3.5 FREIGHT TRANSPORT

3.5.1 Subjects for Freight Transport

Subjects for PKP's freight transport are summarized as the following seven items.

①Changes in Transport Structure

While Poland had undergone social and economic structural changes, the volume of transport dropped from 482 million tons in 1980 to 201 million tons in 1992, to represent a quantitative change in the COMECON structure. As social and economic stability has recovered in recent years, however, the volume of transport rallied to 224 million tons in 1995.

As the country shifts to a market economy and vitalizes economic activities, transport by truck will develop in the future. The privatization of PKP will expedite new entry of domestic transport agencies. Advanced transport technologies of EU will flow into the country. Under the circumstances, the physical distribution industry in Poland will enter into an age of merciless competition and be forced to undergo qualitative changes.

②Changes in Transport Items

Among the current transport items, coal accounts for 50% of the total transport volume. When the volumes of coal, other minerals, petroleum and cement are summed up, the volume of bulk cargos shares 70% of the total, to make the basis of the operation of PKP, as they suit rail transport. PKP cannot be optimistic, however, amid the development of other transport facilities. In the physical distribution industry, volumes of general commodities and industrial products will increase, as a market economy develops. Rapidity and clarification of arrival date and time are essential for these cargos, which must duly be addressed by PKP to develop in the future. For the measures to be taken for this purpose, see Table 3.5.1.

③Insufficient marketing and transport systems

The current marketing and transport systems are based on a nationwide railway network, about 1,800 stations distributed all over the country, 12 marshalling yards and 212 shunting bases. Although trials have been made to operate through-trains to bypass marshalling yards, PKP still preserves the transport system when it monopolized freight transport and played a leading role. Although the present system is useful for commodities that require efficient transport, it cannot cope with those for which rapidity and the arrival date and time must be clarified. In addition to the present yard-based transport, therefore, PKP must offer speedy inter-mode transport services such as those

with containers (Table 3.5.2).

As the rail transport was only one monopolized business in the country, the transport service is at a low level and tends to be offered one-sidedly from PKP.

④Superannuation of facilities and rolling stock

Since it started railway operation in 1842, Poland has constituted a railway kingdom after a number of vicissitudes in its history, claiming high level railway technologies in terms of the magnitude of railway network, length of double-track sections, electrification and rolling stock engineering. Amid the changes in social and economic structures, however, it delayed modernizing the railway industry and now requires a drastic modernization of superannuated facilities and rolling stock. It still preserves rolling stock, freight handling stations, shunting yards and freight car yards of the magnitudes when the railway enjoyed a large transport volume. This involves inefficient allocation of employees and pushes up costs of freight transport. To raise the productivity of the Freight Transport, it is essential to optimize the facilities for freight transport (Table 3.5.3).

⑤Delayed off-rail transport

From arrival stations to consignees (short-distance transport), cargos are transported on private tracks to customers who use the railway to transport large quantities of cargos, or by trucks of consignees or contracted road transport agencies to general consignees who don't have a private track. As trucks increase and their business areas expand in the future, PKP will lose its market share, in that small cargos and those transported through private tracks will shift to trucks, except those that particularly suit railway transport or that cannot be handled by trucks. It is required, therefore, to establish a system to handle off-rail transport integratedly with on-rail transport.

⑥Importance of international transport

Rail transport can fulfil its inherent characteristics in constant mass transport for medium and long distances. The territory of Poland is circular and mostly flat, extending 600km from the east to the west, and 560km from the south to the north. Although Poland is now entirely covered with a railway network, the entire territory will fall in the scope of road transport, as trucks increase and road networks are improved in the future. Under such circumstances, businesses in which rail transport is viable in the future are transport of basic materials such as coal and minerals and international transport for long distances.

The volume of international transport in 1995 accounted for 37% of the total tonnage of transport and 50% of total ton-kilometers. While coal and minerals share a majority of

the transport volume, metallic and chemical products are increasing in recent years. Container transport of these products that is applicable to through-transport over different transport modes, such as railways, ships and trucks, is one of the most promising businesses that are expected to develop in the future.

⑦Departure for a competitive enterprise

The Freight Transport of PKP maintains a large amount of surplus. It is not conceivable, however, that this trend remains unchanged for ever, as a market economy is developing and the transport structure is changing. Despite the favorable balance between revenue and expenditure at present, PKP must make efforts to further improve its transport businesses, modernize its operation and stabilize its management.

Prior to or in parallel with its privatization, PKP must promote self-subsistent management as a privatized organization, compete with foreign transport companies in an open access system, and endeavor to make a new departure as a railway promoter that can fulfil its mission.

Table 3.5.1 Transport volumes of major commodities (1,000 tons)

Commodity	1991	1995	2005
Hard Coal	111,827	107,600(100)	77,185(71.7)
Ores	10,826	13,997	14,817(105.8)
Stone	13,157	17,435	23,102(132.5)
Oil Products	10.242	11,606	16,002(136.8)
Cement	3,425	5,651	14,047(248.5)
Metal & Product	17,868	16,910	19,263(114.0)
Fertilizers	3,778	5,146	8,969(174.4)
Other Chemicals	9,290	9,931	12,017(121.0)
Agriculutural	3,184	6,805	6,564(96.4)
Others	36,715	29,174	31,745(108.8)

Source: PKP's data for 1991 and 1995. Figures of 2005 are assumed by the study team.

Table 3.5.2 Statistics on freight marketing and transport systems (fiscal 1996)

Item	Cen	Wsc	Polu	Sla	Poln	Doln	Zac	Pom
Freight station1905	193	174	159	271	341	257	287	223
Regional base station 98	12	10	9	14	14	13	14	12
Loading/unloading site (about 6,000)	890	480	470	750	980	900	880	650
Freight yard 12	2	1	1	3	2	1	1	1
Shunting yard 212	28	19	22	29	31	34	29	20
Train-kilometers per day (290,000 train-kilometers)	4.9	3.0	2.7	4.1	5.2	3.2	3.4	2.4

Source: PKP

Table 3.5.3 Number of freight cars and years of service (fiscal 1996)

Car type	Number	Years of service
Covered wagon	19,177	21.5
Platform car	17,369	17.0
Coal open wagon	71,248	16.5
Special open wagon	72	26.8
Tank car	39	27.9
Refrigerator	1,669	23.3
Special purpose car	1,845	15.5
Total	111,455	17.5

Source: PKP

3.5.2 Profitability of Freight Transport

As clarified in the PKP Annual Report (1995), the Freight Transport earned 4.288 million PLN, spent 2,802 million PLN with a profit of 1,486 million PLN. To prepare for discussions on the future management form, we divided the freight transport commodity-wise into the following four categories to investigate the profitability of several scenarios.

A ... Cargos for which characteristics inherent to railway transport for medium- and long-distance
masstransport can easily be fulfilled.

B ... Cargos for which characteristics inherent to railway can be fulfilled, when commodity-wise
terminals and other facilities have been improved.

C ... Other cargos

D ... Complex transport that is expected to develop in the future.

In this discussion, we used fixed and variable costs of the transport and infrastructure divisions for freight transport of PKP in fiscal 1995 (Table 3.5.4).

Table 3.5.4 Breakdown of freight transport costs in fiscal 1995

(in one million PLN)

	Fixed	Variable	Total
Operation	565	157	722
Infrastructure	857	1233	2090
Total	1422	1390	2812

(Note) Source: PKP

We also assumed direct transport ratio for the categories A and B, and complete direct transport for the category D. We assumed some amount for additional investment to

improve freight terminals and replace rolling stock in the scenario 3.

(1) When the present PKP remains unchanged (scenario 1).
The volume of freight transport of PKP will remain unchanged as a whole, though coal will decrease as shown in 3.1.2 Transport Demands in the Future. In this scenario, revenue will also remain at the present level with expenditure remained almost unchanged.. Therefore, profitability seems to be maintained in Freight Transports in the future.

(2) When the volume of transport decreases through severe competition with other transport facilities (scenarios 2 and 2-2).
Although PKP will retain the present volumes of transport in mass transport and in medium- and long-distance transport, the volume of the category C which is related to yard-to-yard transport and the revenue therefrom will decrease as a result of severe competition with other transport facilities. In this case, in case the volume of the group C has decreased by 20% or 40%, the profitability of the group C decreases to compromise the profitability of entire Freight Transports.

(3) When efforts are made to maintain the present volume of transport through various improvement measures (scenario 3)
It is necessary to improve commodity-wise freight terminals for bulk cargos in order to demonstrate characteristics inherent to railway transport as far as possible to attain the target set by PKP, as an effort to secure a sufficient volume of transport and revenue. In parallel, expenditure must be cut through various modernization measures. In this case, the present level of profitability will be maintained.
Table 3.5.5 summarized the above discussions. To survive the competition with other transport facilities and play the role assigned to the railway, it is required for PKP to promote the scenario (3).

Table 3.5.5 Profitability of freight transport in the future

Scenario	Description	Effect
1. (When the present trend continues.)	1 Volume of transport: 224 million ton, 69.1 billion ton-kilometers A 92 285 B 30 99 C 97 287 D 5 20 2 Major improvement measures are not taken with transporting methods remained almost unchanged.	1 Revenue Expenditure Difference (million PLN) 1682 1258 424 648 263 385 1906 1241 665 131 29 102 2 Although revenue and expenditure are balanced, PKP must not be optimistic, as this case will develop to scenario 2 or 3 depending on the development of other transport facilities.
2. (When other cargos (category C) largely shift to other transport facilities.)	1 Volume of transport: 205 million tons, 63.6 billion ton-kilometers A 92 285 B 30 99 C 78 232 D 5 20 2 Major improvement measures are not taken with transporting methods remained almost unchanged. 3 Other cargos (category C) decreases by 20%.	1 Revenue Expenditure Difference (million PLN) 1682 1258 424 648 263 385 1520 1105 413 131 29 102 2 Profit decreases.
2-2. (When other cargos (category C) shift more to other transport facilities.)	1 Volume of transport: 185 million tons, 57.9 billion ton-kilometers A 92 285 B 30 99 C 58 175 D 5 20 2 Major improvement measures are not taken with transporting methods remained almost unchanged. 3 Other cargos (category C) decreases by 40%.	1 Revenue Expenditure Difference (million PLN) 1682 1258 424 648 263 385 1144 966 178 131 29 102 2 Profit, particularly that of other cargos (category C), further decreases.
3. (When improvement measures are take to maintain the volume of transport)	1 Volume of transport: 224 million tons, 71.8 billion ton-kilometers A 92 285 B 30 99 C 88 278 D 14 56 2 Efforts are made to maintain the volume of transport and cut expenditure by implementing yard-pass train operation and complex transport. 3 Additional investment is required for ground facilities and rolling stock. 4 Investment is also required to abolish excess facilities including freight yards to cope with decreases in the volume of transport.	1 Revenue Expenditure Difference (million PLN) 1682 1256 426 648 273 375 1821 1181 640 867 125 242 2 Despite increases in costs due to additional investment, revenue is maintained through strengthened competitiveness as a result of improved transport measures. 3 Rationalization of freight yards including improvement of track layout will cut the number of employees and expenditure.

(Note) The figure of the category A is coal (77) + oar (15) =92, and B is oil (16) + cement (14) = 30.

The figure of the category D is extrapolated to the present trend in scenarios 1 and 2, and assumed by PKP in scenario 3.

3.5.3 Management Form in the Future

As the management form of freight transport, several ideas are conceivable, i.e., entrusting it to a nationwide integrated entity, or dividing it region-wise, commodity-wise or according to transport system.

① However, regional division doesn't suit transporting cargos that move across the country.

② In the case of coal which accounts for about 50% of the total volume of transport, only about 30% are being transported by complete train compositions and others are mixedly with other cargos through freight yards and shunting yards.

③ As the basis of freight transport system, the entire railway network is divided into about 220 zones, over which 12 freight car yards and 212 shunting bases or regional base stations are distributed. Cargos are collected from consignors to the nearest base station by local freight trains or shunting trains with cargo handling staff on board, and then transported to the base station nearest the consignee by base-to-base freight trains. From the arrival base station, cargos are forwarded to consignees by local freight trains or shunting trains with cargo handling staff on board. when necessary. Finally, they are transported to the freight handling station nearest to the consignor. This is an ideal system in terms of rapidity and efficiency. Therefore, commodity-wise division of freight transport is not practical at all.

④ As referred to in the above discussions on the profitability of freight transport, general commodities will be exposed to severe competition with other transport facilities. If the transport of general commodities stagnates as a result, the efficiency of yard-based freight transport system will totally be compromised. Therefore, it is advantageous in terms of profitability to operate a freight transport system to encompass general commodities and bulk cargos including coal and petroleum as a whole.

⑤ Among the commodities transported by rail, about 80% are those for which rail transport can demonstrate its inherent advantageous characteristics. It is not difficult, therefore, to maintain the present volume of transport, if transport costs are cut through improvement measures and services that meet customer requirements are offered.

⑥ Miscellaneous commodities that account for 20% of the total will encounter severe

competition with other transport facilities with respect to rapidity and transport costs. Therefore, it is required to implement door-to-door complex transport of these commodities. Unlike the conventional transport system, such a direct transport system to connect freight handling stations will be profitable, even if some amount of funds are invested. For above reasons, it is appropriate to divide freight transport business and perform it by the following two companies in the future.

Freight transport railway company .... To transport conventional cargos efficiently at low costs.

Complex freight transport company ... To transport door-to-door cargos that are promising in the future at high speeds and low costs.

Companies who transport coal for power plants or those who have private freight cars for petroleum or cement transport will enter the market when an open access policy is implemented in the future. It is not desirable for PKP, however, to withdraw from this profitable and efficient through-transport of cargos that it has brought up through various improvement measures, as withdrawal would adversely affect the profitability of the transport of other cargos.

3.6 INFRASTRUCTURE

3.6.1 Subjects for Infrastructure

(1) Management of Infrastructure in the Future

To privatize PKP, the following must be discussed in regard to its infrastructure.

① As the reform is based on the EC directive 91/440, vertical separation of organization and open access are the foundation of privatization. Therefore, the organization must be separated into a railway operation company and a company (or a corporation) who holds and maintains the infrastructure.

② It affects the profitability of railway operation whether the infrastructure company is privatized or nationalized. If the railway transport is unprofitable, the infrastructure company cannot maintain the infrastructure by relying on the charges for using railway lines alone, and requires subsidies by the government. In such a case, the government must maintain and control the infrastructure for the interest of people. For this reason, the infrastructure of railway is normally possessed and maintained

by the government or a public corporation.

Therefore, the infrastructure of PKP must be separated from transport divisions and its management form must be determined by taking into consideration the profitability of railway and the passenger and freight transport systems. What is important in this regard is to determine the magnitude of infrastructure (railway network), and to clarify the costs for its maintenance and modernization.

We will summarize below item-wise subjects for PKP's infrastructure divisions when PKP is privatized.

(2) Subjects for Infrastructure

① Over-scaled railway network

In addition to the standard gauge (1,435mm) lines which are the mainstream in the country, PKP's railway network consists of a broad gauge (1,520mm) line to Ukraine and some narrow gauge (600, 750, 785 and 1,000 mm) lines.

In this study, we adopt the standard and board gauge lines with a total length of 22,285km.

What should be noted in discussing the railway network to be preserved in the future is the fact that the present network has retained a scale to correspond to the volume of transport when it was first planned. As the volume of transport has lowered to almost a half, the railway network is now over-scaled. Being aware of this fact, PKP is rationalizing and abolishing facilities to match them to the volume of transport, in that it reduced (abolished) railway lines of 314km (1.4% of the entire network) in 1996, and suspended transport on lines of 73km.

Some drastic measures must be taken further, however, as the present speed of retreat from unprofitable lines is not sufficient, in order to reform and privatize PKP.

② Changes and Concentration of the Volume of Transport into Specific Sections.

When the data in 1989 under a planned economy and in 1994 under a market economy are compared, the volume of transport by PKP decreased by 41% (in ton-kilometers) in freight transport and by 51% (in passenger-kilometers) in passenger transport. In addition, 92% of passengers and freights were transported on 11,625km-long electrified sections which account for 52% of the total length. In total, 94.2% of passengers and 98.6% of freight concentrate into important and specific lines.(Table 3.6.1)

Table 3.6.1 Concentration of PKP's transport (Fiscal 1994)

Division	Ratio of concentration	Length of lines
Passenger	Out of 207 sections, 67 sections secure 90% of revenue.	Length of the 67 sections = 11,300km (59% of passenger transport sections)
Freight	Out of 287 sections, 58 sections secure 90% of revenue.	Length of the 58 sections = 10,100km (48% of freight transport sections)

Source: Mercer Report

③ Excess Employees

Table 3.6.2 shows the number of employees in the infrastructure division quoted from a PKP yearbook.

Table 3.6.2 Number of employees in the infrastructure division

(in persons)

Sector	Fiscal 1996
Track maintenance	43,945
Power supply	13,537
Signalling and Telecommunication	12,568
Traffic control	46,256
Total	116,306

Source: PKP Yearbook

Although the track maintenance is mostly mechanized on its entire network of 22,285km, PKP has about 44,000 employees at the track maintenance division. When the total ton-kilometers per employee in west European countries is taken as unity, the figure of PKP is as low as 40%.(Table 3.6.3) To prepare for privatization in the future, PKP must establish an independent company by separating its track maintenance division, contract track maintenance work with private companies and promote other measures for modernization to cut expenditure. This also holds true with power supply, signaling, telecommunication and train dispatch divisions.

Table 3.6.3 Comparison of productivity in infrastructure division

Railway	Total ton-kilometers per employee (millions)
SNCF	6.13
RENFE	6.97
CFF/SBB/FFS	8.33
NSB	6.33
FS	4.99
CP	4.77
BLS	7.80
Average (1)	6.47
PKP (2)	2.58
Ratio (2)/(1)	0.40

Source: Mercer Report

④ Insufficient Investment for Modernization of Infrastructure

One of the problems of PKP's present infrastructure is that its modernization, maintenance and renewal have been retarded to large extents due to insufficient investment. Only about 50% of the planned modernization work has been implemented at different infrastructure divisions. Out of the 1,830km-long tracks that required improvement, for example, only about 616km (33%) were improved in 1995. Only 45% of investment items were performed for the power supply and train control divisions. For this reason, the section where train speed is limited was extended by 1,023km (4.5%) in the 1996/1997 time table (Table 3.6.4).

Investment costs in Table 3.6.4 contain new investment costs for modernization and replacement of facilities, excluding maintenance costs of infrastructure (2.1 billion PLN in 1995).

Table 3.6.4 Status of investment in infrastructure

(in million PLN)

Year	Implemented (%)	Not implemented (%)	Required amount of investment (total)
1989	860.0 (67%)	431.1 (33%)	1,291.1
1990	870.5 (88%)	115.5 (12%)	986.0
1991	773.4 (54%)	646.1 (46%)	1,419.5
1992	381.5 (29%)	939.6 (71%)	1,321.1
1993	501.7 (55%)	403.0 (45%)	904.7
1994	559.8 (38%)	918.4 (62%)	1,478.2
1995	1,029.6 (64%)	581.3 (36%)	1,610.9
1996	1,618.5 (48%)	1,768.1 (52%)	3,386.6
Total	6,595.0 (53%)	5,803.1 (47%)	12,398.1

(Note) 1. At the value in 1995

2. Figures for 1995 and 1996 include costs for improvement.

3. Figures for 1996 are planed amounts.

4. Source: Department of Investment Construction and Engineering, PKP

This is evident from the relation between the funds for investment and depreciation. As shown in Table 3.6.5, funds for investment have been less than those for depreciation since 1991.

Table 3.6.5 Funds for investment and depreciation of PKP (1994)

(in trillion PLN)

Year	Investment	Depreciation
1989	14	3
1990	13	11
1991	8	16
1992	3	11
1993	6	9
1994	4	7

Source: Mercer report

Table 3.6.6 shows the ratios of funds for procurement of rolling stock and investment in the infrastructure to the total investment funds.

Table 3.6.6 The ratios of funds for procurement of rolling stock and investment the infrastructure to the total investment funds

(%)

Year	Infrastructure	Procurement of Rolling stock	Others
1991	40.2	18.1	41.7
1992	39.8	21.3	38.9
1993	42.0	24.5	33.5
1994	42.7	21.3	36.0
1995	52.6	10.9	36.5
1996	54.7	16.6	28.7
1997	53.2	13.7	33.1

Source: Department of Investment Construction and Engineering, PKP
(Note) Figures of 1995 and thereafter include funds for improvement.

As a result, tracks have deteriorated. Although trunk lines and first class lines are maintained satisfactorily, other lines are maintained only to a level that barely ensures the safety of train operation. Trains are operated, therefore, according to the maintenance level of tracks.
Under such circumstances for investment, PKP is promoting the following investment projects on a preferential basis.

① Speed-up on trunk lines
② Elimination of sections where the transport capacity is insufficient
③ Rationalization of operation
④ Modernization of large stations
⑤ Modernization of stations in urban areas and improvement of rolling stock bases
⑥ Improvement of facilities for passenger services
⑦ Modernization of rolling stock workshops
⑧ Modernization of marshalling yards

Given the present status of infrastructure that hasn't sufficiently been improved or remodeled, there are following subjects for investment in infrastructure before PKP is privatized.

1) Investment before Privatization
   ① Investment items and their order in consideration of economy, safety and lines to be preserved in the future.
   ② Modernization to acquire competitiveness against other transport modes including automobiles to prepare for privatization

③ Rationalization of employment structure due to modernization of facilities
④ Modernization of deteriorated and superannuated railway facilities

2) Investment after Privatization

Basically, the infrastructure will be maintained with the Rail Access charges borne by railway transport promoters. Although it depends on the profitability of passenger and Freight Transports, investment in modernization of important lines for the nation and construction of new lines require subsidies of the government.

3.6.2 Optimum Railway Network to be Preserved in the Future

In discussing the railway network to be preserved in the future, we took into consideration the following indexes.

(1) Important Lines for the Nation

These lines were determined by the ordinance dated September 3, 1996, based on the Paragraph 7, Clause 13, KPK Law (July 6, 1995).
These lines were specified as important lines for the nation by taking into account one or more criteria listed below.

① Economical criterion
② Social criterion
③ National defense criterion (Maintenance costs for the purpose of defense are borne by the government based on the Paragraph 3, Clause 21, Railway Transport Law.)
④ Criterion on environmental preservation

(2) Ninety percent of passenger and freight transport is being performed on sections of 11,000 to 12,000km. (Table 3.6.1)
(3) A network of 6,000km which is called a skeleton in PKP.
(4) A route length of 5,000km which is specified by international agreements AGC and AGTC.(Reference) "Reasonable institution of an optimum railway network in Poland," Strategy Department, PKP (April, 1995)

We have determined that a route length of about 17,000km (excluding excess assets) must be preserved as the infrastructure in the future, based on the above indexes, competitiveness of passenger and freight transport in the future, networks for passenger and freight transport (partly common and partly different) and the criterion on abolition

of low-density lines (see 5.4 "Management of light-density line").

Based on the above conclusion, we recommend to separate PKP's railway network as shown in Fig. 3.6.1.

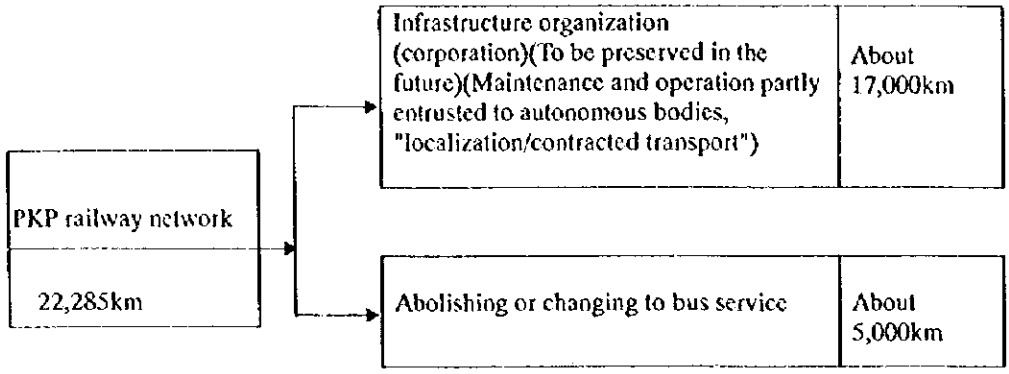

Fig. 3.6.1 Division of PKP's railway network

3.6.3 Costs to Maintain the Infrastructure

One of the important points in vertically dividing the organization is to clarify the costs to maintain the infrastructure. Table 3.6.7 shows the costs to maintain the infrastructure and for train operation of PKP in 1995.

Table 3.6.7 Breakdown of the costs of PKP

In one million PLN

No.	Expenditure	Costs of train operation			Costs of infrastructure			Total
		Passenger	Freight	Total	Passenger	Freight	Total	
1	Variable costs	1,451	1,233	2,684	168	157	325	3,009
	Ratio (%)	64	69	66	16	16	16	49
2	Constant costs	815	565	1,380	879	857	1,736	3,116
	Ratio (%)	36	31	34	84	84	84	51
3	Total	2,266	1,798	4,064	1,074	1,014	2,061	6,125
	Ratio (%)	56	44	100	51	49	100	
				66			34	100

Source: Finance and Accounting Department, PKP

Table 3.6.7 indicates that 34% of the expenses of PKP are for the infrastructure, of which 51% are spent for passenger transport and 49% are for freight transport. As the volume of transport, PKP recorded 26.6 billion passenger-kilometers and 69.1 ton-kilometers in 1995. The cost to maintain the infrastructure per unit volume of transport is 0.0393 PLN per passenger-kilometer and 0.0167 PLN per ton-kilometer.

Table 3.6.8 shows the costs for passenger and freight transport in the past which were calculated by applying the ratios of infrastructure costs (31.6% for passenger and 36.1% for

freight transport) to the total costs of passenger and freight transport.

Table 3.6.8 Infrastructure costs for passenger and freight transport

Year	Passenger (PLN/passenger-kilometer)	Freight (PLN/ton-kilometer)
1989	0.0155	0.0169
1990	0.0200	0.0216
1991	0.0295	0.0205
1992	0.0283	0.0179
1993	0.0296	0.0148
1994	0.0284	0.0153
1995	0.0393	0.0167

Source: Data are quoted form the Mercer report.

(Note) Figures before 1995 are based on the value in 1994 and those of 1994 were based on the value in 1995.

3.6.4 Rail Access Charges

(1) Conditions for Setting Rail Access Charges

To determine Rail Access charges, we have to discuss to what extents infrastructure costs for maintenance and depreciation and investment funds should be recovered as Rail Access charges.

As stipulated in the EU directive 95/19, Rail Access charges must not discriminate railway transport promoters. As the balance between revenue and expenditure differs to a large extent between passenger and freight transport in Poland, we must deliberately discuss what amount of Rail Access charges can be imposed on passenger and freight transport.

It is another important issue who does and how to determine the Rail Access charges. As the approval of the government is not required in Germany, Deutsche Bahn Aktien-Gesellschaft (DBAG) determines the amount. In contrast, it is wholly determined by the government (Diet) in Sweden and a price cap is imposed in the UK.

The method of determining train operation diagrams (or the right for it) and distributing slots, which are closely related to Rail Access charges, is also important. For this issue, a system or rule must also be discussed.

(2) Examples of Rail Access charges

According to the clause 8, EU directive 95/15, Rail Access charges must be set based on the quality of service, time, market conditions and the degree and type of wear and

tear of infrastructure. We will briefly explain below the cases of setting Rail Access charges in Sweden, Germany, the UK and Japan (Japan Freight Railway Company) and their ratios in the revenue from operation (Tables 3.6.9 and 3.6.10).

① Sweden

In Sweden, rail way charges consist of constant and variable components (two-tier system). The constant charges are imposed on railway transport promoters for the number and types of rolling stock they possess and variable charges are determined by reflecting the concept of social marginal cost which takes into account the costs for preventing air pollution and other environmental preservation measures. Although the constant costs (those for tracks) should totally be borne in principle by Rail Access charges, the amount actually collected is only 17% of the annual budget of the Swedish Railway Board (Banverket), an organization that possesses the right of way, with the balance borne by the national exchequer.

② Germany

Rail Access charges in Germany are set at a level to enable maintaining the railway infrastructure (except costs of maintenance work and depreciation, and investment costs for new facilities). They are drastically discriminating, in that different rates are set for freight transport, passenger transport and different train types, depending on the train speed, weight and other attributes. They also reflect the quality of sections where trains run. A discount system is also in force to take into account the running distance of train. This is a charge system to correspond to costs and demands.

③ UK

The system of Rail Access charges in the UK is similar to that in Germany for the fact that costs of track are wholly borne by rental charges. However, a difference is that the total costs including those for investment are recovered by rental charges to make the charge level extremely high. The concept behind this system is to collect full costs of track from passenger transport promoters and avoidable costs from freight transport promoters. Passenger transport promoters are provided with subsidies by the government.

A price cap (RPI-2%) system is also applied to Rail Access charges.

④ Japan (Japan Freight Railway Company)

In Japan where passenger transport is the mainstream in railway transport business, freight transport is not profitable. Japan Freight Railway Company pays the costs

that increase due to the operation of freight trains, or the costs that could be avoided if freight trains don't run, to passenger railway companies who possess the infrastructure. In other words, the freight transport is regarded as marginal in the total railway business, and passenger railway companies collect at least avoidable costs from Japan Freight Railway Company to make it viable.

The amount of track renal charges borne by Japan Freight Railway Company for using tracks of passenger railway companies is calculated as follows.

Track renal charges = Costs for using tracks and electric facilities plus an incentive where

Cost for using tracks	= The variable component (about 60%) in the track repairing costs which is borne by passenger trains and freight trains in proportion to respective ton-kilometers and speeds.
Cost for using electric facilities	= The variable component (about 60%) in the sum of (1) replacement costs of trolley wires, (2) inspection costs of telecommunication facilities and (3) repairing costs of trolley wires, transformers, distribution boards, signalling facilities and telecommunication facilities, which is borne by passenger trains and freight trains in proportion to respective train-kilometers.
Incentive (rate of profit)	= One percent of the sum of costs for using tracks and electric facilities

Table 3.6.9 Examples of rail access charges

Country	Description
Sweden	• Two-tier system • In the same way as the cases of other transport facilities, the railway infrastructure is possessed and controlled by a public organization and used for transport with public funds. • The level of Rail Access charges is very low. • Rail Access charges must be approved by the government.
Germany	• Costs for maintenance and depreciation of infrastructure are borne by track renal charges (except investment costs for new facilities). • DBAG sets Rail Access charges.
UK (charges for using tracks of passenger railway companies)	• Total costs for maintaining the infrastructure are borne by track rental charges (including investment costs for new facilities) • Rail Access charges are extremely high. • Price cap system (RPI-2%) • The government provides subsidies to the passenger railway companies.
Japan (Japan Freight Railway Company)	• Rail Access charges based on avoidable costs (that could be avoided for passenger railway companies, if freight trains are not operated) are paid to passenger railway companies who possess the infrastructure. • Rail Access charges are low (11% of the revenue from operation in 1995). • Rail Access charges must be approved by the government.

Table 3.6.10 Ratio of rail access charges to the total revenue from operation

Country	Railway company	Fiscal year	Rail Access charges (A)	Revenue from operation (B)	Ratio (A/B)
Sweden	SJ/BV	1995	Kr 618.1 million (Revenue of BV from Rail Access charges)	Kr 12.0018	5.1%
Germany	DBAG	1994	About 8 billion Mark (an estimated amount, as it is not known due to internal transaction. As Rail Access charges set in 1994 had been too high, they were reduced later. Details are not known.)	Mark 23.5300	33.7%
UK (Rail Access charges borne by passenger railway companies (note))	Inter City	1994/95	644 million pounds	-	76%
	Network South East	1994/95	840 million pounds	-	80%
	Regional Railway	1994/95	699 million pounds	-	203%
Japan	Japan Freight Railway Company	1995	21.98629 billion yen (the total revenue of six passenger railway companies from Rail Access charges)	196.293 billion yen	11.2%

(Note) As the Rail Access charges are too high in the UK, Office of Passenger Railway Franchising (OPRAF) is indirectly providing subsidies to passenger railway companies to compensate for Rail Access charges.

(3) Ministerial Ordinance on Rail Access Charges in Poland (Draft)

The following is an outline of the Ordinance of Ministry of Transport on track renal charges under discussion based on the Paragraph 8, Clause 15, PKP Law, dated July 6, 1995 (No. 474, Chapter 95, Official Gazette No. 687, December 17, 1996).

① Rail Access charges

a) Rail Access charges shall reflect the costs of track maintenance, operation and management, and the costs of depreciation for tracks constructed by PKP's own funds.

b) Costs for track maintenance, operation and management shall be determined based on the average value in the previous year of a track that is at the same technological level as that of contracted tracks, and shall take into account increases in the costs of raw materials, power and wages in the year of contract agreement.

② Unit amount of track renal charges

A unit amount of Rail Access charges shall be set for a train-kilometer for usage of tracks of railway transport companies, while taking into account the following.

a) Technological level of the track under contract
b) Frequency of usage
c) Train types and technological and operational parameters

Unit amounts may also be set for different sections or different trains.

③ Method of calculation

Rail Access charges for a single-track section shall be calculated by multiplying the length of the section by the unit amount for the section. Rail Access charges for a multiple-track section shall be a sum of charges for each track.

④ Discount

Rail Access charges may be discounted up to 20% by considering the following.

a) Volume of transport and contract period
b) Train operation hours a day
c) Conditions of market

⑤ Power charges

Power charges shall be determined based on the readings of instruments mounted on electric locomotives or EMUs, or by contract when such instruments are not available.

Actual track renal charges are now being discussed. They must be determined by taking into consideration the fact that the balance between revenue and expenditure is extremely different between passenger and freight transport in Poland. It is also recommended to discuss the method of determining Rail Access charges based on avoidable costs as seen in the cases of the UK and Japan.

4. PRIVATIZATION SCENARIOS

4.1 TRANSITION PERIOD TO PRIVATIZATION

Poland aims to become a member of the EU in the near future. PKP is improving its organization and facilities in conformity with EU directives for infrastructure separation and open access etc. It is important for PKP to secure profitability and privatize as soon as possible, given the company's business deterioration, motorization and state fiscal rigidity since political reform.

Such situations considered, it is proposed that PKP should transform into a joint-stock company (JSC) by the end of 2002, and prepare for listing requirements on the stock exchange by the end of 2005 (indirect privatization). During the process, the field-work units for maintenance and railway-related business (RRB) units will be separated and actively leased and/or sold to investors (direct privatization).

4.2 SELECTION OF PRIVATIZATION SCENARIOS

Two typical privatization scenarios with different executive policies (scenario 1 and scenario 2), though the objective of realization of privatization is common to them, are presented and considered from a qualitative viewpoint. The better scenario (scenario 1) is selected and estimated quantitatively based on a set of assumptions. Scenario 1 shows that every sector of the railway business (infrastructure, passenger and freight) would be in the black and able to be privatized. Scenario 2 is also calculated in order to demonstrate the benefits of scenario 1. As quantitative analyses, income and cash-flow are estimated for the period 1997~2005. Nine cases (seven for scenario 1 and two for scenario 2) are computed and shown as references in annex.

Further study and recommendations on scenario 1 are described in Chapter 5.

4.3 SCENARIO 1

4.3.1 Executive Policy

Early privatization of Poland's largest enterprise will contribute to the national targets of accelerating the market-economy, promoting privatization and joining the EU. Scenario 1 suggests that innovative means and active organizational separation will facilitate privatization. It also aims to ensure early privatization and ease labor problems.

4.3.2 Basic Means

(1) Streamline Organization

The current complex organization composed of 3 tiers and 8 regional DOKPs should be streamlined into 2 tiers, 4 sectors (infrastructure, passenger service, freight service, traction & workshop back-up facilities) and 12 pillars (real estate, welfare, housing, pension, health-care service, computerized data processing, telecommunications, power engineering, training, procurement, railway security service, structural units) by the end of 1998. This reorganization also aims at the decentralization of authority and the speeding up of decision-making.

Later, the traction & back-up sector will be integrated into the passenger and freight sectors to make the business efficient and competitive, and the 12 pillars will be combined into 3 larger railway-related business pillars by the end of 2000. (see 5.2.1)

(2) Transfer Of Surplus Assets To The Infrastructure Sector

Most of the surplus assets such as the 5,000 km lines to be decommissioned (cf. Chap. 5.4), narrow-gauge lines etc. belong to the infrastructure sector. Other surplus assets such as old coaches and wagons etc. scattered throughout the whole country should be transferred to the infrastructure sector in order to be managed intensively. Income from sales of the assets can be appropriated for management expenses.

On the other hand, it should be considered that some surplus assets which can be more utilized for promotion of future railway-related business are transferred to the real estate pillar. (cf. (10))

(3) Staff Investment Fund (SIF)

Commercial and privatization law provides that a privatized JSC can grant up to 15% of shares to the employees. It is recommended that PKP deliver exchange coupons for future shares to the present employees.

An SIF secures economic benefit for employees and increases support to accelerate privatization from them. The scheme which encourages early retirement will contribute to a reduction in staff numbers and a correction of the age structure (see table 4.3.1).

The introduction of an SIF needs no additional cost except several staff in charge of legal and data processing divisions.

Table 4.3.1 Vesting rate of exchange rights to SIF (example)

Length of Service (age)	Vesting Rate
0~20 years (20~40)	0~100%(increase in proportion to service length)
21~40 years (41~60)	100%

(4) Infrastructure Sector To Be Separated From PKP (see (5)~(8), 4.5.2(4), 5.1.1)

Rail infrastructure is a public property to be used, after Poland's entry in to EU, not only by PKP (or its successor operators) but by other operations including foreigners. The minimum requirement of the Directive 91/440 EEC is to separate the accounts for the management of rail infrastructure and for the provision of transport services. However, from the viewpoint of securing fair competition, it will be preferable to keep infrastructure management separated from PKP and leave it to a self-governing public authority (state-owned infrastructure corporation, hereafter called SOI).

When the infrastructure is separated from PKP, the SOI owns infrastructure assets from government (assumed 31 billion PLN) and owes the same amount of long-term debts to government. The capital is nominally set at e.g. 1 PLN, and the sole shareholder is the government. The SOI collects access charges from railway operators, and pays capital cost portion of the access charge for interest expenses (3.1 billion PLN, assumed interest rate at 10%) on the debt to government.

SOI

Assumed Opening Balance Sheet as of Jan. 1, 1999

Assets 31 bn PLN	Long-term Govt. Debts 31 bn PLN
	Capital 1 PLN
Total 31 bn PLN	Total 31 bn PLN

(5) SOE Responsible For Infrastructure (SOI) Access Charges At Full Cost (see 4.5.2 (4))

The quality of infrastructure should be improved as soon as possible to catch up with the technical standards of EU countries. The SOI should be protected by a self-financing scheme based on a legal monopoly.

The SOI should charge train operators an access charge at full cost, for the use of the infrastructure. The access charge sould be composed of not only the SOI's operating & maintenance costs, but also capital cost. The capital cost means a financing cost (a cost to be necessary for raising money i.e. interest expense and/or dividends payment). It would be calculated at a rate of return that the creditors and/or investors could fairly expect on their loan/investment. Access charge can be described by a formula as

below:

$$AC = OC + CC = OC + (V - D)\,r$$

AC : Access charge, OC: Operating & maintenance cost, CC: Capital cost
V: Value of assets used, D: Depreciation accumulated,
r: Fair rate of return on asset (investment), e.g. 10%.

The access charge will be regulated to ensure the full cost by law. The SOI will be able to raise money for modernizing facilities from any creditor and/or investor easily by paying fair return on investment to them. This means that such access charge based on full cost will allow the SOI to be self-financing with small State subsidy, and the SOI can be privatized in the future.

Access charges should not be much higher than those of neighboring countries under the future open access, and in fact in PKP's case, the estimated access charge is considerably lower (see 5.2.2 (2)).

In its white paper, the EU also recommends that the infrastructure sector should charge full cost for access. But in order to privatize all railway transport sectors, all of them must balance their accounts under such access charge, and the access fees should not hinder fair competition, nor increase State burden (see (8), 4.5.2).

The SOI's financial data must be publicly disclosed in order to avoid the waste associated with a monopoly.

(6) Services To Be Provided Under Contract With The Local Government (See Fig. 4.3.1, Fig. 4.5.1)

Most of the deficit of the passenger sector accrues from commuter and local lines. Those services are essentially social services and PKP, which aims to support itself and privatize, should not necessarily shoulder the responsibility for them.
The level of such services should be decided by the local authorities concerned, and should be ensured by public service contracts concluded with the service providers (passenger train operators such as PKP).The different providers of commuter railway services will negotiate individually / separately their public service contract payments.
As a result, PKP will avoid many of the losses caused by such services.

(7) Public Service Contract Fund (PSC Fund) (See Fig. 4.3.1, Fig. 4.5.1)

Local governments may not always have enough budget to provide services for commuter and local lines, and the source of their budget comes from taxes. So it is proposed that a PSC Fund should be set up under the jurisdiction of the Ministry of Transport and Maritime Economy (MTME). The PSC Fund is funded by interest which government receives from SOI. The P.S.C Fund grants the receipt from government to commuter and local lines operators via local governments. It will allow the local authorities to sponsor the contracted services, without spending their tax-derived budget.

Such governmental special account as PSC Fund should be more flexible to use annual state budget than general account.

The PSC Fund contracts with local governments, and it independently inspects the actual situation of the loss-making lines from a national viewpoint and assesses the necessary amount of subsidy. The process of assessment must be disclosed to the public. The public can then have informed discussions, and judge the necessity of individual services and their value for money, and alternatives, such as abolition of lines or switching to a bus service, can be agreed.

There is no contradiction between this scheme and the EU directives.

1) SOI, passenger and freight sectors are managed by different entities. Their accounts are therefore clearly separated from each other, fulfilling the requirements of EU Council Directive 91/440, Article 6. Passenger and freight sectors pay SOI "access charge".
2) SOI pays capital cost for "interest expense" to the government. How the interest revenues are spent for is decided by government (PSC Fund), not by railway sector.
3) The fund (interest revenues) are granted to commuter & local services via local governments. EU Regulation 1893/91 stipulates that such services should be ensured by concluding public service contracts between the competent authorities and transport undertakings.
4) Article 2-2 of the Directive 91/440 allows member states to exclude from the scope of the Directive railway undertakings whose activity is limited to the provision of solely urban, suburban or regional services. This is presumably for the reason that problems related to such local services should be decided on the responsibility of each member state.
5) We verified the fund circulation scheme does not amount to a cross subsidy (with EU DGVII).

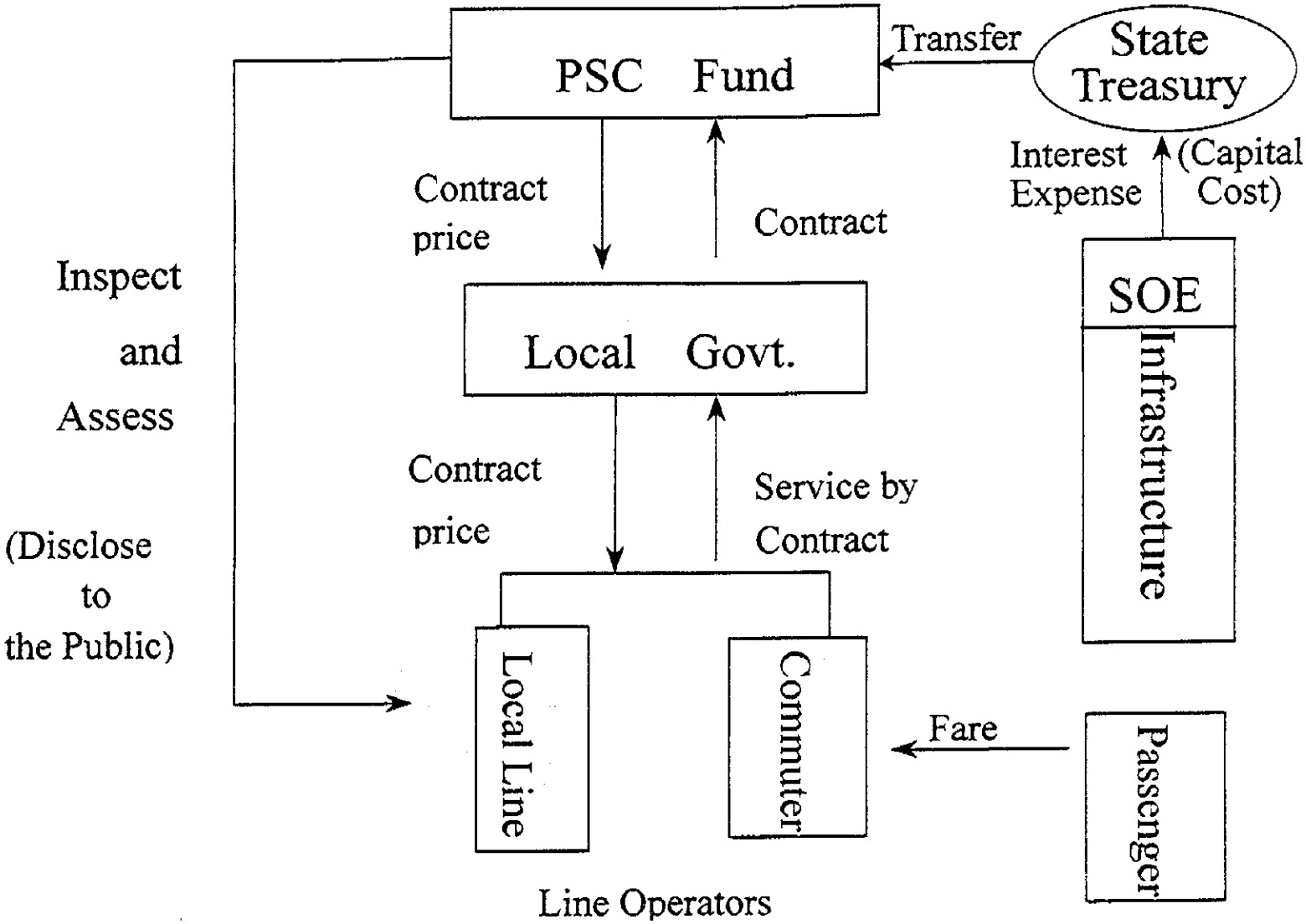

Fig. 4.3.1 Service by Contract with Local Governments

(8) Privatization of the SOI (see 4.5.2(4), 5.1.1)

Under scenario 1, all railway sectors will be able to balance their accounts, and under that situation the SOI can also be privatized.
When privatized, debts of the infrastructure Joint Stock Company (JSC) are converted into capital, and the government floats the JSC on the stock exchange and contributes the sales amount (assumed 31bn PLN = capitalized value = 3.1 bn PLN / 10%) to the PSC fund. The PSC fund can subsequently use the interest yielded from this contribution (3.1 billion PLN, assumed interest rate at 10%) as a contract payment to the urban, suburban or regional service providers via local governments. (cf. 4.5.2 (4))

After privatization, the infrastructure JSC can raise sufficient money and continue to exist independently by paying fair return on investment (ROI - capital cost) to the investors/lenders in the form of dividends/interest expense under the law which permits the JSC to fix the access charge at full cost.

(9) Separation Of Field-Work Units

Field-work units for maintenance, which belong to all sectors (infrastructure, passenger service, freight service, traction & workshop back-up facilities), consist of approximately 108 thousand employees. It is recommended that these units are separated, initially as independent accounting units and subsequently as totally separate organizations.
PKP is now reorganizing 500 field-work cost centers into about 100. These cost centers should be modified into profit centers (by accounting separation), separated from PKP and privatized through mergers and sales among the units themselves and to third parties. As a result, field-work units for maintenance will become outside suppliers, and PKP will be noticeably streamlined and able to shift to a strategy-oriented company composed of a smaller number of able staff. Namely, e.g. infrastructure company will be composed of mainly expert engineers and supervisors without conducting its own maintenance and construction works.

The profitability of PKP should be improved, with the burden of maintenance costs being replaced by service fee payments from third parties. Because PKP will make a profit through a staff reduction, curtailment of overhead costs, a cut in the service fee payments from third parties thank to introduction of competitive tender, leasing and/or sales of the units to strategic investors etc. (direct privatization).

(10) Railway-Related Business (RRB)

RRB is very promising thank to the best growing economy in European countries. PKP should develop real estate, telecommunications, data processing, travel, retail etc. under a unified strategy, concentrating on reorganization, and the active separation and privatization of RRB. It will bring PKP new income and employment opportunities (cf. 5.6).

(11) Investment Policy

PKP plans investment of about 28 billion PLN in different facilities from 1997 to 2005. It is proposed that an additional 2 billion PLN should be invested to recover past shortages caused by state subsidy.
On the other hand, PKP should reexamine its investment plan with respect to priority order and effectiveness, and cut the planned amount considering the current financial difficulties. (cf. 5.7, 5.8)

(12) Reexamination of Staff's Free Ticket Benefit, Increase of Fare and Coal Tariff.

The free ticket benefit for staff and their family amounts to 20% of total passenger sales. Such benefits were reduced during Japan National Railways' privatization process, and should be curtailed in the same manner for PKP.
A fare increase should be considered to increase revenue from passenger services. The current fare levels of PKP, after adjusted by purchasing power parities, are only at 20% of the UK's and 30% that of Germany & France (see 3.3.2, Table 3.3.3).

The income from coal transportation occupies half of total freight revenue, and the tariff is discounted 10% compared with other commodities. The discount is due to the government's energy policy, but PKP could claim a correction (cf. 3.3.4).

(13) Divide Operating Sectors Into 5 Companies.

The passenger operating sector should be divided into 3 companies (Inter-city, Commuter, Local) and the freight operating sector into 2 companies (Combined, Commodity) in order to make each performance clear, improve operational efficiency and facilitate privatization (cf. 5.10, 5.11).

(14) Holding company (HC)

It is recommended to divide and separate PKP's organization in order to facilitate privatization, considering the capacity of the Warsaw Stock Exchange. At the same time, a HC is very effective to frame unified strategies, make good use of managerial resources, avoid duplicated investment and eliminate waste.

The role of the HC is more important among the able minority companies and it will change as subsidiaries grow up. HC has some advantages in terms of business expansion, international competitiveness and financing. The purpose of the HC is not to dominate the market but to make the whole company's business efficient (see 5.1.2).

4.3.3 Privatization Phases (see Fig. 4.3.2)

(1) 1st Phase (1997~1998)

1) The current organization is reorganized into a more simple and flat structure consisting of 2 tiers, 4 sectors and 12 pillars by the end of 1998.
2) Surplus assets are transferred to the infrastructure sector.
3) The name of the real estate pillar is changed into the railway-related business (RRB) pillar.
4) Sectors and pillars settle internal transactions with each other, make their financial situation clear, and aim to be self-supporting .
5) Set up SIF and issue coupons to employees which are guaranteed to be exchangeable with future privatized PKP's shares.

(2) 2nd phase (1999~2000)

1) Traction and Infrastructure sector is separated from PKP and transformed into a newly established SOE (SOI) under the jurisdiction of MTME by the end of 1998. MTME also establishes a PSC Fund, and the fund begins to subsidize the local governments which contract with commuter and local lines' operators.
   Power engineering pillar returns to SOI by the end of 2000.
2) back-up sector is divided between passenger and freight sectors by the end of 2000.
3) Field-work units for maintenance are divided into independent accounting units (profit centers) within PKP.
4) RRB pillar merges with 3 other pillars (welfare, railway security service, structural units), sets up subsidiaries by type of business, and transfers the right staff there in

order to delegate authority, heighten morale and clarify responsibility.(see 5.6.4 (1))

5) The other 5 pillars (housing, pension, health-care service, training, procurement) are abolished or merged. As a result, pillars are reorganized into 3 larger divisions (RRB, computerized data processing, telecommunications), all connected with RRB in a broad sense. These pillars establish subsidiaries and privatize them by leasing or selling to employees or strategic investors.(see 5.2.1)

(3) 3rd phase (2001~2002)

1) PKP transforms from SOE into JSC 100% owned by the Ministry of Treasury (MOT).
2) 15% of the shares of the privatized PKP (JSC) are delivered to the SIF.
3) Passenger and freight sectors are divided into 5 sectors; inter-city, commuter & local for the passenger sector, and combined & commodity for the freight sector.
4) Promote separation and privatization of field-work units which have been modified into profit centers in the 1st phase.

(4) 4th phase (2003~2005)

1) The 5 sectors (3 passenger, 2 freight) and 3 RRB pillars are transformed into 8 JSCs. The 8 JSCs are 100% owned by a newly established holding company (HC).
2) HC implements proper privatization measures for each JSC such as leasing, selling to strategic investors, listing etc. The proceeds from privatization flow into the HC, and are appropriated for financial improvement etc.

(5) 5th phase (2006~)

MOT proceeds to list HC on the Stock Exchange. SOI is transformed into a JSC, 100% owned by MOT, and subsequently listed on the stock exchange. SIF delivers shares to employees in exchange for coupons just before HC's listing, and SIF then dissolves.
Sales of HC's 85% share of PKP flow into MOT. Sales of infrastructure JSC's shares are contributed to the PSC fund via MOT. PSC fund uses the interest yields from such amounts as a grant to commuter & local lines' operators.

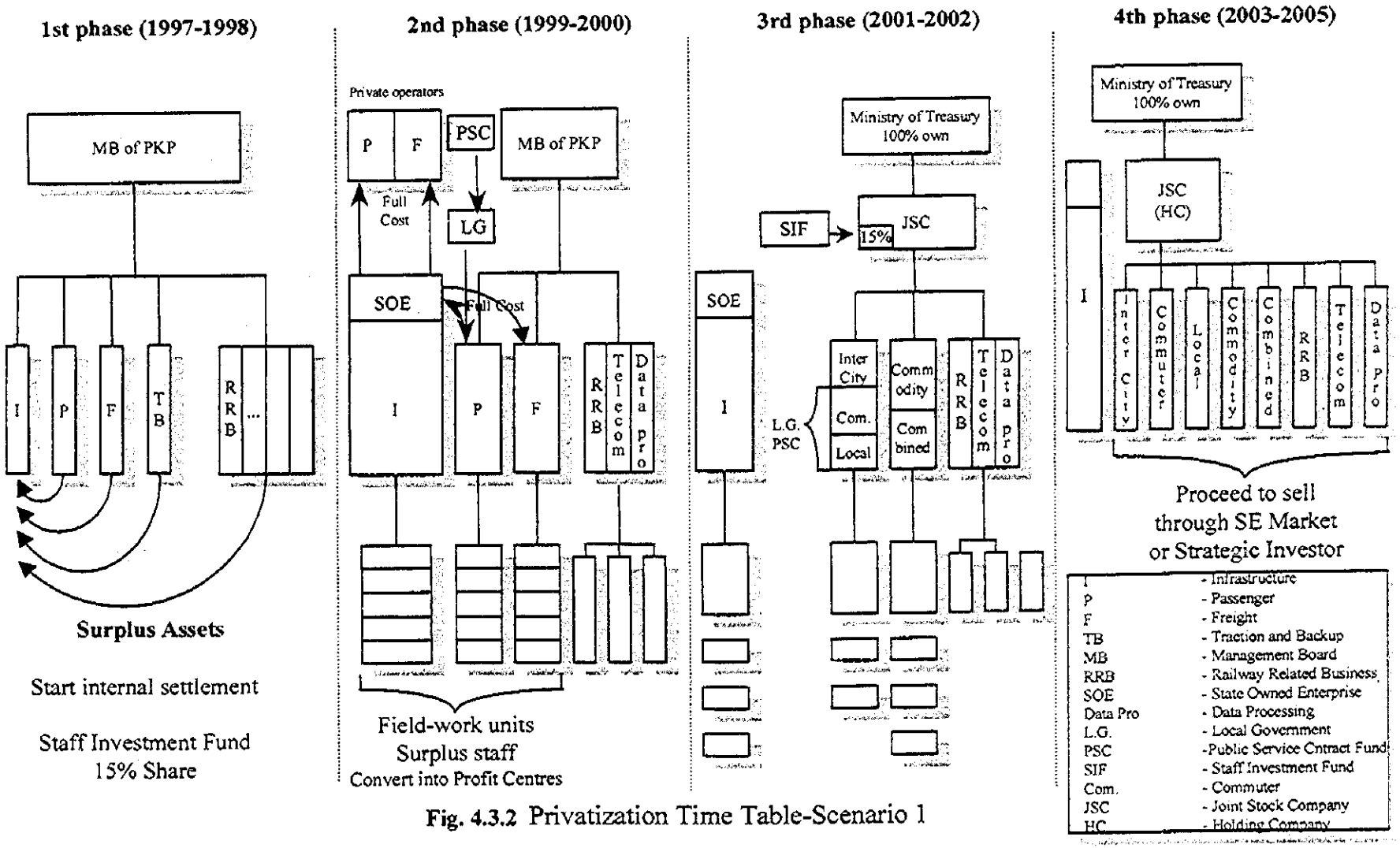

Fig. 4.3.2 Privatization Time Table-Scenario 1

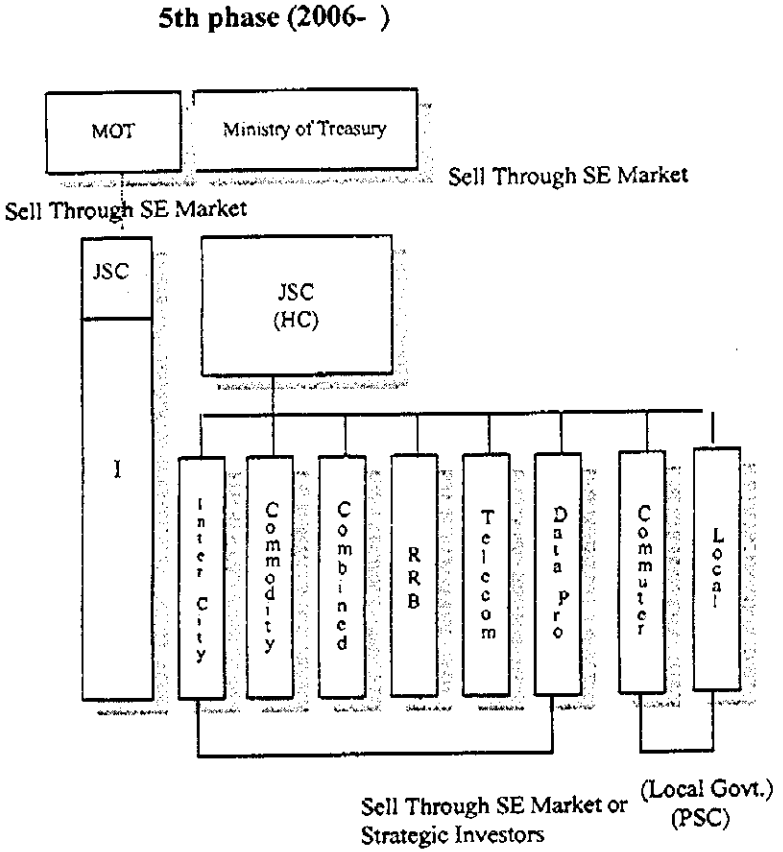

Fig. 4.3.2 Privatization Time Table-Scenario 1

4.4 SCENARIO 2

4.4.1 Executive Policy

Scenario 2 proceeds to privatize PKP by moderate means in order to avoid possible friction and confusion caused by radical means. Surplus assets and staff are transferred from PKP into a newly established settlement agency subsidized by the government. Infrastructure is separated from operations to suit to EU directives, but basically the whole organization is maintained under a HC, and advantages of scale are pursued.

4.4.2 Basic Means

(1) Streamline organization

Same as scenario 1 except the following.
The infrastructure sector remains within PKP in order to keep a close connection with operation sectors. The traction and back-up sector remains as an independent department within PKP by request of the labor union. Operation sectors are divided into only 2 sectors (passenger and freight) to maintain the advantage of business consistency. 12 pillars are not combined.

(2) Set Up Settlement Agency (SA)

Surplus assets such as the 5,000 km lines subject for abolition , narrow-gauge lines, houses for employees etc. cost a great deal to maintain. It is better to transfer such assets and those maintenance staff (15,800) to SA under the jurisdiction of MTME in order to accelerate restructuring. Working expenses for the disposal of assets, employment placement, salary etc. are paid by the government. The life of the SA should be limited to 5 years (from 1998 to 2002), and a government subsidy of 2 billion PLN (400 million assumed for 1 year's expenses * 5) is needed.

(3) Infrastructure Access Charges At Partial Cost

The infrastructure sector charges each operator access charges based only on operating & maintenance costs (partial cost).
Such access charges do not include capital cost , and this lightens the burden on operators and may facilitate the entry of new operators into an open access market. On

the other hand, the infrastructure sector does not collect financing cost, so it cannot raise new investment money by itself, cannot stop being subsidized by the government, and EU criteria regarding the public debt ratio to GDP (under 60%) make it rather difficult to borrow low-interested loan, even with a government guarantee. As a result, infrastructure cannot be sufficiently modernized, and the infrastructure sector cannot be privatized.

Moreover, if the access charges at partial cost are much lower than the access charges of neighboring countries, PKP will end up subsidizing foreign operators.

(4) Services To Be Provided Under Contract With Local Government

Same as scenario 1 except the following.

Access charge includes only operating & maintenance cost (partial cost), so there is no source of funds for a PSC Fund, and it cannot be set up. As a result, service by contract with the local government would not progress practically, and the improvement of PKP's financial position would be delayed.

(5) Streamline field-work units

The 500 field-work units for maintenance scattered all over the country should be put together into about 100. Thus, the organization could be streamlined and maintenance work would be conducted efficiently. Moreover, it would produce surplus real estate and staff, and by making good use of those resources, PKP could develop new business opportunities (RRB).

(6) Railway-related business (RRB)

RRB should be developed at each division's discretion, ensuring that the importance of the RRB is recognized by employees and avoiding the confusion that may be caused by a restrictive strategy and a change of organization.

(7) Investment policy

It is proposed that investment in a variety of facilities of about 28 billion PLN from1997 to 2005 should be implemented. PKP should refrain from additional investment, even for past insufficiencies from 1989 to 1996, in view of current financial difficulties.

(8) Staff's free ticket benefit, and increase in fare and coal tariff.

PKP should not discontinue staff's free ticket benefit, nor increase fares and coal tariffs more than the inflation rate, in view of unions' wishes and the social impact.

(9) Holding company (HC)

Same as scenario 1.

4.4.3 Privatization Phases (see Fig. 4.4.1)

(1) 1st phase (1997~1998)

1) The current organization is reorganized into a simpler and flatter structure consisting of 2 tiers, 4 sectors and 12 pillars by the end of 1998.
2) Sectors and pillars settle internal transactions with each other, and make their financial situation clear.
3) SA is established, and surplus assets and maintenance staff are transferred to SA.

(2) 2nd phase (1999~2002)

1) Sectors and pillars expand their businesses into external transactions, and gradually aim to be self-supporting departments.
2) PKP begins contracted services with the local governments for commuter and local lines.
3) PKP transforms from SOE into JSC 100% owned by the MOT by the end of 2002.
4) SA obtains the expected results and dissolves.

(3) 3rd Phase (2003~2005)

1) 4 sectors (Infrastructure, Passenger, Freight, Traction and Back-up) and 1 pillar (including 12 functions) are transformed into 5 JSC. The 5 JSC are 100% owned by newly established HC.
2) 2) HC leads and unifies every JSC, and endeavors to make them profitable.

(4) 4th phase (2006~)

1) HC implements proper privatization measures for each JSC such as leasing, selling to strategic investors, listing etc. The proceeds of privatization flow into HC, and are appropriated for financial improvement etc.
2) MOT proceeds to list HC on Stock Exchange. Sales of HC's shares flow into MOT.

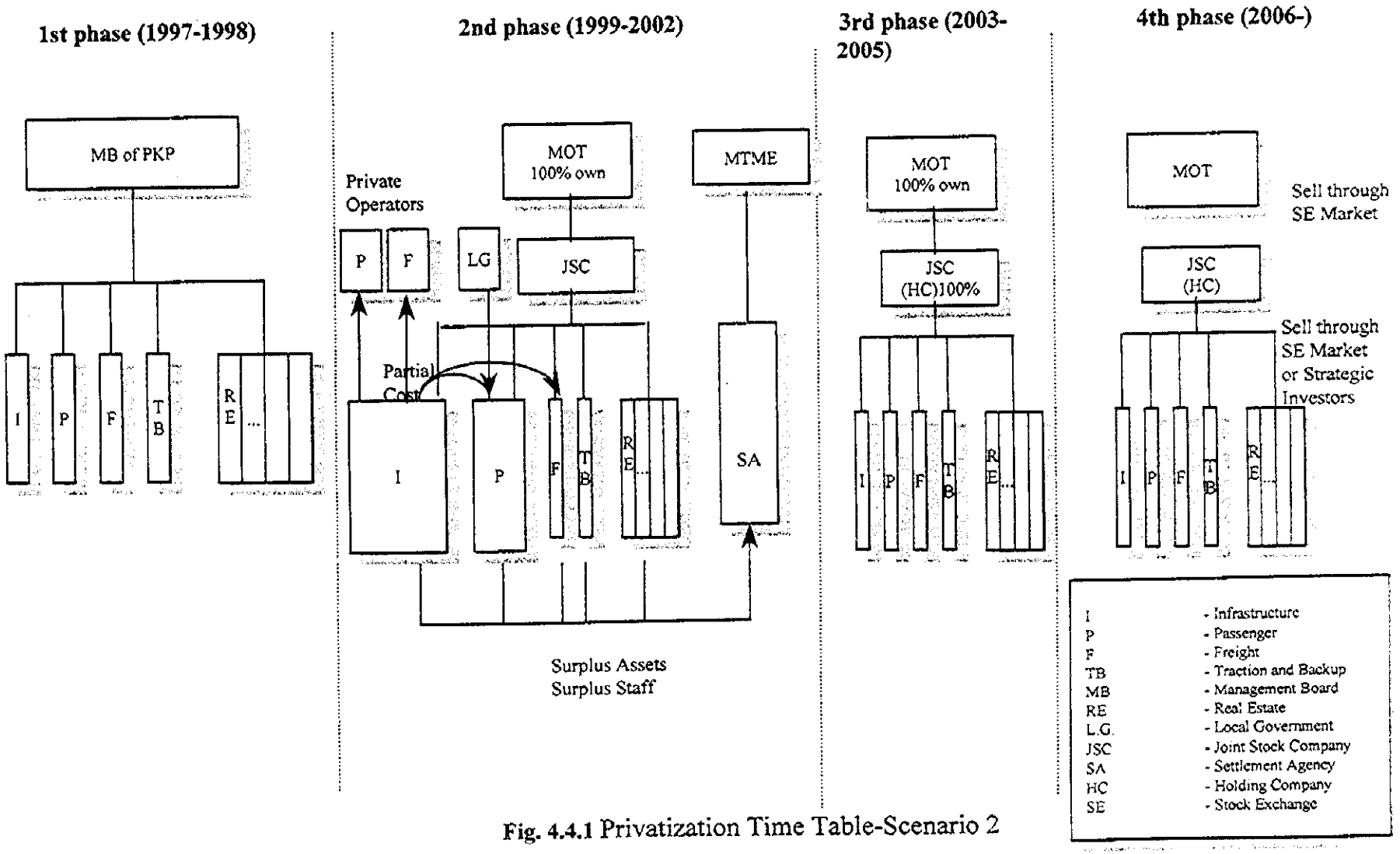

Fig. 4.4.1 Privatization Time Table-Scenario 2

4.5 EVALUATION AND CALCULATION OF SCENARIOS

4.5.1 Qualitative Evaluation

(1) Differences, and qualitative comparison between scenarios

Differences derived from the executive policies for privatization, and a qualitative comparison of the 2 scenarios are summarized in the following tables (Table 4.5.1, Table 4.5.2):

Table 4.5.1 Differences Between Scenarios

	SCENARIO 1	SCENARIO 2
Objective	Realize privatization	Same as scenario 1
Executive policy	Privatize efficiently by every means possible. Reform-oriented but coordinated with labor interests.	Privatize to a minimum. Status quo-oriented. Avoid conflict with labor and operational confusion
Streamline organization	Promote actively.	Promote by mutual consent.
Surplus assets	Infrastructure sector.	Settlement agency.
Surplus staff	Natral attrition, SIF. Separate infrastructure sector, field-work units. Promote direct privt'n. RRB. Placement. Buy-out.	Natral attrition, SA. RRB. Placement. Buy-out.
SIF	Establish.	Maintain the status quo. (I.e. do not establish)
SA	Unnecessary.	Establish under the state budget.
Infrastructure sector	Separate from PKP into new SOE.	JSC under PKP holding company.
Access charge	At full cost (Operating & maintenance cost + Capital Cost)	At partial cost (Operating & maintenance cost only).
Local lines etc.	By contract with local Govt.	Same as scenario 1, but difficult.
PSC fund	Establish.	Impossible.
Privatize infra.	Privatize infrastructure SOE.	Impossible.
Traction & back-p sector	Divide into passenger and freight sectors.	Remain as an independent department.
Field-work units	Separate from PKP. Privatize.	Amalgamate within PKP.
RRB	Reorganize. Unify strategy.	Leave to each dept.'s discretion.
Pillars	Put together into 3 RRB pillars	Maintain the 12 functional pillars
Investment policy	Additional investment. Reduction in waste.	Invest according to PKP's current plan.
Fare increases etc.	Raise passenger fares and coal tariffs.	Maintain the status quo.
Staff benefit	Curtail. Discontinue	Maintain the status quo.
Divide operating sectors.	3 for passenger, 2 for freight.	1 for passenger, 1 for freight.
HC	Set up after PKP has been streamlined.	Set up as top of large-scale organization
Govt. subsidy	For additional investment.	For SA, and passenger operators.

Table 4.5.2 Qualitative Comparison of Scenarios

	SCENARIO 1		SCENARIO 2	
Subjects	**Means**	**Comments**	**Means**	**Comments**
1. Privatization. Competition	Active privatization and separation of PKP's organization.	• In accordance with national privatization aims • Promoting competition, efficient allocation of resources ,and customer service. • Labor cooperation is indispensable for successful implementation	Privatization promoted by mutual consent and not by direct means. The existing organization of PKP is maintained	• This avoids confusion and it is easy to obtain labor cooperation. • But, it restricts competition. • Large, monopolistic organizations are contrary to the theory of privatization and efficient allocation of resources.
2. Organization 2.1 Infrastructure sector	Separate the infrastructure sector into an independent institution. Privatize	• Complies with EU directive. • Secures neutrality under open-access policy • Separation facilitates staff reduction. • Privatization facilitates voluntary investment by self-financing.	Infrastructure and , operation sectors come under PKP HC.	• Advantage of close on-the-job contact between infrastructure and operation sectors. • Investment depends on government subsidies. • Modernization is delayed.
2.2 Traction & back-up sector	Divide into passenger and freight sectors	• Unification of traction engines & drivers sector with operating sectors increases commercial power to compete.	Remain as a sector	• Complies with unions' demands. • Makes connected jobs inefficient.
2.3 Settlement agency	Do not establish	• Unnecessary. PKP has no debt. • Surplus assets and staff can be settled by other means.	Establish (for 5 year duration)	• Improves PKP's financial position and thus facilitates restructuring. • Burdens the government • Privatization may be delayed by late enactment of a law.
2.4 Split passenger, freight sectors	Split passenger sector into 3 JSCs and freight sector into 2	• Financial position, responsibility, and necessity of public aid for each JSC are made clear. • Promotes competition and privatization	Form 2 JSCs (passenger and freight)	• Keep each task's connection and continuity. • Privatization of passenger JSC is difficult.

2.5 Pillars	Amalgamate into 3 RRB pillar	Select the 3 most promising RRB. Other divisions are abolished or unified into other departments. Streamlined organization increases efficiency and reduces overheads	Retain 12 pillars	Complicated organization can make business inefficient and wasteful
2.6 Field-work units	Separate from PKP. Put field work out to public tender. . Actively privatize units where possible	PKP is streamlined, and turns into a strategy-oriented organization composed of a small number of able staff. Separated units seek outside orders, diversify and become easy to privatize. Reduce staff, overhead, maintenance cost. Earn external money by privatization	Amalgamate within PKP. Don't separate.	Streamline field work units within PKP. Easier to get labor understanding. Promote restructuring gradually. No new money available from privatization..
3. Management 3.1 Surplus assets	Set up an Infrastructure SOE, separate from PKP	Most surplus assets belong to infrastructure sector. Asset administration can be rationalized. No need for new law, and Infrastructure sector can manage flexibly.	Set up a settlement agency	PKP can concentrate on its principal business. SA needs state budget.
3.2 Surplus staff	Reduce PKP staff by natural attrition, SIF, separation of infrastructure sector & field-work units, and privatization of RRBs, and buy-out etc. 160 thousand at the end of 2005.	SIF encourages early retirement. Separate infrastructure sector & field-work units reduces PKP employees. Direct privatization of RRB further lessens PKP's staff burdens	Off-load PKP staff onto the Settlement Agency,. natural attrition, RRB, and buy-out etc. 178 thousand at the end of 2005.	Natural attrition will avoid conflict. Settlement Agency would become responsible for nearly 16,000 PKP staff. RRB would be at each division's discretion.
3.3 Labor morale	Ensure support of the labour force via SIF & active privatization.	SIF provides a direct financial incentive for the labour force, boosts support for early privatization and reduces number of staff by encouraging early retirement. Active privatization stimulates the organization and heightens the morale of able staff.	Privatize gradually. Set up SA.	This may reassure the mediocre staff, but the morale of able staff may suffer. SA may antagonize staff, or wound their pride.

3.4 Commuter and local lines	Local governments contract unprofitable commuter and local line services out to PKP JSCs etc.	Subsidies provided by the PSC fund help local governments to pay PKP JSCs etc. to run these lines. Separation of JSC makes performance clear and facilitates grant from PSC fund. Deficit from such lines can be reduced.	Local government contracts out non-profitable commuter and local line services to PKP passenger JSC etc.	The both line services are operated by one passenger JSC of PKP, and it keeps each job's continuity and avoids confusion. For the local government to contract out these services, a special source of funds may be needed.
3.5 RRB	Unify the strategy on RRBs for PKP as a whole, reorganize, separate and privatize actively.	RRB is promising, and can be expanded by reorganizing and concentrating management resources etc.	Leave RRB strategy to each division's discretion.	The various divisions will each be seeking out their own business opportunities independently. No central organization or unified strategy can lead to inefficiency.
4. Quantitative effect **4.1 Gov. subsidy**	In addition to the current subsidy (for passenger services and investment), an extra investment subsidy of 2 billion PLN (1998~2002) will be necessary	Additional subsidy necessary to recover past under-investment and to modernize the infrastructure. This is more constructive and significant aid.	In addition to the current subsidy (for passenger services and investment), Government funding of 2 billion PLN (1998~2002) necessary for running of SA.	The funding will be used for SA's operational expenses and ultimately there will be nothing concrete to show for this government spending.
4.2 Access charge	Full cost (Operating & maintenance cost + Capital cost)	Capital cost component is channeled through the PSC Fund to subsidize passenger (commuter & local lines) operators. Thus, all railway sectors' accounts balance without additional government subsidy. Also infra-structure sector can privatize by charging full cost on operators.	Partial cost (Operating & maintenance cost only)	Additional Govt.'s subsidy is required for passenger sector. Passenger and infrastructure sectors cannot privatize.

(2) Evaluation and conclusion

Scenario 1 aims to privatize PKP by reforming the current situation, and promotes business efficiency and urgent partial, direct privatization as the first step to full privatization. Scenario 2 aims to privatize PKP as a whole by more gradual means, taking into consideration the opinion of the labor force. Both scenarios have advantages and disadvantages. But considering PKP's current difficulties , priority should be given to improving business efficiency and promoting privatization. So, Scenario 1 is selected.

The executive policy of Scenario 1 is more in harmony with EU directives and the national target of promoting privatization. Scenario 1 improves PKP's financial position more rapidly than Scenario 2, by earning external money from direct privatization, and by reducing costs from the separation of organizational units and contracted services with local governments. As a result, power to compete against neighboring countries and other transport modes will be strengthened, and service for users should be improved. Regarding labor problems, SIF of Scenario 1 provides staff with a financial interest, while SA of Scenario 2 may cause the staff morale to decline.

4.5.2 Calculation Examples

(1) Conditions of calculation

Qualitative differences between scenarios inevitably lead to quantitative differences . It is difficult to measure the differences numerically, but conditions for calculation are set as an example. Other calculations by scenarios are shown in the annex (Scenario 1 and scenario 2 mentioned here, correspond to scenario 1C( ) and scenario 2A respectively in the annex).

Table 4.5.3 Conditions of calculation

	SCENARIO 1	SCENARIO 2
PKP income from railway services	Indexed to JICA's demand forecast. Increase 18% for passenger sales[1] & 5% for freight sales[2] from 1998.	Indexed to JICA's demand forecast.
Other PKP income	Increase[3] gradually to 10% of railway sales by 2005	N/A
Infrastructure cost allocation	Passenger services 45% : freight services 55% (according to PKP's 1995 data)	Same as scenario 1
Price level	Fixed at 1996 prices	Same as scenario 1
Demand forecast	JICA's forecast (see Appendix)	Same as scenario 1
Abolition of lines	5,000 km	Same as scenario 1
Settlement Agency (SA)	N/A	Establish SA at operating cost of 400 million PLN p.a. * 5 years (1998~2002) = Total cost of 2 billion PLN
Infrastructure Access charge	Full cost = operating & maintenance cost + capital cost (assets * e.g. 10%)	Partial cost = operating & maintenance cost
Investment **Additional investment**	Same as PKP plan 400 million PLN * 5 years (1998~ 2002) = 2 billion PLN	Same as PKP plan N/A
Changes to investment	Cut 10% of total investment annually	N/A
Interest rate of loan	6% (assumed)	Same as scenario 1
Government funding **Additional government subsidy**	Same as 1996 (400million for investment + 571million for passenger service = total subsidies of 971 million PLN) 2 billion PLN for additional investment	Same as scenario 1 2 billion PLN for SA
Number of staff at the end of 2005	160 thousand[4]	178 thousand

(Notes for scenario 1):

[1]Increase 18% for passenger sales = 10% from cuts to staff benefits + 8% from fare increases of 16%.

[2]Increase 5% for freight sales = 5% from increasing coal tariff rate of 10%.

[3]Other income = Income from RRB +direct privatization sales + reduction in PKP's current losses for non-profitable commuter/local lines thanks to contracting out via local government + reduction in maintenance costs by separation of field-work units + reduction in overhead costs by staff reduction[4] and streamlining the organization.

[4]Staff reduction: To be achieved by Natural attrition, and early retirement thanks to SIF, separation of infrastructure & field-work units, direct privatization and RRBs.

(2) Calculation result (ref. Table 4.5.3, Fig. 4.5.1)

Table 4.5.4 Calculation result (in million PLN)

	SCENARIO 1				SCENARIO 2			
	Year	Amount	Year	Amount	Year	Amount	Year	Amount
Total sales	1996	7,422	2005	8,597	1996	7,422	2005	7,611
Total profit	1996	-256	2005	1,125	1996	-256	2005	-876
Passenger & freight sales			1997~2005	60,818			1997~2005	56,955
Freight sales	1999	5,298	2005	5,340	1999	5,045	2005	5,085
Freight costs	1999	5,162	2005	5,125	1999	3,337	2005	3,843
Freight profit	1999	136	2005	214	1999	1,708	2005	1,242
Passenger sales	1999	1,476	2005	1,544	1999	1,250	2005	1,308
Revenue from PSC fund	1999	3,173	2005	3,148				
			1999~2005	22,078				
Govt. passenger subsidy	1999	572	2005	572	1999	572	2005	572
Passenger costs	1999	4,958	2005	5,002	1999	3,411	2005	3,998
Passenger profit	1999	263	2005	261	1999	-1,589	2005	-2,118
			1999~2005	1,851			1999~2005	-12,649
Other income			1998~2005	2,243				
Payroll costs			1997~2005	25,816			1997~2005	26,848
Access charge for passenger			2005	2,314			2005	750
Access charge for freight			2005	2,747			2005	932
Accumulated investment			1997~2005	27,072			1997~2005	27,945
Govt. investment subsidy			annually	400			annually	400
Balance of loan			2005	2,586			2005	12,555
Additional Govt. subsidy	1998~2002 (for inv.)			2,000	1998~2002 (for SA)			2,000
					1999~2005 (for passenger sector)			**12,649**

(3) Financial analysis of Table 4.5.4 (all figures in million PLN)

The above figures show that the active measures proposed under Scenario 1 are essential to avoid the decline in total profit (to -876 by 2005) that is envisaged under Scenario 2.

1) **Scenario 1:** Both passenger & freight operators pay "full cost" as access charges of 5,061 *(2,314 + 2,747)* in 2005 to infrastructure SOE. This is composed of operating/ maintenance costs *(1,913)* and capital cost *(3,148)*. The capital cost is passed on to passenger (commuter & local lines) operators in the form of grants, as necessary, via the PSC fund & local governments. As a result, both passenger and freight services are able to show a moderate profit until 2005 *(261 for passenger and 214 for freight in 2005)*. It suggests that both sectors can privatize.

2) **Scenario 2:** Access charges are made on an 'at partial cost' basis only standing at 1,682 *(750 + 932)* in 2005. Under this scenario, the freight sector makes a large profit of 1,242, but the passenger sector shows a huge loss of 2,118. Thus, under Scenario 2, privatization of the passenger sector would be rather difficult.

3) **Scenario 1 vs. Scenario 2:** Under Scenario 1, the passenger sector makes a total profit of 1,851 over the seven year period from the commencement of the PSC fund in 1999. Over the same period, the sector makes a loss of 12,649 under Scenario 2; this amount would have to be met by government subsidy.

Borrowings of Scenario 2 amount to 12,555 which greatly exceeds total sales of 7,611, i.e. a highly unusual financial situation.

Incidentally, other income (RRB sales etc.), under Scenario 1 is approximately the same as government subsidy for SA, under Scenario 2 - 2,243 & 2,000 respectively. It shows that there is a possibility of earning same amount of income as subsidy for SA by aggressive means under Scenario 1.

(4) Fund circulation scheme (see 4.3.2 (4)~(8), Fig. 4.5.1)

Scenario 1 shows that funds circulate through the railway industry autonomously without an additional government. subsidy except 2,000 PLN for investment. As a result, not only the passenger and freight sectors but also the infrastructure sector can be privatized. Namely, the government. should make a new law which prescribes the infrastructure enterprise a pricing method as follows:

Access charge revenues = Full costs

The full costs include capital cost, i.e. a fixed fair return on assets which is paid to lenders and/or investors. The reasons why this pricing method is adopted are that,

(a) The railway infrastructure enterprise is a public and monopolistic utility,

(b) The access charges should not bring the enterprise arbitrary profit, while

(c) The revenues should make the enterprise run soundly with necessary investment, and

(d) The pricing method should be clear based on objective figure('costs'), and transparent and impartial among every operator.

Namely, this pricing method aims at harmonization between 'sound improvement of railway infrastructure' and 'protection of users' interests'.(cf. 4.3.2 (5))

A fixed return on assets for infrastructure enterprise is equal to a fixed return on investment for lenders/investors. So, the stock of the infrastructure enterprise will thus become blue chip, like a fixed interest bearing bond which is guaranteed by the government. When the infrastructure enterprise is privatized, the government will be able to sell or list the shares of the infrastructure JSC to the investors by capitalized

value (31 bn PLN = 3.1 bn PLN / 10%).

The government contributes the sales amount to the PSC fund, and afterward, the PSC fund can use the interest yield on the contribution as a grant to local governments. (cf. 4.3.2(8))

This scheme is in conformity with the idea of a public service contract proposed by the EU's white paper, and the idea of full cost pricing is adopted by Japanese utility companies (electric power, gas). For example, Japanese electric power companies are sanctioned by the government to base prices on cost plus a fair return on assets (financing costs) which is appropriated for interest on borrowings and dividend on capital. These companies also hold a local monopoly, and are listed on the Stock Exchange. They are obliged to provide a stable public supply of the utility in question.

The fund circulation scheme of the 2 scenarios are compared as follows:

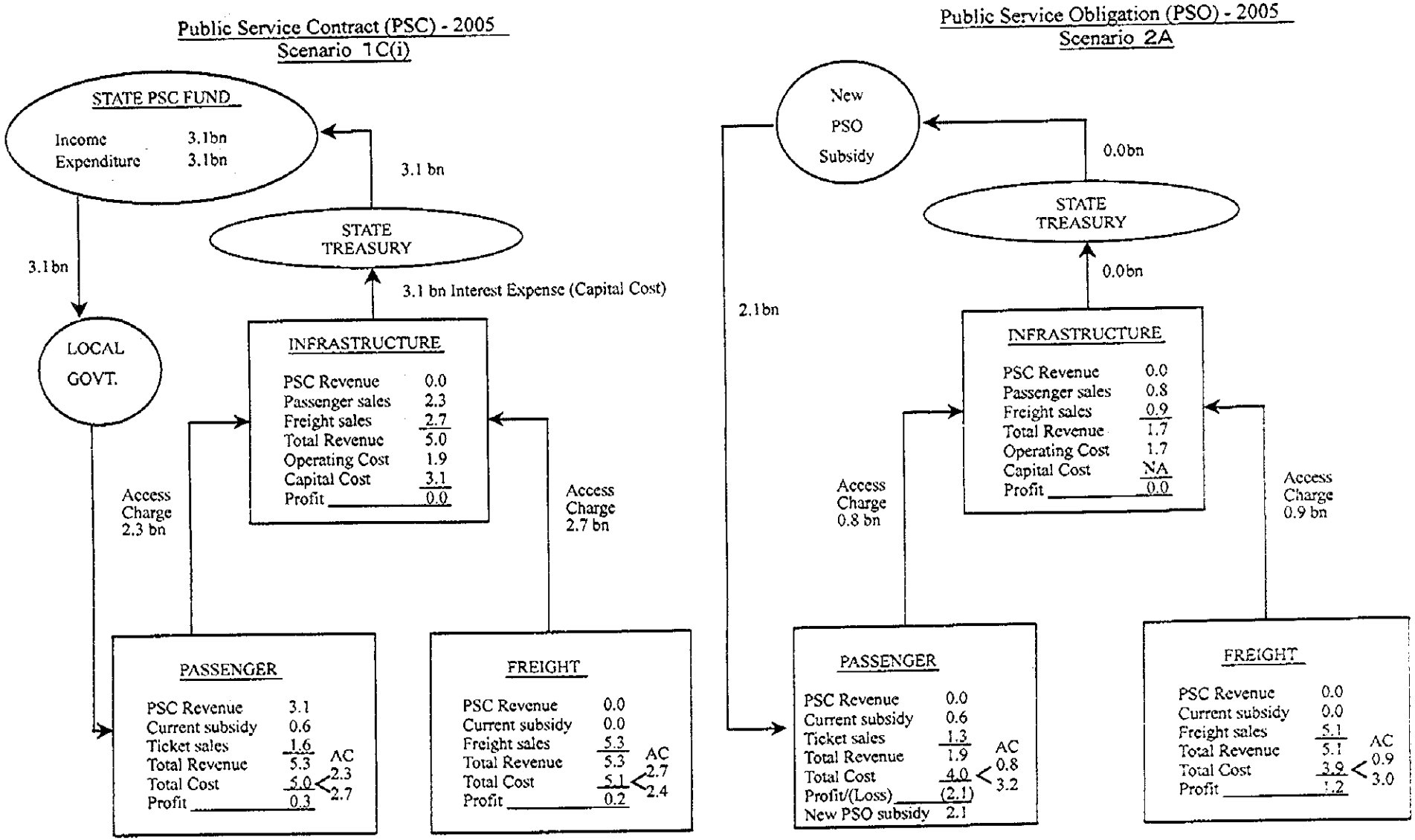

Fig. 4.5.1 Fund circulation scheme

Explanation of Figure 4.5.1 (i.e. differences between Scenario 1C(i) and Scenario 2A Fund Circulation Schemes)

1. Passenger

a. Ticket sales

This is 1.3 bn in Scenario 2A but 1.6bn in Scenario 1C(i). This is because Scenario 2A assumes fares at current levels but a 18% increase is assumed in Scenario 1C(i) (See Annex 4.1)

b. Passenger Access charge

This is 0.8 bn in Scenario 2A but 2.3bn in Scenario 1C(i). This is because Scenario 2A assumes payment of only operating costs to Infrastructure. In Scenario 1C(i), capital costs of Infrastructure are also charged to Passenger (See Annex 4.1 and 4.2)

c. Passenger operating costs

This is 3.2 bn in Scenario 2A but 2.7bn in Scenario 1C(i). A number of factors contribute to this difference including

- staff numbers are lower in Scenario 1C(i) than in Scenario 2A
- lower housing costs in Scenario 1C(i)
- lower depreciation costs in Scenario 1C(i)
- electro-energetic costs are included in passenger operating costs in Scenario 2A but are included in Infrastructure's operating costs in Scenario 1C(i).

2. Freight

The reasons for the differences in Freight Sales (tariffs increased by 5%), Freight access charge and freight operating costs are similar to that for passenger (see above).

3. Infrastructure

a. Passenger and Freight sales

This is because Scenario 2A assumes charging of only operating costs to Passenger and Freight. In Scenario 1C(i), capital costs of Infrastructure are also charged to Passenger and Freight. The detailed calculations are shown in Annex 4.1 and 4.2.

b. Infrastructure operating costs

This is 1.7 bn in Scenario 2A but 1.9bn in Scenario 1C(i). This is because Scenario 2A

assumes Electro-Energetic is in a separate Power Vertical. In Scenario 1C(i) the Power Vertical is included in the Infrastructure company.

4. Payment to State Treasury

In Scenario 1C(i), the Infrastructure company was created with Infrastructure assets valued at 32bn (Gross) with balancing debt (mainly to the government). Thus Infrastructure company has to pay interest costs (capital costs) of 3.1bn to the State Treasury (excludeing a small amount of interest payable to banks).

In Scenario 2A, since the Passenger and Freight are not charged "capital costs" by Infrastructure, there is no possibility for the Infrastructure to make any payment to the State Treasury.

5. New Public Service Obligation (PSO) Subsidy

In Scenario 2A, passenger makes a loss of 2.1bn which the State is obliged to fund by a "New PSO Subsidy" of 2.1bn. In Scenario 1C(i), the State PSC Fund can receive 3.1bn of new money collected by the State Treasury. This is paid to Passenger (via local authorities etc.). As Passenger makes a profit, no "New PSO Subsidy" is required.

Table 4.5.5 Fund circulation scheme (in million PLN)

SCENARIO 1	SCENARIO 2
Additional Govt. subsidy for commuter & local lines services is not needed	Additional Govt. subsidy is needed (2,118 for 2005, 12,649 for 1999~2005).
Aid for loss-making lines (commuter and local lines) is provided by contract with the Govt.'s Public Service Contract (PSC)	Govt. is under obligation to aid loss-making lines. Public Service Obligation (PSO)
Suits EU directive (access charge = operating & maintenance cost + capital cost). Market economy-oriented	Access charge = operating & maintenance cost. Controlled economy-oriented
Infrastructure sector can be self-financing, and can be privatized. Investment can be financed by private money.	Infrastructure sector cannot be self-financing for investment, and cannot be privatized. Investment needs Govt. subsidy (increase Govt. burden).
Passenger sector makes profit, and can be privatized.	Passenger sector makes loss, and cannot be privatized.
Earn more from foreign operators (assumed 10% of access charge of 2005, 5,061 * 10% = 506)	Earn less from foreign operators (1,682 * 10% = 168)
Full cost is charged, and real cost will be transparent.	Only partial cost is charged , and real cost will be opaque.
Real cost is transparent, and easy to adopt cost reducing measures (e.g. price-cap).	Real cost is opaque, and difficult to reduce cost.
Grant from PSC Fund (3,148 for 2005, 22,078 for 1999~2005) is not Govt. subsidy, but public disclosure will advance abolition of loss-making lines and force savings in the grant.	Grant (2,118 for 2005, 12,649 for 1999~2005) is Govt. subsidy, and it should be disclosed publicly to advance abolition of loss-making lines and save the grant. The necessity of such lines should be judged by the public (taxpayers) ultimately.

Notes on EU's recommendations:

1) Concerning aid for loss-making lines, EU recommendations have shifted from PSO (Public Service Obligation), whereby subsidies are repeatedly granted on a periodic basic (usually annually), to a PSC (Public Service Contract) basis, whereby each separate contract between train operators and the government is individually assessed, with grants made on a case-by-case basis, with consideration for the social necessity of non-profitable lines. PSC aims to reduce the fiscal burden on tax payers and eliminate government waste.
2) EU recommends that the full cost of all transport infrastructure in EU countries should be transparent and charged to users, so that access charges in member states are priced according to the same conditions, and international open access can be accelerated.
   Another objective of charging full cost is to make the infrastructure sector self financing, facilitate its privatization, and lighten each member nation's fiscal burden.

(5) Consideration

Remarkable differences between the 2 scenarios lie in the demand for additional subsidy and the possibility of privatization. Namely, scenario 1 indicates that the whole railway industry can be self-financed without additional fiscal burden, and as a result, every sector can be privatized. On the other hand, scenario 2 indicates that a large additional government subsidy is required every year to cover the passenger sector's deficit (2,118 million PLN for 2005).

Other calculation examples are shown in the annex.

Annex 4.1 Explanation of scenarios and results of calculations

1) Explanation of scenarios

Scenario 2A is the "Base Case" or "Status Quo" scenario. In this scenario, the Infrastructure and Traction & Back-up Sectors along with the Verticals are treated as cost-centers. The following assumptions were made :

- Fares and tariffs at current levels
- Revenues dependent on transportation levels
- Railway related business at current levels
- Staff reductions to 178,000
- Infrastructure charges Operating Costs only
- The State spends an extra 2bn PLN over 5 years to fund a Restructuring Agency
- The Railway Health Service is totally separated from 1/1999 but the PKP pays 40m PLN p.a. for occupational health checks

In Scenario 1, the effects of changes in tariffs, investment level, infrastructure charges etc. are explored.

2) Results of Calculations

Scenario 2A results

The forecast results of Scenario 2A are :

- PKP's losses keep growing reaching 876m PLN in 2005 (1998–profit of 169m PLN)
- Profits of freight are falling (1998–1,734m PLN, 2005–1,242m PLN) and losses of Passenger keep increasing (1998–1,564m PLN, 2005–2,118m PLN)
- Staff costs despite falling by 1.1 bn PLN (1996-3.7bn PLN, 2005-2.6bn PLN) are more than offset by increased depreciation of 1.0 bn PLN and increased interest payments of 0.6 bn PLN
- An increasing amount must be borrowed each year and total amount borrowed also keeps growing each year to reach 12.6 bn PLN in 2005

The results for Passenger, Freight and Infrastructure are shown in Annex 4.5.1 and presented as a Public Service Obligation[1]. If Passenger is separated from freight, the State would have to increase subsidy for Passenger by 2.1bn PLN. Also, Infrastructure would not be able to finance required additional investment as it makes no profits. In Scenario 2A, Passenger,

[1] See EC White Paper "A strategy for revitalising the community's railways"- Executive Summary point 6 "The Commission will propose the generalisation of Public Service Contracts between the State and transport operators".

Freight and Infrastructure all cannot be privatized.

Scenario 2B

In this instance, all the changes that have been made for Scenario 1C(i) are assumed to be possible in the Option 2 i.e. 4 sector and verticals model.

Scenario 2B results

- Profits of 1,125m PLN (greater than Railway Related Business profits of 650m PLN)
- the amount borrowed increases to a total of 2,753m but then falls to 2,586m PLN
- Freight profits increase slightly from 1,908m PLN in 1999 to 1,987 m PLN in 2005
- Passenger losses fall slightly from 1,484m PLN in 1999 to 1,459 m PLN in 2005

Scenario 1A

The following are the main changes made to the scenario 2A:

- Passenger revenues raised 10% and freight revenues by 3% with no change in traffic levels
- Staff numbers further reduced to 160,000 in 2005
- Total Costs2 (i.e. Capital Costs and Operating Costs) of infrastructure are charged to Passenger and freight
- Profits from Railway Related Businesses (including efficiency gains etc.) reach 650m PLN in 2005
- The 400m PLN per year for 5 years (total 2bn PLN) to be spent on the Restructuring Agency is instead used for increased capital spending

Scenario 1A results

The forecast results of Scenario 1A are :

- Profits of 486m PLN in 2005 is less than the increase in Railway Related Business profits of 650 m PLN
- An amount must be borrowed each year with borrowing reaching 8.0 bn PLN in 2005
- Freight profits (9.1m PLN in 1999) falling each year to a loss of 16.8 m PLN in 2005
- Passenger profits (114.5m PLN in 1999) falling each year to a loss of 147.5 m PLN in 2005

The results of scenario 1A show that while Infrastructure can be privatized, Passenger and

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[2] See EC Green Paper "Towards fair and efficient pricing in transport" chapter 4.2.1 which distinguishes
(i) capital costs i.e. costs of providing infrastructure assets and
(ii) operating and maintenance cost
Chapter 4.6 states that full recovery of both of the above types of costs should be the infrastructure charging policy.

Freight cannot be privatized.

Scenario 1B

The only (major) change made to scenario 1A is:

- Passenger revenues raised 18% and freight revenues by 3%

Scenario 1B results

The forecast results of Scenario 1B are :

- Profits of 794m PLN which is greater than the increase in Railway Related Business profits of 650 m PLN
- An amount must be borrowed each year with borrowing reaching 6.0 bn PN in 2005
- Freight profits steady at 112.5m PLN in 1999 and 107.1m PLN in 2005
- Passenger profits (224.1m PLN in 1999) dropping each year to 36.4 m PLN in 2005

The results of Scenario 1B show that while Infrastructure and Freight can be privatized, Passenger cannot be privatized.

Scenario 1C(i)

The only (major) change made to Scenario 1B is:

- Investment reduced by 10% i.e. from 29,846m PLN to 26,862m PLN over the period to 2005

Scenario 1C(i) results

The forecast results of Scenario 1C(i) are :

- Profits of 1,125m PLN which is greater than the increase in Railway Related Business profits of 650 m PLN
- An amount must be borrowed each year till 2003 but repayments are made in 2004 and 2005 i.e. the amount borrowed increases to a total of 2,753m but then falls to 2,586m PLN
- Freight profits increasing from 135.6m PLN in 1999 to 214.4m PLN in 2005
- Passenger profits are steady at 262.6m PLN in 1999 and 260.9 m PLN in 2005

The results of Scenario 1C(i) show that all parts i.e. Infrastructure, Freight and Passenger can be privatized. Annex 4.5.2 depicts this scenario.

Comparison of Scenario 1C(i), Scenario 1C(ii) and Scenario 1C(iii)

The differences between these scenarios are shown in Annex 4.5.2, 4.5.3 and 4.5.4 and in Annex 4.2 and again summarized below. The freight and passenger profits

	Scenario 1C(i)	Scenario 1C(ii)	Scenario 1C(iii)
Passenger profit (2005)	261 m	261 m	261 m
Freight profit (2005)	214 m	214 m	214 m
Total profit (2005)	1,125	1,125 m	1,125 m
Infrastructure profit	3.1 bn	1.3 bn	1.7 bn
Passenger access charge	2.3 bn	0.5 bn	0.8 bn
Passenger PSC revenue	3.1 bn	1.3 bn	1.7 bn

Thus the Passenger profits in all 3 cases is the same as decreased access charges are exactly matched by reduced PSC payments.

The only difference is in the method of calculating Infrastructure Charges

Scenario 1C(i) Infrastructure charge:

Assumes Current Cost Net Book Value of 32bn PLN

Capital Costs based on Return On Assets of 10 % or 3.2 bn PLN

Operating costs of 1,860,788,000 PLN

Calculation of 2005 charges :

	Total (PLN 000)	Passenger (PLN 000)	Freight (PLN 000)
Capital costs	3,200,000	1,427,200	1,772,800
Operating cost	1,860,788	886,458	974,330
Total Charge	5,060,788	2,313,658	2,747,130

Note the charges are divided in the ratio 44.6% / 55.4%. This is the ratio that comes from PKP's calculations in "Obrachunek kostow 1995".

Scenario 1C(ii) Infrastructure charge:

In this instance, the freight infrastructure charge remains as calculated above in Scenario 1C(i) i.e. 2,747,130,000 PLN.

Passenger is charged only for "avoidable costs". No data is available but a first estimation is based on the assumption that the passenger ratio is about 50% and the avoidable cost to total costs is also 50% :

Avoidable cost = operating cost X passenger ratio X avoidable costs ratio

i.e. 1,860,788,000 X 50% X 50% = 465,197,000 PLN

Thus the total recovered from passenger and freight is:

	PLN 000	%
Passenger	465,197	14
Freight	2,747,130	86
Total	3,212,327	100

Note the above calculation has been made only to illustrate the central theme point in this scenario and represents the upper limit for the true avoidable cost.

Scenario 1C(iii) Infrastructure charge:

In this instance, the freight infrastructure charge remains as calculated above in Scenario 1C(i) i.e. 2,747,130,000 PLN.

The passenger charge is calculated relative to the freight charge and to gross ton kilometers of both passenger and freight and is for 2005 (in PLN 000):

Passenger charge = Freight charge / Freight gross ton km X Passenger gross ton km

i.e. 2,747,130 / 144,492 X 54,555 = 1,037,215.

Thus the total recovered from passenger and freight is:

	PLN 000	%
Passenger	1,037,215	27
Freight	2,747,130	73
Total	3,784,347	100

Scenario 1D

The only change made to scenario 1C(i) is:

- Infrastructure Total Costs (i.e. Capital Costs + Operating Costs) of 5,060,788,000 are allocated to passenger and freight in the ratios of gross-ton-km i.e.

Calculation of 2005 charges :

	Gross ton-km	%	Charge (PLN 000)
Passenger	54,555	27	1,503,991
Freight	144,492	73	3,556,797
Total	199,046	100	5,060,788

Scenario 1D results

The forecast results of Scenario 1D are :

- Freight loss of 726m PLN in 1999 falling to 595m PLN in 2005
- Passenger profits of 1,124m PLN in 1999 and 1,071m PLN in 2005
- All other results are similar to 1C(i)

The results of scenario 1D show that while Infrastructure and Passenger can be privatized,

Freight cannot be privatized.

Scenario 1E

The only change made to scenario 1C(i) is:

- Investments totaling 66,100m PLN till 2005 [3] rather than 26,862m PLN

Scenario 1E results

The forecast results of scenario 1E are :

- PKP's losses keep growing reaching 3,160m PLN in 2005
- Losses of freight increase from 231m PLN in1999 to 1,172m PLN in 2005
- Losses of Passenger increase from 408m PLN to 2,638m PLN
- Borrowing keeps growing to reach 51.8 bn PLN in 2005

This Scenario 1E is clearly intolerable. Passenger and Freight cannot be privatized but Infrastructure can be privatized. Neither the Public nor the Private Sector would be able to finance the assumed investment. The assumed high level of investment and debt would result in the PKP having the same problems as the Japan National Railways (JNR) before JNR's restructuring / privatization. Thus the PKP would need to be restructured again in 2005.

Conclusion

The basic question under each scenario is what parts (Infrastructure / Passenger / Freight) can or cannot be privatized. The results are summarized in the following table.

Possibility to privatize in 2002

	Passenger	Freight	Infrastructure
Scenario 2A	Impossible	Impossible	Impossible
Scenario 2B	Impossible	Possible	Impossible
Scenario 1A	Impossible	Impossible	Possible
Scenario 1B	Impossible	Possible	Possible
Scenario 1C(i)	Possible	Possible	Possible
Scenario 1C(ii)	Possible	Possible	Impossible
Scenario 1C(iii)	Possible	Possible	Impossible
Scenario 1D	Possible	Impossible	Possible
Scenario 1E	Impossible	Impossible	Impossible

[3] This is the estimated required investment

Annex 4.2 : Summary of results for various forecasts / iterations (in million PLN)

	Scenario 2A	Scenario 2B	Scenario 1A	Scenario 1B	Scenario 1C(i)	Scenario 1C(ii)	Scenario1C(iii)	Scenario 1D	Scenario 1E
Revenues									
passenger	current	up 18%	up 10%	up 18%	up 18%	up 18%	up 18%	up 18%	up 18%
freight	current	up 5%	up 3%	up 5%	up 5%	up 5%	up 5%	up 5%	up 5%
Related business	current	10% in 2005	10% in 2005	10% in 2005	10% in 2005	10% in 2005	10% in 2005	10% in 2005	10% in 2005
Staff number	178,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000
Infra allocation (Pass/freight)	45%/55%	45%/55%	45%/55%	45%/55%	45%/55%	14%/86%	27%/73%	27%/73%	45%/55%
	(PKP's ratio)	(PKP's ratio)	(PKP's ratio)	(PKP's ratio)	(PKP's ratio)	(aviodable cost)	(grss-ton-km)	(grss-ton-km)	(PKP's ratio)
freight - operating cost	yes	yes	yes	yes	yes	yes	yes	yes	yes
freight - capital cost	no	no	yes	yes	yes	yes	yes	yes	yes
passenger - operating cost	yes	yes	yes	yes	yes	avoidable	ratio of freight	yes	yes
passenger - capital cost	no	no	yes	yes	yes	no	no	yes	yes
Investment 1997 - 2005	27,945 m	27,072m	29,846 m	29,846 m	27,072m	27,072m	27,072m	27,072m	66,100 m
Total profits - 1998	169 m	363 m	136 m	336 m	363 m	363 m	363 m	363 m	-276 m
Total profits - 2005	-876m	1,125 m	486 m	794 m	1,125 m	1,125 m	1,125 m	1,125 m	-3,160 m
Freight profits - 1999	1,708 m	1,908 m	9 m	113 m	136 m	136 m	136 m	-726 m	-231 m
Freight profits - 2005	1,242 m	1,987 m	-17 m	107 m	214 m	214 m	214 m	-595 m	-1,172 m
Passenger profits - 1999	-1,589 m	-1,484 m	115 m	224 m	263 m	263 m	263 m	1,124 m	-408 m
Passenger profits - 2005	-2,118 m	-1,459 m	-148 m	36 m	261 m	261 m	261 m	1,071 m	-2,638 m
To/From PSC Fund - 1999	0 m	0 m	3,160 m	3,165 m	3,174 m	1,325 m	1,859 m	3,174 m	2,895 m
To/From PSC Fund - 2005	0 m	0 m	3,026 m	3,071 m	3,148 m	1,299 m	1,871 m	3,148 m	1,748 m
Borrowing @ 31/12/2005	12,555 m	2,586 m	7,991 m	5,984 m	2,586 m	2,586 m	2,586 m	2,586 m	51,764 m
New govt subsidy : revenue	2,000 m	0 m	0 m	0 m	0 m	0 m	0 m	0 m	0 m
New govt subsidy : capital	0 m	2,000 m	2,000 m	2,000 m	2,000 m	2,000 m	2,000 m	2,000 m	2,000 m
Access charges for 2005									
- passenger	750 m	690 m	2,339 m	2,339 m	2,314 m	465 m	1,037 m	1,504 m	2,733 m
- freight	932 m	857 m	2,773 m	2,773 m	2,747 m	2,747 m	2,747 m	3,556 m	3,315 m

Annex 4.3.1 : SCENARIO 2A – PKP Consolidated including Restructuring Agency (Macroeconomic view), 000 PLN

	Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	Cargo transport income	4,298,289	5,025,380	5,032,042	5,038,704	5,045,366	5,052,028	5,058,691	5,065,353	5,072,015	5,078,677	5,085,339
2	Passenger transport income	1,069,226	1,221,580	1,231,209	1,240,837	1,250,466	1,260,095	1,269,723	1,279,352	1,288,980	1,298,609	1,308,238
3	Other income	963,620	1,174,986	1,175,656	1,186,680	1,194,780	1,201,580	1,206,580	1,210,580	1,213,580	1,215,580	1,217,580
	Required New Income				0	0	0	0	0	0	0	0
4	TOTAL	6,331,135	7,421,946	7,438,907	7,466,221	7,490,612	7,513,703	7,534,994	7,555,284	7,574,575	7,592,866	7,611,157
5	Subsidies	1,011,641	963,723	963,723	1,363,723	971,500	971,500	971,500	971,500	571,500	571,500	571,500
6	Total operational incomes (4+5)	7,342,776	8,385,669	8,402,630	8,829,944	8,462,112	8,485,203	8,506,494	8,526,784	8,146,075	8,164,366	8,182,657
7	Salary costs	2,972,685	3,650,001	3,536,452	3,443,638	3,096,920	3,011,534	2,925,147	2,838,611	2,751,774	2,664,687	2,577,629
8	Fuel and energy costs	863,223	1,020,000	1,019,520	1,021,138	1,006,317	1,007,936	1,009,220	1,010,526	1,011,652	1,012,681	1,013,714
9	Material costs	603,663	649,999	654,987	649,300	562,303	556,981	552,264	546,942	541,501	535,661	529,767
10	Maintenance costs	611,959	469,999	469,990	469,949	463,235	462,945	461,971	460,830	459,498	457,940	456,403
11	Other operational costs	1,482,178	1,604,813	1,587,888	1,586,739	1,602,344	1,599,581	1,596,518	1,593,383	1,590,062	1,586,747	1,583,436
12	Redirected costs	0	0	0	0	0	0	0	0	0	0	0
13	Total operational costs	6,533,708	7,394,812	7,268,836	7,170,765	6,731,119	6,638,975	6,545,120	6,450,292	6,354,487	6,257,716	6,160,948
14	Extraordinary profits and losses	0	0	0	0	0	0	0	0	0	0	0
15	Operational income excl. depn.	809,068	990,857	1,133,794	1,659,180	1,730,993	1,846,228	1,961,374	2,076,493	1,791,589	1,906,649	2,021,708
16	Depreciation	851,385	1,132,008	1,193,577	1,280,134	1,357,778	1,460,581	1,578,917	1,713,530	1,847,263	1,989,953	2,157,630
17	Operational costs incl. depn.	7,385,093	8,526,820	8,462,413	8,450,898	8,088,897	8,099,556	8,124,037	8,163,822	8,201,749	8,247,670	8,318,578
18	Net income	-42,317	-141,151	-59,784	379,046	373,215	385,647	382,457	362,962	-55,674	-83,304	-135,921
19	Financial costs	63,905	114,564	163,564	209,584	254,503	310,667	368,594	440,152	523,476	628,030	739,773
20	Profit / loss	-106,222	-255,715	-223,348	169,463	118,712	74,980	13,863	-77,189	-579,150	-711,333	-875,695
1	Net operating income			-223,348	169,463	118,712	74,980	13,863	-77,189	-579,150	-711,333	-875,695
2	Depreciation			1,193,577	1,280,134	1,357,778	1,460,581	1,578,917	1,713,530	1,847,263	1,989,953	2,157,630
3	Investment			2,137,222	2,624,647	2,812,839	2,901,135	3,186,271	3,426,162	3,412,829	3,542,777	3,900,779
4	Investment Subsidy			400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
5	Borrowing in year			766,992	775,051	936,349	965,575	1,193,492	1,389,821	1,744,716	1,864,157	2,218,844
6	Borrowing to date (additional)		700,000	1,466,992	2,242,043	3,178,392	4,143,967	5,337,458	6,727,279	8,471,996	10,336,153	12,554,997
7	Borrowing / Investment - cumul			35.9%	32.4%	32.7%	32.9%	33.9%	35.3%	37.9%	40.1%	42.4%
8												
9	interest rate	6.0%										

Annex 4.3.2 : SCENARIO 2A – PKP Freight Sector, 000 PLN

	Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	Cargo transport income	4,298,289	5,025,380	5,032,042	5,038,704	5,045,366	5,052,028	5,058,691	5,065,353	5,072,015	5,078,677	5,085,339
2	Passenger transport income											
3	Other income											
4	TOTAL	4,298,289	5,025,380	5,032,042	5,038,704	5,045,366	5,052,028	5,058,691	5,065,353	5,072,015	5,078,677	5,085,339
5	Subsidies											
6	Total operational incomes (4+5)	4,298,289	5,025,380	5,032,042	5,038,704	5,045,366	5,052,028	5,058,691	5,065,353	5,072,015	5,078,677	5,085,339
7	Salary costs	409,590	502,914	489,690	476,466	463,242	450,018	436,794	423,571	410,347	397,123	383,899
8	Fuel and energy costs	23,264	27,489	27,523	27,557	27,591	27,625	27,659	27,693	27,727	27,761	27,795
9	Material costs	14,847	15,987	16,007	16,027	16,046	16,066	16,086	16,106	16,125	16,145	16,165
10	Maintenance costs	1,362	1,046	1,047	1,049	1,050	1,051	1,052	1,054	1,055	1,056	1,058
11	Other operational costs	42,107	44,347	44,406	44,465	44,523	44,582	44,641	44,700	44,759	44,817	44,876
12	Redirected costs	2,326,218	2,890,721	2,896,497	2,735,752	2,781,495	2,822,284	2,870,269	2,934,779	3,187,760	3,270,796	3,367,686
13	Total operational costs	2,817,388	3,482,504	3,475,170	3,301,314	3,333,948	3,361,627	3,396,501	3,447,902	3,687,773	3,757,699	3,841,478
14	Extraordinary profits and losses	0	0	0	0	0	0	0	0	0	0	0
15	Operational income excl. depn.	1,480,901	1,542,876	1,556,872	1,737,390	1,711,419	1,690,402	1,662,189	1,617,451	1,384,242	1,320,978	1,243,861
16	Depreciation	3,129	4,102	3,829	3,555	3,282	3,008	2,735	2,461	2,188	1,914	1,641
17	Operational costs incl. depn.	2,820,517	3,486,606	3,478,999	3,304,870	3,337,229	3,364,635	3,399,236	3,450,363	3,689,960	3,759,613	3,843,119
18	Net income	1,477,772	1,538,774	1,553,043	1,733,835	1,708,137	1,687,394	1,659,455	1,614,990	1,382,054	1,319,064	1,242,220
19	Financial costs											
20	Profit / loss	1,477,772	1,538,774	1,553,043	1,733,835	1,708,137	1,687,394	1,659,455	1,614,990	1,382,054	1,319,064	1,242,220

Annex 4.3.3 : SCENARIO 2A – PKP Freight Rolling Stock, 000 PLN

	Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	Cargo transport income											
2	Passenger transport income											
3	Other income											
4	TOTAL	0	0	0	0	0	0	0	0	0	0	0
5	Subsidies											
6	Total operational incomes (4+5)	0	0	0	0	0	0	0	0	0	0	0
7	Salary costs	104,087	127,803	124,442	121,082	117,721	114,361	111,000	107,640	104,279	100,919	97,558
8	Fuel and energy costs	3,753	4,435	4,440	4,446	4,451	4,457	4,462	4,468	4,473	4,479	4,484
9	Material costs	28,254	30,422	30,460	30,497	30,535	30,572	30,610	30,648	30,685	30,723	30,760
10	Maintenance costs	146,281	112,347	112,486	112,625	112,764	112,902	113,041	113,180	113,319	113,458	113,597
11	Other operational costs	10,015	10,548	10,561	10,574	10,587	10,600	10,613	10,626	10,639	10,652	10,665
12	Redirected costs	7,292	6,714	5,586	5,314	6,127	6,047	5,972	5,903	5,838	5,781	5,728
13	Total operational costs	299,681	292,269	287,975	284,538	282,186	278,940	275,699	272,464	269,234	266,012	262,793
14	Extraordinary profits and losses	0	0	0	0	0	0	0	0	0	0	0
15	Operational income excl. depn.	-299,681	-292,269	-287,975	-284,538	-282,186	-278,940	-275,699	-272,464	-269,234	-266,012	-262,793
16	Depreciation	87,236	114,389	108,378	101,709	100,101	93,911	87,757	86,639	81,931	77,223	70,488
17	Operational costs incl. depn.	386,917	406,658	396,353	386,247	382,287	372,851	363,457	359,103	351,165	343,235	333,281
18	Net income	-386,917	-406,658	-396,353	-386,247	-382,287	-372,851	-363,457	-359,103	-351,165	-343,235	-333,281
19	Financial costs			0	497	714	2,409	2,825	3,345	5,443	6,799	8,190
20	Profit / loss	-386,917	-406,658	-396,353	-386,744	-383,001	-375,260	-366,282	-362,448	-356,608	-350,034	-341,471
21	Redirected to Passenger Sector	0	0	0	0	0	0	0	0	0	0	0
22	Redirected to Freight Sector	386,917	406,658	396,353	386,744	383,001	375,260	366,282	362,448	356,608	350,034	341,471
23	Profit / loss after redirected cost	0	0	0	0	0	0	0	0	0	0	0

Annex 4.3.4 : SCENARIO 2A – PKP Passenger Sector, 000 PLN

	Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	Cargo transport income											
2	Passenger transport income	1,069,226	1,221,580	1,231,209	1,240,837	1,250,466	1,260,095	1,269,723	1,279,352	1,288,980	1,298,609	1,308,238
3	Other income											
4	TOTAL	1,069,226	1,221,580	1,231,209	1,240,837	1,250,466	1,260,095	1,269,723	1,279,352	1,288,980	1,298,609	1,308,238
5	Subsidies	338,293	571,500	571,500	571,500	571,500	571,500	571,500	571,500	571,500	571,500	571,500
6	Total operational incomes (4+5)	1,407,519	1,793,080	1,802,709	1,812,337	1,821,966	1,831,595	1,841,223	1,850,852	1,860,480	1,870,109	1,879,738
7	Salary costs	535,889	657,990	640,688	623,387	606,085	588,784	571,482	554,181	536,879	519,578	502,276
8	Fuel and energy costs	31,394	37,096	36,629	36,163	35,696	35,230	34,763	34,297	33,830	33,364	32,897
9	Material costs	19,775	21,293	21,025	20,757	20,490	20,222	19,954	19,686	19,418	19,151	18,883
10	Maintenance costs	1,871	1,437	1,419	1,401	1,383	1,365	1,347	1,329	1,310	1,292	1,274
11	Other operational costs	73,138	77,030	77,637	78,244	78,851	79,459	80,066	80,673	81,280	81,887	82,494
12	Redirected costs	2,324,867	2,786,720	2,796,098	2,611,554	2,664,083	2,714,548	2,775,201	2,849,264	3,145,765	3,242,434	3,357,427
13	Total operational costs	2,986,935	3,581,566	3,573,497	3,371,507	3,406,588	3,439,607	3,482,813	3,539,429	3,818,483	3,897,705	3,995,251
14	Extraordinary profits and losses	0	0	0	0	0	0	0	0	0	0	0
15	Operational income excl. depn.	-1,579,416	-1,788,486	-1,770,788	-1,559,170	-1,584,623	-1,608,012	-1,641,590	-1,688,577	-1,958,003	-2,027,596	-2,115,514
16	Depreciation	4,578	6,003	5,603	5,203	4,802	4,402	4,002	3,602	3,202	2,801	2,401
17	Operational costs incl. depn.	2,991,513	3,587,569	3,579,100	3,376,709	3,411,391	3,444,009	3,486,815	3,543,031	3,821,685	3,900,507	3,997,653
18	Net income	-1,583,994	-1,794,489	-1,776,391	-1,564,372	-1,589,425	-1,612,414	-1,645,592	-1,692,179	-1,961,204	-2,030,398	-2,117,915
19	Financial costs											
20	Profit / loss	-1,583,994	-1,794,489	-1,776,391	-1,564,372	-1,589,425	-1,612,414	-1,645,592	-1,692,179	-1,961,204	-2,030,398	-2,117,915

Annex 4.3.5 : SCENARIO 2A – PKP Passenger Rolling Stock, 000 PLN

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1 Cargo transport income											
2 Passenger transport income											
3 Other income											
4 TOTAL	0	0	0	0	0	0	0	0	0	0	0
5 Subsidies											
6 Total operational incomes (4+5)	0	0	0	0	0	0	0	0	0	0	0
7 Salary costs	67,489	82,866	80,687	78,508	76,329	74,150	71,971	69,792	67,614	65,435	63,256
8 Fuel and energy costs	4,788	5,658	5,587	5,516	5,445	5,373	5,302	5,231	5,160	5,089	5,018
9 Material costs	22,996	24,761	24,450	24,138	23,827	23,515	23,204	22,893	22,581	22,270	21,958
10 Maintenance costs	120,078	92,223	91,063	89,903	88,743	87,584	86,424	85,264	84,104	82,944	81,784
11 Other operational costs	46,850	49,343	48,722	48,102	47,481	46,861	46,240	45,620	44,999	44,378	43,758
12 Redirected costs	4,728	4,353	3,622	3,446	3,973	3,921	3,872	3,827	3,785	3,749	3,714
13 Total operational costs	266,929	259,204	254,131	249,613	245,798	241,404	237,014	232,627	228,243	223,864	219,488
14 Extraordinary profits and losses	0	0	0	0	0	0	0	0	0	0	0
15 Operational income excl. depn.	-266,929	-259,204	-254,131	-249,613	-245,798	-241,404	-237,014	-232,627	-228,243	-223,864	-219,488
16 Depreciation	54,491	71,452	68,439	65,425	62,412	59,398	56,385	53,371	50,358	47,344	44,331
17 Operational costs incl. depn.	321,420	330,656	322,569	315,038	308,210	300,802	293,398	285,998	278,600	271,208	263,819
18 Net income	-321,420	-330,656	-322,569	-315,038	-308,210	-300,802	-293,398	-285,998	-278,600	-271,208	-263,819
19 Financial costs			0	538	971	1,472	1,973	2,546	3,174	3,981	4,809
20 Profit / loss	-321,420	-330,656	-322,569	-315,576	-309,181	-302,274	-295,371	-288,544	-281,775	-275,189	-268,628
21 Redirected to Passenger Sector	321,420	330,656	322,569	315,576	309,181	302,274	295,371	288,544	281,775	275,189	268,628
22 Redirected to Freight Sector	0	0	0	0	0	0	0	0	0	0	0
23 Profit / loss after redirected costs	0	0	0	0	0	0	0	0	0	0	0

Annex 4.3.6 : SCENARIO 2A – PKP Traction & Back-up Sector, 000 PLN

	Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	Cargo transport income											
2	Passenger transport income											
3	Other income											
4	TOTAL	0	0	0	0	0	0	0	0	0	0	0
5	Subsidies											
6	Total operational incomes (4+5)	0	0	0	0	0	0	0	0	0	0	0
7	Salary costs	751,822	923,121	898,848	874,575	850,302	826,029	801,756	777,483	753,210	728,937	704,663
8	Fuel and energy costs	632,066	746,861	749,139	751,416	753,694	755,972	758,250	760,527	762,805	765,083	767,360
9	Material costs	101,270	109,044	109,377	109,709	110,042	110,374	110,707	111,039	111,372	111,704	112,037
10	Maintenance costs	148,411	113,983	114,331	114,678	115,026	115,373	115,721	116,069	116,416	116,764	117,112
11	Other operational costs	131,815	138,829	139,252	139,676	140,099	140,523	140,946	141,369	141,793	142,216	142,639
12	Redirected costs	52,669	48,495	40,347	38,385	44,258	43,676	43,137	42,635	42,166	41,759	41,375
13	Total operational costs	1,818,054	2,080,333	2,051,293	2,028,440	2,013,420	1,991,947	1,970,516	1,949,122	1,927,762	1,906,462	1,885,187
14	Extraordinary profits and losses	0	0	0	0	0	0	0	0	0	0	0
15	Operational income excl. depn.	-1,818,054	-2,080,333	-2,051,293	-2,028,440	-2,013,420	-1,991,947	-1,970,516	-1,949,122	-1,927,762	-1,906,462	-1,885,187
16	Depreciation	108,529	142,309	204,964	275,165	353,336	440,273	536,852	644,037	754,055	872,907	1,018,709
17	Operational costs incl. depn.	1,926,582	2,222,642	2,256,257	2,303,605	2,366,756	2,432,220	2,507,368	2,593,159	2,681,816	2,779,370	2,903,896
18	Net income	-1,926,582	-2,222,642	-2,256,257	-2,303,605	-2,366,756	-2,432,220	-2,507,368	-2,593,159	-2,681,816	-2,779,370	-2,903,896
19	Financial costs			0	22,191	42,144	67,165	94,656	128,593	168,895	220,363	277,048
20	Profit / loss	-1,926,582	-2,222,642	-2,256,257	-2,325,796	-2,408,900	-2,499,385	-2,602,024	-2,721,752	-2,850,712	-2,999,733	-3,180,944
21	Redirected to Passenger Sector	964,901	1,090,859	1,106,362	1,143,114	1,187,412	1,235,440	1,289,915	1,353,579	1,421,657	1,500,284	1,596,173
22	Redirected to Freight Sector	961,681	1,131,783	1,149,895	1,182,682	1,221,488	1,263,945	1,312,109	1,368,173	1,429,054	1,499,449	1,584,771
32	Profit / loss after redirected cost	0	0	0	0	0	0	0	0	0	0	0

Annex 4.3.7 : SCENARIO 2A – PKP Infrastructure Sector (road + non-road), 000 PLN

	Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	Cargo transport income	0	0	0	0	0	0	0	0	0	0	0
2	Passenger transport income	0	0	0	0	0	0	0	0	0	0	0
3	Other income	0	0	0	0	0	0	0	0	0	0	0
4	TOTAL	0	0	0	0	0	0	0	0	0	0	0
5	Subsidies	365,500	0	0	0	0	0	0	0	0	0	0
6	Total operational incomes (4+5)	365,500	0	0	0	0	0	0	0	0	0	0
7	Salary costs	485,156	595,697	580,033	564,370	548,706	533,043	517,379	501,715	486,052	470,388	454,725
8	Fuel and energy costs	30,142	35,617	34,856	34,095	33,334	32,573	31,812	31,051	30,290	29,529	28,768
9	Material costs	233,367	251,280	245,911	240,543	235,174	229,806	224,437	219,069	213,700	208,332	202,963
10	Maintenance costs	68,808	52,846	51,717	50,588	49,459	48,330	47,201	46,072	44,943	43,814	42,685
11	Other operational costs	159,063	167,527	163,948	160,369	156,790	153,210	149,631	146,052	142,473	138,894	135,315
12	Rdirected costs	33,988	31,294	26,036	24,770	28,560	28,185	27,837	27,512	27,210	26,947	26,700
13	Total operational costs	1,010,524	1,134,261	1,102,502	1,074,735	1,052,023	1,025,147	998,298	971,472	944,669	917,904	891,156
14	Extraordinary profits and losses	0	0	0	0	0	0	0	0	0	0	0
15	Operational income excl. depn.	-645,024	-1,134,261	-1,102,502	-1,074,735	-1,052,023	-1,025,147	-998,298	-971,472	-944,669	-917,904	-891,156
16	Depreciation	406,303	532,774	536,502	548,471	560,440	572,409	584,778	597,147	609,516	621,885	634,254
17	Operational costs incl. depn.	1,416,827	1,667,035	1,639,004	1,623,206	1,612,463	1,597,556	1,583,076	1,568,619	1,554,185	1,539,790	1,525,410
18	Net income	-1,051,327	-1,667,035	-1,639,004	-1,623,206	-1,612,463	-1,597,556	-1,583,076	-1,568,619	-1,554,185	-1,539,790	-1,525,410
19	Financial costs	0	0	0	13,479	28,328	44,956	61,582	80,732	101,708	128,469	156,061
20	Profit / loss	-1,051,327	-1,667,035	-1,639,004	-1,636,685	-1,640,792	-1,642,512	-1,644,658	-1,649,351	-1,655,893	-1,668,259	-1,681,471
21	Redirected to Passenger Sector	468,892	743,498	730,996	729,961	731,793	732,560	733,517	735,611	738,528	744,044	749,936
22	Redirected to Freight Sector	582,435	923,537	908,008	906,723	908,999	909,952	911,140	913,741	917,365	924,216	931,535
23	Profit / loss after redirected cost	0	0	0	0	0	0	0	0	0	0	0