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**RAILWAY INFRASTRUCTURE FINANCING AND CHARGING SYSTEM
IN POLAND**

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Introduction

Financing of transport infrastructure is the field of economics which for many years has challenged economists, public administration and politicians to find an efficient and effective mechanism for investing in transport infrastructure, namely, for establishing principles of financing its construction, reconstruction, renovation, maintenance and management. So far none of the developed countries has managed to find solutions which would guarantee sufficient and stable financial means for achieving these goals.

In the European Union both railway and road transport aim at introducing the '*user pays*' principle, which assumes that infrastructure renovation and maintenance costs as well as external costs of transport should be paid for directly by the users. One of the main problems which arises when implementing the concept of short-term social marginal cost pricing is the contradiction between public and private interests. It is a result of macroeconomic benefits of using transport infrastructure financed from state budget when its users are private entities acting in their own interest and oriented at achieving their own profits [1].

The accession of Poland to the European Union creates new opportunities as far as the utilization of EU structural funds. It also opens up enormous possibilities for the modernization of existing infrastructure projects and the construction of new ones. In the new financial perspective (2007–2013) transport investments will be financed under

The Operational Programme for Infrastructure and Environment. The Programme, with the overall budget, including national contribution, amounting to EUR 37.6 billion, is the biggest operational programme that the European Union has ever launched. The funds have mainly been allocated in the implementation of transport projects – EUR 19.07 billion, including EUR 16.13 billion from the Cohesion Fund (CF) and EUR 2.94 billion from the European Regional Development Fund (ERDF). The biggest beneficiaries are the General Directorate for National Roads and Motorways (GDDKiA) and the PKP Polish Railway Lines SA (*PKP Polskie Linie Kolejowe SA, PKP PLK SA*).

Poland, like the any other country realizing and planning infrastructural undertakings on a large scale, has various problems regarding transport infrastructure financing. Since 2006 a number of fundamental changes with regard to railway transport infrastructure funding have been introduced in Poland. These changes mainly aim at ensuring competitive rates of access to railway infrastructure. In this paper the most important issues connected with financing development of railway infrastructure in Poland as well as problems with defining the level of rates of access to infrastructure have been presented.

1. Legal background

Polish railway network managed by PKP PLK SA covers about 18,900 kilometers of railway lines. Railway network is divided into lines of national and local importance (11,530 km and 7,370 km respectively).

The rail infrastructure funding system in Poland is based on three basic legal acts:

- 1) Railway Act of 28 March 2003 on railway transport,
- 2) Act of 16 December 2005 on financing of inland transport infrastructure,
- 3) Act of 16 December 2005 on establishment of Railway Fund.

In accordance with the Act on railway transport (Article 38), the following expenditures are financed from the state budget:

- investments resulting from international contracts and agreements,
- investments, repairs, operation and maintenance of railway lines of purely defensive character,
- costs of preparing and realization of investments including railway lines of national importance.

These tasks may also be financed from the funds of infrastructure manager and local self-government units or from other sources (e.g. the EU assistance funds).

A significant change, which was set forth in Article 38 of the Act of 16 December 2005 on amendment to the Act on railway transport and amendment to other Acts, was the introduction of the possibility of financing railway infrastructure repairs and maintenance with the funds from the state budget and Railway Fund. For this purpose it

was necessary for the Minister of Transport to conclude an agreement with the railway infrastructure manager for a period not less than 3 years. In accordance with the subsequent amendment to the Railway Act of 22 July 2006 (Article 33 item 5a), by setting unit rates of the basic fare the manager reduces by expected outlays from the above-mentioned sources allocated to railway infrastructure repairs and maintenance of the total planned cost of railway infrastructure access.

The basis of establishing the Railway Fund was the idea of ensuring an additional source of financing, mainly for the local railway infrastructure, which cannot be financed from the state budget or the EU funds. This Fund, managed by the BGK (*Bank Gospodarstwa Krajowego*), collects resources and finances tasks involving the preparation, construction and reconstruction of railways, repairs and maintenance of the railway lines as well as liquidation of obsolete rail routes. The main source of the Fund's financing are proceeds amounting to 20 percent of the so-called fuel surcharge collected on engine fuels introduced on the domestic market and ushered in by the Act on Toll Motorways and the Act on National Road Fund. During the first years of Railway Fund activities, a part of its income will be allocated to the coverage of income lost by railway operators due to statutory tariff reduction in national domestic passenger transport in the years 2002–2003.

According to Article 5 of the Act of 16 December 2005 on inland transport infrastructure financing, the funds to realize tasks in such areas as construction, reconstruction, repairs, maintenance, railway infrastructure protection and its management, which may be financed by the relevant minister, come from a part of proceeds planned for the given year from the excise tax on engine fuels [2].

Apart from the aforementioned changes, in Poland there still exists a lack of cohesion between the goals of transport policy defined by the parliament and government and solutions related to sources and amounts designated to public railway infrastructure financing. The rail transport, given preference as according to the transport policy in Poland as well as in the whole European Union, lacks funds for its development and even for keeping up the existing infrastructure at the required technical and organizational level. It is the effect of the practice used for many years to keep financial assistance from state budget and other sources earmarked for transport infrastructure managers at a very low level. As a result the railway infrastructure manager (PKP PLK SA) has to adapt the scope of maintenance works to changing revenues obtained from railway carriers and possibly from selling additional services. The effect of PKP PLK SA indebtedness (net financial loss in 2005 amounted to PLN 959 million, in 2006 – PLN 134 million and in 2007 – PLN 63 million [3]) resulting from state budget financing is progressive degradation of railway lines technical condition, leading not only to deterioration of transport services level due to lowering the trains speed, but also a threat to railway transport safety.

2. Railway infrastructure investments

For the last fifteen years in Poland several government and programme documents in which special attention was paid to the needs of transport infrastructure development and modernization have been elaborated. Nevertheless, improvement of the state of infrastructure and adjusting its parameters to the requirements of international agreements is very slow, mainly due to the lack of sufficient financial means, including stable support from the state budget. Total shortage of financial resources allocated in railway infrastructure in the years 1989–2002 was estimated at around PLN 11.3 billion. At the same time in the years 1998–2002 investment outlays fell three times; average annual expenditures on infrastructural investments (renovations) were at the level of PLN 790 million. As the data in **Tab. 1** show, gradual growth of investment outlays in the next five years (2003–2007) followed, which allowed doubling average annual expenditures to the amount of PLN 1.4 billion. However, on the basis of PKP PLK SA calculations, in order to carry out the investments planned until 2020, annual expenditures should amount to more than PLN 5 billion, which is several times more than so far.

Tab. 1 Volume of outlays on PKP PLK SA investment activity in 2003–2008 (million PLN)

Financing resource	2003	2004	2005	2006	2007	2008 (plan)
Own resources	281	185	305	258	231	282
State subsidy	191	275	204	601	891	1,818
EU funds	279	272	280	473	1,533	1,288
EBI loan	105	261	157	35	90	126
Railway Fund	-	-	-	8	211	395
Others	-	7,0	-	0.8	20	-
Total	864	1,000	946	1,376	2,980	3,909

Source: based on PKP PLK SA data.

In 2007 PKP PLK SA allocated almost PLN 3.0 billion in investments, which represents an almost two-fold increase over the previous year. There was a growth of almost 220 percent in funds from the European Union. More than half of investment outlays came from the EU funds (CF and ERDF) and around 36 percent were secured by budget resources and from the Railway Fund, which in 2006 were mainly directed at reduction of liabilities of losses from reduced tariffs in passenger transport. The analysis of investment outlays in railway infrastructure proves that its structure changes every year. The share of budget funds was highest in 2001 (68 percent) and lowest in the years 2003–2005 (below 25 percent). These changes depend on real transfer of public funds stipulated in The Budget Act, progress in signing agreements on execution of investments co-financed from the EU funds and absorption of these funds.

Although since 2006 we have observed a significant increase in the size of investment outlays on railway infrastructure development, the wealth of state budget in Poland does not and in the nearest years will not allow for allocating in the development of railway infrastructure such sums as those targeted to this aim in other EU member countries.

Before 2006 in Poland legal regulations which would allow planning investment outlays to maintain and develop infrastructure for periods longer than one year had not been implemented. Annual decisions concerning the state budget, in which amounts allocated in the support of the railway infrastructure state manager are set separately, are decisive.

In the Budget Act for 2008 PLN 1.8 billion, including earmarked subsidies to PKP PLK SA to finance railway infrastructure repair and maintenance costs amounting to PLN 0.5 billion (i.e. 131.6 percent of the subsidy level provided for in the Budget Act for 2007) and subsidies to PKP PLK SA to perform investment tasks on railway lines of national importance and to co-finance projects realized from EU funds amounting to PLN 1.2 billion (i.e. 189.6 percent) were envisaged. Also PLN 0.4 billion from the Railway Fund were allocated in PKP PLK SA and SKM (Fast Urban Railway) investments.

In 2006 for the first time a three-year contract (i.e. for the shortest period provided for in the Act on inland transport infrastructure financing) specifying the amount of funds allocated in finance costs of railway infrastructure repairs and maintenance was concluded with the infrastructure manager. Besides, the first one-year facility financing Programme for the use of Railway Fund (prepared for the period from one to six years) was drawn up. The use of the shortest possible periods in both cases was caused by lack of experience in efficient use of new financial and organizational instruments.

In the future it will be necessary to use solutions implemented abroad, e.g. in Germany where the parliament in a binding manner determines long-term plans of financing infrastructural projects. The provision on state responsibility for development and maintenance of railway network was included in Article 87e of Constitution of the Federal Republic of Germany (*Grundgesetz*, GG). There are eleven legal acts regulating the issue of funding infrastructure from public funds.

It is also worth noting that in previously and presently realized 'Programme of PKP PLK SA railway network reconstruction for the years 2007–2013', the support from public finance was reduced to carrying out projects located on lines of international importance (at present covered by AGC/AGTC agreements) within Pan-European corridors and some chosen lines between the biggest city agglomerations. At the same time reconstruction investments (maintenance and repairs) necessary to restore technical parameters on lines outside the corridors, estimated at some PLN 2.5 billion annually, were in the last decade almost ten times higher than real outlays incurred in connection with this goal. Degradation of railway lines which strengthen streams of traffic on main circulation routes may have an adverse impact on the future volume of carriage on routes

being reconstructed at present, which in turn will lead to the increase (of the already high) unit costs and transportation rates.

Providing a stable state policy related to railway infrastructure funding is the key to competitive access fees.

3. Changes in the Polish rail infrastructure charging system

Significant diversity is a characteristic feature of the fees charged for access to the European railway infrastructure [4]. It results from the differences in railway access cost recovery (e.g. MC, MC+, FC, FC-) and the pricing calculation models used by infrastructure managers (see Table 2). Marginal cost-based charges cover 2-5 percent of railway infrastructure cost in Scandinavian countries in comparison to approx. 60 percent in Germany and 90 percent in Hungary, Baltic countries and Poland, which use full costs model.

Tab. 2 Rail charging principles applying in different countries

Model of costs covering	Infrastructure Manager	Country
FC- Full costs after subsidies	Infrabel	Belgium
	DB Netz	Germany
	PKP PLK SA	Poland
	Mav Co	Hungary
FC Full costs	LDZ	Latvia
MC Marginal costs with mark-ups	RFF	France
	Bahnverket	Sweden
	Network Rail	Great Britain

Source: based on EIM, CER (2008).

Since 1999, when Network Statement was prepared for the first time in Poland and the first price list of charges for the use of railway infrastructure managed by PKP PLK SA was published, the access charging principles have been changed several times.

Before 2005 unit rates of basic access charges (per train-km) were determined for track sections and depended on both historical costs and the level of operating performance in each section. Access charges to railway infrastructure should have covered the total (maintenance and traffic operation) costs as well as justified infrastructure manager's costs (administration and additional). The underlying drawback of setting fees depending on fixed and variable costs split into different train categories was multiple unit fee range in the same sections. Moreover, these fees were in fact used for outside the PKP Group carriers who used the average network fees.

In 2005 Poland had the second-highest in Europe (after Slovakia) charges for access to railway infrastructure in freight transportation [5]. Aiming at changing this situation, at the turn of 2005/2006 the parliament of Poland accepted a package of rail acts, which included new principles of infrastructure financing. In accordance with Act of 16 December 2005 on inland transport infrastructure financing (Article 33, item 9a, point 1), in case of an increase in the expected outlays on railway infrastructure maintenance and repairs, the manager is entitled to introduce changes (reduction) of basic fee unit rates at any time. In mid-2006 a new decree concerning the access to and use of railway infrastructure conditions [6] was introduced.

As a result of these changes, the level of unit fees included in the 2006/2007 Price List, was defined depending on the standard of the railway line section and train category, and taking into account planned train-kilometers. For the first time fees were calculated in the way that the revenues from the fees would allow for covering the costs that PKP PLK SA would face as a result of assigning train paths. Average network rates were withdrawn. Instead, additional charges (including access to and use of passenger stations as well as access to transshipping terminals) and a reservation charge for the unused volume of granted traffic capacity were introduced.

The unit rate was separately calculated for passenger and freight trains on the basis of two components: one, resulting from the planned fixed costs depending on technical speed limit on the line section, and two, variable costs depending on timetable speed for qualified passenger trains and total gross weight for other train categories.

The assumptions made in 2005 and 2006 concerning lowering unit rates in the coming years provided for a different level of financing from the state budget of the infrastructure manager activity than it was envisaged in the 2007 Budget Act and the long-term contract between the Government (Ministry of Transport) and PKP PLK SA. Despite access charges reduction for some train categories in the 2006/2007 Price List, operators in Poland still cover more than 90 percent of total railway network maintenance, which is more than in any other EU country, except for Lithuania and Latvia.

In April 2007 a regulation, which one more time changed the way of calculating access charges, was introduced [7]. Among others, the timetable speed, which had been introduced in the previous regulation as one of the cost elements determining the level of access charges, was abandoned, which resulted in eliminating the need for separate calculating rates for freight and passenger trains. Despite new additional charges and changes in the way of collecting reservation charges, in the 2007/2008 Timetable there was a reduction of fares for most lines.

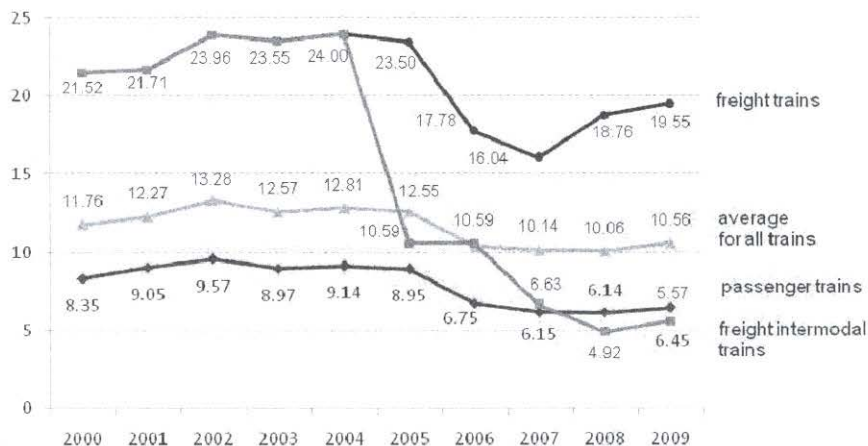


Fig. 1 Average unit rates for different train categories in Poland in 2000-2009

Source: based on Price Lists 2000-2009, PKP PLK SA.

One of the principles governing the existing railway infrastructure access charging system is that unit costs increase along with the increase of line or section standard. In practice it leads to the situations when modernization of railway line may lead to significant reduction of the carriage offer along the given line. The Skierniewice – Lodz route, for which unit access prices in the current timetable have increased three-fold, provides such an example. As a result, annual access costs on this line, provided keeping the planned number of trains, would increase by almost PLN 11.0 million, which amounts to the equivalent of total charges for all regional trains running in the Lodz voivodeship in the previous timetable.

The cause of such disproportions should be perceived in adopting in the system of access rate calculation such a parameter as maximum technical speed on line section, which trains practically do not use. Applying the above-mentioned rules when calculating rates discredits the sense of rail lines modernization to the level exceeding 120 km/h. Since standards were raised, carriage on regional lines has been getting more loss-making every year. It also leads to 'double' railway infrastructure financing through local government, which in the first place participate in raising the line standards and then have to pay a higher (than before the modernization) charge for rendering it operational to passenger trains. On the other hand lower rates often result from reducing the speed on successive sections.

Continual changes in the level and structure of charges for the use of railway lines in Poland to a large extent result from principles of railway infrastructure manager's financing, and particularly from unstable and insufficient level of financing from the state budget.

4. Conclusion

Over the past fifty years trends in transport investment funding have changed and become more complex [8]. For the last decade in Poland efficient methods railway infrastructure funding have been searched for. Regulations introduced in the years 2006–2008 have created bases for increasing outlays on transport infrastructure maintenance and development. Nevertheless, the carried out analysis of changes with reference to setting rates for access to infrastructure shows that this process to a large extent was carried out by a trial and error method, without taking into account the socio-economic effects of the introduced regulations. The system of transport infrastructure funding in Poland continues to be characterized by such features as:

- predominance of political over economic goals when planning and managing infrastructural investments,
- lack of cohesion between ecological and economic criteria when evaluating branch investment projects (a permanent conflict between road and rail projects),
- low level of state subsidies.

The lack of long-term national and regional policy as well as state guarantees ensuring the continuity of transferring declared budget funds, remains the main barrier in the railway infrastructure development process in Poland.

Notes

- [1] In recent years this issue was a subject of numerous papers, conferences and research projects, funded by European Commission (5th and 6th EU Framework Programmes). See: Nash, Ch. and Matthews, B. (eds) (2005); Rietveld, P., Bruinsma, F.R. and Koetse, M.J. (2007), pp. 202-204; de Palma, A., Lindsey, R. (2007), pp. 29-57.
- [2] Excise is a form of additional tax collected by tax authorities on sales of specified goods and persons. Excise tax should not be identified with fuel fee, a part of which is paid to the Railway Fund.
- [3] At the beginning of 2007 1 EUR was worth ca. 3.6 PLN.
- [4] See: OECD, ITF (2008); EIM, CER (2008).
- [5] The average access charge for 1000 tones train amounted to about 6 EUR per train-km.
- [6] Decree of Minister of Transport of 30 May 2006 on conditions concerning access and use of railway infrastructure, Dz.U. No. 107, item 737 as amended.
- [7] Decree of Minister of Transport of 25 April 2007 amended Decree on conditions concerning access and use of railway infrastructure, Dz.U. No. 81, item 552.
- [8] See Molnar, E. (2003).

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Resumé

FINANCOVÁNÍ A ZPOPLATNĚNÍ ŽELEZNIČNÍ INFRASTRUKTURY V POLSKU

Jana PIERIEGUD

Existuje celá řada problémů spojených s financováním dopravní infrastruktury v Polsku, stejně jako v dalších zemích, které plánují a realizují infrastrukturální činnost ve velkém rozsahu. Změny ve způsobu financování pozemní dopravní infrastruktury, které byly zavedeny v roce 2006, vytvořily základní rámec pro navýšení výdajů na opravy, údržbu a rozvoj železniční infrastruktury. Klíčová role v tomto procesu patří státním garancím, které zajišťují kontinuitu v realizaci schválených transferů z rozpočtových fondů.

Jana Pieriegud:

Článek obsahuje analýzu investičních potřeb do železniční infrastruktury společně s analýzou rozsahu a struktury výdajů v Polsku v letech 2003 až 2008. Navíc jsou prezentovány hlavní aspekty týkající se kalkulace ceny za použití železniční dopravní cesty. V závěru je poukázáno na problémy a překážky týkající se dalšího rozvoje a údržby železniční infrastruktury.

Summary

RAILWAY INFRASTRUCTURE FINANCING AND CHARGING SYSTEM IN POLAND

Jana PIERIEGUD

There are various problems regarding the financing of transport infrastructure in Poland, like in any other country, which is planning and realizing infrastructural undertakings on a large scale. Changes in the mechanisms of inland transport infrastructure funding, which have been introduced in 2006, created frameworks for increasing expenditures for the maintenance and development of railway infrastructure. The key role in this process belongs to the state guarantees ensuring the continuity of transferring declared budget funds.

The paper includes an analysis of railway infrastructure investment needs as well as the volume and structure of outlays in Poland in 2003-2008. Moreover, the main issues connected with calculating access charges are being presented. In the conclusion the barriers in the process of railway infrastructure maintenance and development are summed up.

Zusammenfassung

FINANZIERUNG UND PREISSYSTEM DER BAHNINFRASTRUKTUR IN POLEN

Jana PIERIEGUD

In Polen, genauso wie in jedem anderen Land, ist die Durchführung von infrastrukturellen Investitionen mit zahlreichen Problemen im Finanzierungsbereich verbunden. Im Jahre 2006 eingeführte Änderungen in den Finanzierungsrahmenbedingungen im Binnenverkehr ermöglichten ein Wachstum der Ausgaben für Unterhaltung und Sanierung der Bahnstrecken. Die Schlüsselposition in diesem Prozess spielt die Regierung, die eine langfristige Finanzierung gewährleistet.

Der Artikel enthält eine Analyse der Investitionsbedürfnisse der polnischen Bahninfrastruktur, sowie die Menge und Struktur der tatsächlichen Ausgaben in 2003-2008. Zudem werden die Kernpunkte zum Thema der Infrastrukturbenutzungsgebühren präsentiert. Im Fazit werden die Beschränkungen von Unterhaltung und Sanierung der Bahninfrastruktur analysiert.