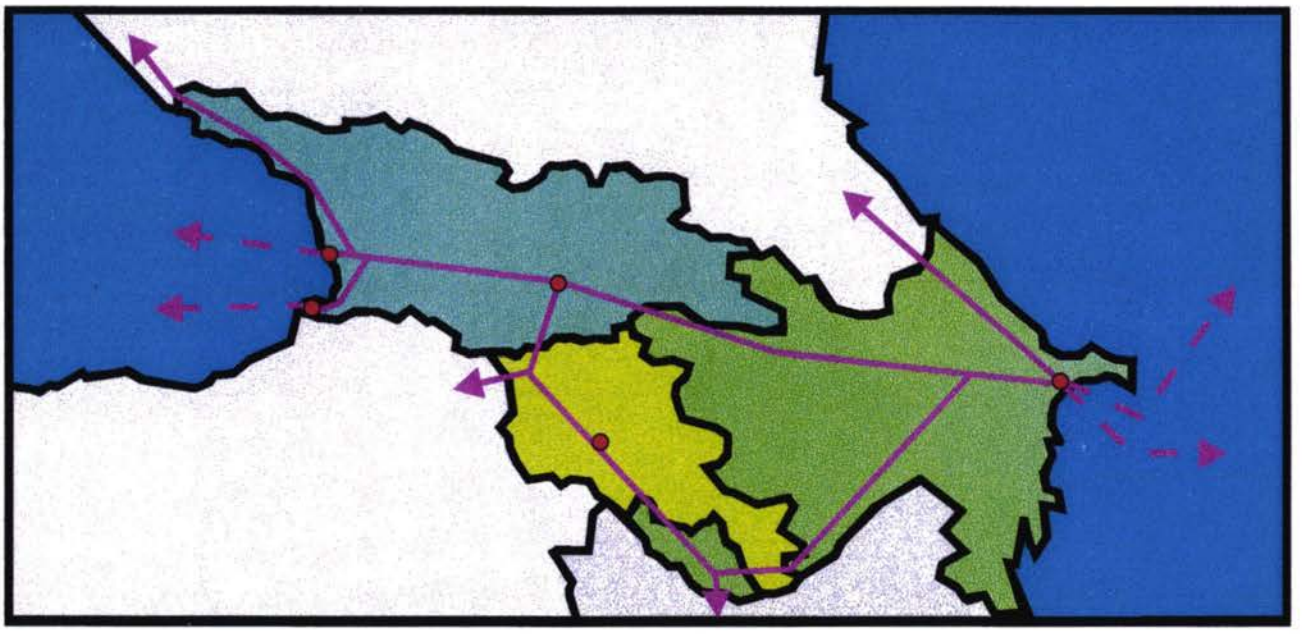
COMMISSION OF THE EUROPEAN UNION

Directorate General IA External Relations
DG IA/E/6 Tacis

Technical Assistance to the Southern Republics of the CIS
and Georgia - TRACECA
(TNREG 939401)

Joint Venture(s) for the Caucasian Railways



Draft

FINAL REPORT

Volume II

October 1997

TEWET

TRANSPORT EAST WEST EXPERT TEAM GMBH

in association with

DE-Consult

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Contents

Abbreviation list:

AC	Alternating Current of electrical power
AGC	European Agreement on Main International Railway Lines
AGTC	European Agreement on Important International Combined Transport Lines and Related Installations
AGZD	Azerbaijan State Railways
AICCF	International Railway Congress Association
AIM	Agreements for the International Carriage of Goods
AIOC	Azerbaijan International Operating Company (Oil production)
AIV	Agreements for the International Carriage of Passengers and Luggage
ARM	Agreement for the Communication of Traffic Restrictions for the International Carriage of Goods by Rail
ARM	Armenian Railway
ATP	Agreement on the international carriage of perishable foodstuffs and on the special equipment to be used for such carriage
BIS	Baku International Seaport
BOLT	Build - Operate - Lease - Transfer
BOT	Build - Operate - Transfer
BUS	Transformer station of railway power supply
BWRS	Baku Wagon Repair Plant
CECA	European Community for coal and steel
CEH	European Timetable Conference for Passenger Trains
CEM	European Timetable Conference for Goods Trains
CEV	European Passenger Tariffs Conference
CFS	Container Freight Station
CIM	Contracts for International Carriage of Goods by Rail
CIS	Commonwealth of Independent States
CIT	International Rail Transport Committee
CIV	Contracts for International Carriage of Passengers by Rail
COTIF	Convention for the International Carriage by Rail
CSC	Caspian Shipping Company
DB AG	Deutsche Bahn AG (German Railways)
DC	Direct current of electrical power
DCU	Uniform Regulations for Rail Transport
DEG	Deutsche Investitions- und Entwicklungsgesellschaft mbH (German Society for Investment and Development Ltd.), Cologne, Germany
DEM	Deutsche Mark (= German currency)
DIN	German Regulations of Standardisation in the Industry
DM	Deutsche Mark (= German currency)
DMU	Diesel Motor Unit
Dpt.	Department
DR	type of inspections of locomotives, wagons, coaches and EMU/DMU
DSA	European Prestressed Concrete Sleepers (type of sleepers)
DSS	Decision Support System
EBRD	European Bank for Reconstruction and Development, London, UK

EC	European Community
ECE	Economic Commission of the UN for Europe
EDI	Electronic Data Interchange
EDIFACT	Electronic Data Interchange for Administration Commerce and Transport
EDP	Electronic Data Processing
EEC	European Economic Community
EMU	Electric Multiple Unit
ESCAP	Economic and Social Commission for Asia and the Pacific
EUROP	Agreement for the Common use of Wagons
FADA	Traffic controller installations
FESA	Permanent line-side radio installations
FSU	Former Soviet Union
FTOS	Freight Transport Operation System
FZ	Financial co-operation programme (in Germany)
GDP	Gross Domestic Product
GDR	former German Democratic Republic
GOST	State Organisation of Standardisation of the former Soviet Union
GRID®	American management training system
GRZD	Georgian Railways
HERMES	German State Guarantees for Suppliers
HQ	Headquarters
HV	High Voltage
ICC	Information and Computer Centre
ICE	Inter-City-Express(-Train)
IMF	International Monetary Found
IRR	Internal Rates of Return (of investments)
ISO	International Organisation of Standardisation
JV	Joint Venture
KfW	Kreditanstalt für Wiederaufbau (= German Bank for Reconstruction), Frankfurt/Main, Germany
KR	type of repairs of locomotives, wagons, coaches and EMU/DMU
LIF	General List of Frontier Points for Rail Transport
LOI	Letter of Interest
LOU	Letter of Understanding
LV	Low Voltage
MBC	Motorised coaches
MESA	Mobile railway radio installations
MIS	Management Information System
MPS	Ministry of Railway Transport of the former Soviet Union
MTT	Uniform Transit Tariff of the OSShD
MV	Medium Voltage
nm	nautical miles
OCC	Operations Control Centre (of the railways)
OCS	Overheadline catenary system of power supply
OCTI	Central Office for International Carriage by Rail (in Bern, Switzerland)
OR	type of overhauls of wagons, coaches and EMU
OSShD	Organisation for the Co-operation of Railways
PC	Personal Computer

PCM	Personal Computer assisted Management
PFCCS	Processing and Freight Cost Calculation System
PIEx	Common Regulations for the International Carriage of Express Parcels
PIM	Common Regulations for the International Carriage of Goods
PIV	Common Regulations for the International Carriage of Passengers and Luggage
Pkm	Passenger-kilometre
POD	Port of Discharge
POL	Port of Loading
PPW	Regulation for the Use of Wagons in International Rail Transport
resp.	respective
RIC	Regulations for the International Carriage of Containers by Rail
RIC	Regulations for the Reciprocal use of railway carriages and luggage vans for International Transport
RID	Regulations for the International Carriage of Dangerous Goods by Rail
RIEx	Regulations for the International Carriage of Express Parcels by Rail
RIP	Regulations for the International Carriage of Private Wagons by Rail
RIV	Regulations for the Reciprocal use of Wagons for International Transport
RoRo	Roll-on-Roll-off
RSM	General Summary of Special Regulations for the International Goods Traffic
SBB	Swiss Federal Railway
SCADA	Supervisory, Control and Data Acquisition System
SMGS	Conventions to International Railway Transport of Goods
SMPS	Conventions to International Railway Transport of Passengers
SNCB	Belgian Rail
SNCF	French National Railway Society
SZD	former Soviet Railways
TCLE	Trans-Caucasian-Logistic-Express
TECF	Tbilisi Electro-Locomotive Construction Factory
TEU	Twenty feet container Equivalent Unit
TEWRS	Tbilisi Electro-Wagon Repair Plant
TEWS	Tbilisi Electro-Wagon Repair Plant
TIEx	Agreements for the International Carriage of Express Parcels
Tkm	Ton-kilometre
TO	type of overhauls of locomotives, wagons, coaches and EMU/DMU
TQM	Total Quality Management
TR	type of repairs of locomotives, wagons, coaches and EMU/DMU
UIC	International Union of Railways
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UTI	International Transportation Units
VAT	Value Added Tax
ZÜV	System for the supervision of train running

Chapter 2

Legal, organisational, and financial conditions

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2 Legal, organisational, and financial conditions

As already explained under chapter 1, the three Caucasian railways have small networks and traffic flows in comparison with other C.I.S. or European railways. In order to overcome the present difficulties in the infrastructure and operation fields, a closer co-operation and harmonisation in the fields of rehabilitation, maintenance, operation and marketing is obviously necessary.
The following paragraphs analyse the present legal, organisational, and financing conditions of the railway administrations, giving some outlooks for necessary improvements and adjustments. This analysis is carried out in view of the envisaged co-operation in the field of infrastructure. However, as infrastructure is still an integral part of the railways, being not yet separated from the traffic and service components, the organisational and financial analyses apply to the railway administrations as a whole.

For reasons of confidential treatment, the financial analysis (section 2.4) is carried out for each railway administration separately.

2.1 Legislation on railways and transport enterprises

2.1.1 General overview of legislation

The legal situation of the railways ARM, AGZD and GRZD is influenced by the following circumstances:

- Railway construction and operation rules FSU and the international railway transport conventions of OSShD continue to be valid. However, the CIS governments can modify the application of these rules.

- National regulations for the legal form, organisation, management, and financing of the railways are being created. Further laws are being prepared with the objective to convert the railways to stock companies.

- The general legislation on enterprises and on property on land is increasingly being applied to the railways. In the FSU, there was no such legislation.

- Certain regulations of the FSU ceased to be valid without being replaced by legal rules (e.g. in sea ports).

- As a result of the new sovereignty, rules have been introduced for objects of legislation not necessary in the FSU (e.g. border controls between republics, customs).

That means: The legislation is in flow, but its further development can be influenced.

In principle, a juridical unity for the three Caucasian railways still exists. However, it is increasingly challenged by the creation of national laws having priority over the uniform law. The problem is being recognised in the CIS states: the governments and railway administrations take care to maintain the uniform rules by the decisions of the Council for Rail Transport, or at least to modify them only by mutual agreement.

The managers in the Caucasian ministries of transport and in the railway administrations are uncertain in the field of legislation. The interviews held with them in the three states showed an uncertainty with regard to

- the decisions of the parliamentary or ministerial lawmakers on national level

  and

- the political development in the Caucasus region on international level.

Representatives of the three railway administrations declared to be only willing to co-operate with the other Caucasian railways on the present level. Objections were raised to closer contact. A few think that the efforts of TRACECA are futile as long as the war-like situation persists.

The three Caucasian railways have the juridical form of enterprises. They are generally subject to the legislation on enterprises which in the three Caucasian states has been developed in the years after gaining their independence.

The railways are state enterprises, which is fixed in the respective constitutions. In each of these countries the state railway is the only railway, with one line and an operation monopoly. This monopoly as yet remains untouched. The anti-monopoly legislations are not applied to the railways' infrastructure and operations, but to their services. At present, the privatisation of the state railways is excluded by law. It is planned to modify this stringent rule within the next 2 or 3 years, when the railways shall be converted to stock companies.

In the Caucasus region, there are no private railways, only works sidings and rail connections.

The general framework of the FSU railway law, dated 15-04-1991, is still being applied in the Caucasus region. However, in 1994 Georgia enforced a new railway law. In Armenia a general transport law and a railway law were drawn up; in Azerbaijan a transport law, including ferry boat transports, came into force in 1997. It is the aim of these laws to replace the Soviet railway legislation, and to eventually split the present juridical unity of the three railways.

The international co-operation of the Caucasian states in railway traffic still leaves much to be desired, compared with that in Western Europe.

2.1.1.1 Conventions of states or governments

(a) Organisation for the co-operation of railways (OSShD): Members are the Republics of Azerbaijan and of Georgia. The Republic of Armenia is represented by Russia (ARM is participating in the meetings of the Council of OSShD as a part of the Russian delegation). OSShD continues to apply the conventions to international railway transport of passengers (SMPS) and of goods (SMGS). These conventions are to be applied to railway transports between the Caucasian states themselves, between these states and the other CIS countries, and other East European and Asian states.

(b) Common meeting of the heads of governments of the CIS member states having created the Council for Rail Transport, dated 20-3-1992. This Council is not based on an international treaty, but on agreements between the governments only. Presently, the general managers of the CIS and the Baltic railways (these as associated members) are representing their governments in the meetings of the Council. They decide, in mutual agreement, whether to maintain the common rules or, possibly, modify them. The governments of Armenia, Azerbaijan and Georgia are members of this Council.

(c) Treaty between the Republics of Azerbaijan, Georgia, Uzbekistan and Turkmenistan, dated 13-05-1996, on co-ordinating the activities in rail transport.

(d) Agreement between the Republics of Azerbaijan, Georgia, Uzbekistan and Turkmenistan, dated 13-05-1996, on co-operation in the regulation of transit transports.

(e) Agreement on mutual relations in international rail transport between the Republics of Azerbaijan, Georgia, Uzbekistan and Turkmenistan, dated 13-05-1996.

(f) Georgia ratified the Convention on Liability of International Terminal Operators dated 1994, the other republics did not.

2.1.1.2 Conventions of railways

(a) International Railway Union (UIC). ARM and AGZD are associated members, GRZD as yet is not.

(b) According to the resolutions of OSShD, the following regulations are being applied by the three Caucasian railways:

- the uniform transit tariff (MTT) to the SMGS convention,
- the tariffs for transport of passengers, luggage and express goods,
- the instructions to the SMGS and SMPS conventions,
- the regulation concerning the use of wagons in international rail transport (PPW),

- the instructions on accounting in international rail transport of passengers and goods.

(c) According to the resolutions of 13-05-1996, the following regulations continue to be valid for the railway enterprises of Azerbaijan, Georgia, Uzbekistan and Turkmenistan:
- the FSU Railway Law,
- the regulations on railway operation,
- the technological relations,
- the assessment of the railways' liability in the case of deviation of regular operation,
- the regulation concerning the procurement and repair of rolling stock, containers, equipment.

All measures or changes to be developed must take into account these conventions which, however, may be subject to alterations later on.

The international relations of the three Caucasian railways have to be expanded. Apart from the above conventions, the relations to foreign railways, to foreign governments and to international organisations are to be cultivated and deepened in very different extents. Of course each of the three railways has a special department dealing with international relations, which is well organised with AGZD and GRZD. By contrast to that, the international division of the ARM is insufficient. It has not the competencies indispensable for establishing the Armenian railways in international transport.

2.1.2 Review of legislation in each country

Laws and drafts of laws of the three Caucasian states having relevance for the activities of enterprises in general and for railways in particular are listed country by country under section 6.3.1.

2.1.3 Conditions for a joint railway infrastructure unit

Following the Soviet Union's dissolution, the railway enterprises in the three states founded affiliated enterprises in the legal form of private enterprises. It has been examined to which extent the legislation admits to separate certain activities, assets or areas from the actual infrastructure administrations, and to combine them in a Railway Infrastructure Unit or in Joint Ventures.

The results of these examinations are as follows:

The railways may found affiliated enterprises in the form of private enterprises, e.g. stock companies, either alone or together with private companies/investors, without any governmental permission. Therefore, there is no obstruction to the railways' separating certain infrastructure activities from the railway entity and managing them in affiliated enterprises. Such activities might be:

- the purchase or the production of materials for the infrastructure,
- the maintenance of the track system or of the signalling or telecommunication systems.

The real problem of the separation and re-configuration lies in the laws on privatisation. The alienation of state property used by railways is not permitted as long as the privatisation of railways (that means also: of railway assets) is interdicted by law. Such laws are in force in all the three states. However, it is no alienation in the sense of the privatisation laws to bring in land or assets into an affiliated enterprise being a legal entity, when the majority of the voting rights is with the state (resp. the state railway), no matter how large the percentage of shares belonging to the state (resp. the state railway) is. Even the separation of railway lines in their entirety is not excluded when these requirements are met.

The leasing of mobile or immobile objects is permitted without restriction.

This legal situation prevails in all of the Caucasian states and will continue as long as the privatisation laws are not amended. Once privatisation will be permitted, stock companies will be founded which may then own railway assets. The national legislation should be amended according to whether the railways will then own the land they use or not.

However, this model can at present be realised only on a national level, and not as an international joint venture. For the latter case, two states (or 2 railways, respectively) may be partners. That means that not both of them can have the majority simultaneously. Such international joint ventures will become possible without restriction once the railways will have been converted to stock companies.

2.2 Analysis of present organisation

2.2.1. Introduction

The infrastructure is a constituent part of the three Caucasian state railways. There are privatisation programmes in the three states, but the railways are as yet excluded. The railway laws, respectively the drafts of them, do not concede a legal position to the railway infrastructure - neither with regard to their legal form, nor to their organisation, nor to their financing investments. In none of the Caucasian states the legislation provides for the separation between transport and infrastructure activities as required, for example, by Article 6 of the Directive on the development of railways in the European Union, 91/440/EEC.

2.2.2. The present organisation

The term "infrastructure" is not defined in any of the legal regulations of the three Caucasian states. In the FSU railway law, dated 15-4-1991, which is still valid in Armenia and Azerbaijan, and in the Georgian railway law the term "infrastructure" is not known, either. Therefore, the definition must be found taking into account the purpose of railway enterprise's infrastructure, and with reference to the directives 91/440/EEC and 95/19/EC. Article 3 of the Directive 91/440/CEE refers to Annex 1 part A of the EEC regulation no. 2598/70, dated 18-12-1970, which describes the term 'infrastructure' as follows:

Railway infrastructures are all ways and assets necessary for vehicle traffic and traffic safety, with the exception of tracks inside workshops and locomotive sheds, and private sidings:

- Ground area: track and track bed, in particular embankments, cuttings, drainage channels and trenches, masonry trenches, culverts, lining walls, planting for protecting side slopes etc.; passenger and good platforms; four-foot way and walkways; enclosure walls, hedges, fencing; fire-protection stripes; apparatus for heating points; crossings, etc.; snow protection screens;
- Engineering structures: bridges, culverts and other overpasses; tunnels, covered cuttings and other underpasses; retaining walls, and structures for protection against avalanches, falling stones, etc.;
- Level crossings, including appliances to ensure the safety of road traffic;
- Superstructure, in particular: rails, grooved rails and check rails; sleepers and longitudinal ties, small fittings for the permanent way, ballast including stone chipping and sand; points, crossings, etc.; turntables and traverses (except those reserved exclusively for locomotives);
- Access ways for passengers and goods, including access by road;

- Safety, signalling and telecommunication installations on the open track, in stations and in marshalling yards, including plant for generating, transforming and distributing electric current for signalling and telecommunications; buildings for such installations or plant; track brakes;
- Lighting installations for traffic and safety purposes;
- Plant for transforming and carrying electric power for train haulage: substations, supply cables between substations and contact wires, catenaries and supports; third rail with supports;
- Buildings used by the infrastructure department.

The EEC definition should be applied to any Railway Infrastructure Unit or Joint Ventures to be founded in the Caucasian states. The legislation of the three states is not contradictory to it.

The infrastructures are integral parts of the respective national railway enterprises. There are no legal relations to the transport divisions of the railway administrations whose trains use the infrastructure. In Azerbaijan a special department for passenger traffic was established in 1996, and in Armenia, where passenger service at present is part of the rolling stock administration, the establishment of such a department is planned. At present, "contracts" in connection with the passenger traffic departments have no legal character; they are internal provisions.

This model can be developed to the establishment of enterprises using the infrastructure of the state railways. The Infrastructure Unit could enter into administrative, technical and financial arrangements with the users of the infrastructure. The contents of such arrangements should correspond to Article 10 (3) of the directive 91/440/EEC and to Article 10 (5) of the directive 95/19/EEC. The "contracts" of the passenger traffic departments with AGZD or ARM, respectively, may be adapted in accordance with this objective. In case the traffic department has to procure the train traction itself, this requires that the user of the infrastructure gets the ministerial permit to act as a railway enterprise. This permit should correspond to Article 2 b) of the directive 95/18/ CEE.

An authority for railway infrastructure has sovereign competencies. It cannot be founded in the legal form of a private enterprise, nor can it establish a Railway Infrastructure Authority with competencies for two or three states. This objective would require international treaties between the partner states, and the approval of the concerned parliaments in the form of laws. The prerequisites for such treaties do not exist at present. Therefore, the objective of a Railway Infrastructure Authority cannot be pursued.

The infrastructures of the three Caucasian railways are state monopolies. **It is prohibited to other persons to use the infrastructure with own trains or tractive vehicles.** Therefore, no rules exist as regards the access of other railway entrepreneurs to the national infrastructures in the three states. Privately owned wagons

which are registered with any railway administration, and railway vehicles belonging to foreign railway administrations may use the infrastructure according to the decisions of the Council for Rail Transport or the international conventions, respectively. The abolition of this monopoly would require the separation of the traffic departments from the infrastructure operator.

The organisation of the three Caucasian railways is shown in Annexes 2.2-1 to 2.2-3. It can be seen that in none of the three railway enterprises there is a special organisational unit "infrastructure". Most activities concerning the infrastructure are organisationally connected with other activities of the railway administrations. On the other hand, several administrative departments and divisions are competent/responsible for the administration and the operation of the infrastructure.

The internal structures of the three railways were developed from the FSU's railway organisation. They are similar. Therefore, it is possible and appropriate to refer to uniform problems of the three railways in the following explanations.

The term "administration of the infrastructure" in a legal sense means
- planning, construction schedule,
- acquisition of land (real estates),
- placing of orders, purchase and production of materials,
- execution of the plan,
- performance, supervision and acceptance of works for repair, maintenance, reconstruction and renewal,
- inspection of lines, drainage of lines,
- use of dynamometer wagons etc.

The term "operation of the infrastructure" in a legal sense means
- slot management,
- making available lines and train paths to train movements,
- telecommunication and signalling,
- operation of the level crossings,
- supervision of the trains' running,
- throwing of the points,
- power supply (on electrified lines) etc.

Administration and operation of the infrastructure includes personnel, financial, legal, and computer services and other activities.

The organisational form of the three Caucasian railways is that of a state monopoly, for which the infrastructure is not anything to be marketed: it is used by itself exclusively. Each department/division of the railways is responsible for and concerned with anything connected with its respective tasks.

Most of the local units (stations etc.) of the three railways are subordinate not to one but to several departments/divisions: e.g. the stations to the transport division, to the

wagon division and to the freight traffic division. Few units (e.g. the permanent way districts) are subordinate to one unit only.

This structure is not efficient: it is an inheritance from the FSU's railway organisation and should be abandoned.

In Azerbaijan, there are three regional divisions (Baku, Gyandsha, Nakhichevan); in Georgia four (Batumi, Khashuri, Samtredia, Tbilisi). These units should be dissolved in favour of a market-oriented organisation, which will possibly result in a reduction of staff.

2.2.3 The staff of the three Caucasian railways

The total number of personnel of the three railways and how they are being allocated to the various infrastructure activities is given in Annexes 2.2-4 to 2.2-6.

The repartition of the current personnel and their allocation to the different activities of the railway enterprises is somewhat difficult. Tables or lists to this effect do not exist. The number of staff working for the infrastructure for many units can be assessed by means of calculation. Some figures, however, have to be estimated. As a result, it can be said that 30 to 35 per cent of the staff of the three railway entities are concerned with infrastructure activities. This proportion equals the standard of West European railways.

The varying productivity of the staff of the three railways can be demonstrated by the following figures:

ARM	93,000 tkm per employee per year
AGZD	97,000 tkm per employee per year
GRZD	60,000 tkm per employee per year

(In comparison: The productivity of the Deutsche Bahn AG (German Railways) staff in 1995 was approximately 1,040,000 tkm per employee per year).

2.2.4 Foundation of branches, subsidiaries, and affiliated enterprises

ARM, AGZD and GRZD founded organisational units in the form of

- state enterprises: some of whom are legal entities. Their foundation is possible without special approval by the government;
- private companies: such enterprises were up to now have been founded by ARM and GRZD in peripheral areas only (e.g. hospitals, schools) and not in the core of the railway activities.

The AGZD founded many affiliated enterprises and brought in railway assets to some of them. For the latter, the consent of the Council of Ministers was required. The AGZD unit "passenger traffic" is a legal entity. It is a state enterprise, not a private company. The passenger traffic department in Azerbaijan to this day has not yet settled accounts with the entity AGZD. Its tariffs are subject to state authorisation; price reductions are imposed on it and it is not entitled to payments from the government for imposed unprofitable services. The management of the passenger traffic department plans a re-organisation and definition of its activities. The new passenger traffic department is partially independent of the decisions made by the departments in the AGZD headquarters (HQ). In Armenia, a similar passenger traffic department is under preparation by ARM; the foundation of further traffic departments is envisaged.

This organisational form should be further promoted. It could also be applied to other services of the three railways with the following activities:

- marketing,
- providing the services to the customers,
- safeguarding of obligations of public service imposed by the authorities of the state, or execution of contracts on transport services according to Articles 1 (4) and (5) of the regulation (EEC) no. 1191/69 and no. 1893/91,
- dispatching and operating the trains,
- maintenance of the wagons etc.,
- possibly: repair and reconstruction of the wagons,
- all pertinent personnel; financial, legal, and computer service activities.

The draft of the Armenian transport law provides licences for certain transport activities. The licensed enterprises or subsidiaries may be privatised, even in the railway sector. However, the definitive draft of this law is not yet available; and it is not certain if ever it will come into force.

2.2.5 Railway infrastructure in the three Caucasian states

For the present organisation in general, please see section 2.2.2. The conditions of the railway infrastructure regarding the organisation are reviewed hereafter, state by state.

2.2.5.1 Armenian Railway (ARM)

There is no homogenous administration of ARM's infrastructure. In the headquarters, it is assigned to the operating services in the transport, track maintenance, energy supply, telecommunication and signalling engineering divisions. The production and construction services form a special organisational unit. The responsibility for safety, economic efficiency, staff, and financing are split. The drafts of the Armenian transport and railway laws do not provide modifications for the legal or institutional organisation of ARM's infrastructure.

The organisation of the ARM is not determined by legislation. Therefore, no legal problems would exclude or stand in the way of any modifications seeming necessary.

In the local organisation, the assignments related to infrastructure are allocated to 4 permanent way districts, 1 track construction workshop, 76 stations, 3 power current districts, 2 telecom districts, and to 1 department for materials and technical supply. In the headquarters of the ARM, each of the 5 departments is competent in infrastructure problems:

- in the financial and economic department: each of the 4 divisions,
- in the operations department: the transport, the track and the energy supply divisions,
- in the communication and foreign affairs department: the telecom and signalisation division,
- of the divisions assigned to the general manager: the personnel, the legal and the technics for production divisions.

Most of the headquarters' units are not only concerned with tasks relating to infrastructure, but also with other duties, that is they are only partially concerned with infrastructure tasks. It has to be stated, however, that those local units which are affiliated enterprises have their own personnel department. The other local units of the ARM belong to the "personnel department" of the headquarters mentioned above.

Within the envisaged restructuring process of the ARM, its organisation should be adapted to the objectives of a stock company. Hereby, staff reductions could be attained.

2.2.5.2 Azerbaijan State Railways (AGZD)

The AGZD is a state enterprise as defined in Article 6 of the law on enterprises. It is a legal entity. In the organogram (Annex 2.2-2) the actual structure of the AGZD headquarters is shown in detail. The following divisions of the AGZD-HQ are in charge of infrastructure activities:

- In the engineering department: the civil engineering and construction division (Az-shel-dor-stroy) and the railway track division (Az-stroy-put; 15 permanent way districts are subordinate to this division); they are legal entities, too;
- the general construction division;
- the informatics and research service;
- the projection unit;
- the material service (subordinate to the General Manager); it provides the procurement (purchase, production) and the administration of the material.
- the power supply (AGZD has power plants of its own).

In charge of financing, economics, personnel, legal consulting, and controlling are the special services of the AGZD HQ.

The operation of the infrastructure is realised by the "operation department". On the other hand, the "technical department" has only a co-ordinating function in infrastructure activities.

This organisation form is complicate. It is well understood that the economic autonomy of the Az-shel-dor-stroy and Az-stroy-put divisions is limited.

Regional divisions of the AGZD are established in Baku, Gyandsha and Nakhichevan.

Local units with infrastructure activities are, apart from the above mentioned 15 permanent way districts, the following:

175 stations, 6 power supply districts, 9 telecommunication districts, 3 water supply districts, Az-stroy-put, Az-shel-dor-stroy, the track construction train, 4 track construction engine stations, 2 gravel works, 1 concrete construction work, and 2 bridge construction works.

The new transport law of Azerbaijan does not provide for changing the actual organisation of the AGZD. However, the legislation does not exclude or stand in the way of any modification of this organisation.

2.2.5.3 Georgian Railways (GRZD)

The organisation of the GRZD has been modified during the last 2 years. The modification at the end of 1996 created many new structures. For the organisation of the "Georgian Railway Administration" it is made reference to Annex 2.2-3. The organogram shows 48 units, 22 of which form the "Georgian Railway Department". The other units are subordinate to the General Manager and to the Deputy Managers, too, but they are concerned with in non-railway activities. The attribution of the organisational units to the General Manager or to the Deputy Managers can hardly be understood. Different organisational units are in charge of the infrastructure activities. Most of them are also employed with other duties. The organisation should be oriented towards the aims of a stock company. Reductions of staff number could be attained hereby.

Since 1-1-1997, there are 4 regional divisions in Batumi, Samtredia, Khashuri, and Tbilisi. The internal organisation of these regional divisions corresponds to that of the HQ. On the local level, many technical district units were dissolved on 1-1-1997; their staff belongs now to the respective services in the Georgian Railway Administration. At present, no detailed numbers are available as to the new service units.

2.2.6. Intersections

When founding railway co-operation institutions (infrastructure unit) and/or joint ventures, the first requirements will be to determine the intersections between the new institutions and the basis railway enterprises (entities). Such intersections could concern

1. the tendering (procurement - purchase or production) of materials for repair, maintenance, reconstruction etc. of railway assets (e.g. for sleepers, for telecom, for signalisation, or for the energy supply);

2. the repair, maintenance etc. of the infrastructure assets;

3. the operation of the infrastructure in accordance with the directives 91/440/EEC and 95/19 EC.

The number of staff for the third intersection corresponds to the actual figures calculated for the infrastructure activities in Annexes 2.2-4 to 2.2-6. For the intersections no. 1 and no. 2, considerably less staff will be required.

To prevent misunderstandings, it is emphasised that the staff numbers given in the annexes do not explain the number of personnel to be necessary for the activities of any Railway Infrastructure Unit or Joint Venture.

Similar to the Caucasian railways' infrastructure, intersections are imaginable for Joint Ventures in the field of workshops or operation of the railway locomotives, coaches and/or wagons; such intersections should be defined clearly. These activities could be contracted out to third enterprises under the same conditions.

2.3 Analysis of human resources

"Human resources" means the entire human performance potential available to an enterprise.

Success and stability of an enterprise increasingly depend on highly motivated and qualified staff. This statement, however, does not only imply the demand for excellent, specialised staff with additional capacities for modern ways of working but, in the first place, a new picture of the ideal management and the ideal manager.

The analysis of human resources in the present situation is based on statistics on the number of personnel in the organisational structure, on the ages of personnel, on the structure of their professional skills and their further education. It is also based on talks with the personnel departments and with management personnel of different levels in the administrative and managerial structures of the railways in the three Caucasian republics.

In the following, the present situation will be described.

An evaluation of the present situation with a view to deficits as compared with an appropriate final situation ('objective'), including a description of measures already realised in the projects and still to be necessary will be given in section 6.7 "Human Resources Development".

2.3.1 Present situation of the Armenian Railway (ARM)

Statements as to the present number of personnel were already made in section 2.2 "Analysis of Present Organisation".

The approximately 4,700 persons working today for ARM represent only a little less than a third of the former number of personnel. In the past, some 16,000 persons were working for ARM. About 11,000 persons were stepwise let go within the course of several reorganisational processes. The basis for these dismissals was and keeps being a reduction of the volume of work to about 8 % of the former volume.

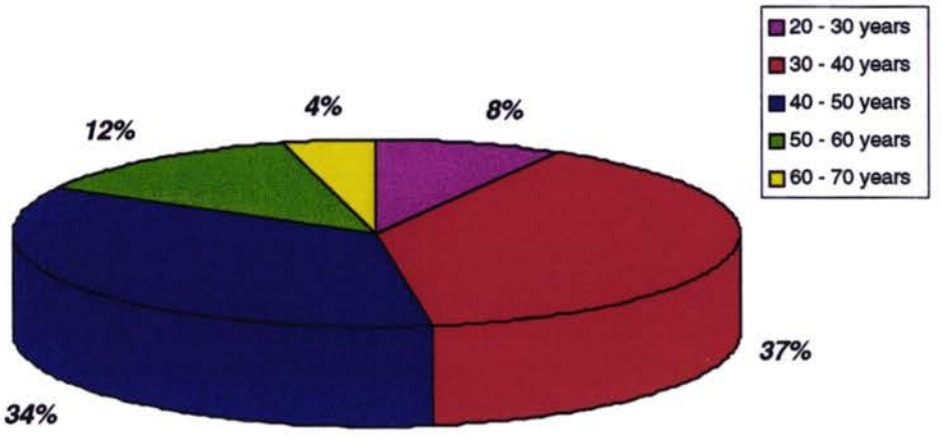
Since in those times within the framework of the centrally managed economy the railway was utilised to the full, this created a monopoly inside which typical structures of management, thinking, and the way work was done and organised came into being and constantly strengthened. This "old style" even today for the most part is being realised, though the situation and the outline conditions of ARM have considerably changed in the meantime.

One reason for this might be that the staff of the railway consists mostly of the old personnel, who very rarely were supplemented by new or younger staff from outside.

The predominant, basic supposition that the experience required for working in the railway system can only be gained by many years' work in the railway system, and

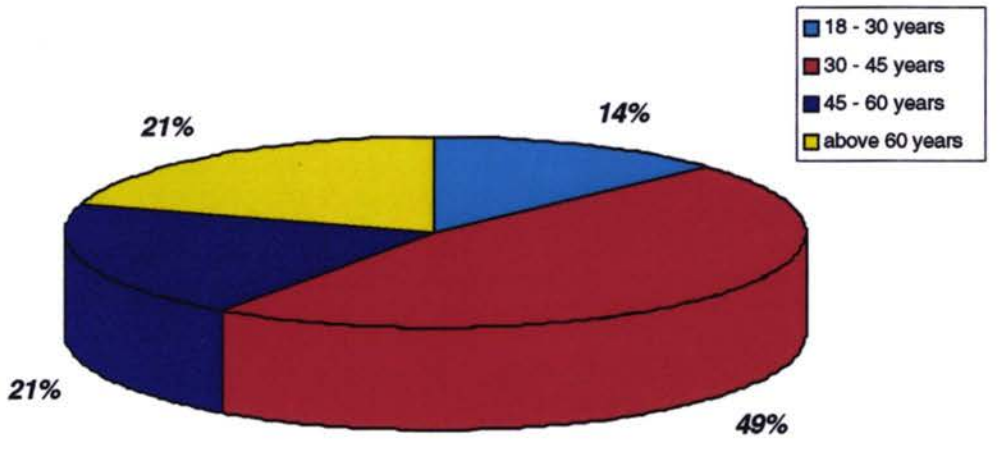
that this experience is the most important factor for the existence and smooth functioning of the enterprise, results in the small number of young personnel, especially in the management structures (see Figure 2.3-1).

Fig. 2.3-1 Age structure in the administration of ARM



The share of women in the administration is 45 %.

Fig. 2.3-2 Age structure in the productive fields (example: signalling and telecommunication)



There are, though, also other reasons why there is so little junior staff:

- Junior staff with an academic degree are scarce since a professional education, completed by a diploma and available only abroad (CIS states) is above a private person's and the railway's means.

The Armenian "Technical College of Railways" can only provide an education with a final examination on technical college level.

At present, 70 % of the administrative staff graduated from a university.

About 90 % of the personnel were trained in specific railway faculties, i.e. even the majority of the economists, lawyers, and so on working for the railway.

- Wages of on average 15 $ or 18 $ (for administrative personnel) per month are not a basis for attracting highly qualified young staff.
- As compared to the volume of work to be dealt with, the number of staff employed is still too high.

  Also, the number of personnel actually working for ARM is higher than statistics and plans suggest. 93 persons, for instance, show in the statistics as working in the administration of ARM, although actually 125 persons are working in this department.

  Further dismissals of personnel, however, will lead to serious social problems and, because of the level of staff costs, does not present many advantages in terms of business economics. Engaging new labour is therefore nearly out of the question.

New know-how and methods to be necessary to meet now and in future the changing requirements of the railway business have received very little propagation up to now.

Only few of the staff on their own initiative or on that of the railway participated in further training courses. These were mostly computer courses and study tours abroad / in Europe.

However, problems connected with competition (amongst others, with roadbound transport), with marketing and with special customer services and modern working methods and structures did not play a sufficiently large role or were not further propagated in the enterprise.

The old thinking still prevails that "the customer is the one who wants something" and has to come to the railway to "ask" for a service to be rendered.

The customer is then allotted the service just the way it was planned and was always rendered by the railway.

If changes or new ideas become necessary, these are mostly turned down with the phrase "we've always been doing it this way".

So then "work with the customer" only means to correctly deal with the administrative work required for dealing with a customer order (paper work).

Direct contacts with the customers are scarce, anyhow, which means that information about what the customer expects from service (for instance in terms of time, security, etc.) is equally scarce.

A new situation in so far that ARM is now a company offering services in competition with other offerers is hardly noticeable from the way they are still working.

Also, the connection between qualification, flexibility, and team spirit as those factors leading to a high productivity in the winning and execution of orders for the most part remains undigested.

Similarly unknown is the co-operation between qualification, motivation, and participation as a design field for inciting the efficiency and development of capabilities of staff and co-operatives.

Predominant is an authoritarian management style with strongly centralised responsibilities. Clearly separated fields of work / tasks for everybody leave little scope for creativity and collectivity.

We were informed about an intended extensive restructuring resulting in that individual departments will be separated out to be new, economically independent units.

However, in this connection most of the funds are to be used for new technology, which really is an indispensable investment. Still, despite all the investments and organisational changes it would be counter-productive to the success of the enterprise to disregard the human factor when in future making decisions.

There is a great potential available with ARM in utilising the often neglected chances the human resources present.

2.3.2 Present situation of the Azerbaijan State Railways (AGZD)

Details as to the present number of staff were already given in section 2.2 "Analysis of present organisation".

Detailed information regarding the present situation and pertinent backgrounds has also been given in the report of June 1996 "Azerbaijan Railways - Management and Organisational Structure", by Mrs. F. Heidebroek and Mr. P. Claes.

The results of our analysis correspond to the statements made in that report. In order to avoid repetitions but at the same time enable to understand and compare the railways of the three Caucasian republics, a résumé of the central statements is given below.

- Today, some 40,000 persons are working for AGZD, that is 12,000 persons less than in 1990.
- The dismissal of personnel up to now has not been in correspondence with the loss in transport performance (about 90%).
- Out of social reasons, dismissal of personnel will not be enforced further.
- The management qualities of the managerial staff at first dropped considerably, when the Russian employees that had worked in top positions left AGZD.

  Our analysis shows that meanwhile a younger, more motivated middle management with growing interest and qualifications is establishing itself.
- Predominating (still) is an authoritarian management style and, as regards the staff, a tendency to leave all decisions to the boss.
- A deficit in motivation is due in the first place to the relatively low salaries and (according to our analysis) to the rigid distribution of competencies and the narrowness of individual fields of activity and responsibility connected with that.
- The railway engineers formerly especially trained in the Moscow Railway Institute are no longer followed by adequately trained junior staff, since the training (now taking place abroad) is beyond anyone's financial means.

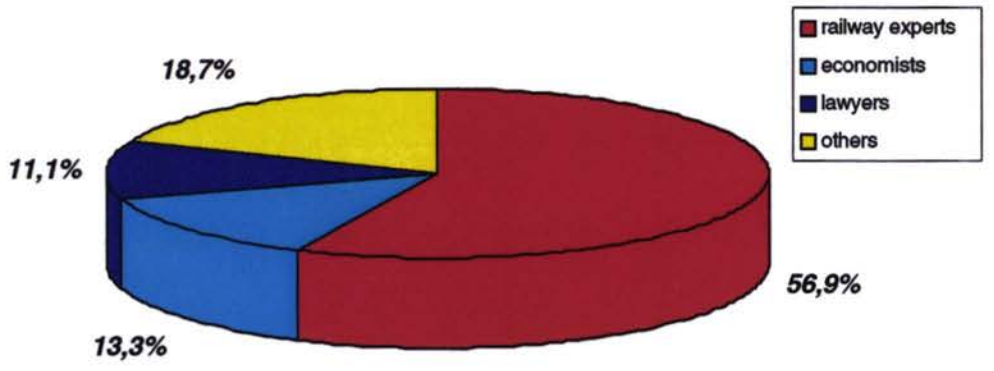
  Whenever elder staff are leaving the company there is a lack of technically qualified, competent personnel.

Additionally, our analysis yielded the following:

- The "Technical College for Railway Transport" of AGZD has completely taken over all training specific to the railway. Some 100 experts per year are leaving the college with a degree. At present some 200 persons are being trained there. This small number results from the present abundance in personnel.

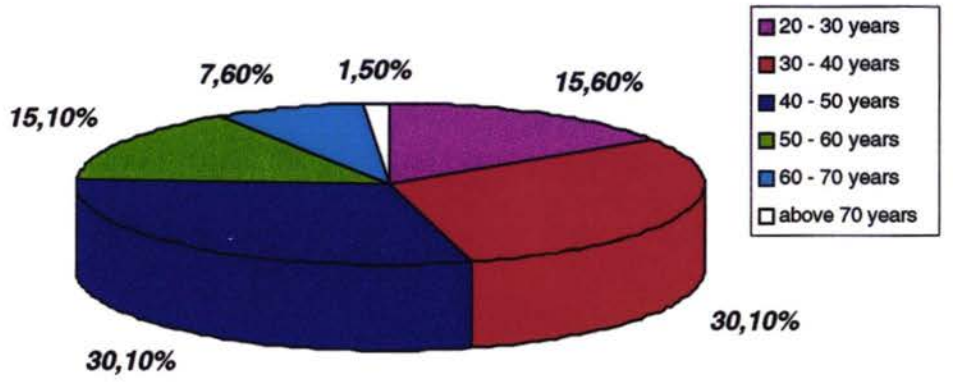
  AGZD, however, does not consider the resulting problem of junior staff to be critical.
- The present share of graduates from an institute of technology is about 70% in the railway administration. With a view to the job descriptions, personnel in the administration are overqualified. The reason is that all graduates from institutes of railway technology were engaged, regardless of the requirements of the specific position.
- At present more than 50 % of the administrative personnel and more than 90% of AGZD's entire personnel have been trained in specific railway jobs.

Fig. 2.3-3 Educational structure in the administration of AGZD



- Similar to that of ARM, the age structure of AGZD shows a predominance of elder staff:

Fig. 2.3-4 Age structure in the administration of AGZD



The share of women in the administration is about 50 %.

- AGZD is still working in accordance with structures, regulations, and working methods dating from the times of the former Soviet Union.
- Especially in regional offices, for instance, personnel are often subordinate doubly: as regards administration, their superior is the Chief of the District, and in technical respect it is the corresponding department of the railway administration.

- At present there is a "Commission for Changing the Structure of the Railway", headed by the technical department. However, works as yet are not progressed far enough for concrete development objectives or results to be available. But the restructuring is said to entail a dismissal of about 10 % of the personnel.
- Further training of personnel is being organised centrally, on the basis of a programme for further training.
- However, the assignment of further training measures is preferably done according to formal aspects. Modern working methods, management techniques, marketing, work with the customer, command of foreign languages, and service quality - all these pillars of survival in competition - are hard to be found there.
- As regards the conception of competition and the necessity resulting from it to work differently with and for the railways' customers, the situation is similar to that described for ARM. The term 'marketing' is still a foreign word and is, at best, understood as a planning form of economics and is being realised (in the old way) as such.

2.3.3 Present situation of the Georgian Railways (GRZD)

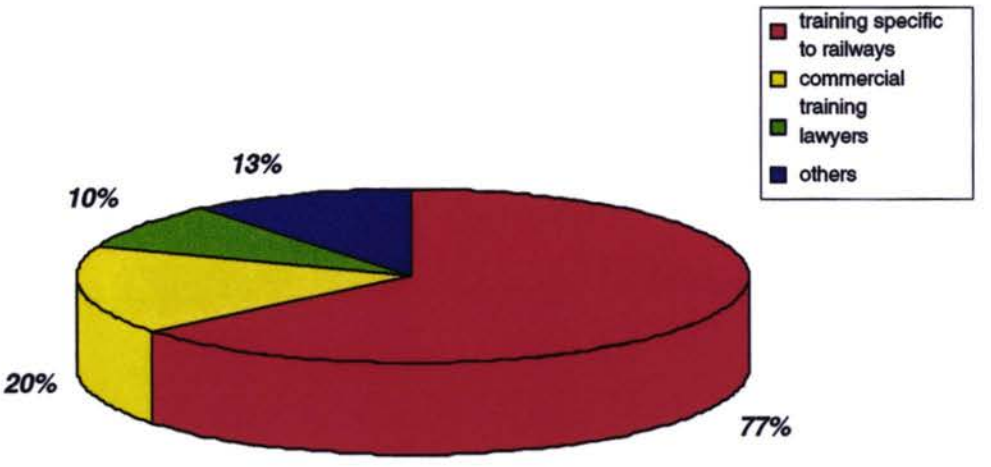
Statements as to the present number of personnel were already made in section 2.2 "Analysis of present organisation".

The approximately 25,000 persons today working for GRZD are the result of restructuring measures up to the end of 1996.

Unfortunately, only greatly varying and contradictory data are available as regards the personnel of GRZD, so that the following statements can only present a rough survey.

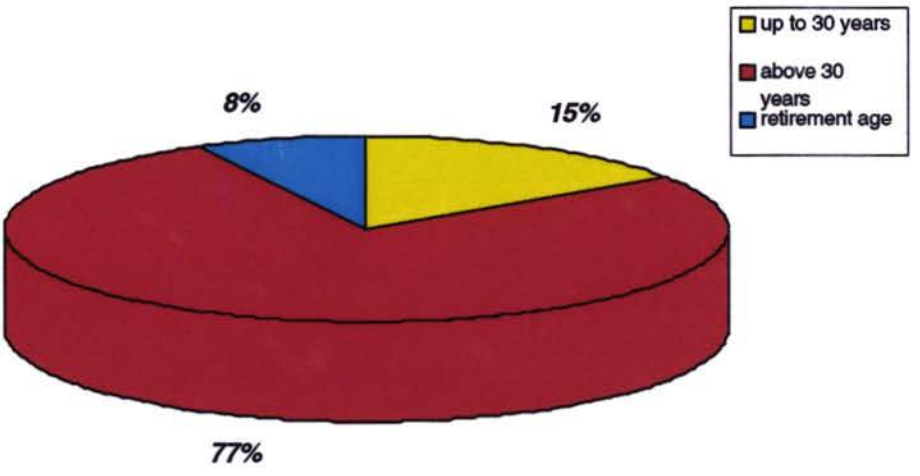
- About 400 persons are working in the railways' administration, 35 % of whom are women.
- The professional training of GRZD's personnel, too, shows a predominance of training specific to railway. Even the staff trained in commercial skills very often have already studied a subject related to railways.

Fig. 2.3-5 Educational structure in the administration of GRZD



- The majority of the administrative staff graduated from a technical university (80 %).
- The (future) staff of GRZD will receive both a training in a Technical College of Railways and a further training in the Technical University in Tbilisi.
- Problems with junior staff, being of such importance with the two other railways described above, are non-existent here.
- Like with the other two railways, the age structure of GRZD's administration shows relatively small numbers of young personnel.

Fig. 2.3-6 Age structure in the administration of GRZD



- However, especially in the middle management young managerial staff are increasingly being employed.

With respect to the predominant management methods the situation is similar to that described for the two other railways.

Modern working methods are still more or less unknown.

However, according to the statements made by the persons we talked to they do not see any management problems.

Decisions, they said, are mostly being made on technical department level, which to the Director General leaves only to participate in decisions to be made on the financial sector. This statement, however, could not be verified by what we experienced.

As regards the conception of competition and the necessity resulting from it to work differently with and for the railways' customers, the situation is similar to that described for ARM. The term 'marketing' is still a foreign word and is, at best, understood as a planning form of economics and is being realised (in the old way) as such.

2.4 Financial analysis

2.4.1 Financial analysis of the Armenian Railway (ARM)

2.4.1.1 Financial overview

2.4.1.1.1 Assets and liabilities

The balance sheets of the years 1994, 1995 and 9 months 1996 are given in Annex 2.4.1-1. The current re-evaluation of the fixed assets took place by applying official coefficients, which shall have compensated the effects of inflation. The book values which have come out of this exercise do not seem to reflect actual values and the acquisition values are obviously underestimated. A breakdown of the official acquisition values of the assets at the end of 1994 and 1995 is given in Annex 2.4.1-2. At the end of 1995, total physical assets had an acquisition value of only 20.2 Million US$, of which 61% were for permanent ways and 15% for the rolling stock. The approximate correct total value of the major fixed assets has been estimated by considering what the rehabilitation will cost, according to chapters 4 and 5. It can be assumed that the acquisition value of the existing assets corresponds to the cost of their rehabilitation; except for some buildings. All assets needed in future are subject to rehabilitation according to the plan under section 1.7. This gives for ARM a total acquisition value which is about 11 to 12 times higher than the official one for the end of 1996. On the other hand, the average percentage of residual value of about 62% is overestimated. Half that percentage would be more correct. The estimated correct total values are given in Annex 2.4.1-1.

The summary of the balance sheets of the last years in Annex 2.4.1-1 is given in western style, for the end of the respective years in order to avoid confusion. However the figures represent the situation at the beginning of the following year, after distribution of the profit. Profits (if any) are utilised as follows: a certain percentage has to be paid as profit tax, the rest goes to various "funds", such as the "accumulation fund" (for investments), the "consumption fund" (for profit related bonuses to the employees) and the "pension fund" (for profit related pension contributions). These funds are reserves which can be treated as a part of the equity. The equity is the counterpart of the long term assets and is always re-evaluated along with the latter.

ARM has high outstanding debts, which are coming partly from Soviet times and partly from big customers (particularly the State owned gold mining and refining company Armgold), the total being about 2.2 Billion Dram (about 4.9 Million US$) at the end of 1996 The "receivables" of ARM (in US$) built up as follows over the years:

3.15 million US$ in 1994 (38% of official sales),
0.52 million US$ in 1995 (6% of official sales),
1.20 million US$ in 1996 (15% of official sales).

2.4.1.1.2 Costs and revenues

According to the profit-and-loss statements annexed to the balance sheets (Annex 2.4.1-3), revenues and costs for main activities were as follows on 1996:

Tab. 2.4.1-1: Revenues and costs from transport and auxiliary services of ARM, 1996

	Total	of which		
		freight transport	passenger transport	side and service act.*
		- Million Dram	-	
Revenue (receipts)	3,399	2,606	104	689
Costs	3,702	2,810	422	470
Profit	- 303	- 204	- 318	219
		- Converted to US$ '000	-	
Revenue (receipts)	8,216	6,299	251	1,665
Costs	8,949	6,792	1,020	1,136
Profit	- 733	- 493	- 769	529

* such as the production and sale of electricity and water

The revenues shown in the profit-and-loss statements are only those actually received. The sales which remained unpaid were not counted.

On the average of the first 9 months of 1996, ARM employed a staff of 3,753 (down from 4,542 in 1993), which performed on average about 94,000 tkm per person, if passenger traffic is neglected.

Clearly understated cost levels exist for the following items:

- Personnel costs. Average salaries are in the order of 23 US$ per month; a salary covering the minimum living standard would be about 13 times this amount;
- Electricity. This energy cost on average 8.7 Dram = 0.021 US$ per kWh in 1995 and 13.7 Dram = 0.033 US$ per kWh in 1996; this is about half the normal cost price;
- Depreciation. This cost item represented the following average percentages of the acquisition value of the assets:

- in 1993 0.4%
- in 1994 5.5% (however of strongly undervalued assets)
- in 1995 1.3%
- in 1996 2.0% (the assets being still undervalued).

Official depreciation rates, which are those of the Russian Federation, are relatively low. For example office buildings have to last 100 years, electric locomotives 30 years (the same as in Germany), rails, ballast and sleepers about 20 years (in Germany, depreciation is variable according to the intensity of use, from 1.4 to 10.1% p.a. of the acquisition value). In addition to that, understated depreciations have resulted from the undervaluation of assets. The extent of this undervaluation was indicated in the previous paragraph. Given the cost estimates for the rehabilitation measures and the corresponding depreciation costs, the correct amount for depreciation in 1996 would have been about 14.7 million US$, which is 28 times the official amount of 520,000 US$!

- Maintenance. If the cost categories "materials" and "major repairs" (actual expenses only) are considered as representing the maintenance costs, these costs had the following shares of the respective official total acquisition value of the assets: 2.6% in 1993, 78% in 1994 (assets being extremely undervalued), 7.6% in 1995 and about 6% in 1996. These figures become about ¼ higher if the other (fixed) costs of the cost centres called "maintenance units" are also added. Apart for 1994, where there were exceptionally high materials costs at the locomotive centre Yerevan, maintenance costs appear as being relatively too low, particularly if the undervaluation of the assets is considered. The planned costs for "major repairs" (see Annex 2.4.1-5) might rather reflect what should be done in that respect.

The structure of revenues and costs, in as far as the accounting system is able to show, can be seen in Annex 2.4.1-4, which gives a statistical overview of the physical and financial performance of ARM. The table is incomplete due to the insufficiencies of records received. It can be stated that passenger transport played a fairly significant role four years ago but has lost its importance since that time, and also that a strong cross-subsidisation exists in its favour. Details of cost calculation are given in the Annex 2.4.1-5, whose totals partly do not correspond with the costs in the profit-and-loss statements in Annex 2.4.1-3; these discrepancies could not be explained by the Armenian Railway administration.

In addition to above mentioned understatements, the calculation of costs and revenues of ARM is distorted by manipulations, in order to avoid the payment of profit tax. The figures as given in 1996 accounting and those which would be correct are given below:

Tab. 2.4.1-2: Distortions of costs and revenue in 1996 accounts

	US$ '000 from accounts	US$ '000 corrected	Impact of correction on profit US$ '000
Costs of major repairs	2,125.2	688.6 [1)]	+ 1,436.6
Revenue net of VAT	8,215.9	9,410.9 [2)]	+ 1,195.0
Official profit			- 303.0
Profit after correction			+ 2,328.6

[1)] The official costs correspond to norms, the corrected ones to actual expenses

[2)] addition of the increase of receivables (unpaid revenue) in 1996, of 1,194.7 thousand US$

The above table does not take into consideration the undervaluation of personnel and electricity costs. All these distortions are however relatively harmless compared to the deep plunge which the profit would make if depreciation would be counted as it should.
ARM are suffering in a particularly high extent from traffic recession. At present, only about half of the network of 800 km is permanently under operation and Armenia, a landlocked country has only one access by rail to the rest of the world, due to the political problems in the region.

2.4.1.2 Present level of investment expenditures

Due to the lack of funds and of local borrowers, investment or reinvestment expenses were insignificant in the last years: they amounted to 196.5 Million Dram (0.68 Million US$) in 1994 and 104 Million Dram (0.26 Million US$) in 1995. A Diesel locomotive was purchased in 1994. Apart from that, most of the money was spent for removing part of the damages of the 1988 earthquake.

2.4.1.3 Other relevant information; ratios

Due to the consequences of the collapse of the former USSR and of the war with Azerbaijan, the traffic of the ARM decreased considerably (from 5,140 Million tkm in 1985 to 450.9 Million tkm in 1993 and further to 351 Million tkm in 1996 for goods traffic; from 490 Million pass.km in 1985 to 435 Million pass.km in 1993 and further to 84 Million pass.km in 1996 for passenger traffic).

The freight transport of ARM is mainly influenced by the activity of major industrial clients, as: mills, mining industries (the gold producing and processing enterprise "Armgold" being the biggest client), producers of special building materials, mechanical and electro-mechanical industries, food processing factories, foundries for special metals. As in other countries of the FSU, these statal or parastatal industries are suffering from being separated from their former supply or sales markets.

ARM do not participate in the regional clearing agreement for freight transport. International transports from and to Armenia, which at present pass entirely via Tbilisi, are subject to a break at the border stations of Sadakhlo/Ayrum, where new documents have to be issued.

Some performance indicators and financial ratios for 1996 are given below:

Tab. 2.4.1-3: Performance and financial ratios of ARM for 1996

tkm equiv.[1] performed in a year per staff member (rounded) total staff being 4,686	93,000
Annual costs per tkm equiv.[1]	1.80 UScents
Increase of receivables during 1996, in % of annual sales	15%
Receivables in % of total official assets	21,5%
Personnel costs % of total costs	18.1%
Depreciation costs in % of the acquisition value of assets	2.0%
Actual expenses for maintenance in % of the acquisition value of assets	about 6 to 8%
Revenue profitability = profit before tax (corrected[2]) in % of sales (corrected[2])	24.7%
Simple rate of return = profit before tax (corrected[2]) in % of equity	11.5%
Debt-to-equity ratio = short and medium term liabilities in % of equity[3]	11.7%
Sales-to-equity ratio = sales (corrected[2]) in % of equity[3]	46.3%
Degree of undervaluation of the residual value of fixed assets = estimated real value / official value	6.1 times

1) Tonnes-kilometre equivalent, composed of performed tonnes-kilometres plus passenger-kilometres

2) as calculated in the previous table

3) the equity being however undervalued, in approx. the same extent as the fixed assets

2.4 Financial analysis

2.4.2 Financial analysis of the Azerbaijan State Railways (AGZD)

2.4.2.1 Existing financial situation

2.4.2.1.1 Assets and liabilities

The balance sheets of the years 1994, 1995 and 9 months 1996 are given in Annex 2.4.2-1. The current re-evaluation of the fixed assets has been carried out by applying official coefficients, which shall have compensated the effects of inflation. The book values which have come out of this exercise do not necessarily reflect the actual values, especially not those for the end of 1994 and 1995, which were still strongly undervalued. A breakdown of the acquisition value of the assets existing in the books at the end of 1994, 1995 and 1996 is given in Annex 2.4.2-2. The approximate correct total value of the major fixed assets has been estimated by considering what the rehabilitation will cost, according to chapters 4 and 5. It can be assumed that the acquisition value of the existing assets corresponds to the cost of their rehabilitation; except for some buildings. All assets needed in future are subject to rehabilitation according to the plan under section 1.7. This gives for AGZD a total acquisition value which is about 2 times higher than the official one for the end of 1996. On the other hand, the average percentage of residual value of about 63% is overestimated. Half that percentage would be more correct. Finally the total residual value of fixed assets given by the balance sheet comes out to be fairly correct. The estimated correct total values are given in Annex 2.4.1-1.

The summary of the balance sheets of the last years in Annex 2.4.1-1 is given in western style, for the end of the respective years in order to avoid confusion. However the figures represent the situation at the beginning of the following year, after distribution of the profit. Profits are utilised as follows: a certain percentage has to be paid as profit tax, the rest goes to various "funds", such as the "consumption fund" (for salaries paid from the profit, as explained in the next paragraph) the "accumulation fund" (for investments), and a social insurance fund (for pension contributions paid from the profit). Apart from the consumption and the social insurance fund, the funds are reserves which can be treated as a part of the equity. The equity is the counterpart of the long term assets and is always re-evaluated along with the latter.

AGZD face acute problems of uncollected receivables, which constrain their liquidity. Receivables totalled 55.1 million US$ at the end of 1996 and 68.3 million US$ at the end of the first quarter, 1997. Part of the salaries are delayed by three months. The bad debts with which the Railway administration is struggling come from transports for Government and Government owned enterprises. All concerned parties have increasing liquidity problems and are increasingly unable to honour their debts.

The "receivables" of AGZD (in US$) built up as follows over the years:

34.4 million US$ in 1995 (45% of sales),
19.4 million US$ in 1996 (21% of sales),
13.2 million US$ in the first quarter of 1997.

The railways had, at the end of 1996, debts to the tax administration of 26.4 million US$ and debts to suppliers of 30.3 million US$. Usually the tax administration is very strict on getting its share of the revenue. This time however, it has agreed on compensating the Railway's tax arrears with part of the receivables. This will ease the liquidity problems a little bit.

The railway administration has two own, but independently operating forwarding agencies, whose figures are not included in the balance sheets and cost calculations discussed here. These agencies do not face bad debts problems, as their customers have to pay in advance.

2.4.2.1.2 Costs and revenues

The conversion of cost and revenue figures to US$ which has been carried out in the annexes does not entirely reflect real terms, as the Manat was undervalued in 1994. So the Dollar figures for 1994 appear as being too low.

According to the profit-and-loss statements annexed to the balance sheets (Annex 2.4.2-3), revenue for main activities, net of value added tax, amounted to 398.0 Billion Manat (92.3 million US$) in 1996, against costs of 255.2 Billion Manat (59.2 million US$), leaving a profit for main activities of 142.8 Billion Manat (33.1 million US$) = 35.8% of the sales, which looks like a very comfortable margin. It has to be mentioned that this profit includes a "consumption fund" (62.3 Billion Manat = 14.5 million US$), which is in fact a portion of the salaries. The practise of paying the major share (86% for 1996) of the salaries out of the (taxed) profit had been introduced in order to comply with government regulations fixing maximum salaries. It has been abolished as from the beginning of 1997.

The cost and revenue figures of the railway administration for the transport services and related auxiliary services were as follows for 1996 (details see in Annex 2.4.2-4):

Tab. 2.4.2-1: Revenues and costs from transport and auxiliary services of AGZD, 1996

	Total according to profit-&-loss statement	Total according to cost accounting	of which goods transport	passenger transport	side and service act.
		- Billion Manat -			
Revenue	462.9	371.3	297.4	9.0	64.9
Costs	321.2	244.6	133.1	45.6	66.0
Profit	141.7	126.7	164.4	- 36.6	- 1.1
		- Converted to million US$ -			
Revenue	107.3	86.1	69.0	2.1	15.0
Costs	74.5	56.7	30.9	10.6	15.3
Profit	32.8	29.4	38.1	- 8.5	- 0.3

In above table, differences between the figures in the profit-and-loss statement and those of cost accounting become visible. Cost accounting has eliminated all double counting, whereas such double counting is probably still included in the profit-and-loss calculation. It was not possible to clarify these differences.

The structure of revenues, in as far as the accounting system is able to show, can be seen in Annex 2.4.2-4, which gives a statistical overview of the physical and financial performance of AGZD. Two statements can be made: that the profit margin seems extremely high (however with more than half of it being actually for salaries); and that there exists a strong cross-subsidisation in favour of passenger transport.

There seems to be a contradiction in the fact that substantial profits appeared, while at the same time the railways suffered from financial constraints in such an extent that staff had to be reduced. The chief economist explained that these profits were tied up in increasing receivables. A look at Annex 2.4.2-1 confirms this statement.

Understated cost levels exist for the following items:

- Personnel costs. Average salaries are in the order of 45 US$ per month (of which 39 US$ are paid from the profit); a salary covering the minimum living standard would be about 10 times this amount;
- Electricity. This energy costs the Railways on average 190 Manat = 0.046 US$ per kWh; despite the price increases since December 1994 (when it cost 51 Manat = 0.012 US$ per kWh), this is probably still below the cost price;
- Depreciation. This cost item represented the following average percentages of the acquisition value of the assets:

- in 1994 1.5% (assets being strongly undervalued)
- in 1995 3.1% (assets being strongly undervalued)
- for 1996 depreciation has been kept at its previous level in absolute terms, although the assets were strongly re-evaluated (14.5 times); this manipulation, which is totally contrary to accounting rules, shall help keeping costs down and avoiding a loss; if, instead of calculating with the previous valuation of depreciation (which results in a ratio of only 0.2% of the acquisition value of assets), the depreciation had been revaluated at the same rate as the assets, the additional depreciation costs of about 107 Billion Manat (24.7 million US$) would have converted the official annual profit in a loss.

Official depreciation rates, which are those of the Russian Federation, are relatively low. For example office buildings have to last 100 years, electric locomotives 30 years (the same as in Germany), rails, ballast and sleepers about 20 years (in Germany, depreciation is variable according to the intensity of use, from 1.4 to 10.1% p.a.). In addition to that, depreciation has not been revaluated in 1996 along with the fixed assets - as explained above - and the acquisition values of the fixed assets are still undervalued. The extent of this undervaluation was indicated in the previous paragraph. Given the cost estimates for the rehabilitation measures and the corresponding depreciation costs, the correct amount for depreciation in 1996 would have been about 62.5 million US$, which is 33 times the official amount of 1.9 million US$!

- Maintenance. If the totals of the cost centres called "maintenance" are added together, the resulting sum makes 1.1% of the fixed assets in 1994 and 8.2% in 1995. If the cost category "materials" is also added, the resulting sum makes 1.8% of the fixed assets in 1994 and 16.1% in 1995 (assets in both years being undervalued); these figures are erratic and most probably the "maintenance" centres did not work at full capacity. Cost accounting in that respect is unsatisfactory. From discussions held it can be concluded that, due to financial constraints, maintenance could not be fully performed according to technical standards in the last years and that the increasingly limited funds are reserved for emergency measures.

The structure of revenues and costs, as far as the accounting system is able to show it, can be seen in Annex 2.4.1-4. It can be stated that passenger transport played a fairly significant role four years ago but has lost its importance since, and also that a strong cross-subsidisation exists in its favour. Details of cost calculation are given in the Annex 2.4.1-5. As explained earlier, the biggest share of the salaries was paid from the profit; this share had a contractual character and was not profit oriented.

2.4.2.2 Present level of investment expenditures

The following amounts were invested in fixed assets in the last years:

Tab. 2.4.2-2: Amounts spent for investments, 1994 to 1996

	Million Manat	= Million US$	% of the official residual value of the assets
1994	2,323	1.38	1.4%
1995	23,322	5.84	15.5%
1996	15,753	3.75	0.7%

When judging above figures, it must be kept in mind that in 1994 and 1995, the value of the assets was underestimated (which tends to increase the percentages), but that the Manat was undervalued in 1994. It can however be seen that investments, which consisted in replacements and rehabilitation, were not entirely neglected.

2.4.2.3 Other relevant information; ratios

The AGZD strong dependency from the Council of Ministers seems to limit seriously its scope of decision. This explains partly the high amount of bad debts.
As can be seen from Annex 2.4.2-4, the performance in physical terms has shown a drop after 1993, as a result of the Chechenya war, which disrupted the important traffic flow to Russia (Northern line). It had already decreased drastically before (from 41,895 million tkm in 1988 to 7,300 million tkm in 1993). For freight transport, the 1995 level of performance was 33% of the one of 1993 and only 5.8% of the one of 1988.

Recent statistical data are shown with more details in Annex 2.4.2-4.
Some performance indicators and financial ratios for 1996 are given below:

Tab. 2.4.2-3: Performance and cost ratios of AGZD for 1996

tkm equiv.[1] performed in a year per staff member (rounded) total staff being 40,552	97,000
Annual costs transport activities[3] per tkm equiv. (sold)	1.55 UScents
Increase of receivables during 1996, in % of annual sales	21%
Receivables in % of total official assets	8.4%
Personnel costs[3] in % of total costs	22.8%
Depreciation costs in % of the acquisition value of assets	0.2%[2]
Revenue profitability = profit (corrected[3]) before tax in % of sales	19.6%
Simple rate of return = profit (corrected[3]) before tax in % of equity	3.1%
Debt-to-equity ratio = short and medium term liabilities in % of equity	21.5%
Sales-to-equity ratio = sales in % of equity	15.6%
Degree of undervaluation of the residual value of fixed assets = estimated real value / official value	fairly correct

1) Tonnes-kilometre equivalent, composed of performed tonnes-kilometres plus passenger-kilometres

2) Percentage kept so low due to the fact that assets were re-evaluated, but not the depreciation; this percentage was 3.1% at the end of 1995.

3) Under consideration of salaries and social insurance paid from profit

The cost price of 1.55 UScents per tkm equivalent is the lowest of the three Caucasian railways.

2.4 Financial analysis

2.4.3 Financial analysis of the Georgian Railways (GRZD)

2.4.3.1 Existing financial situation

2.4.3.1.1 Assets and liabilities

The balance sheets of the years 1993 to 1996 are given in Annex 2.4.3-1. The current re-evaluation of the fixed assets took place by applying official coefficients, which shall have compensated the effects of inflation. The book values which have come out of this exercise do not necessarily reflect the actual values, especially not those for the end of 1993 and 1994, which are strongly undervalued. A breakdown of the acquisition value of the assets existing in the books at the end of 1995 is given in Annex 2.4.3-2. The approximate correct total value of the major fixed assets has been estimated by considering what the rehabilitation will cost, according to chapters 4 and 5. It can be assumed that the acquisition value of the existing assets corresponds to the cost of their rehabilitation; except for some buildings, all assets needed in future are subject to rehabilitation according to the plan under 1.7. This gives for Georgian Railways a total acquisition value which is about 7.5 times higher than the official one for the end of 1996. On the other hand, the average percentage of residual value of about 66% is overestimated. Half that percentage would be more correct. The estimated correct total values are given in Annex 2.4.1-1.

The "receivables" of GRZD (in US$) built up as follows over the years:

1.4 million US$ in 1994
27.9 million US$ in 1995 (77% of sales)
- 2.8 million US$ in 1996

At the end of 1995, receivables amounted to 13.2% of official assets. This ratio was down to 12.7% by the end of 1996.

2.4.3.1.2 Costs and revenues

According to the profit-and-loss statements annexed to the balance sheets (Annex 2.4.3-3), revenues for main activities, net of value added tax, amounted to 58.6 million Lari in 1995, against costs of 42.0 million Lari, leaving a profit for main activities of 16.7 million Lari. The corresponding figures for 1996 are: revenue 50.3 million Lari, costs 50.5 million Lari, profit -0.2 million Lari. This evolution shows a strong deterioration of the official profitability of revenue. Following a common practise in Russian type cost accounting, costs subject to internal transactions are counted double: once in the originating cost centres (whose outputs are counted as sales) and then again in the receiving cost centres (where the said outputs are counted as costs). This is the case for part of the costs of the group of cost centres called "side and service activities", which are related to stores, electricity and water supply systems and the like. Total costs and sales are therefore inflated.

In the case of the profit-and-loss statements of GRZD, this inflation can be eliminated by excluding the cost centre "side and service activities". The revenues and costs for 1995 were then (for details see Annexes 2.4.3-4 and 2.4.3-5):

Tab. 2.4.3-1: Revenues and costs of transport activities of GRZD, 1996

	Total	of which goods transport	passenger transport
	-	Million Lari	-
Revenue	41.2*	39.0*	2.2*
Costs	45.0	27.9*	17.1*
Profit	- 3.8	11.1	- 14.9
	- Converted to million US$ -		
Revenue	32.6	30.9	1.7
Costs	35.6	22.1	13.5
Profit	- 3.0	8.8	- 11.8

* Figures extrapolated from figures for 9 months and from cost relations valid in 1995

In above table, costs and receipts from side and service activities (see above) and also those "not related to transport services", are excluded. Side and service activities, which are subject to the second part of the tables in Annex 2.4.3-3, consist of the payment of a property tax (1% of the fixed assets), of the payments and receipts of fines and the receipts of rents. Above table also does not contain costs and receipts of commercial and production activities of subsidiaries of the Railway administration, which are not included in the consolidated balance sheets.

Details of cost calculation of GRZD are given in the Annex 2.4.3-5.

Clearly understated cost levels exist for the following items:

- Personnel costs. Average salaries are in the order of 30 US$ per month; a salary covering the minimum living standard would be about 10 times this amount;
- Electricity. This energy has cost on average 0.045 Lari = 0.036 US$ per kWh since October, 1995; this is about half the normal cost price;
- Depreciation. This cost item represented the following average percentages of the acquisition value of the assets:
  - in 1993 19.5% (figure distorted by inflation)
  - in 1994 4.5% (however of strongly undervalued assets)
  - in 1995 0.8%
  - in 1996 2.5% .

  Official depreciation rates, which are those of the Russian Federation, are relatively low. For example office buildings have to last 100 years, electric locomotives 30 years (the same as in Germany), rails, ballast and sleepers about 20

years (in Germany, depreciation is variable according to the intensity of use, from 1.4 to 10.1% p.a.). In addition to that, understated depreciations have resulted from the undervaluation of assets. The extent of this undervaluation was indicated in the previous paragraph. Given the cost estimates for the rehabilitation measures and the corresponding depreciation costs, the correct amount for depreciation in 1996 would have been about 62.5 million US$, which is 13 times the official amount of 4.7 million US$!

- Maintenance. If the cost category "repairs" and half that of "materials"[1] are considered as the maintenance costs, these costs represented 4.0% of the official total acquisition value of fixed assets in 1995 and 7.8% in 1996. However some double counting is involved in the addition of the two components. Furthermore, knowing that fixed assets were undervalued, it is obvious that maintenance costs were too low, what reflects insufficient maintenance performance, although figures suggest some efforts in this respect.

The structure of revenues, in as far as the accounting system is able to show, can be seen in Annex 2.4.3-4, which gives a statistical overview of the physical and financial performance of GRZD. It can be stated that passenger transport is not negligible and that a strong cross-subsidisation exists in its favour.

There seems to be a contradiction in the fact that substantial profits appeared in the profit-and-loss statements of previous years while at the same time the Railways suffered from financial constraints in such an extent that staff had to be reduced. The chief economist explained that these profits were tied up in increasing receivables. A look at Annex 2.4.3-1 confirms this statement.

2.4.3.2 Present level of investment expenditures

Due to the lack of own funds and to the absence of local borrowers, virtually no investment has been undertaken during the last three years.

2.4.3.3 Other relevant information

As for the two other Caucasian railways, the performance of GRZD has dropped dramatically since Soviet times: freight transport fell from 12,591 million tkm in 1988 to 955.3 million tkm in 1994.

For the recent past, the following figures suggest that, since 1994, the activity of the Railways is recovering slowly, along with the recovery of economy[2]:

---

1 share estimated by accounting department

2 According to "Georgian Economic Trends", 3rd quarter 1996 (a TACIS financed publication), real GDP had declined sharply between 1991 and 1994 and has then shown an increase from 1994 to 1995 of 2.4%, to which succeeded a faster growth from 1995 to 1996 (14.3% for the first 9 months of 1996 against the same period of 1995).

Tab. 2.4.3-2: Transport performance of GRZD, 1993 - 1996

	Total performance in freight transport, 10^3 tkm	Total performance in passenger transport, 10^3 passenger.km
1993	1,553,554	1,004,935
1994	955,291	1,164,502
1995	1,245,981	371,316
1996	1,141,381	380,261

Recent statistical data are shown with more details in Annex 2.4.3-4.
Some performance indicators and financial ratios for 1996 are given below:

Tab. 2.4.3-3: Performance and cost ratios of GRZD for 1996

tkm equiv.* performed in a year per staff member (rounded), total staff being 25,276	60,000
Annual costs per tkm equiv.	2.34 UScents
Increase of receivables during 1996, in % of annual sales	- 8.6%
Receivables in % of total official assets	12.7%
Personnel costs in % of total costs	23.7%
Depreciation costs in % of the acquisition value of assets	2.5%
Costs for maintenance ("repair fund" + half of "materials") in % of the acquisition value of assets	7.8%
Revenue profitability = profit from transport in % of transport sales	- 9.2%
Simple rate of return = global profit before tax in % of equity	0,3%
Debt-to-equity ratio = short and medium term liabilities in % of equity	15.2%
Sales-to-equity ratio = transport sales in % of equity	17.9%
Degree of undervaluation of the residual value of fixed assets = estimated real value / official value	3.6 times

* Tonnes-kilometre equivalent, composed of performed tonnes-kilometres plus passenger-kilometres

2.4.4 Deficiency analysis of accounting system and recommendations

2.4.4.1 Cost centres in use at present

The main activities of each of the three railway administrations are comprised in a certain number of cost centres (also called "enterprises"), which however do not serve for cost accounting. Each of these cost centres acts as an own entity with own balance sheets. In addition to that, there exist regional divisions in Azerbaijan and in Georgia (3 and 2 respectively, those of Armenia having been abolished at the beginning of 1997). These divisions play an intermediate role between the "enterprises" and the head office. Apart from the main cost centres (including administration), there exists a group of cost centres called "auxiliary and service activities", which are small power plants, water distribution schemes and regional storage units.

Financial figures pertaining to the costs centres were shown in the country specific sections of this chapter. In the case of the Georgian Railways, it could be stated that double counting of costs occurs for internal exchanges of goods and services, when the figures are consolidated. This is particularly the case for the "side and service activities".

2.4.4.2 Functioning of cost accounting

Each cost centre calculates its own costs, revenues, profits and also prepares its own balance sheet, on a monthly and quarterly basis respectively.

The balance sheets and cost and revenue calculations are then consolidated quarterly by the concerned departments of the headquarters (accounting and economic planning). In Azerbaijan and (up to the end of 1996) in Georgia, the regional divisions play an intermediate role in preparing information from their "enterprises" to regional reports (cost tables, quarterly balance sheet and profit-and-loss statement). In Armenia, where there are no intermediate entities between the "enterprises" and the headquarters, the central accounting and economic planning departments receive the individual financial reports (amazingly) from the tax administration.

Despite the fact that the cost centres prepare their profit-and-loss statements, they have little or no competence in influencing neither their costs nor their income, as both are strongly influenced by decisions taken at the head office.

In the case of Georgian Railways there exists still a relatively good control of the operating results by the cost centres, through the use of unit prices for different performances. Unit prices are used for the traction performance of the locomotive centre (the unit being the "gross tkm", differentiated by transport category and tracting power); for the shunting performance of the shunting stations centre (the unit being the working hour); for the wagon centre (the unit being the „technical inspection", which is in fact the act of putting a wagon into operation). Concerning the performance of the locomotives, it has also to be mentioned that this performance was in the

past broken down by regions, so that each of the two former regional entities got its share of the revenue. In some cases however, monthly lump sums are used instead of unit prices. The unit prices and lump sums are calculated monthly in advance by each cost centre. They have to be approved by the head office.

At Azerbaijan Railways, performance oriented internal revenue calculations are also carried out, unit prices applying for example to „gross tkm" for the locomotives and to "axle.km" for the wagons. However, under the existing underemployment conditions and financial constraints, the revenues of the cost centres consist of allocations decided by the headquarters, which do not have much to do with performance, but which are dictated by acute urgencies.

At Armenian Railway, the situation is similar, with less efforts for distributing the revenues equitably. This unsatisfactory situation is due to totally insufficient income.

The only real cost accounting actually taking place is the one which separates the costs according to whether they belong to freight transport or to passenger traffic (pattern of this calculation, which is used at the Azerbaijan and the Georgian Railways, in Annex 2.4.4-1). The result of this separation, which is partly based on assumptions and estimates, does not entirely reflect the causality of costs.

2.4.4.3 Budgeting, controlling

There exists a budgeting and controlling system at each of the three railway administrations, which is coming from Soviet times and which is under the responsibility of the "economic department".

It is in Georgia where this system seems to be the most consistent. There, each cost centre (or "enterprise") prepares its own cost planning, which is based on standard costs, which were calculated by the cost centre and approved by the economic department. A comparison of the actual costs with the planned ones is carried out by the cost centres for each quarter. Deviations are then analysed by the economic department and corrections of the norms are made when necessary. Strict cost limitation comes however less from cost control than from the scarcity of funds available, which are such that the quality of services tends to decrease.

In Armenia, costs and incomes are mainly determined by the headquarters, often in an improvised way, due to insufficient revenues. Under these circumstances, budgeting and controlling have lost part of their usefulness.

In Azerbaijan, budgeting is mainly oriented to urgent needs, in the same way as the funds allocation explained in the previous paragraph. There exists also a severe checking of deviations of the actual costs from the budgeted ones. But, as for the "enterprise's" profit, the cost deviations are not valuable indicators for management performance.

2.4.4.4 Critical assessment of the present cost accounting system

The decentralised cost centre accounting, which is typical for the former Soviet Union, enables a certain decentralisation of responsibilities and a decentralised cost control. It is however not able to serve the purpose of analysing and optimising costs by interesting categories and types of services.

The profit calculation for each cost centre, being mainly based on artificial revenues, cannot provide much interesting information about management performance.

The way the system is decentralised makes that duplication of tasks at different levels takes place, with much copying being involved. As computers are not yet being used, the work is labour intensive and cumbersome. All tables and reports are prepared manually.

2.4.4.5 Proposals for improvements in cost accounting

Cost accounting has to be modernised in that way that it provides the knowledge about actual costs of cost centres and of the production by product type, and also that it enables to take the right decisions regarding the setting of prices, the envisaged production programme and - by complementary model calculations - regarding necessary investments and also the contracting out or even the closing down of certain railway lines, stations or other parts of the enterprise. However, cost accounting has to remain simple, at least at the beginning.

By introducing the necessary changes, the existing accounting and planning organisation, where cost centre accounting and budgeting are functioning, will have to be utilised at a maximum degree, in order to make the changes acceptable. The participation of the existing accountants and economists in place is indispensable.

The following proposals for the introduction of an improved cost accounting take this requirement into consideration.

Step one

Meaningful cost centres and corresponding performance measuring units have to be defined. For example:

Tab. 2.4.4-1: Examples of cost centres and internal performance measuring units

Cost centre	Performance measuring unit
Lines (subdivided by degree of utilisation)	Wagon-unit-km
Stations	Train stops in mn
Container terminals	Loading and unloading in t
Shunting stations	Shunting locomotive working hour
Traction	Gross tkm
Wagons	Wagon-unit-km
Maintenance units	Working hour
Signalling and telecommunication	Transmitting unit

Step two

The method for the calculation of costs has to be decided and developed. The following aspects have to be treated:

a) Choice of products and production units, for example

Tab. 2.4.4-2: Products and production units

	Product	Production unit
Freight transport	Transport by the weight	tkm
	Transport of single containers	Container-unit (TEU)-km
	Single wagon	Single-wagon-km
	Wagon group	Wagon-group-km
	Whole train	Whole-train-km
	Container train	Container-train-km
Passenger transport		Single-wagon-km

b) Recording of costs
   - Maximum classing with the product
     For example train staff in the case of whole train, energy (direct measuring)
   - Other costs classed with the respective cost centre

c) Recording and reporting system for the exact measuring of the utilisation of each cost centre by the different products and by other cost centres (for example utilisation of a locomotive by wagons, of a mechanical workshop by a locomotive, etc.), and for measuring the performed production units, by type of product; the necessary reporting forms have to be designed and introduced (like wagon lists, locomotive service sheet, diesel oil filling sheet etc.).

d) Calculation of the costs of the production performed during the period (month or year) and by production unit.

Step three

A suitable planning and controlling system has to be developed and internal cost prices to be calculated. The production performance and the corresponding internal exchanges are planned for one month ahead and also for each calendar year. The unit prices for the internal exchanges are calculated on the basis of actual costs and then planned along with the performance.

At the end of each month, the deviations of the actual performances and costs from the planned ones are stated and analysed.

2.4.4.6 Price level of railway transport in the three countries

Some actual transport prices applied by the three Caucasian railways in December 1996 are indicated hereafter (not including handling costs):

Tab. 2.4.4-3: Some transport prices applied by the Caucasian railways (end of 1996 / beginning of 1997)

	Armenian Railway	Azerbaijan State Railways	Georgian Railways
Bulk products, domestic transport (in 60t wagon)	13.2 Dram/tkm incl. 20% VAT* = 0.028 US$/tkm	161.46 US$ incl. 20% VAT* per 60t wagon for 130 km = 0.0207 US$/tkm	9.53 SFr/t = 7.14 US$/t incl. VAT* for 310 km = 0.023 US$/tkm
Bulk products, international transport	13.2 Dram/tkm incl. 20% VAT = 0.028 US$/tkm	617,07 US$ incl. 20% VAT per 60t wagon for 502 km = 0.0205 US$/tkm	13.68 SFr/t = 10.25 US$/t for 360 km = 0.028 US$/tkm
Containers of 20' (loaded), domestic transport	264 Dram/km incl. 20% VAT = 0.56 US$/km	260.16 US$ incl. 20% VAT for 362 km = 0.72 US$/km	294 SFr = 221 US$ incl. VAT for 316 km = 0.70 US$/km
Containers of 20' (loaded), international transport	264 Dram/km incl. 20% VAT = 0.56 US$/km	352,03 US$ incl. 20% VAT for 500 km = 0.70 US$/km	360 SFr = 271 US$ for 387 km = 0.70 US$/km
Containers of 20' (loaded), TRACECA pilot train		188,84 US$ (no VAT applicable) for 500 km = 0.38 US$/km	116.70 US$ Poti to Tbilisi (about 316 km) = 0.37 US$/km
Mineral oil products, domestic transport	13.2 Dram/tkm incl. 20% VAT* = 0.028 US$/tkm	301.00 US$ per 50t wagon for 362 km (no VAT applicable) = 0.0166 US$/tkm	10.65 SFr/t = 7.98 US$/t incl. VAT for 346 km = 0.023 US$/tkm
Mineral oil products, international transport	13.2 Dram/tkm incl. 20% VAT* = 0.028 US$/tkm	24-26 US$/t Baku to Batumi (about 1,000 km) = 0.025 US$/tkm	

* VAT = Value added tax

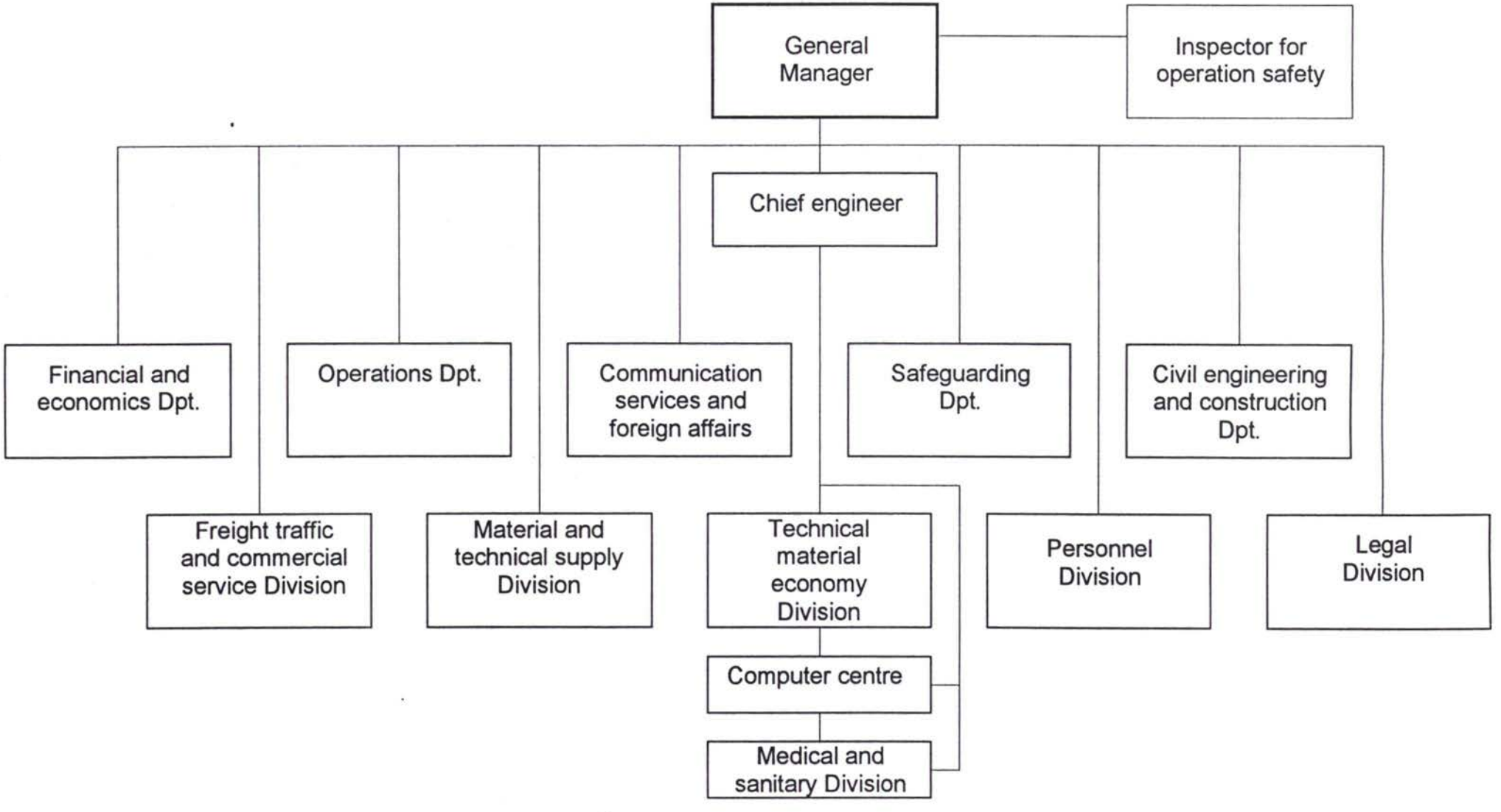
Above tariffs seem rather low, if compared with West European levels and also if compared with what road transport costs (about 2,000 US$ for a 30t truck from Batumi to Baku = about 0.066 US$/tkm = about 1.00 US$/km per 20' container). It is generally feared that higher tariffs would make lose clients. Other competition factors, such as time, safety and reliability are not so much considered.

Handling in Poti costs in the order of 0.35 US$/t for dry cargo and 0.56 US$/t for oil products. Handling of a 20' container costs about 200 US$ in Poti. These costs are not excessive and they are the same if the land transport takes place by road or by train.

Basic passenger tariffs were in the range of 0.5 UScents per pass.km in Georgia, 0.4 UScents per pass.km in Azerbaijan (both average January - September 1996) and 0.3 UScents per pass.km in Armenia. These tariffs are being increased (by about 100% in Armenia) and are coming close to what bus transport costs. It must be said that normal maintenance and replacement can surely not be covered by such prices, also not in the case of buses, what is reflected by the poor condition of trains and buses and the corresponding lack of comfort.

Annexes

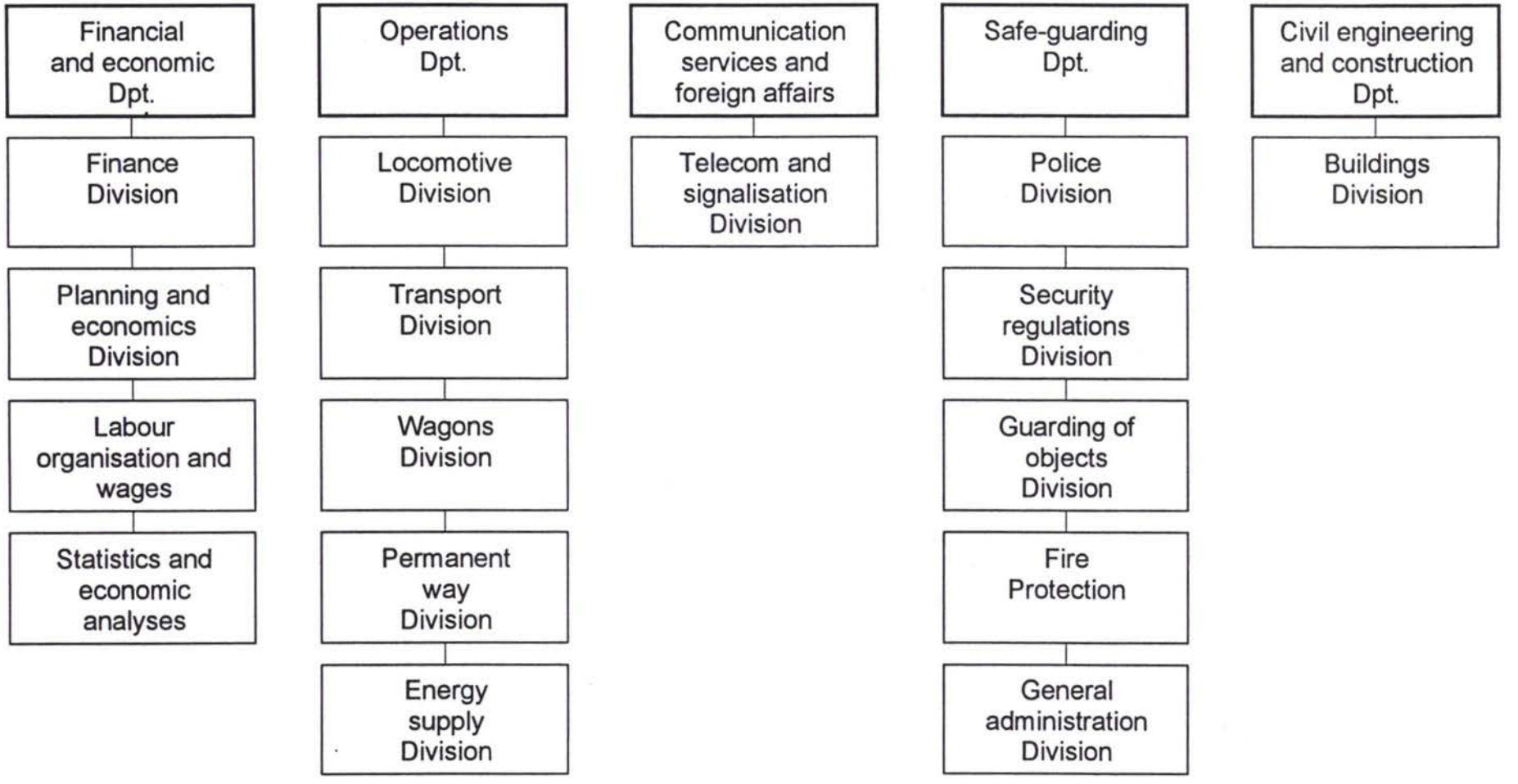
Organogramme of the Armenian Railway (ARM)
General Manager and directly subordinated units
(01.06.1997)



On 18.06.1997, 2 offices for Deputy Managers were established. The subordination shown in the organogramme will be modified. Details are not yet known.

Organogramme of the Management Structure

ARM-Headquarters: Departments and Divisions

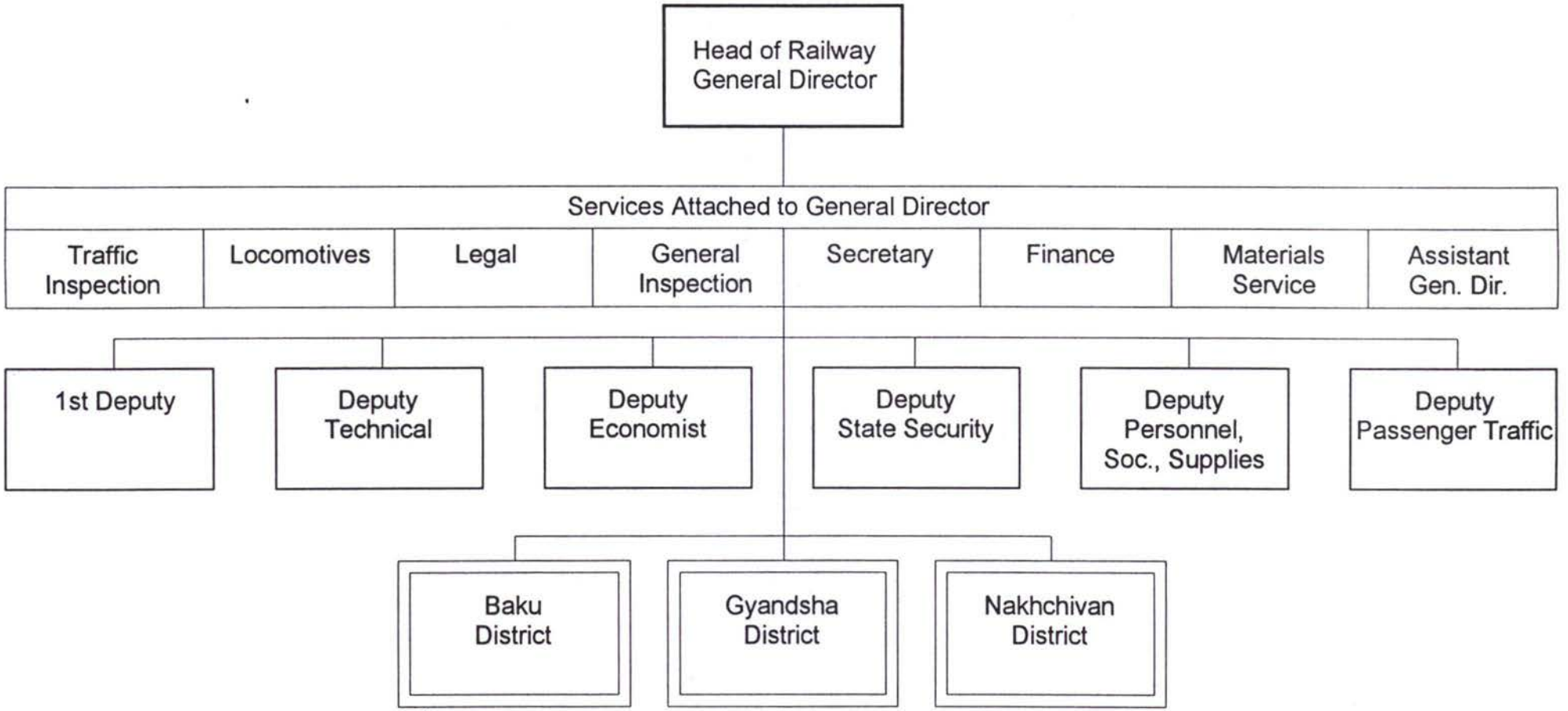


Local organisation:

76 stations, 5 permanent way districts, 1 track construction workshop, 2 telecom districts, 3 power current districts, 3 power current districts, 2 superstructure work districts, 3 overhaul workshops, 2 overhaul workshops for wagons, 1 enterprise for material-technical supply, 7 licensed state enterprises.

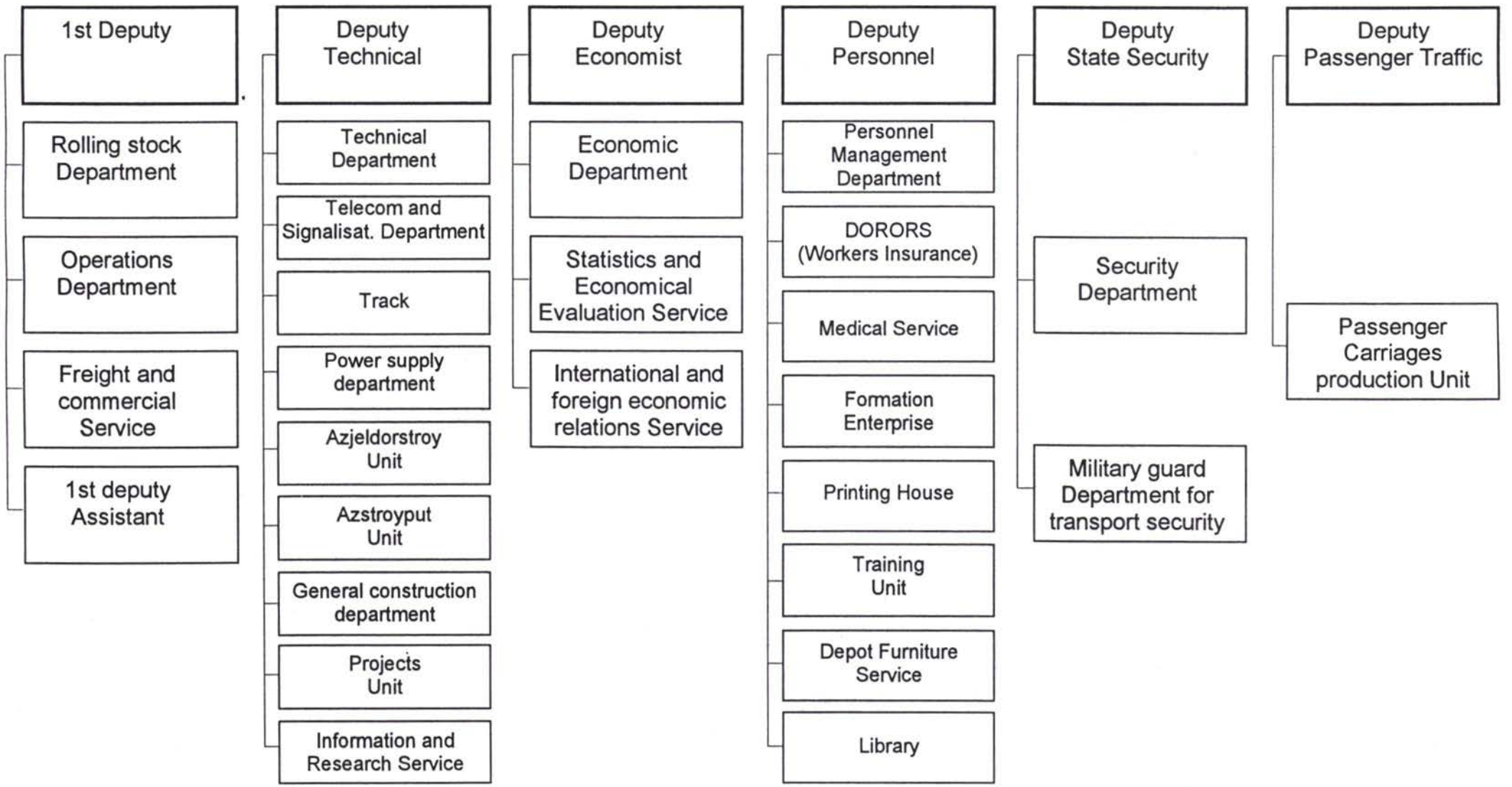
Annex 2.2 - 2
page 1

Azerbaijan State Railways Management Structure

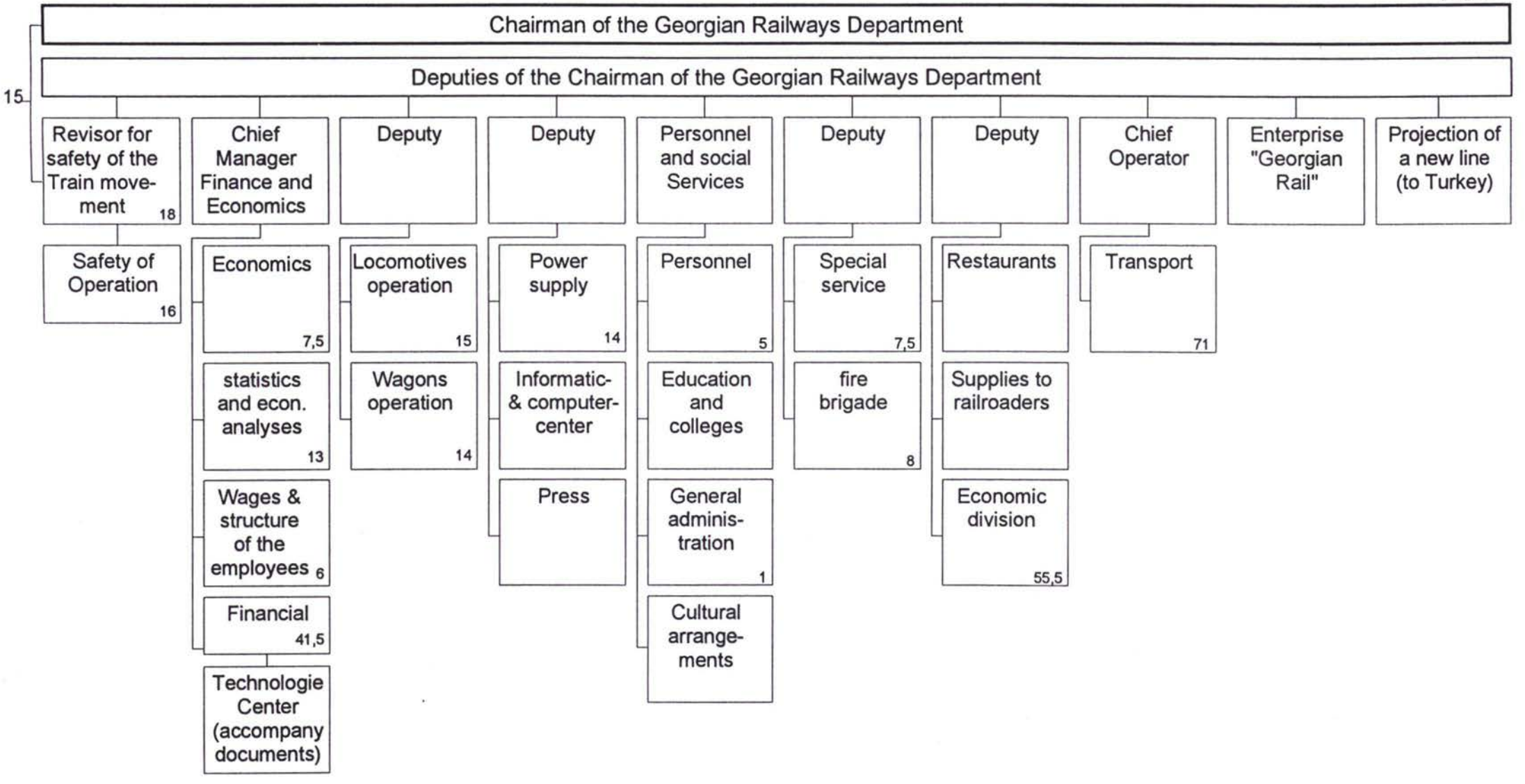


Annex 2.2 - 2
page 2

A.G.Z.D. - Headquarters Structure

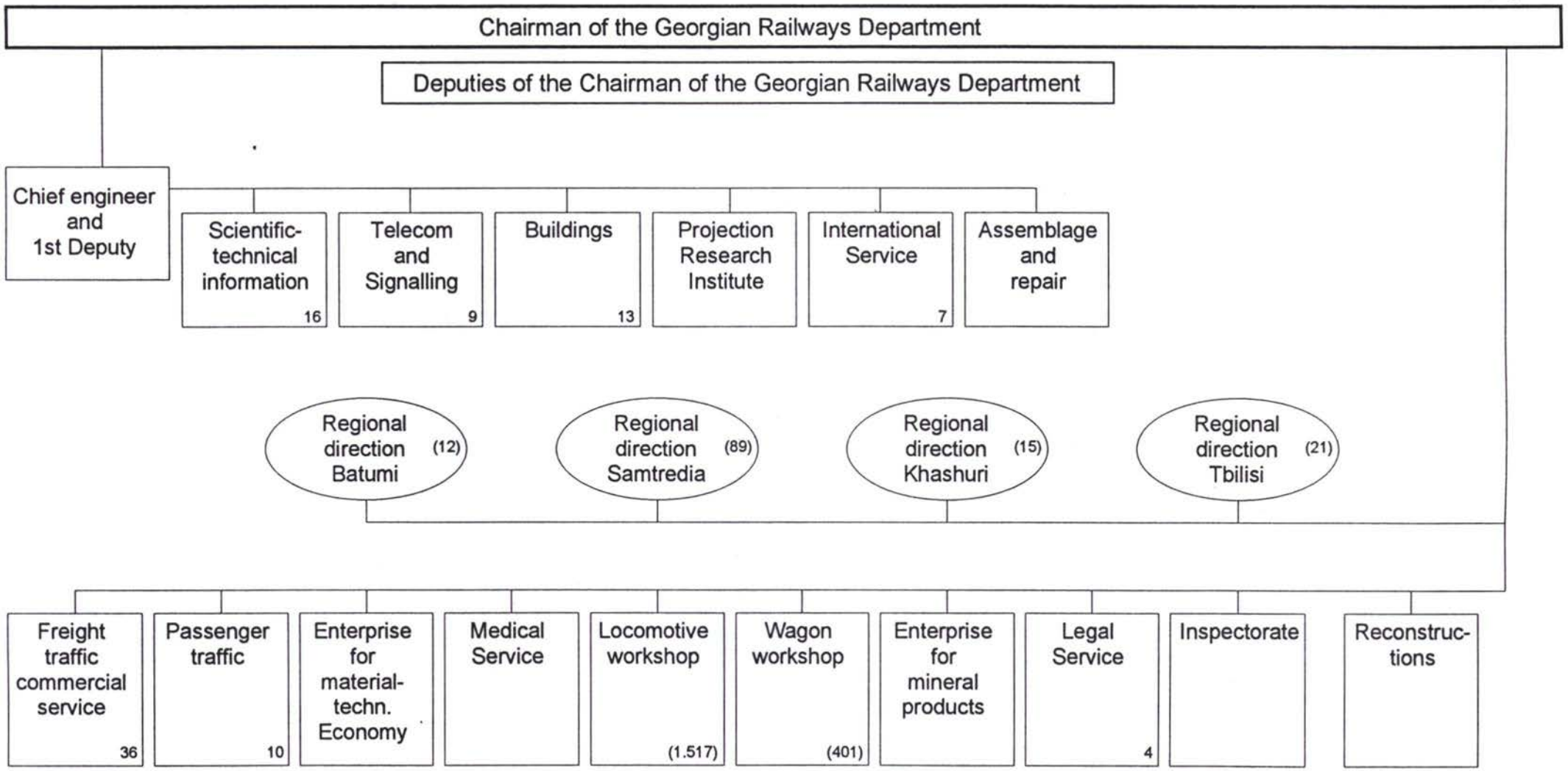


Structure of the Georgian Railways Administration



The figures refer to the number off staff of the units belonging to the "Georgian Railways Department". Figures in brackets () refer to the staff of other organisational units.

Structure of the Georgian Railways Administration (01.06.1997)



On 05.05.1997 unit "Service for international transport and relations" has been established. It is subordinated to a Deputy Manager of the "Georgian Railways Department".

Annex 2.2-4

Armenian Railway (ARM)

Number of staff
(1.6.1997)

1.	Total Persons (P)	4,686 P
2.	Of these are working in the railway organisation (including affiliated enterprises)	3,949 P
3.	In non-railway activities (e.g. industries, health, water supply, instruction) are employed further	737 P
4.	Besides of the ARM-organisation there are 7 "licensed state enterprises" (supplying the ARM)	527 P
5.	The staff of the railway organisation is distributed to the following units:	
	– administration	93 P
	– 76 stations (of which 2 are affiliated enterprises)	1,082 P
	– 3 overhaul workshops (affiliated enterprises)	604 P
	– 2 overhaul workshops for wagons (affiliated enterprises)	393 P
	– 5 permanent way districts (affiliated enterprises)	633 P
	– 1 track construction workshop (affiliated enterprise)	35 P
	– 3 power supply districts (affiliated enterprises)	514 P
	– 2 telecommunication districts (affiliated enterprises)	304 P
	– 2 superstructure work districts (affiliated enterprises)	243 P
	– 1 loading /unloading facility (affiliated enterprise)	48 P
6.	Total (Railway organisation)	3,949 P
7.	Of no.6 are to be contributed to infrastructure activities:	
	– administration	25 P
	– stations	350 P
	– permanent way districts	633 P
	– track construction workshop	35 P
	– power current districts	170 P
	– telecommunication districts	100 P
	Total staff for infrastructure	1,313 P

Result: about 1/3 of the staff of the ARM is employed with infrastructure activities.

Annex 2.2-5

Azerbaijan State Railways (AGZD)

Number of staff
(27.3.1997)

1.	Total: Persons (P) working in the railway organisation	32,269 P
2.	Persons working in industrial enterprises of AGZD	652 P
3.	Total Persons (no. 1+2)	32,921 P
4.	Medical, social etc. services	7,631 P
5.	Total (no. 3+4)	40,552 P
		=======
6.	The Staff of the railway organisation (including industrial enterprises) (no. 3) is distributed to the following organisational units:	
	- 175 stations	2,685 P
	- 15 locomotive and wagon workshops	7,644 P
	- 15 permanent way districts	3,834 P
	- 6 power supply districts	1,651 P
	- 9 telecom / signalling districts	2,273 P
	- 4 structural engineering districts	1,225 P
	- 3 water supply districts	494 P
	- 3 loading / unloading districts	137 P
	- 4 technical / material support stores	204 P
	- 1 Passenger traffic unit	731 P
	- 2 Azsheldor and Azstroiput	1,384 P
	- 6 technical works	483 P
	- 1 guarding unit	1,142 P
	- 14 administration units	5,859 P
7.	Of the total (no 3) are to be contributed to infrastructure activities	9,980 P

Annex 2.2-6

Georgian Railways (GRZD)

Number of staff
(1.4.1997)

1.	Total: Persons (P) in railway activities	17,867 P
2.	Persons in non-railway activities (schools, institutes, hospitals)	4,238 P
3.	Enterprises supplying the GRZD:	
	- Locomotive repair works Tbilisi	1,517 P
	- Wagon repair works Tbilisi	401 P
	- others	1,253 P
4.	Total: staff railway organisation	25,276 P
5.	Staff employed in railway activities (no.1) is distributed to the following units:	
5.1.	Regional directions Batumi and Samtredia	3,998 P
5.2.	Regional directions Tbilisi and Khashuri	7,623 P
5.3.	"Administration"	6,246 P
	Of the staff in no.5.3. are employed:	
5.3.1.	in the Georgian Railway Department	451 P
5.3.2.	in the Regional Direction Batumi	12 P
5.3.3.	in the Regional Direction Khashuri	15 P
5.3.4.	in the Regional Direction Samtredia	89 P
5.3.5.	in the Regional Direction Tbilisi	21 P
5.3.6.	in the local organisations additional	5,658 P
5.3.	(repeated)	6,246 P

Local units are:

- in the reg. div. Batumi and Samtredia: 73 stations (21 of them in Abkhasia), 4 locomotive workshops and 2 wagon workshops;
- in the reg. dir. Khashuri and Tbilisi: 76 stations, 4 locomotive workshops and 3 wagon workshops;

The organisation of the GRZD has been modified completely at the end of 1996. Many local units were abolished. The further repartition of the staff and its attribution to the new organisational units is not yet possible. Further figures are not available.

Annex 2.4.1-1, page 1

Balance sheets Armenian Railway, main sphere (transport activities)
after distribution of profits

	End 1993 10^6Dram	End 1994 10^6Dram	End 1995 10^6Dram	End 1996 10^6Dram	End 1993 10^6 US$	End 1994 10^6 US$	End 1995 10^6 US$	End 1996 10^6 US$	
Assets								*	
Long term assets	**237,3**	**385,9**	**5.614,3**	**7.242,8**	**3,16**	**0,95**	**13,97**	**16,28**	
Major fixed assets: acquis. value	371,2	526,3	8.113,9	11.749,6	4,95	1,30	20,18	26,40	1)
Major fixed assets: depreciation	133,9	140,4	2.499,6	4.506,8	1,79	0,35	6,22	10,13	2)
Major fixed assets: residual value	237,3	385,9	5.614,3	7.242,8	3,16	0,95	13,97	16,28	3)
Mobile equipment									
Uncompleted fixed assets									
Financial assets									
Short term assets	**19,1**	**1.426,7**	**2.082,5**	**2.859,3**	**0,25**	**3,52**	**5,18**	**6,43**	
Inventory of materials	0,7	101,8	478,2	604,5	0,01	0,25	1,19	1,36	
Minor fixed assets: acquis. val.		46,9	95,1	120,4					
Minor fixed assets: depreciation	0,0	23,5	46,3	58,5	0,00	0,06	0,12	0,13	
Minor fixed assets: residual val.	-0,0	23,4	48,9	61,9		0,06	0,12	0,14	
Other + omission	8,5	-13,3		6,9	0,11	-0,03		0,02	
Accounts receivable	1,6	1.286,1	1.485,2	2.175,7	0,02	3,17	3,69	4,89	
Advance payments	6,3		3,0	2,3	0,08		0,01	0,01	
Cash	2,1	28,7	67,3	8,0	0,03	0,07	0,17	0,02	
Balance	**256,4**	**1.812,6**	**7.696,8**	**10.102,1**	**3,42**	**4,47**	**19,15**	**22,70**	
Liabilities									
Equity	**240,6**	**1.347,3**	**7.302,7**	**9.043,4**	**3,21**	**3,32**	**18,17**	**20,32**	
Share capital	238,7	417,1	5.848,2	7.486,2	3,18	1,03	14,55	16,82	
Fund for special purposes (reserves)	0,1	31,9	14,2	55,5	0,00	0,08	0,04	0,12	
Other funds	1,8	898,3	1.440,4	1.501,7	0,02	2,22	3,58	3,37	
Long-term liabilities	**1,5**				**0,02**				
Short- and medium-term liabilities	**14,3**	**465,3**	**394,1**	**1.058,7**	**0,2**	**1,15**	**0,98**	**2,38**	
Short-term debts to banks				23,9				0,05	
Bank loans for the staff									
Accounts payable:									
Suppliers	2,6	407,5	246,8	191,1	0,03	1,00	0,61	0,43	
Salaries	0,8	17,7	33,6	34,6	0,01	0,04	0,08	0,08	
Social insurance	0,2	6,2	13,8	17,7	0,00	0,02	0,03	0,04	
Life and property insurance			2,9				0,01		
Non-governmental organizations									
Taxes	0,9	2,9	27,3	787,5	0,01	0,01	0,07	1,77	
Various creditors	3,6	31,0	69,7	3,9	0,05	0,08	0,17	0,01	
Various short-term liabilities	6,3				0,08				
Balance	**256,4**	**1.812,6**	**7.696,8**	**10.102,1**	**3,42**	**4,47**	**19,15**	**22,70**	

* The real total values at the end of 1996, under consideration of the replacement value, are estimated as follows:

300,00	1)
200,00	2)
100,00	3)

Official re-evaluation of fixed assets:

For balance sheet 31/12/93:	have been multiplied by	
- items acquired before 1991	150	times
- items acquired in 1991	36	times
- items acquired in 1992	8	times
- items acquired in 1993	1	time
For balance sheet 31/12/95:		
- all items	25	times

Exchange rates	Dram/US$
End 1993	75,0
End 1994	405,5
End 1995	402,0
End 1996	445,0

Annex 2.4.1 - 2

Acquisition value of the fixed assets of Armenian Railway at the end of 1994 and 1995, at their respective values

Category	Acquisition value in Million Dram	
	End of 1994	End of 1995
Buildings	32.3	788.9
Permanent ways	341.3	4,936.5
Electric and transmission cables and installations	9.0	223.3
Machinery and equipment	22.0	627.4
Rolling stock	35.8	1,239.4
Tools and inventory	0.5	25.6
Other assets	85.4	272.8
Total	526.3	8,113.9
= in 1,000 US$ (approx.)	1,298	20,183

Annex 2.4.1-3

Armenian Railway, main sphere (transport activities)

Profit and loss statements

	1993 Million Rubles		1994 Million Dram		1995 Million Dram		1996 Million Dram	
	+	-	+	-	+	-	+	-
Gross receipts (main activities)	4.471,2		2.390,9		4.334,1		3.972,9	
Value added tax						616,6		573,7
Costs (main activities)*		4.750,6		2.215,9		3.704,3		3.702,2
Profit (main activities)		-279,3		175,0		13,2		-303,0
	4.471,2	4.471,2	2.390,9	2.390,9	4.334,1	4.334,1	3.972,9	3.972,9
Receipts and expenses not related to transport activities	580,0	207,5	10,9	66,1	0,0			
Net profit from these rec.& exp.		372,5		-55,2		0,0		
	580,0	580,0	10,9	10,9	0,0	0,0		
Total profit	93,1		119,8		13,2		-303,0	
Distribution:								
State (profit tax)		67,0		35,5				
"Accumulation fund"				40,9				
"Consumption fund"				10,0				
"Pension fund"				18,0				
Other uses		26,1		15,5		15,5		
* With repair costs as planned, not actual; if repair costs are taken at their actual expenses, total costs are only		4.350,6		1.486,5		2.765,1		3.107,8
and total profit is then	493,1		849,2		952,4		291,4	

Conversion to US$

Average parity per US$:

for 1993:	1.770 Ruble	for 1994:	290 Dram	for 1995:	406 Dram	for 1996	413,7 Dram

	1993 1000 US$		1994 1000 US$		1995 1000 US$		1996 1000 US$	
	+	-	+	-	+	-	+	-
Gross receipts (main activities)	2.526,7		8.248,7		10.679,3		9.602,5	
Value added tax						1.519,3		1.386,6
Costs (main activities)*		2.684,6		7.644,9		9.127,4		8.948,3
Profit (main activities)		-157,9		603,9		32,6		-732,4
	2.526,7	2.526,7	8.248,7	8.248,7	10.679,3	10.679,3	9.602,5	9.602,5
Receipts and expenses not related to transport activities	327,8	117,3	37,6	228,0	0,0			
Net profit from these rec.& exp.		210,5		-190,5		0,0		
	327,8	327,8	37,6	37,6	0,0	0,0		
Total profit	52,6		413,4		32,6		-732,4	
* With repair costs as planned, not actual; if repair costs are taken at their actual expenses, total costs are only		2.458,5		5.128,4		6.813,2		7.511,6
and total profit is then	278,7		2.929,8		2.346,8		704,3	

Annex 2.4.1-4

Armenian Railway. Transport and revenue statistics, 1993 - 1996

	Unit	1993	1994	1995	1996
Goods transport					
Total performance	10^3 t.km	450.900	n.a.	n.a.	351.000
Tonnes transported	10^3 t	2.682,5	n.a.	n.a.	1.710,7
Revenues		10^6 Ruble	10^6 Dram	10^6 Dram	10^6 Dram
		2.463,0	1.400,0	3.101,8	2.606,2
Revenues, converted to US$		1,000 US$	1,000 US$	1,000 US$	1,000 US$
		1.391,8	4.830,0	7.642,9	6.299,0
Portion of costs attributed to		10^6 Ruble	10^6 Dram	10^6 Dram	10^6 Dram
goods transport		2.265,0	1.589,8	2.994,8	2.810,2
converted to US$		1,000 US$	1,000 US$	1,000 US$	1,000 US$
		1.280,0	5.484,8	7.379,2	6.792,1
Passenger transport					
Total performance	10^3 pass.km	435.200	n.a.	n.a.	84.200
Revenues		10^6 Ruble	10^6 Dram	10^6 Dram	10^6 Dram
		378,0	134,0	151,8	103,6
Revenues, converted to US$		1,000 US$	1,000 US$	1,000 US$	1,000 US$
		213,6	462,3	374,0	250,4
Portion of costs attributed to		10^6 Ruble	10^6 Dram	10^6 Dram	10^6 Dram
passenger transport		1.535,0	280,6	530,8	422,0
converted to US$		1,000 US$	1,000 US$	1,000 US$	1,000 US$
		867,4	968,1	1.307,9	1.019,9
Total revenues		10^6 Ruble	10^6 Dram	10^6 Dram	10^6 Dram
goods + passenger transp.		2.841,0	1.534,0	3.253,6	2.709,8
converted to US$		1,000 US$	1,000 US$	1,000 US$	1,000 US$
		1.605,5	5.292,3	8.016,9	6.549,4
Total costs		10^6 Ruble	10^6 Dram	10^6 Dram	10^6 Dram
goods + passenger transp.		3.800,0	1.870,4	3.525,6	3.232,2
converted to US$		1,000 US$	1,000 US$	1,000 US$	1,000 US$
		2.147,4	6.452,9	8.687,1	7.812,0
Profit		10^6 Ruble	10^6 Dram	10^6 Dram	10^6 Dram
goods + passenger transp.		-959,0	-336,4	-272,0	-522,4
converted to US$		1,000 US$	1,000 US$	1,000 US$	1,000 US$
		-541,9	-1.160,6	-670,2	-1.262,6

Notes:

Due to insufficiencies in accounting, it was not possible to explain the difference between the total annual revenues and costs as stated in the profit-and-loss statements of the balance sheets and those attributed to transport services only.

Above costs include costs for major repairs ("repair fund") as planned, not actual ones (see "Profit-and-loss statements")

Armenian Railway **Costs** **1993** **converted to US$****

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Maj.repairs (rep. fund)*	Other costs	Total
1	Locomotive unit Sanain											
2	Locomotive unit Gyumri	37.690	13.946	4.015	55.582	1.382	267.906	7.227	642	119.496	15.335	523.221
3	Locomotive unit Yerevan	36.883	13.718	4.033	62.161	271	256.303	17.276	825	599	34.185	426.253
4	Waggon unit Gyumri	7.770	2.875	371		285		1.270	40	248	604	13.462
5	Waggon unit Yerevan	37.121	13.735	8.486		1.543		7.309	528	85.658	2.129	156.509
6	Railway station Gyumri	4.958	1.834	38				3.507	5		6.054	16.397
7	Railway station Yerevan	7.256	2.645	27				487	10			10.426
8	Maintenance unit Vanadzor	9.645	3.634	261		1.119		1.116	847	3.232	841	20.695
9	Maintenance unit Gyumri	12.500	4.625	53		2.469		758	357	18.813	1.060	40.635
10	Maintenance unit Yerevan	12.262	4.408	1.502		1.251		2.987	1.333	1.995	198	25.935
11	Maintenance unit Sevan	8.422	3.397	82		241		2.407	855	891	1.162	17.457
12	Maintenance unit Ijevan	5.379	1.990	707		1.867		425	1.403	649	1.180	13.600
13	Maintenance unit forestation	873	331	25					5	50	29	1.313
14	High voltage unit Gyumri	13.905	4.182	1.838				7.075	348	5.651	2.161	35.160
15	High voltage unit Yerevan	11.782	4.374	524		1.300		4.376	209	3.761	879	27.205
16	High voltage unit Razdan	17.090	6.517	511				10.958	440	7.316	1.816	44.649
17	Telecommunication unit Gyumri	10.168	3.539	92		784		8.635	124	441	192	23.973
18	Telecommunication unit Yerevan	12.497	4.472	288		1.363		11.366	324	1.729	567	32.607
19	Construction unit Gyumri	1.557	576	3.249		3.108		1.136	39	5.179		14.845
20	Construction unit Yerevan	1.600	592	193					236	17.424		20.045
21	State supervision	3.985	1.590	24				66	33		286	5.983
22	Administration Sub-total	130.927	48.296	22.280		2.230		166.479	12.306	9.419	285.076	677.013
	= Administration operation											
	+ Administration freight traffic											
	+ Administration passenger traff.											
	+ Assistance trains											
	+ Freight invoicing											
	+ Central control											
	+ Fire brigade											
	+ Depreciation freight waggons											
	Sub-total	384.269	141.276	48.599	117.743	19.213	524.209	254.860	20.909	282.551	353.754	2.147.382
	Auxiliary and service centres	54.306	19.779	23.452		22.491		394.554			139.863	654.445
	Total	438.576	161.054	72.051	117.743	41.705	524.209	649.414	20.909	282.551	493.617	2.801.827

* Costs as planned; actual expenses were only: 56.510

** Rubles converted into US$ at the average free exchange rate of 1.769,6 Ruble/$

Armenian Railway **Costs** **1994** **converted to US$****

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Maj.repairs (rep. fund)*	Other costs	Total
1	Locomotive unit Sanain											
2	Locomotive unit Gyumri	51.968	19.227	9.650	93.316	6.327	658.441	25.761	1.504	806.958	12.041	1.685.192
3	Locomotive unit Yerevan	37.781	13.803	480.079	91.660	2.691	594.713	8.049	1.953	273.931	17.088	1.521.748
4	Waggon unit Gyumri	6.517	2.412	1.904		197		894	756	173	1.232	14.083
5	Waggon unit Yerevan	24.775	8.804	57.246		2.812		21.632	2.425	143.865	19.106	280.665
6	Railway station Gyumri	5.210	1.929	628				4.744	10		1.735	14.255
7	Railway station Yerevan	7.487	2.708	362				849	83		693	12.182
8	Maintenance unit Vanadzor	10.098	3.733	1.818		3.581		2.415	3.084	393.301	1.718	419.749
9	Maintenance unit Gyumri	14.573	5.434	911		3.167		3.923	72	299.116	7.414	334.610
10	Maintenance unit Yerevan	11.233	4.112	12.372		5.544		6.662	2.788	296.356	3.581	342.648
11	Maintenance unit Sevan	8.829	3.267	1.432		1.325		6.548	3.022	17.595	3.916	45.933
12	Maintenance unit Ijevan	1.898	704			176			4.033		104	6.914
13	Maintenance unit forestation	631	235	24					28		204	1.121
14	High voltage unit Gyumri	12.782	4.730	3.750				18.582	566	707	6.131	47.248
15	High voltage unit Yerevan	11.219	4.150	4.002		1.704		12.603	431	742	2.722	37.574
16	High voltage unit Razdan	14.335	5.303	4.102				21.573	1.142	863	8.290	55.607
17	Telecommunication unit Gyumri	9.505	3.426	2.594		455		23.622	331	69	876	40.879
18	Telecommunication unit Yerevan	10.995	4.030	6.148		421		23.940	932	15.201	2.191	63.856
19	Construction unit Gyumri	6.545	2.422	6.900		2.760		2.401	179	10.367	21	31.595
20	Construction unit Yerevan	10.081	3.643	14.838		11.965		2.763	21	45.885	535	89.731
21	State supervision	3.867	1.432	186					117		317	5.920
22	Administration Sub-total	70.525	17.316	113.485		86.260		577.217	47.486	480.411	8.847	1.401.547
	= Administration operation											
	+ Administration freight traffic											
	+ Administration passenger traff.											
	+ Assistance trains											
	+ Freight invoicing											
	+ Central control											
	+ Fire brigade											
	+ Depreciation freight waggons											
	Sub-total	330.853	112.819	722.433	184.976	129.385	1.253.154	764.177	70.963	2.785.539	98.761	6.453.060
	Auxiliary and service centres	38.985	14.490	24.150		11.730		599.957			730.712	1.420.024
	Total	369.838	127.309	746.583	184.976	141.116	1.253.154	1.364.134	70.963	2.785.539	829.473	7.873.084

* Costs as planned; actual expenses were only: 269.101

** Drams converted into US$ at the average free exchange rate of 289,9 Dram/$

Armenian Railway **Costs** **1995** **converted to US$****

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Maj.repairs (rep. fund)*	Other costs	Total
1	Locomotive unit Sanain	10.911	4.036	2.109	26.897		42.152	1.725		36.068	1.087	124.985
2	Locomotive unit Gyumri	124.963	46.235	70.313	114.624	7.905	664.336	35.706	12.187	561.572	75.616	1.713.455
3	Locomotive unit Yerevan	90.139	33.353	178.052	130.061	18.069	709.484	88.236	19.025	656.382	53.585	1.976.385
4	Waggon unit Gyumri	13.912	5.147	10.455		303		786	1.210	88.710	2.782	123.304
5	Waggon unit Yerevan	71.927	26.614	59.398		3.785		28.275	22.460	117.492	17.571	347.520
6	Railway station Gyumri	13.700	5.068	4.440				6.209	651		20.518	50.586
7	Railway station Yerevan	21.062	7.594	998				922	788		6.549	37.914
8	Maintenance unit Vanadzor	31.116	12.226	152.791		8.168		4.627	28.822	447.704	3.504	688.959
9	Maintenance unit Gyumri	32.752	10.642	128.494		9.053		7.109	7.099	176.916	13.099	385.163
10	Maintenance unit Yerevan	37.184	13.757	66.070		14.062		6.315	42.159	278.840	24.280	482.669
11	Maintenance unit Sevan	26.333	9.743	32.858		6.648		9.703	18.133	221.269	10.721	335.407
12	Maintenance unit Ijevan	6.559	2.235									8.794
13	Maintenance unit forestation	1.614	599	62					256		333	2.863
14	High voltage unit Gyumri	37.231	13.392	15.930				21.646	5.827	3.595	9.018	106.640
15	High voltage unit Yerevan	29.802	11.026	8.279		2.935		16.386	4.186	6.567	4.975	84.156
16	High voltage unit Razdan	39.624	14.661	11.670				34.617	9.028	24.591	2.553	136.743
17	Telecommunication unit Gyumri	26.020	9.183	10.290		1.045		30.389	3.078	8.713	1.267	89.983
18	Telecommunication unit Yerevan	32.757	12.113	22.181		3.469		29.679	8.594	18.165	3.087	130.046
19	Construction unit Gyumri	21.021	7.678	15.523		1.035		1.232	1.441	24.110		72.040
20	Construction unit Yerevan	30.211	11.179	51.234		11.872		5.798	16.290	104.501	392	231.477
21	State supervision	10.268	3.593						2.494		547	16.901
22	Administration Sub-total	200.857	69.606	20.883		57.522		579.919	52.286	218.312	341.858	1.541.243
	= Administration operation											
	+ Administration freight traffic											
	+ Administration passenger traff.											
	+ Assistance trains											
	+ Freight invoicing											
	+ Central control											
	+ Fire brigade											
	+ Depreciation freight waggons											
	Sub-total	909.961	329.681	862.029	271.581	145.870	1.415.972	909.279	256.014	2.993.507	593.340	8.687.234
	Auxiliary and service centres	28.829	10.349	48.541		4.435		264.389			83.777	440.320
	Total	938.790	340.029	910.570	271.581	150.305	1.415.972	1.173.668	256.014	2.993.507	677.117	9.127.554

* Costs as planned; actual expenses were only: 679.329

** Drams converted into US$ at the average free exchange rate of 405,8 Dram/$

Armenian Railway **Costs in 1,000 Dram** **1996**

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Maj.repairs (rep. fund)*	Other costs	Total
		Details by cost centre not available										
	Total***	427.700	155.900	322.800	71.500	56.200	583.500	248.500	215.200	879.300	271.600	3.232.200

* Costs as planned; actual expenses were only: 284.900

Armenian Railway **Costs** **1996** **converted to US$****

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Maj.repairs (rep. fund)*	Other costs	Total
		Details by cost centre not available										
	Total***	1.033.720	376.799	780.184	172.810	135.831	1.410.278	600.607	520.123	2.125.205	656.438	7.811.995

* Costs as planned; actual expenses were only: 688.583

** Drams converted into US$ at the average free exchange rate of 413,7 Dram/$

*** Not including auxiliary and service centres

Annex 2.4.2-1, page 1

Balance sheets Azerbaijan State Railways, main sphere (transport activities)
after distribution of profits

	End 1994 10^9Manat	End 1995 10^9Manat	End 1996 10^9Manat	31/03/97 10^9Manat	End 1994 10^6 US$	End 1995 10^6 US$	End 1996 10^6 US$	31/03/97 10^6 US$
Assets								
Long term assets	**169,8**	**166,4**	**2.321,2**	**2.359,1**	**39,3**	**37,5**	**559,3**	**582,5**
Major fixed assets: acquis. value	258,9	258,5	3.631,4	3.706,4	60,0	58,2	875,0 1)	915,2
Major fixed assets: depreciation	89,1	92,1	1.326,6	1.364,0	20,6	20,7	319,7 2)	336,8
Major fixed assets: residual value	169,8	166,4	2.304,8	2.342,4	39,3	37,5	555,4 3)	578,4
Mobile equipment								
Uncompleted fixed assets			16,3	16,7	0,0	0,0	3,9	4,1
Financial assets	0,1							
Short term assets	**31,9**	**262,4**	**403,3**	**545,2**	**7,4**	**59,1**	**97,2**	**134,6**
Inventory of materials	2,8	37,3	65,5	80,2	0,6	8,4	15,8	19,8
Inventory finished goods	0,0	0,0	0,2	0,0	0,0	0,0	0,1	0,0
Minor fixed assets: acquis. val.	0,2	4,7	15,6	17,2	0,0	1,1	3,8	4,3
Minor fixed assets: depreciation	0,1	2,4	7,0	7,9	0,0	0,5	1,7	2,0
Minor fixed assets: residual val.	0,1	2,3	8,6	9,3	0,0	0,5	2,1	2,3
Other	20,8	62,6	99,5	177,5	4,8	14,1	24,0	43,8
Accounts receivable	5,8	158,6	228,5	276,7	1,3	35,7	55,1	68,3
Advance payments	0,0	0,1	0,1	0,2	0,0	0,0	0,0	0,1
Cash	2,4	1,6	1,0	1,1	0,6	0,4	0,2	0,3
Losses								
Balance	**201,7**	**428,9**	**2.724,5**	**2.904,3**	**46,7**	**96,6**	**656,5**	**717,1**
Liabilities								
Equity	**180,1**	**211,3**	**2.382,6**	**2.390,3**	**41,7**	**47,6**	**574,1**	**590,2**
Share capital	108,1	111,3	2.257,6	2.265,3	25,0	25,1	544,0	559,3
Fund for special purposes (reserves)		0,0	0,0	0,0	0,0	0,0	0,0	0,0
Other funds	71,9	100,0	125,0	125,0	16,7	22,5	30,1	30,9
Long-term liabilities	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**
Short- and medium-term liabilities	**21,7**	**217,6**	**341,9**	**514,0**	**5,0**	**49,0**	**82,4**	**126,9**
Short-term debts to banks	0,0	0,2	6,3	5,9	0,0	0,0	1,5	1,5
Bank loans for the staff								
Accounts payable:								
Suppliers	4,9	61,4	84,1	109,8	1,1	13,8	20,3	27,1
Salaries	0,6	5,4	13,7	15,0	0,2	1,2	3,3	3,7
Social insurance	0,8	4,9	23,6	27,9	0,2	1,1	5,7	6,9
Life and property insurance								
Non-governmental organizations								
Taxes	5,3	23,4	109,5	120,5	1,2	5,3	26,4	29,8
Various creditors	0,6	3,0	9,8	21,6	0,1	0,7	2,4	5,3
Provisions								
Reserve								
Various short-term liabilities	9,4	119,2	95,0	213,2	2,2	26,9	22,9	52,6
Balance	**201,7**	**428,9**	**2.724,5**	**2.904,3**	**46,7**	**96,6**	**656,5**	**717,1**

* The real total values at the end of 1996, under consideration of the replacement value, are estimated as follows: 1.700,0 1)
1.150,0 2)
550,0 3)

Official re-evaluation of fixed assets:

For balance sheet 31/12/93	have been multiplied by
- items on average	32 times
For balance sheet 31/03/94	
- items on average	30 times
For balance sheet 31/12/96	
- items on average	14,5 times

However the corresponding depreciation costs were not re-evaluated

Average exchange rates	Manat/US$
End 1994	4.318,0
End 1995	4.440,0
30/09/96	4.222,0
End 1996	4.150,0
31/03/97	4.050,0

Annex 2.4.2 - 2

Acquisition value of the fixed assets of Azerbaijan State Railways at the end of 1994 and 1995, at their respective values

Category	Acquisition value in Million Manat		
	End of 1994	End of 1995	End of 1996
Buildings	39,421	19,900	262,730
Permanent ways	71,780	68,852	888,440
Electric and transmission cables and installations	7,161	7,343	124,163
Machinery and equipment	11,558	12,145	144,234
Rolling stock	126,249	143,052	2,154,757
Tools and inventory	466	1,348	21,864
Other assets	2,291	5,897	35,259
Total	258,926	258,537	3,631,447
= in 1,000 US$ (approx.)	59,964	58,229	858,498
	(undervalued)	(undervalued)	

Azerbaijan State Railways, main sphere (transport activities)

Annex 2.4.2-3

Profit and loss statements

	1994 Million Manat		1995 Billion Manat		1996 Billion Manat	
	+	-	+	-	+	-
Gross revenue (main activities)	46.781,2		373,6		455,7	
Value added tax		5.435,5		38,2		57,7
Costs (main activities)		23.009,5		170,9		255,2
Profit (main activities)		18.336,2		164,5		142,8
	46.781,2	46.781,2	373,6	373,6	455,7	455,7
Revenue and costs of side and service activities	10.137,2	4.826,3	43,6	55,1	64,9	66,0
Net profit side and serv. activities		5.310,9		-11,5		-1,1
	10.137,2	10.137,2	43,6	43,6	64,9	64,9
Total profit (official)	23.647,1		153,0		141,708	
Distribution:						
State (profit tax, about 35%)		8.277,6		53,0		49,1
"Accumulation fund"		6.546,2		40,6		27,4
"Consumption fund" (salaries)		8.604,9		56,6		62,3
Other funds and reserves		4,7		1,2		1,4
Social insurance (1%)		213,7		1,5		1,4
Profit after deduction of salaries and social insurance paid from profit:	14.828,5		94,9		77,9	

Conversion into US$

Average parity Manat/US$

for 1994:	1.682,9	for 1995:	4.415,8	9 mon.96:	4.312,5	

	1994 1000 US$		1995 1000 US$		1996 1000 US$	
	+	-	+	-	+	-
Gross revenue (main activities)	27.798,8		84.596,3		105.675,6	
Value added tax		3.229,9		8.656,3		13.371,4
Costs (main activities)		13.673,0		38.695,3		59.185,6
Profit (main activities)		10.895,9		37.244,8		33.118,6
	27.798,8	27.798,8	84.596,3	84.596,3	105.675,6	105.675,6
Revenue and costs of side and service activities	6.023,8	2.867,9	9.878,0	12.473,3	15.038,6	15.297,4
Net profit side and serv. activities		3.155,9		-2.595,3		-258,8
	6.023,8	6.023,8	9.878,0	9.878,0	15.038,6	15.038,6
Total profit (official)	14.051,8		34.649,5		32.859,8	
Profit after deduction of salaries and social insurance paid from profit:	8.811,5		21.490,5		18.073,5	

Average exchange rates	Manat/US$
1994	1.682,9
1995	4.415,8
1996	4.312,5

Azerbaijan State Railways. General overview of performance

Annex 2.4.2-4

	Unit	1993	1994	1995	1996	
Physical performance						
t.km sold (goods)	10^6 t.km	7.300	3.276	2.409	2.775	
of which - Short distance	"	3.094	2.219	1.776	1.573	
- Long distance	"	4.206	1.058	633	1.202	
t.km performed	"	8.629	4.380	3.195	3.367	
Passenger-km performed	10^6 Pass.km	1.330	1.104	787	558	
Commercial performance in current Manat						
Revenue from transport services	10^6 Manat	41.434	35.569	285.738	306.446	
of which - Goods short distance	"	17.408	22.773	172.944	163.590	
- Goods long distance	"	17.430	7.181	64.075	93.981	
- Other revenue goods	"	4.507	3.768	40.729	39.874	
- Passenger transport	"	2.022	1.800	7.944	8.808	
- Baggage and post serv.	"	68	47	47	194	
Costs of transport services	10^6 Manat	24.422	18.293	130.386	178.673	2)
of which - Goods transport	"	n.a.	13.095	102.744	133.076	
- Passenger tr. & bagg.	"	n.a.	5.198	27.641	45.597	
Profit from transport services	"	17.013	17.277	155.353	127.773	2)
Revenue from side and service activities 1)	10^6 Manat	n.a.	5.777	49.595	64.854	
Costs of these activities	"	n.a.	4.717	40.483	65.970	
Profit from these activities	"	1.892	1.060	9.112	-1.116	
Other profits	"	3.037	5.311	-11.460	15.051	
Total profit	"	21.942	23.647	153.005	141.708	2)
Commercial performance converted to US$						
Average free exchange rate	Manat/US$	No rate avail.	1.682,9	4.415,8	4.312,5	
Revenue from transport services	1000 US$		21.136	64.709	71.060	
of which - Goods short distance	"		13.533	39.165	37.934	
- Goods long distance	"		4.267	14.510	21.793	
- Other revenue goods	"		2.239	9.224	9.246	
- Passenger transport	"		1.069	1.799	2.042	
- Baggage and post serv.	"		28	11	45	
Costs of transport services	"		10.870	29.527	41.432	2)
of which - Goods transport	"		7.781	23.268	30.858	
- Passenger tr. & bagg.	"		3.089	6.260	10.573	
Profit from transport services	"		10.266	35.181	29.629	2)
Revenue from side and service activities	1000 US$		3.433	11.231	15.039	
Costs of these activities	"		2.803	9.168	15.297	
Profit from these activities	"		630	2.064	-259	
Other profits	"		3.156	-2.595	3.490	
Total profit	"		14.052	34.650	32.860	2)

1) No double counting involved
2) Plus/minus (respectively) personnel costs paid from the profit

10^6 Manat	8.817	58.107	63.766
1000 US$	5.240	13.159	10.053

Azerbaijan State Railways, main sphere (transport activities) **Costs 1994 in 10^6 Manat**

	Cost centre	Salaries, wages	Materials	Fuels	Electricity	Other costs	Total	+ salaries* paid from profi
1	Passenger traffic	233,6	73,9	3,0	95,2	706,3	1.112,0	
2	Goods traffic (incl. containers)	108,7	8,4	5,9	98,6	285,7	507,3	
3	Stations	291,8	33,8	35,2	278,0	741,3	1.380,1	
4	Traction	417,9	154,2	620,0	3.285,6	1.453,4	5.931,0	
5	Waggons	424,4	162,8	216,9	81,8	2.473,3	3.359,2	
6	Permanent ways	408,7	120,9	68,9	53,2	2.414,6	3.066,3	
7	Maintenance of buildings	39,4	88,8	39,7	44,0	284,3	496,2	
8	Signalisation & telecom.	220,0	26,2	17,8	228,1	412,6	904,8	
9	Electrical installation	122,3	35,3	14,4	68,6	345,7	586,3	
10	Regional administrations	49,3	6,9	0,8	40,7	153,6	251,3	
11	Head office & other gen. services	191,6	12,9	41,6	11,2	440,9	698,1	
12	Sub-total	2.507,9	724,1	1.064,3	4.284,9	9.711,6	18.292,7	
13	Side and service activities	412,0	673,0	331,2	2.562,4	1.588,0	5.566,6	
14	Total	2.919,9	1.397,1	1.395,4	6.847,3	11.299,5	23.859,2	8.818,6

Azerbaijan State Railways, main sphere (transport activities) **Costs 1994, converted to 1,000 US$****

	Cost centre	Salaries, wages	Materials	Fuels	Electricity	Other costs	Total	+ salaries* paid from profi
1	Passenger traffic	138,8	43,9	1,8	56,6	419,7	660,8	
2	Goods traffic (incl. containers)	64,6	5,0	3,5	58,6	169,8	301,4	
3	Stations	173,4	20,1	20,9	165,2	440,5	820,1	
4	Traction	248,3	91,6	368,4	1.952,4	863,7	3.524,4	
5	Waggons	252,2	96,8	128,9	48,6	1.469,7	1.996,1	
6	Permanent ways	242,9	71,8	41,0	31,6	1.434,8	1.822,1	
7	Maintenance of buildings	23,4	52,8	23,6	26,1	168,9	294,8	
8	Signalisation & telecom.	130,8	15,6	10,6	135,6	245,2	537,7	
9	Electrical installation	72,7	21,0	8,6	40,8	205,4	348,4	
10	Regional administrations	29,3	4,1	0,5	24,2	91,3	149,4	
11	Head office & other gen. services	113,9	7,7	24,7	6,6	262,0	414,9	
12	Sub-total	1.490,2	430,3	632,4	2.546,2	5.770,9	10.870,0	
13	Side and service activities	244,8	399,9	196,8	1.522,7	943,6	3.307,8	
14	Total	1.735,1	830,2	829,2	4.068,9	6.714,5	14.177,9	5.240,3

* Salaries, wages and social insurance

** Manat converted into US$ at the average free exchange rate of 1.682,9 Manat/$

Azerbaijan State Railways, main sphere (transport activities) **Costs 1995 in 10^6 Manat**

	Cost centre	Salaries, wages	Materials	Fuels	Electricity	Other costs	Total	+ salaries* paid from profi
1	Passenger traffic	751,0	415,2	82,2	808,3	2.682,0	4.738,7	
2	Goods traffic (incl. containers)	258,5	127,5	60,7	1.040,6	1.745,4	3.232,6	
3	Stations	690,2	359,2	140,9	3.738,9	6.081,5	11.010,7	
4	Traction	1.016,9	1.433,0	7.990,5	36.645,4	7.394,4	54.480,1	
5	Waggons	1.020,9	912,7	2.636,9	740,8	12.370,9	17.682,2	
6	Permanent ways	950,3	585,0	751,2	548,4	16.946,9	19.781,9	
7	Maintenance of buildings	95,3	936,3	175,9	399,7	1.381,4	2.988,7	
8	Signalisation & telecom.	528,2	310,7	159,2	2.415,3	2.312,3	5.725,6	
9	Electrical installation	302,2	414,4	244,1	981,2	2.143,0	4.085,0	
10	Regional administrations	181,8	73,1	95,4	334,2	444,0	1.128,5	
11	Head office & other gen. services	419,5	38,8	179,9	344,3	4.549,0	5.531,6	
12	Sub-total	6.214,8	5.605,8	12.516,9	47.997,1	58.051,0	130.385,5	
13	Side and service activities	1.198,0	7.108,6	2.611,1	24.859,7	7.978,7	43.756,1	
14	Total	7.412,8	12.714,4	15.128,0	72.856,7	66.029,7	174.141,6	58.106,6

Azerbaijan State Railways, main sphere (transport activities) **Costs 1995, converted to 1,000 US$****

	Cost centre	Salaries, wages	Materials	Fuels	Electricity	Other costs	Total	+ salaries* paid from profi
1	Passenger traffic	170,1	94,0	18,6	183,1	607,4	1.073,1	
2	Goods traffic (incl. containers)	58,5	28,9	13,8	235,7	395,3	732,1	
3	Stations	156,3	81,3	31,9	846,7	1.377,2	2.493,5	
4	Traction	230,3	324,5	1.809,5	8.298,8	1.674,5	12.337,7	
5	Waggons	231,2	206,7	597,1	167,8	2.801,5	4.004,3	
6	Permanent ways	215,2	132,5	170,1	124,2	3.837,8	4.479,8	
7	Maintenance of buildings	21,6	212,0	39,8	90,5	312,8	676,8	
8	Signalisation & telecom.	119,6	70,4	36,0	547,0	523,7	1.296,6	
9	Electrical installation	68,4	93,8	55,3	222,2	485,3	925,1	
10	Regional administrations	41,2	16,6	21,6	75,7	100,6	255,6	
11	Head office & other gen. services	95,0	8,8	40,7	78,0	1.030,2	1.252,7	
12	Sub-total	1.407,4	1.269,5	2.834,6	10.869,5	13.146,3	29.527,3	
13	Side and service activities	271,3	1.609,8	591,3	5.629,8	1.806,9	9.909,1	
14	Total	1.678,7	2.879,3	3.425,9	16.499,3	14.953,2	39.436,4	13.158,9

* Salaries, wages and social insurance

** Manat converted into US$ at the average free exchange rate of 4.415,8 Manat/$

Azerbaijan State Railways, main sphere (transport activities) **Costs 1996 in 10^6 Manat**

	Cost centre	Salaries, wages	Materials	Fuels	Electricity	Depreciation	Other costs	Total	+ salaries* paid from profi
1	Passenger traffic	778,7	1.306,9	392,0	1.180,3	33,7	3.628,9	7.320,5	
2	Goods traffic (incl. containers)	439,8	176,3	56,6	1.162,3	886,3	2.231,4	4.952,6	
3	Stations	901,5	632,4	367,5	3.987,5	104,1	3.884,4	9.877,4	
4	Traction	1.368,1	3.096,9	9.534,5	44.115,9	749,3	11.795,9	70.660,6	
5	Waggons	1.637,9	4.592,4	2.168,6	1.763,2	3.139,4	15.114,1	28.415,7	
6	Permanent ways	1.297,8	2.065,0	933,4	941,9	1.592,8	23.311,4	30.142,2	
7	Maintenance of buildings	152,6	201,1	146,5	376,8	97,6	3.155,1	4.129,6	
8	Signalisation & telecom.	754,2	1.084,3	133,0	3.363,4	385,4	3.939,7	9.660,0	
9	Electrical installation	423,8	938,7	333,7	1.149,3	358,7	2.553,9	5.758,0	
10	Regional administrations	215,8	65,6	77,4	849,7	66,4	918,6	2.193,5	
11	Head office & other gen. services	599,9	40,1	94,0	262,9	81,8	4.484,7	5.563,4	
12	Sub-total	8.570,0	14.199,7	14.237,3	59.153,2	7.495,3	75.018,1	178.673,6	
13	Side and service activities	1.678,4	14.526,4	4.423,7	35.091,6	719,8	26.572,7	83.012,6	
14	Total	10.248,5	28.726,1	18.661,0	94.244,9	8.215,1	101.590,7	261.686,2	63.766,1

Azerbaijan State Railways, main sphere (transport activities) **Costs 1996, converted to 1,000 US$****

	Cost centre	Salaries, wages	Materials	Fuels	Electricity	Depreciation	Other costs	Total	+ salaries* paid from profi
1	Passenger traffic	180,6	303,1	90,9	273,7	7,8	841,5	1.697,5	
2	Goods traffic (incl. containers)	102,0	40,9	13,1	269,5	205,5	517,4	1.148,4	
3	Stations	209,0	146,6	85,2	924,6	24,1	900,7	2.290,4	
4	Traction	317,2	718,1	2.210,9	10.229,8	173,7	2.735,3	16.385,1	
5	Waggons	379,8	1.064,9	502,9	408,9	728,0	3.504,7	6.589,1	
6	Permanent ways	300,9	478,8	216,4	218,4	369,3	5.405,5	6.989,5	
7	Maintenance of buildings	35,4	46,6	34,0	87,4	22,6	731,6	957,6	
8	Signalisation & telecom.	174,9	251,4	30,8	779,9	89,4	913,6	2.240,0	
9	Electrical installation	98,3	217,7	77,4	266,5	83,2	592,2	1.335,2	
10	Regional administrations	50,0	15,2	18,0	197,0	15,4	213,0	508,6	
11	Head office & other gen. services	139,1	9,3	21,8	61,0	19,0	1.039,9	1.290,1	
12	Sub-total	1.987,3	3.292,7	3.301,4	13.716,7	1.738,1	17.395,5	41.431,6	
13	Side and service activities	389,2	3.368,4	1.025,8	8.137,2	166,9	6.161,8	19.249,3	
14	Total	2.376,5	6.661,1	4.327,2	21.853,9	1.905,0	23.557,3	60.680,9	14.786,3

* Salaries, wages and social insurance

** Manat converted into US$ at the average free exchange rate of 4.349,3 Manat/$

Azerbaijan State Railways, main sphere (transport activitie Costs Jan.- Sept. 1996 in 10^6 Manat

	Cost centre	Salaries, wages	Materials	Fuels	Electricity	Other costs	Total	+ salaries* paid from profit
1	Passenger traffic	657,3	2.499,9	141,2	1.125,1	4.730,8	9.154,3	
2	Goods traffic (incl. containers)	261,4	105,7	35,3	857,9	3.963,0	5.223,3	
3	Stations	596,6	280,0	200,9	3.144,8	15.235,2	19.457,5	
4	Traction	857,2	2.017,8	7.334,9	31.599,8	7.310,1	49.119,9	
5	Waggons	783,9	1.543,8	1.565,8	1.003,3	9.070,5	13.967,4	
6	Permanent ways	803,6	1.176,0	625,0	631,2	17.159,2	20.395,1	
7	Maintenance of buildings	92,0	459,2	74,7	315,0	1.696,0	2.636,9	
8	Signalisation & telecom.	452,2	631,9	102,6	2.361,4	2.939,6	6.487,7	
9	Electrical installation	257,3	657,9	259,0	817,3	1.831,6	3.823,0	
10	Regional administrations	473,1	65,7	101,7	744,3	3.916,4	5.301,3	
11	Head office & other gen. services							
12	Sub-total	5.234,6	9.438,0	10.441,2	42.600,1	67.852,5	135.566,3	
13	Side and service activities	982,0	10.296,2	2.998,0	24.746,0	18.419,3	57.441,4	
14	Total	6.216,5	19.734,1	13.439,2	67.346,1	86.271,8	193.007,8	43.724,3

Azerbaijan State Railways, main sphere (transport activitie Costs Jan.- Sept. 1996, converted to 1,000 US$**

	Cost centre	Salaries, wages	Materials	Fuels	Electricity	Other costs	Total	+ salaries* paid from profit
1	Passenger traffic	152,4	579,7	32,7	260,9	1.097,0	2.122,7	
2	Goods traffic (incl. containers)	60,6	24,5	8,2	198,9	918,9	1.211,2	
3	Stations	138,4	64,9	46,6	729,2	3.532,8	4.511,9	
4	Traction	198,8	467,9	1.700,9	7.327,5	1.695,1	11.390,1	
5	Waggons	181,8	358,0	363,1	232,7	2.103,3	3.238,8	
6	Permanent ways	186,3	272,7	144,9	146,4	3.979,0	4.729,3	
7	Maintenance of buildings	21,3	106,5	17,3	73,0	393,3	611,4	
8	Signalisation & telecom.	104,9	146,5	23,8	547,6	681,6	1.504,4	
9	Electrical installation	59,7	152,6	60,0	189,5	424,7	886,5	
10	Regional administrations	109,7	15,2	23,6	172,6	908,2	1.229,3	
11	Head office & other gen. services							
12	Sub-total	1.213,8	2.188,5	2.421,1	9.878,3	15.733,9	31.435,7	
13	Side and service activities	227,7	2.387,5	695,2	5.738,2	4.271,1	13.319,7	
14	Total	1.441,5	4.576,0	3.116,3	15.616,5	20.005,1	44.755,4	10.139,0

* Salaries, wages and social insurance

** Manat converted into US$ at the average free exchange rate of 4.312,5 Manat/$

Exchange rate Manat/US$ in 1996 (Interbank FX auctions)

January	4.443,2
February	4.440,4
March	4.396,0
April	4.367,3
May	4.352,0
June	4.342,5
July	4.297,6
August	4.283,0
September	4.222,0
October	4.226,0
November	4.230,0
December	4.150,0

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Balance sheets Georgian Railways, main sphere (transport activities)
after distribution of profits

	End 1993 10^6Coupons	End 1994 10^9Coupons	End 1995 10^6 Lari	End 1996 10^6 Lari	31/03/97 10^6 Lari	End 1993 10^6 US$	End 1994 10^6 US$	End 1995 10^6 US$	End 1996 10^6 US$	31/03/97 10^6 US$
Assets									*	
Long term assets	**65.222,4**	**21.974,3**	**215,4**	**208,7**	**205,4**	**0,8**	**15,6**	**175,1**	**163,8**	**159,2**
Major fixed assets: acquis. value	77.596,8	16.665,7	230,0	237,2	233,3	1,0	11,9	187,0	186,2 1)	180,9
Major fixed assets: depreciation	23.567,1	5.627,9	73,5	80,0	80,3	0,3	4,0	59,8	62,8 2)	62,2
Major fixed assets: residual value	54.029,6	11.037,9	156,4	157,1	153,0	0,7	7,9	127,2	123,3 3)	118,6
Mobile equipment	478,6	1,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Uncompleted fixed assets	10.693,3	10.582,2	58,5	51,3	52,2	0,1	7,5	47,5	40,3	40,4
Financial assets	20,9	352,5	0,5	0,2	0,2	0,0	0,3	0,4	0,2	0,2
Short term assets	**198.993,0**	**26.660,2**	**57,7**	**58,2**	**59,1**	**2,6**	**19,0**	**46,9**	**45,7**	**45,8**
Inventory of materials	12.005,3	5.162,6	12,8	15,1	14,3	0,2	3,7	10,4	11,8	11,1
Minor fixed assets: acquis. val.	178,7	72,7	3,3	3,0	2,9	0,0	0,1	2,7	2,3	2,3
Minor fixed assets: depreciation	67,8	33,0	1,5	1,4	1,4	0,0	0,0	1,2	1,1	1,1
Minor fixed assets: residual val.	110,9	39,7	1,8	1,6	1,5	0,0	0,0	1,5	1,3	1,2
Other	4,8	0,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Accounts receivable	11.583,5	2.143,4	36,1	33,9	34,9	0,1	1,5	29,4	26,6	27,0
Advance payments	53.107,6	2.133,2	4,7	4,9	4,8	0,7	1,5	3,9	3,8	3,7
Cash	122.181,0	17.180,6	2,2	2,8	3,5	1,6	12,2	1,8	2,2	2,7
Balance	**264.215,4**	**48.634,5**	**273,1**	**266,9**	**264,5**	**3,4**	**34,6**	**222,0**	**209,5**	**205,0**
Liabilities										
Equity	**107.150,3**	**28.784,2**	**230,6**	**231,8**	**229,2**	**1,4**	**20,5**	**187,5**	**181,9**	**177,6**
Share capital	50.719,6	52,6	0,1	0,1	163,4	0,7	0,0	0,0	0,0	126,7
Fund for special purposes (reserves)	53.021,8	28.679,0	230,5	231,7	65,7	0,7	20,4	187,4	181,8	50,9
Other funds	3.408,9	52,6	0,0	0,1	0,1	0,0	0,0	0,0	0,0	0,1
Long-term liabilities	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**
Short- and medium-term liabilities	**157.065,1**	**19.850,3**	**42,5**	**35,1**	**35,3**	**2,0**	**14,1**	**34,5**	**27,6**	**27,4**
Short-term debts to banks	1.879,5	151,1	0,8	0,6	0,5	0,0	0,1	0,6	0,5	0,4
Bank loans for the staff	0,1	0,0	0,0	0,0		0,0	0,0	0,0	0,0	0,0
Accounts payable:										
Suppliers	24.446,1	7.489,5	14,5	10,2	9,1	0,3	5,3	11,8	8,0	7,0
Salaries	4.665,9	754,2	0,7	0,9	1,1	0,1	0,5	0,5	0,7	0,9
Social insurance	1.966,9	579,8	0,6	0,3	0,4	0,0	0,4	0,5	0,3	0,3
Life and property insurance	1,4	0,2	0,0	0,1	0,1	0,0	0,0	0,0	0,1	0,1
Non-governmental organizations	196,7	6,2	0,0	0,1	0,1	0,0	0,0	0,0	0,1	0,1
Taxes	29.896,6	1.474,4	3,5	3,1	3,1	0,4	1,0	2,9	2,4	2,4
Various creditors	7.643,6	3.706,1	8,7	8,4	7,3	0,1	2,6	7,1	6,6	5,7
Provisions		2.777,4	3,7			0,0	2,0	3,0	0,0	0,0
Reserve	10,8	0,5	0,0	0,0	0,7	0,0	0,0	0,0	0,0	0,6
Various short-term liabilities	86.357,5	2.910,9	9,9	11,5	12,9	1,1	2,1	8,1	9,1	10,0
Balance	**264.215,4**	**48.634,5**	**273,1**	**266,9**	**264,5**	**3,4**	**34,6**	**222,0**	**209,5**	**205,0**

* The real total values at the end of 1996, under consideration of the replacement value, are estimated as follows: 1.400,0 1)
950,0 2)
450,0 3)

Official re-evaluation of fixed assets:

A first re-evaluation took place for the balance sheet as of 31/12/92

For balance sheet 31/12/94	have been multiplied by
- items acquired before 01/10/93	300 times
- items acquired 01/10/92 - 01/04/93	95 "
- items acquired 01/04/93 - 01/08/93	35 "
- items acquired 01/08/93 - 01/10/93	7 "
- items acquired 01/10/93 - 01/12/93	1,4 "
- items acquired 01/12/93 - 01/01/94	1,0 "

For balance sheet 31/12/95	have been multiplied by
- items acquired before 01/01/94	12,7 times
- items acquired 01/01/94 - 01/10/94	12,7 "
- items acquired 01/10/94 - 01/01/95	1,0 "

Exchange rates	Per US$
End 1993	77.394 Coupons
End 1994	1,4047 10^6 Coup.
End 1995	1,2300 Lari
End 1996	1,2740 Lari
February, 1997	1,2900 Lari

Annex 2.4.3 - 2

Acquisition value of the fixed assets of Georgian Railways existing in the books at the end of 1995

Category	Acquisition value (after revaluation) in 1,000 Lari
Buildings	26,899
Permanent ways	91,557
Electric and transmission cables and installations	11,340
Machinery and equipment	10,423
Rolling stock	89,030
Tools and inventory	715
Total	229,964
= in 1,000 US$ (approx.)	186,963

Annex 2.4.3-3

Georgian Railways. main sphere (transport activities)

Profit and loss statements

	1993 10^6 Coupons		1994 10^9 Coupons		1995 Million Lari		1996 Million Lari	
	+	-	+	-	+	-	+	-
Gross revenue (main activities)	120.851		34.255,5		62,3		57,8	
Value added tax		11.257		948,4		3,7		7,5
Costs (main activities)		72.577		13.692,1		42,0		50,5
Profit (main activities)		37.017		19.615,1		16,7		-0,2
	120.851	120.851	34.255,5	34.255,5	62,3	62,3	57,8	57,8
Receipts and expenses not related to transport services	39.337	2.260	1.431,5	1.318,9	1,5	2,1	3,5	2,7
Net profit side activities		37.077		112,6		-0,6		0,9
	39.337	39.337	1.431,5	1.431,5	1,5	1,5	3,5	3,5
Total profit	74.094		19.727,7		16,1		0,7	
Distribution:								
State (profit tax)		28.331		2.591,1		2,1		0,1
"Accumulation fund"		21.812		11.851,9		8,6		
"Consumption fund"		23.329		4.979,7		3,8		
Pension fund								
Other reserves		623		304,9		1,6		0,8

Conversion into US$

Average parity Coupons/US$:				Average parity Lari/US$:			
for 1993: 12.000		for 1994: 1096488		for 1995: 1,2846		for 1996: 1,2637	
1993 1000 US$		1994 1000 US$		1995 1000 US$		1996 1000 US$	
+	-	+	-	+	-	+	-
Gross revenue (main activities)	10.070,9	0	31.241,1	0,0	48.508,8	0,0	45.764,4	0,0
Value added tax	0,0	938,1	0,0	864,9	0,0	2.854,5	0,0	5.928,9
Costs (main activities)	0,0	6.048,1	0,0	12.487,2	0,0	32.686,4	0,0	39.971,6
Profit (main activities)		3.084,7		17.889,0		12.967,9		-136,1
	10.070,9	10.070,9	31.241,1	31.241,1	48.508,8	48.508,8	45.764,4	45.764,4
Receipts and expenses not related to transport services	3.278,1	188,3	1.305,6	1.202,9	1.184,8	1.623,0	2.804,1	2.118,6
Net profit side activities		3.089,8		102,7		-438,3		685,5
	3.278,1	3.278,1	1.305,6	1.305,6	1.184,8	1.184,8	2.804,1	2.804,1
Total profit	6.174,5		17.991,7		12.529,6		549,4	

Annex 2.4.3-4

Georgian Railways. Transport and revenue statistics, 1993 - 1996

	Unit	1993	1994	1995	1996
Goods transport					
Total performance	10^3 t.km	1.553.554	955.291	1.245.981	1.141.381
- of which domestic	10^3 t.km	549.015	340.878	211.785	197.566
- international	10^3 t.km	1.003.163	613.949	1.034.090	943.270
- luggage	10^3 t.km	1.376	464	106	545
Tonnes transported	10^3 t	7.965,9	3.173,4	4.656,4	4.723,7
- of which domestic	10^3 t	3.210,0	1.764,8	1.286,6	1.412,0
- international	10^3 t	4.751,0	1.406,7	3.369,4	3.309,9
- luggage	10^3 t	5,0	1,9	0,4	1,8
Revenues		10^3 Coupons	10^6 Coupons	Lari	Lari for 9 months
		77.866.822	28.971.857	46.084.553	29.285.640
Revenues, converted to US$		US$	US$	US$	US$for 9 months
		6.488.902	26.422.423	35.873.702	23.175.283
Portion of costs attributed to		10^3 Coupons	10^6 Coupons	Lari	Lari for 9 months
goods transport		39.507.956	6.907.258	20.220.891	n.a.
converted to US$		US$	US$	US$	US$for 9 months
		3.292.330	6.299.441	15.740.593	n.a.
Passenger transport					
Total performance	10^3 pass.km	1.004.935	1.164.502	371.316	380.261
- of which domest.long dist.	10^3 pass.km	497.004	368.808	128.880	259.294
- suburban	10^3 pass.km	447.003	784.267	241.446	120.799
- international	10^3 pass.km	60.928	11.427	990	168
Passengers transported	10^3 passeng.	8.314,8	10.997,7	3.673,9	3.008,1
- of which domest.long dist.	10^3 passeng.	1.957,2	1.503,3	651,8	1.400,4
- suburban	10^3 passeng.	5.642,2	9.333,0	3.008,6	1.604,5
- international	10^3 passeng.	715,3	161,4	13,5	3,2
Revenues		10^3 Coupons	10^6 Coupons	Lari	Lari for 9 months
		14.957.659	446.898	625.119	1.641.851
Revenues, converted to US$		US$	US$	US$	US$for 9 months
		1.246.472	407.572	486.613	1.299.284
Portion of costs attributed to		10^3 Coupons	10^6 Coupons	Lari	Lari for 9 months
passenger transport		20.183.122	4.392.264	12.426.469	n.a.
converted to US$		US$	US$	US$	US$for 9 months
		1.681.927	4.005.758	9.673.164	n.a.
Total revenues main activities		10^3 Coupons	10^6 Coupons	Lari	Lari for 9 months
(goods + passenger transp.)		92.824.481	29.418.755	46.709.672	30.927.491
converted to US$		US$	US$	US$	US$for 9 months
		7.735.373	26.829.996	36.360.314	24.474.567
Total costs main activities		10^3 Coupons	10^6 Coupons	Lari	Lari
(goods + passenger transp.)		59.691.078	11.299.522	32.647.360	45.047.611
converted to US$		US$	US$	US$	US$
		4.974.257	10.305.199	25.413.757	35.648.569
Profit main activities		10^3 Coupons	10^6 Coupons	Lari	Lari
		33.133.403	18.119.233	14.062.312	-3.810.956 *
converted to US$		US$	US$	US$	US$
		2.761.117	16.524.797	10.946.557	-3.015.812 *

* Approximate; calculated by converting the revenues for 9 months to annual figures by multiplying them with 4/3.

Georgian Railways, main sphere (transport activities) Costs in 10^6 Coupons 1993

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Repairs, repair fund	Other costs	Total
1	Passenger traffic	1.145	424	242		106		403	156	579	579	3.634
2	Goods traffic (incl. containers)	463	171	5		34		176	1	12	20	882
3	Stations	1.781	659	22		34		509	13	102	283	3.403
4	Traction	3.885	1.437	336	9.051	1.054	9.190	425	278	1.368	371	27.395
5	Waggons	1.751	648	82		534		164	880	39	657	4.755
6	Permanent ways	2.616	968	393		625		72	557	5.733	1.855	12.819
7	Buildings	72	26	7		7		32	91	569	177	981
8	Signalisation & telecom.	774	287	61		68		379	61	186	142	1.958
9	Electrical installation	948	351	94		201		149	146	8	37	1.934
10	Regional administrations	556	206	7		78		87	53	31	71	1.089
11	Head office & other gen. services	251	93	2				64	17	60	355	842
12	Sub-total	14.242	5.270	1.251	9.051	2.741	9.190	2.460	2.253	8.687	4.547	59.692
13	Side and service activities	3.920	1.446	2.191		1.416		1.584	83	654	7.617	18.911
14	Total	18.162	6.716	3.442	9.051	4.157	9.190	4.044	2.336	9.341	12.164	78.603

Georgian Railways, main sphere (transport activities) Costs 1993 converted to US$*

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Repairs, repair fund	Other costs	Total
1	Passenger traffic	95.417	35.333	20.167		8.833		33.583	13.000	48.250	48.250	302.833
2	Goods traffic (incl. containers)	38.583	14.250	417		2.833		14.667	83	1.000	1.667	73.500
3	Stations	148.417	54.917	1.833		2.833		42.417	1.083	8.500	23.583	283.583
4	Traction	323.750	119.750	28.000	754.250	87.833	765.833	35.417	23.167	114.000	30.917	2.282.917
5	Waggons	145.917	54.000	6.833		44.500		13.667	73.333	3.250	54.750	396.250
6	Permanent ways	218.000	80.667	32.750		52.083		6.000	46.417	477.750	154.583	1.068.250
7	Buildings	6.000	2.167	583		583		2.667	7.583	47.417	14.750	81.750
8	Signalisation & telecom.	64.500	23.917	5.083		5.667		31.583	5.083	15.500	11.833	163.167
9	Electrical installation	79.000	29.250	7.833		16.750		12.417	12.167	667	3.083	161.167
10	Regional administrations	46.333	17.167	583		6.500		7.250	4.417	2.583	5.917	90.750
11	Head office & other gen. services	20.917	7.750	167				5.333	1.417	5.000	29.583	70.167
12	Sub-total	1.186.833	439.167	104.250	754.250	228.417	765.833	205.000	187.750	723.917	378.917	4.974.333
13	Side and service activities	326.667	120.500	182.583		118.000		132.000	6.917	54.500	634.750	1.575.917
14	Total	1.513.500	559.667	286.833	754.250	346.417	765.833	337.000	194.667	778.417	1.013.667	6.550.250

* Coupons converted into US$ at the average free exchange rate (TICEX) of 12.000 Coupons/$ (estimated)

Georgian Railways, main sphere (transport activities) Costs in 10^9 Coupons 1994

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Repairs, repair fund	Other costs	Total
1	Passenger traffic	134,6	49,8	26,9		14,9		96,0	43,4	242,6	124,3	732,5
2	Goods traffic (incl. containers)	48,4	17,9	2,2		0,6		32,7	0,3	0,6	23,8	126,5
3	Stations	201,2	74,5	3,7		5,9		109,4	1,2	2,4	385,9	784,2
4	Traction	509,7	188,6	163,2	842,1	38,2	2.352,1	97,7	70,6	369,1	410,4	5.041,7
5	Waggons	218,2	80,7	20,8		69,5		34,2	275,2	12,4	474,2	1.185,2
6	Permanent ways	396,5	146,7	36,8		165,5		22,6	131,1	554,6	527,2	1.981,0
7	Buildings	9,7	3,6	3,2		0,7		11,7	12,7	111,8	68,6	222,0
8	Signalisation & telecom.	105,3	39,0	4,6		23,8		127,3	16,6	37,2	92,5	446,3
9	Electrical installation	130,4	48,3	17,9		33,9		57,6	22,7	2,4	89,4	402,6
10	Regional administrations	57,7	21,3	11,9		7,9		20,1	2,7	37,9	11,1	170,6
11	Head office & other gen. services	49,8	18,4	0,6				18,4	3,3		116,3	206,8
12	Sub-total	1.861,5	688,8	291,8	842,1	360,9	2.352,1	627,7	579,8	1.371,0	2.323,7	11.299,4
13	Side and service activities	725,8	268,8	498,5		186,9		333,4	17,9	621,6	659,9	3.312,8
14	Total	2.587,3	957,6	790,3	842,1	547,8	2.352,1	961,1	597,7	1.992,6	2.983,6	14.612,2

Georgian Railways, main sphere (transport activities) Costs 1994 converted to 1000 US$*

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Repairs, repair fund	Other costs	Total
1	Passenger traffic	122,8	45,4	24,5		13,6		87,6	39,6	221,3	113,4	668,0
2	Goods traffic (incl. containers)	44,1	16,3	2,0		0,5		29,8	0,3	0,5	21,7	115,4
3	Stations	183,5	67,9	3,4		5,4		99,8	1,1	2,2	351,9	715,2
4	Traction	464,8	172,0	148,8	768,0	34,8	2.145,1	89,1	64,4	336,6	374,3	4.598,0
5	Waggons	199,0	73,6	19,0		63,4		31,2	251,0	11,3	432,5	1.080,9
6	Permanent ways	361,6	133,8	33,6		150,9		20,6	119,6	505,8	480,8	1.806,7
7	Buildings	8,8	3,3	2,9		0,6		10,7	11,6	102,0	62,6	202,5
8	Signalisation & telecom.	96,0	35,6	4,2		21,7		116,1	15,1	33,9	84,4	407,0
9	Electrical installation	118,9	44,0	16,3		30,9		52,5	20,7	2,2	81,5	367,2
10	Regional administrations	52,6	19,4	10,9		7,2		18,3	2,5	34,6	10,1	155,6
11	Head office & other gen. services	45,4	16,8	0,5				16,8	3,0		106,1	188,6
12	Sub-total	1.697,7	628,2	266,1	768,0	329,1	2.145,1	572,5	528,8	1.250,4	2.119,2	10.305,1
13	Side and service activities	661,9	245,1	454,6		170,5		304,1	16,3	566,9	601,8	3.021,3
14	Total	2.359,6	873,3	720,8	768,0	499,6	2.145,1	876,5	545,1	1.817,3	2.721,1	13.326,4

* Coupons converted into US$ at the average free exchange rate (TICEX) of 1.096.488 Coupons/$

Georgian Railways, main sphere (transport activities) Costs in 1000 Laris 1995

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Repairs, repair fund	Other costs	Total
1	Passenger traffic	395,4	146,7	280,1		34,5		214,7	173,7	1.073,9	869,4	3.188,4
2	Goods traffic (incl. containers)	140,5	52,1	6,2		2,6		63,9	0,2	73,5	17,9	356,9
3	Stations	662,5	245,8	14,9		5,4		216,5	8,1	95,1	845,6	2.093,9
4	Traction	1.556,9	577,5	684,5	1.954,8	56,2	3.879,9	288,7	319,5	775,4	477,3	10.570,7
5	Waggons	719,8	267,0	187,8		148,7		67,8	485,6	37,5	474,7	2.388,9
6	Railway lines	1.194,9	443,2	428,6		288,0		61,7	500,5	2.424,0	3.408,7	8.749,6
7	Buildings	25,7	9,5	4,6		6,2		32,4	54,1	470,5	517,2	1.120,2
8	Signalisation & telecom.	368,2	136,6	84,1		55,7		128,0	77,0	167,1	335,9	1.352,6
9	Electrical installation	404,6	150,1	135,0		58,8		113,0	100,4	32,9	507,0	1.501,8
10	Regional administrations	248,4	92,1	54,1		3,0		40,2	7,6	118,5	40,6	604,5
11	Head office & other gen. services	164,6	61,1	22,4		38,8		25,5	40,6		367,1	720,1
12	Sub-total	5.881,5	2.181,7	1.902,3	1.954,8	697,9	3.879,9	1.252,4	1.767,3	5.268,4	7.861,4	32.647,6
13	Side and service activities	2.363,0	587,4	2.698,3		784,2		1.478,6	107,3	2.083,3	1.063,9	11.166,0
14	Total	8.244,5	2.769,1	4.600,6	1.954,8	1.482,1	3.879,9	2.731,0	1.874,6	7.351,7	8.925,3	43.813,6

Georgian Railways, main sphere (transport activities) Costs 1995 converted to 1000 US$*

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Repairs, repair fund	Other costs	Total
1	Passenger traffic	307,8	114,2	218,0		26,9		167,1	135,2	836,0	676,8	2.482,0
2	Goods traffic (incl. containers)	109,4	40,6	4,8		2,0		49,7	0,2	57,2	13,9	277,8
3	Stations	515,7	191,3	11,6		4,2		168,5	6,3	74,0	658,2	1.630,0
4	Traction	1.211,9	449,5	532,8	1.521,7	43,7	3.020,2	224,7	248,7	603,6	371,5	8.228,6
5	Waggons	560,3	207,8	146,2		115,8		52,8	378,0	29,2	369,5	1.859,6
6	Railway lines	930,1	345,0	333,6		224,2		48,0	389,6	1.886,9	2.653,4	6.811,0
7	Buildings	20,0	7,4	3,6		4,8		25,2	42,1	366,3	402,6	872,0
8	Signalisation & telecom.	286,6	106,3	65,5		43,4		99,6	59,9	130,1	261,5	1.052,9
9	Electrical installation	315,0	116,8	105,1		45,8		88,0	78,2	25,6	394,7	1.169,0
10	Regional administrations	193,4	71,7	42,1		2,3		31,3	5,9	92,2	31,6	470,6
11	Head office & other gen. services	128,1	47,6	17,4		30,2		19,9	31,6		285,8	560,5
12	Sub-total	4.578,3	1.698,3	1.480,8	1.521,7	543,3	3.020,2	974,9	1.375,7	4.101,1	6.119,6	25.413,9
13	Side and service activities	1.839,4	457,3	2.100,4		610,4		1.151,0	83,5	1.621,7	828,2	8.692,0
14	Total	6.417,8	2.155,6	3.581,3	1.521,7	1.153,7	3.020,2	2.125,9	1.459,2	5.722,8	6.947,7	34.105,9

* Laris converted into US$ at the average free exchange rate (TICEX) of 1,2846 Lari/$

Georgian Railways, main sphere (transport activities) **Costs in 1000 Laris** **1996**

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Repairs, repair fund	Other costs	Total
1	Passenger traffic	557,9	161,8	405,1		54,9		100,5	594,4	867,3	429,7	3.171,7
2	Goods traffic (incl. containers)	182,6	52,9	7,8		3,4		42,0	2,1	184,6	253,8	729,2
3	Stations	846,6	245,5	24,5		10,5		244,2	40,9	351,8	573,1	2.337,1
4	Traction	1.962,5	569,1	914,0	1.668,5	104,3	3.950,5	112,7	1.126,2	971,4	760,2	12.139,2
5	Waggons	1.064,1	308,6	525,7		156,0		62,8	1.551,2	913,2	826,6	5.408,3
6	Permanent ways	1.761,9	510,9	894,0		203,6		30,7	1.511,5	6.856,1	707,5	12.476,3
7	Buildings	40,4	11,7					6,2	172,6	604,6	1.091,2	1.926,7
8	Signalisation & telecom.	497,7	144,3	77,2		34,5		115,1	266,5	500,9	45,5	1.681,7
9	Electrical installation	578,9	167,9	264,5		59,6		82,6	279,5	1.517,6	188,7	3.139,3
10	Regional administrations	308,1	89,3	83,1		6,9		12,5	14,8	339,7	175,7	1.030,2
11	Head office & other gen. services	243,9	70,7	37,4		1,5		26,5	77,9	110,0	440,1	1.007,9
12	Sub-total	8.044,5	2.332,9	3.233,2	1.668,5	635,2	3.950,5	835,9	5.637,7	13.217,2	5.492,1	45.047,6
13	Side and service activities	3.461,8	1.003,9	4.938,1		869,9		1.844,2	351,7	1.076,7	4.003,6	17.549,9
14	Total	11.506,3	3.336,8	8.171,3	1.668,5	1.505,1	3.950,5	2.680,1	5.989,4	14.293,8	9.495,7	62.597,5

Georgian Railways, main sphere (transport activities) **Costs** **1996** **converted to 1000 US$***

	Cost centre	Salaries, wages	Social insurance	Materials	Fuels for traction	Fuels for other	Electricity for traction	Electricity for other	Depre-ciation	Repairs, repair fund	Other costs	Total
1	Passenger traffic	441,5	128,0	320,6		43,5		79,5	470,4	686,4	340,1	2.510,0
2	Goods traffic (incl. containers)	144,5	41,9	6,2		2,7		33,2	1,7	146,1	200,8	577,0
3	Stations	669,9	194,3	19,4		8,3		193,3	32,4	278,4	453,5	1.849,5
4	Traction	1.553,0	450,4	723,3	1.320,3	82,5	3.126,3	89,2	891,2	768,7	601,6	9.606,4
5	Waggons	842,1	244,2	416,0		123,5		49,7	1.227,5	722,7	654,1	4.279,9
6	Permanent ways	1.394,3	404,3	707,4		161,1		24,3	1.196,1	5.425,6	559,9	9.873,1
7	Buildings	32,0	9,3					4,9	136,6	478,4	863,5	1.524,7
8	Signalisation & telecom.	393,8	114,2	61,1		27,3		91,1	210,9	396,4	36,0	1.330,8
9	Electrical installation	458,1	132,9	209,3		47,2		65,3	221,2	1.200,9	149,3	2.484,3
10	Regional administrations	243,8	70,7	65,7		5,4		9,9	11,8	268,8	139,0	815,2
11	Head office & other gen. services	193,0	56,0	29,6		1,2		21,0	61,7	87,0	348,3	797,6
12	Sub-total	6.366,0	1.846,2	2.558,6	1.320,3	502,7	3.126,3	661,5	4.461,4	10.459,5	4.346,2	35.648,6
13	Side and service activities	2.739,5	794,4	3.907,8		688,4		1.459,4	278,3	852,0	3.168,3	13.888,2
14	Total	9.105,5	2.640,6	6.466,4	1.320,3	1.191,1	3.126,3	2.120,9	4.739,7	11.311,5	7.514,5	49.536,7

* Laris converted into US$ at the average free exchange rate (TICEX) of 1,2637 Lari/$

Annex 2.4.4-1

Separation of costs between passenger transport and freight transport (Summary of an accounting document for 1995, simplified)

Cost centre / cost category	Distribution of costs (according to)	Nr.	Total cost	Amount to be allocated to passenger transport	Amount to be allocated to freight transport
I. Container and passenger transport, commercial service					
a) Stations					
Passenger transport					
Ticketing	Passenger transport	1			
Luggage	"	2			
Shunting for passenger transport	"	3			
Other services for passenger transport	"	4			
Technical services for passenger transport	"	5			
Sum 1-5		6			
All expenses for stations	Passenger transport	7			
Personnel costs for passenger transport	"	8			
Sum 1-8		9			
Container transport and commercial service					
All expenses for container transport and commercial service	Freight transport	10			

Cost centre / cost category	Distribution of costs (according to)	Nr.	Total cost	Amount to be allocated to passenger transport	Amount to be allocated to freight transport
Auxiliary services					
Shunting for freight transport	Freight transport	11			
Shunting at other stations	Wagon-km, except electric and Diesel trains	12			
Receiving trains, formalities	Freight transport	13			
Other expenses	Locomotive-km or train-km	14			
Sum 11-14		15			
Other expenses at stations	Salaries	16			
Other expenses	Salaries	17			
Sum 15 - 17		18			
Maintenance of the train staff	Freight transport	19			
Sum 9+10+18+19		20			
II. Locomotive operation					
A. Locomotives and motor coaches					
1. Electric locomotives					
Operation costs for passenger traffic	Passenger transport	21			
Electricity for traction for passenger traffic	"	22			
Operation costs for freight traffic	Freight traffic	23			
Electricity for traction for freight traffic	"	24			
Operation costs for shunting	As for 3, 21 and 22*	25			

Cost centre / cost category	Distribution of costs (according to)	Nr.	Total cost	Amount to be allocated to pas-senger transport	Amount to be allocated to freight transport
Equipment for passenger traffic	Passenger transport	26			
Equipment for freight traffic	Freight transport	27			
Equipment for shunting	As for 3, 21 and 22*	28			
Maintenance electric locomotives for passenger traffic	Passenger transport	29			
Maintenance electric locomotives for freight traffic	Freight transport	30			
Maintenance electric shunting locomotives	As for 3, 21 and 22*	31			
Minor repairs on electric locomotives for passenger traffic	Passenger transport	32			
Minor repairs on electric locomotives for freight traffic	Freight transport	33			
Minor repairs on electric shunting locomotives	As for 3, 21 and 22*	34			
Depreciation electric locomotives	?	35			
Depreciation electric shunting locomotives	As for 3, 21 and 22*	36			
Sum 21+23+(25 to 36)		37			
Other costs	In proportion of 37	38			
Overhead costs	In proportion of 37	39			
Sum 37+38+39		40			

Cost centre / cost category	Distribution of costs (according to)	Nr.	Total cost	Amount to be attributed to passenger transport	Amount to be attributed to freight transport
2. Electric motor coaches					
Operation costs	Passenger transport	41			
Electricity for traction	"	42			
3. Diesel locomotives					
Analogous to electric locomotives		43 to 60			
4. Diesel motor coach trains					
All costs	Passenger transport	61			
5. Steam locomotives					
All costs	As for 3, 21 and 22*	62			
Total locomotives and motor coaches (40+41+60+61+62)		63			
III. Wagons					
Technical services and minor repairs passenger wagons	Passenger transport	64			
Repairs passenger wagons	Passenger transport	65			
Repairs goods wagons	Freight transport	66			
Repairs insulated wagons	Freight transport	67			
Current maintenance passenger wagons	Passenger transport	68			
Depreciation passenger wagons	"	69			
Depreciation luggage vans	"	70			

Cost centre / cost category	Distribution of costs (according to)	Nr.	Total cost	Amount to be attributed to passenger transport	Amount to be attributed to freight transport
Depreciation of goods wagons, of containers and of refrigeration trains	Freight transport	71			
Sum 64 to 71		72			
Overhead costs	?	73			
General overhead costs	?	74			
Sum 72+73+74		75			
IV. Permanent ways					
Maintenance main lines	Gross tkm	76			
Depreciation of ground, civil structures and tracks	"	77			
Maintenance other lines	As for 3, 21 and 22*	78			
Guarding...	Locomotive-km ...	79			
Depreciation branch tracks	Freight transport	80			
Sum 76 to 80		81			
Common costs permanent ways	?	82			
General common costs permanent ways	?	83			
Sum 81+82+83		84			
V. Superstructures					
Details not given here		85 to 91			

Cost centre / cost category	Distribution of costs (according to)	Nr.	Total cost	Amount to be attributed to passenger transport	Amount to be attributed to freight transport
VI. Signalling and telecommunication					
Details not given here		92 to 99			
VII. Electricity supply					
Details not given here		100 to 107			
VIII. Services to foreign trains					
Details not given here		108 to 110			
IX. Regional offices					
Details not given here		111 to 119			
X. Head office					
Details not given here		120 to 124			

* The distribution key is not clear; it is probably meant "in proportion of the cost relation 3+21+22 / 11+23+24".

Chapter 3

Traffic forecast

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3 Traffic forecast

3.1 Freight traffic forecast

3.1.0 Introduction

Apart from the general problems in drawing up a forecast for traffic development under the current political and economic conditions in the region, explained in the following chapter, there were additional difficulties due to existing problems in making available the necessary statistical reference data. Whereas relatively detailed internal statistical data on the development of traffic could be made available by the Azerbaijan Railways, the Armenian and Georgian Railways have not got available such detailed data.

Unfortunately, there is scarcely reliable data on road transport in all three countries.

The very informative Azerbaijan statistics on foreign trade offered an important basis for drawing up the forecast. Furthermore, national foreign trade statistics of Western European and Central Asian countries as well as of the CIS were included in the investigations. A great number of different other sources, e.g. customs, trade authorities, industrial companies, forwarders had to be utilised for data collection.

Due to the data availability described above, assumptions or own calculations were necessary in many cases to work on. These cases are explained in detail in the following.

There was close coordination and data exchange with other running relevant TRACECA projects, especially with:

- Regional traffic forecasting model
- Forwarding / Multimodal transport system
- Technical assistance for the development of the Port of Baku
- Port network plan and improvement programme

The results of the forecast of freight traffic have been discussed and harmonised with the local authorities. After discussions with the railway administrations, the Ministry of Transport of Georgia, the Ministries of Economy of Georgia and Azerbaijan, the results presented in the Interim report had been slightly amended. This concerns mainly the transport volumes of oil products, especially in the pessimistic scenario, as well as the transit traffic from and to Central Asia.

3.1.1 Methodology

Traditional mathematical and statistical methods of traffic forecasts, normally used under West European conditions, do not apply to the prognosis of traffic flows under the current situation in East European countries. These methods would lead to very imprecise results, under the conditions prevailing in the successor states to the Former Soviet Union (FSU), at the moment. The most important reasons, which make a different methodological approach necessary, are:

- The disintegration of the Soviet Union and the transition from the centrally planned economy to market economy structures have led to thoroughgoing structural changes in politics and the economy;

- The traditional economic, trade and clearing relations between the former Soviet republics have more or less all collapsed. The trade relations of the republics investigated are currently undergoing a completely new geographical and structural orientation;

- The former strong central influence on the role of the individual modes of transport led to a state approved modal split, which is now being influenced more and more by the conditions prevailing on the market;

- There is no detailed statistical data base on production, trade and traffic. Existing data is partly incomplete or the information is severely limited. Statistical time rows for the previous period of time are without informative value due to the considerable structural amendments or the changed statistical registration methods.

Due to the reasons mentioned, a methodology was applied in drawing up the traffic volume forecast, tailor-made for the conditions of the East European reform states.

This special methodology of the Consultant includes the following main elements:

The most important initial item to be analysed for assessing the future traffic volume is the development of the main economic indices, especially the Gross Domestic Product (GDP). The assumption is that there is a close connection between the development of the GDP and the total traffic volume of a country, which has been extensively proved by analogue investigations in various East European countries and for different periods of time.

The development of selected branches of the economy, which are of special importance for the traffic volume of the railways, have been assessed in detail to further verify the forecast. These are above all the oil processing industry, the chemical industry, the non-ferrous and ferrous metallurgy, the building materials industry as well as agriculture, for the respective period of investigation.

The foreign trade relations are of special significance for the development of the freight traffic volume. That is why very detailed investigations were conducted on the

current and the future structures and trade volumes. The studies also included the foreign trade relations of other countries, which are of interest especially for the transit traffic of the region, e.g. the Central Asian republics, Russia, Turkey, Iran.

The possible development of the mentioned factors is depicted in two scenarios, an optimistic and a pessimistic one.

On the basis of assessing all these above-mentioned factors and a special interlinking of them annual growth rates were deducted for the development of the transport volume in the mentioned railway traffic for the period up to 2015, divided according to domestic traffic, export, import, transit and that in the respective two scenarios. The statistical data for 1995 served as reference figures. Separate assumptions on the production and trade volume were made for individual types of goods, which are of particular importance for the total traffic volume. These assumptions are described in the following. This applies especially to the oil processing sector, cotton, and container traffic.

The traffic volume for important transport corridors was established on the basis of these statements on the development of the total traffic. In doing so, the pertaining development rates for the individual segments (export, import, transit, domestic traffic) were used, and where necessary, they were harmonised with the data of neighbouring railways. The establishment of a reliable starting level posed a problem for those transport corridors along which there is no or a very limited freight traffic due to the political tensions in the region. The respective approach chosen is explained in detail in the relevant section.

3.1.2 Development of GDP

The assessment of the possible development of the Gross Domestic Product, as one of the most important economic indices, was conducted with the help of an analysis of the economic and political situation, based on selected important factors such as

- political stability,
- climate for investment,
- situation of the national economy,
- stability of the money value / availability of foreign currency,
- foreign trade as well as
- the stage of the reform process.

Furthermore, similar investigations conducted by the World Bank, the IMF and the World Food Program were included in the assessment.

As the calculation of the GDP is conducted very differently in the individual countries, and especially the statistical reference figures available in the three countries are relatively unreliable at present, this investigation was carried out without using

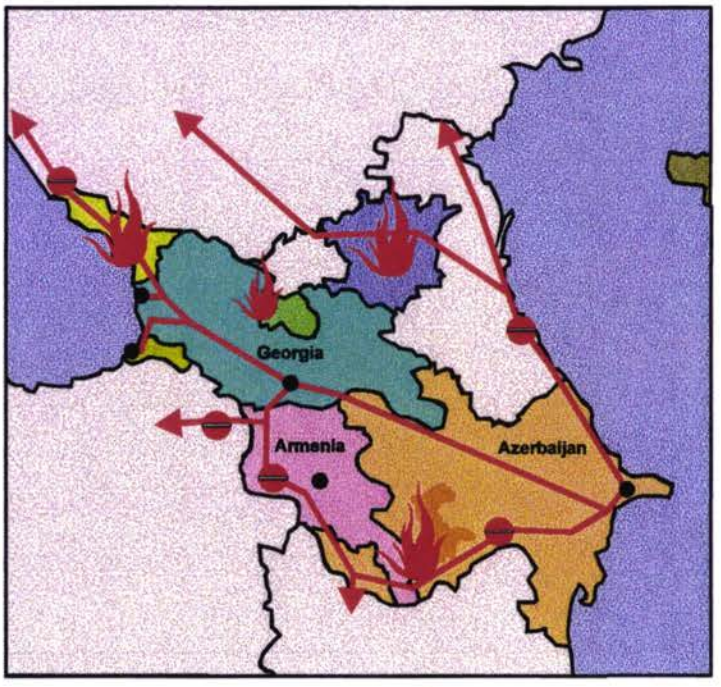
absolute figures for the GDP. The assessment was drawn up on the basis of the annual percentage of change, using the year 1989 as the year of reference.
The width and breadth of a possible development is depicted in an optimistic and a pessimistic scenario, separately for each country.
Despite all care taken in the analysis of the economic situation, a forecast of the socio-economic development of the Caucasus republics is connected with a great amount of insecurity, due to the unstable political situation of the region.

3.1.2.1 Political situation

At the moment, the entire region of the Caucasus is covered with manifold flashpoints of conflicts.

National, ethnic and religious disputes, often connected with military confrontations, have led to a severe impairment of the economic situation in the region. The existing, historically grown transport system is especially badly affected, above all the inter-regional and international rail links. Such important lines as Baku - Nakhichevan - Dshulfa - Iran, Baku - Yalama - Russia or Tbilisi - Sukhumi - Russia have been either completely closed down or strongly restricted due to the political conflicts.

Fig. 3.1.2-1: Political situation in the Caucasus region



The future political situation in the region will influence the further economic situation in Armenia, Azerbaijan and Georgia decisively and thus the situation of the railways.

Armenia

After the disintegration of the former Soviet Union, the Republic of Armenia declared its independence in 1991. A new constitution was adopted in 1995. Armenia has had the most stable domestic political development of the three Caucasus republics. Up until now, the country has been spared civil-war type of strife, ethnic conflicts or separatist movements.

The relatively stable domestic conditions, which developed subsequently to reaching independence, have contributed to the fact that the course of reforms adopted by the government has already led to considerable success on the path towards a market economy, as compared to the other republics of the former Soviet Union.

The economic situation of the country is put under a particularly severe strain because of the conflict of Nagorno-Karabakh. As Armenia is more or less at war with Azerbaijan, all important transport routes from and to Azerbaijan are blocked. This is especially difficult, as in the past nearly 80 per cent of all transports from and to Armenia were conducted in transit via Azerbaijan. The conflict of Nagorno-Karabakh has also strained relations with Turkey considerably. There are no transport links with this neighbouring country either.

There are relatively close political ties with Russia and Iran, at the moment. Apart from that, Armenia maintains very close and good relations with Western Europe and the USA.

Azerbaijan

Stable domestic political conditions continue to prevail in Azerbaijan. The process of democratisation is progressing further.

The economic situation of the country is still severely strained by the conflict surrounding Nagorno-Karabakh. At the moment, a solution of the conflict is hard to asses, especially as regards the time schedule. There are first indicators which signal readiness for a negotiated settlement. The railway connection to Nakhichevan is severed, whereby this part of Azerbaijan is hardly accessible by road (only via Iran). Traditional transport ways from and to Russia are also barely usable due to the conflict in Chechnya.

Just as Armenia, the further economic development over the years to come will be determined above all by the political situation in the region.

Georgia

Religious and ethnic conflicts and nationalistic sentiments have led to serious civil disturbances in several areas of the country.
The political situation inside the country has stabilised following the election of E. Shevardnadse as President. The interior order was re-established. Nevertheless,

there is still an internal potential of conflict, which should not be underestimated, even today. The further political stabilisation, especially the solving of the problems of Abkhasia, South Ossetia and Adsharia will influence decisively the future economic situation of the country.

3.1.2.2 Makroeconomic development

Armenia

Among the former Soviet republics Armenia experienced the most extreme drop in the Gross Domestic Product at the beginning of the process of reforms. From 1989 to 1993, the GDP dropped by more than 60 %.

On the other hand, Armenia is the only country among the former Soviet republics which has featured positive growth rates of the Gross Domestic Product as of 1994. There was a GDP growth rate of more than 6 per cent in 1995. This development is mainly due to the speedy progress in the process of transition to market economy structures. The reform process was initiated relatively early and determinedly, above all thanks to the stable domestic situation. Starting in 1991, the reform process covered practically all spheres of the national economy.

Further positive effects are to be expected mainly from a comprehensive programme of macroeconomic stabilisation and structural reforms, which was drawn up by the government in 1995, in cooperation with renown international financial institutions.

The gradual economic growth is accompanied by a further drop in the rate of inflation as well as the budget deficit.

The following framework conditions formed the basis for the assessment of the future development of the GDP:

Optimistic scenario	Pessimistic scenario
Political situation:	
❒ the domestic situation in Armenia will remain stable also in future, the democratic conditions will be further strengthened in the country	❒ growing social problems will put a strain on the internal stability
❒ by the year 2000, a stage will have been reached in the conflict of Nagorno-Karabakh which will allow the opening of important transit corridors through Azerbaijan (Nakhichevan/Dshulfa), the relations with Turkey will also have normalised at this point in time	❒ the problem of Nagorno-Karabakh will be solved by the year 2005 at the earliest, thus the transit transports through Azerbaijan will not be possible in the year 2000 yet, first progress in the relations with Turkey will enable transports of a limited extent between the two countries

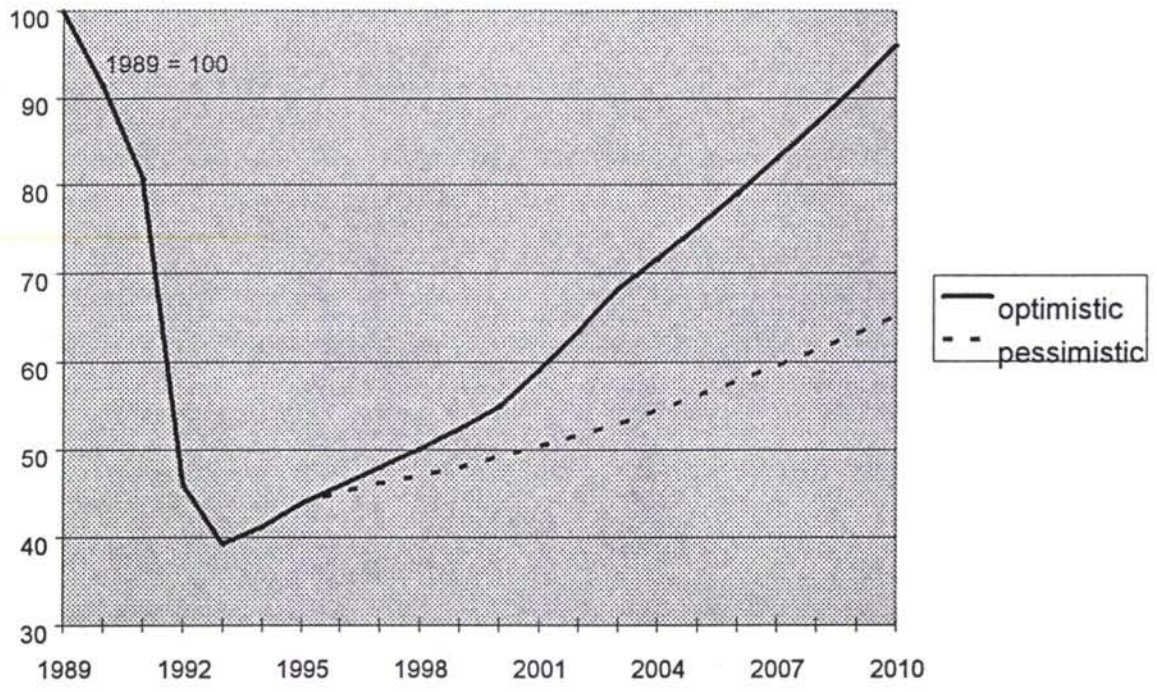
Development of the national economy:	
❒ industrial production of the country will show moderate growth rates in the key areas over the coming years	❒ the growth rate of industrial production will only develop hesitantly, minor increases will be registered only in a few areas
❒ the situation in the energy supply of the country will be further stabilised, there will be no restrictions of production because of energy problems	❒ the energy supply will remain difficult especially due to problems in the import of fuel
❒ due to the relatively favourable investment conditions and stable political relations, the inflow of foreign capital will increase	❒ domestic tension will be the cause for a hesitant attitude of foreign investors
❒ based on existing traditions and well trained experts, a high-quality processing industry will develop, especially in the areas of mechanical engineering and lighter manufacturing	❒ due to sustained economic difficulties, local qualified specialists will go abroad to a growing extent, which will hamper the expansion of the domestic processing industry
❒ the existing high-quality raw materials will be processed in the country to a large extent and the revenue will contribute to heightening the investment power of the country	❒ domestic raw materials will be exported at an early stage of processing and this to an unfavourably large extent, which will reduce the revenue on the one hand and the impulses for developing the own processing industry, on the other hand
❒ an efficient services sector will develop with above-average rates of growth, which will gain significance for the entire Caucasus region with progressing normalisation of the political situation	❒ as it will not be possible to solve the political problems in the short term, there will not be a sufficiently receptive market for a developed services sector
❒ the positive development of industrial and agricultural production will lead to a respective growth in the exports of the country, the political normalisation within the region will improve the foreign trade conditions of the country considerably	❒ the major trade routes will remain blocked beyond the year 2000, thus exports will develop only insufficiently, the negative trade balance will remain for the years to come
Policy of reform	
❒ the adopted course of reforms towards market economy structures will be continued consistently	❒ due to domestic difficulties, the government will be forced to take back certain parts of their reform policy
❒ the process of restructuring the economy will show the first successes in the short term	❒ the restructuring process of the economy will prove to be long-winded
❒ the privatisation, especially of medium-sized and large state companies, will be conducted according to schedule	

For the development of GDP the following range of annual growth rates has been determined for the country:

	1997 - 2000	2001 - 2005	2006 - 2010	2011 - 2015
optimistic	4,5 ... 5 %	5 ... 7,5 %	5 %	3 ... 5 %
pessimistic	2 ... 2,5 %	2,5 ... 3 %	3 %	2,5 ... 3 %

Based on the framework conditions outlined above, the following scenarios are imaginable for the development of the Gross Domestic Product of Armenia:

Fig. 3.1.2-2: Development of the GDP in Armenia



- The trough of the economic development was reached by 1993, at a level of about 40 % as compared to 1989;
- the starting level of 1989 will not be reached before the year 2010;
- political détente in the region will lead to increasing growth rates especially as of the year 2000

Azerbaijan

The economic decline of Azerbaijan started at the beginning of the '90s. Until 1995, the GDP dropped to about a third of the 1989 level. The situation was especially bad in the years of 1992 to 1994 with an annual fall of the GDP by more than 20 per cent. The downward trend in the economy has not been halted in 1996, but it did slow down as of 1995. Great hopes for stopping the decline of the GDP are linked to the start of oil production at the new off-shore oil fields as of 1997.

In agriculture and industry it seems as if the trough has been reached and soon there could be a slow start of an upward trend. In selected areas, there were first increases in production in 1996.

The economic symptoms of crisis were aggravated further through the military conflict over Nagorno-Karabakh as well as the more or less complete breakdown of the trade and payment transactions with the countries of the former Soviet Union.

Apart from the development of the oil industry, the boosting of further branches of the economy (e.g. chemical industry in Sumgait, mechanical engineering), the extension of the services sector as well as the re-structuring of agriculture are necessary for a balanced development of the Azerbaijan economy.

The reform process in Azerbaijan has made only relatively slow progress up until now. Structural reforms of the economy have only been tackled hesitantly. The privatisation process only started slowly in 1995. A law on privatisation was passed. However, legislation still requires serious revision. Up until now, the development of the private sector has been hampered through the lack of respective legal prerequisites. The small privatisation has started slowly. The privatisation of medium-sized and large industrial companies was to be started in 1996.

The following scenario formed the basis for predicting the GDP development:

Optimistic scenario	Pessimistic scenario
Political situation:	
❒ stable domestic political conditions	❒ growing social problems will put a strain on the internal stability
❒ the conflict of Nagorno-Karabakh will have been settled peacefully by the year 2000, and there will be no further strains on the economic development anymore	❒ the problem of Nagorno-Karabakh will be solved by the year 2005 at the earliest, so that important transit corridors will still not be available until that point in time
❒ the situation in Chechnya will stabilise to such an extent up to the year 2000 that international railway transports will not be hampered anymore;	❒ due to sustained tensions in Chechnya, important international transit links will continue to be interrupted;

Development of the national economy:	
❒ AIOC will start oil production as scheduled in 1997; production will be extended to 35 million t/a up to 2010 (see section 3.1.3)	❒ due to a great number of problems, production of the 'early oil' by AIOC will not start in 1997, production volumes will remain well below the originally planned figures until the year 2000
❒ the development of the oil industry will lead to an upswing of the other branches of economy, especially the processing industry	❒ other branches of industry will lag behind the growth rates of the oil sector considerably; foreign investments will concentrate on oil production;
❒ favourable framework conditions and the development of the oil industry will lead to rising international investments, also in other branches of the economy;	❒ due to quality and other problems, national companies will only be included to a limited extent in the delivery and service in connection with the oil production;
❒ national companies will be included more and more in the supplies and services for oil production	❒ delays in the reconstruction of the oil processing plants will lead to capacity losses in the medium term;
❒ the national oil processing capacities will be reconstructed or developed speedily and supplied with crude oil in the scope of the max. capacity (see section 3.1.3.1);	
Policy of reform	
❒ the course of reforms in the direction of the market economy will be continued unerringly;	❒ hesitant steps towards the market economy, sustained strong central state influence will hamper economic development;
❒ the privatisation of medium-sized and large companies will continue;	❒ continuing problems in privatising the economy, especially the medium-sized and larger companies;
❒ the missing legal conditions will be established shortly;	❒ lacking legal prerequisites and conditions will lead to a reserved commitment of international firms;

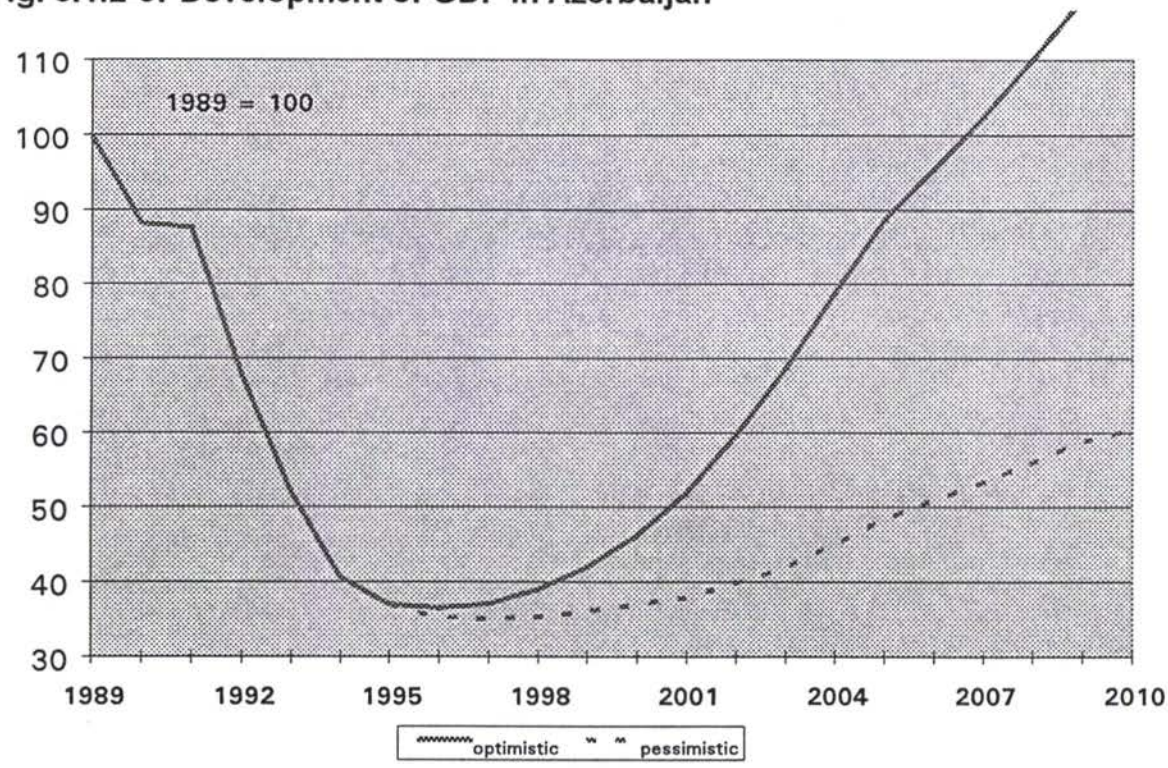
For the development of GDP of Azerbaijan the following range of annual growth rates has been determined:

	1997 - 2000	2001 - 2005	2006 - 2010	2011 - 2015
optimistic	5 ... 10 %	12,5 ... 15 %	5 ... 7,5 %	5 %
pessimistic	0,5 ... 2,5 %	2,5 ... 7,5 %	5 %	2,5 ... 5 %

Based on these framework conditions, the Gross Domestic Product of Azerbaijan will develop as follows:

- The trough of the economic development was reached in Azerbaijan by 1996, at a very low level as compared to 1989;
- The future development of the GDP in Azerbaijan will be determined decisively by the oil sector;
- Thanks to the steeply increasing oil production in future, strong growth impulses will result also for the other economic areas, that is why the forecast growth is higher than in Armenia and Georgia;
- Due to the very low reference level, the forecast growth rates are much higher during the first years and decrease markedly later on;

Fig. 3.1.2-3: Development of GDP in Azerbaijan



Georgia

In Georgia, too, the GDP dropped continuously in the period between 1989 to 1995, and in 1995 it was at about 35 per cent of the 1989 level. There was a deterioration of the economic situation, especially in 1992/93, in connection with internal political problems.

The economic state of Georgia is influenced decisively by the energy situation in the country. Over the past years, bottlenecks in the energy supply of the economy, traffic and the public led to an additional decrease in production.
The economic decline of the country slowed down the first time in 1995. In 1996, there is a standstill or a slight upward movement in individual branches of the economy.

The following scenario forms the basis for the further development:

Optimistic scenario	Pessimistic scenario
Political situation:	
❒ the internal political situation in the country will remain stable, ❒ there will be no internal unrest due to social problems; ❒ the conflicts of Abkhasia and South Ossetia will be dissolved by the year 2000 so that they will not influence the economic development negatively any longer;	❒ socio-economic conflicts will burden the internal stability, making more difficult a continuous, consistent policy of reform; ❒ the national conflicts (Abkhasia, South Ossetia) will not be resolved until the year 2000, so that the economic development, especially the transport links, will be influenced negatively further;
Development of the national economy:	
❒ the problems in energy supply of the country will be resolved in the short term; ❒ branches of industry which work on the basis of domestic raw materials will be developed at an exceptional speed (non-ferrous and ferrous metallurgy, building materials industry); ❒ income from international transit transports will lead to further impulses for the economic development of the country	❒ the problems of energy supply cannot be solved satisfactorily in the medium term and will lead to further obstruction of industrial production; ❒ existing domestic raw materials will be exported at a relatively low level of processing, the own processing industry develops with insufficient speed; ❒ lacking income from international transit transports will limit the investment possibilities of the country severely;
Policy of reform	
❒ the course of reforms in the direction of the market economy will be continued unerringly; ❒ the restructuring process of the national economy will be accelerated ❒ the privatisation of medium-sized and large companies will continue;	❒ hesitant steps towards the market economy, sustained strong central state influence will hamper economic development; ❒ continuing problems in privatising the economy, especially the medium-sized and larger companies; ❒ lacking legal prerequisites and conditions will lead to a reserved commitment of international firms;

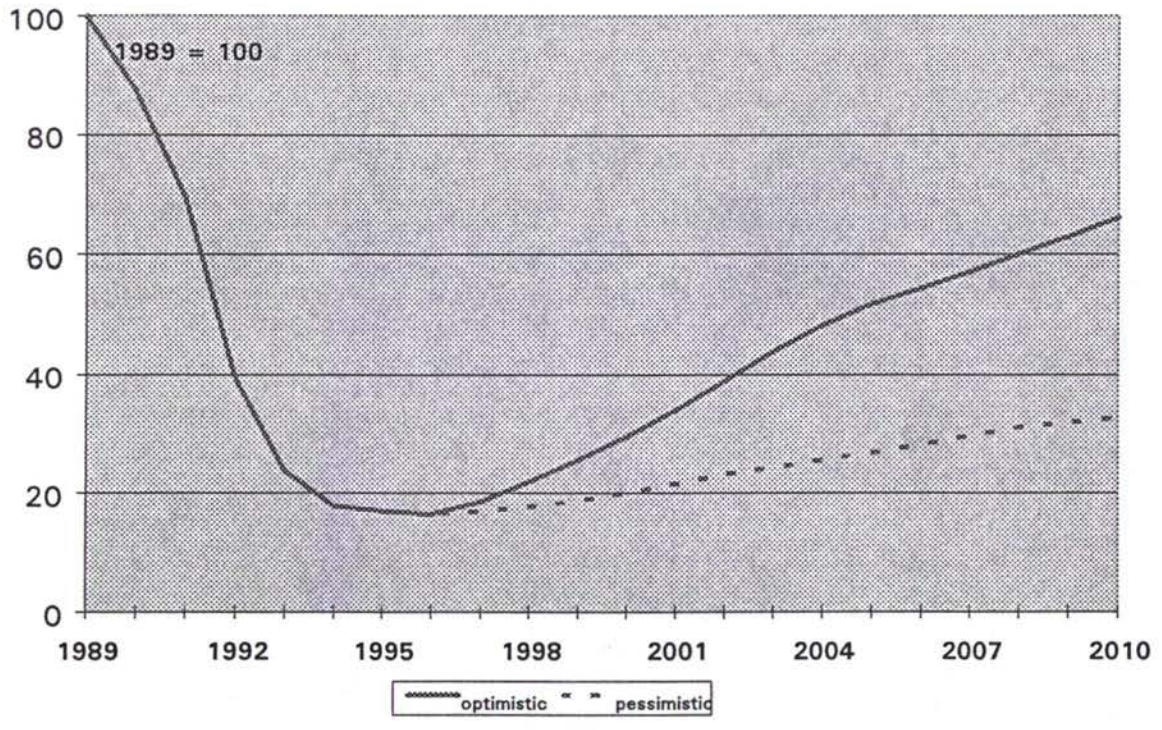
For the development of GDP the following range of annual growth rates had been determined for Georgia:

	1997 - 2000	2001 - 2005	2006 - 2010	2011 - 2015
optimistic	12,5 ... 17,5 %	7,5 ... 15 %	5 % ... 7 %	3 ... 5 %
pessimistic	2,5 ... 7,5 %	5 ... 7,5 %	4 ... 6 %	2,5 ... 5 %

(A World Bank study "Georgia - Public Expenditure Review", 1996, contains the following GDP growth rates: 1997/98 - 10 %, 2000 - 8 %, 2004 - 5 %).

This scenario leads to the development of the GDP depicted in the following:

Fig. 3.1.2-4: Development of GDP in Georgia



3.1.3 Development of main branches of national economy

3.1.3.1 Oil industry of Azerbaijan

Oil production and processing is by far the most important branch of the country's economy. The oil industry yields about 68 per cent (1995) of the total industrial production of the country.

The oil production and processing sector in Azerbaijan currently is a highly delicate field both in terms of politics and economy. Differing national interests and views of the States bordering the Caspian Sea as regards the distribution of the available resources are clashing. Political and economic interests of the states in the region are influencing or complicating decisions as to the course of the pipelines for crude oil transport, and are impeding or delaying their construction. In the long run the starting of full-scale production of oil by the international consortiums will considerably influence the situation on the world market for oil. All these factors contribute to the current reservedness of national and international authorities in making available data and information, especially with respect to future production volumes of crude oil and its use.

Crude oil production

Oil production has decreased since 1989. It dropped from 13.2 million tons (1989) to 9.1 million tons in 1996.

Tab. 3.1.3-1: Crude oil production of Azerbaijan

(in ,000 tons)

	1989	1992	1995	1996
Total	13,159	11,195	9,161	9,101
Onshore	*3,023*	*1,970*	*1,520*	*1,569*
Offshore	*10,136*	*9,225*	*7,641*	*7,532*

In the year 1997 the production of about 9 million tons is planned by the national oil company (SOCAR).

In 1994, a contract between Azerbaijan and an international consortium (AIOC) was signed on the exploitation of the off-shore oil fields in the area of Baku. The consortium will start producing the so-called 'early oil' in 1997. At the moment, there are no exact statements on possible production volumes, however, experts think that production could amount to 0.2 million tons in 1997. For the years to come, figures on the possible AIOC production amounts also differ strongly. They are between 3.5 and 10 million tons per year in 2000, with a lower amount being more probable. Oil production is to reach 35 million tons a year in 2010. Apart from the contract with AIOC, four more contracts have been concluded with international consortiums or companies for oil production in Azerbaijan.

In 1994 0.85 million tons of crude oil were imported, mainly from Kazakhstan, and refined in Azerbaijan. In 1995 the amount of imported crude oil was down to 0.06 million tons due to the blockade of the railway line through Dagestan.

Oil refining

Azerbaijan has oil processing capacities in Baku. The capacity of the refineries is currently some 12 million t/a, this figure stood at 24 million tons in 1990. At present,

this existing potential is not even being used to the full, as their is not enough crude oil available.

Presently, the outdated technology and the poor state of maintenance of the refineries are the main reasons why the oil refining industry is not extracting the maximum value from Azerbaijan's high-quality crude oil. Due to their limited upgrading capability, the refineries produce a relatively large volume of fuel oil. The principal components of the current output mix are fuel oil (49.2 %), diesel oil (24.3 %), petrol (11.7 %), kerosene (6.9 %) and lubricants (2.6 %).

Tab.: 3.1.3-2: Production of oil products in Azerbaijan

	,000 tons	%
1991 Total	**13,639**	
1995 Total	**8,923**	**100.0**
of which		
Petrol	1,040	11.7
Kerosene	617	6.9
Diesel	2,168	24.3
Fuel oil	4,391	49.2
Lubricants	231	2.6
others	476	5.3

6.7 million tons (75.5 %) of the oil products were produced for domestic consumption in 1995. This mainly concerned fuel oil and petrol.

The produced fuel oil was used to a large extend for electricity generation. Approximately 90 per cent of the country's electricity production is generated by thermal stations, which are powered by dual cycle oil and gas system. All of the thermal power stations have been switched from gas to oil burning recently after Turkmenistan sharply raised gas prices. The main thermal power stations are located in Mingechaur, Ali-Bairamly and Sumgait. (For transportation of fuel oil to power stations see below). To return all dual-cycle power stations to gas burning would require an additional amount of about 4 billion cubic metres of natural gas which will not be available before 2004. Presently Azerbaijan experiences a gas supply deficit of about 1 billion cubic metres.

About 10 per cent of electricity output is generated by hydroelectric stations (Mingechaur).

Notwithstanding the high quality of domestic crude oil, the outdated refinery technology does not allow the production of sufficient amounts of highly refined products so far. That's why investment in the refinery industry aims to increase the depth of refining.

The oil processing industry is extremely important to the Azerbaijan economy. The share of this branch in the country's industrial production in 1995 amounted to nearly

50 %. It is therefore legitimate to assume that this branch of industry will keep playing an important role in Azerbaijan's economy, and that the existing processing capacities will be reconstructed and expanded accordingly; particularly since in future sufficient, high-class crude oil out of domestic production will be available.

According to various consultations the consultant has had on the problem of developing prospects of the oil processing industry with national experts of the oil industry, the Azerbaijan oil refineries and economic experts, it is assumed that the oil processing industry is going to develop as follows during the forecast period (in million tons):

	optimistic	pessimistic
2000	16.5	9.5
2010	22.0	14.0
2015	25.0	15.5

This is based on the assumption of a corresponding extension of the processing capacities as well as the provision of the necessary crude oil amounts.

In 1994 about 1 million metric tons of crude oil from Kazakhstan were processed in Azerbaijan refineries. It cannot be expected, however, that in future large quantities of crude oil from Kazakhstan will be processed, since the Kazak oil is of minor quality (high content of sulphur) and thus is an ecological hazard. What is more, the import-export business related to the processing of foreign crude oil is not very profitable.

Exports of oil products

The products of the oil processing industry are of extraordinary significance for the foreign trade of Azerbaijan as well as for railway transports. Altogether, Azerbaijan exported 2.19 million tons of petrochemical products in 1995, which was about 20 per cent more than the previous year.

Tab. 3.1.3-3: Azerbaijan exports of oil products

	1994		1995	
	,000 t	%	,000 t	%
Total	1,803	100.0	2,190	100.0
Petrol	0	0.0	89	4.1
Kerosene	132	7.3	189	8.6
Diesel	1,507	83.6	1,625	74.2
Fuel oil	58	3.2	126	5.8
Lubricants	101	5.6	120	5.5
others	5	0.3	41	1.8

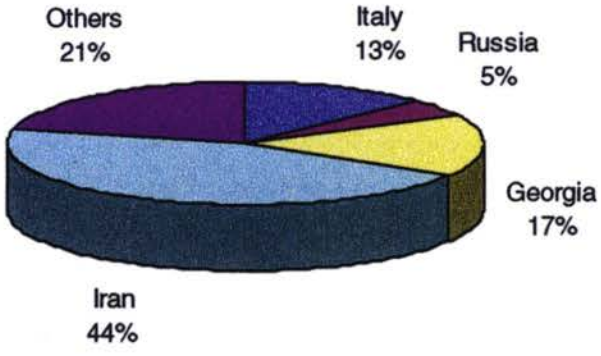
Analogous to the changes in the production structure mentioned above the structure of the products to be exported will change to products with a deeper stage of refining.

Iran was the largest importer of Azerbaijan petrochemical products with 1.045 million tons in 1994 and 0.976 million tons in 1995. 44.6 per cent of the total export of oil products went to Iran. This quantity was transported by ship to Iranian Caspian sea ports. Georgia was the second largest recipient in 1995 with 0.364 million tons. The share of the CIS countries stood at about 30 per cent (comp. Annex 3.1.4-10).

Main buyer countries for Azerbaijan oil products will be the countries of the region: Iran, Georgia, Russia, Ukraine, Armenia (once the political problems will be solved), and further States bordering the Black Sea. These countries are a relatively reliable market with a demand potential as yet not utilised to the full. Azerbaijan as a supplier of oil products offers itself particularly because of the favourable transport distances. Its importance will grow along with the increasing refinement of processing and growing quality of the products.

At present, Iran is importing oil products (mainly diesel) from Azerbaijan, since its own processing capacities are mainly located in the south. Thus the supply of Iran's northern regions with products from Azerbaijan is favourable under aspects of transport economy. Furthermore, these exports presently serve to finance deliveries from Iran for the supply of Nakhichevan. Thus for the next years Iran appears to be a relatively stable market for Azerbaijan oil products.

Fig. 3.1.3-1: Main importers of Azerbaijan petrochemical products (1995)



Transportation of oil products

Oil and oil products represent the commodity type group with the largest transportation volume for all three railways. 74.3% of the freight dispatch of the Azerbaijan Railways in 1995 were oil products, and it was 46.0 per cent of the entire transporta-

tion volume in the case of the Georgian Railways in the same year. 30 per cent of the freight reception of the Armenian Railways were oil products in 1996.

In Azerbaijan, 8.923 million tons of oil products were produced in 1995. 6.416 million tons out of this figure, that is to say 72 per cent, were transported by railway. Another 0.976 million tons were transported on the sea route (export to Iran). And 17% of the entire transport volume was handled by road transport.

The domestic rail transport of oil products concerned mainly fuel oil for the thermal power stations of the country. The entire quantity is delivered by the refineries in Baku. The main recipients are (figures for 1995, in ,000 tons):

Thermal power plant Mingechaur	2,185
Thermal power plant Ali-Bairamly	1,050
Heat and power stations Sumgait	0,820
Power station Mardakan	0,350
Heat and power station Gyandsha	0,050

In 1995, Azerbaijan exported 2.19 million tons of oil products. Some 49 per cent were transported by rail, 45 per cent of the total export volume went by sea, and the remaining 6 per cent of the entire export volume was transported by road.

Export by rail in 1995 was distributed as follows along the main corridors (in '000 tons):

Total	**1,064**
Baku - Beyuk-Kyassik (Georgia)	942
for Georgia	*364*
in transit through Georgia	*578*
Baku - Yalama (Russia)	98
Baku - ferry to Turkmenbashi	24

74 % of the entire export volume was made up of diesel fuel, the railways did not transport any crude oil for export.

Furthermore, 136,000 tons of oil products were transported in transit from Central Asia along the corridor of Turkmenbashi - Baku - Beyuk-Kyassik (Georgia).

In Georgia, some 75 per cent of the oil product transits channelled through the Black Sea ports were shipped at Batumi, in 1995. In the same year, Georgia imported 713 thousand tons of oil products via Poti and Batumi. Out of which 379 thousand tons were for domestic consumption and 334 thousand tons for transit (mainly to Armenia).

For the future development of transportation of oil products see section 3.1.6.3

3.1.3.2 Other branches of industry

Armenia

Within the economic system of the former Soviet Union, Armenia had a relatively highly developed processing industry, especially in the areas of mechanical engineering, electrical engineering and electronics as well as light industry. Due to the natural conditions prevailing in the country, less material-intensive branches of the economy with a high degree of processing will develop in future and those branches will continue to grow which work on the basis of indigenous raw materials (copper, aluminium, mineral building materials).

The following table containing production data of selected products shows that the overall production volume has considerably dropped off, and that there is only a low transport volume available to railway traffic from the home industry.

It is especially the further development of the building materials industry which is of significance for the future transport volume of the railways. Armenia has presently got two cement plants in Ararat and Razdan with an annual capacity of altogether more than 2 million tons. There are good prospects especially for the plant in Ararat.

Tab. 3.1.3-4: Output of selected products in Armenia

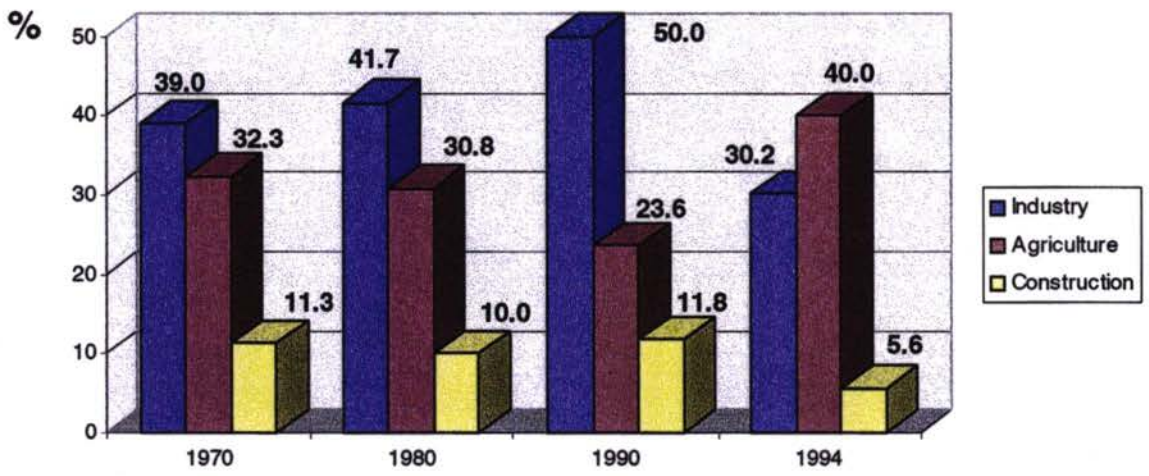
	1990	1993	1994
Electric power (bn. kWh)	10,4	6,3	5,6
Non-ferrous metals (tons)	38,604	1,633	1,827
Rolled aluminium (tons)	15,915	899	562
Aluminium foil (tons)	21,394	693	1,117
Chemical fibres (tons)	4,100	50	80
Synthetic rubber (tons)	1,441	396	2,064
Cement ('000 tons)	1,466	198	128

There are several plants for extracting and processing mineral building materials (sand, pearlit, tuff), which are currently using only about 10 % of their capacities. Thanks to the high quality of the raw materials, there are also good prospects for export, mainly to the neighbouring countries.

Azerbaijan

The share of industrial production in the produced national income of Azerbaijan has dropped constantly over the past years:

Fig. 3.1.3-2: Share of industrial branches in the produced national income of Azerbaijan



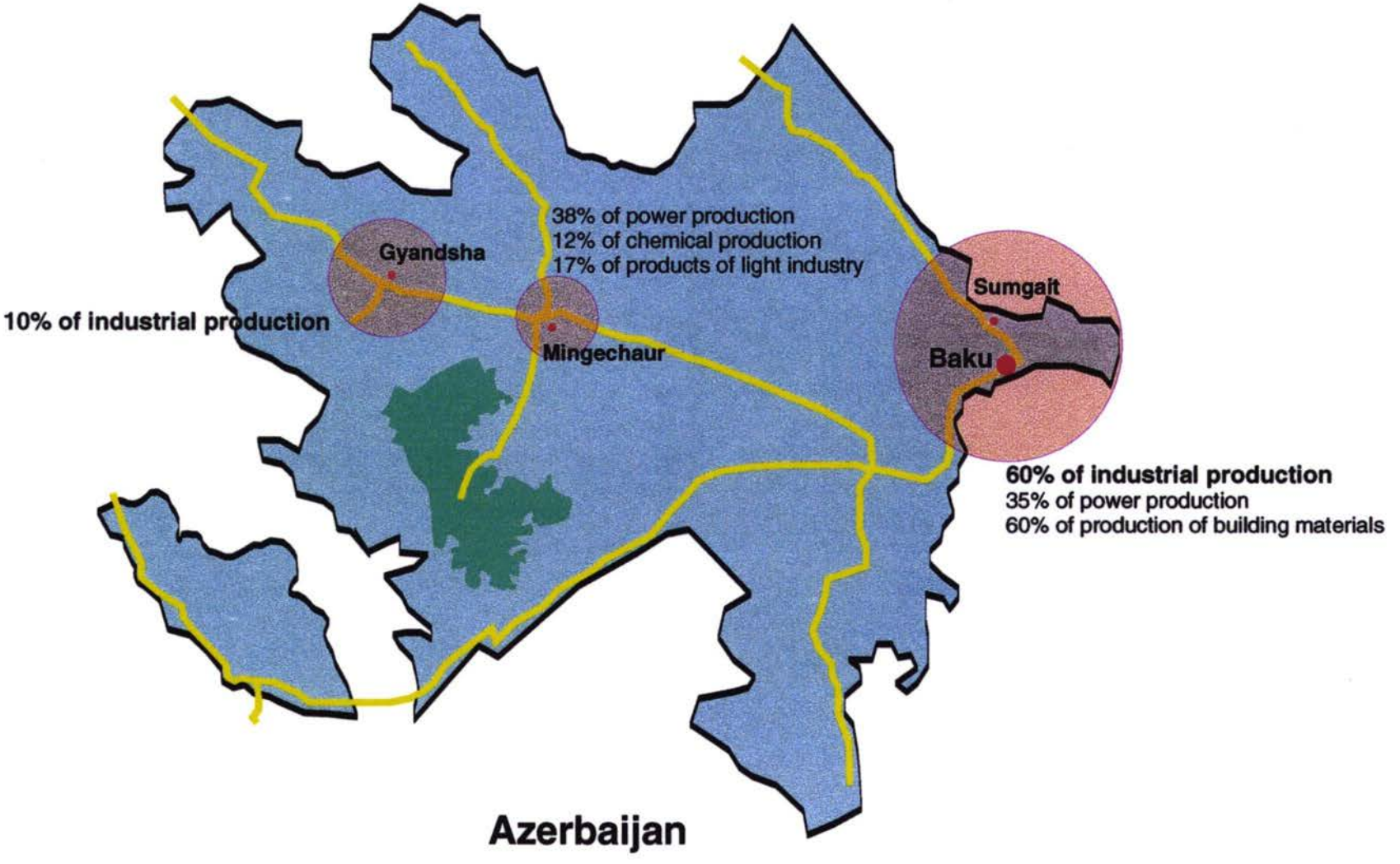
The main industrial locations of Azerbaijan are distributed very irregularly across the territory of the country. The most important region by far is the Apsheron peninsula with Baku and the industrial complex of Sumgait, which concentrate some 60 per cent of the country's industrial production., The second most important industrial region is the area around Gyandsha, where some 10 per cent of industrial production of the country is located (comp. Fig. 3.1.3-3).

As mentioned above oil production and processing is the most important branch of the country's economy, accounting for about 68 per cent (1995) of the total industrial production of the country.

Apart from oil production and processing, the development of the economic zone of Sumgait is of special importance for the economic rise of the country. The main branches of industry in Sumgait are the metallurgical industry, the aluminium industry, the chemical industry. The present capacity of some selected plants and factories of the Sumgait region is as follows (tons per year): Azerbaijan Pipe and Tube Works - 600,000 tons; Sumgait Aluminium Smelter - 55,000 tons; chemical and petrochemical industries: ethylene - 260,000 tons, propylene - 180,000 tons, detergents - 90,000 tons, caustic soda - 180,000 tons, chlorine - 160,000 tons. These capacities are presently only partly used, mainly by reasons of raw material shortages and poor technical conditions of the installations. With the help of international organisations (for example the United Nations Development Organisation - UNIDO) and foreign investors, the modernisation of the plants is planned, especially with the aim of increasing the share of final products.

Azerbaijan has significant deposits of rich iron ore in the Dashkesan area, which was formerly used to supply reducing plants in Georgia and other FSU states. Near Dashkesan there are rich deposits of alunite. The proven reserves of alunite of about 300 million tons are reported to be among the largest deposits in the world.

Fig. 3.1.3-3: Main industrial centres of Azerbaijan



(as per 1994/95)

The aluminium refinery at Gyandsha processes bauxite as well as the locally mined alunite. The capacity of the refinery is about 500,000 tons of aluminium p.a., but the current output is down to only about 10 per cent of this amount.

Georgia

The structure of the economy is changing significantly. Industry is on a relative decline, in 1996 it accounted for 14 per cent of value added, compared to 24 per cent in 1990. The service sectors have been increasing their share in GDP fast during the last years, accounting for about 43 per cent in 1996. The construction sector is growing, too. It accounted for 5 % of GDP in 1996.

The industrial sector is recovering very slowly. About 33 % of the industrial enterprises were not working by the end of 1996. Capacity use ranges from just over 20 % in chemical production to 5 % in machine building.
The structure of industry is beginning to change. Mining, electricity, food processing and non-ferrous metal production are increasing their relative share. Mining accounted for 26.5 % of industrial output in 1996, food processing for 22.2 %. Fuel and building materials production are also growing fast.

The products from the iron and steel plant at Rustavi count among the country's most important products of industry. The plant has an annual capacity of 1.5 million tons of steel, of which only 5 % are used at present. However, reconstruction and expansions by means of investments from abroad are already under planning, so that increases in production can be expected for as early as 1997.

A further investment project of top priority is the modernisation of the coal industry. While until 1989 up to 3 million tons of coal per year were being extracted, at present it is only about 50,000 tons per year. By 2005 the production is scheduled to have risen again to about 1 million tons per year.

Figures for production by region emphasise the dominance of Tbilisi, with about 30 % of Georgia's industrial output in 1996.

3.1.3.3 Agricultural production

The natural conditions for agricultural production differ strongly as to the region.

At the moment, agriculture in all three countries is experiencing a deep crisis. Drastic slumps in agricultural production over the past years are due especially to the following causes:

- internal unrest and wars
- disappearance of traditional markets in the other former Soviet republics
- scarcity or drastic rise in the price of the means of agricultural production

Armenia has got the most unfavourable prerequisites. The country is and will remain a net importer of agricultural products and foodstuffs in future. Even with intensive use of the available agricultural areas, the import of grain, for instance, will be absolutely essential. The own production of grain stands at about 200 to 300 thousand tons per year, as compared to a demand of about 600 thousand tons. Other main agricultural imports are meat, milk and butter.

Tab. 3.1.3-5: Production of main agricultural commodities in Armenia

(in 1,000 tons)

	1991	1992	1993	1994	1995
Grain	304	310	316	238	264
Potatoes	275	322	414	417	429
Vegetables	425	496	417	424	451
Fruits	167	133	49	127	146
Dairy products	128	26	10	10	5
Milk	412	395	398	415	428

In the past, ***Azerbaijan's*** agriculture was developed primarily as a source of raw materials for the Soviet economy, with only limited domestic processing of agricultural products. About 80 per cent of total agricultural land is irrigated, and half of this area suffers from salinization. Agriculture suffers from machinery and input shortages. The slow progress with privatisation and land reform, moreover, has delayed the restructuring of agricultural production and trade necessary for the development of new markets.

The production of main agricultural commodities is shown in the following table (for cotton see section 3.1.5.3).

Tab. 3.1.3-6: Production of main agricultural commodities in Azerbaijan

(in 1,000 tons)

	1991	1992	1993	1994	1995
Grain	1346	1285	1100	1039	1100
Potatoes	180	156	152	150	200
Vegetables	805	555	488	471	500
Fruits	496	401	346	323	324
Dairy products	175	81	50	40	10
Milk	948	850	798	784	789

Agriculture in ***Georgia*** is the largest source of value added in the country's economy. The sector accounted for 32 per cent of the GDP in 1996. Agricultural production figures are more significant than those for industrial production. Production of grain and vegetables has increased since independence. However domestic wheat production accounts for only a quarter of domestic consumption. The country's traditional export crops of grapes, tea and to a lesser extend citrus have all declined over recent years, mainly due to the loss of traditional export markets within the former Soviet Union.

Tab. 3.1.3-7: Production of main agricultural commodities in Georgia

(in 1,000 tons)

	1992	1993	1994	1995	1996
Grain	526	426	493	525	650
Vegetables	308	357	443	428	540
Potatoes	255	247	297	353	350
Grapes	175	71	13	39	58
Other fruits	337	270	373	384	250
Citrus	108	70	89	90	96
Tea	212	133	62	37	32

The agriculture of Armenia, Azerbaijan and Georgia will mainly produce for their own demand, in the medium-term. Significant export and thus transport potentials are not to be expected from this branch of the economy (with the exception of a few selected products such as cotton, tea, citrus fruit).

3.1.4 Development of foreign trade

With the disintegration of the former Soviet Union, the foreign trade relations of Armenia, Azerbaijan and Georgia also experienced thoroughgoing changes. The economic symptoms of crisis, especially the decline of industrial and agricultural production, have led to a sharp drop both in exports as well as imports.

In the past, the volume and direction of goods flows were determined above all by a strong specialisation of production, which led to a high degree of dependence on raw materials deliveries and the mutual supply of goods in process and intermediate products. Thus, the more or less complete collapse of the trade and payment transactions with the countries of the former Soviet Union is another decisive factor for the radical changes in the foreign trade relations of the Caucasian republics.

In the Caucasus republics as well as in the Central Asian republics of the former Soviet Union, there is currently a geographical re-orientation of the international trade relations. What is characteristic for these new geographical structures is a

more or less strong decline in the goods exchange with the former Soviet republics, especially with Russia, and a growing share of Western industrial states. Iran and Turkey play a special role in the foreign trade of the region.

3.1.4.1 Armenia

The Armenian economy depends on foreign trade to a large extent. In the second half of the 80s, both exports and imports made up more than 50 per cent of the Gross Domestic Product. Just like in all former Soviet republics, the scope and direction of the trade flows were determined, above all, by the high degree of specialisation of the national economies within the system of a planned economy. Exports, especially in the area of mechanical engineering and lighter manufacturing, were conducted nearly exclusively to the other republics of the Union, whereas raw materials and semi-finished products were imported to a large degree.

The more or less total collapse of the economic, trade and payment transfer system of the countries of the former Soviet Union, as well as the features of economic crisis, especially the drop in industrial production, led to a drastic reduction in the country's imports and exports. In addition, this development was even aggravated by the political and military conflicts between Armenia and Azerbaijan. The Nagorno-Karabakh conflict has led to the situation that Armenia has now got very limited international transport links. The borders to Turkey and Azerbaijan are completely closed to international trade flows. The main connections are maintained via Georgia and by road to Iran. This situation is decisively influencing both the geographical structure of Armenia's foreign trade relations as well as the goods structure, especially of Armenian exports.

Armenian foreign trade is meanwhile characterised by a severe trade balance deficit. In 1996, imports were three times as high as exports.

Geographical structure of Armenian foreign trade

There is a geographical re-orientation in the trade relations of Armenia, which is similar to that of the other Caucasus republics. The role of Western industrialised countries as trade partners is growing. Back in 1990, the share of CIS countries in Armenian exports was still more than 97 per cent. During the subsequent years, this share dropped very significantly and in 1996, it stood at only 44.1 per cent (compare Table 3.1.4-1). The importance of the CIS countries in Armenian imports also dwindled. Their share dropped from 75.2 per cent in 1990, to 33.6 per cent in 1996.

The political situation in the region is exerting a decisive influence on the direction of the trade flows at the moment. For instance, the significance of Iran as a trading partner has increased enormously over the past years. The existing direct transport link (even though only one road connection) between the two countries is a decisive cause for this development. In 1996, Iran was the second largest recipient of Arme-

nian export products with a share of 15.1 per cent, Russia came first with 33.1 per cent. Iran even ranked top in supplying Armenian import goods with a share of 17.4 per cent in 1996.

Russia is still one of the most important foreign trade partners of Armenia. Nearly a third of all Armenian exports went to Russia in 1996 and the Russian share in imports stood at 14.6 per cent. Turkmenistan is the second largest trading partner among the CIS countries, due to extensive deliveries of natural gas, which is delivered by pipeline via Russia and Georgia.

12.0 per cent of all Armenian imports came from the United States, in 1996. This share was even higher in the years before (compare Table 3.1.4-2). In 1996, nearly 50 per cent of the US-American imports were humanitarian aid. At the moment, Armenia is the CIS republic with the highest per-capita share of US humanitarian aid.

Table 3.1.4-1: Geographical structure of Armenian exports 1996
(% of total value)

	1993	1994	1996
EU countries	**10.8**	**16.3**	**21.6**
Belgium	9.5	12.1	15.4
Netherlands	0.1	0.3	3.0
Germany	0.2	3.1	1.3
Iran	3.5	6.8	15.1
CIS countries	**80.9**	**73.3**	**44.1**
Russia	37.3	39.0	33.1
Turkmenistan	36.4	30.5	6.0
Georgia	2.0	1.3	2.4

Table 3.1.4-2: Geographical structure of Armenian imports 1996
(% of total value)

	1993	1994	1996
EU countries	**6.1**	**9.3**	**14.0**
Belgium	1.1	0.4	5.7
Italy	4.4	2.3	3.0
Germany	0.1	1.7	2.0
Iran	6.2	10.8	17.4
USA	28.9	24.4	12.0
CIS countries	**56.1**	**52.2**	**32.9**
Russia	26.7	28.5	14.6
Turkmenistan	25.2	17.7	10.7

For more detailed figures on the geographical structure of Armenian foreign trade see Annex 3.1.4-1.

The political development of the region will play a decisive role in the further development of the geographical structure of Armenian foreign trade. As long as important international transport links are blocked, the significance of Iran will increase further. Iran is generally playing a growing role in the foreign trade relations of the region, as to be seen in the other Caucasus republics.
The neighbouring countries Azerbaijan and Turkey will pick up an important part of Armenian foreign trade again, once the political conflicts have been solved. They will turn into suppliers of badly needed raw materials as well as constitute receptive sales markets. The same applies to the countries of Central Asia, for whose trade relations with Armenia functioning transport links (in transit through Azerbaijan) are an important prerequisite.

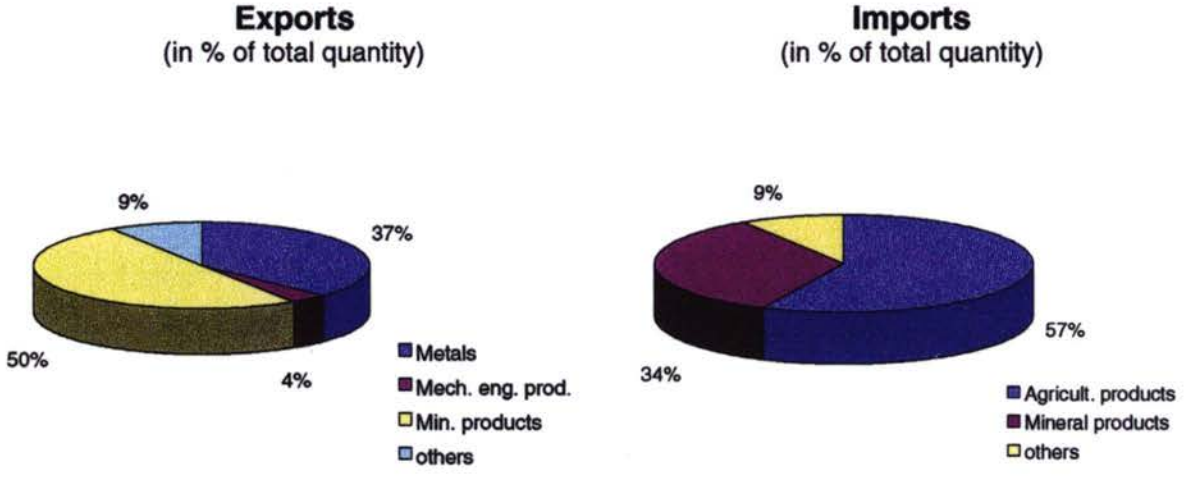
Commodity structure of Armenian foreign trade

The commodity structure of Armenian foreign trade is determined above all by the following factors:

- political tensions in the region with severely restricted transport links from and to Armenia;
- a relatively well developed sector of the processing industry (mechanical engineering, electrical engineering / electronics, lighter manufacturing) as well as a stock of highly skilled workers;
- small deposits of raw materials and fuels;
- weakly developed agriculture due to natural conditions.

Processed products and such requiring little transport constitute the main share of Armenian exports. In 1996, the item of 'precious stones, semi-precious stones, precious metals and commodities thereof' made up some 48 per cent of total exports (on a value basis). Mechanical engineering products constituted approx. 12 per cent of the exports. As regards the goods volumes to be transported, the largest proportion of Armenian exports were mineral products with 50.5 per cent (especially stones and other building materials), metals and metal products stood at 37.1 per cent.

Fig. 3.1.4-1: Commodity structure of Armenian foreign trade in 1996



Armenian imports are dominated by agricultural products and fuels. Agricultural products and foodstuffs made up 56.9 per cent of all imports (based on volume) in 1996. 34.3 per cent were mineral products, which were more or less only oil products (304,000 t).

The commodity structure of Armenian exports will continue to develop in the direction of high-value processed goods, requiring little transport. These are mainly mechanical engineering products, precious stones and metals as well as lighter manufacturing goods. Given the necessary transport links, the export of bulk goods (stones, cement, other building materials) will increase, especially to the neighbouring countries.

As the country has few own fuel resources, the import of such goods will be necessary also in future. The import will even rise, particularly in oil products. Imports of agricultural products and foodstuffs will remain necessary due to the insufficient own production.

3.1.4.2 Azerbaijan

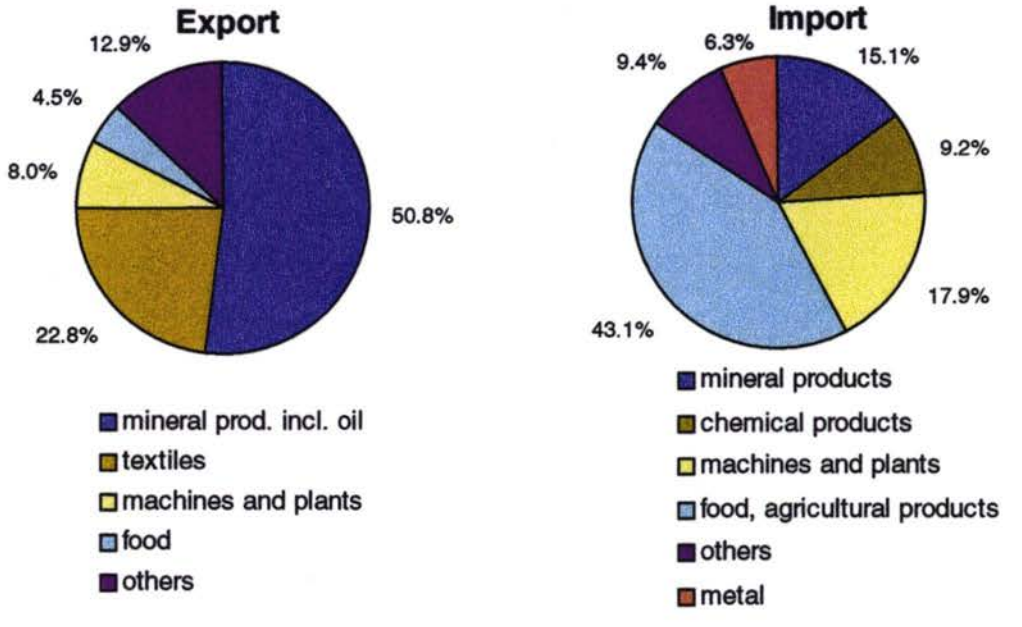
In connection with the conflicts in the Caucasus, a drastic decline in the foreign trade turnover of Azerbaijan started in 1988. A further strong reduction in the following years was due mainly to the disintegration of the former Soviet Union and the economic crisis starting at the beginning of the '90s.

In 1995, some 26 per cent of the goods produced in Azerbaijan were exported. About 22 per cent of the goods consumed in the country were imported. Thus there is a relatively high degree of foreign trade activity.

The main proportion of the Azerbaijan exports is made up of the products of the oil processing industry. In 1994, they constituted some 35 per cent of the entire exports, in 1995 the share rose to more than 50 % (on value basis). Products of the textile industry were the second most important item with 18 and 23 per cent respectively. The metallurgical products made up 16 and 3 per cent.

The goods structure of the Azerbaijan foreign trade (on value basis) is depicted in the following chart. A detailed overview is contained in Annex 3.1.4-5.

Fig. 3.1.4-2: Commodity structure of Azerbaijan foreign trade in 1995
(in % of total value)



From the transport point of view an assessment of foreign trade flows by volume is even more interesting. The extraordinarily high share of products from the oil processing industry is especially striking when looking at the forwarded amount of goods. In 1995, they made up roughly 80 per cent of the goods exported in total.

The following table contains the most important export items of Azerbaijan. A detailed overview is shown in Annex 3.1.4-7.

Tab. 3.1.4-3: Important export items of Azerbaijan foreign trade

[in tons]

Type of goods	1994	1995
petrochemical products	1,819,108	2,190,481
metallurgical products	348,783	45,073
Bentonit	147,488	68,258
cotton	78,286	75,992
chemical products	74,590	45,427
agricultural products, food	70,873	37,945

Food and agricultural products made up the largest share of Azerbaijan imports in 1995 (for detailed data compare Annex 3.1.4-8).

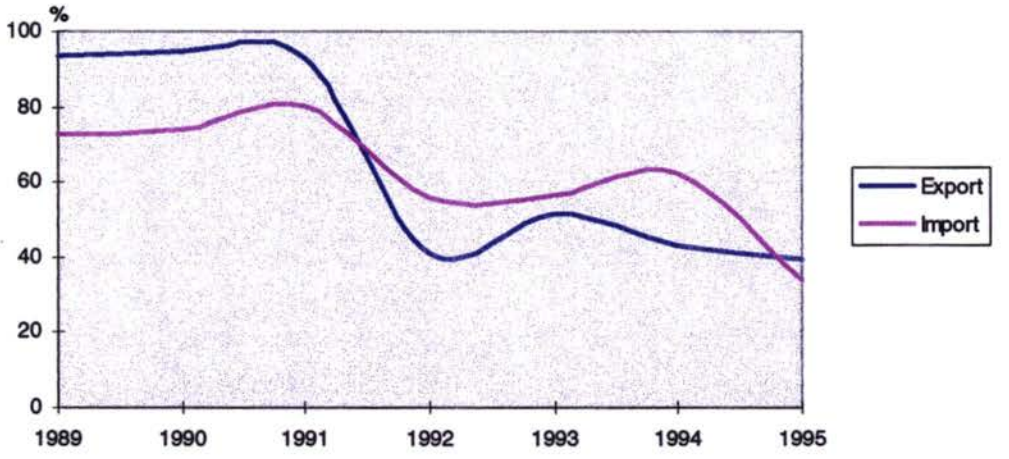
Tab. 3.1.4-4: Main import items of Azerbaijan foreign trade

[in tons]

Type of goods	1994	1995
food	93,535	207,874
fruit, vegetables, potatoes	119,304	83,824
cereals	291,993	112,553
flour	248,800	69,891
sugar	46,495	104,186
crude oil	852,567	61,936
building materials	9,766	153,049
cement	83,007	91,295
metallurgical products	334,432	55,772

A new orientation of the Azerbaijan foreign trade started with the beginning of the '90s. The geographical structure of the exports and imports has changed radically over the past few years. The development is characterised by a sharp drop in the share of the countries of the former Soviet Union. Whereas the share of those countries in the export of 1990 still made up 94.9 per cent and in the import 73.8 per cent, it dropped to 39.6 per cent in export and 34.2 per cent in import, in 1995. (comp. Annex 3.1.4-2).

Fig. 3.1.4-3: CIS share in Azerbaijan foreign trade
[in % of total value]



Iran and Turkey have taken on a growing importance for Azerbaijan foreign trade in the last few years. The share of Iran in Azerbaijan's exports was just under 30 per cent in 1995 and in the case of imports the share stood at 12 per cent. Turkey achieved a 21 per cent share in Azerbaijan's imports in 1995.

Looking at the geographical structure of foreign trade one should also consider the quantities exported and imported. Looking at it from this angle, the current dominating role of Iran, with a share of more than 40 per cent of the export and about 30 per cent on the import (1995), becomes especially clear. The geographical structure of the imports and exports is depicted in Figures 3.1.4-4 and 3.1.4-5. Annex 3.1.4-2 contains a detailed overview.

Fig. 3.1.4-4: Exports of Azerbaijan 1995

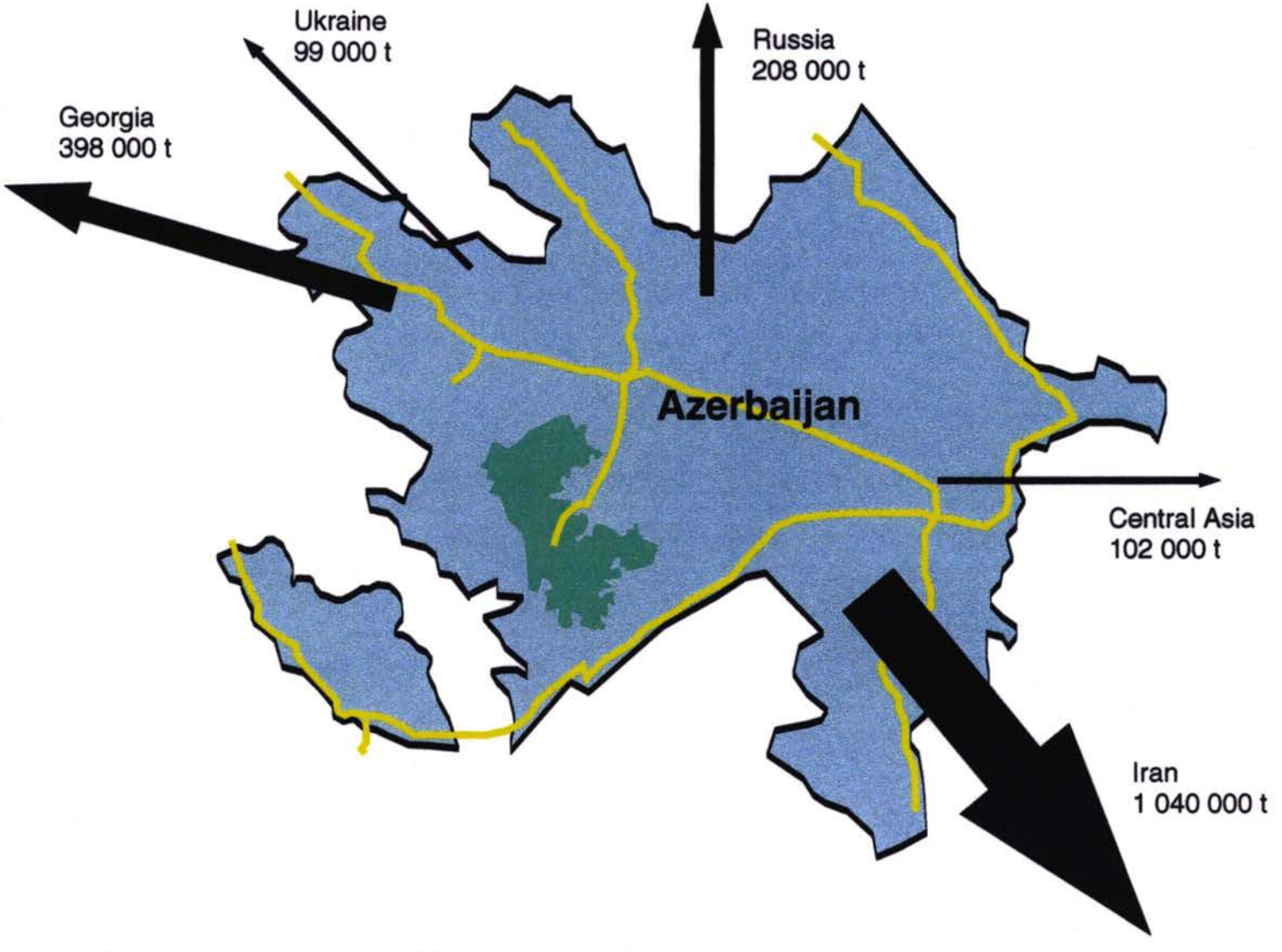
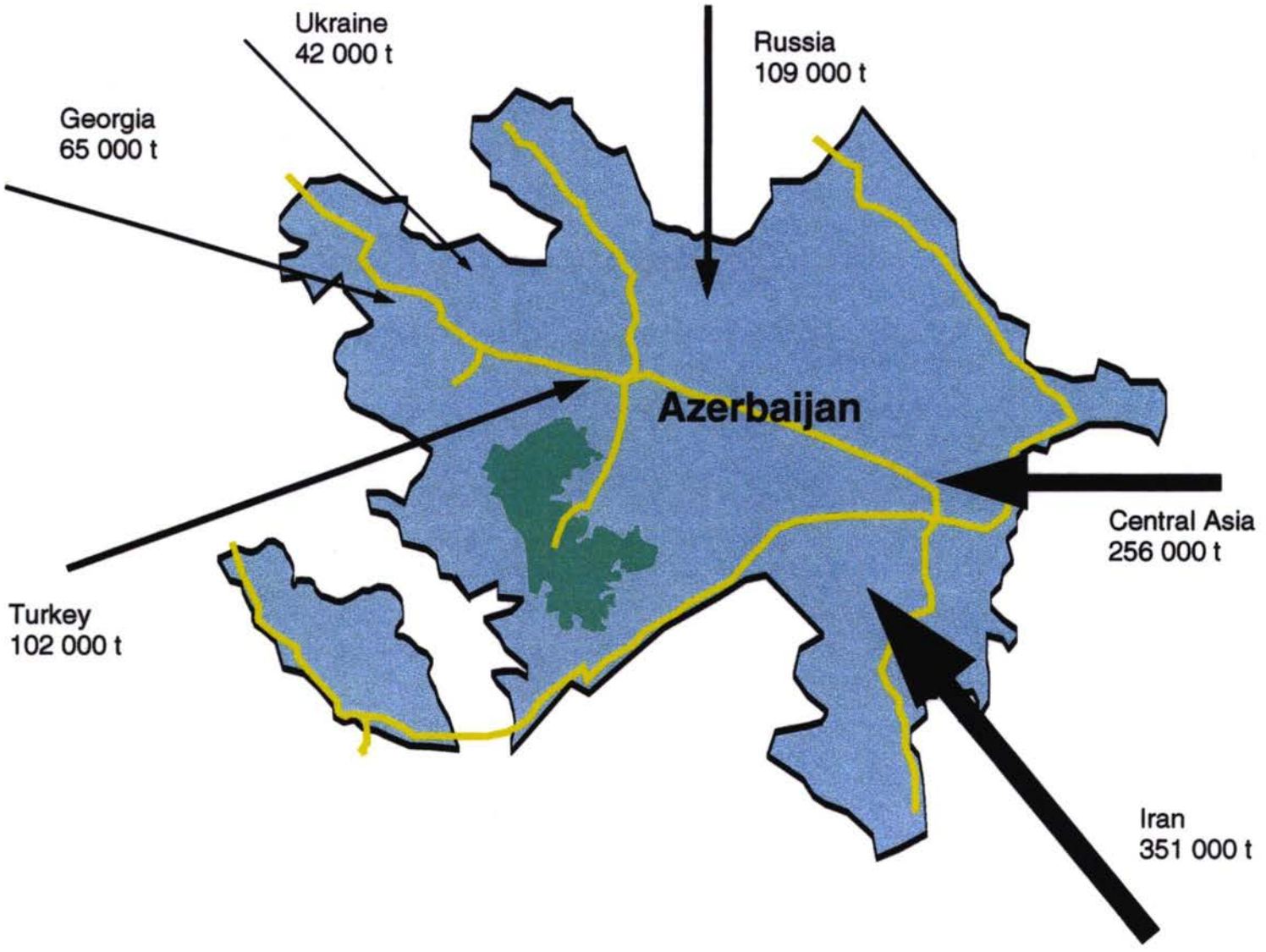


Fig. 3.1.4-5: Imports of Azerbaijan 1995



3.1.4.3 Georgia

Foreign trade played an important role in the Georgian economy. In 1990, the imports of the country amounted to 41 per cent of the GDP, and the exports corresponded with 46 per cent.
Georgia was highly dependent on exchange relations with the other republics, within the economic system of the former Soviet Union.
The largest part of the raw materials and semi-finished products for further processing were imported. And the countries of the former Soviet Union were the main market for the products of the relatively highly specialised national industry and agriculture. Thus, the effects of the collapse of the economic, trade and payment relations within the former Soviet Union were especially negative for Georgia.
At the moment, the share of CIS countries in Georgian foreign trade is still relatively high. In 1992, the CIS still had a share of 96.3 per cent of Georgian exports and it was 96.8 per cent in the case of imports (comp. Annex 3.1.4-3).
In 1995, the CIS share in the foreign trade turnover was still more than 50 per cent. At the moment, Russia and Turkmenistan represent the main trade partners of Georgia, followed by Turkey, Bulgaria and Romania, all three bordering on the Black Sea. Figures 3.1.4-7 and 3.1.4-8 show the main trade flows from and to Georgia.

Those branches of industry producing on the basis of domestic raw materials, such as non-ferrous and ferrous metallurgy, the chemical and the petrochemical industries, the building materials industry as well as agriculture, play a vital role in Georgia's exports. Imports focus much on fuels as well as agricultural products and food (comp. Annex 3.1.4-6). The goods structure of Georgian foreign trade is depicted in figure 3.1.4-6.

Fig. 3.1.4-6: Goods structure of Georgian foreign trade, 1995
(in % of total value)

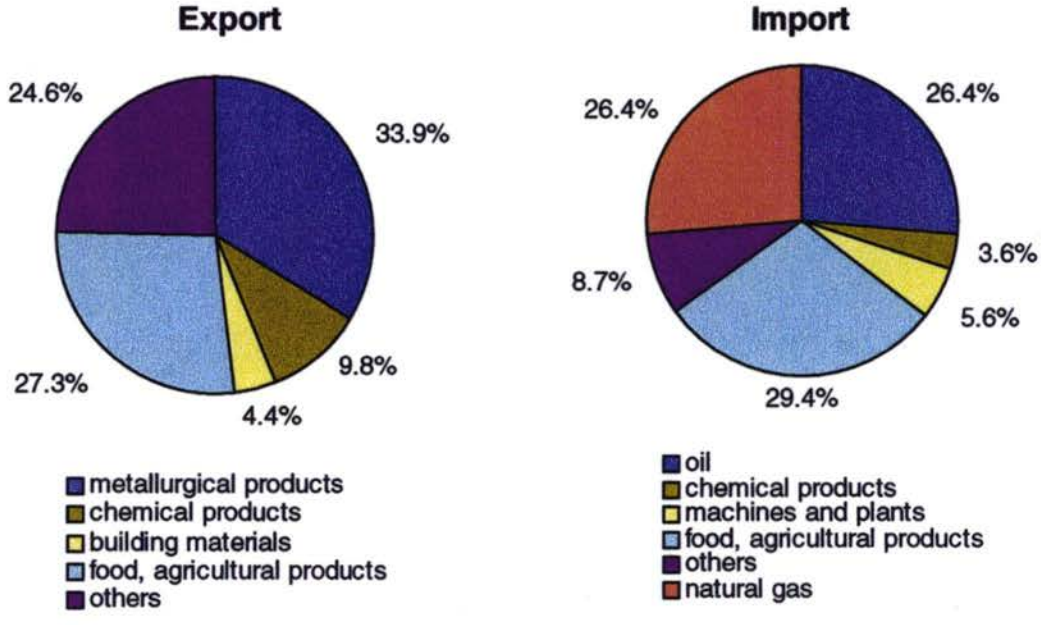


Fig. 3.1.4-7: Main export partners of Georgia in 1995

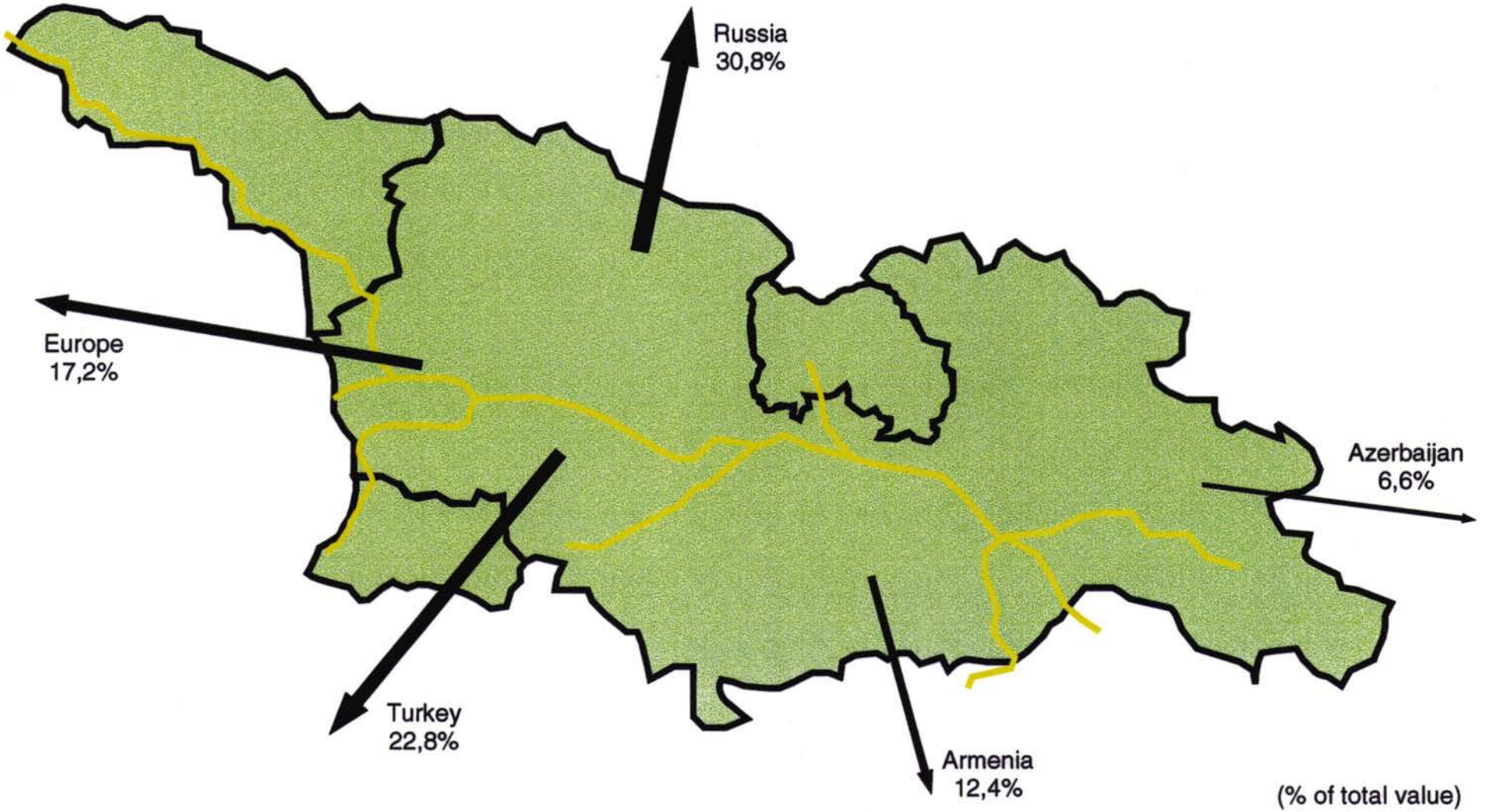
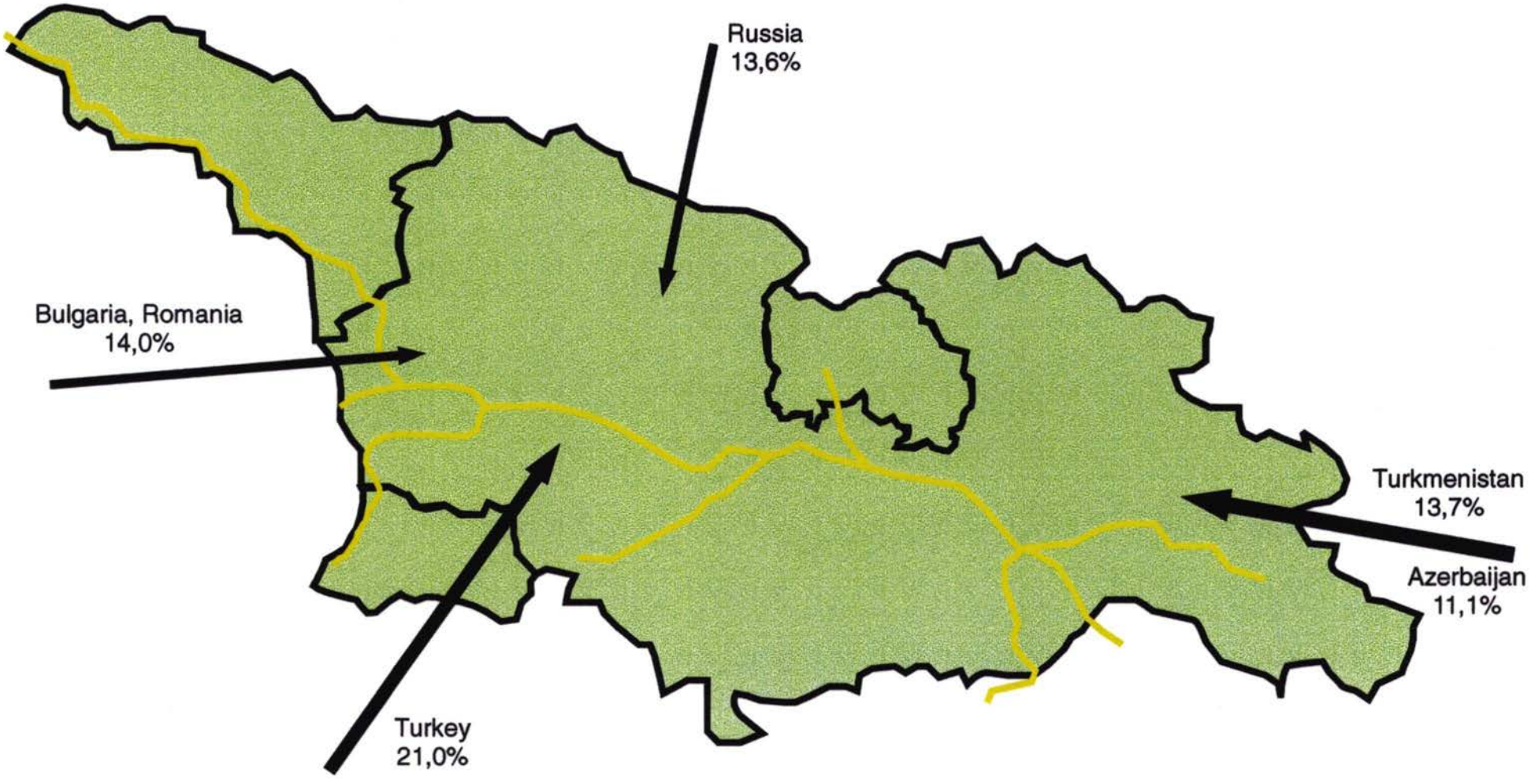


Fig. 3.1.4-8: Main import partners of Georgia in 1995



(% of total value)

The bilateral exchange of goods between Azerbaijan and Georgia has special significance for the rail traffic in the investigated corridor of Baku - Tbilisi - Poti/Batumi. The most important types of goods of the mutual imports and exports are listed in Annex 3.1.4-9. The share of petrochemical products in the export of Azerbaijan stood at 80 per cent (based on volume) in 1995. Nitrogen fertiliser makes up the main part of Georgian exports (approx. 32 per cent), metallurgical products rank second (approx. 26 per cent) and then come mineral building materials (approx. 18 per cent).

3.1.4.4 Foreign trade of Central Asian republics

Foreign trade with the Central Asian republics of the former Soviet Union represents an important potential for transit transports on the Caucasian Railways. Uzbekistan and Turkmenistan are the most important dispatch and recipient countries in this region. Therefore the development of foreign trade of this two countries is analysed more detailed in the following.

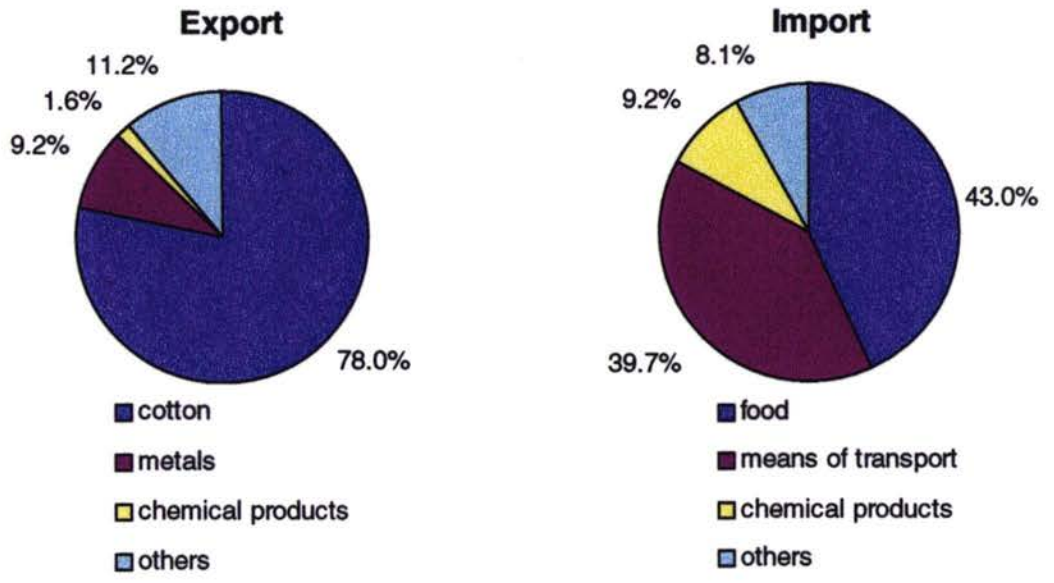
A geographical re-orientation of the foreign trade relations has also taken place in the Central Asian countries over the past years. The foreign trade turnover of ***Uzbekistan*** with countries outside the CIS has increased steadily in the last few years. In 1994, exports rose by 14 per cent and imports by 19 per cent, as compared to the previous year. In the first six months of 1995, the growth of exports was about 50 per cent and of imports it was 39 per cent. The proportion of European partners in the exchange of goods with Uzbekistan has risen sharply. Europe accounted for 72.9 % of Uzbek exports and 67.1 % of the imports in 1994.

Turkey is another trade partner of growing importance.

The goods structure of Uzbek exports is still very one-sided at the moment. The share of cotton was 78 per cent of the total exports of the country in the first half of 1995, non-ferrous and ferrous metals made up 9.2 per cent and chemical products 1.6 per cent.

The share of food in imports was 43 per cent, 40 per cent of all imports were means of transport and 9 per cent chemical products.

Fig. 3.1.4-9: Commodity structure of Uzbek foreign trade in the first six months of 1995 (in % of total value)



Due to the rich deposits, raw materials will continue to play an important role in the Uzbek export business. Up to the year 2000, for instance, the country's oil production is to be increased to 10 million tons per year. Uzbekistan is among the 10 largest natural gas producers in the world. Raw materials for the building material industry constitute a further important export potential.

However, Uzbekistan is undertaking efforts to increase the share of processed products in the exports, too. There are chances to accomplish this aim especially in the light industry. At the moment, only some 15 per cent of the cotton grown in the country is also processed there, there are plans to rise this share to at least 25 per cent up to the year 2000.

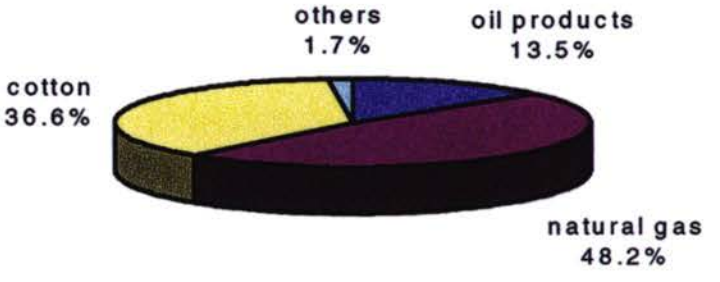
In 1996, Uzbekistan exported a total of 3.451 million tons of goods. The decisive share had mineral products with 1.121 million tons (32.5 %), products of vegetable origin with 0.462 million tons (13.4 %) and textiles and textile products with 0.896 million tons (26,0 %). A large part of the exports (1.340 million tons = 38.8 %) went to the other Central Asian republics.

Uzbekistan's imports in 1996 totalled 6.465 million tons. The most important items were: products of vegetable origin (1.964 million. t = 30.4 %) and mineral products (2.483 million tons = 38.4 %). 46.1 % of all imports came from the other Central Asian republics.

The European countries play a growing role also in the foreign trade of ***Turkmenistan***. Their share in the exports of the country was 63.9 per cent in 1994, and 55.4 per cent in imports. Turkey is a main trading partner for Turkmenistan, too. Its share in the exports of the country was 21 per cent over the above quoted period, and Turkey had a share of 11.6 per cent in Turkmenistan's imports.

Similarly to Uzbekistan, the exports of Turkmenistan are determined largely by unprocessed raw materials:

Fig. 3.1.4-10: Commodity structure of Turkmenistan's exports, 1993 (in % of total value)



In 1995, Turkmenistan exported a total of 3.647 million tons of goods, 28 % of which went into the other Central Asian republics. With 3.111 million tons, mineral products had a share of 85.3 % in the overall export. In the same year 2.173 million tons were imported. 18.7 % of this quantity were mineral products, 18.7 % chemical products, and 18.2 % products of vegetable origin. 52.5 % of the imports came from the other Central Asian republics.

Compared to these two countries, the foreign trade volumes of Kyrghyzstan and Tadjikistan were relatively small. In 1995 Kyrghyzstan exported a total of 0.765 million tons, 49 % of which into the other Central Asian republics. Imports amounted to 1.704 million tons, and 68 % of all deliveries came from the other Central Asian republics. Tadjikistan exported in 1995 a total of 0.562 million tons, and 1.386 million tons were imported, 51 % of which from the other Central Asian republics.

3.1.5 Present volumes of railway freight transport

For analysing the present transport volumes in railway traffic and for preparing the traffic forecast the flows of goods were classified as follows:

- domestic traffic
- exports
- imports
- transit

The determining factor for this classification was the existing statistic material to start from. The statistical data made available by the three railway administrations could be unified according to this scheme both for the entire network of the individual railways and , in the first place for the main transport corridors.

In the following, *freight dispatch* means the overall quantity of goods (loaded /forwarded tons) being forwarded in the individual period on the network of the corresponding railway.

Domestic traffic are those transports for which both dispatching station and receiving station are located inside the network of the individual railway administration.

According to this definition, *freight dispatch* is the sum total of domestic traffic and exports.

Contrary to the customary definition, *transit* here below in specific cases, especially as refers to transports on select corridors, means only those transports which mean transit to *both* railway administrations. These cases will be especially earmarked wherever they appear.

3.1.5.1 Total railway freight traffic

Armenia

The transport volume in freight traffic of the Armenian Railway dropped from 33.9 million tons in 1989 to a mere 1.2 million tons in 1996. This represents a reduction down to 3.5 per cent! During the same period of time, the transport performance of 5,121 million tkm was reduced to 351 million tkm, i.e. to 6.9 per cent. The main causes for this extreme drop of freight transport volume are:

- the collapse of the Soviet economic system and thus the loss of a large number of deliveries of raw materials and supplied parts as well as the transport of finished products to the other republics of the former Soviet Union

- the economic crisis in Armenia, in whose wake the production in all areas of the national economy were reduced to a minimum

- the interruption of important transport corridors due to the political situation in the Caucasus region (railway lines to Turkey and Azerbaijan/Iran)

Because of the Armenian economy's high degree of dependence on imports of raw materials and supplied parts, imports play a decisive role in the freight traffic of the Armenian Railways. In 1989 some 53.8 per cent of the entire transport volume were made up by imports. In 1996, this share was still 43.4 per cent.

Due to the blockade situation faced by the Armenian Railways, the proportion of exports in the entire transport volume decreased from 23.7 per cent in 1989 to 11.2 per cent in 1996. On the other hand, the domestic transport volume rose from 22.5 per cent to 45.4 per cent in the same period of time.

The freight transport of the Armenian Railways shows the following structure of commodities:

Tab. 3.1.5-1: Freight transport of Armenian Railways

	1989		1996	
	1000 t	%	1000 t	%
Total freight dispatch	*15,641*	*100.0*	*666*	*100.0*
cement	1,053	6.7	130	19.5
building materials	6,909	44.2	116	17.4
chemical products	310	2.0	8	1.2
industrial raw materials	2,625	16.8	130	19.5
others	4,744	30.3	282	42.4
Exports	*8,033*	*100.0*	*132*	*100.0*
of which:				
building materials	2,220	27.6	115	87,1
Imports	*18,227*	*100.0*	*511*	*100.0*
oil products	5,662	31.1	316	61.8
building materials	4,771	26.2	9	1.8
Coal	112	0.6	-	-
Ore	468	2.6	-	-
Cereals	1,175	6.4	173	33.9
foodstuff	680	3.7	8	1.5
others	5,359	29.4	5	1.0

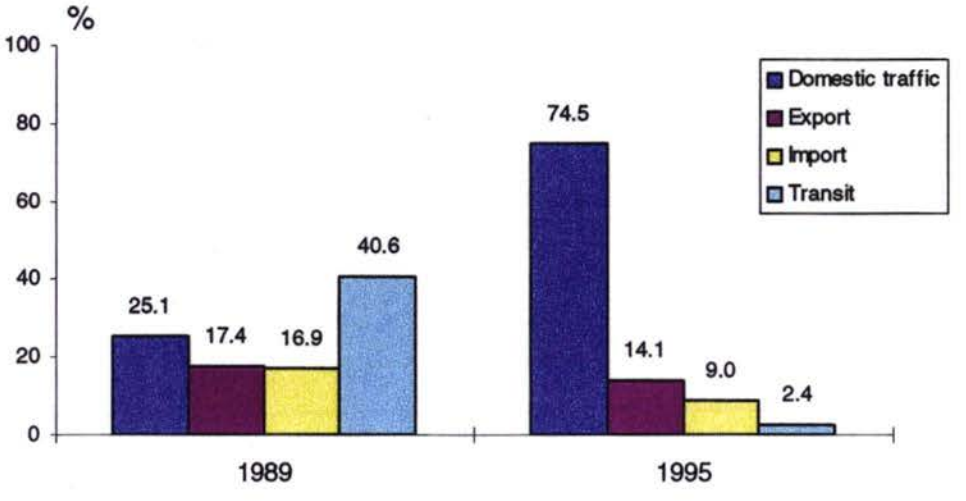
In the past, transit traffic did not play a role for the Armenian Railways. In 1989, only 40,000 t of transit goods were handled. Because of the political situation, there is no transit traffic at all, at present. The following connections constitute potential transit corridors: Dshulfa/Nakhichevan - Yeraskh - Ayrum - Georgia as well as Turkey - Akhurian - Ayrum - Georgia (compare section 3.1.6-2).

Azerbaijan

The volume of Azerbaijan's rail transport dropped from 91.4 million tons in 1989 to a mere 9.1 million tons in 1995. This corresponds with a decrease to 9.9 per cent. The transport performance, during the same period, dropped from 41.9 billion tkm to 2.4 billion tkm, i.e. to a mere 5.8 per cent. This even more significant reduction in the transport performance is due to a decisive shortening of the average transport distances. The average transport distance of 458 km in 1989 decreased to 265 km in 1995, because the main transport corridors to the north (Yalama - Russia) as well as to the south (Nakhichevan - Dshulfa - Iran) were closed down.

The transport flows of the Azerbaijan Railways have changed markedly, due to the political development in the region, above all, but also because of the collapse of the economic and trade system of the former Soviet Union. For instance, transit transports in 1989 still constituted a share of 40.6 per cent of the entire transport volume. In 1995, it only made up a proportion of 2.4 per cent. The share of exports and imports, too, was reduced drastically. This led to the situation that the domestic transport had a share of 74.5 per cent in 1995 as compared to 25.1 per cent in 1989, even though the absolute transport volume of domestic transports went back by nearly 70 per cent during this period (comp. Annex 3.1.6-2).

Fig. 3.1.5-1: Structure of Azerbaijan's railway transports (transport volume)



Products of the oil processing industry constituted the main part or 76.1 per cent of freight transport of the Azerbaijan Railways in 1995, building materials made up 12.2 per cent.

Tab. 3.1.5-2: Freight transport of Azerbaijan Railways

	1989		1995	
	1000 t	%	1000 t	%
Total freight dispatch	39,466	100.0	8,429	100.0
of which:				
oil products	*10,692*	*27.1*	*6,416*	*76.1*
building materials	*13,044*	*33.1*	*1,031*	*12.2*
Exports	15,895		1,277	100.0
of which:				
oil products	...		*1,064*	*83.3*
Imports	15,477		815	
Transit	37,082		219	

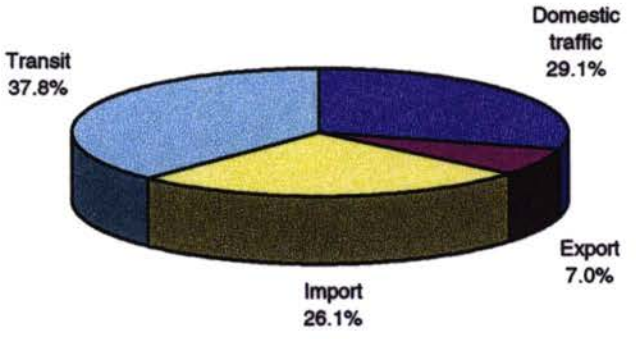
The average transportation distance in freight traffic of the Azerbaijan Railways dropped from 458 km in 1989 to 225 km in 1995, which is due, as mentioned above, to the closure of important transit corridors.

Georgia

In Georgia there is a similar development in railway freight transports as compared to Azerbaijan. The entire transport volume dropped from 36.2 million tons in 1988 to 4.7 million tons in 1995, this corresponds with a reduction to 13.0 per cent. The transport performance decreased from 12.6 thousand million tkm in 1988 to only 1.2 thousand million tkm in 1995, i.e. to 9.9 per cent (comp. Annex 3.1.6-3).

The share of transit transports of 37.8 per cent in the total volume of transports, in 1995, was relatively high as compared to Azerbaijan. On the other hand, the share of domestic transports was only 29.1 per cent:

Fig. 3.1.5-2: Structure of Georgia's railway transports 1995 (transport volume)



3.1.5.2 Railway freight traffic in main corridors

The following corridors, which are of special importance in the network of the three railways, were subject of a detailed investigation:

- Baku - Gyandsha - Tbilisi - Samtredia - Poti / Batumi
- Baku - Nakhichevan / Dshulfa - Iran
- Baku - Nakhichevan - Yerevan
- Baku - Astara - Iran
- Baku - Yalama - Russia
- Tbilisi - Yerevan - Nakhichevan / Dshulfa - Iran
- Tbilisi - Gyumri - Turkey
- Tbilisi - Samtredia - Sukhumi - Russia

The current situation of railway freight traffic in the quoted corridors is described in the following. The goods flows are divided up according to
- domestic traffic
- exports
- imports
- transit.

Unfortunately there was not complete statistical data available for the individual transport corridors so that in many cases own calculations and assumptions were used.

Baku - Tbilisi - Poti / Batumi

The Trans-Caucasian Railway line from Baku at the Caspian Sea, via Tbilisi to the Black Sea ports of Poti and Batumi is by far the most important axis for both countries at the moment. The significance of this line has even increased because of the blocking of important international links, due to political tensions in the region (comp. Fig. 3.1.2-1). The Azerbaijan Railways cater for about 90 per cent of the entire transport performance on the Baku - Beyuk Kyassik line. The Georgian Railways conduct about 75 per cent of their transports in the corridor of Tbilisi - Batumi/Poti, at the moment.

In order to assess the future transport potentials on this line as exactly as possible, the transport corridor was divided up into individual main sections first:

- Baku - Gyandsha
- Gyandsha - border of Azerbaijan/Georgia - Tbilisi
- Tbilisi - Batumi
- Tbilisi - Poti

Then, the transport flows on the individual sections of the line were split up into their above mentioned main components.

The current situation resulting for 1995 has been compiled for the East-West direction in Fig. 3.1.5-3 and for the West-East direction in Fig. 3.1.5-4. The detailed figures are contained in Annexes 3.1.6-4 to 3.1.6-7.

As there was either incomplete or no statistical data for some of the line sections as well as certain parts of the freight flow, often own calculations or assumptions as regards volume, structure and direction of the transports had to be applied. Thus, detailed explanations are given for each of the transport flows in the following:

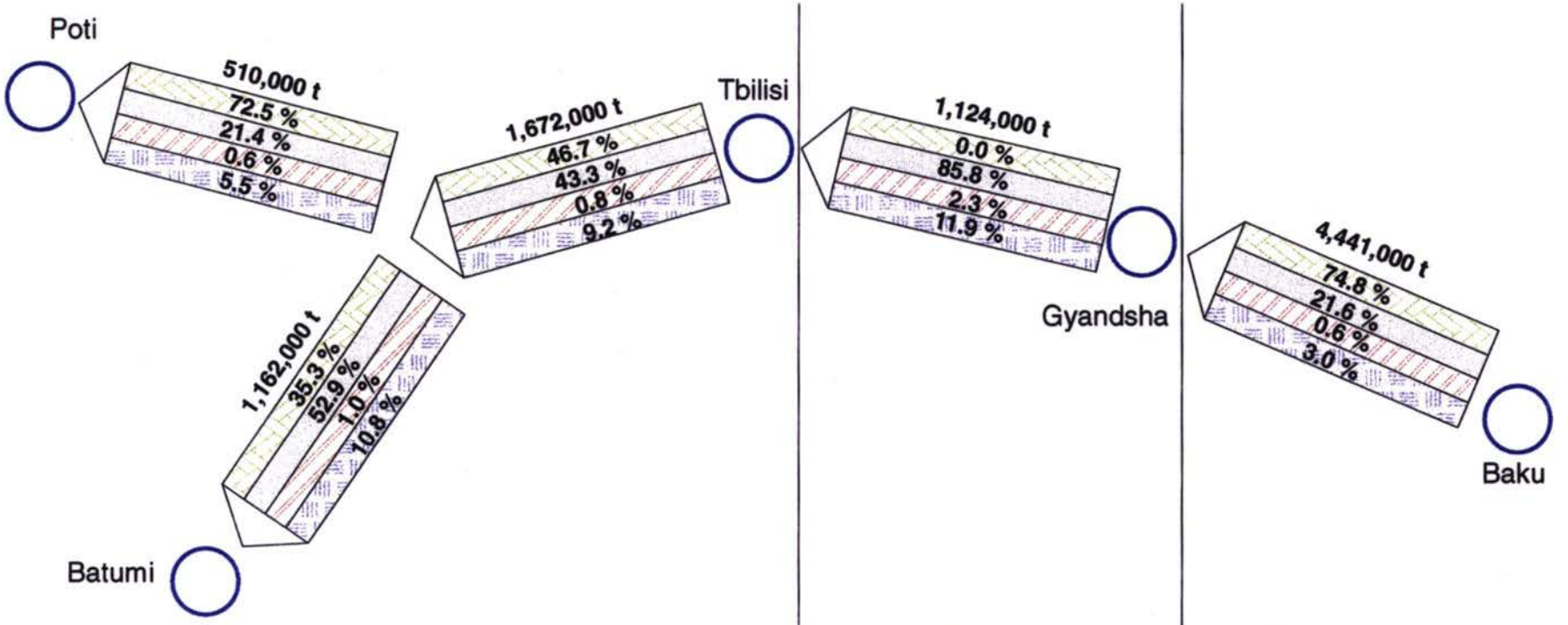
Domestic traffic:

The transported volumes on the section of Baku - Gyandsha and vice versa were calculated for the domestic traffic of **Azerbaijan** on the basis of existing statistical data on transport performance. The volumes depicted for the entire section represent an average figure. The burden on the respective line sections is contained in Fig. 3.1.5-5.

The domestic traffic of Azerbaijan quoted, in Figures 3.1.5-3 and 3.1.5-4 respectively, includes Azerbaijan imports (in East-West direction) and exports (in West-East direction), whose share in the total volume is insignificant, however.

The strong disparity of the freight flows in domestic traffic is striking. The transports in the western direction are more than four-fold that of the transports in the opposite direction.

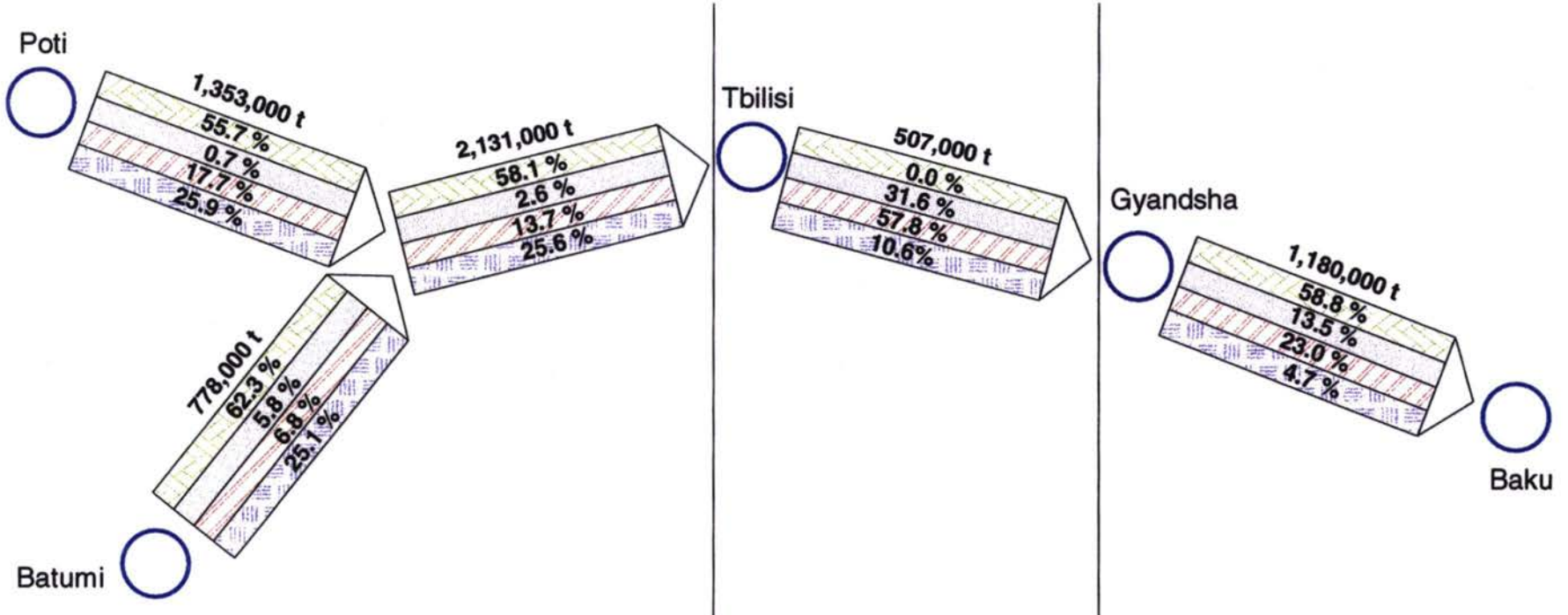
Fig. 3.1.5-3: West-bound traffic 1995



Tbilisi-Poti	Tbilisi-Batumi	Gyandsha-Tbilisi	Baku-Gyandsha	
370,000 t [2]	410,000 t [2]	0 t	3,329,000 t [1]	Domestic traffic
109,000 t	615,000 t	964,000 t	952,000 t	Exports Azerbaijan
3,000 t	11,000 t	26,000 t	26,000 t	Imports Georgia
28,000 t	126,000 t	134,000 t	134,000 t	Transit

[1] incl. Azeri imports [2] incl. Georgian exports

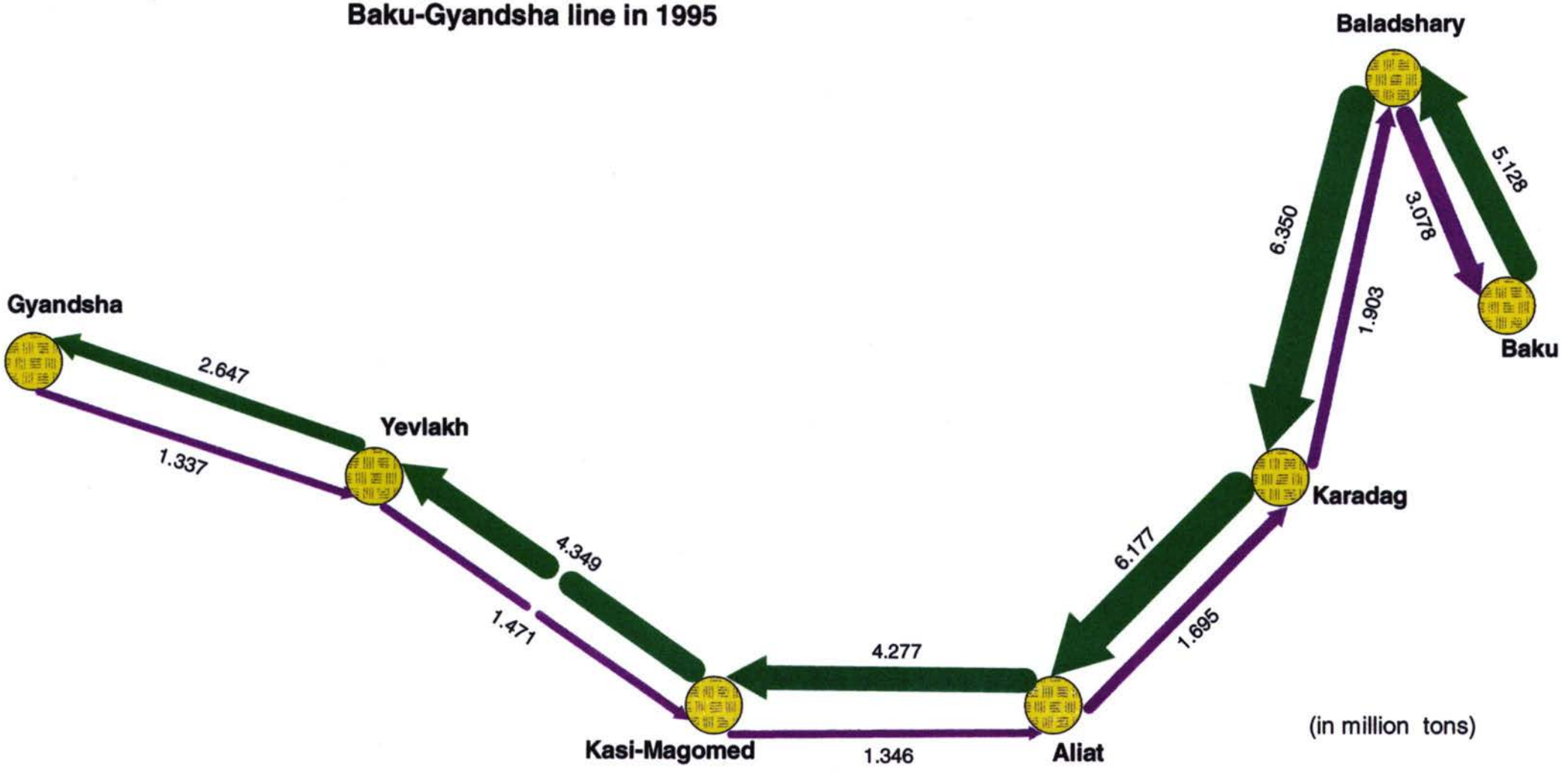
Fig. 3.1.5-4: East-bound traffic 1995



Poti-Tbilisii	Batumi-Tbilisi	Tbilisi-Gyandsha	Gyandsha-Baku	
753,000 t [1)]	485,000 t [1)]	0 t	706,000 t [2)]	Domestic traffic
10,000 t	45,000 t	160,000 t	155,000 t	Exports Georgia
240,000 t	53,000 t	293,000 t	265,000 t	Imports Azerbaijan
350,000 t	195,000 t	54,000 t	54,000 t	Transit

[1)] incl. Georgian imports [2)] incl. Azeri exports

Fig. 3.1.5-5: Transport volume on the Baku-Gyandsha line in 1995



Unfortunately, there is no statistical data on the structure of goods being transported in domestic traffic on the quoted section of the line. However, one may assume that it was mainly petrochemical products which were transported in the western direction (compare section 3.1.3.1), whereas in the eastern direction it was above all mineral building materials and other raw materials which were transported from the Gyandsha and Yevlakh area. Domestic traffic on the section Gyandsha - border was neglected due to its insignificant volume. Unfortunately, there was no statistical data on domestic traffic in **Georgia,** relating to the line. It was assumed that some 75 per cent of the 1.37 million tons total transport volume of domestic traffic were forwarded on the Tbilisi - Batumi/Poti section. The volume resulting from this assumption was allocated, according to their significance, to the individual recipient and dispatch areas on the Tbilisi - Poti and Tbilisi - Batumi sections and the respective direction (East-West / West-East).

Domestic traffic in the East-West direction contains Georgian exports, and the transports in the opposite direction Georgian imports.

Exports and imports of Azerbaijan and Georgia

For clarification of the terms, one has to say that the Azerbaijan exports in the East-West direction also contain the exports to Georgia, Georgian imports, on the other hand, are imports from third countries in transit through Azerbaijan.
In the opposite direction, the Georgian exports contain the exports of the country to Azerbaijan. Azerbaijan imports are those from third countries in transit via the ports of Poti and Batumi.

According to existing statistics of the Azerbaijan Railways, the cross-border railway traffic (without transits) via the Beyuk-Kyassik border crossing point in 1995 was as follows:

Tab. 3.1.5-3: Cross-border railway traffic between Azerbaijan and Georgia

Type of goods	Azerbaijan Export		Azerbaijan Import	
	tons	%	tons	%
Total	*963,801*	*100.0*	*452,813*	*100.0*
petrochemical products	941,958	97.7	5,106	1.1
coal, coke				
ore			62,125	13.7
ferrous metals			17,290	3.8
timber				
mineral building materials	1,499	0.2	12,698	2.8
cement	65	0.0	491	0.1
mineral fertiliser			18,693	4.1
cereals			315,335	69.9
others	20,279	2.1	21,075	4.7

Note: Data provided by Azerbaijan Railways for 1995, without transits, but including Azerbaijan exports and imports via Black Sea ports.

Unfortunately, the statistics do not show the destination countries for Azerbaijan exports nor the countries of origin for the imports. However, one may assume that some 400,000 tons of the exports were destined for Georgia and approx. 65,000 tons of the imports came from Georgia (comp. Annex 3.1.4-9). The remaining volume was foreign trade traffic of Azerbaijan, transported in transit through Georgia.

Table 3.1.5-3 shows clearly that the Azerbaijan exports by rail were absolutely dominated by the item of petrochemical products in 1995. In the imports, two thirds were made up by cereals.

In 1995, some 75 per cent of the Azerbaijan exports transported by rail went via the Beyuk-Kyassik border crossing point. Even though there is no exact statistical data, one may assume that the Azerbaijan exports were split between the ports of Batumi and Poti at a ratio of 85:15. This is deduced from the structure of the goods exported by Azerbaijan (Batumi as the main oil port and refinery location).
56 % of Azerbaijan imports in rail traffic came into the country via the Beyuk-Kyassik border crossing point. Due to the structure of the goods, one may deduce that the imports via the Black Sea ports were split between Poti and Batumi at a ratio 80:20 (Poti as the most important port for general cargo and cereals).

Due to the geographical structure of Georgian foreign trade, one may assume that some 50 per cent of the exports and some 30 per cent of Georgia's imports (in rail traffic) was conducted through the Beyuk-Kyassik border crossing point.

Transit traffic

Transit traffic in this case means transports, which run through *both* countries in transit, thus they do not contain foreign trade transports of either country. According to statistical data of the Azerbaijan Railways, the transit transports via the Beyuk-Kyassik border crossing point in 1995, were composed as follows:

Tab. 3.1.5-4: Transit transports via Beyuk-Kyassik border crossing point, 1995

Type of goods	East-West direction		West-East direction	
	tons	%	tons	%
total	*159,835*	*100.0*	*54,185*	*100.0*
petrochemical products	135,862	85.0	381	0.7
coal, coke	915	0.6	-	-
ore	65	0.0	1,686	3.1
ferrous metals	3,588	2.3	25,031	46.2
timber	963	0.6	105	0.2
mineral building materials	4,542	2.8	1,441	2.6
cement	3,651	2.3	-	-
mineral fertiliser	-	-	-	-
cereals	3,804	2.4	420	0.8
others	6,445	4.0	25,121	46.4

The transit transports on the Azerbaijan side are distributed as follows:

Tab. 3.1.5-5:Origin/destination of transit transports via Beyuk-Kyassik

Origin/Destination	East-West direction		West-East direction	
	tons	%	tons	%
total	**159,835**		**54,185**	
Baku - ferry	136,541	85.4	13,814	25.5
Yalama - (Russia)	23,294	14.6	36,785	67.9
Astara - (Iran)			3,588	6.6

There are no exact statistical details for the transit flows on the Georgian side. Thus, the following own assessments were drawn up:

The westbound transit transports are split between the ports of Batumi and Poti at a ratio of 80:20, based on the structure of the type of goods. As of Tbilisi, there is a smaller volume from Armenia and a similarly small proportion branches from Tbilisi in the direction of Armenia.
The eastbound transit transports (including those for Armenia) are also channelled through the ports of Poti and Batumi at a ratio of 65:35, based on the structure of the type of goods. The share of the freight destined for Armenia currently stands at 90 per cent of the entire eastbound transit traffic through Georgia.

The following overview makes clear the strong imbalance of freight flows on the individual line sections (total transport volume in 1995 in '000 tons):

	Westbound	Eastbound
Baku - Gyandsha	4,441	1,180
Gyandsha - Tbilisi	1,124	507
Tbilisi - Poti	510	1,353
Tbilisi - Batumi	1,162	778

Baku - Nakhichevan / Dshulfa - Iran

Traffic on this line has been completely ceased at the moment due to the conflict of Nagorno-Karabakh.

In the past, this line was an important transit corridor for rail transports from and to Iran. Exports from the former Soviet Union as well as the Scandinavian countries (wood, paper) to Iran mainly ran via Dshulfa. This route was also important for rail

transports from and to Western Europe and was at times used more frequently than the transit route through Turkey.

In 1989, some 2.2 million tons of transit goods were transported via Dshulfa to Iran, and it was 0.1 million tons in the other direction.

Due to differing gauges of the railways in Iran and the former Soviet Union, the goods had to be transhipped in Dshulfa.

Baku - Nakhichevan - Yerevan

In the past, this line used to be of great significance for the exports and imports of Armenia. Eighty per cent of the country's imports and exports were handled in transit through Azerbaijan. In 1989, 61 per cent of all Armenian imports were channelled through Nakhichevan in rail transport.

According to details provided by the Azerbaijan Railways, the following amounts of freight were transported on this line during the period of 1989 to 1991 (in '000 t)

	1989	**1990**	**1991**
to Armenia	10,112	8,107	5,715
out of Armenia	3,138	1,629	497

Baku - Astara

This line is of subordinated significance for railway traffic. It is of interest, above all, for transports to and from Iran. However, the rail track only reaches Astara (Azerbaijan) . Transports from and to Iran are continued by road from that point.

The transport volumes are insignificant at the moment. In 1993, 109 thousand tons were transported in the direction to Iran and 16 thousand tons in the opposite direction. After that the transport volume decreased further.

Baku - Yalama

In the past, this was by far the most heavily used railway line. Nearly the entire rail freight traffic between Azerbaijan, Georgia, Armenia and Russia as well as the other republics of the former Soviet Union was handled via this corridor. Over the past few years, the traffic has been closed down or limited severely due to the situation in Chechnya. The following goods volumes were transported (in '000 tons):

	1989	1990	1991	1995
Northbound	17,770	14,981	13,359	270
Southbound	40,025	37,271	8,723	181

Under normal political conditions in the region, this line is the shortest direct rail link of the Central Asian republics (except for Kazakhstan) to Russia and the Ukraine. It is also the preferred corridor for direct rail transports from Northern and Central Europe to these countries of Central Asia. Transports from and to Central Asia via sea ports will rarely use this line (to Novorossijsk on the Black Sea coast), as the Baku - Poti / Batumi connection is considerably shorter:

Tashkent	-	Poti	3,094 km
Tashkent	-	Novorossijsk	3,512 km
Ashkhabad	-	Poti	1,810 km
Ashkhabad	-	Novorossijsk	2,228 km

Tbilisi - Masis / (Yerevan) - Dshulfa - Iran

This line, along which there is no international rail traffic in the direction to Iran at the moment, was of little importance for transit in the past. Transits from and to Iran via Dshulfa were handled more or less exclusively via the line through Azerbaijan as described above. The most important reason for this was that the further connection in transit through Georgia to Russia - a single track line to a large extent - was mainly used for passenger traffic in the past.
The exchange of goods between Armenia / Georgia and Iran was completely insignificant during the times of the Soviet Union.

Tbilisi - Gyumri - Turkey

This line, too, which represents the only direct rail link between Turkey and the CIS states, was used for international freight traffic only to a limited extent in the past. The main reason for this was the insignificant volume of trade between Turkey and the adjoining regions of the former Soviet Union.

In 1992, international traffic between Armenia and Turkey was ceased completely.

Competitive rail transport corridors

Competitive rail connections, which do not cross the territories of Armenia, Azerbaijan or Georgia, mostly relate to transports from and to Central Asia. The following corridors may be regarded, above all, as competitive connections between Europe and Central Asia or the Far East:

1) Western, Central, Northern Europe - Russia - Kazakhstan - Uzbekistan / Turkmenistan / Far East

2) Western, Central, Northern Europe - Russia - Far East (Transsib)

3) Western, Central, Southern and South Eastern Europe - Turkey - Iran - Turkmenistan

It is difficult to present a general assessment of the advantages and disadvantages of the individual corridors, as regards distances, transport times, tariffs etc. The concrete economic advantages and disadvantages of the individual corridors depend decisively on the respective origin or destination, on the type of goods to be transported, demands on transport time and quality and so on.

Furthermore, today and in the future, decisions on the transport route are and will be influenced strongly by political and trade policy aspects, and customs issues play an important role, too. The tariffs to be applied will also be significant in future. Especially in this area, a possible development is difficult to predict, as all the countries of the region will try to participate in the quickly developing transit market by employing a respective tariff policy. Even at present it is evident that, despite existing agreements between the railways concerned, there is no joint, co-ordinated tariff policy and will hardly be achievable in future.

A comparative analysis of the individual corridors which will take into account distances, transport times and, in the first place, transport costs, is only possible for concrete types of goods with clearly defined dispatching and receiving places. Such a detailed analysis, however, was not required for preparing the traffic forecast according to the methodology described in section 3.1.1. Comparative investigations regarding costs and tariffs in the different corridors will be done in chapter 6.1.

Thus, certain origin-destination relations and catchment areas had been determined, for which the one or the other transit route is predestined. The significance of the competing main corridors for selected relations is assessed in the following, assuming a normal political situation and thus unrestricted usability of the respective lines. This evaluation of the individual corridors together with the evaluation of the competitive modes of transport in the first place served to estimate which shares the individual transit routes will have in the future foreign trade flows of the Central Asian and Far Eastern countries.

Baku - Tbilisi - Poti / Batumi

- main corridor for exports of Azerbaijan to overseas destinations and imports from overseas
- most favourable sea port link for Azerbaijan, Georgia, Armenia
- advantageous sea port link for Uzbekistan, Turkmenistan Tadjikistan, Kyrghyzstan
- great significance for multi-modal transports to the Caucasus region, Central Asia and Northern Iran

Baku - Yalama - Russia

- main corridor for exports and imports of Azerbaijan to Russia, Ukraine, Belarus, Northern and Central Europe in direct rail traffic
- most favourable transit line from/to Central Asia (via the ferry of Baku - Turkmenbashi) from Northern and Western Europe, Western Russia, Ukraine
- transit line for direct railway traffic between Iran, Armenia, Georgia and Russia, Northern Europe

Europe - Russia - Far East (Transsib)

- advantageous link in direct rail traffic between Europe and the Far East via Russian ports on the Pacific Ocean
- favourable direct rail link between Europe and China, Korea

Europe - Russia - Kazakhstan - Central Asia / Far East

- preferred transport corridor for direct railway traffic between Europe and Northern, Western Kazakhstan
- favourable rail link between Europe, Western Russia, Ukraine and Western Uzbekistan
- possible rail link between Europe and China (via Drushba)

Europe - Turkey - Iran - Turkmenistan

- possible rail connection from Southern, South Eastern Europe to Eastern Turkey, Armenia, Iran
- disadvantages of this line for direct rail transports between Europe and Central Asia are the larger distances and difficult infra-structural conditions (e.g. two ferry crossings across the Bosporus and Lake Van)

Turkmenistan - Iran

- possible access of the countries of Central Asia to the Gulf ports (Bandar Abbas)

3.1.5.3 Transportation of main commodities

For the traffic forecast three groups of goods were investigated in detail:
- oil products
- cotton
- containers

The main reason for choosing exactly these groups was their special importance to the present and future transport volumes of the three Caucasian Railways. Different from the methodology described in section 3.1.1, special assumptions were made for these groups which will be more detailed in section 3.1.6.3. For all other types of goods the forecast was made in accordance with the methodology mentioned above.

Oil products

For the sake of clarity, the production of, trade with and transport of oil products were coherently analysed in section 3.1.3.1. Details as to the future transport volumes are given in section 3.1.6.3.

Cotton

Cotton is of special importance for transit transports from Central Asia via the lines of the Azerbaijan and Georgian Railways. This group of goods currently is one of the major items in westbound traffic from Central Asia and will keep gaining importance in future.

The Central Asian republics belong to the important cotton producers of the world. Uzbekistan is the fifth-largest producer and the second-largest exporter of cotton in the world.

Production and export of cotton has been steadily decreasing in the Central Asian republics and Azerbaijan over the past few years.

Tab. 3.1.5-6: Production and exports of cotton

(in '000 tons)

	1995/96		1996/97*	
	Production	Exports	Production	Exports
Uzbekistan	1,250	980	1,045	936
Turkmenistan	250	196	131	152
Tadjikistan	120	98	89	87
Kyrghyzstan	22	13	26	13
Azerbaijan	83	65	83	65

* estimate, Source: USDA /FAS

In recent years cotton production has been steadily declining in most growing regions of *Uzbekistan*. Cotton production in the country has declined by about 30 per cent since 1989. Lower producer prices, lack of adequate incentives, and a shortage of inputs and operating capital have contributed to the downward production spiral. Low currency levels had led to shortages of fertilisers, seeds, pesticides, machinery and spare parts. In addition, to solve the problem of adequate food supply, the government has encouraged farmers to diversify their crops and focus also on wheat production. This has led to a gradual shift of approximately 600,000 hectares of cotton area to wheat. The decline in cotton production has inevitably reduced the amount of exportable cotton. Lower cotton exports are also due to lower quality and new export pricing schemes.

The situation is almost the same in *Turkmenistan*. For example, farms have shifted approximately 50,000 hectares of irrigated cotton land to wheat, with at least some of the cotton shifted to more marginal land. In addition, non-payment for deliveries of natural gas to FSU countries has made it difficult for the government to maintain its heavily subsidised state production. Compounding the problem, state farms reportedly are not adequately planting, harvesting and picking cotton. If solutions to these problems are not found, the production decline is likely to have a negative impact on cotton exports in the long run. Turkmenistan has gained a more important role in the world cotton market over recent years, exporting cotton at below world market prices to earn desperately needed foreign exchange. Most of the cotton is sold to markets in East Asia, Southeast Asia, and predominantly Western Europe.

In recent years, *Azerbaijan* has relied on cotton exports in addition to its significant oil and natural gas resources to finance its economic growth. However, since the independence of the country in 1991, cotton area, production, and procurement have steadily declined due to the problems shared by all FSU cotton producing countries. The conflict with Armenia, loss of territory, large numbers of refugees, and the blockade of important transport corridors caused by the situation in Chechnya compound Azerbaijan's problems. Prior to the break-up of the FSU, the country channelled most of its cotton exports to Russia, the Baltic States and Eastern Europe. Recently, Azerbaijan has gained a larger share in the world cotton market by exporting cotton at below world market prices to markets in East and Southeast Asia and Western Europe. Nevertheless, although the government places emphasis on cotton as a strategic commodity, problems leading to the decline in cotton production have resulted in lower exportable supplies.

Containers

Container traffic to the three Caucasus republics has increased considerably in recent years. The largest part of the transported containers was handled by the Black Sea port of Poti. The incoming container traffic via Poti port more than doubled every year since 1994.

Tab. 3.1.5-7: Incoming container traffic via Poti port

	1994		1995		1996	
	TEU		TEU	% to 1994	TEU	% to 1995
Influx total	2,417		4,967	205.5	11,310	227.7
Ø per month	201		414		940	

The container flows from and to the Caucasus and Central Asia currently are extremely uneven. The percentage of loaded containers being transported in the East-West direction at present amounts to a mere 7- 10 per cent of those containers transported in the West-East direction.

The containers arriving via Poti port were distributed to the individual destination regions in 1996 as follows (in per cent):

Georgia	39.8
Azerbaijan	13.8
Armenia	37.4
Russia	6.9
Central Asia	2.1

The share of the railways in transporting the containers from the port of Poti differs very much depending on the destination. Some 20 per cent of the containers arriving in Poti port for Azerbaijan were transported by rail from there in 1996. As regards transport to Armenia, the railways' share was about 40 per cent.

Some 1,640 loaded containers (TEU) were transported in the relation of Poti - Baku, in 1996, 340 of which were taken over by the railways. Altogether 4,230 TEU went from Poti to Armenia in 1996, and the railways transported 1,582 of them.

The Armenian Railways received 1,586 loaded containers (TEU) in 1996, 338 TEU (loaded) were handled in dispatch, i.e. 21 per cent of the loaded containers received.

The freight reception in containers of the Azerbaijan Railways amounted to a total of 389 TEU in 1996, and in dispatch the figure stood at 86 loaded TEU (22 per cent of the amount received).

For more detailed information on container traffic see section 6.1.1.

3.1.5.4 Cargo flows through ports of Batumi, Poti, Baku

The current situation as well as the development prospects for the ports of Poti and Batumi have been dealt with in great detail already within the framework of other international projects. Respective TRACECA projects are being processed currently on Baku port and the Baku - Turkmenbashi ferry link. That is the reason why a detailed investigation on this subject area is not included in the current project.

Cargo flows to and from the mentioned ports are dealt with only to such an extent as they are relevant to railway traffic.

The following cargo flows from and to sea or ferry ports result from the forecast transport volumes:

Tab. 3.1.5-8: Transports from and to sea ports in railway traffic up to the year 2015

(in '000 t)

	2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Poti						
outgoing traffic	1,785	1,206	2,140	1,509	2,325	1,775
incoming traffic	1,221	1,083	1,612	1,379	1,918	1,660
Batumi						
outgoing traffic	4,595	1,474	7,866	3,309	8,646	3,914
incoming traffic	645	473	825	585	951	695
Baku						
outgoing traffic	273	125	402	387	554	477
incoming traffic	1,605	1,352	2,013	1,659	2,500	1,875

3.1.5.5 Competitive transport modes

Road transport

When preparing the traffic forecast according to the methodology described in section 3.1.1, annual rates of increase were determined for the individual groups of goods. Possible modifications in the modal split had to be taken into account when determining these percentage rates. In order to assess the future role especially road traffic will play both for individual groups of goods, and for individual transport relations, a detailed analysis of the current situation in all three republics was made.

Comparisons of costs and tariffs between road and rail transport on select main corridors are made within section 6.1.1.

Unfortunately, the data basis on the initial situation in road traffic is very fragmentary in all three countries. The statistical details on road traffic do not contain anything on the private sector. And the data on road freight traffic of the state sector, are not always very reliable either, as the statistics of the three countries are undergoing a restructuring process at the moment and data registration is incomplete.

Armenia

The volume of road freight traffic in Armenia dropped from 96.6 million tons in 1990 to 2.6 million tons in 1994, i.e. to 2.7 per cent. Thus, the volume of road traffic has decreased even more than the freight transport volume in total. The share of road traffic in the goods transported decreased from 86 per cent in 1990 to 77 per cent in 1994. The reason for this development is to be seen, among others, in the problems of fuel supply of the country.

Road traffic is rather insignificant in the freight transport performance (tkm). In 1994, less than 15 per cent of the entire freight transport performance was taken up by road traffic.

Under the current political conditions, which have led to an interruption of important rail connections from and to Armenia, road traffic plays an extraordinary role for international freight transports of the country. The exchange of goods with Iran is currently of special significance for the foreign trade of Armenia. As there is no rail link between the two countries at the moment, the transports are exclusively handled by road. Road traffic had a share of 48 per cent in the exports of the country, and 44 per cent in the imports, in 1996.

The assumption is that with a normalisation of the political situation in the region and the re-instatement of international railway connections, the proportion of road traffic in the international transports of the country will decrease considerably. In domestic traffic, the role of road freight transport will grow, as in future the share of the processing industry, especially in little material intensive branches, will rise strongly and thus growth is to be expected particularly in those goods' areas associated with truck transport.

Azerbaijan

The cargo volume of 153.1 million tons transported by road traffic in Azerbaijan in 1990 dropped to 12.6 million tons in 1995, i.e. down to 8 per cent. The share of road transport in the entire goods traffic of the country (transport volume) was 69.6 per cent in 1990 and by 1994 it had decreased to a mere 38.4 per cent.

Tab. 3.1.5-9: Road freight transport in Azerbaijan

	1990	1994	1995
Transport volume ('000,000 t):			
Total	153.1	19.4	12.6
of which long-haul	2.6	0.8	0.6
Transport performance ('000,000 tkm):			
Total	3287.1	569.0	388.5
of which long-haul	319.7	120.7	79.8

In 1995, there were 100 state-run transport companies conducting freight transports in Azerbaijan. Their vehicle stock comprised 11,900 trucks with an average age of 9 years.

The following table depicts the role of road freight transport in the foreign trade transport of Azerbaijan. It becomes clear that road traffic plays a subordinated role in the export of the country. Its share dropped from 13.2 per cent in 1995 to 6.0 per cent in 1996. The main cause for this is, above all, the structure of the commodities for export, consisting largely of bulk goods, especially oil products. Exports to Iran and Turkey are mainly transported by road. The main reason being the lacking reliable or currently interrupted rail connections.

Tab. 3.1.5-10: Cross-border road freight transport in Azerbaijan

	1995		1996	
	'000 tons	Share in %*	'000 tons	Share in %*
Export				
Total	***218.3***	***13.2***	***139.6***	***6.0***
Russia	18.6	7.2	12.1	3.3
Georgia	18.6	4.7	4.3	0.6
Iran*	75.6	92.8	21.2	79.4
Turkey	33.4	96.5	67.7	93.5
Import				
Total	***548.6***	***37.1***	***779.8***	***40.1***
Russia	16.3	9.8	13.8	6.1
Georgia	7.7	10.8	4.8	6.6
Iran	270.0	98.8	238.5	99.1
Turkey	111.8	88.0	251.4	88.4

* Share in total cross-border traffic, for Iran without sea transport of oil products (1995 approx. 1 million t, 1996 approx. 1.6 million t)
Source: Customs authorities

The share of road traffic is relatively high as regards imports, however, which rose further in 1996 to a total of 40.1 per cent. Imports from Iran and Turkey are being transported more or less exclusively by road.

The share of road transport in exports will not rise significantly in the next years either, as the proportion of bulk goods will remain very high. The share of high-quality processed goods will rise a little. In domestic traffic, the share of road transport will increase markedly once more as a consequence of the further development of market-economy structures and progressing privatisation. It is mainly the development of reliable rail connections, especially in combined traffic, which is of decisive significance for the role of road traffic in imports. The share of road traffic in the transport volume will decrease with the re-instatement of the transit connection via Nakhiche-

van to Iran. The share of the railways will increase further with its stable quality connection Baku - Poti/Batumi, for transports to and, above all, from Turkey.

Georgia

In Georgia, the transport volume of freight transport by road dropped from 167.1 million tons in 1990 to 5.4 million tons in 1994. This equals a reduction to 3 per cent. As of 1995, however, there has been an increase in road freight transport. The transport volume rose by 55 per cent to 8.7 million tons in 1995 and the transport performance increased by 74 per cent to 130 million tkm. The share of road traffic in the entire freight transport thus was 65 per cent (transport volume). Measured in transport performance, the share of the road was only 10 per cent, however.

In international freight transport by road the share of road transport varies considerably, depending on the country of origin or destination, respectively (compare table 3.1.5-11).

Tab. 3.1.5-11: Share of road transport in border-crossing freight traffic of Georgia in 1996

Origin / Destination	Exports (%)	Imports (%)
Azerbaijan	8.7	2.3
Armenia	49.9	3.4
Iran	82.6	99.9
Russia	17.4	36.4
Ukraine	7.8	4.2
Turkey	49.1	83.8
Total	*21.8*	*15.8*

With the progressing re-structuring of the economy in the direction of a market economy, the share of road traffic will increase once more over the years to come. This applies especially to domestic traffic. The share of road transport will grow above-average in processed goods.

Inland waterways

Inland navigation shall only be included here in so far as it constitutes direct competition to railway traffic. This applies to the investigated countries only in the case of transportation from and to Baku with river-sea vessels.

This transport option is an alternative to railway traffic, above all, in the transport of bulk goods, e.g. oil or oil products, to the other CIS republics or from and to the Black Sea ports. At the moment, this possibility of transport is not being availed of, as Russia does not permit the passage of Azerbaijan ships via the Volga-Don Canal or has restricted it severely. Even on settling all political issues, there will still be technical restrictions for this transport route. Navigation on the Russian inland waterways is limited to about six months per year, due to adverse weather conditions. Furthermore, there are restrictions as to the permissible draught of the ships.

Thus, the possibilities of inland waterway navigation are relatively small as compared to the railways. Transport on inland waterways will be used as a supplement to railway transport but not as a complete alternative in future.

Pipelines

The future construction and use of pipelines for the transport of crude oil or oil products is of essential significance for the volume of rail traffic.

The international oil consortium (AIOC) as well as the Azerbaijan Government believe that two pipelines are going to be used for the transportation of the Azerbaijan oil. One is to lead through Chechnya to the Russian Black Sea port of Novorossijsk, the other through Georgia to the Black Sea coast (Supsa). A further possibility, through Turkey to the Mediterranean coast, is also being discussed. However, at the moment there are no definite statements as to the point in time of the inauguration and the scope of use for the different versions.

The following assumptions, which seem secure at the moment, were used for the forecast of the volume of railway traffic:

- only crude oil is going to be transported through the pipelines, which are to be built,
- a transport of crude oil by railway is not planned,
- there are no intentions of building or using pipelines for the transportation of oil products so far.

3.1.6 Scenarios for freight transport development

3.1.6.1 Total railway freight traffic

The assessment of future transport volume was conducted in two scenarios, an optimistic and a pessimistic one, and to the time horizons of 2000, 2010 and 2015. The assessment of the transport volume of 1997 served as an interim step.
The future development was calculated separately for the individual components of railway freight traffic:

Freight dispatch:

For to be able to calculate the dispatch volume in railway freight traffic, average annual growth rates were determined for the individual main types of goods, based on the overall economic development depicted in section 3.1.2.2 and section 3.1.3, for the respective time periods. In determining these growth rates, possible changes in the modal split of the transport modes were taken into consideration within the individual goods type groups (comp. section 3.1.5.5)

Export transports:

The determination of the annual growth rates was based on the development of the goods structure, the geographical structure of foreign trade and the development of production / domestic requirements.
Possible changes in the modal split and the utilisation of other, competing transport corridors (comp. section 3.1.5.2) were considered in dependence on the future geographical structure of foreign trade.

Import transports:

The future import volume was established with the help of the same calculation as for export.

Transit traffic:

The possible political development in the region and the usability of the transit corridors connected with it was considered as a decisive factor of influence for the future transit volume.
Furthermore the future economic development and the connected foreign trade development of the Central Asian republics (first of all Uzbekistan and Turkmenistan) were included in the assessment. The future geographical orientation of foreign trade in this region was also an important point in the assessment (comp. section 3.1.4). And the development of the foreign trade relations with Iran and Turkey were incorporated, as the region is an important transit area for both these countries.

Armenia

Based on the analysis of the political, economic and foreign trade development of the country, the following scenarios have been drawn up, which are to serve as a foundation for the evaluation of future goods traffic flows:

Optimistic scenario	Pessimistic scenario
Freight dispatch: ❒ the entire freight dispatch will rise slightly again as of 1997 ❒ the items of building materials and cement will develop with above-average rates of increase; the existing rich raw material resources will be utilised intensively in the short-term; due to the very low starting level, the rates of growth over the first few years of the forecast period will be particularly high ❒ as regards the modal split, the share of road traffic will increase further, especially in the dispatch of processed goods; in the transport of bulk goods, the share of the railways will remain relatively high or even increase slightly	❒ freight dispatch will drop slightly once more in 1997 but will rise moderately as of 1989/99 ❒ the use of indigenous raw materials will only progress very hesitantly ❒ as regards the modal split there will be a stronger shift towards road transport, also in the bulk goods, due to infrastructural problems of the railways
Export transports: ❒ export transports will develop initially with the same growth rates as the entire freight dispatch, but as of the year 2000, they will increase even faster due to the normalisation of the political situation ❒ the dominating role of road traffic in selected relations (e.g. Iran) will remain in place until the year 2000, but it will lose in significance with international rail traffic being re-instated	❒ the growth rates will be only insignificantly below those of the optimistic scenario, differences result especially from the time delay in the re-instatement of important international rail connections ❒ road traffic will remain the decisive mode of transport for certain relations up the year 2005, subsequently it will be difficult for the railways to regain lost positions
Import transports: ❒ import transports will develop with lower growth rates than the exports, the cause being the very high trade balance deficit ❒ in connection with political normalisation and the intensification of foreign trade activities, there will be a speedy import increase as of the year 2000 ❒ as regards the modal split, the statements on exports may be applied accordingly	❒ the lower growth rates and time delay in the normalisation of international connections are the only differences to the optimistic scenario
Transit traffic: ❒ railway transit through Armenia will be possible only as of the year 2000	❒ transit traffic from and to Iran via Armenia will be started by the year 2005, transits from Turkey will be handled already as of the year 2000

Average transport distance:	
❒ the average transport distance in both scenarios will be 298 km in 1997 and will rise to 310 km as of the year 2000.	

The future development of transit traffic will play an important role for the Armenian Railways. Statements have been made on the significance of transit corridors already in section 3.1.5.

The following transport volumes per year are assumed as a starting level for transit traffic through Armenia upon a normalisation of the political situation (2000/2005):

Turkey - Azerbaijan / Central Asia v.v.	130,000 tons
Turkey - Georgia v.v.	40,000 tons
Iran - Georgia v.v.	105,000 tons
Iran - Russia v.v.	210,000 tons
Iran - Ukraine v.v.	150,000 tons
Iran - Black Sea ports v.v.	50,000 tons

The current trade flows between the quoted countries and regions served as a basis, taking into consideration the role of competing, traditional transit corridors

Based on the above scenarios, the following annual growth rates (in %) were applied to the development of transport volumes for the individual transport relations and main groups of commodities:

Tab. 3.1.6-1: Annual growth rates of rail freight traffic of Armenia

	1997 - 2000		2001 - 2010		2011 - 2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Freight dispatch:						
Building materials	5.5...17.5	2.5...7.5	7.0...12.5	4.5...8.0	8.5...10.0	3.5...6.0
Metals	2.0...2.5	0...1.8	1.5...2.0	0.8...1.5	1.5...2.0	1.3...1.8
Cement	5.0...7.5	2.7...5.5	4.5...5.7	0.9...1.6	4.5...5.0	2.6...3.4
Cereals, foodstuff	0...3.3	-2.5...2.0	2.0...2.5	0.7...1.4	4.6...5.5	1.9...2.8
Others	2.5...7.6	-5.0...4.8	4.8...5.6	2.9...3.7	4.8...5.5	2.0...2.5
Exports	2.0...12.0	-2.5...7.5	6.5...8.5	4.6...5.7	8.5...11.0	8.0...10.5
Imports	7.5...10.5	0.5...7.0	4.5...5.8	3.0...3.5	3.6...4.5	2.6...3.2

Based on these rates of development, the following transport volumes may be deduced up to the year 2015:

Tab. 3.1.6-2: Transport volume of the Armenian Railways up to the year 2015

	1996	2000		2010		2015	
		opt.	pess.	opt.	pess.	opt.	pess.
transport volume ('000 t)	1,177	2,269	1,535	3,357	2,242	4,238	2,726
transport performance ('000 000 tkm)	351	703	476	1,041	695	1,314	845

Azerbaijan

The following basic assumptions were made for the two scenarios:

Optimistic scenario	Pessimistic scenario
Freight dispatch: ❒ the entire freight dispatch volume of the railways will decrease once more in 1996, but as of 1997, a continuous increase will start, the increase in 1997 will be about 5 per cent, and up to the year 2000, the freight dispatch will increase annually by about 12 to 15 per cent, after that the growth rate will slow down to 2 to 5 per cent; ❒ the production of petrochemical products is of decisive importance for the entire dispatch volume, following a small decrease in 1996 production will grow again as of 1997, ❒ there will be above average growth rates from 1997 on also in building materials (rich national raw material deposits, increasing demand); ❒ with regard to the modal split, there will only be insignificant changes in the type of goods important for the railways (mass goods), road transport will grow significantly in the area of high-value goods; crude oil will be transported by pipeline only	❒ the development in the pessimistic scenario differs only little from the optimistic one for most types of goods, and the growth rates are only insignificantly lower; ❒ the main differences between the two scenarios are determined by petrochemical products; following a decline in 1996, production will pick up again as of 1997, but after 2000 will be 7 to 10 million tons/a lower than the level of the optimistic scenario; ❒ especially for the item „other goods", the share of road transport will grow more rapidly, due to infrastructural problems of the railways;
Export transports: ❒ the amount of export transports will be determined mainly by the production level of petrochemical products, the volume produced over and above the level of national consumption will be exported;	❒ due to a lower production level in petrochemical products and a continuing domestic need of the same magnitude, the amount of goods remaining for export will be reduced;

❒ the share of countries in the Azerbaijan export for which a shipping through the Black Sea ports is favourable will increase; ❒ the export of petrochemical products to Iran (maritime traffic share) will not increase further, and will rather drop as of 2000; ❒ due to the opening of the Nakhichevan/ Dshulfa line, exports to Iran will be forwarded in this corridor once more;	❒ a slightly rising share of the Central Asian countries in Azerbaijan exports, thus a smaller transport volume on the network of the Azerbaijan Railways; ❒ the same or a slightly growing share of exports of petrochemical products to Iran by sea;
Import transports: ❒ in contrast to the exports, imports will rise slightly also in 1996 and later on; ❒ the food imports (food aid) will decrease; ❒ growing import volumes of equipment for oil production and other investment projects (e.g. Sumgait);	❒ differences to the optimistic scenario result, above all, from the lower annual growth rates;
Transit traffic: ❒ the optimistic scenario says that the important transit lines via Yalama to Russia and via Dshulfa to Iran will be available without restrictions again by the year 2000; ❒ already in 1996, the transit traffic via Baku/ferry will be about 200 Kt above the 1995 level (cotton and petrochemical products from Central Asia, investment goods and food products to Central Asia);	❒ the political situation will only allow for a limited scope of transit traffic from and to Russia via Yalama, traffic via Dshulfa will continue not to be possible at all; ❒ all existing transit routes will be available without restrictions by 2010, however, the volume will then be lower than in the optimistic scenario, due to a meanwhile other orientation of important transit flows;
Average transport distance: ❒ the average transport distance will remain at the level of 1995 (265 km) up to 1997 and will then rise to 438 km (opt.) / 421 km (pess.) by 2000;	

The main differences between the optimistic and the pessimistic scenario in Azerbaijan result from a different political development in terms of time, and from strongly varying transport volumes for oil products.

Based on the above scenarios, the following annual growth rates (in %) were applied to the development of transport volumes for the individual transport relations and main groups of commodities:

Tab. 3.1.6-3: Annual growth rates of rail freight traffic of Azerbaijan

	1997 - 2000		2001 - 2010		2011 - 2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Freight dispatch:						
Oil products*						
Building materials	5...45	3...30	3.0...3.5	2.5...3.2	1.8...2.2	2.0
Metals	7.5...15	3.0...7.5	2.9...3.6	1.0...1.5	1.7...2.0	1.5...1.8
Cement	2...5.4	1.8...5.0	3.0...3.5	2.5...3.2	1.8...2.2	2.0
Cereals, foodstuff	2.9...3.4	1.5...3.0	2.0...2.5	2.0...2.3	2.0	1.8
Others	5.0...12.5	3.0...10.5	4.5...5.5	4.0...4.5	4.0...4.5	4.0
Exports	2.0...8.5	1.0...7.0	4.0...6.5	3.8...6.0	1.0...1.5	0.8...1.2
Imports	7.5...10.5	6.5...9.5	5.0...5.5	4.0...4.3	5.0...6.5	4.5...5.0

* For oil products see Pt. 3.1.6.3

Based on the framework conditions described above, the following total transport volumes and transport performance result for the forecast period:

Tab. 3.1.6-4: Transport volume of the Azerbaijan Railways up to the year 2015

	1995	2000		2010		2015	
		opt.	pess.	opt.	pess.	opt.	pess.
transport volume ('000 t)	9,073	20,102	12,992	29,690	20,519	34,825	23,685
transport performance ('000 000 tkm)	2,409	8,805	5,469	13,004	8,638	15,253	9,971

Georgia

The following scenario was developed for the Georgian Railways:

Optimistic scenario	Pessimistic scenario
Freight dispatch:	
❒ the entire freight dispatch volume of the railways will rise already in 1996, and there will be another 7 to 10 % increase in 1997;	❒ the development in the pessimistic scenario differs only a little from the optimistic one for most types of goods, and the growth rates are only insignificantly lower;
❒ there will be an average growth of approx. 10 % up to the year 2000;	❒ especially for the item „other goods", the share of road transport will grow more rapidly due to infrastructural problems of the railways;
❒ with regard to the modal split, there will only be little change in the type of goods important for the railways (mass goods), like in Azerbaijan, road transport will see considerable increases in high-value goods;	

Export transports: ❒ export transports will develop similarly in both scenarios, coupled with the volume of the entire freight traffic;	
Import transports: ❒ import transports will decrease significantly with the reduction of cereals supplies (food aid) in 1996 and 1997; ❒ commercial imports will develop with similar growth rates as the exports;	
Transit traffic: ❒ transit transports through Georgia will be determined mainly by exports of petrochemical products from Azerbaijan as well as by transits from and to Central Asia and Armenia, and the same assumptions apply as established for Azerbaijan above;	
Average transport distance: ❒ the average transport distance in both scenarios will be 270 km in 1997 and will rise to 340 km as of the year 2000.	

Based on the above scenarios, the following annual growth rates (in %) were applied to the development of transport volumes for the individual transport relations and main groups of commodities:

Tab. 3.1.6-5: Annual growth rates of rail freight traffic of Georgia

	1997 - 2000		2001 - 2010		2011 - 2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Freight dispatch:						
Coal	15...25	5...12.5	4.7...5.2	1.8...2.3	2.5...3.2	3.0
Oil products	7.5...8.5	4.8...5.5	3.0	2.4...2.9	2.7...3.0	2.5...2.9
Building materials	10...25	9.0...12.5	4.5...6.0	4.0...5.2	2.5...3.0	3.0
Ore	7.0...8.5	5.0...10.0	1.8...2.5	1.5...2.0	2.4...3.3	2.8
Cement	10...25	5.5...12.5	4.5...6.5	3.5...4.5	2.5...3.0	2.4...2.9
Cereals, foodstuff	6.5...9.0	4.5...7.5	1.7...2.2	1.5...2.0	2.6...2.8	2.5...2.7
Metals	15...17.5	5.0...8.0	5.5...6.5	3.5...4.5	2.9	2.9
Others	7.5...11.5	4.5...7.0	3.0...4.0	1.8...2.2	1.8...3.4	2.5...3.0
Exports	7.5...12.0	3.0...6.5	5.0...6.5	4.5...6.0	5.0	4.8
Imports	1.5...5.0	-2.5...4.5	2.0...2.5	1.8...2.4	2.5	2.0

Using these growth rates, the following transport volumes are deduced for the forecast period:

Tab. 3.1.6-6: Transport volume of the Georgian Railways up the year 2015

	1995	2000		2010		2015	
		opt.	pess.	opt.	pess.	opt.	pess.
transport volume ('000 t)	4,700	9,525	4,477	15,268	7,611	17,470	9,135
transport performance ('000 000 tkm)	1,246	3,238	1,522	5,191	2,588	5,940	3,106

The development of the individual components of rail freight traffic is depicted in the graphs below. The detailed figures are contained in Annexes 3.1.6-1 to 3.1.6-3.

Fig. 3.1.6-1: Development of Armenian rail freight traffic up to 2015 (optimistic scenario)

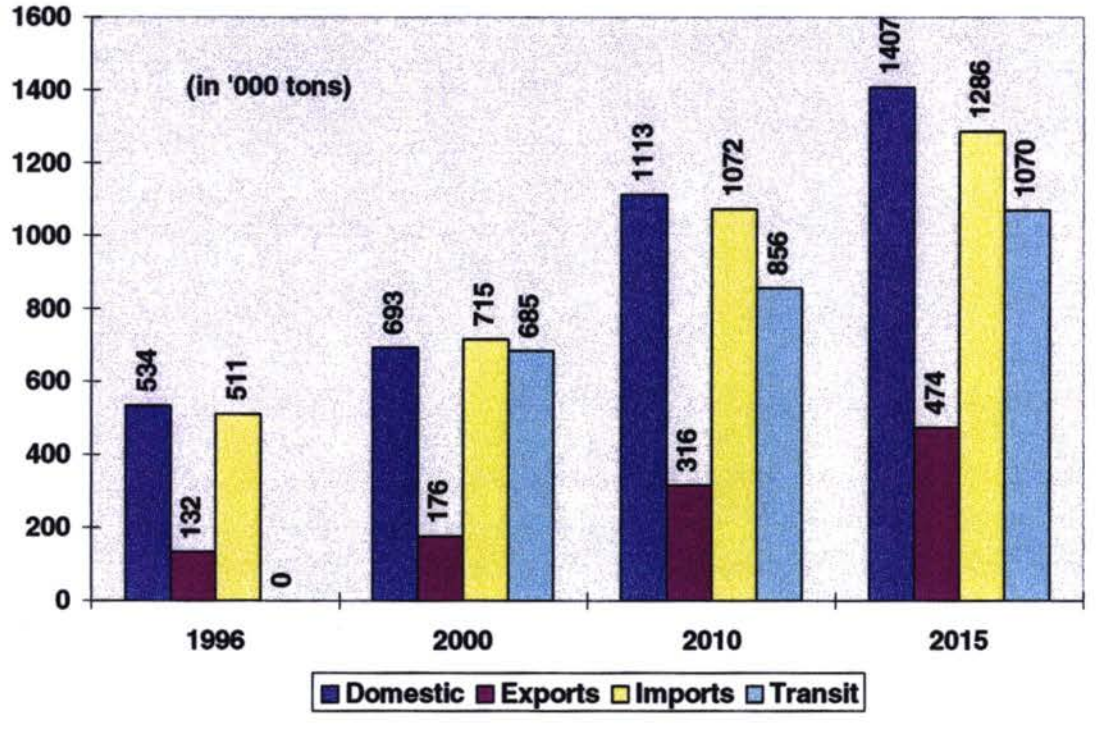


Fig. 3.1.6-2: Development of Azerbaijan rail freight traffic up to 2015 (optimistic scenario)

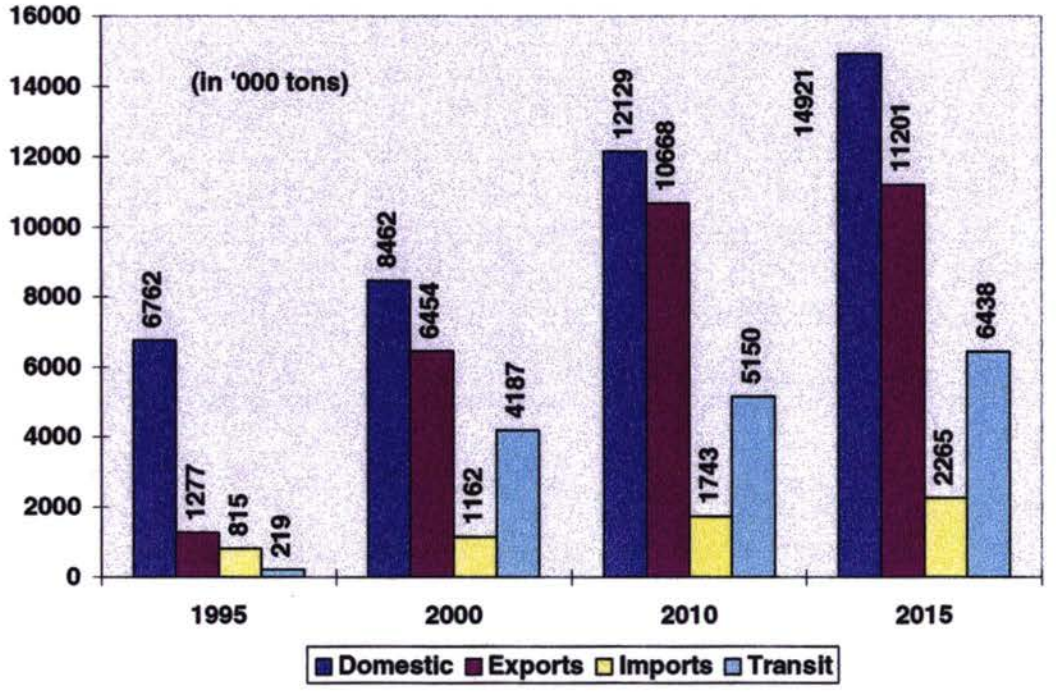
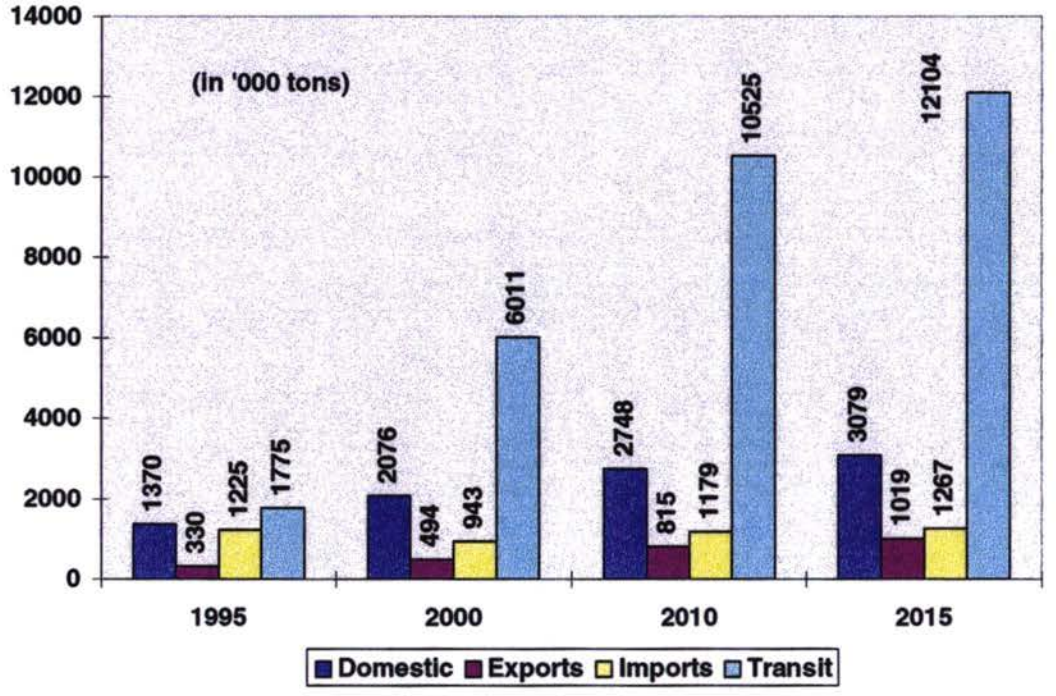


Fig. 3.1.6-3: Development of Georgian rail freight traffic up to 2015 (optimistic scenario)



The forwarding of the petrochemical products produced in Azerbaijan will maintain a dominating position in the rail freight traffic of the country. Their share in the total amount of goods transported was 70.7 per cent in 1995. It will have reached 59,1 per cent (optimistic scenarios) by the year 2000, in 2010 it will be 62.7 per cent and in 2015 the share will stand at 61.5 per cent. Parallel, the share of transit transports will rise considerably during the period under investigation. Whereas the share of transit transports was still 2.4 per cent in 1995, it will have reached 20,8 per cent (in the optimistic scenario) already in the year 2000. In the following years it will remain at about that level.

Transit traffic will gain a dominating role in the rail freight traffic of Georgia. Already in 1995, the share of transits in the total amount forwarded was high at 37.8 per cent, as compared to Azerbaijan. This share will already be 63,1 per cent (optimistic scenario) in the year 2000, and after that it will raise to about 70 per cent by the year 2015.

There will only be insignificant changes, as compared to the current situation, in the goods structure of the two countries.

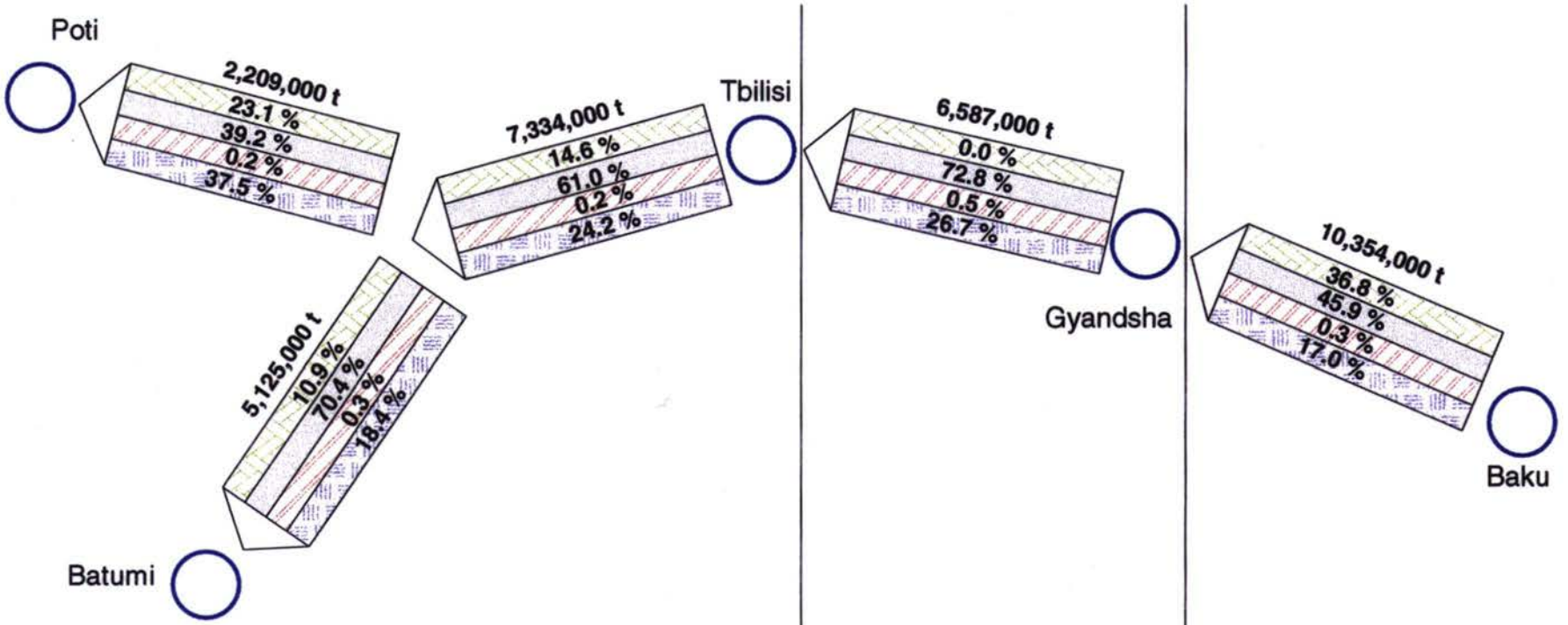
3.1.6.2 Traffic forecast for main transport corridors

Baku - Poti / Batumi

Based on the division of the freight transport flows along this line according to line sections and main components in section 3.1.5.2, a possible development during the forecast period was assessed also in two scenarios. This was based on the assumptions drawn up for the entire freight traffic in section 3.1.6.1. With regard to the current conditions and assumptions mentioned in section 3.1.5.2, for instance, concerning the role of the Black Sea ports of Poti and Batumi, there will be no decisive changes during the forecast period.

The goods flows resulting from this are depicted in the graphs of Figures 3.1.6-4 to 3.1.6-9 for the optimistic scenario for the years of 2000, 2010 and 2015. Detailed figures for both scenarios are contained in Annexes 3.1.6-4 to 3.1.6-7.

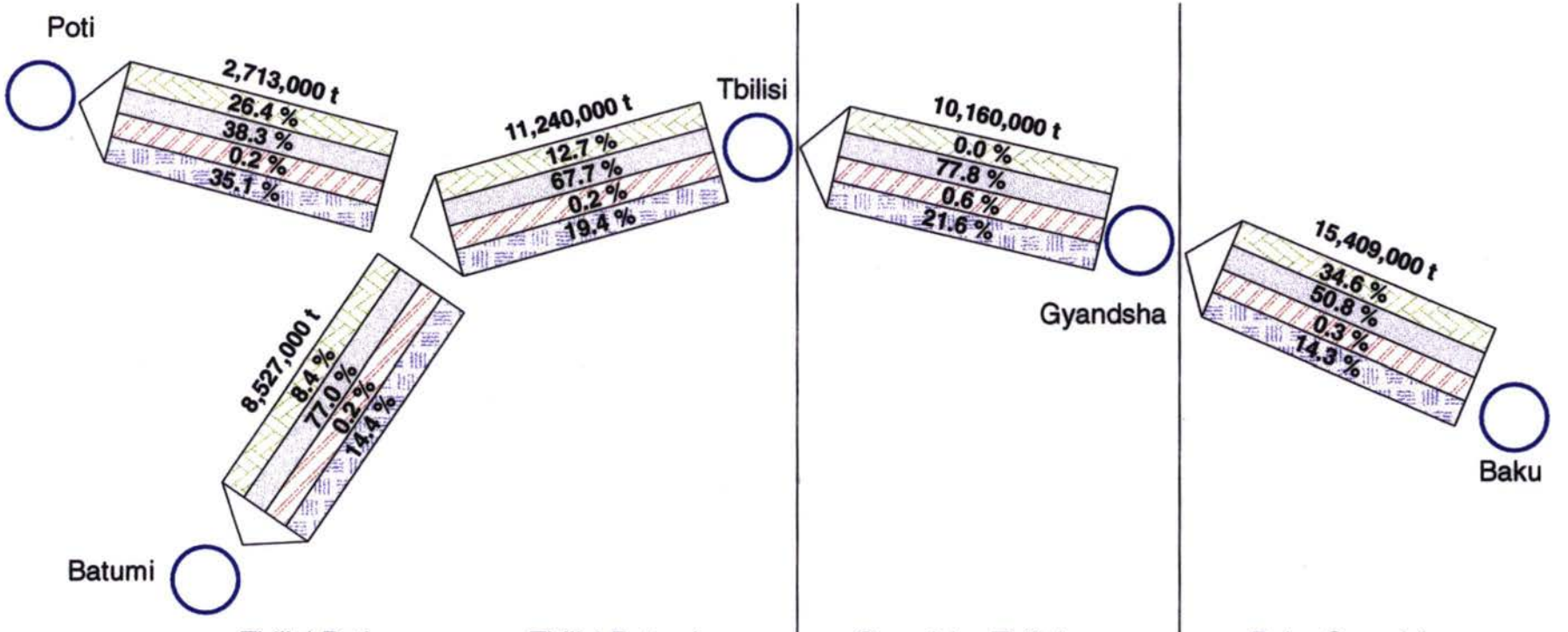
Fig. 3.1.6-4: West-bound traffic 2000 - Optimistic scenario



Tbilisi-Poti	Tbilisi-Batumi	Gyandsha-Tbilisi	Baku-Gyandsha	
510,000 t [2]	560,000 t [2]	0 t	3,826,000 t [1]	Domestic traffic
867,000 t	3,609,000 t	4,793,000 t	4,734,000 t	Exports Azerbaijan
4,000 t	14,000 t	35,000 t	35,000 t	Imports Georgia
828,000 t	942,000 t	1,759,000 t	1,759,000 t	Transit

[1] incl. Azeri imports [2] incl. Georgian exports

Fig. 3.1.6-5: West-bound traffic 2010 - Optimistic scenario

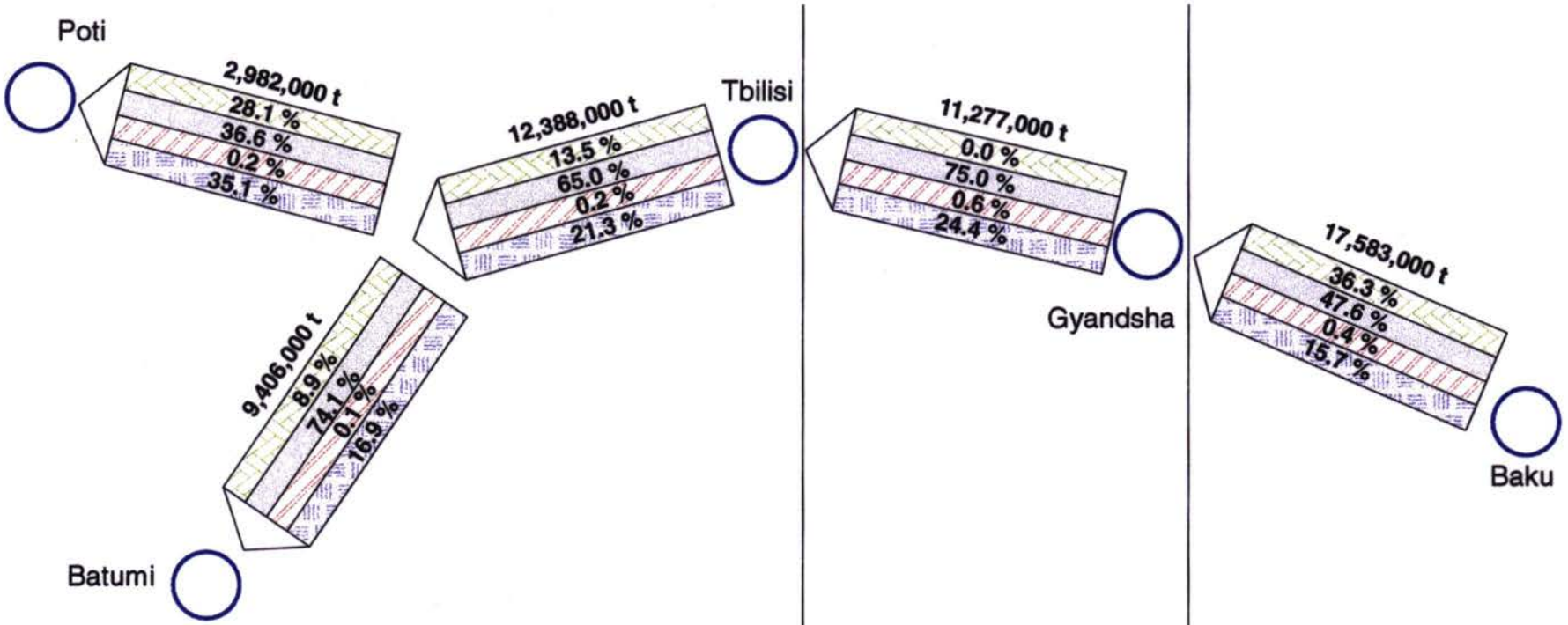


	Tbilisi-Poti	Tbilisi-Batumi	Gyandsha-Tbilisi	Baku-Gyandsha
Domestic traffic	715,000 t [2]	717,000 t [2]	0 t	5,347,000 t [1]
Exports Azerbaijan	1,041,000 t	6,568,000 t	7,909,000 t	7,811,000 t
Imports Georgia	5,000 t	18,000 t	53,000 t	53,000 t
Transit	952,000 t	1,224,000 t	2,198,000 t	2,198,000 t

[1] incl. Azeri imports

[2] incl. Georgian exports

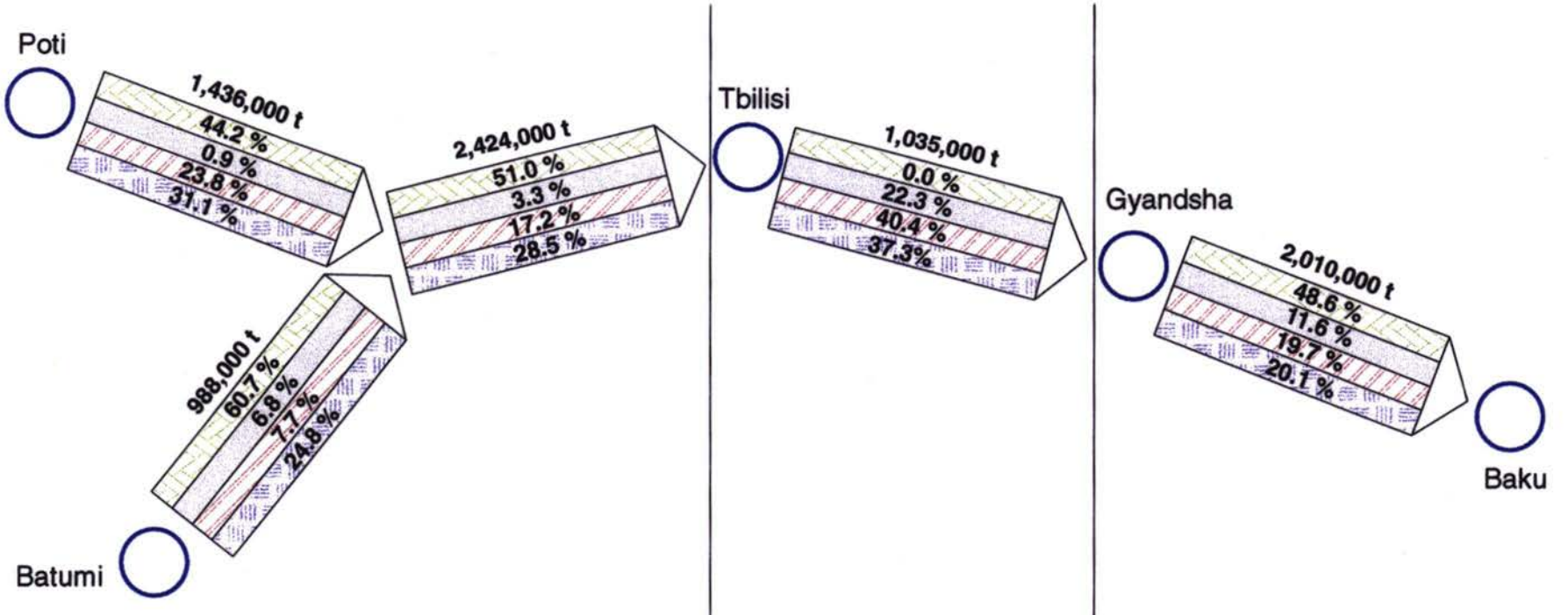
Fig. 3.1.6-6: West-bound traffic 2015 - Optimistic scenario



Tbilisi-Poti	Tbilisi-Batumi	Gyandsha-Tbilisi	Baku-Gyandsha	
837,000 t [2]	833,000 t [2]	0 t	6,411,000 t [1]	Domestic traffic
1,093,000 t	6,962,000 t	8,463,000 t	8,358,000 t	Exports Azerbaijan
5,000 t	19,000 t	66,000 t	66,000 t	Imports Georgia
1,047,000 t	1,592,000 t	2,748,000 t	2,748,000 t	Transit

[1] incl. Azeri imports [2] incl. Georgian exports

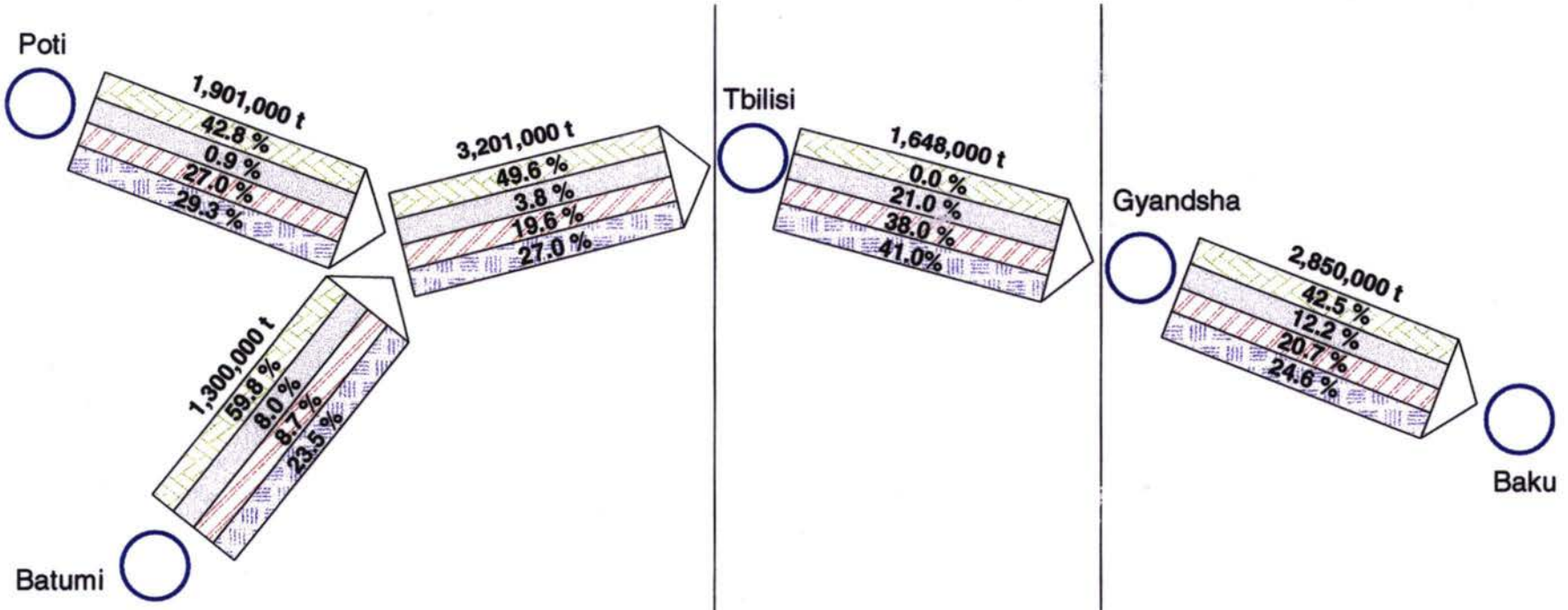
Fig. 3.1.6-7: East-bound traffic 2000 - Optimistic scenario



Poti-Tbilisii	Batumi-Tbilisi	Tbilisi-Gyandsha	Gyandsha-Baku	
635,000 t [1]	600,000 t [1]	0 t	1,022,000 t [2]	Domestic traffic
13,000 t	67,000 t	231,000 t	224,000 t	Exports Georgia
342,000 t	76,000 t	418,000 t	378,000 t	Imports Azerbaijan
446,000 t	245,000 t	386,000 t	386,000 t	Transit

[1] incl. Georgian imports [2] incl. Azeri exports

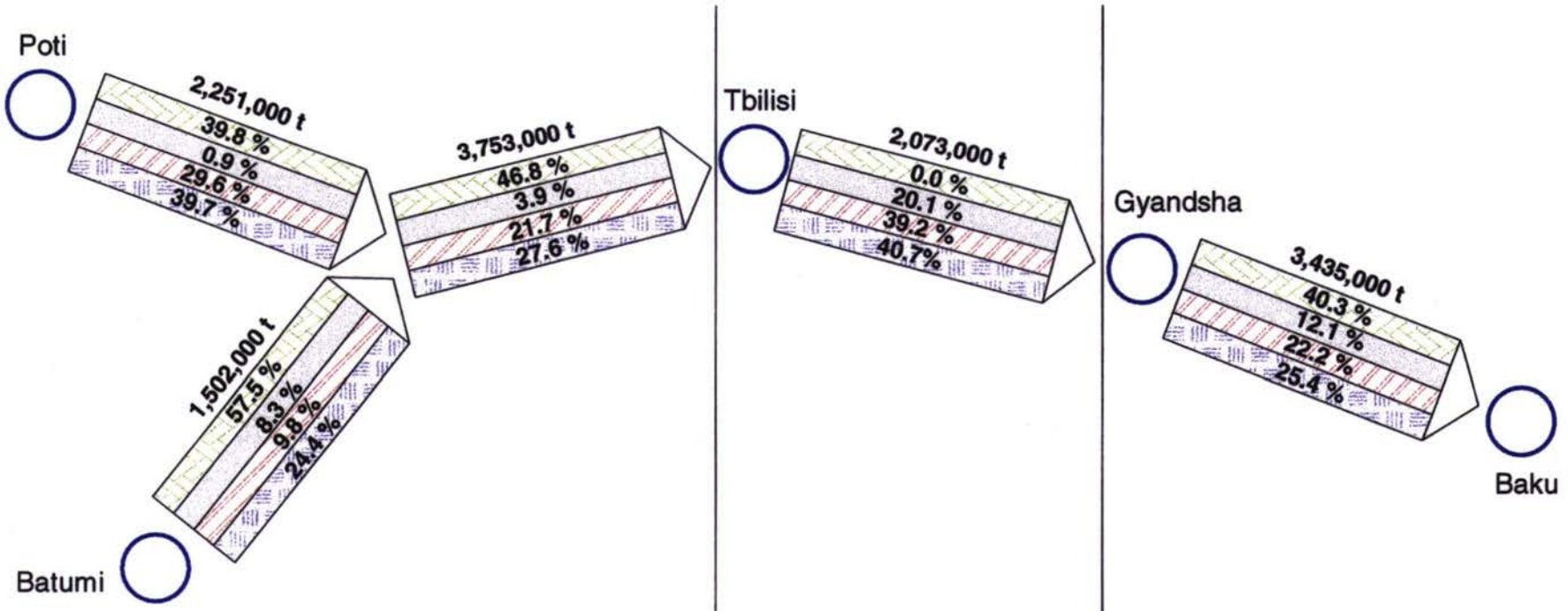
Fig. 3.1.6-8: East-bound traffic 2010 - Optimistic scenario



Poti-Tbilisii	Batumi-Tbilisi	Tbilisi-Gyandsha	Gyandsha-Baku	
813,000 t [1]	777,000 t [1]	0 t	1,272,000 t [2]	Domestic traffic
17,000 t	104,000 t	347,000 t	336,000 t	Exports Georgia
513,000 t	113,000 t	626,000 t	567,000 t	Imports Azerbaijan
558,000 t	306,000 t	675,000 t	675,000 t	Transit

[1] incl. Georgian imports [2] incl. Azeri exports

Fig. 3.1.6-9: East-bound traffic 2015 - Optimistic scenario



Poti-Tbilisii	Batumi-Tbilisi	Tbilisi-Gyandsha	Gyandsha-Baku	
895,000 t [1]	863,000 t [1]	0 t	1,452,000 t [2]	Domestic traffic
20,000 t	125,000 t	416,000 t	403,000 t	Exports Georgia
667,000 t	147,000 t	814,000 t	737,000 t	Imports Azerbaijan
669,000 t	367,000 t	843,000 t	843,000 t	Transit

[1] incl. Georgian imports

[2] incl. Azeri exports

There will only be insignificant changes in the structure of the type of goods for the forecast development of the freight traffic volume in the transport corridor of Baku - Tbilisi - Poti/Batumi.

Tab. 3.1.6-7: Development of the goods structure in the corridor of Baku - Tbilisi - Poti/Batumi (westbound traffic)

Type of goods	East - West - direction (opt. scenario)			
	1995	2000	2010	2015
total	100.0	100.0	100.0	100.0
petrochemical products	95.5	89.9	89.4	88.9
coal, coke	0.1	0.0	0.0	0.0
ore	0.0	0.9	0.9	0.8
ferrous metals	0.3	1.5	1.7	1.8
timber	0.1	0.0	0.0	0.1
mineral building materials	0.5	0.3	0.4	0.6
cement	0.3	0.1	0.1	0.2
mineral fertiliser	0.0	0.0	0.0	0.0
cereals	0.3	0.1	0.1	0.1
others	2.4	7.3	7.3	7.5

Petrochemical products will continue to determine transport in the westbound traffic. Their share will decrease to slightly below 90 per cent by the year 2015. On the other hand, the share of other processed products will increase a little.

There are only insignificant differences between the optimistic and the pessimistic scenario with regard to the structure of the type of goods.

Tab. 3.1.6-8: Development of the goods structure in the corridor of Baku - Tbilisi - Poti/Batumi (eastbound traffic)

Type of goods	West - East - direction (opt. scenario)			
	1995	2000	2010	2015
total	100.0	100.0	100.0	100.0
petrochemical products	1.1	1.2	1.2	1.0
coal, coke	0.0	0.1	0.1	0.1
ore	12.6	12.9	12.8	10.6
ferrous metals	8.3	15.6	16.2	18.7
timber	0.0	0.0	0.0	0.0
mineral building materials	2.8	7.5	8.4	8.5
cement	0.1	0.6	1.3	1.2
mineral fertiliser	3.7	4.3	4.3	4.1
cereals	62.3	35.5	30.5	28.7
others	9.1	22.3	25.2	27.1

The share of cereals will drop considerably in the eastbound traffic, due to the decreasing food aid for the countries of the region. The share of investment goods, consumer goods and other processed goods will grow.

There are only insignificant differences between the optimistic and the pessimistic scenario with regard to the structure of the type of goods, also in the eastbound traffic.

Baku - Nakhichevan / Dshulfa - Iran

The scope of future freight flows along this corridor depends, above all, on the further political development in the region. In drawing up the forecast, it was assumed that the traffic to and from Nakhichevan will operate normally as of the year 2000, in the optimistic scenario, and that railway traffic will be resumed along this line as of the year 2005 at the earliest, in the pessimistic scenario.

The freight flows were first of all broken down into their individual components: domestic traffic, exports/imports Azerbaijan, exports/imports Armenia as well as transit traffic to and from Iran. An initial level was assumed for domestic traffic which corresponds with the total level of freight traffic of the Azerbaijan Railways in the year 2000, as compared to the initial basis of 1988.

Transit traffic mainly consists of freight flows between Iran and Russia as well as the other CIS republics and the Scandinavian countries through the corridor of Baku - Yalama. It has to be added that it is especially wood, wood products and paper cardboard which are transported in the North-South direction.

The same rates of increase as for the entire railway traffic of Azerbaijan (or Armenia respectively) were used for the development of the individual segments (comp. section 3.1.6.1). The difference between the optimistic and pessimistic scenarios as of the year 2010 is greater, particularly in transit traffic than on other line sections, as, due to the late re-instatement of the traffic, transport flows will have shifted to other corridors or modes of transport.

Tab. 3.1.6-9: Freight traffic in the Baku - Nakhichevan / Dshulfa corridor

Baku - Nakhichevan:

(in '000 t)

	2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Domestic traffic	265	-	379	322	451	417
Azerb. exports	355	-	630	367	690	378
Transit to Iran	1,063	-	1,175	716	1,288	926
Armenian imports	253	-	317	268	431	294
Total	*1,936*	-	*2,501*	*1,727*	*2,860*	*2,191*

Nakhichevan - Baku:

(in '000 t)

	2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Domestic traffic	44	-	63	56	74	65
Azerb. imports	151	-	321	266	365	314
Transit from Iran	310	-	315	151	421	260
Armenian exports	30	-	32	28	58	42
Total	*535*	-	*731*	*501*	*918*	*681*

Baku - Astara

In future, this line will remain rather insignificant for railway freight traffic. This railway link does not play a great role in the considerable exchange of goods between Azerbaijan and Iran. Exports and imports of Azerbaijan from and to Iran via Astara will be transported by road to a large extent, as the cargo would have to be shifted onto trucks in Astara anyway. This connection will in future be used more than today for transits from and in the direction of Russia via Yalama. It has to be added that the connection via Dshulfa or the sea route will bear the main part.

Tab. 3.1.6-10: International freight traffic in the Baku - Astara corridor

Baku - Astara:

(in '000 t)

	2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Azerb. exports	109	75	115	90	115	90
Transit to Iran	45	30	75	45	95	60

Astara - Baku:

(in '000 t)

	2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Azerb. imports	35	15	46	27	85	30
Transit from Iran	35	30	55	40	75	56

Baku - Yalama

In future, this line will be of significance, above all, for international traffic. It is of more or less no importance for the domestic railway traffic of Azerbaijan (with the exception of the Baku - Sumgait section).

The improvement of the political situation in Chechnya, in order to prevent any impediment of railway traffic in future, is the prerequisite for a growth of transport volumes along this line. The forecast is based on the assumption that normal railway freight traffic can be conducted along this route once more as of the year 2000.

In future, some 15 per cent of all Azerbaijan exports by rail will run through this corridor, and in the case of imports, the percentage is approximately 30 per cent. (The line to the Black Sea ports of Poti /Batumi represents the main connection for Azerbaijan exports)

On re-instating the railway line from and to Nakhichevan - Dshulfa - Iran, the connection Baku - Yalama - Russia will gain in importance significantly for transit traffic. The following transport volumes were identified for international traffic during the forecast period:

Tab. 3.1.6-11: International freight traffic in the Baku - Yalama corridor

Baku - Yalama:

(in '000 t)

	2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Azerb. exports	965	432	1,564	927	1,638	942
Transit to Russia	809	419	921	647	1,238	889

Yalama - Baku:

(in '000 t)

	2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Azerb. imports	365	348	537	498	736	703
Transit from Russia	1,863	335	2,134	1,395	2,616	1,860

Tbilisi - Armenia - Dshulfa - Iran

Railway transit through Armenia will develop with the normalisation of the political situation in the region and the re-instatement of railway traffic via Nakhichevan / Dshulfa. However, there will be strong competition by the traditional transit line through Azerbaijan, along which the main part of transit from and to Iran will be handled also in future.

It will be primarily foreign trade goods of Georgia as well as transit traffic between Iran and Ukraine as well as Russia which will run through Armenia in transit. The foreign trade transports of Armenia via the Black Sea ports constitute an important share of the cargo flows along the Tbilisi - Armenia section.

Tab. 3.1.6-12: International freight traffic in the Tbilisi - Armenia - Dshulfa corridor

Southbound:

(in '000 t)

	2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Exports Georgia	44	11	83	37	125	68
Imports Armenia	403	617	650	499	723	571
Transit	240	-	302	156	378	195

Northbound:

(in '000 t)

	2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Imports Georgia	75	-	183	132	207	167
Exports Armenia	106	142	214	148	303	220
Transit	180	-	225	112	281	139

Tbilisi - Gyumri - Turkey

The same may be said for this corridor as for the Tbilisi - Nakhichevan line as regards the initial political situation. The transport volume in the cross-border railway traffic between Turkey and Armenia, however, will remain insignificant during the forecast period.

Transports between Turkey and Azerbaijan as well as the Central Asian Republics will constitute the main volume, which will reach a scope of 130 thousand tons (in both directions) by the year 2000. This relates to the optimistic scenario, traffic will only be resumed in the year 2005 at the earliest in the pessimistic scenario.

Foreign trade transports between Turkey and Georgia in railway traffic along this line will take on a volume of 40 thousand tons by the year 2000 (optimistic scenario, traffic in both directions).

3.1.6.3 Traffic forecast for main groups of commodities

Oil products

The following assumptions were the basis for preparing the traffic forecast for oil products:

- Transportation of oil products by pipeline is not envisaged during the forecast period
- Crude oil will be transported exclusively by pipeline.

Proceeding from the situation described in section 3.1.3.1, production, domestic consumption, and exports of oil products will develop in Azerbaijan within the forecast period as follows:

Tab. 3.1.6-13 Production and exports of oil products up to the year 2015

(in '000 tons)

	1995	2000		2010		2015	
		opt.	pess.	opt.	pess.	opt.	pess.
Production	8,923	16,500	9,500	22,000	14,000	25,000	15,500
Domestic cons.	6,733	6,950	6,375	8,100	7,835	10,250	9,085
Exports	2,190	9,550	3,125	13,900	6,165	14750	6,415

The percentage of rail transport in the overall transport of oil products will rise from 72 per cent in 1995 to 85.6 per cent (82.1 per cent pess. scenario) in 2015. In the export of oil products the percentage of rail transport will rise from 48.6 per cent in 1995 to 65 per cent (60 per cent pess. scenario) in 2015. The remaining export volume not transported by rail will for a minor part be transported by road, but mainly by sea. The most important destinations in sea-borne export are Iran and Russia.

Tab. 3.1.6-14: Rail freight dispatch of oil products in Azerbaijan

(in '000 t)

	2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Rail freight dispatch of oil products	11,880	7,120	18,611	11,483	21,403	12,718
Exports of oil products by rail	5,730	1,735	9,035	3,690	9,588	3,857
Exports by other transport modes	*3,820*	*1,390*	*4,865*	*2,475*	*5,162*	*2,558*

The transport of oil products by railway will be distributed to the main corridors during the forecast period as follows:

Tab. 3.1.6-15: Main destinations of Azerbaijan exports of oil products by rail

(in '000 t)

Destination	2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.
Georgia	397	325	407	342	413	345
Black sea ports	3,842	790	6,467	2,063	6,943	2,374
Yalama - Russia	893	390	1,329	627	1,465	736
Nakhichevan - Armenia/Iran	315	-	504	260	587	295

In addition, oil products from Central Asia will be transported in transit through Azerbaijan. The transport volumes will rise from 530 / 405 thousand tons (opt. / pess.) in the year 2000 to 825 / 620 thousand tons in 2015.

Cotton

During the next years the production - and thus the export - will not rise very much. The reasons for this were described in detail in section 3.1.5.3. For the forecast period, the following export volumes from the Central Asian republics (without Kazakhstan) are being assumed (in '000 tons):

	optimistic	pessimistic
2000	1,350	1,200
2010	1,400	1,200
2015	1,450	1,250

The use of the railway corridors through Azerbaijan and Georgia depends, above all, on the future distribution of the sales markets for Central Asian cotton. Europe is playing an increasing role for the export of these countries. Presently, the exports to this region are conducted mainly via Baltic Sea ports (Riga).In 1995, for instance, 36 per cent of all of Uzbekistan's cotton exports were shipped via the port of Riga. It is assumed that in future the port of Poti because of its favourable geographic location and thus considerably shorter transport distances as compared to Riga will play an ever more important role for the cotton exports of the Central Asian republics. This, however, requires the creation of appropriate conditions for storage and of various services in the port.

As regards future cotton exports from the Central Asian republics it is assumed that the percentage of the port of Poti in the overall exports will rise from 20 per cent in 2000 to 30 per cent in 2015 (equivalent from 15 to 20 per cent, respectively, in the pessimistic scenario). Thus for the forecast period the following transit transports through Azerbaijan and Georgia result (in '000 tons):

	optimistic	pessimistic
2000	270	180
2010	350	240
2015	435	250

Containers

There are three major growth potentials regarding the goods volume in the Caucasian railways' container traffic.

- further increase of foreign trade of the states in the region and, consequently, increase of the overall transport volume in railway traffic;
- increase of the degree of containerisation in goods traffic from and to the region;
- shifting of container transports from road to rail.

The total incoming container volume at Poti port will grow by an annual 25 - 30 per cent for Azerbaijan and Central Asia and 10 - 25 per cent for Armenia and Georgia by the year 2000 (opt. scenario). As of then, the annual growth up to the year 2010 will be from 10 - 15 per cent, and as of 2011 it will be an annual 5 per cent. In the pessimistic scenario, the corresponding annual growth rates are 15 - 20 per cent for Azerbaijan / Central Asia and 5 - 10 per cent for Armenia / Georgia up to the year 2000. As of then the annual growth rates for all counties will be 5 per cent. Particularly during the first years these increase rates are clearly above those for the overall traffic volume.

The most important reason for this is the expected increase in the degree of containerisation of the transports in foreign trade to the countries of the Caucasus and Central Asia. At present, the percentage of container transports in the overall railway traffic of Azerbaijan amounts to only about 0.1 per cent. The percentage of container traffic in Armenia and Georgia is equally low. In Germany, for example, the share of combined transport in total rail freight transport was 10.2 per cent in 1996.
Furthermore, the percentage of high-quality consumer goods and investment goods in the imports of the states concerned will further increase.

As regards the volume to Central Asia, it was assumed that the containerisation by 2000 will have reached the same level as with transports to Azerbaijan.

A similar development with respect to overall volume and containerisation is also assumed for the exports of these countries, resulting in that the proportion between loaded / empty containers in traffic between Poti and Azerbaijan, Armenia, Georgia will nearly remain the same.

The development as to the proportion of loaded / empty containers for transports from and to Central Asia, however, is assessed differently. Container transports from Central Asia to Poti to a large extent are determined by the transport of cotton. The Central Asian republics intend to deliver high-quality cotton via Turkmenbashi / Baku to Poti. Uzbekistan declared that it intends to send a total of 35,000 tons per year in containers by using this transport variant. For the purpose of the traffic forecast a start of these deliveries was assumed for 1997 with at first 500 TEU; full-scale deliveries will then be reached in 2000. This results in a considerably higher percentage of loaded containers in the East-West direction for container traffic from and to Central Asia. In 2000 the proportion loaded / empty containers will be about 4:1 (optimistic scenario). Along with increase in the eastbound container traffic up to the year 2015 this proportion will change to about 2:1.

The future percentage of road traffic in the container transports is of vital importance to the transport volumes in the railways' container traffic. Here, a short-term heavy increase of the railways' percentage is assumed. Experience gained during the introduction of the "Trans-Caucasian Logistic Express" shows that the railways have a clear competitive advantage as compared to road traffic, if they offer regular, reliable, favourably priced and, above all, safe transport services to the customers. The introduction of the "Trans-Caucasian Logistic Express" on the route Poti - Tbilisi - Baku in November 1996 led to a precipitous rise in the railways' container traffic. One can therefore proceed from the assumption that the railways will utilise the advantages they have in long-distance transports (Poti - Baku, Poti - Yerevan, Poti - Central Asia) as compared to road traffic. A further asset in traffic from and to Armenia is that the railways are additionally advantageous because of the difficult geographic conditions, which becomes especially apparent in the winter months. For the traffic forecast therefore the following assumptions were made with respect to the modal split in container traffic:

The share of railway transport in total container traffic will rise to 40 per cent in the relations of Poti - Baku in 1997, and as of the year 2000, it will be 65 per cent (pessimistic scenario 30 % / 45 % respectively). The share of the railways in the Poti - Yerevan relation will be 45 per cent in 1997 and as of 2000 it will also be 65 % (pessimistic scenario 40 % / 50 % respectively). In the Poti - Tbilisi direction the share of the railways in the total container traffic will reach 10 per cent in 1997, and as of 2000 it will be at 25 % (respectively 7,5 % / 15 % in the pessimistic scenario). This lower share of rail transport is due to the considerably shorter distance from Poti to Tbilisi and thus more favourable conditions for road transport.

Based on these basic assumptions, the following container flows result for railway traffic during the forecast period:

Tab. 3.1.6-16: Freight volumes in container traffic up to 2015

(loaded containers / TEU)

	1997		2000		2010		2015	
	opt.	pess.	opt.	pess.	opt.	pess.	opt.	pess.
Poti - Tbilisi	580	400	2,124	1,014	4,779	1,902	5,974	2,378
Poti - Baku	820	566	3,003	1,434	6,757	2,689	8,446	3,361
Poti - Turkmenb.	94	86	1,043	751	1,760	1,172	2,200	1,465
Poti - Armenia	1,936	1,653	4,050	2,708	9,113	3,627	11,391	4,534
Tbilisi - Poti	174	120	637	304	1,434	685	1,792	856
Baku - Poti	180	124	659	315	1,483	708	1,854	885
Turkmenb. - Poti	500	500	4,300	2,470	4,720	2,690	4,910	2,880
Armenia - Poti	493	421	1,031	689	2,319	1,108	2,899	1,385

3.2 Passenger traffic forecast

3.2.1 Methodology

The application of traditional West European mathematical and statistical procedures for forecasting passenger flows is connected with considerable problems in predicting the development of passenger traffic in the Caucasus republics and would lead to very doubtful results. The reasons for this are especially

- the structural break due to serious political and economic changes in the transition from the centrally planned economy to a market economy, starting in 1988/89,
- the change in values and travel motivations in this transition, sparked off by a changed income and expenditure structure within the population,
- changed destinations for private and business trips due to the disappearance of state restrictions and a re-orientation of trade and tourism relations,
- the disappearance of state regulations for the modal split of transport as well as the dismantling of state regulations and subsidies of fares.

It is more or less impossible to register these manifold changes of the different factors of influence, which have grave consequences, with traditional procedures.

That is the reason why a methodology specially geared to the conditions of the CIS states was chosen, which enables a more exact consideration of the special conditions for the development of passenger traffic in the countries to be investigated, by including a number of most varied factors of influence and scrutinising and assessing these using the specific filter of the respective country.

Selecting from the most diverse factors of influence on travel demand and choice of the mode of transport, the following were subjected to an assessment of the current situation and their development:

- political situation in the country and the region
- macroeconomic development
- development of the population
- income, rate of unemployment
- foreign trade and international economic relations
- active and passive tourism
- individual car ownership.

On the basis of assessing these factors specifically for the individual country and a special interlinking, the possible development of total passenger traffic was established. Derived from these findings, annual growth rates were calculated for the transport volume, heeding also the probable changes in the modal split. The differentiation was between:

- regional traffic (generally up to 50 km)
- domestic traffic (long-haul traffic)

– international traffic.

Usually the year 1995 served as a starting point, the level of 1988/89 and the development over the subsequent years was, however, included in the assessment as an orientation. The assessment was conducted in the form of an optimistic and a pessimistic scenario.

3.2.2 Present volumes of passenger traffic

Similarly to freight traffic, there have been serious changes also in passenger traffic over the past years. Both the number of persons transported as well as the transport performance have decreased considerably in all three republics. This is true without exception for all three modes of transport. During these years some significant shifts in the modal split have emerged. The current situation is depicted for each of the three countries individually in the following:

Armenia

In the table below, the development of passenger traffic is shown for the years of 1990 to 1995. Unfortunately, the details on road transport only comprise the passengers handled by state companies. They do not cover public transport in towns and cities. The data on road and air transport for 1996 represent own calculations based on the results from January to September.

Tab. 3.2.2-1: Passenger transport in Armenia

	1990	1992		1994		1996	
	'000 000	'000 000	% to '90	'000 000	% to '90	'000 000	% to '90
Total	382.766	185.759	48.5	70.770	18.5	86.131	22.5
Rail	3.528	2.910	82.5	3.495	99.1	1.859	52.7
Bus	377.398	181.996	48.2	66.672	17.7	83.218	22.1
Air	1.840	0.853	46.4	0.598	32.5	1.054	57.3

The number of passengers transported thus dropped to less than a third during the period of 1990 to 1996. This decrease applies mainly to the public, state bus services. Unfortunately there is no official data available on the private bus services. As of 1995, there is a growing trend in road passenger transport. The share of road traffic in the total transport of passengers was far more than 90 per cent in 1996. As there are more and more private competitors on the market, the number of actually transported passengers and thus the share of road transport in the entire volume of passenger traffic is higher than reflected in the table.

There was a sharp fall in the transport volumes in rail passenger traffic only in 1995. Until 1994, there were annual increases in part. In 1996 the number of transported passengers was only 53 per cent of the 1994 level, as compared to 1988, this represented a mere 40.6 per cent.

Tab. 3.2.2-2: Rail passenger traffic of Armenia

	1988	1991	1993	1995	1996
Rail, total					
1,000	4,575	2,803	2,884	2,969	1,859
'000 000 pkm	417.2	319.8	435.2	164.9	84.2
Ø km	91	114	151	56	45
Regional traffic					
1,000	2,896	1,608	1,901	2,807	1,823
'000 000 pkm	70.6	35.1	116.6	135.8	76.3
Ø km	24	22	61	48	42
Domestic long-haul					
1,000	...	179	144	163	36
'000 000 pkm	...	36.2	41.7	30.1	7.9
Ø km	...	202	290	185	218
Internat. traffic					
1,000	...	1,016	839	0	-
'000 000 pkm	...	248.4	277.0	0	-
Ø km	...	244	330	248	-

Regional traffic has the main share in passenger transport of the Armenian Railways. The share of passengers transported was 57 per cent in 1991 and it reached 98 per cent in 1996. The proportion of passenger transport performance rose from 11 per cent in 1991 to 97 per cent in 1996.

Domestic long-haul and international traffic displayed the most significant drops in passenger transport by railway. The domestic long-haul traffic is insignificant for Armenia, due to the geographical conditions. Its share in the passengers transported was 6 per cent in 1991 and only 2 per cent in 1996.

As of May 1995, the last international line in passenger traffic of the Armenian Railways, Yerevan - Tbilisi was closed down. There exist plans to reopen this connection in 1997.

Azerbaijan

In Azerbaijan, too, the number of passengers handled by public transport services dropped considerably between the years of 1989 to 1995. This applies both to the railways as well as bus services.

Tab. 3.2.2-3: Passenger transport in Azerbaijan

	1989	1991		1993		1995	
	'000 000	'000 000	% to '89	'000 000	% to '89	'000 000	% to '89
Rail	19.6	15.7	80.1	9.8	50.0	9.0	45.9
Bus	298.4	279.4	93.6	193.6	64.9	150.4	50.4
Air	2.2	2.0	90.9	1.5	68.2	...	

The data on bus traffic does include public transport in towns and cities, whose share was about 45 per cent in 1995. Unfortunately, there are no figures on private bus services for Azerbaijan either. In the state-run transport business, the number of passengers transported between 1989 to 1995 dropped by nearly a half. Considering the private bus services, it becomes clear that the decline in passenger transport on road is far less than with the railways.

In 1995, there were still 75 state-run companies in the bus transport sector of Azerbaijan. The fleet consisted of 3,728 vehicles with an average age of about 8 years. The vehicle stock is in an altogether bad technical condition.

The state bus companies offer connections on numerous routes both in long-haul and international traffic. In 1996 for instance, there was a daily service Baku-Tbilisi and five departures per day from Baku to Makhachkala (Dagestan). And there are a great many bus connections being offered by private Azerbaijan and, to a growing extent, also foreign companies.

In rail traffic, the number of passengers fell to 45.9 per cent from 1989 to 1995. The passenger transport performance was reduced to 38.7 per cent during the same period of time. There was a further sharp decrease in 1996, when the number of passengers dropped by another 50 per cent as compared to the previous year.

Tab. 3.2.2-4: Rail passenger traffic of Azerbaijan

	1989	1991	1993	1994	1995
Rail, total					
1,000	19,600	15,700	9,800	10,600	9,000
'000 000 pkm	2,042.9	1,975.2	1,395.8	1,111.9	791.2
Ø km	104	126	142	105	88
Regional traffic					
1,000	14,000	10,300	6,100	7,800	6,400
'000 000 pkm	177.0	181.8	171.3	170.1	140.2
Ø km	12.6	17.7	28.1	21.8	21.9
Long-haul traffic					
1,000	5,600	5,400	3,700	2,800	2,600
'000 000 pkm	1,865.9	1,793.4	1,224.5	941.8	651.0
Ø km	333	332	331	336	250

The number of passengers transported has declined more or less at the same rate in regional as well as long-haul traffic. Thus, the proportion of regional traffic in passengers transported remained more or less the same at approx. 71 per cent in 1995, as compared to 1989. The share of regional traffic in passenger transport performance rose from 8.7 per cent in 1989 to 17.7 per cent in 1995. This is due to the considerable shrinkage of the average transport distance in long-haul traffic from 333 km to 250 km.

The following table depicts passenger transport on selected main lines of the Azerbaijan Railways:

Tab. 3.2.2-5: Rail passenger transport on main lines in Azerbaijan

('000)

	1989	1994	1995
Baku - Tbilisi v.v.	525.6	160.6	22.0
Baku - Yalama v.v.	1,333.3	182.5	146.0
Baku - Nakhichevan v.v.	871.2	-	-
Baku - Astara v.v.	306.6	328.5	233.6

Due to the Nagorno-Karabakh conflict, operations were ceased on the line of Baku - Nakhichevan in March 1992.

Georgia

Georgia experienced the greatest drop in passenger transport among the three Caucasus republics. Both in the railway and the state bus services, the number of pas-

sengers transported as well as the transport performance fell to less than a quarter from 1989 to 1995.

Tab. 3.2.2-6: Passenger transport in Georgia

	1989	1991		1993		1995	
	'000 000	'000 000	% to '89	'000 000	% to '89	'000 000	% to '89
Rail	17.0	11.0	64.7	8.1	47.6	3.7	21.8
Bus .	772.7	613.3	79.4	57.3	7.4	57.0	7.4
Air	2.7	2.4	88.9	0.6	22.2	...	...

The details on the bus services also contain the urban public transport. There are no official figures for private road transport for Georgia either. According to expert estimates, the share of the state sector in passenger transport was approx. 30 to 40 per cent in 1995.

In rail traffic, passenger transport dropped to 22 per cent from 1989 to 1995. In 1996, too, the downward trend continued. According to preliminary figures, the number of passengers transported fell by roughly another 10 per cent as compared to the previous year.

Tab. 3.2.2-7: Rail passenger traffic of Georgia

	1991	1992	1993	1994	1995
Rail, total					
1.000	11,041	7,632	8,070	9,762	3,676
'000 000 pkm	2,135	1,213	1,003	1,165	371
Ø km	193.4	173.4	131.0	120.5	101.4
Regional traffic					
1.000	6,219	4,654	5,642	8,449	3,010
'000 000 pkm	294.0	262.3	447.0	784.3	241.4
Ø km	47.3	56.4	79.2	92.8	80.2
Long-haul traffic					
1.000	4,822	2,978	2,428	1,313	666
'000 000 pkm	1,841	951	556	381	130
Ø km	382	319	229	290	195

The increase in the average transport distance in regional traffic and thus in its proportion of the total transport is obviously caused by the different allocation to the individual traffic sectors. The share of international traffic in the number of passengers transported in long-haul traffic was 22 per cent in 1989 and went down to 2 per cent in 1995.

3.2.3 Assessment of main factors of influence

Some of the decisive factors of influence were already described in sections 3.1.2 - 3.1.4 on the freight traffic forecast, e.g. the political and macroeconomic situation and foreign trade. That is the reason why only those aspects shall be elaborated on in the following which have direct influence on passenger traffic demand as well as the development of the modal split.

3.2.3.1 Political situation

The great number of conflict points in the Caucasus region has also led to serious impediments of national and international passenger traffic in all three countries. International rail traffic is especially hard hit. Lines which were formerly of great significance for rail passenger traffic are now either interrupted or only to be used to a severely restricted extent.

For instance, the Baku - Yalama - (Makhachkala) line is only used very little for passenger traffic because of the tense situation in the Northern Caucasus (Chechnia, Dagestan). Nearly 50 per cent of the total international passenger traffic of the Azerbaijan Railways was conducted via this relation in 1989. Passenger traffic on this section had gone down to 11 per cent of the 1989 level by 1995 and afterwards the international traffic was suspended generally. In October 1996, the regular scheduled service on the Baku - Makhachkala line was to be resumed once more, but had to be cancelled again only a few days later.

The line of Tbilisi - Samtredia - Sukhumi - (Russia) which was important for international passenger traffic in the past is not serviceable at the moment due to the conflict of Abkhasia. The important connections of Baku - Nakhichevan - (Armenia) and Yerevan - Nakhichevan - (Azerbaijan) are also shut down because of the Nagorno-Karabakh conflict.

Thus, the prospects for domestic long-haul traffic and international traffic of the railways in all three countries will be decisively influenced by the further political development in the region. In the scenarios described in section 3.2.4, assumptions are detailed as to the point in time of a possible resumption of international passenger traffic on the individual line sections.

3.2.3.2 Economic situation

The current economic situation in the three countries as well as possible scenarios for the further macroeconomic development for all three Caucasus republics have already been laid down in the section on the freight traffic forecast. Thus, the trough of the economic crisis connected with the transition to market economy structures has already been reached or overcome in all three countries. There is a moderate economic upswing with growth rates differentiated according to the respective country.

The macroeconomic development is of course closely linked to the factors of influence investigated in the following, such as the development of income, the rate of employment, individual car ownership.

And it is the degree of privatisation achieved so far which is of significance for the modal split in passenger traffic, as especially the road transport business is to undergo a transition to private economic structures. The three countries have meanwhile reached a different stage of privatisation. Armenia has progressed farthest, whereas in Azerbaijan the privatisation of small and medium-sized companies has just begun.

A privatisation of the state-owned railways is not planned in any of the three countries at the moment.

3.2.3.3 Development of income; rate of employment

The economic restructuring in the three countries has also led to dramatic changes in the development of the income, the structure of expenditure and thus in the cost of living for the population. The following table shows the development of prices for the period of 1990 to 1994 in Azerbaijan and Georgia:

Tab. 3.2.3-1: General retail price index (1990 = 1)

	1991	1992	1993	1994
Azerbaijan	2.1	20.9	257.1	4534.2
Georgia	1.75	15	478	28319

Also after inflation adjustment, there is a clear increase in the cost of living. The following example for Armenia shows that the real income has been drastically reduced over recent years:

Tab. 3.2.3-2: Money income of Armenia's population

	1990	1991	1992	1993	1994
disposable money income (in per cent, compared with previous year)	85.4	70.2	30.4	51.7	50.7

The situation in Azerbaijan and Georgia is similar.

The service sectors of the three countries are also hit by the increase in consumer prices.

3.2.3.4 Population

Population and population density figures are shown in the following table:

Tab. 3.2.3-3: Population and population density (1994)

	Population ('000)	Population density (per km²)	Share of urban population (in %)
Armenia	3754	133.5	67.7
Azerbaijan	7487	86.0	53.0
Georgia	5430	77.9	55.7

More than 50 per cent of the total population in Azerbaijan and Georgia live in towns and cities, 23 per cent of the people inhabit in the country's capital respectively. The proportion of the urban population in Armenia is about 67 per cent, some 35 per cent of the people live in the capital city of Yerevan.

Population figures and territorial distribution are strongly influenced by migration processes in all three countries. As a consequence of political conflicts, there is a relatively high number of refugees, who are temporarily living in the capitals or other large cities. Especially economic problems but also the tense political situation have led to the fact that a great number of people are leaving the region.

3.2.3.5 Foreign trade

A detailed discussion of the foreign trade relations of the three countries can be found in section 3.1.4 of the freight traffic forecast. It is especially the geographical structure of the foreign trade relations which is of relevance for the passenger traffic. Intensive mutual economic relations also lead to an increased business travel.

The relations between the three countries are of special significance for the rail traffic. Rail transport is less interesting for trips of business partners to other countries outside the region because of the great distances or difficult infrastructural conditions. The main means of transport for business trips from outside the region will be undoubtedly the aeroplane in future.

At the moment, the foreign trade relations within the region have not reached the level which would correspond with the potentials and possibilities of the countries. The causes are to be found first and foremost in the political tensions in the region but also in the yet not unfinished process of restructuring the economic and trade relations. Foreign trade relations among the three countries will intensify over the next few years.

3.2.3.6 Tourism

Tourism could become a growth potential for rail traffic in the region. However, the prospects are not very promising due to the political and economic relations in the short- and medium term.

The political tensions have caused tourist regions formerly significant for the populations of the three countries, for instance the Abkhasian Black Sea coast, Nagorno-Karabakh etc., to be rendered inaccessible. In addition, the infrastructure of the tourist sector has been badly affected by the military conflicts and the difficult economic situation in the countries.

Tourist traffic has decreased extremely as compared to the level of 1989 in all three countries. This is true for the following areas:

- the influx of foreign tourists, especially from the other CIS republics, has dropped to a minimum; trips to the three countries concentrate especially on the capital cities and less on the former traditional tourist resorts;

- holiday trips of the indigenous population within the own countries or the neighbouring countries more or less do not take place anymore; the main cause is above all the difficult economic situation, but also the political tensions in the region exert a negative influence;

Due to the new political framework, the relatively low number of trips abroad by the national populations are mostly undertaken to such countries, for which rail traffic is not interesting because of infrastructural conditions, distances or the costs involved (Iran, Turkey, Southern and Western Europe)

The steep decline in tourism is to be highlighted in the following with the help of Georgia as an example:

Tab. 3.2.3-4: Tourism in Georgia

(,000)

	1988	1989	1995
Tourists, total	1600	1005	252
including from			
Georgia	400	240	199
CIS	900	555	31
other countries	300	210	22

In future, the main means of transport for tourists will be the aeroplane. The railways will be used especially for trips within the region, e.g. to the tourist areas of the Black Sea coast. However, there is to be assumed a quickly growing significance of bus services, especially in the tourist sector. Already today, there are a great number of

tourist offers by bus, which are conducted also covering extraordinarily large distances.

3.2.3.7 Individual car ownership

Armenia and Georgia belong to the republics of the former Soviet Union with the highest per capita car ownership, in Azerbaijan the stock of cars was under the Soviet Union's average.

Tab. 3.2.3-5: Car ownership

	1990		1995		1995/1990
	cars	per 1000 inhab.	cars	per 1000 inhab.	%
Armenia	240,800	67.4	256,700	71.8	106.6
Azerbaijan	246,000	34.2	392,165	52.4	159.4
Georgia	471,300	86.3	415,389	76.5	88.1

In comparison to Western Europe and also to other East European countries the level of individual car ownership is extremely low. The stock of private cars features a very high average age and is in a bad technical condition.

Based on the forecast of the economic development of the countries and the connected income situation of the population, only a slow increase in private car ownership is to be expected for the years to come. From 1990 to 1995, the stock of cars in Armenia only rose slightly (by 6.6 per cent) and in Georgia it even dropped (by 11.9 per cent). In Azerbaijan, the number of registered cars increased by nearly 60 per cent during the same period of time, but the car density of 52.4 vehicles per 1,000 inhabitants was still quite clearly below the level of the other two countries. Second-hand cars make up a relatively high proportion of imported cars at the moment.

3.2.4 Future traffic volumes

3.2.4.1 Total rail passenger transport

The individual factors of influence were first analysed and then their significance for the development of passenger volumes was assessed. A weighting of the individual elements was conducted, taking into consideration the respective specific factors in the individual countries.

The forecast of the volume in passenger traffic was based on the following general political and economic development in the region:

The internal political situation in all three countries will remain more or less stable over the next few years and will have a relatively insignificant influence on the num-

ber of passengers. The political situation in the region as a whole is of much greater importance, as this is what the development of international rail traffic but also national domestic long-haul traffic depend on. As regards the re-introduction of rail passenger traffic on the main lines, the two scenarios are based on the following development:

Relation	*optimistic*	*pessimistic*
re-introduction of passenger transport on the Tbilisi - Yerevan line	1998	2000
regular traffic Baku - Yalama - (Makhachkala/ Russia)	1997/98	2000
re-introduction of rail traffic via Nakhichevan	2000	2005
unimpeded rail traffic through Abkhasia	2000	2003

Armenia

The economic situation in the country will stabilise further. This will be reflected also in a gradually growing passenger volume. However, the individual modes of transport will participate to a differing degree in this growth. The proportion of road transport, both individual and public, will increase further. Whereas the number of people transported will grow in total, there will be a further decline in rail transport in 1997. Only as of 1998, the railways will register an increase in passengers whereas in the pessimistic scenario the year is 2000.

Following the concrete assessment and weighting of all factors of influence, there will be the following growth rates in passenger transport of the Armenian Railways (figures in per cent):

Tab. 3.2.4-1: Annual growth rates of rail passenger traffic in Armenia

	1997	1998-2000	2001-2005	2006-2010	2011-2015
Regional traffic					
optimistic	- 5.4	1.5 ... 2.2	1.8 ... 2.3	4.7 ... 5.0	4.8 ... 5.1
pessimistic	- 10.0	- 5.2 ...+0.8	0.8 ... 1.1	2.3 ... 2.6	2.5
Domestic traffic					
optimistic	0	4.8 ... 5.0	5.0 ... 7.5	4.6 ... 5.1	2.4
pessimistic	-5.0	0 ... 1.9	1.9 ... 2.2	2.0	0.7 ... 1.0
International traffic					
optimistic	-	5.3	9.5 ... 10.5	5.2	2.3 ... 2.7
pessimistic	-	-	5.0 ... 5.2	2.5 ... 2.8	2.3 ... 2.5

Following the start of the Yerevan - Tbilisi service as of 1998 (optimistic) or 2000 (pessimistic), international passenger rail traffic will develop moderately once more. As of the year 2000 (or 2005), there will be a further increase through the reinstatement of traffic to and through Nakhichevan.

As of 1997, the following average transportation distances are to be expected:

Regional traffic	40 km
Domestic traffic	210 km
International traffic	250 km

Thus, the following passenger volumes may be deduced for the Armenian Railways:

Tab. 3.2.4-2: Rail passenger traffic in Armenia up to the year 2015

(,000)

	1997	2000	2005	2010	2015
Passengers ('000)					
optimistic	1,796	1,975	2,224	2,532	2,801
pessimistic	1,701	1,665	1,785	2,013	2,122
Pkm ('000,000)					
optimistic	77.9	100.0	120.8	140.5	156.4
pessimistic	73.8	78.8	91.7	103.3	110.1

The number of passengers transported will be 94 per cent of the 1995 level in the year 2015 in the optimistic scenario and only 71 per cent in the pessimistic scenario. Detailed figures on the individual transport segments are to be found in Annex 3.2.4-1. The share of regional traffic will continue to be over 90 per cent of the people transported, its proportion in transport performance will drop to 65 per cent by the year 2015.

Azerbaijan

In Azerbaijan, too, the modal split will continue to shift in favour of transport by road. The total traffic volume will continue to decrease until 1997 and only slightly rise as of 1998. In railway traffic, a growth in passengers transported may be reckoned with as of 1998 at the earliest (optimistic scenario), but an increase is more likely only after the year 2000.
The assessment of the individual factors of influence yields the following growth rates in the passenger traffic of the Azerbaijan Railways (in per cent):

Tab. 3.2.4-3: Annual growth rates of rail passenger traffic in Azerbaijan

	1997	1998-2000	2001-2005	2006-2010	2011-2015
Regional traffic					
optimistic	-5.2	2.5 ... 5.0	4.8 ... 5.3	5.0	2.7
pessimistic	-25.0	-4.5 ... -5.0	0 ... 2.5	2.5 ... 2.7	1.0
Domestic traffic					
optimistic	-4.8	2.5 ... 5.0	9.5	4.6 ... 5.2	2.3 ... 2.7
pessimistic	-10.0	-2.8 ... 0.5	0 ... 5.6	2.6	1.0
International traffic					
optimistic	0	9.6 ... 10.2	14.5 ...15.4	9.4 ... 10.1	7.0 ... 7.5
pessimistic	0	4.5 ... 5.0	4.9 ... 5.5	4.5 ... 5.2	4.0 ... 4.8

In 1996, too, there was a significant reduction in the transport volumes of railway passenger traffic, amounting to some 50 per cent as compared to the previous year. This downward trend will continue also in 1997. Regional traffic is affected most severely by the reduction in passenger numbers. The share of this segment in the total number of passengers will go down to 57 per cent by 2015.

A growth in international traffic may be expected as of 1989 (optimistic scenario) or 2000 (pessimistic) with the normalisation of traffic on the Baku - Yalama - Russia line. A further increase will take place as of 2000 (optimistic) or 2005 (pessimistic) with the re-instatement of services to and through Nakhichevan. The start of operations on this line will also lead to a significant increase in domestic traffic.

As of 1997 the following average transport distances are expected:

Regional traffic	25 km
Domestic traffic	250 km
International traffic	295 km

This results in the passenger traffic volumes for the Azerbaijan Railways as shown in the table below.

Tab. 3.2.4-4: Rail passenger traffic in Azerbaijan up to the year 2015

(,000)

	1997	2000	2005	2010	2015
Passengers ('000)					
optimistic	4,333	5,205	7,316	9,396	10,717
pessimistic	3,644	3,292	3,928	4,457	4,709
Pkm ('000,000)					
optimistic	426.8	563.3	889.9	1,153.1	1,330.0
pessimistic	392.9	380.6	518.9	590.9	628.6

The detailed figures on the individual transport segments are contained in Annex 3.2.4-2.

The number of people transported in the optimistic version will rise to 119 per cent of the 1995 level by the year 2015, and in the pessimistic scenario the level is a mere 52 per cent of the 1995 figure. These large differences between the two scenarios result above all from the assumed repeated serious drop in the period of 1997/98 in the pessimistic scenario and the much later opening of important lines in long-haul traffic.

Georgia

In Georgia, the volume of the overall passenger traffic has risen since 1995 once more. However, the railways cannot profit from this yet, even in 1997. Thus, in Georgia, too, there will be a further increase in the proportion of road transport.

After the assessment and weighting of the individual factors of influence according to the specific conditions of the country, the following growth rates result for rail passenger transport in Georgia (in per cent):

Tab. 3.2.4-5: Annual growth rates of rail passenger traffic in Georgia

(,000)

	1997	1998-2000	2001-2005	2006-2010	2011-2015
Regional traffic					
optimistic	0	0.8 ... 3.0	3.2 ... 3.6	2.0 ... 2.5	2.2 ... 2.4
pessimistic	-5	-5.5 ... -2.3	0 ... 2.3	1.8 ... 2.0	1.5 ... 2.3
Domestic traffic					
optimistic	0	4.5 ... 5.3	4.8 ... 5.5	7.0 ... 7.5	5.0 ... 5.4
pessimistic	-2.6	-2.5 ... 0	2.4 ... 2.8	4.8 ... 5.0	2.1 ... 2.6
International traffic					
optimistic	2.5	7.1 ... 7.5	5.0 ... 5.3	9.5 ... 10.5	4.8 ... 5.0
pessimistic	0	0	2.1 ... 2.6	4.5 ... 5.3	1.8 ... 2.4

Impulses for an increase in the volume of Georgia's railway passenger transport will emanate from the re-instatement of services to and through Abkhasia. This applies both to the domestic long-haul as well as international traffic. A further increase of traffic will be linked with the start of traffic to Armenia.

The following average transport distances are assumed for the Georgian Railways as of 1997:

Regional traffic	45 km
Domestic traffic	185 km
International traffic*	75 / 210 km

* 210 km as of 2000/2003 (optimistic/pessimistic) with re-instatement of traffic through Abkhasia

As a result, passenger volume and passenger transport performance of the Georgian Railways will develop as follows until 2015:

Tab. 3.2.4-6: Rail passenger traffic in Georgia up to the year 2015

(,000)

	1997	2000	2005	2010	2015
Passengers ('000)					
optimistic	3,218	3,632	4,417	5,700	6,920
pessimistic	3,094	2,907	3,595	4,260	4,773
Pkm ('000,000)					
optimistic	348.4	412.4	516.5	715.6	897.3
pessimistic	337.7	320.5	449.1	550.1	620.2

In the optimistic scenario, the number of people transported will rise to 188 per cent of the 1995 level by the year 2015, and only to 130 per cent in the pessimistic version. These relatively high growth rates, compared with the other two countries, result, above all, from the comparatively low starting level in 1995, only 33 per cent of the 1991 level (Azerbaijan stood at 57 per cent and Armenia at 66 per cent).

In Georgia, the share of regional passenger transport will drop from 82 per cent in 1995 to 41 per cent in 2015 (optimistic scenario).

In order to check the forecast results achieved as to their plausibility, they were compared with the current situation in other European countries. Greece and Turkey suggested themselves as comparison, as their railway passenger traffic features a comparable initial situation. Both countries have a similar density of railway network as the three Caucasus republics. The degree of private car ownership is also comparable.

	Network density (km / 1,000 km^2)	Car ownership (cars / 1,000 inhab.)	Mobility (trips per year)
Turkey	10.8	43	2.2
Greece	18.8	178	1.2
Armenia	12.1	72	0.7
Azerbaijan	24.1	52	1.4
Georgia	52.7	77	1.3

The figures on network density and car ownership relate to 1995, mobility means trips by railway per inhabitant, for Greece / Turkey 1994, for the Caucasus republics in 2015 (optimistic scenario).

According to these figures, the three Caucasus republics will reach a similar level as regards the use of the railways for passenger traffic by the year 2015, as it currently prevails in Greece and Turkey.

3.2.4.2 Passenger transport in main railway corridors

The selection of the traffic relations, for which the passenger volumes are to be forecast, was based above all on the significance of the respective line sections for international traffic. The following relations were included in the assessment:

- Baku - Tbilisi
- Baku - Yalama - (Makhachkala)
- Baku - Nakhichevan - Yerevan
- Baku - Astara
- Tbilisi - Yerevan
- Tbilisi - Samtredia - Sukhumi - (Russia)

The forecast of the passenger volume related to the respective relation is difficult in so far as, except for the lines of Baku - Tbilisi and Baku - Astara, there is no scheduled passenger traffic at the moment. Thus, the identification of a realistic starting level is extremely complicated. In the following, the approach is explained in detail for each individual corridor.

Baku - Tbilisi

Over the past years, one international passenger train operated in each direction per day. The traffic volume has been decreasing steadily since 1989. The following passenger numbers were transported in the Baku - Tbilisi direction:

1989	262,000
1994	80,300
1995	10,950
1996	1,500

It is assumed that traffic on this line will be stabilised approximately at the level of 1995 as of the year 1998. The further development will then take place in line with the rates of increase established for international rail traffic (compare section 3.2.4-1). Thus, the following volume results for international passenger traffic on the Baku - Tbilisi v.v. line:

('000 passengers)

Baku - Tbilisi v.v.	1998	2000	2005	2010	2015
Optimistic scenario	22	27	54	86	124
Pessimistic scenario	17	19	24	31	39

Based on the transport volume of 1995 and the rates of increase as laid down in Point 2.2.4.1, the volume of domestic long-haul traffic was established additionally for the relation Baku - Gyandsha v.v.:

('000 passengers)

Baku-Gyandsha v.v.	1995	1997	2000	2005	2010	2015
Optimistic scenario	803	465	526	847	1,081	1,223
Pessimistic scenario	803	441	419	509	576	606

Baku - Yalama - (Makhachkala/Russia)

In the past, this line was among the most important connections of the Azerbaijan Railways in international passenger traffic. The following number of passengers were transported in the relation of Baku - Yalama:

1989	666,650
1994	91,250
1995	73,000

The figures for 1989 include international traffic. As of 1994, the figures only relate to the passengers transported in domestic traffic. International traffic via Yalama to Russia was ceased due to the tense political situation. Already in 1996, traffic between Baku and Makhachkala was to have been re-introduced again. Now it is assumed that this connection will be operated regularly as of 1998 (optimistic) or 2000 (pessimistic). The predicted number of passengers in international traffic is 40,000 in the year of resuming operations. Thus, there would be the following passenger volumes for this section:

('000 passengers)

Baku - Yalama v.v.	1995	1997	2000	2005	2010	2015
Optimistic scenario						
Domestic long-haul	146	85	96	154	197	222
International traffic	-	-	48	97	157	225
Pessimistic scenario						
Domestic traffic	146	80	76	93	105	110
International traffic	-	-	40	51	65	83

Baku - Nakhichevan - Yerevan

Due to the conflict around Nagorno-Karabakh, railway operations were ceased on this line in March 1992. In the year 1989, some 525,600 passengers were transported between Baku and Nakhichevan, and the figure was 345,600 for the relation of Baku to Yerevan. The optimistic scenario assumes the resumption of traffic in the year 2000 (pessimistic scenario - 2005).

The following passenger volume is predicted for the time of resuming operations:

Domestic long-haul traffic	200,000
International traffic	30,000

The passenger numbers assumed for the domestic long-haul traffic (Baku - Nakhichevan) more or less correspond with the level of the entire domestic long-haul traffic in the year 2000, as compared to 1989.

Using the development rates detailed in section 3.2.4-1, the following passenger numbers result for the Baku - Nakhichevan corridor (both directions):

('000 passengers)

Baku - Nakhichevan	1995	1997	2000	2005	2010	2015
Optimistic scenario	-	-	230	260	332	375
Pessimistic scenario	-	-	-	230	260	273

Baku - Astara

The passenger volume was established for this relation, based on the actual level in 1995, using the development rates for domestic long-haul traffic:

('000 passengers)

Baku - Astara v.v.	1995	1997	2000	2005	2010	2015
Optimistic scenario	234	136	171	275	351	397
Pessimistic scenario	234	128	122	170	192	202

Tbilisi - Yerevan

Railway passenger transport was ceased on this line in May 1995. The reasons were the severely decreased passenger numbers as well as the unstable security conditions along the line.

It is assumed that traffic between the two capital cities will be resumed again in 1998 (optimistic) or 2000 (pessimistic). The assumed passenger volume on re-introducing services is 30,000. On the basis of the rates of increase for international traffic (section 3.2.4.1), the following development is predicted:

('000 passengers)

Tbilisi - Yerevan v.v.	1995	1997	2000	2005	2010	2015
Optimistic scenario	0	-	33	42	61	77
Pessimistic scenario	0	-	30	36	45	50

Tbilisi - Sukhumi - (Russia)

In the past, this line was of special importance both for national as well as international passenger traffic. In connection with the conflict around Abkhasia, railway services were ceased completely. In predicting the future passenger volume on this line, it was assumed that regular railway traffic to and through Abkhasia will be resumed in the year 2000 (optimistic) or 2003 (pessimistic).

The assumed starting numbers on resuming traffic are 130,000 passengers in domestic long-haul traffic (that corresponds with the level of traffic on the Tbilisi - Poti line in 1996/97) and 40,000 passengers in international traffic. Thus the following development of passenger traffic results up to the year 2015:

('000 passengers)

Tbilisi-Sukhumi v.v.	1995	1997	2000	2005	2010	2015
Optimistic scenario	0	0	170	217	320	409
Pessimistic scenario	0	0	0	209	261	295

Tbilisi - Samtredia - Poti / Batumi

These connections are also of significance for the tourist traffic and as a link to the two important port towns of Poti and Batumi. Unfortunately, there is no concrete statistical data available on the current passenger traffic on these lines. Thus the prediction was based on our own calculations, using the seat capacity being offered on these lines and the average passenger numbers carried on the trains (details provided by the Georgian Railways). The following passenger volumes result for 1995:

Tbilisi - Batumi v.v.	220,300
Tbilisi - Poti v.v.	130,800

Using the established growth rates for domestic long-haul traffic in Georgia, the passenger volume will develop as follows up to the year 2015:

('000 passengers)

Tbilisi - Poti v.v.	1995	1997	2000	2005	2010	2015
Optimistic scenario	131	131	152	194	278	355
Pessimistic scenario	131	126	120	174	217	246

('000 passengers)

Tbilisi - Batumi v.v.	1995	1997	2000	2005	2010	2015
Optimistic scenario	221	221	256	327	470	600
Pessimistic scenario	221	213	203	295	367	415

Annexes

Annex 3.1.4-1

Geographical structure of Armenian foreign trade

(in % of total value)

	Exports			Imports		
	1994	1995	1996	1994	1995	1996
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
FSU	***73.3***	***62.6***	***44.1***	***52.2***	***49.6***	***32.9***
Russia	39.0	33.5	33.1	28.5	20.0	14.6
Turkmenistan	30.5	25.4	6.0	1.8	19.2	10.7
Georgia	1.3	1.0	2.4	4.5	9.2	5.9
Ukraine	1.7	1.7	1.7	1.3	0.8	1.4
Kazakhstan	0.4	0.6	0.3	0.0	0.0	0.0
Non - FSU	***26.6***	***37.4***	***53.9***	***46.0***	***44.0***	***60.7***
Belgium	12.1	11.4	15.4	0.4	2.3	5.7
France	0.2	0.1	0.1	2.7	2.4	1.4
Germany	3.1	3.7	1.3	1.8	1.7	2.0
Italy	0.0	0.0	0.0	2.3	3.3	3.0
Netherlands	0.3	2.0	3.0	2.1	0.9	0.7
Great Britain	0.2	0.5	1.1	0.1	0.3	0.8
Iran	6.8	12.9	15.1	10.8	8.9	17.4
Turkey	0.1	1.0	2.1	0.1	0.4	0.7
USA	0.2	0.2	1.5	24.4	17.0	12.0
South Africa	0.0	3.1	12.5	0.0	0.4	4.9

Annex 3.1.4-2
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Geographical structure of Azerbaijan foreign trade

1. Exports

(% of total value)

	1989	1990	1991	1992	1993	1994	1995
FSU	**93.7**	**94.9**	**93.3**	**40.8**	**51.6**	**43.1**	**39.6**
Russia			56.1		25.6	21.9	18.1
Ukraine			12.3		6.7	9.1	6.1
Belarus			4.7		2.1	1.2	0.5
Kazakhstan			3.9		4.2	2.6	3.1
Turkmenistan			4.2		5.4	2.7	2.4
Uzbekistan			2.4		0.6	0.4	0.7
Georgia			5.7		4.2	2.6	7.6
Non-FSU	**6.3**	**5.1**	**6.1**	**59.2**	**48.4**	**56.9**	**60.4**
European Union					6.3	11.0	17.1
Turkey					8.4	2.6	4.8
Iran					26.6	38.0	29.8

2. Imports

(% of total value)

	1989	1990	1991	1992	1993	1994	1995
FSU	**73.1**	**73.8**	**80.3**	**56.0**	**56.2**	**62.5**	**34.2**
Russia			45.0		23.1	15.1	13.2
Ukraine			22.7		9.7	11.1	5.0
Belarus			2.3		1.5	1.0	0.7
Kazakhstan			4.2		6.4	6.7	2.6
Turkmenistan			0.2		9.9	25.1	7.7
Uzbekistan			1.7		0.3	0.3	1.2
Georgia			1.6		3.3	1.0	2.8
Non-FSU	**26.9**	**26.2**	**19.7**	**44.0**	**43.8**	**37.5**	**65.8**
European Union					7.1	7.6	11.7
Turkey					11.5	9.8	21.0
Iran					7.6	8.6	12.0

Geographical structure of Azerbaijan´s foreign trade

Exports

Destination	1994		1995	
	Tons	%	Tons	%
Total	**2,683,798**		**2,548,620**	
Russia	255,015	9.5	208,145	8.2
Ukraine	273,424	10.2	98,563	3.9
Belarus	14,124	0.5	4,341	0.2
Georgia	91,724	3.4	397,616	15.6
Total	*379,272*	*14.1*	*500,520*	*19.6*
Uzbekistan	2,822	0.1	2,349	0.1
Kazakhstan	29,391	1.1	45,266	1.8
Kirgiztan	21,612	0.8	7,628	0.3
Tadshikistan	16,842	0.6	19,783	0.8
Turkmenistan	159,427	5.9	26,535	1.0
Total	*230,094*	*8.6*	*101,561*	*4.0*
Turkey	16,994	0.6	36,288	1.4
Iran	1,405,866	52.4	1,040,194	40.8

Imports

Destination	1994		1995	
	Tons	%	Tons	%
Total	**2,439,559**		**1,164,814**	
Russia	497,778	20.4	108,782	9.3
Ukraine	301,080	12.3	42,219	3.6
Belarus	8,102	0.3	4,159	0.4
Georgia	33,516	1.4	65,233	5.6
Total	*342,698*	*14.0*	*111,611*	*9.6*
Uzbekistan	5,866	0.2	56,033	4.8
Kazakhstan	979,985	40.2	157,258	13.5
Kirgiztan	42,385	1.7	2,031	0.2
Tadshikistan	330	0.0	137	0.0
Turkmenistan	144,367	5.9	40,674	3.5
Total	*1,172,933*	*48.1*	*256,133*	*22.0*
Turkey	142,344	5.8	102,280	8.8
Iran	171,059	7.0	351,141	30.1

Annex 3.1.4-3

Geographical structure of Georgian foreign trade

1. Exports

(% of total value)

	1989	1990	1991	1992	1994	1995
FSU	**94.0**	**95.7**	**99.1**	**96.3**	**...**	**...**
Russia			66.6	54.7	33.7	30.8
Ukraine			10.3	12.4	2.1	...
Belarus			2.0	3.2	...	...
Kazakhstan			6.2	3.6	2.0	...
Turkmenistan			1.5	10.2	10.0	4.5
Uzbekistan			2.9	2.4	...	...
Azerbaijan			1.7	6.4	9.4	6.6
Armenia			2.3	0.6	8.3	12.4
Non FSU	**6.0**	**4.3**	**0.9**	**3.7**	**...**	**...**
Europe			0.4	3.3	...	17.2
Turkey			0.0	0.2	14.6	22.8
Iran			-	-	1.1	...

2. Imports

(% of total value)

	1989	1990	1991	1992	1994	1995
FSU	**75.6**	**72.3**	**84.5**	**96.8**	**...**	**...**
Russia			50.7	10.3	8.4	13.6
Ukraine			16.9	10.1	...	...
Belarus			2.4	1.8	...	...
Kazakhstan			1.4	0.9	...	...
Turkmenistan			0.0	64.9	65.0	13.7
Uzbekistan			1.2	1.1	...	...
Azerbaijan			6.0	1.2	4.9	11.1
Armenia			1.5	0.6	0.3	0.6
Non-FSU	**24.4**	**27.7**	**15.5**	**3.2**	**...**	**...**
Europe			4.1	0.5	...	...
Turkey			6.8	0.4	10.8	21.0
Bulgaria			...	...	0.6	7.0
Romania			...	...	1.0	7.7

Annex 3.1.4-4

Commodity structure of foreign trade of Armenia 1996

Commodity group	Export		Import	
	tons	%	tons	%
Total	**230,952**	**100.0**	**960,689**	**100.0**
Live animals and animal products	10	0.0	51,288	5.3
Vegetable products	316	0.1	332,759	34.6
Animal, vegetable fats/oils	74	0.0	51,288	5.3
Prepared foodstuff	4,751	2.1	112,029	11.7
Mineral products	116,736	50.5	329,363	34.3
Chemical products	3,638	1.6	28,075	2.9
Plastics, rubber	2,236	1.0	4,010	0.4
Raw hides, skins, leather, furs	1,869	0.8	86	0.0
Wood	103	0.0	1,887	0.2
Paper and paperboard	96	0.0	4,457	0.5
Textiles	1,016	0.4	17,474	1.8
Footwear, umbrellas	91	0.0	239	0.0
Articles of stone, gypsum, cement	2,673	1.2	7,253	0.8
Metals	85,679	37.1	5,640	0.6
Machinery	6,644	2.9	2,674	0.3
Vehicles, aircraft, vessels	1,512	0.7	1,546	0.2
others	3,508	1.5	10,621	1.1

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Commodity structure of Azerbaijan foreign trade

Exports

(in % of total value)

Commodity group	1994			1995		
	Total	FSU	Non-FSU	Total	FSU	Non-FSU
live animals, animal products	0.1	0.2	0.0	0.1	0.2	0.1
plant products	2.3	5.0	0.2	2.4	5.5	0.3
animals or vegetable oil and fat	0.0	0.0	0.0	0.1	0.1	0.0
food, beverages, tobacco	7.7	17.1	0.5	4.5	8.5	1.8
mineral products (oil, ore, build. mater.)	34.2	25.2	41.0	51.8	49.3	53.4
chemical products	3.6	6.7	1.3	3.6	7.7	0.8
plastic, rubber, rubber products	1.6	2.9	0.6	2.5	4.5	1.1
hides, furs and products thereof	0.1	0.1	0.1	0.3	0.0	0.4
timber, timber products	0.1	0.0	0.1	0.0	0.0	0.1
pulp, paper, cardboard	0.6	0.1	0.9	0.1	0.1	0.1
textiles	18.0	8.4	25.2	22.8	5.0	34.5
shoes and oth. prod. of ligth industry	0.1	0.3	0.0	0.1	0.0	0.0
prod. of stone, ceramics, cement, glass	0.2	0.4	0.0	0.3	0.7	0.0
precious metals and stones	0.0	0.0	0.0	0.0	0.0	0.0
metal, metal products	16.5	1.4	28.0	3.2	1.4	4.4
machines, electrical appliances	14.0	30.4	1.7	7.2	14.8	2.2
means of transport	0.7	1.2	0.3	0.8	1.2	0.6
other equip., watches, musical instr.	0.2	0.4	0.0	0.3	0.8	0.0
other finished industrial products	0.1	0.2	0.0	0.0	0.1	0.0

Commodity structure of Azerbaijan foreign trade

Imports

(in % of total value)

Commodity group	1994			1995		
	Total	FSU	Non-FSU	Total	FSU	Non-FSU
live animals, animal products	5.4	4.2	7.5	11.1	6.9	13.3
plant products	10.1	9.6	10.8	7.7	6.8	8.2
animals or vegetable oil and fat	3.0	0.2	7.5	8.2	0.3	12.3
food, beverages, tobacco	7.9	4.4	13.7	14.5	6.2	18.8
mineral products (oil, ore, build. mater.)	33.3	49.0	7.3	15.1	32.2	6.2
chemical products	4.9	2.5	8.8	9.2	6.3	10.7
plastic, rubber, rubber products	1.9	2.6	0.6	1.7	3.3	0.9
hides, furs and products thereof	0.2	0.1	0.4	0.4	0.0	0.6
timber, timber products	0.8	1.1	0.2	0.8	1.3	0.5
pulp, paper, cardboard	0.9	1.0	0.7	2.3	3.7	1.5
textiles	2.3	1.2	4.2	1.7	1.5	1.8
shoes and oth. prod. of ligth industry	0.9	0.3	1.9	0.3	0.1	0.4
prod. of stone, ceramics, cement, glass	0.9	1.0	0.8	1.2	1.9	0.8
precious metals and stones	0.0	0.0	0.1	0.0	0.0	0.0
metal, metal products	12.5	15.0	8.4	6.3	12.9	2.9
machines, electrical appliances	10.1	4.6	19.4	12.4	12.3	12.5
means of transport	2.9	2.4	3.7	5.5	3.2	6.7
other equip., watches, musical instr.	0.5	0.1	1.2	0.6	0.7	0.5
other finished industrial products	1.5	0.7	2.8	1.1	0.6	1.3

Annex 3.1.4-6

Commodity structure of foreign trade of Georgia

(in % of total value)

Commodity group	Export		Import	
	1994	1995	1994	1995
Electric power	-	-	2.8	2.3
Crude oil	5.0	7.7	11.1	30.9
Natural gas	-	-	64.4	13.8
Coal, coke	0.3	0.3	0.4	0.4
Ferrous metallurgy	30.1	33.9	0.4	0.4
Non-ferrous metallurgy	0.9	3.0	0.2	0.2
Chemical and petrochem. prod.	11.4	9.8	2.4	4.2
Machinery and metal works	14.1	7.2	4.1	6.5
Wood, pulp, paper products	1.8	2.0	0.3	0.6
Building materials	3.7	4.4	1.2	1.3
Light industry products	10.2	4.1	0.9	2.0
Agricultural and food prod.	21.6	27.3	10.8	34.4
Others	1.1	0.2	1.1	3.1

Annex 3.1.4-7

Main export items of Azerbaijan

(in Tons)

Type of goods	1994	1995
fish (fresh, processed)	1,878	998
fruit, vegetable	31,985	8,492
citrus fruit	415	149
tea	1,972	1,274
cotton products	1,927	19,158
food, preserve	1,721	3,778
tomato pulp	10,064	6,463
fruit juices	6,804	5,648
beverages (alc., non-alc.)	1,100	790
champagne	2,026	1,401
tobacco	12,918	8,952
bentonit	147,488	68,258
heavy spare	13,264	5,945
natural stone (unprocessed)	3,826	331
cement		180
iron ore	4,225	
petrol	412	89,192
kerosene	132,190	188,718
diesel	1,507,093	1,625,216
mazout	58,322	125,621
lubricants	100,618	119,557
other petrochem. products	5,411	22,824
liquid gas	15,150	8,762
petrol coke	15,010	4,817
bitumen	52	14,536
chem. products	74,590	45,427
aluminium oxide	14,488	17,980
hydrocarbone	39,007	10,108
mineral fertiliser	7,836	5,824
tyres	767	250
timber, chipboards	2,195	875
paper	12,826	2,188
cotton	78,286	75,992
metallurgical products	348,783	45,073
non-ferrous metals	9,983	4,277
air conditioning	3,940	2,407
compressors	8,467	1,893
refrigerators	3,555	644
electric motors	990	821
tractors	800	3,570
busses	250	90
cars	21	5
lorries	880	60
motorcycles	263	76
Total	**2,683,798**	**2,548,620**

Annex 3.1.4-8

Main import items of Azerbaijan

(in Tons)

Type of goods	1994	1995
food	93,535	207,874
fruit, vegetables	78,188	64,770
potatoes	41,116	19,054
cereals	291,993	112,553
flour	248,800	69,891
sugar	46,495	104,186
beverages	3,420	738
salt	21,629	23,771
minerals	18,559	28,975
cement	83,007	91,295
bauxite	37,395	32,420
coal, coke	1,600	1,059
oil	852,567	61,936
petrochemical products	145,632	2,006
chemical products	60,869	34,813
mineral fertiliser	4,147	36,062
tyres	1,918	1,255
timer, timber products	44,830	28,862
paper	8,325	26,189
building materials	9,766	153,049
metallurgical products	334,432	55,772
non-ferrous metals	1,605	1,116
tractors	2,830	270
busses	850	1,970
cars	1,091	2,864
lorries	4,960	2,064
Total	**2,439,559**	**1,164,814**

Annex 3.1.4-9

Foreign trade between Azerbaijan and Georgia

(in Tons)

Type of goods	Export Georgia		Export Azerbaijan	
	1994	1995	1994	1995
food		281	513	932
tea	108	34		
tobacco			41	411
fruit and vegetable juice	785			
sugar	20			
minerals	70	11,808		6
kerosene			11,325	84,521
diesel			25,894	188,448
petrol			51	4,684
mazout	17,000		20,262	51,498
lubricants		8	1,739	12,154
gas			1,304	8,762
chemistry	277	2,975	1,956	26,964
acids	62	65	17,585	7,734
carbide	139	105		
caustic soda			2,619	1,121
hydrocarbon			7,277	10,108
ammonia	671	1,537		
spirit		1,950		
phenol	2,021	7,921		
nitrogen fertiliser	1,904	21,113		
paper	338	153	259	266
stone	294	124		
metal and metal products	8,879	17,159	285	
Total	***32,568***	***65,233***	***91,110***	***397,609***

Annex 3.1.4-10

Azerbaijan's export of oil products

Destination	1994		1995	
	Tons	%	Tons	%
Total	***1,819,108***		***2,190,481***	
Russia	11,056	0.6	102,068	4.7
Ukraine	219,739	12.1	82,608	3.8
Belarus	7,500	0.4	177	0.0
Uzbekistan	110	0.0	108	0.0
Moldova	112,933	6.2	39,480	1.8
Kazakhstan	22,976	1.3	41,201	1.9
Georgia	59,280	3.3	364,393	16.6
Kyrghyzstan	20,600	1.1	5,669	0.3
Tajikistan	2,524	0.1	3,931	0.2
Turkmenistan	146,635	8.1	20,177	0.9
FSU	**603,353**	**33.2**	**659,812**	**30.1**
Afghanistan	1,591	0.1		
Lithuania	12,744	0.7	47,756	2.2
Latvia	35,683	2.0	13,464	0.6
Austria	52,998	2.9	22,355	1.0
Gibraltar		0.0	45,421	2.1
Greece	10,303	0.6	101,988	4.7
Iran	1,045,326	57.5	976,324	44.6
Italy		0.0	277,138	12.7
Poland	22,695	1.2		
UK	32,745	1.8	46,071	2.1
Non FSU	**1,214,085**	**66.7**	**1,530,517**	**69.9**

Annex 3.1.6-1

Development of rail freight traffic - Armenia

	ME	1989	1996	1997		2000		2010		2015	
				opt.	pess.	opt.	pess.	opt.	pess.	opt.	pess.
Total amount	,000 t	**33,868**	**1,177**	**1,238**	**1,166**	**2,269**	**1,535**	**3,357**	**2,242**	**4,238**	**2,726**
Total perform.	Mio tkm	**5,121**	**351**	**369**	**348**	**703**	**476**	**1,041**	**695**	**1,314**	**845**
Export, amount	,000 t	8,033	132	135	129	176	142	316	213	474	320
Import, amount	,000 t	18,227	511	550	514	715	617	1,072	832	1,286	957
Transit, amount	,000 t	40	0	0	0	685	170	856	360	1,070	541
Domestic traffic		*7,568*	*534*	*553*	*523*	*693*	*606*	*1,113*	*836*	*1,407*	908
Freight dispatch		*15,641*	*666*	*688*	*652*	*869*	*748*	*1,429*	*1,050*	*1,882*	1,228
Oil products	,000 t			0	0	0	0	0	0	0	0
Building materials	,000 t	6,909	116	122	119	189	149	425	260	637	338
Metal	,000 t	16	20	21	20	22	21	26	23	29	25
Cement	,000 t	1,053	130	137	133	171	152	256	198	320	228
Cereals, foodstuf	,000 t		34	34	33	37	35	47	40	51	43
others	,000 t	7,663	366	375	348	450	391	675	528	844	594
Transport distance	km			298		310		310		310	

Annex 3.1.6-2

Development of rail freight traffic - Azerbaijan

		1989	1995	1997		2000		2010		2015	
				opt.	pess.	opt.	pess.	opt.	pess.	opt.	pess.
Total amount	,000 t	**91,363**	**9,073**	**10,863**	**10,173**	**20,102**	**12,992**	**29,690**	**20,519**	**34,825**	**23,685**
Total perform.	Mio tkm	**41,895**	**2,409**	**2,879**	**2,696**	**8,805**	**5,469**	**13,004**	**8,638**	**15,253**	**9,971**
Export, amount	,000 t	15,859	1,277	1,270	1,251	6,454	1,965	10,668	4,456	11,201	4,912
Import, amount	,000 t	15,477	815	894	885	1,162	1,151	1,743	1,611	2,265	2,014
Transit, amount	,000 t	37,082	219	881	608	4,187	2,005	5,150	3,810	6,438	4,763
Domestic traffic		*22,945*	*6,762*	*7,817*	*7,429*	*8,462*	*7,871*	*12,129*	*10,642*	*14,921*	11,997
Freight dispatch		*39,466*	*8,429*	*9,087*	*8,680*	*14,916*	*9,836*	*22,797*	*15,098*	*26,123*	16,909
Oil products	,000 t	10,692	6,416	7,342	6,987	11,880	7,120	18,611	11,483	21,403	12,718
Building materials	,000 t	13,044	1,031	812	796	1,827	1,593	2,466	2,071	2,713	2,381
Iron ore	,000 t	697	4	10	4	22	5	30	5	33	6
Cement	,000 t	835	141	126	122	145	141	195	183	215	210
Cereals	,000 t	725	241	251	248	276	273	345	335	379	368
others	,000 t	8,294	596	548	522	767	704	1,150	1,021	1,380	1,226
Transport distance	km		265	265	265	438	421	438	421	438	421

Annex 3.1.6-3

Development of rail freight traffic - Georgia

		1988	1995	1997		2000		2010		2015	
				opt.	pess.	opt.	pess.	opt.	pess.	opt.	pess.
Total amount	,000 t	**36,190**	**4,700**	**4,886**	**4,390**	**9,525**	**4,477**	**15,268**	**7,611**	**17,470**	**9,135**
Total perform.	Mio tkm	**12,591**	**1,246**	**1,319**	**1,185**	**3,238**	**1,522**	**5,191**	**2,588**	**5,940**	**3,106**
Export, amount	,000 t		330	353	306	494	367	815	606	1,019	787
Import, amount	,000 t		1,225	820	603	943	620	1,179	715	1,267	805
Transit, amount	,000 t		1,775	2,245	2,050	6,011	1,758	10,525	4,192	12,104	5,220
Domestic traffic			1,370	*1,467*	*1,430*	*2,076*	*1,732*	*2,748*	*2,099*	*3,079*	2,323
Freight dispatch			1,600	*1,820*	*1,736*	*2,570*	*2,099*	*3,564*	*2,704*	*4,098*	3,110
Coal	,000 t	2,352	41	50	44	87	62	130	74	149	86
Oil products	,000 t	1,332	271	297	290	371	334	483	434	555	499
Building materials	,000 t	10,329	218	252	247	441	309	661	463	760	533
Iron ore	,000 t	5,467	80	88	86	110	103	132	123	151	142
Cement	,000 t	882	20	22	22	39	26	58	38	66	43
Cereals	,000 t	2,624	157	177	170	222	204	266	255	306	293
Metal	,000 t	1996	161	199	172	309	216	494	302	568	347
Others	,000 t		652	736	705	994	846	1,341	1,015	1,542	1,168
Transport distance	km		268	270		340		340		340	

Annex 3.1.6-4

Westbound traffic in Baku - Tbilisi - Poti / Batumi corridor (optimistic scenario)

(in '000 tons)

	1995	1996	1997	2000	2010	2015
1 Baku - Gyandsha						
Domestic	3,299	3,283	3,529	3,793	5,311	6,373
Azeri exports	952	928	947	4,734	7,811	8,358
Georgian imports	26	27	28	35	53	66
Transit	134	335	469	1,759	2,198	2,748
Azeri imports	30	30	32	33	36	38
Total	*4,441*	*4,602*	*5,004*	*10,354*	*15,409*	*17,583*
2 Gyandsha - Tbilisi						
Domestic	0	0	0	0	0	0
Azeri exports	964	940	959	4,793	7,909	8,463
Georgian imports	26	27	28	35	53	66
Transit	134	335	469	1,759	2,198	2,748
Total	*1,124*	*1,302*	*1,456*	*6,587*	*10,160*	*11,277*
3 Tbilisi - Batumi						
Domestic	380	399	429	515	643	740
Azeri exports	615	600	612	3,609	6,568	6,962
Georgian imports	11	11	12	14	18	19
Transit	126	315	410	942	1,224	1,592
Georgian exports	30	30	32	45	74	93
Total	*1,162*	*1,355*	*1,494*	*5,124*	*8,527*	*9,405*
4 Tbilisi - Poti						
Domestic	310	326	350	420	567	652
Azeri exports	109	106	108	867	1,041	1,093
Georgian imports	3	3	3	4	5	5
Transit	28	70	151	828	952	1,047
Georgian exports	60	60	64	90	148	185
Total	*510*	*565*	*676*	*2,209*	*2,712*	*2,982*

Annex 3.1.6-5

Westbound traffic in Baku - Tbilisi - Poti / Batumi corridor (pessimistic scenario)

(in '000 tons)

	1995	1996	1997	2000	2010	2015
1 Baku - Gyandsha						
Domestic	3,299	3,283	3,447	3,481	4,525	5,087
Azeri exports	952	928	944	1,429	3,208	3,635
Georgian imports	26	27	28	31	37	43
Transit	134	335	352	1,354	1,693	2,065
Azeri imports	30	30	30	31	34	36
Total	*4,441*	*4,602*	*4,801*	*6,326*	*9,497*	*10,866*
2 Gyandsha - Tbilisi						
Domestic	0	0	0	0	0	0
Azeri exports	964	940	956	1,463	3,374	3,714
Georgian imports	26	27	28	31	37	43
Transit	134	335	352	1,354	1,693	2,065
Total	*1,124*	*1,302*	*1,336*	*2,848*	*5,104*	*5,822*
3 Tbilisi - Batumi						
Domestic	380	399	409	458	490	564
Azeri exports	615	600	510	692	2,375	2,618
Georgian imports	11	11	12	13	16	18
Transit	126	315	372	743	870	1,218
Georgian exports	30	30	32	39	64	79
Total	*1,162*	*1,355*	*1,335*	*1,945*	*3,815*	*4,496*
4 Tbilisi - Poti						
Domestic	310	326	335	349	436	501
Azeri exports	109	106	98	450	598	635
Georgian imports	3	3	3	4	5	5
Transit	28	70	63	677	792	990
Georgian exports	60	60	61	80	119	149
Total	*510*	*565*	*561*	*1,559*	*1,950*	*2,281*

Annex 3.1.6-6

Eastbound traffic in Baku - Tbilisi - Poti / Batumi corridor (optimistic scenario)

(in '000 tons)

	1995	1996	1997	2000	2010	2015
1 Gyandsha - Baku						
Domestic	676	592	621	932	1,165	1,339
Azeri imports	265	270	291	378	567	737
Georgian exports	155	154	166	224	336	403
Transit	54	55	96	386	675	843
Azeri exports	30	29	30	90	107	113
Total	*1,180*	*1,100*	*1,204*	*2,008*	*2,849*	*3,435*
2 Tbilisi - Gyandsha						
Domestic	0	0	0	0	0	0
Azeri imports	293	299	321	418	626	814
Georgian exports	160	159	171	231	347	416
Transit	54	55	96	386	675	843
Total	*507*	*513*	*589*	*1,034*	*1,648*	*2,074*
3 Batumi - Tbilisi						
Domestic	195	205	220	275	371	427
Azeri imports	53	54	58	76	113	147
Georgian exports	45	45	48	67	104	125
Transit	195	191	196	245	306	367
Georgian imports	290	276	282	325	406	436
Total	*778*	*770*	*805*	*988*	*1,301*	*1,503*
4 Poti - Tbilisi						
Domestic	143	150	161	202	272	313
Azeri imports	240	245	263	342	513	667
Georgian exports	10	10	10	13	17	20
Transit	350	348	357	446	558	669
Georgian imports	610	580	377	433	541	582
Total	*1,353*	*1,333*	*1,169*	*1,436*	*1,902*	*2,252*

Annex 3.1.6-7

Eastbound traffic in Baku - Tbilisi - Poti / Batumi corridor (pessimistic scenario)

(in '000 tons)

	1995	1996	1997	2000	2010	2015
1 Gyandsha - Baku						
Domestic	676	592	603	845	1,014	1,135
Azeri imports	265	270	284	355	522	654
Georgian exports	155	154	148	170	272	327
Transit	54	55	83	323	581	726
Azeri exports	30	29	29	64	74	77
Total	*1,180*	*1,099*	*1,146*	*1,757*	*2,463*	*2,919*
2 Tbilisi - Gyandsha						
Domestic	0	0	0	0	0	0
Azeri imports	293	297	312	391	574	719
Georgian exports	160	160	154	177	283	339
Transit	54	55	83	323	581	726
Total	*507*	*512*	*549*	*890*	*1,438*	*1,784*
3 Batumi - Tbilisi						
Domestic	195	196	206	237	308	345
Azeri imports	53	54	56	71	102	130
Georgian exports	45	45	46	48	63	72
Transit	195	195	198	238	285	333
Georgian imports	290	261	144	165	198	232
Total	*778*	*751*	*650*	*758*	*956*	*1,112*
4 Poti - Tbilisi						
Domestic	143	144	151	174	226	253
Azeri imports	240	244	256	320	464	589
Georgian exports	10	10	10	11	14	16
Transit	350	341	346	416	499	584
Georgian imports	610	549	302	347	417	488
Total	*1,353*	*1,288*	*1,065*	*1,267*	*1,619*	*1,929*

Annex 3.2.4-1

Development of rail passenger traffic in Armenia

	1995	1997	%	2000	%	2010	%	2015	%
Optimistic scenario									
Regional traffic									
Passengers (,000)	2,807	1,760	62.7	1,868	66.5	2,333	83.1	2,576	91.8
Pkm (Mio)	134.7	70.0	52.3	75	55.5	93.3	69.3	103.0	76.5
Domestic traffic									
Passengers (,000)	163	36	22.1	42	25.8	63	38.7	71	43.6
Pkm (Mio)	30.2	7.5	24.8	8.7	28.8	13.2	43.7	14.9	49.3
International traffic									
Passengers (,000)				66		136		154	
Pkm (Mio)				16.5		34.0		38.5	
Total									
Passengers (,000)	**2,970**	**1,796**	**60.5**	**1,976**	**66.5**	**2,532**	**85.3**	**2,801**	**94.3**
Pkm (Mio)	**164.9**	**77.9**	**47.2**	**99.9**	**60.6**	**140.5**	**85.2**	**156.4**	**94.8**
Pessimistic scenario									
Regional traffic									
Passengers (,000)	2,807	1,667	59.4	1,600	57.0	1,897	67.6	1,994	71.0
Pkm (Mio)	134.7	66.7	49.5	64.0	47.5	75.9	56.3	79.7	59.2
Domestic traffic									
Passengers (,000)	163	34	20.9	35	21.5	42	25.8	45	27.6
Pkm (Mio)	30.2	7.2	23.8	7.3	24.2	8.9	29.5	9.3	30.8
International traffic									
Passengers (,000)				30		74		84	
Pkm (Mio)				7.5		18.6		21.0	
Total									
Passengers (,000)	**2,970**	**1,701**	**57.3**	**1,665**	**56.1**	**2,013**	**67.8**	**2,123**	**71.5**
Pkm (Mio)	**164.9**	**73.9**	**44.8**	**78.8**	**47.8**	**103.4**	**62.7**	**110.0**	**66.7**

Note: Percentage rates refer to year 1995

Annex 3.2.4-2

Development of rail passenger traffic in Azerbaijan

	1995	1997	%	2000	%	2010	%	2015	%
Optimistic scenario									
Regional traffic									
Passengers (,000)	6,400	2,918	45.6	3,298	51.5	5,372	83.9	6,078	95.0
Pkm (Mio)	140.2	73.0	52.1	82	58.8	134.3	95.8	151.9	108.3
Domestic traffic									
Passengers (,000)	2,432	1,409	57.9	1,820	74.8	3,741	153.8	4,233	174.1
Pkm (Mio)	608.0	352.3	57.9	455.0	74.8	935.3	153.8	1058.2	174.0
International traffic									
Passengers (,000)	168	5	3.0	87	51.8	283	168.5	406	241.7
Pkm (Mio)	42.0	1.5	3.6	25.8	61.4	83.4	198.6	119.8	285.2
Total									
Passengers (,000)	**9,000**	**4,332**	**48.1**	**5,205**	**57.8**	**9,396**	**104.4**	**10,717**	**119.1**
Pkm (Mio)	**790.2**	**426.8**	**54.0**	**563.2**	**71.3**	**1153.0**	**145.9**	**1329.9**	**168.3**
Pessimistic scenario									
Regional traffic									
Passengers (,000)	6,400	2,304	36.0	1,975	30.9	2,348	36.7	2,468	38.6
Pkm (Mio)	140.2	57.6	41.1	49.4	35.2	58.7	41.9	61.7	44.0
Domestic traffic									
Passengers (,000)	2,432	1,335	54.9	1,269	52.2	1,995	82.0	2,097	86.2
Pkm (Mio)	608.0	333.8	54.9	317.3	52.2	498.7	82.0	524.2	86.2
International traffic'									
Passengers (,000)	168	5	3.0	47	28.0	114	67.9	145	86.3
Pkm (Mio)	42.0	1.5	3.6	13.9	33.1	33.5	79.8	42.8	101.9
Total									
Passengers (,000)	**9,000**	**3,644**	**40.5**	**3,291**	**36.6**	**4,457**	**49.5**	**4,710**	**52.3**
Pkm (Mio)	**790.2**	**392.9**	**49.7**	**380.6**	**48.2**	**590.9**	**74.8**	**628.7**	**79.6**

Note: Percentage rates refer to year 1995

Annex 3.2.4-3

Development of rail passenger traffic in Georgia

	1996	1997	%	2000	%	2010	%	2015	%
Optimistic scenario									
Regional traffic									
Passengers (,000)	1,761	1,761	100.0	1,868	106.1	2,451	139.2	2,773	157.5
Pkm (Mio)	137.7	79	57.5	84	61.1	110.3	80.1	124.8	90.6
Domestic traffic									
Passengers (,000)	1,454	1,454	100.0	1,683	115.7	3,084	212.1	3,936	270.7
Pkm (Mio)	269.0	269.0	100.0	311.4	115.8	570.5	212.1	728.2	270.7
International traffic									
Passengers (,000)	4	4	100.0	81		166		211	
Pkm (Mio)	0.2	0.2	100.0	16.9		34.8		44.4	
Total									
Passengers (,000)	**3,219**	**3,219**	**100.0**	**3,632**	**112.8**	**5,701**	**177.1**	**6,920**	**215.0**
Pkm (Mio)	**406.9**	**348.4**	**85.6**	**412.4**	**101.4**	**715.6**	**175.9**	**897.4**	**220.5**
Pessimistic scenario									
Regional traffic									
Passengers (,000)	1,761	1,673	95.0	1,526	86.7	1,719	97.6	1,898	107.8
Pkm (Mio)	137.7	75.3	54.7	68.7	49.9	77.3	56.1	85.4	62.0
Domestic traffic									
Passengers (,000)	1,454	1,418	97.5	1,348	92.7	2,441	167.9	2,762	190.0
Pkm (Mio)	269.0	262.3	97.5	249.3	92.7	451.6	167.9	510.9	189.9
International traffic									
Passengers (,000)	4	4	100.0	33		101		114	
Pkm (Mio)	0.2	0.2	100.0	2.5		21.1		23.9	
Total									
Passengers (,000)	**3,219**	**3,095**	**96.1**	**2,907**	**90.3**	**4,261**	**132.4**	**4,774**	**148.3**
Pkm (Mio)	**406.9**	**337.8**	**83.0**	**320.5**	**78.8**	**550.0**	**135.2**	**620.2**	**152.4**

Note: Percentage rates refer to year 1995