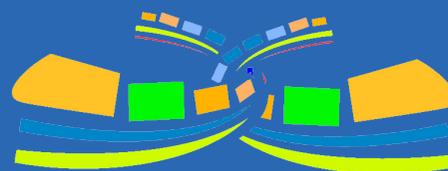
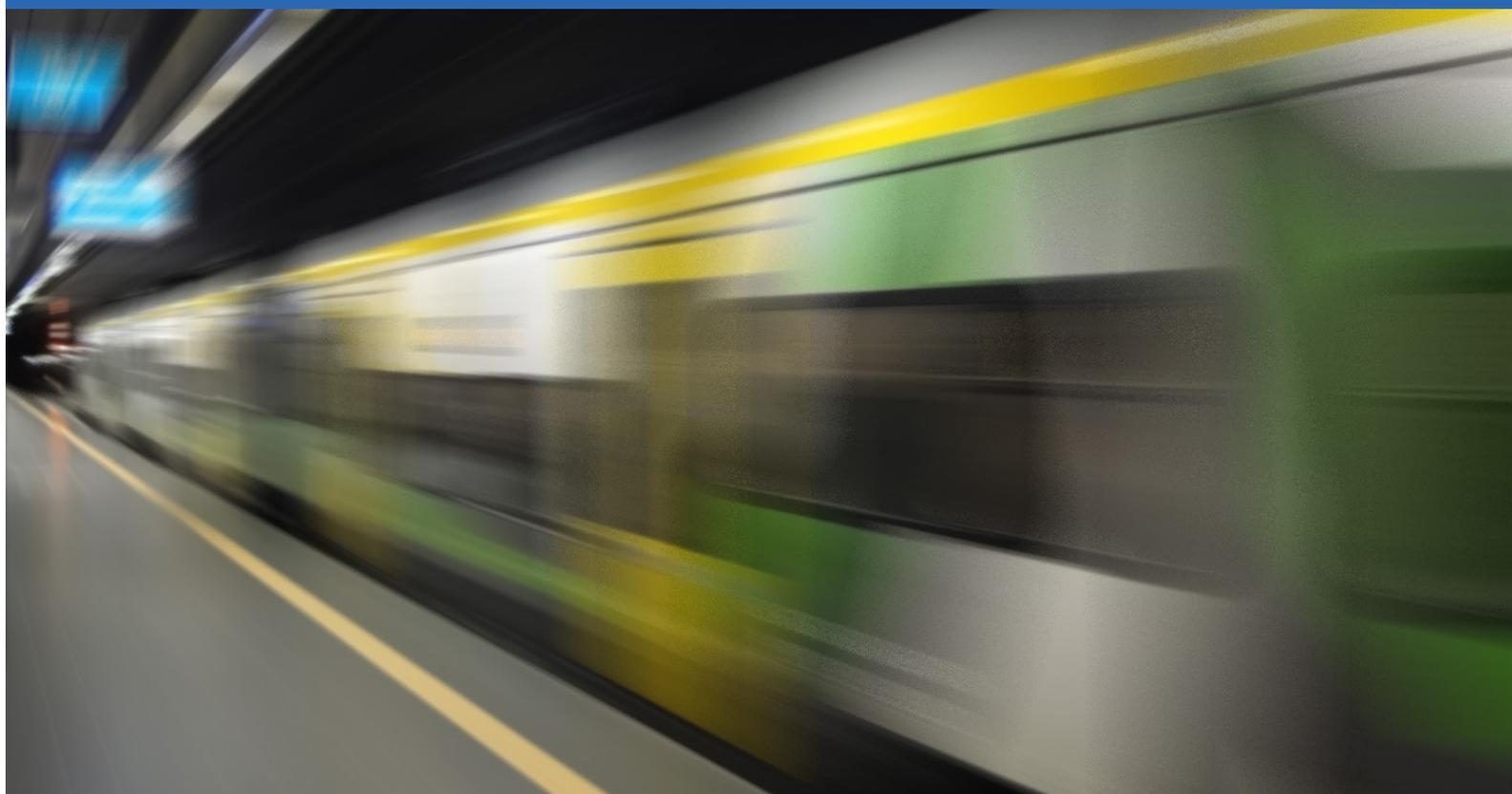




URZĄD TRANSPORTU KOLEJOWEGO

Polish Railways in 2012 – market operation and traffic safety



PRZYJAZNY REGULATOR RYNKU KOLEJOWEGO

Introduction

Dear Sirs,

I have the honor of presenting you the annual report prepared by the Office of Rail Transportation on the Polish railway market operations. This year the report is supplemented by the assessment of railway traffic safety. This document is a precise diagnosis reflecting the current condition as well as the perspectives for the development of the railway market in Poland.

The data included in this study was submitted by licensed railway carriers, infrastructure managers and organizers of public railway transport, who are obliged to systematically provide information on the operation of the railway market to the President of the Office of Rail Transportation for the purpose of control and monitoring. I would like to take the opportunity to thank the railway market participants for their cooperation with the Office, which allows us to determine the barriers and chances for the development of Polish railway more accurately and support the increase of competitiveness as well as the improvement of railway transport safety.

The present document depicts the railway market situation in Poland in 2012 taking under consideration the changes that occurred in comparison to the previous periods. The analysis presented herein has dynamic character, illustrates the tendencies and mutual dependencies between various phenomena and thus allows for a better understanding of the market operation.

The study defines the characteristics and state of railway transport market in Poland – the analysis referred to the main issues regarding transport and granting access to railway infrastructure, as well as the factors regarding railway safety, including in particular the following questions:

- structure and size of passenger and freight transport,
- railway infrastructure market, including the effectiveness indicators, the analysis of access charges and railway infrastructure quality and availability assessment,
- the role of market regulator and the scope of regulatory decisions concerning the access to the railway infrastructure,
- passenger and freight transport, railway infrastructure and competition between transport modes in the European Union,
- railway occurrences in railway traffic, including their tendencies and conditionings,
- supervision over railway market units.

I hope that the document we are presenting to you will constitute a valuable tool to support decisions which will serve the development of the whole railway market in Poland.

I wish you a pleasant reading.



Krzysztof Dyl

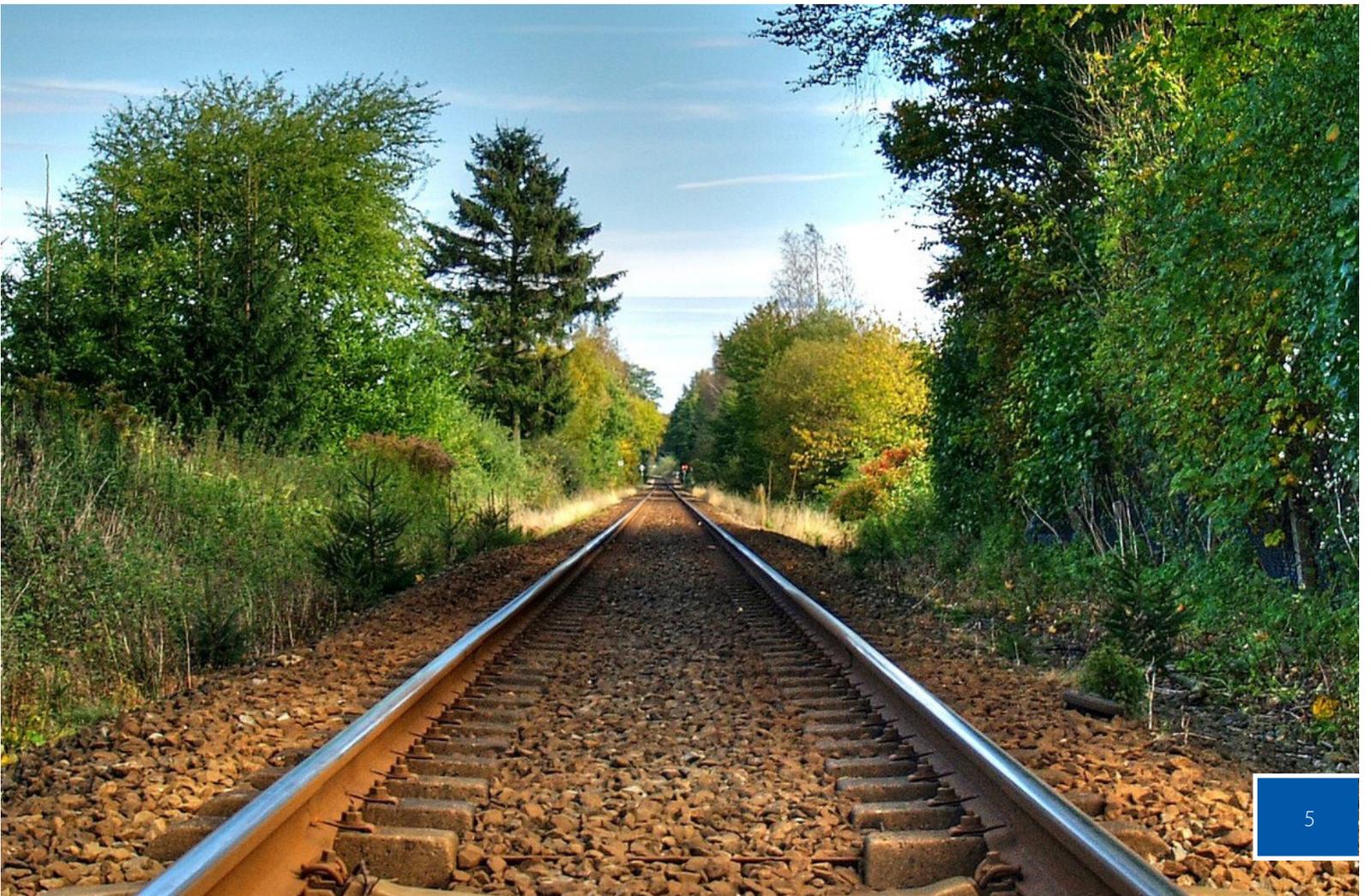


Krzysztof Dyl
President of the Office of Rail
Transportation

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PART I

Assessment Of The Operation
Of Railway Transport Market In
Poland In 2012





1. The diagnosis of the state and characteristic features of railway transport market in 2012

The year 2012 was filled with events of utmost importance for the Polish economy, events that also had direct influence on the railway market and its characteristics.

Important events referring to the railway market in 2012 were broadly commented not only by the railway environment, but also in media and by the public opinion. These events include the tragic, frequently reported on accident near Szczekociny, the effects of long standing preparations for EURO 2012, and the chaos after the takeover of most connections from Przewozy Regionalne by Koleje Śląskie in the śląskie province, described often enough in the media as well.

In 2012 the railway transport suffered more than ever from the competition of the road transport due to the fact that many additional roads have been put into operation. Looking back in time, in spring 2007, when it was announced that Poland

would host the European Football Championship, we opened a five-year preparation period. Simultaneously, we were able to profit from the structural funds of the European Union available within the new programming period, which allowed for long-term investment plans related to the preparation of the country for the great sports event. The plans included modernization of both road and railway infrastructure. According to the UEFA requirements, the railway travel time between the cities where the championship games were supposed to take place should not exceed 4 hours. The largest infrastructure manager – PKP Polskie Linie Kolejowe – was planning to close the investments which would allow for reduction of travel time from Warsaw to Gdańsk to 2,5 hours, and from Poznań to Wrocław to 1 hour in

2012. Unfortunately, the delays in the realization of this plan were disproportionate in comparison to the delays in the construction of road infrastructure. The modernization of railway lines turned out to be a complicated and long-lasting process, which not only requires vast expenditures, but also causes significant troubles for passengers. It should be stressed that when road investments are carried out the car traffic takes place within the existing routes, and the highways and express roads are mostly built in new corridors, which does not disturb the traffic fluidity. During the modernization of a railway line this fluidity is disturbed, which extends the travel time and directing trains to diversions which are less favourable for passengers rarely turn out to be good. An example of such trouble for passengers is the modernization of line E65, still in progress, due to which the trains from Gdańsk, Gdynia and Sopot cities (Tri-City) arrive in Warsaw in 7,5 hours, whereas the same route by car lasts not much more than 4 hours. The disproportion in the advancement of road investments and railway investments has negative impact also on the balance in freight transport. The discussions on the state of preparation of railways to the European Championship intensified also three months before the event and after the tragic accident near Szczekociny, questioning the state of railway safety in the eyes of the public opinion.

Despite the lack of completion of the key infrastructure and rolling stock investments, rail passed the test in respect of transport organization during the EURO 2012 championship. The number of passengers in June 2012 was by 8% higher in comparison to the previous year. The preparation of rail to the role of an important means of transport for thousands of supporters moving around Poland was examined before the event, i.a. as a part of

controls conducted directly by the employees of the Office of Rail Transportation (Urząd Transportu Kolejowego - UTK). The new and renovated railway stations where information offices were opened and volunteers

were hired to help the visitors also played an important role in the communication. The railway market, including passenger railway carriers, took the opportunity to promote their services (e.g. PKP Intercity through their railway engines painted in national colours of the championship participants). The trains ran according to time schedules taking the supporters directly to the games (in case of Warsaw i.a. to the new station Warsaw Stadium, situated in direct vicinity of the National Stadium) or to the airport (to the railway station opened in June 2012 on the Chopin Airport in Warsaw).

Among the railway events which occurred in 2012 one of the most important ones was the failed expansion of Koleje Śląskie – a railway carrier appointed by the self-government of the Śląskie province - in December 2012. Since 9 December 2012 the aforementioned railway carrier took over from Przewozy Regionalne the operation of all regional connections in the area of the Śląskie province. In the first days of the new timetables numerous trains were called off or delayed, moreover, on many

routes substitute communication was introduced. In this situation, the authorities of the province concluded an agreement with Przewozy Regionalne on its reintroduction and return to the operation of these railway connections.

Taking under consideration the aforementioned events of 2012, in order to diagnose the state of the railway market in this period, we should define the place and role of this market in the international environment, present its main actors and characterize the services they provide.

When describing the role and place of the Polish railway market in Europe it is important to present the factors which prove its appeal. The first and most important factor is its geographical location on communication routes. The transportation corridors that run through Poland have a total length of over 5 K km of railway lines. Other factors which create the appeal of Poland are its large area and a relatively dense railway infrastructure network (the third in Europe concerning length), the volume of transport (second in Europe concerning railway market) and numerous infrastructure investments, including the improvement of line parameters and dynamic development of chosen market segments (e.g. intermodal freight transport). The abovementioned features prove that the Polish railway market is attractive and offers good chances for its potential actors.

The railway carriers provide their services in the area of Poland using railway lines of the length exceeding 20 K km. 93% of the lines remain under the administration of the largest infrastructure manager on the market – PKP Polskie Linie Kolejowe S.A. Important characteristics having impact on Polish railway market is still an unsatisfying state of infrastructure as well as the costs of access to it. On the lines managed by PKP Polskie Linie Kolejowe S.A. renovations are still in progress and numerous speed limits are introduced. This influences the extension of passenger and freight transport time, which reduces the competitiveness of rail in comparison to other means of transport. Of course the renovation works are aimed at the improvement of the quality and parameters of railway transport in the future, nonetheless at present they constitute an impediment and are a serious trouble for market participants, especially when their completion is delayed, which happens quite often. The unsatisfying state of infrastructure and relatively high costs of access to it (in comparison to the costs of access to the road infrastructure) is additionally reducing the attractiveness of rail in comparison to road transport.

Passenger transport in Poland in 2012 was performed mostly by 10 railway carriers. Among them two companies from the PKP group could be enumerated: PKP Szybka Kolej Miejska w Trójmieście, providing agglomeration services, and PKP Intercity, the main railway carrier that operates connections between provinces on national scale as well as international transport connections. Another company conducting its activity in the entire area of the country is Przewozy Regionalne. The services of this railway carrier are mostly provided on commission of the Marshals of provinces, which recently turn to the companies supervised by the Marshal's Offices, e.g. Koleje Śląskie, Koleje Donośląskie or Koleje Wielkopolskie. Companies such as Szybka Kolej Miejska (SKM), which provides passenger transport services in the urban area

Railway proved itself as the organizer of transport during EURO 2012.

of Warsaw, Warszawska Kolej Dojazdowa (WKD) which provides services based on separate infrastructure, or Koleje Mazowieckie constitute parts of companies managed by the Marshal's Office of the mazowieckie province. The private railway carrier Arriva RP is standing out among the railway carriers providing public transport services – the company won tender proceedings for the operation of transport in the kujawsko-pomorskie province. Another group of railway carriers consists of entities that perform transport on narrow-gauge lines, yet due to their seasonal character and rather limited work they are of marginal significance.

In 2012 almost 274 m. passengers were transported, which is by 3.6% more than in 2011.

Freight transport is performed by several-dozen railway carriers. We can single out the companies of the PKP group, amongst which PKP Cargo – the largest railway carriers in the freight transport market in Poland - should be mentioned,

with its 60% share in the market concerning transport performance. The next company of the PKP group with a significant market share is PKP Linia Hutnicza Szerokotorowa – a railway carrier with almost 7% market share concerning the performed transport. This entity performs services in the South of Poland on a railway line of a track gauge amounting to 1,520 mm and the length amounting to about 400 km, directly communicated with Eastern Europe and Asia through Ukraine, being the most westward bridgehead of the line of this width in Europe.

Taking under consideration the performed transport, the CTL group is also standing out (participation of the companies belonging to this group does not exceed 7%), the Lotos Kolej group with its share amounting to about 8% and the DB Schenker group, with a share amounting to about 5%. In 2012 the market share of the remaining several dozen dispersed companies did not exceed 12.6% jointly.

When describing the railway transport market in 2012 its most important parameters should be mentioned, including the information on how they changed in comparison to the previous year, or how the tendency observed within the past few periods is developing.

The basic parameters characterizing the railway passenger transport market are the total number of passengers transported and the railway transport performance. In 2012 273.9 m. passengers were transported (including narrow-gauge railways), which constitutes an increase by 3.6% in comparison to 2011, when the number of passengers amounted to 264.5 m. passengers (including narrow-gauge railways). It is worth mentioning that the dynamics of the increase was stronger in comparison to the period of 2010/2011, when the number of passengers increased by about 1%. When it comes to the transport performance we noticed a decrease from 17,866 m. passenger-kilometres to 17,860 m. passenger-kilometres (-1.7%). This situation means that the number of passengers travelling on short distances increased, and the number of passengers travelling on long distances decreased. This tendency is reflected in the statistics, where the number of

passengers using the services of PKP Intercity (a company generally providing transport services on longer distances between the largest cities and international transport services) has fallen by 3.5% in comparison to 2011. At the same time, the number of passengers travelling with railway carriers providing transport services on local routes and distances within one province increased in 2012 (e.g. Koleje Mazowieckie, Koleje Dolnośląskie, Koleje Wielkopolskie, Koleje Śląskie), so did the number of passengers in trains travelling within the borders of large agglomerations, auxiliary to the municipal transport system (e.g. SKM in Warsaw). This tendency is caused by the new road infrastructure put into operation, which encourages passengers to choose car as a means of transport for long distances. If the railway travel time is relatively long due to the modernization of the network and at the same time the fees are not yet charged on every section of the new roads, for many passengers private car turns out to be a better alternative concerning travel time and economy. On the other hand, the improving offer of regional rail (new and modernized rolling stock, more convenient timetables, renovated stations, the introduction of a common ticket for municipal transport and rail etc.) convinces more and more passengers to choose the services of railway companies on everyday basis, e.g. when commuting to work. It is particularly important when we take under consideration the tendency to move outside the city, intensified by lower real estate prices and convenient public transport connections with the city, which are faster than a car during rush hours. Other regards should also be mentioned here, such as the deficit of parking spaces in city centres and parking fees. The tendency to choose suburban railway instead of a car is supported by new investments, e.g. "Park&Ride" parkings at railway stations (e.g. on the route Warszawa – Otwock). The aforementioned tendency may strengthen in the following years due to further investments.

In 2012 the weight of transported goods fell by nearly 7%, and transport performance fell by 9%.

In case of freight transport the main indicators characterizing the market in a given year is the total weight of freight transported by all railway carriers, as well as the transport performance expressed in millions of tonne-km. In 2012 the weight of transported freight fell by 7.2% (from 249.3 m. in 2011 to 231.3 m. in 2012). The transport performance also decreased from 53,974 millions of tonne-km to 49,063 millions tonne-km (by 9.1%). The decrease on the railway freight transport market results first of all from the general tendency in the European Union, connected with the economic slowdown. Secondly, in case of Poland it is also important that the competitiveness of road transport increased due to the new highways and the renovation of many existing roads. Road transport is in this case, similarly to passenger transport, economically justified. Moreover, due to the significant dispersion of companies on the road transport market, the competition in this transport mode is even stronger and leads to the reduction of margins to the verge of profitability with the use of the scale effect.

In previous years intermodal transport was developing with an unprecedented dynamics. The results for 2012 strengthened this trend.

When characterizing railway freight transport market it is impossible to omit an important type of transport - intermodal transport. In the past few years this transport mode has been developing with an unprecedented dynamics. In 2012 further dynamic development of this mode of transport could be observed. In total, the share of intermodal transport in the railway market increased in comparison to 2011 from 2.37% to 3.48% concerning freight weight, and as far as transport performance is concerned, the share increased respectively from 4.53% to 6.21%. As far as transport performance is concerned, it is still far from the European average, according to which the share of intermodal transport in the domestic freight transport amounts to about 15-20%. The progress in this matter is visible and undoubtedly speaks in favour of the development of this transport mode in Poland. When diagnosing the situation it is worth mentioning that Polish rail is trying to adjust to the market trends and the growing demand for intermodal loading units. This development path is supported by the introduction of new facilities, such as reduction of costs of access to railway infrastructure for intermodal railway carriers. It should also be mentioned that the improvement of operation of the intermodal railway transport in Poland has also become a priority of the Minister of Transportation, Construction and Maritime Economy, who established an auxiliary body in form of the Council for Intermodal Transport in December 2012. The aim of the Council is to work on the improvement of the conditions of intermodal transport operation in Poland through the elimination of the existing barriers, both legal and organizational, which hamper the development of this type of transport, and to indicate the measures necessary to ensure the development of intermodal transport. UTK is also engaged in the works of the Council.

To sum up the general analysis of the market presented above, aimed at a diagnosis of its state in 2012, it should be stated that the past year was a very special period for railway transport. On one hand it was a year of chances and challenges, on the other a year of decreases, troubles and unexpected events.

Taking under consideration all aspects of the conducted analysis of the state of railway market in 2012, some measures should be taken to give this mode of transport an opportunity to play the key role in the domestic transportation system, to allow for making the most of the chances, marginalize threats and, finally, ensure high quality services and profitability.



2. Passenger transport market

2.1.1. Competition between transport modes on the European passenger transport markets

Thanks to its achievements, its infrastructure and approach to the environmental protection issue, Europe is one of the world leaders in transportation. There are more than 330 K companies dealing with passenger transport. The European Union has 5,392 m. km of roads and railway lines in total, which constitutes a significant advantage in comparison to the United States (4,697 m. km) or China (3,237 m. km).

In order to increase the competitiveness of railway in comparison to other transport modes in the European Union, in 1985-2010 the high-speed railway line network has been extended nine-times (from 643 km to 6,602 km). The increase was also observed in road infrastructure – in case of highways in years 2004-2009 the network was extended by 13%. Despite the undertaken actions, cars remain the dominating means of passenger transport. The average distance travelled by an average European by car in 2012 amounted to 9,400 km – which is a slight decrease in comparison to the 9,500 km in 2004.

The analysis of data from all European Union countries confirms the dominating position of car transport. It should be stated that

In Europe motor cars are used as a means of transport more frequently than trains, yet the European policy is aiming at the limiting the disproportions in this respect.

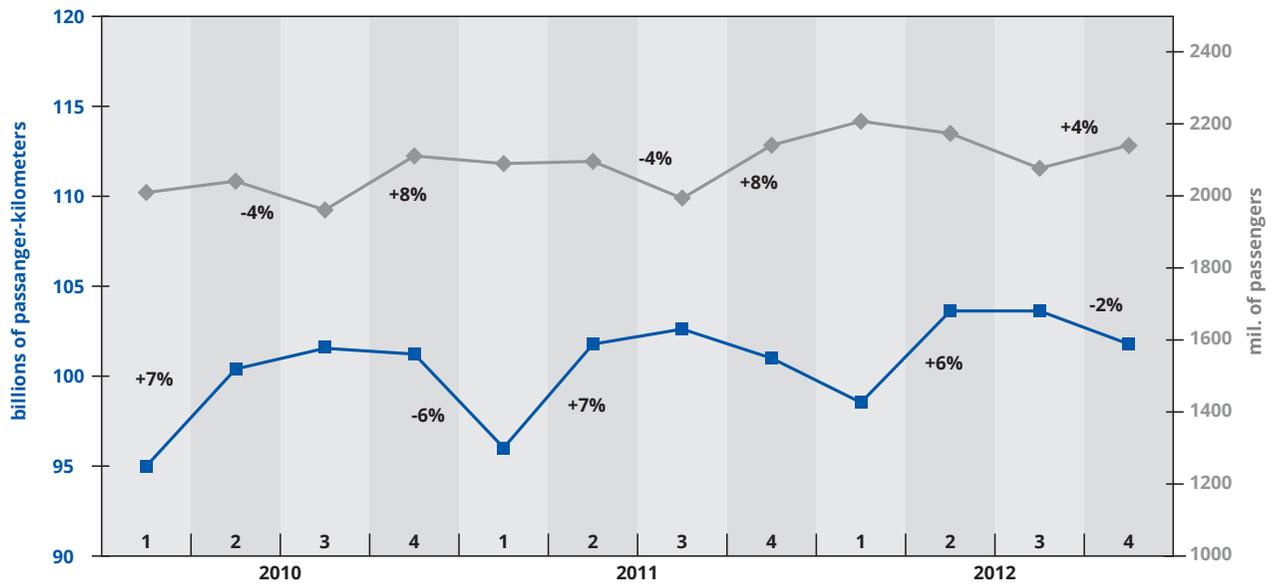
after 2001 passenger transport in the European Union was and still is dominated by passenger cars. There was no significant change in the demand for railway transport services in these years. The factors influencing the choice of means of transport are costs, time, quality, reliability, service accessibility, network density and flexibility during the travel. For passengers who choose railways in the European Union, travel costs are usually more important than time, yet it refers to the group of passengers travelling for holiday and private purposes. Other factors are important concerning business trips, when such time, service accessibility, travel timetable, punctuality and comfort are more important. Passengers decide to choose railway journey due to the growing road traffic and competitiveness concerning travel comfort and time (in comparison to travelling by car or plane).

It should also be mentioned that in 1996-2012 in the EU-27 the costs of passenger transport services were growing faster (average increase in this period amounted to 3.22%) than the average increase of inflation (by 2.78% in average). The costs of car purchase (average annual growth by 0.47%) did not grow simultaneously to the dynamic growth of costs of transport services. Passengers should also take into consideration the increase of costs connected with car usage, such as the prices of gasoline, maintenance, spare parts etc. (average annual increase amounted to 3.5%). Yet if we consider the cost increase in case of these two factors, the costs of private passenger transport in the EU grew less (less even than the average inflation rate) than the costs of transport services, which combined with growing flexibility of road transport constitutes a good argument in favour of this means of transport.

2.1.2. Railway passenger transport in Europe

The numbers concerning transport performance and the number of passengers in 2012 are similar to the previous year. A kind of stagnation could be observed on the passenger transport market in the European Union also in 2011. Moreover the trend concerning transport performance, when looking at the quarterly data in year to year perspective, is similar, which means that the passenger transport sector is not particularly susceptible to the economic situation (crisis).

Graph 1: Number of passengers and transport performance in each quarter of the year in 2010 – 2012 in EU

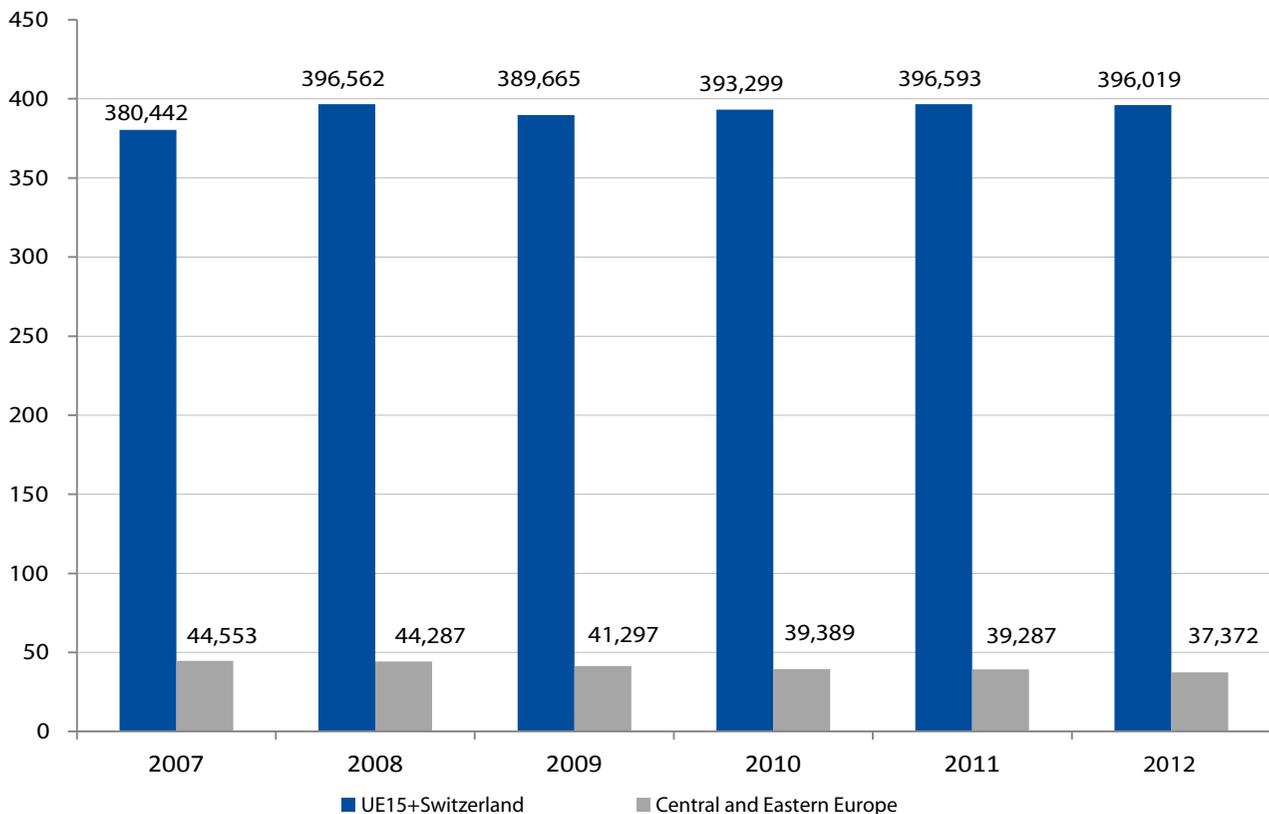


/Source: prepared by UTK based on Eurostat estimates/

A similar tendency is also confirmed in the CER data – the organization observed a slight decrease of transport performance (0.1%) in passenger transport in the 15 countries of the EU including Switzerland, and a fall of the same coefficient of

4.9% for the countries of Central and Eastern Europe. In 2012 the transport performance on the Polish market of passenger transport also fell by 1.7%.

Graph 2: Transport performance in EU15+Switzerland and in Central-Eastern Europe countries in 2007-2012 (passenger transport) in billions of passenger-kilometres



/Source: prepared by UTK based on CER data/

It is important to notice that since 2003 the European Union has observed a very dynamic growth of high-speed line length every year. In 1985 their length amounted to 643 km, in 2012 they were 6,879 km long - an eleven-way increase of length - proving the growing popularity of these lines as well as the effectiveness

and competitiveness of high-speed railway transport. At present in Spain, Germany and France 2,864 km of high-speed lines are under construction, and the two last countries are planning to put trains in operation on 1,185 km in 2015-2017.

Tab. 1: The length of high-speed lines at the end of the year allowing for movement with the speed of over 250 km/h in respective European Union countries

	Belgium	Germany	Spain	France	Italy	The Netherlands	Great Britain	European Union
1985	-	-	-	419	224	-	-	643
1990	-	90	-	710	224	-	-	1,024
1995	-	447	471	1,281	248	-	-	2,447
2000	72	636	471	1,281	248	-	-	2,708
2003	137	875	1,069	1,540	248	-	74	3,943
2004	137	1,196	1,069	1,540	248	-	74	4,264
2005	137	1,196	1,090	1,540	248	-	74	4,285
2006	137	1,285	1,272	1,540	876	-	74	5,184
2007	137	1,285	1,511	1,872	562	-	113	5,480
2008	137	1,285	1,599	1,872	744	-	113	5,750
2009	209	1,285	1,604	1,872	923	120	113	6,126
2010	209	1,285	2,056	1,896	923	120	113	6,602
2011	209	1,285	2,144	2,036	923	120	113	6,830
2012	209	1,334	2,144	2,036	923	120	113	6,879



2.2. Competition between modes on the Polish passenger transport market

According to the data gathered by GUS (Central Statistical Office) in 2012 in Poland all modes of transport were used by almost 457 m. passengers less than in 2001. The decrease of the number of transported passengers in comparison to the previous year amounted to 3.5%. In all modes of transport 779.1 m. passengers were transported, that is by 28.3 m. less than in 2011. The decrease referred to car transport amounting to about 7% and inland waterways amounting to about 33.6%. Air transport showed the greatest growth dynamics - over 8.6%. There was also a 3.5% increase concerning the number of passengers transported by rail. This was caused mostly by the dynamics in the short distance traffic within provinces. In 2012 the average distance of passenger transport in all means of transport amounted to 63.4 km which is by 1.6 km more than in 2011 and by 14.9 km more than in 2001. The average distance in railway transport in comparison to 2011 fell by 3 km and amounted to 65 km. The lowest average distance referred to inland waterways - 14 km – and road transport (including buses and minibuses) – 40.2 km.

Tab. 2: The number of passengers transported in Poland in 2001-2012

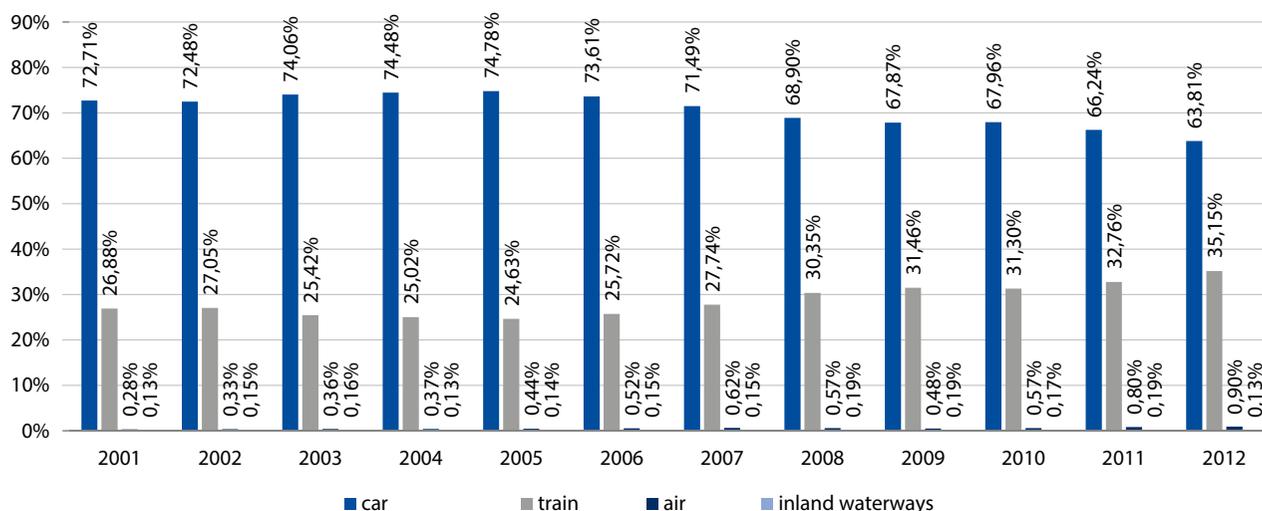
Passenger transport market in Poland in 2001 – 2012												
Transport mode	Year											
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
in m. of passengers												
In total	1,236.00	1,124.50	1,111.15	1,083.92	1,045.71	1,020.95	1,004.71	964.66	902.95	838.18	807.42	779.14
road transport	898.71	815.04	822.88	807.28	782.03	751.47	718.27	664.67	612.88	569.65	534.87	497.19
railway transport	332.22	304.14	282.50	271.20	257.60	262.60	278.75	292.74	284.05	262.33	264.54	273.89
air transport	3.44	3.67	3.98	4.04	4.64	5.33	6.19	5.46	4.35	4.80	6.49	7.05
inland waterways	1.64	1.65	1.80	1.40	1.44	1.55	1.49	1.79	1.67	1.40	1.52	1.01

/Source: prepared by UTK on the basis of GUS data/

Despite the decrease of the overall volume of passenger transport, the railway transport's share is still growing. In 2012 it amounted to almost 35.2% - 2 percentage points higher than in 2011 and 8.3 percentage points higher than in 2001. It is

worth mentioning that despite the vast growth dynamics of the number of passengers in domestic air traffic, the share of this means of transport in the overall transport volume is still rather small: at the end of 2012 it amounted to about 0.13%.

Graph 3: Market share concerning the number of passengers transported in Poland in 2001-2012



/Source: prepared by UTK on the basis of GUS data/

The passenger transport market in 2012 measured by transport performance suffered a downward trend in comparison to 2011. In 2012 the transport performance amounted to 49.4 billion passenger-kilometres, which was almost 0.5 bn less than in the previous year. The dynamics of this indicator was caused by the fall of the number of passenger-kilometres in the segment of road and railway transport, despite the increase in the number of passengers in the domestic long-distance air traffic. At this point it should be stated that in reference to 2001 the volume of transport fell by over 17.5%, which is more than 10.5 billion passenger-kilometres. This reduction was most visible in the road transport segment, where the decrease in the analyzed period of 2001-2012 amounted to 35.5% - which makes 11 billion passenger-kilometres.



Fot. Zbigniew Ostrowski

Tab. 3: Passenger transport performance in Poland in 2001-2012

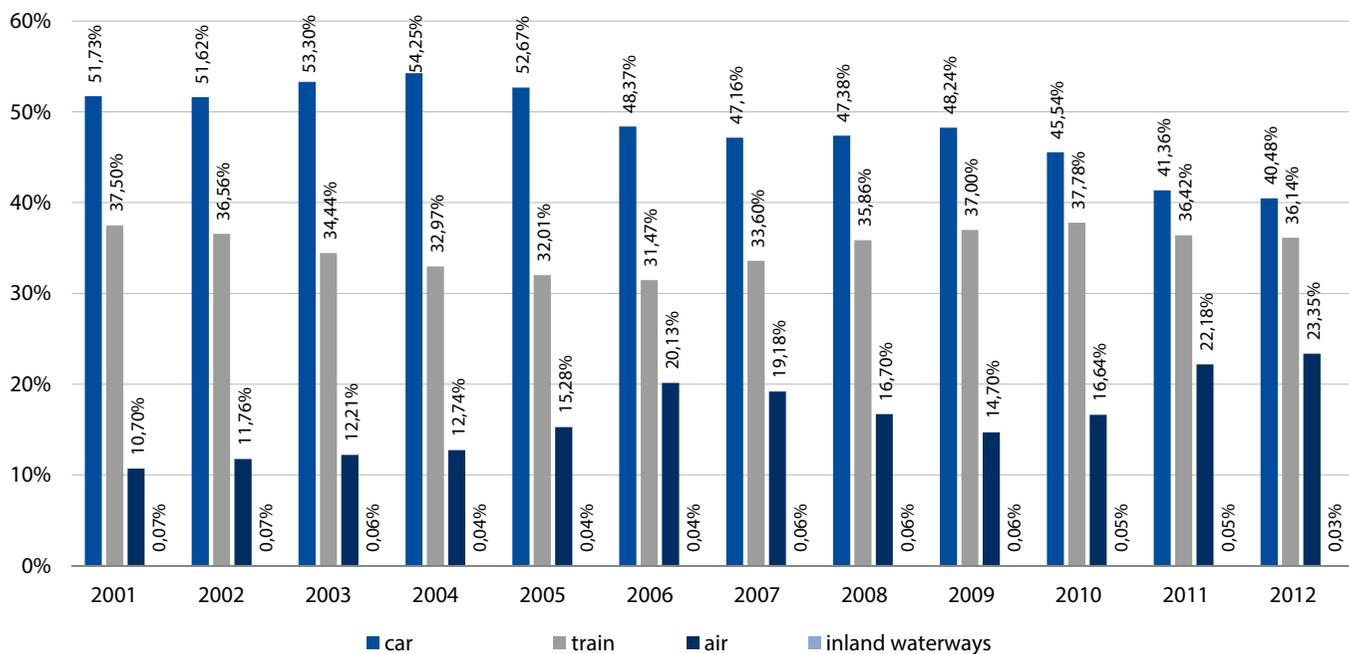
Passenger transport in Poland in 2001 – 2012												
transport mode	Year											
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
in m. of passenger-km												
in total	59,919.0	56,753.0	56,281.7	55,517.7	55,653.8	58,156.0	58,016.2	56,512.1	50,524.7	47,431.9	49,893.3	49,417.1
road transport	30,996.0	29,295.0	29,995.6	30,118.0	29,314.0	28,129.9	27,359.0	26,775.0	24,375.0	21,600.0	20,635.0	20,006.0
railway transport	22,469.0	20,749.0	19,382.5	18,305.3	17,814.8	18,298.9	19,495.2	20,263.1	18,691.7	17,917.9	18,169.3	17,860.1
air transport	6,412.0	6,672.0	6,869.9	7,071.4	8,504.0	11,706.2	11,129.0	9,438.0	7,428.0	7,891.0	11,065.0	11,537.0
inland waterways	42.0	37.0	33.7	23.0	21.0	21.0	33.0	36.0	30.0	23.0	24.0	14.0

/Source: prepared by UTK on the basis of GUS data/

The share of railway transport in the passenger transport market in 2012 measured in transport performance amounted to 36.1% which is around 0.3 percentage points less than in 2011.

The share of car transport fell from 41.4% to the level of 40.5%, whereas the share of transport performance in air transport increased, reaching nearly 23.4% in the end of 2012.

Graph 4: Market share concerning transport performance in Poland in 2001-2012



/Source: prepared by UTK on the basis of GUS data/



To sum up, in 2012 further decrease of demand for public regular passenger transport was observed. The decrease in number of passengers and the decrease of importance of most transport modes, despite the increase of social mobility, are caused by further growth of the importance of individual car transport.

2.2.1. Polish passenger railway undertakings

In 2012 passenger railway transport was performed by fourteen standard-gauge railway carriers, including:

- seven companies owned by local governments:
 - Przewozy Regionalne Sp. z o.o., (hereinafter: „Przewozy Regionalne”)
 - Koleje Mazowieckie - KM Sp. z o.o., (hereinafter: „Koleje Mazowieckie”)
 - Szybka Kolej Miejska Sp. z o.o., (hereinafter: „SKM w Warszawie” or „SKM Warszawa”)
 - Warszawska Kolej Dojazdowa Sp. z o.o., (hereinafter: „WKD”)
 - Koleje Dolnośląskie S.A., (hereinafter: „Koleje Dolnośląskie”)
 - Koleje Wielkopolskie Sp. z o.o., (hereinafter: „Koleje Wielkopolskie”)
 - Koleje Śląskie Sp. z o.o., (hereinafter: „Koleje Śląskie”)
- three companies of the PKP Group, i.e.
 - PKP Intercity S.A., (hereinafter: „PKP Intercity”)
 - PKP Szybka Kolej Miejska w Trójmieście Sp. z o.o., (hereinafter: „PKP SKM” or „PKP SKM w Trójmieście”)
 - PKP Cargo S.A. (occasional transport), (hereinafter: „PKP Cargo”)

- two dependent companies of the DB concern:
 - Usedomer Bäderbahn GmbH, (hereinafter: „UBB”)
 - Arriva RP Sp. z o.o., (hereinafter: „Arriva RP”)
- and the following companies:
 - S&K Train Transport Sp. z o.o. (occasional transport), (hereinafter: „S&K”)
 - NBE Rail Polska Sp. z o.o. (occasional transport) (hereinafter: „NBE”).

Three of the aforementioned companies, that is PKP Cargo, NBE and S&K, provided only occasional transport services, therefore their share in the passenger transport market is rather insignificant. 20 operators offering narrow-gauge line services declared that they also provided passenger transport services (that is 2 less than in the previous year). It is important to stress that narrow-gauge railways used to be utilized for the purposes of the local industry, whereas today most of the performed transport with the use of the infrastructure of the width smaller than 1,435 mm is tourist transport, operating mostly during the vacation season.

The first growth of the number of transported passengers since 2008 was noticed in 2011 and in comparison to 2010 it amounted to 0.84%. The growth tendency was also observed in 2012, when the number of transported passengers (including narrow-gauge railways) amounted to 274.4 m. passengers (by 9.9 m. more than in the previous year and by 12.1 m. more than in 2010). In the same period the railway carriers performed transport services - the product of the number of passengers transported on particular routes and the distance of their transport - equalling 18,169 m. passenger-kilometres (decrease by 1.7%). Average distance travelled by one passenger amounted to 65.2 km in 2012 and fell in comparison to the preceding year by 3.5 km.

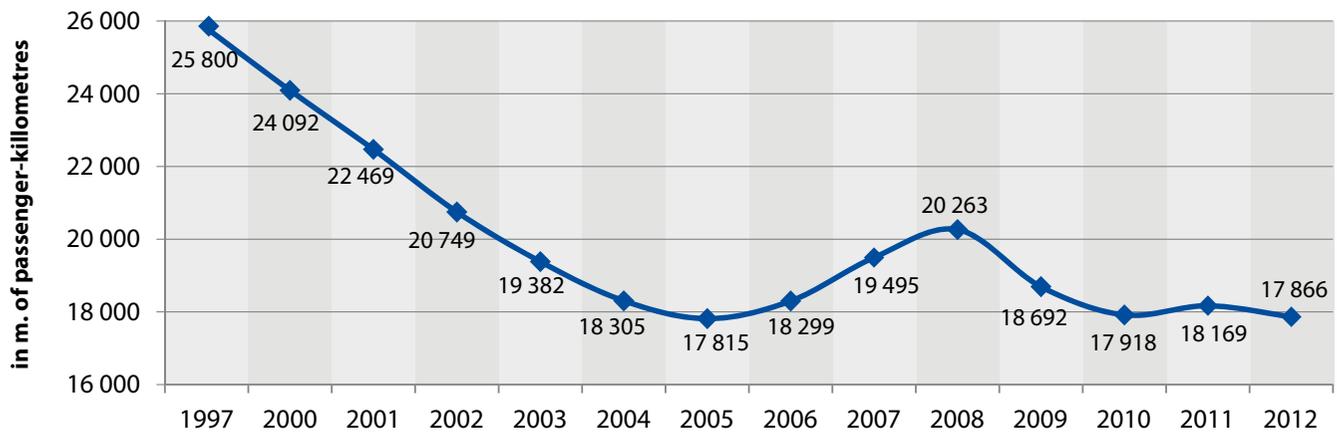
Tourist transport, particularly popular in summer, dominates transport on narrow-gauge lines.

Graph 5: Number of railway passengers in the subsequent years 1997 – 2012



/Source: prepared by UTK/

Graph 6: Transport performance in railway passenger transport in 1997 – 2012



/Source: prepared by UTK/

When analyzing the results concerning transport performance in particular months of 2012 it should be stated that apart from December the number of passengers was higher or equal to the number of passengers transported in 2011. It is important to notice quite characteristic changes of the number of passengers in the winter and vacation period, being the effect of lower number of pupils, students and people travelling to work, which is not compensated by the increase of the number of travels for holiday purposes, e.g. to holiday resorts. Dynamic change of the number of passengers in October results from the end of the vacation season and the start of the academic year. The average number of passengers per month in 2012 amounted to 22,824 K. In comparison to 22,045 K in 2011, which constitutes a 3.5% increase.

More attention should be put to the numbers concerning June 2012 when Poland hosted EURO 2012. The number of passengers in this month fell in comparison to May 2012. It is important to notice a similar trend in the previous year, when there were no special events. The number of passengers could have fallen due to the comments in media before the championship which

stated that the number of passengers would rapidly grow thus paralyzing the railway traffic. Eventually these predictions did not prove right, which might have been caused by the fact that many travelers decided to choose other means of transport in fear of unpredictable situations. Thanks to efficient organization and long-term preparations the rail fulfilled its task very well. The punctuality was assured, there were also no significant changes in the train timetables. It can also be added that the increase of the number of passengers was noted by the SKM company in Warsaw, which launched a new connection from the Chopin airport to the centre of Warsaw in June 2012. The increase in passenger number during the EURO 2012 championship is an evidence of a vast interest in the new line and the need to launch this connection.

Thanks to efficient organization and large investments railway has fulfilled its tasks during EURO 2012.

Graph 7: Number of passengers in particular months of 2012



/Source: prepared by UTK/

Graph 8: Transport performance in particular months of 2012



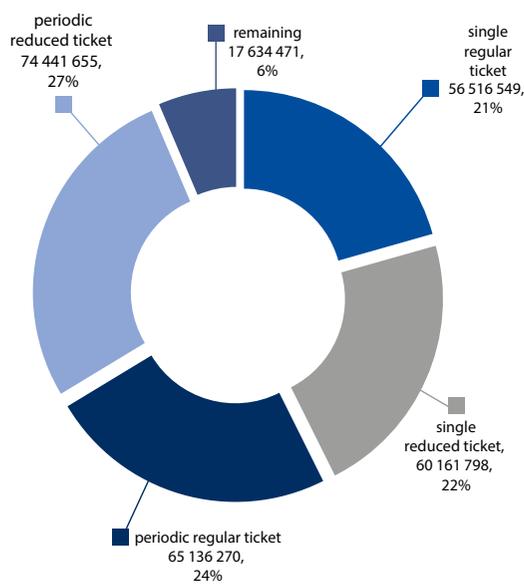
/Source: prepared by UTK/

Tourist transport in the vacation period strongly influences the increase of transport performance, but only in July and August, which means that the railway share, as a means of transport when going on winter holiday, is rather scarce. The transport performance in particular months of 2012 matches the tendencies in the previous years. The increase of the number of passengers in September-October caused a similar increase of transport performance, which means that in these months also the number of passengers travelling on longer distances was higher. The analysis of average passenger transport distance in particular months pictures this tendency quite well – in 2012 this value decreased in comparison to 2011. The average for the whole 2011 amounted to 68.7 km and in 2012 to 65.2 km.

These numbers also confirm a certain regularity - the significance of railway as a means of transport on shorter distances (daily transport to the city, to work, school and university) is constantly growing and its significance as means of transport on longer distances (between provinces and on international connections) is falling. This phenomenon may be reflected in the following years.

all performed transport (by 0.7 percentage points more than a year ago). The travels on the basis of seasonal tickets constituted the remaining part – 51.0% (139.6 m. passengers) - and on the basis of separate contracts with institutions, e.g. in the common ticket option – 6.4%. One of the examples was the urban area of Warsaw, with a common ticket for urban traffic and communication of SKM in Warsaw and chosen sections of Warszawska Kolej Dojazdowa and Koleje Mazowieckie.

Graph 9: Number of passengers according to type of ticket in 2012



/Source: prepared by UTK/

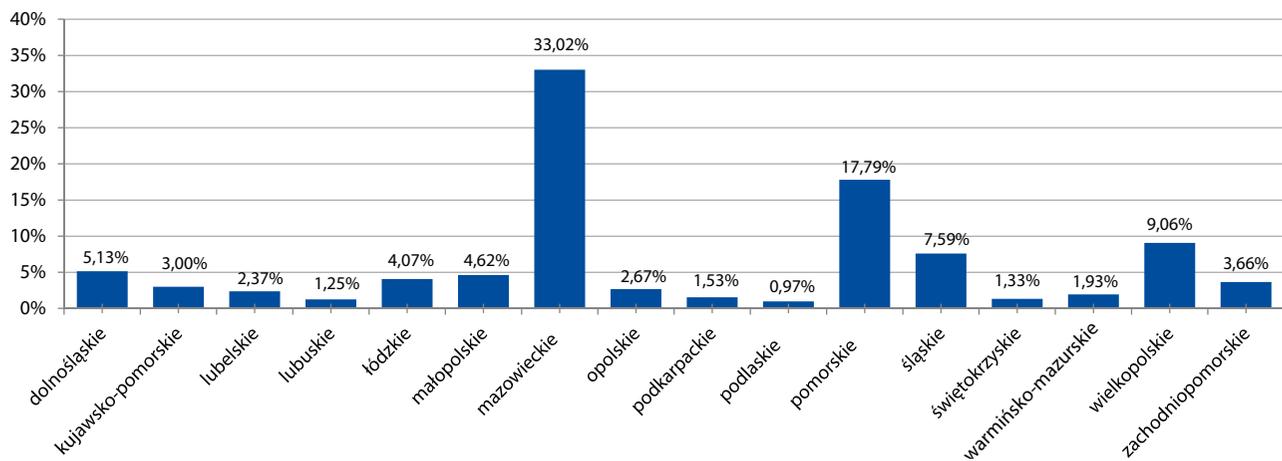
Taking into account the number of passengers checked-in in each of the regions, most of them started the journey in the Mazovian province - around 90 m. people, which constituted almost 1/3 (33.02%) of the entire transport performed in Poland in 2012. High percentage of passengers started their journey in the Pomerania province (17.79%), mainly due to the vast number of passengers using the PKP SKM services in Tri-City. The lowest share in the number of transported passengers was noticed in the following provinces: podlaskie (0.97%), lubuskie (1.25%), świętokrzyskie (1.33%).

The meaning of railway in passenger transport is growing concerning short-distance routes, especially in agglomerations with integrated rail communications systems.

The vacation period is characterized by an increased demand for transport services, mainly concerning long-distance transport. In this period the demand for transport services in urban areas and within the province area is decreasing, yet it is partly compensated

by the growing number of passengers on long-distance routes. The decrease of the number of passengers travelling by short-distance trains is mainly caused by the reduction of demand for commuting to schools and workplaces. In this period the sale of monthly tickets and periodic tickets falls by over 30%. In the whole 2012 116.7 m. passengers (by 1.9% more than in 2011) travelled with one-trip ticket. This constituted 42.6% of

Graph 10: Share of the number of passengers in individual provinces (according to the number of checked-in passengers)

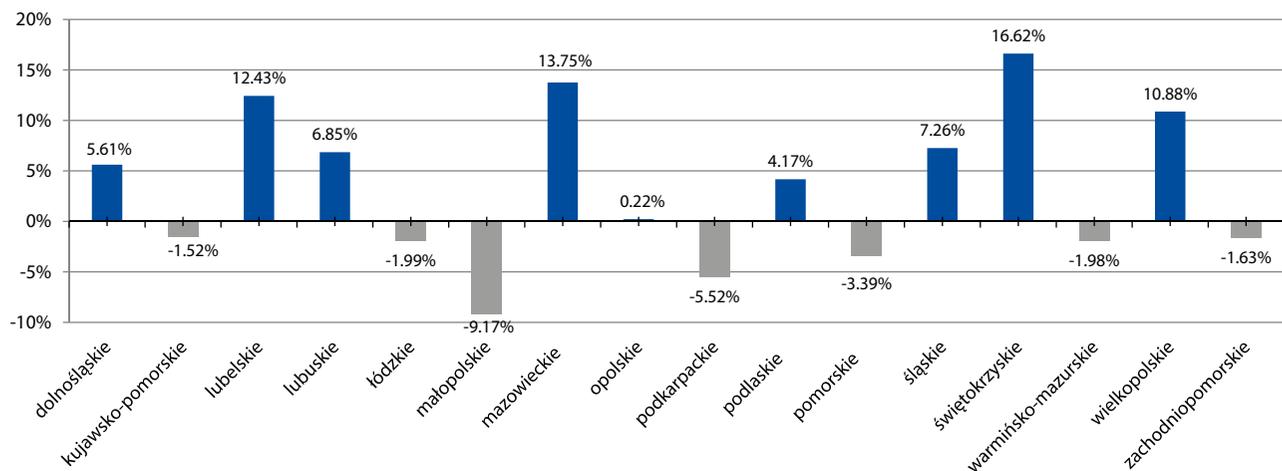


/Source: prepared by UTK/

The growth in 2012 compared to the previous year concerned nine regions: the highest was noted in the świętokrzyskie province - 16.62%, mazowieckie province (13.75%) thanks to the increased popularity of rail as means of transport in ag-

glomeration transport networks, lubelskie province (12.43%) and wielkopolskie province (10.88%). The largest decrease of transport volume was noted in the małopolskie province (-9.17%) and in the podkarpackie province (-5.52%).

Graph 11: Dynamics of the number of passengers in the provinces (according to the number of checked-in passengers) in 2011/2012



/Source: prepared by UTK/

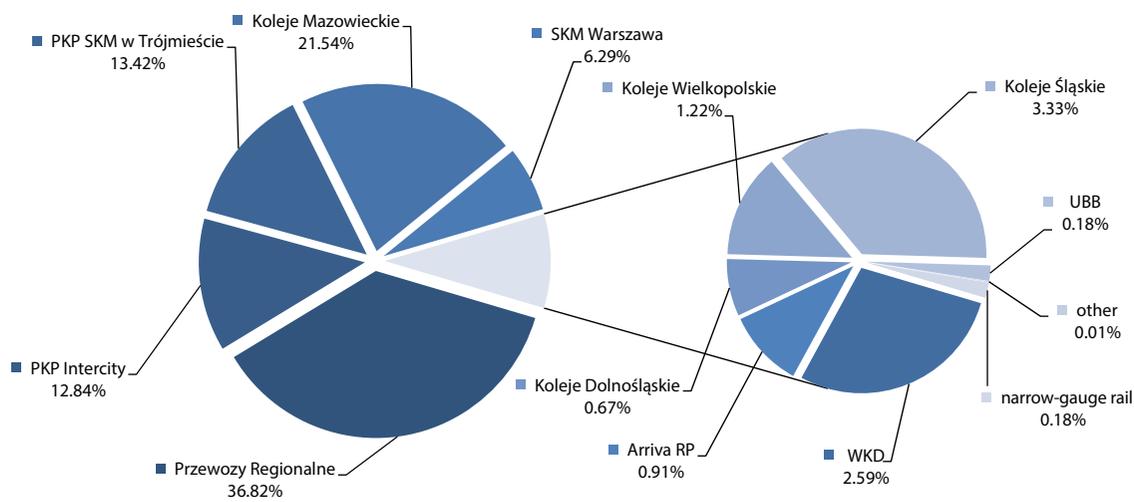


The significant growth of the share of local-government-owned companies which started their activity in 2011 is quite noteworthy.

In 2012, similarly to the preceding year, the largest market share measured by the number of passengers belonged to the local-authority owned companies, including Przewozy Regionalne 36.8% (decrease by 4.7 percentage points comparing to 2011) and Koleje Mazowieckie 21.5% (increase by around 0.9%). The average distance of the passenger journey in the transport per-

formed by the local-authority companies amounted to 42.1 km (by 5.7 km less than in 2011). The share of the PKP Intercity company in terms of number of transported passengers amounted to 12.8% in comparison to 13.8% in 2011. The number of passengers fell by 3.5% to the level of 35.2 m. (decrease by 1.3 m. passengers). Further growth was noted by Koleje Mazowieckie, which transported 59.1 m. passengers – by 8.6% more than in 2011 and 18.4% more than in 2008. It is also important to mention that there was a significant increase in the share of local-authority owned companies, which started operation in 2011, including Koleje Śląskie (over 5-fold increase from 1.8% to 9.1 m. passengers and over 3.3% of market share) and Koleje Wielkopolskie (almost 6-fold increase from 0.6 m. to 3.3 m. passengers and 1.2 % of market share).

Graph 12: Market share of railway carriers according to the number of passengers in 2012

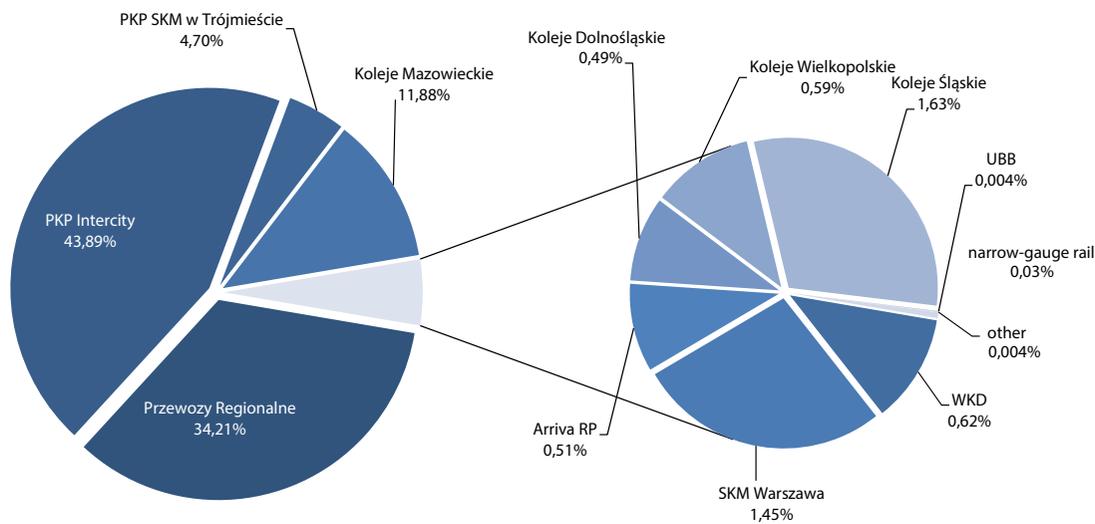


/Source: prepared by UTK/

Measuring with the indicator of transport performance, the largest share belonged to the PKP Intercity company – 43.9% (decrease by 0.6 percentage point) and Przewozy Regionalne – 34.2% (decrease by 2.3 percentage points). The largest market

share concerning transport performance, despite the insignificant share in the number of passengers transported, was achieved by PKP Intercity thanks to the transport performed between provinces and international long-distance transport.

Graph 13: The share of railway carriers in the market according to transport performance in 2012



/Source: prepared by UTK/



Taking transport performance into consideration, the share of the companies from the PKP group (including the timetable operating railway carriers), such as PKP Intercity and PKP SKM w Trójmieście, amounted to 48.6% (a decrease by 1.9 percentage points in comparison to 2011). The railway carriers of the PKP group performed 494.0 m. passenger-kilometres less than in 2011 (decrease by about 5.4%). A significant increase of PKP Intercity's share in 2009 was caused by the fact that the company took over a segment of the regional transport as a result of the transformation of Przewozy Regionalne into a local-government company. The PKP Intercity's market share concerning transport performance increased from 22% to nearly 55%. It should be stressed that since 2009 the market share of PKP Intercity has been gradually falling: in 2010 by 7.7 percentage points, in 2011 by 1.3 percentage points and finally in 2012 by 1.6 percentage points in comparison to the relevant previous years.

2.2.2. Polish passenger railway market structure

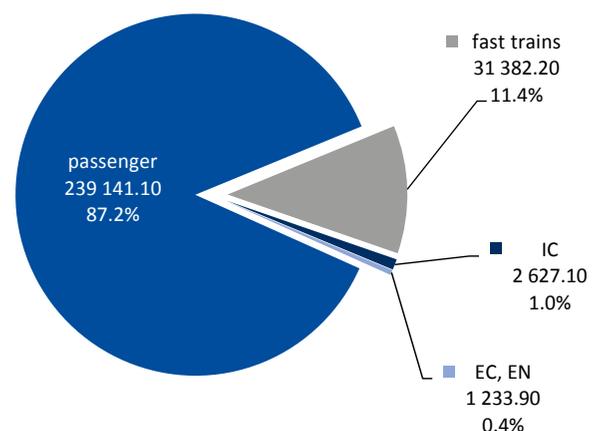
In 2012 the general number of passengers increased in comparison to 2011 (taking into account narrow-gauge railway) by 3.7% (9.9 m. passengers). In particular, the largest growth in comparison to 2011 was noted in regional communication, in passenger trains - by 14.06% (by over 29.4 m. passengers). Further growth was also noted concerning the number of passengers travelling via international connections (EuroCity and EuroNight trains) – by 2.66% in comparison to 2011 (1.233 m. passengers). The number of people using these types of trains is gradually growing since 2009, nonetheless it still has not reached the record level of 2008 when 1.506 m. people travelled by these trains. Additionally, the decrease of the number of passengers amounting to 20.81% was noted in respect of InterCity trains (from 3.32 m. passengers to 2.63 m. passengers), yet the dynamics of decreases in this category is not as vast as it has been in the past few years. The decrease in the number of passengers is caused by the modernization works that were still in progress in 2012, covering part of the railway infrastructure thus causing extensions of journey time between stations and stops.

The number of people using railway transport in the Warsaw agglomeration is still growing. The SKM Warszawa company noted a significant increase, by 5.8 m. passengers (from 11.45 m. to 17.27 m.), which is a 50.81% increase. The railway transport efficiently joined the urban transport system within the Warsaw agglomeration as an alternative, faster and more comfortable form of

communication, e.g. in comparison to individual transport. An important aspect influencing the development of railway transport and the number of passengers transported is i.a. the increasing number of parking lots located in the vicinity of stations and railway stops ("Park & Ride" system) and the "common ticket" offers for combined journeys by train and urban communication. An important element of the development of the transportation system in Warsaw was also the construction of the new Chopin Airport railway station and a relevant new section of the line leading thereto. The new station was opened on 1 June 2012. At the moment it is operated by two railway carriers: Szybka Kolej Miejska and Koleje Mazowieckie. In Warsaw the following stations are still or will be under modernization works: Warszawa Gdańska, which is now part of an important communication junction (i.a. with the 1st subway line), Ursus Niedźwiadek (construction works planned) and i.a. Warszawa Włochy (renovation works planned).

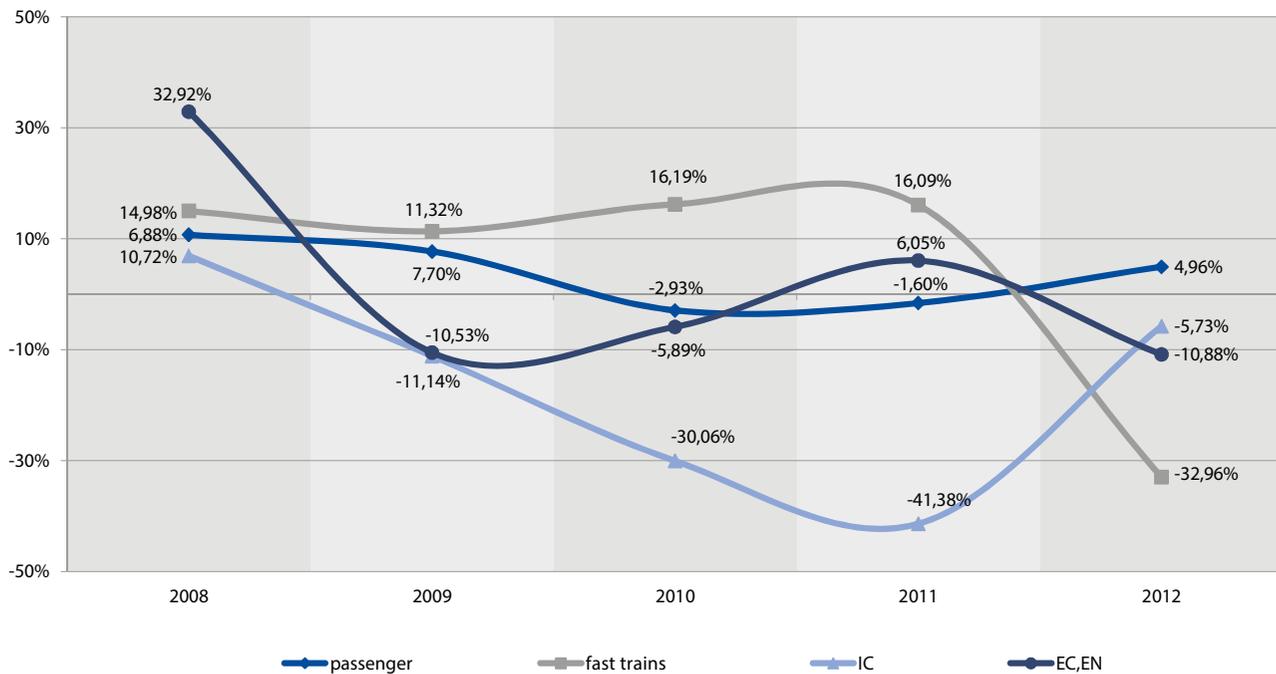
We should also mention that there was a significant increase in the number of transported passengers in the dynamically developing companies operating in individual regions of Poland, e.g. Koleje Dolnośląskie (110% increase), Koleje Wielkopolskie (from 566 thousand passengers in 2011, which was the first year of operation, to 3.3 m. in 2012). Despite deep organizational trouble in December 2012, as a result of which not all ordered travel services were provided, Koleje Śląskie also noted an over 5-way increase of passenger number in 2012 compared to 2011 (from 1.7 m. to 9.1 m. passengers).

Graph 14: The share of passenger number in particular types of trains in 2012 (thousands of passengers/share)



/Source: prepared by UTK/

Graph 15: Dynamics of the number of transported passengers in particular types of trains - 2008-2012 [2007=0]

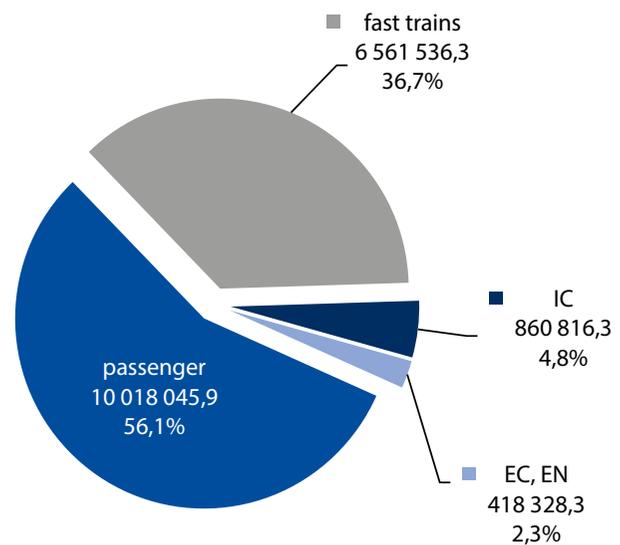


/Source: prepared by UTK/

In 2010 and 2011 the change of number of passengers in slow trains remained negative. In 2012 there was a significant increase in this respect, changing the trend to a positive one. In case of transport in Intercity trains there was a dynamic decrease since 2008, which in terms of passenger number amounted to 41% at the end of 2011. In 2012 there was a rebound, although the value did not reach the level from 2007. The main factor influencing the demand in this market segment concerning price (which is twice as high as in low-cost transport) and travel time relation (similar in both segments) combined with the flexibility in comparison to the comfort of travelling by train.

In 2012 the fall of transport performance was noted by 3 railway undertakings (in 2011 by two). The transport performance of PKP Intercity in 2012 amounted to 7,840.7 mln passenger-kilometres, by 430.5 m. less than in the previous year (decrease of 5.2%). A larger decrease (of 7.03%) was noted by the company PKP SKM w Trójmieście and Przewozy Regionalne (by 7.9%). We should also notice that all companies from the group of railway carriers providing transport in cooperation with local government noted an increase: Koleje Mazowieckie (13.1%), SKM w Warszawie (51%) and Koleje Dolnośląskie (189%). Two companies - Koleje Śląskie and Koleje Wielkopolskie - noted a large (several times) increase of transport performance, amounting to respectively 443% and 568%. A 4.1% increase was also noted by the company Arriva RP.

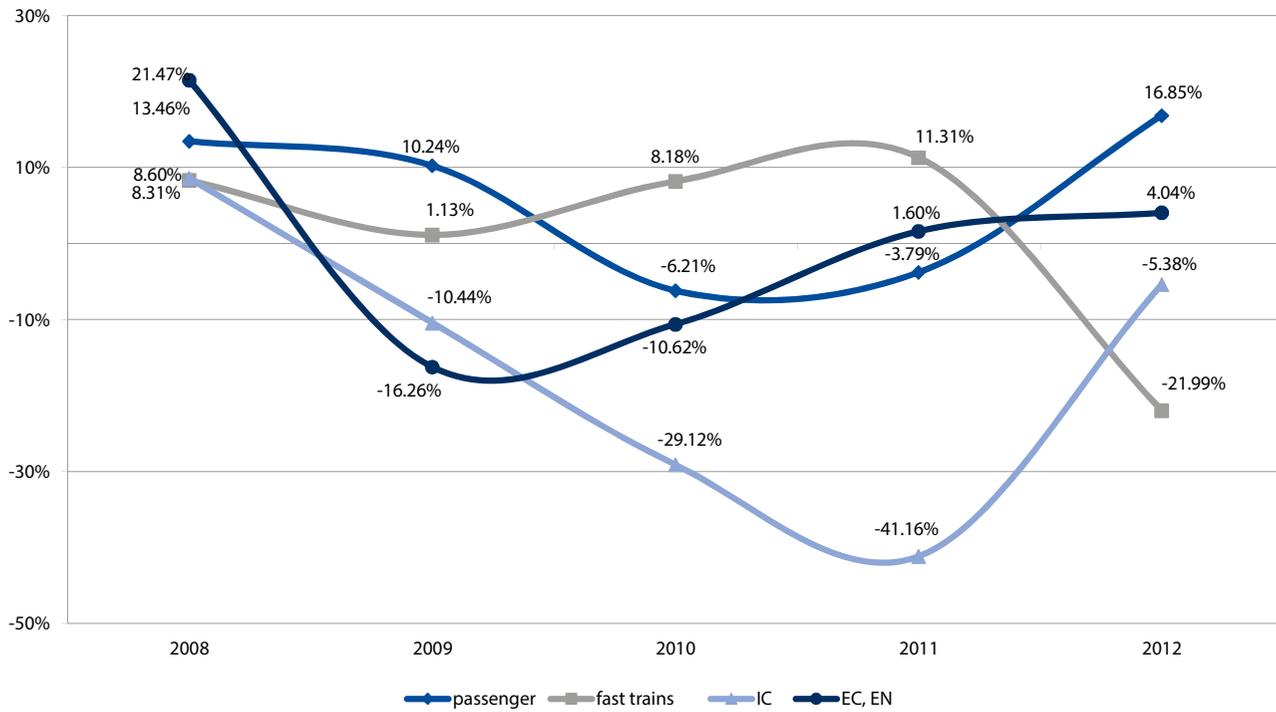
Graph 16: Share of transport performance according to types of trains (thousands of passenger-kilometres/share) in 2012



/Source: prepared by UTK/



Graph 17: Dynamics of transport performance according to particular types of trains in 2008-2012 [2007=0]

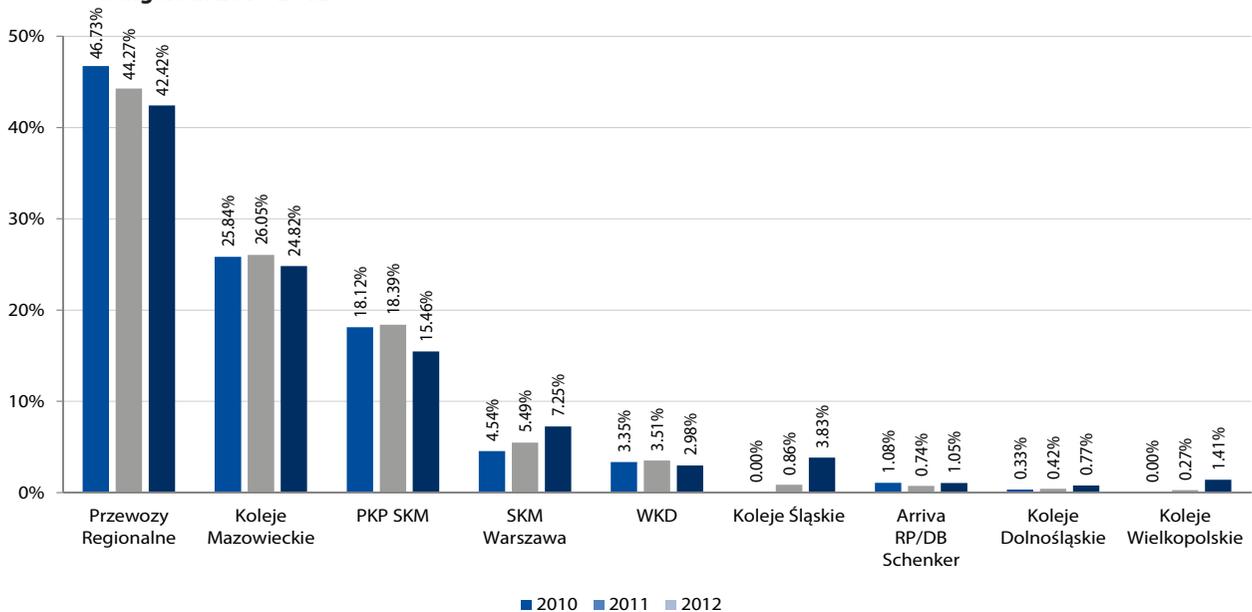


/Source: prepared by UTK/

In the segment of passenger transport, when it comes to the railway transport in agglomerations, 9 licensed railway carriers conducted their activity in 2012 (no changes in comparison to 2011). Still, the highest share belonged to the company Przewozy Regionalne – at the end of the year it amounted to 42.4% - a fall by 1.8 percentage points (when it comes to the number of passengers transported). The largest railway carriers concerning the number of passengers transported, apart from Przewozy Regionalne, were the companies Koleje Mazowieckie and PKP SKM w Trójmieście, which had a market share of re-

spectively 24.8% (decrease in share by about 1.2 percentage point) and 15.4% (decrease by about 2.9 percentage points). In total, the aforementioned companies had a share of 82.7% in the regional transport market (decrease by about 6 percentage points). The railway carriers that started their activity in 2011 reached a significant increase of regional market share: Koleje Śląskie – from 0.86% to 3.83% and Koleje Wielkopolskie – from 0.27% to 1.41%. It is important to notice the significant increase (by 1.8 percentage points) of the share of SKM Warszawa in the passenger transport market (7.25%).

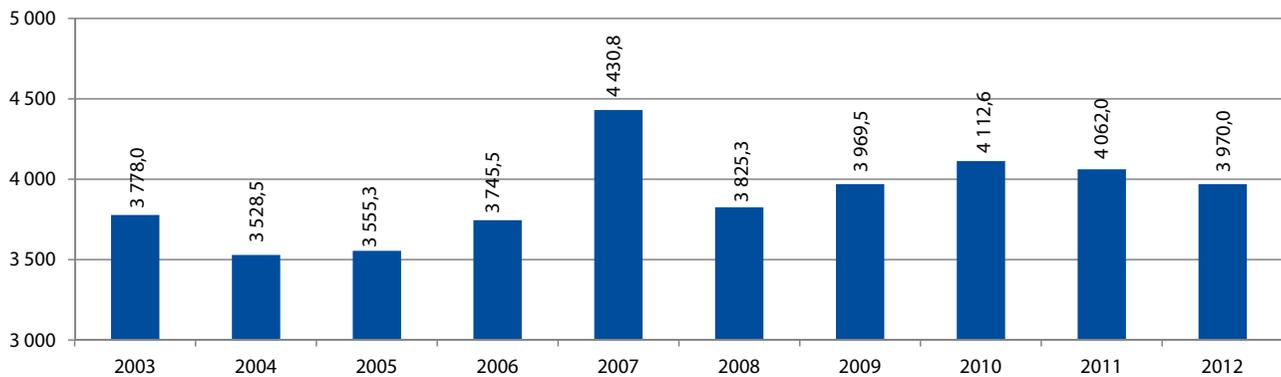
Graph 18: The share of railway carriers in the provincial/regional transport market according to the number of passengers in 2010-2012



/Source: prepared by UTK/

In 2012 there was a further decrease of the number of launched trains per day by all railway carriers. In average 3,970 trains a day were launched - by 2.3% (92 routes) less than in 2011.

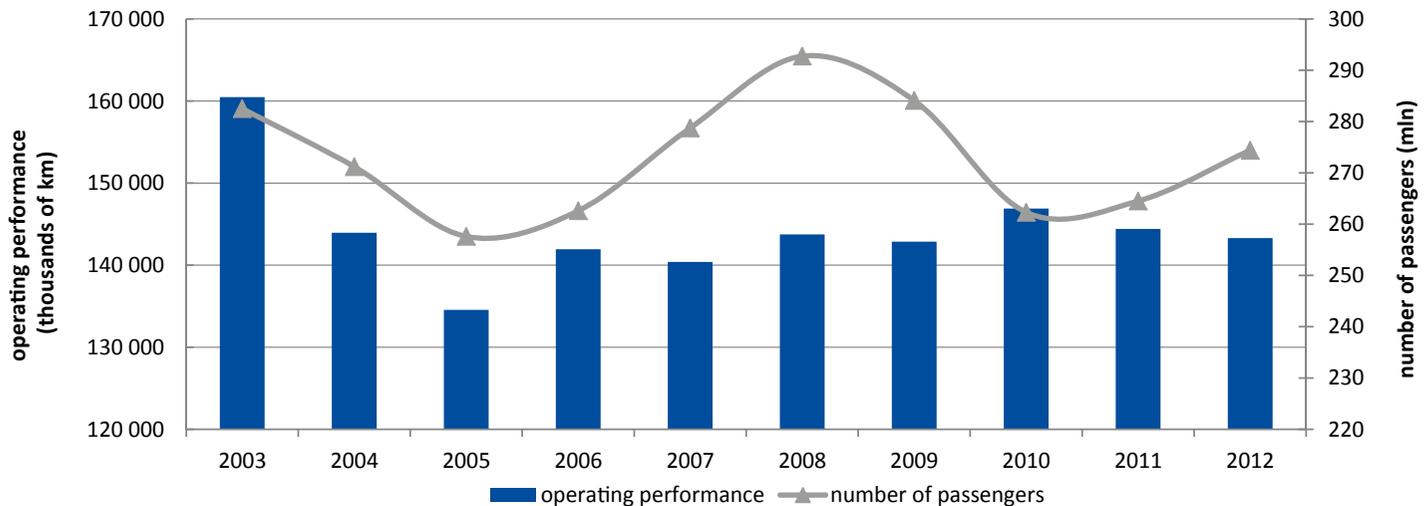
Graph 19: Average number of trains launched per day by all railway carriers in 2003-2012



/Source: prepared by UTK/

In 2012 despite the decrease in operating performance by 0.8% there was a 3.7% increase in the number of passengers. It means that there was a slight improvement of effectiveness of the operation of railway carriers, which should be understood as better adjustment of the train timetable to passengers' needs.

Graph 20: Operating performance of all railway carriers compared to the number of passengers in 2003-2012



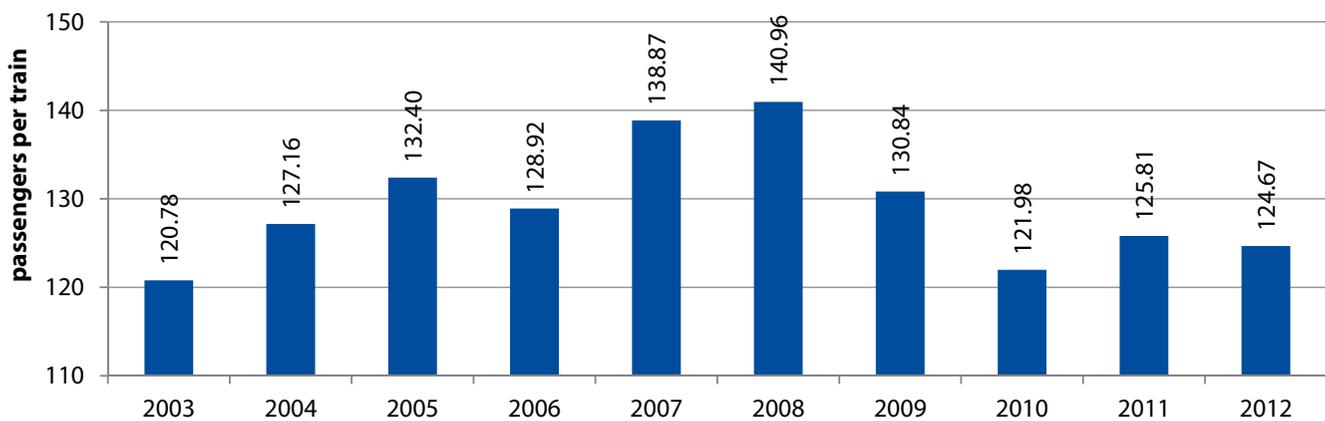
/Source: prepared by UTK/



The largest operating performance in 2012 was noted by the companies Przewozy Regionalne – nearly 65.4 m. train-kilometres - and PKP Intercity – around 44.6 m. train-kilometres. Both companies noted a decrease of transport performance compared to the previous year – by 8.1% and 0.9% respectively.

The indicator showing the effectiveness of the use of the transport offer is the average number of passengers in trains operated by individual railway carriers, measured as the quotient of transport performance and operational performance when providing transport services. In 2012 this indicator amounted to almost 125 passengers per train, in average by 1 person less than in the previous year.

Graph 21: Average number of passengers in trains in 2003-2012 (passenger/train)



/Source: prepared by UTK/

2.2.3. Passenger transport in international communication

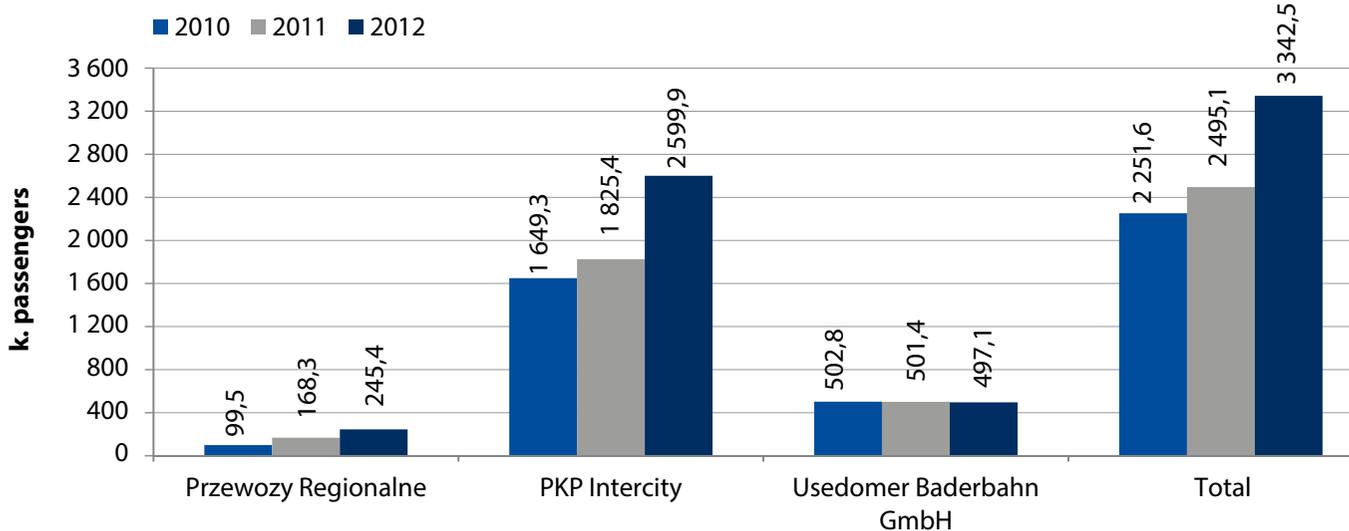
In 2012 passenger transport in international communication (including transport in the cross-border area) was provided by 3 railway carriers:

- PKP Intercity – long-distance trains (including Eurocity, EuroNight);
- Przewozy Regionalne – at-border trains and InterRegio;
- UBB – trains Świnoujście Centrum – country border – Ahlbeck (Germany).

In 2012 in international communication 3.342 m. passengers were transported, which is by 847 thousand more than in 2011 (significant increase by 34%). The transport performance when providing transport services amounted to 939 m. passenger-kilometres, which is by 60 m. more than in the previous year. Average travel distance of a passenger extended to 281 km (46 km more than in 2011).

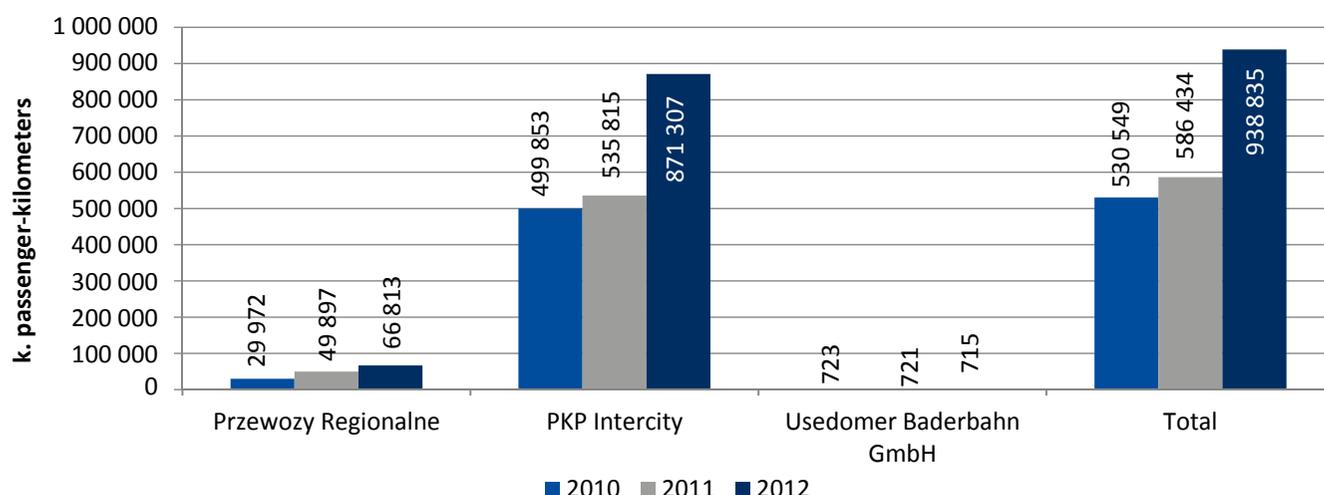
In the cross-border transport the smallest railway undertaking in Poland which supports one line takes second position concerning the number of passengers transported.

Graph 22: Number of passengers in international communication in 2010-2012



/Source: prepared by UTK/

Graph 23: Transport performance in international communication in 2010-2012



/Source: prepared by UTK/

Significant increase of the number of passengers has been noted by the following railway carriers: Przewozy Regionalne – in total 245.4 thousand passengers (increase by 45.8%), and PKP Intercity – 2.599 m. (increase by 42.43%). A slight decrease (0.9%) of transport was noted by the German railway carrier UBB, which transported around 4.3 thousand passengers less than in the previous year.

The largest number of passengers crossed the border with Belarus in Terespol – in total 750 thousand passengers (an increase by nearly 21% in comparison to the previous year). A large percentage of passengers crossing borders when travelling by train crossed the border to Germany, including such border locations as: Świnoujście – Ahlbeck with German railway carrier Usedomer Badenbahn – 497 thousand passengers, and Kunowice – Frankfurt (Oder) – 375 thousand passengers.

The location of Poland on the routes running through Europe results in the transit of passengers within the domestic traffic. In particular, the greatest number of transit passengers travelled through our country from Czech Republic to Russia (16.3 K). Significant traffic is taking place on West-East routes, such as Germany-Ukraine (13.3 thousand passengers) and Germany-Belarus (10.8 thousand passengers).

2.2.4. Structure of the rolling stock held by railway carriers providing passenger transport

In 2012, in the quantitative structure of the passenger rolling stock² there were no important changes in relation to the previous year. There was a slight decrease in the quantity of electric multiple units, the number of which amounted to 1,216 items at the end of the year (by 32 items less than in 2011 – a decrease by 2.6%). The number of wagons in the group of electric multiple units fell from 4,221 items to 3,921 items (decrease by 7.1%). This translated also into an almost 7% decrease of the number of wagons in general (including in the group of electric multiple

units) to the level of 7,520 items. Also the number of diesel vehicles held by railway carriers increased slightly - at the end of 2011 there were 259 of them in total (a growth by 2.8%), including the stock of the so called railbuses - 206 items (growth by 1 item). The total number of locomotives also changed slightly, from 674 down to 670. This number includes also electric locomotives, the share of which grew by 10% (from 380 to 418 items). At the same time the number of diesel engine locomotives fell and steam locomotives, by 11.9% (from 277 to 244 items) in case of diesel engine locomotives and from 17 to 14 items in case of steam locomotives.

Tab. 4: Quantitative structure of the traction and wagon rolling stock of railway carriers, including narrow-gauge railways in 2004-2012

type of rolling stock	Year									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	
locomotives in total	70	75	75	124	618	691	706	674	670	
of which electric locomotives	0	0	0	31	314	384	392	380	412	
of which diesel locomotives	63	67	66	79	290	292	298	277	244	
of which steam locomotives	7	8	9	14	14	15	16	17	14	
electric multiple units	1,165	1,170	1,170	1,174	1,186	1,194	1,205	1,248	1,216	
diesel engine vehicles	51	88	104	98	165	175	230	252	259	
of which railbuses	45	80	93	72	116	154	184	205	206	
passenger wagons	8,829	8,487	8,353	8,247	8,060	7,921	7,900	8,079	7,520	
of which in electric multiple units	3,586	3,648	3,672	3,718	3,797	3,853	4,037	4,221	3,921	

/Source: prepared by UTK/

The differences in the statistical data at the turn of 2008-2009 concerning the quantity of the traction and wagon rolling stock in the companies of the PKP Group and in the local government owned railway carriers are an effect of the transfer of a part of the property of the company Przewozy Regionalne to PKP Intercity in 2008.

2 The data refers to the quantitative structure of railway rolling stock remaining at the disposal of licensed railway carriers and railway carriers performing their activity on narrow-gauge lines.

Tab. 5: Quantity of the wagon rolling stock according to types held by the regular-gauge and narrow-gauge railway carriers, as of 31 December 2012

Wagon type	Number
With seats	3,155
Sleeping cars	180
Couchette cars	113
Dining cars	103
Cars with control cabins	16
Remaining passenger cars	10
Luggage cars	2
Narrow-gauge cars	207
TOTAL	3,786

/Source: prepared by UTK/

Taking into account the stock of locomotives, similarly as in 2011, electric locomotives EP07 (158 items) and EU07 (147 items) with the maximum speed of 125 km/h had the largest share in the total number of items. The share of locomotives with speed allowing for transport with up to 160 km/h is still minor, amounting to no more than 9%, including electric locomotives EP05 (1 item), EP09 (46 items) and EU47 (11 items). Railway carriers held also 10 electric locomotives of the EU44 series (Siemens EuroSprinter "Husarz") able to provide transport with the speed of up to 230 km/h. Due to technical aspects of the railway infrastructure they were used for transport with up to the maximum speed of 160 km/h.

EN57 units dominate in the quantitative structure of electric multiple units (including individual modernized versions: KM, AKM, AMW). Their total number amounted to 942 items at the end of 2012. The maximum design speed of such type of traction units does not exceed 110 – 120 km/h.

Taking into consideration passenger cars, in the total number of 3,786 items (except for wagons within electric multiple traction units) most of the wagons were units with seats, including type 111A and 112A (1,294 and 620 items) allowing transport with the speed of 120 km/h (111A) and 160 km/h (112A). Railway carriers held also sleeping cars and cars with couchettes (180 items and 113 items respectively) as well as dining cars – 103 items.

In 2012 the total amount of investments made by passenger railway carriers exceeded PLN 650 m. Most of this amount was dedicated to the purchase of new or used rolling stock. The remaining 14% was dedicated to modernization.

In 2012, the total value of rolling stock investments of railway carriers exceeded PLN 651 m. Around 84% of this amount (PLN 545.62 m.) covered the acquisition of new or second-hand rolling stock. The largest amount for the acquisition of new rolling stock was spent by: WKD (PLN 283.9 m.), PKP SKM w Trójmieście (PLN 128.30 m.), PKP Intercity (PLN 98.99 m.).

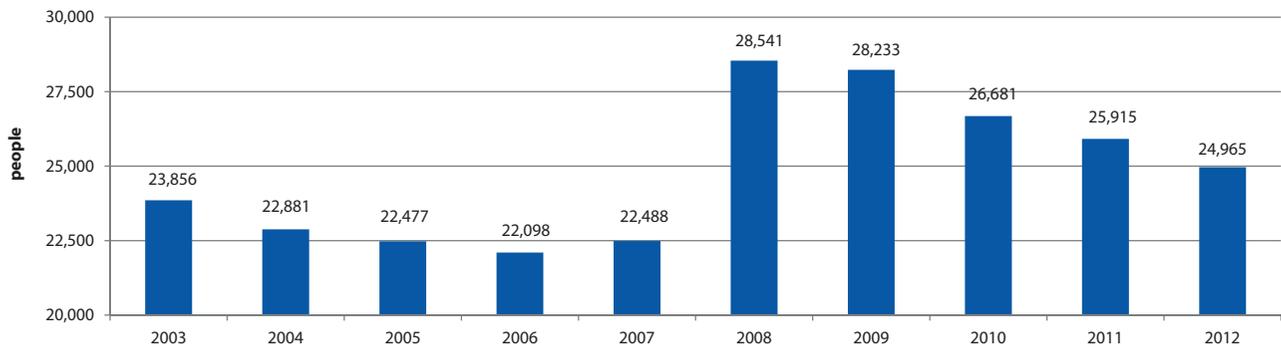
2.2.5. Volume, structure and efficiency indicators of passenger transport

The volume of the Polish market of passenger railway transport in 2012 can be characterized by the following parameters:

the number of licensed carriers	35
the number of regular (timetable operating) railway carriers	10
yearly market income	PLN 4.937 m.
yearly costs of railway service provision	PLN 4.937 m.
employment by the railway sector	24,965 people
number of passengers transported	274,4 m.
transport performance	17.9 bi. passenger-km
operational performance	143.3 m. train-km
number of regular-gauge locomotives	562
number of electric multiple traction units	1,216
number of cars (including electric multiple traction units)	7,520 (3,921)

In 2012, similarly to 2008-2011, the process of reduction of the number of employees in the passenger transport sector was progressing. At the end of 2012 the number of employees of all railway carriers amounted to 24,965 which is by 3.66% less than in 2011. The general number of employees included 42.8% employees related directly to the operation and safety of railway traffic. Their number amounted to about 10.6 thousand people, including 4.5 thousand drivers, 206 driver's helpers, 4.2 thousand train supervisors, 1.1 thousand rolling stock auditors, 137 manoeuvre drivers, 436 shunters.

Graph 24: Employment in the passenger transport sector in 2003-2012



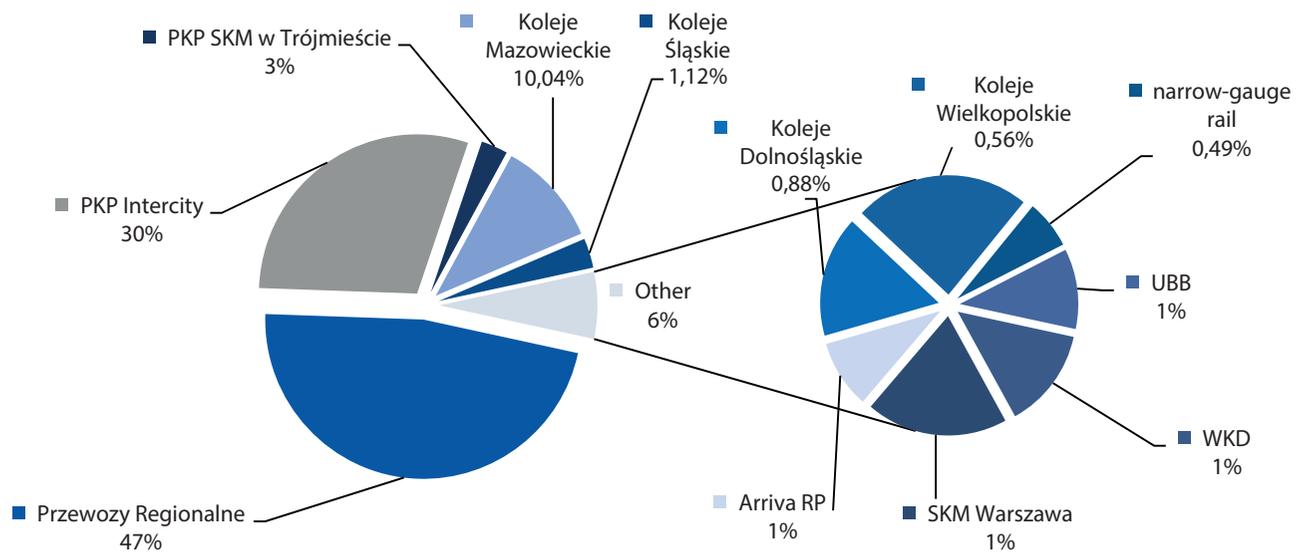
/Source: prepared by UTK/

A significant increase of the number of employees employed in 2008 was caused by the takeover by Przewozy Regionalne and then by PKP Intercity of a certain number of employees who until then had been working for the freight transport carrier PKP Cargo.

The decrease of the number of employees employed in 2012 was caused by further reductions in the restructuring process, and the resulting necessity of further minimization of activity costs of railway carriers. The largest decrease reaching 1,602 employees (by 12%) was noted by the company Przewozy Regionalne.

The decrease of the number of employees in passenger railway undertakings was a further employment reduction in the entire restructuring process.

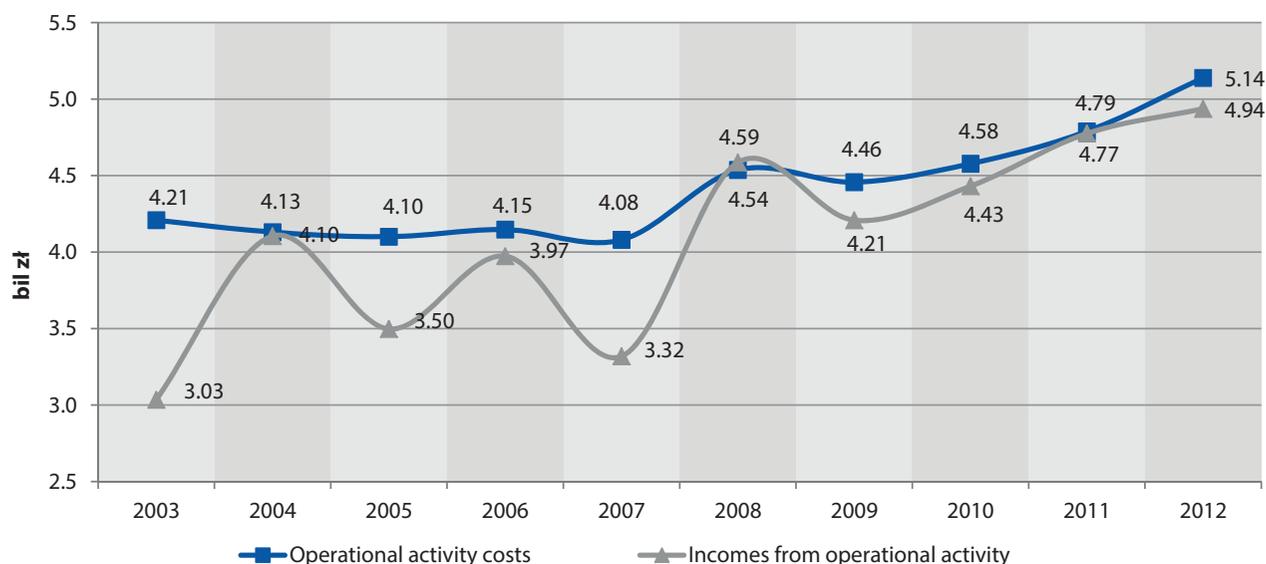
Graph 25: Employment structure in 2012 (share)



/Source: prepared by UTK/

Despite the largest decrease in the employment number, the company Przewozy Regionalne was still employing the greatest number of people (over 47% of all people employed in the passenger railway transport sector). The second place was held by PKP Intercity with its employment share of 30%, followed by Koleje Mazowieckie employing about 10% of all the employees in the railway sector.

In 2012 the carriers operating on the market noted an increase of income from operational activity caused by the growth of passenger number by almost 10 m. and the growth of incomes from ticket sale.

Graph 26: Results of passenger railway carriers' activity (in PLN m.) in 2003-2012

/Source: prepared by UTK/

In comparison to 2012 the income of companies increased by 3.4% (by PLN 161 m.) to the level of PLN 4.936 billion. In total the market suffered a loss of around PLN 202 m., which in comparison to the loss of PLN 15 m. in 2011 stands for a significant decrease in profitability.

The grants received by railway carriers providing passenger services were included in their income calculations, together with the state budget and local government subsidies assigned to the provision of public services and to cover the deficit on account of statutory deductions. Apart from the subsidies, the main element of the incomes of railway carriers was the sale of ticket, directly influencing the total financial result of individual companies on the market. In 2012 the sale of transport services generated around 54% of the whole income of railway carriers (around 5 percentage points less than in 2011).

2.2.6. Evaluation of the quality of railway transport services

Every year we have been witnessing the efforts to raise the quality of provided railway services. The railway carriers and transport organizers see the necessity of investments in traction and car rolling stock, which positively influences the journey comfort. More and more works consisting in the expansion and modernization of stations are introduced. Unfortunately, the railway companies still do not fulfill the necessary minimum requirements provided for in the Transport Law Act of 15 November 1984 in relation to "appropriate safety and hygiene conditions and comfort as well as proper service". The main problems passengers are facing are improper hygiene and comfort conditions as well as imperfect service provision. The rolling stock in operation is exhausted to a high extent, and the railway carriers reduce expenditures almost exclusively to repair works, modernization and maintenance. The cleanliness of rolling

stock, stops, railway stations and station buildings also diverges from the necessary minimum, which would allow passengers to travel in appropriate, comfortable and hygienic conditions. An additional problem is also the low safety level during the journey in night hours (mainly in regional communication) and the lack of reaction of the train staff to acts of vandalism or breach of the ban on alcohol and smoking in trains.

Despite the fact that in the last couple of years the quality of service in railway traffic underwent significant changes, disabled passengers or passengers with limited movement abilities are faced with the lack of proper assistance and help when travelling by train. The railway stations, buildings and railway structures still not adjusted to the needs of disabled passengers cause many problems. It should be noticed that the provisions of the regulation (EC) no 1371/2007 of the European Parliament and European Council of 23 October 2007 on the rights and responsibilities of passengers in the railway traffic provide for minimum requirements towards railway carriers and railway station administrators (which should be fulfilled by the railway carriers), yet despite the fact that the law has already been in effect, the state of railway infrastructure accessibility for disabled passengers still requires many improvements. For example, as a result of control conducted by the employees of UTK in December 2012 it has been proved that over 60% of launched train sets were not adjusted to transport disabled passengers.

The quality of service provision by the railway carriers providing their services proves that further regular trainings in the scope of passenger assistance and service in railway traffic are necessary, especially concerning the assistance for disabled passengers or passengers with limited movement ability.

Increased punctuality of passenger railway transport is a positive trend. Trains that reached the final station on time or with a 5-minute delay are considered punctual. In 2012 the punctuality of trains on final stations reached 92.08%. In comparison

to the previous year it is an increase by 2.25 percentage points. Moreover, the number of all delayed trains (including delays of up to 5 minutes) reached 26.11% in the analyzed period of time, which is by 14.9 thousand less than in the previous year. The trains were mostly (69.68%) delayed by up to 5 minutes. 28.58% (115.94 thousand) of trains were delayed by 5 to 60 minutes, 1.28% (5.2 thousand) of trains were delayed by 1 h to 2 h and 0.46% (1.86 thousand) of trains were delayed by more than 2 h. The number of cancelled trains fell by 16.68 thousand in comparison to 2011.

Average delay time, except for delays of up to 5 minutes, amounted to 22 min. (by more than 1.5 more than in 2011). The analysis of the punctuality indicator of passenger railway transport was based on trains that reached the final station with a delay exceeding 5 min. The punctuality indicator in the moment of arrival is the quotient of the number of trains that reached the final station on time (or delayed by up to 5 minutes) and the number of all trains launched by all passenger railway carriers.

Tab. 6: Punctuality of passenger railway transport in 2012

	I quarter	II quarter	III quarter	IV quarter	Year 2012
In total	94.09%	93.28%	91.00%	89.95%	92.08%
PKP Intercity	85.78%	83.82%	73.58%	80.44%	80.73%
Przewozy Regionalne	94.73%	93.43%	91.21%	89.76%	92.34%
Koleje Mazowieckie – KM	89.89%	91.23%	90.01%	87.29%	89.57%
PKP SKM w Trójmieście	98.67%	98.69%	96.45%	97.61%	97.91%
Szybka Kolej Miejska in Warsaw	92.97%	92.50%	94.09%	91.28%	92.73%
Warszawska Kolej Dojazdowa	99.50%	99.21%	99.28%	99.24%	99.30%
Koleje Dolnośląskie	96.13%	96.64%	92.58%	95.54%	95.18%
Koleje Śląskie	94.31%	86.99%	84.01%	77.15%	83.87%
Koleje Wielkopolskie	96.91%	97.48%	96.18%	93.68%	96.00%
Arriva RP	96.85%	96.67%	96.36%	95.40%	96.31%
UBB GMBH	99.20%	98.24%	97.66%	98.08%	98.22%

/Source: prepared by UTK/

Delays, irrespective of the relations or train category, are unfortunately an element that cannot be entirely eliminated. In winter season delays are mostly caused by difficult weather conditions, i.a.: icing on the contact line, freezing of switches and cracks in the rails. In summer season the delays result from modernization works conducted on most part of the railway infrastructure. The factor influencing the disruptions in timely transport performance are also frequent thefts and devastations of railway infrastructure elements. For these reasons from January to December 2012 9,894 trains were delayed, 8,403 of which were passenger trains. Total delay time amounted to 63,642 minutes, which constituted 1.1 thousand hours- that is over 44 days.

Most frequent causes of delays of passenger trains are:

- investment works (modernizations and renovation works),
- speed restrictions resulting from bad condition of railway infrastructure,
- rolling stock failures,
- accidents and occurrences on the railway infrastructure network,

- accidents and occurrences on railway crossings,
- contact line defects,
- defects of railway traffic operation devices and railway crossing devices,
- stops resulting from the necessity to communicate the relations with other delayed trains,
- extended time of passenger placement, e.g. during communication peaks,
- weather conditions,
- theft and devastations railway infrastructure, including elements of railway traffic operation systems,
- Police, Emergency Service, Railway Protection Guard interventions.

Taking under consideration the assessment of railway service quality we should also analyze the ticket distribution channels, including the possibility of purchase through modern IT techniques. The data presented by individual railway carriers shows that the largest share in the total sale still belonged to the ticket counters – in 2011 their average share amounted to 67.9% whereas in 2012 it amounted to 67%. In 2012 railway carriers providing passenger services held a total of 1,202 stationary ticket counters (by 153 more than in the previous year). This number included only 34% of counters with the possibility of credit card payment. The largest number of ticket counters was held by Przewozy Regionalne – 418 (decrease by 62) and Koleje Śląskie – 308 (increase by 289). More and more frequently ticket sale is conducted via self-service stationary ticket machines. Their number is growing and in 2012 it amounted to 229 (in comparison to 83 in 2011). The number of mobile machines and portable terminals in trains is dropping. Their quantity at the end of 2012 amounted to 1,259 (a drop by nearly 60%). Modern ticket distribution channels enjoy growing popularity, e.g. web-pages of railway carriers (PKP Intercity, Przewozy Regionalne) or phones equipped in special applications. In 2011 the possibility of Internet purchase was used by 0.7% passengers in average and in 2012 this share exceeded the threshold of 1%.

Modern ticket distribution channels, such as Internet or mobile phone applications, are enjoying growing popularity.

The changing structure of ticket distribution is aimed at the fulfillment of expectations of railway passengers in particular concerning the diversity of distribution channels. This tendency involves a handicap, consisting in the decreasing number of ticket counters, which extends the waiting time for ticket purchase, mainly in larger agglomerations during communication peaks and weekends. A vast impediment is also the lack of ticket counters on stations or stops used by small numbers of passengers.

The number of petitions and complaints submitted by passengers to individual railway carriers illustrates the relatively low quality of transport services. In 2012 passengers submitted in total 8,537 petitions and 25,544 complaints. In comparison to 2011 the number of petitions increased by 21.61%, whereas the number of complaints fell by 8%. In the total number of complaints almost 13.7 K (53.5%) were examined in favour of passengers. The total number of compensations paid to the passengers amounted to nearly PLN 415 K (PLN 26.4 per person in average). The increase of complaint and petition cases may be the effect of increased passenger awareness concerning the possibility of filing a petition or a complaint and, in case of an unsatisfactory response, the possibility to submit the case to a superior authority which is the President of UTK.

2.2.7. Protection of passenger rights

Since 3 December 2009 the provisions of the regulation (EC) no 1371/2007 of the European Parliament and European Council of 23 October 2007 concerning passenger rights and responsibilities in railway traffic are binding to a limited extent in the Republic of Poland. The scope of their application with reference to regional transport and the remaining domestic transport as well as the connections with stations located outside the territory of the European Union includes the following issues:

- conclusion and way of performance of the transport contract according to the international regulations CIV (International Convention for the Transportation of Passengers),
- assuring the possibility of bike transport,
- obligation to provide information required by the passenger prior to the commencement of the journey,
- assuring the possibility to purchase tickets on the railway station or on the train,
- responsibility for passengers and their luggage according to international CIV regulations,
- compulsory civil liability insurance of the railway carrier,
- assuring the passenger's right to give up the journey (with the right to return to the departure station free of charge), change the journey date or route in case of anticipated delay exceeding 60 minutes,
- applying non-discriminatory principles of transport of disabled passengers,
- providing information for disabled passengers,
- take efforts to assure assistance for disabled passengers during their journey,
- conditions of assistance for disabled passengers,
- obligation to care for passengers' personal safety,
- obligation of railway carriers to accept and examine claims,
- obligation to define and monitor the standards of service quality and to implement a quality management system,
- obligation to inform the passengers about their rights, including the possibility to submit complaints,
- passengers' right to submit claims to the designated authority (in Poland the President of UTK).

On 25 May 2011 the Minister of Infrastructure issued an order on exemption of some provisions of the Regulation 1371/2007, by virtue of which the number of railway connections with possible compensations for train delays increased. Most provisions

of the regulation has been implemented by all railway carriers providing regular passenger transport in the scope in which they are binding on the territory of Poland.

As regards the examination of complaints concerning the violation of the aforementioned Regulation, in 2012 UTK received 12 petitions fulfilling legal requirements of the Code of Administrative Procedure and the Railway Transport Act, which were then examined in administrative proceedings.

In respect of the supervision over compliance with Regulation 1371/2007, in 2012 the President of UTK exercised inspections of railway carriers. The supervising activities conducted in 2012 revealed numerous irregularities concerning i.a.:

- operation of passenger information system on railway stations,
- operation of seat reservation system,
- lack of the possibility to purchase concessionary fare tickets on the train,
- lack of proper markings on trains,
- charging additional fees for the journey via the CMK (Centralna Magistrala Kolejowa - Central Railway Main Line),
- lack of effort to assure assistance for disabled passengers or passengers with limited movement abilities,
- lack of proper safety and hygiene conditions as well as comfort and adequate journey.

As a result the President of UTK initiated 3 administrative proceedings on the violation of the provisions of the Regulation.

Positive assessment of the state of observance of passenger's rights in Poland would stand in severe contradiction to the low quality of transport services and an insufficient supply of seats. These factors translate into the results of railway transport and its image, e.g. in the media. The negligence of railway carriers, infrastructure managers and railway station owners, which lead to drastic deterioration of travel conditions, in most cases did not constitute violations of Regulation 1371/2007, yet the standard of provided services was still far from the necessary minimum specified in the transport law act.

2012 was the year of intense work of the Office on the issue of passenger rights protection as well as on the resolution of disputes between passengers and railway carriers.

From January to December 2012 UTK received 661 petitions (598 of which by e-mail and 63 via traditional post). In 512 cases the Office intervened and in 149 cases the responses were provided

Most complaints filed and most advices given via phone by the UTK referred to journey conditions. This shows growing expectations of passengers concerning service and travel comfort.

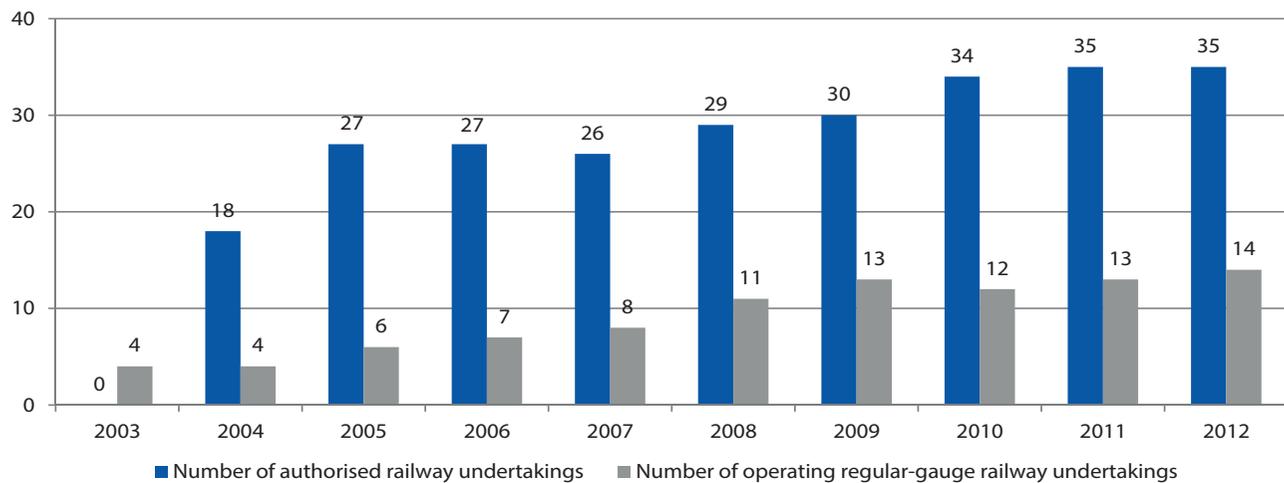
directly. Most petitions received and advices provided by phone referred to the travel conditions, which shows that passengers expect improved travel comfort, have growing awareness of their rights and know what they should demand from the railway carrier. Advices provided by phone refer in most cases to the possibilities of communicating trains or the possibility and way to register the journey of a passenger with limited movement abilities.

2.2.8. Licencing railway passenger transport

In 2012 the President of UTK granted two licenses for the provision of passenger railway services according to the provisions of article 10 par. 1 item 2 of the act on railway transport. In the last couple of years the number of licenses issued by the President of UTK changed significantly. Since 2006 it did not exceed 5 in a year. At the end of 2012 35 railway carriers had active licenses (except for the suspended ones) allowing for the conduction of activity, 13 of which were held by narrow-gauge railway carriers. From the very start of the activity of UTK, the President of the Office issued 42 licenses allowing for the provision of passenger transport services.



Graph 27: The number of licensed railway carriers authorized to provide transport services and actually operating on the market in 2003-2012



/Source: prepared by UTK/

The timeline between the beginning of the second half of 2003 and the end of February 2004 was the transition period, when the legal status allowed the railway carriers to perform transport on the basis of concessions granted by the minister competent for transport or by the license granted by UTK. Taking the above into account, the number of railway carriers providing transport services in 2003 was higher than the number of authorized railway carriers acting on the basis of the granted license.

As a result of the administrative proceedings conducted routinely in the period from 1 January till 31 December 2012 the President of UTK issued a decision concerning the licencing of railway passenger transport, including:

- three decisions changing the data in licenses for provision of passenger railway transport services,
- two decisions granting an extended period for the start of licensed activity to the railway carriers,
- two decisions suspending the licenses,
- one decision withdrawing a license.



3. Freight railway transport market

3.1.1. Competition between transport modes on European freight transport markets

The European position of the world leader in transport is sustained i.a. thanks to the largest container ports in Rotterdam, Antwerp and Hamburg – the only havens, apart from Asian ports, rating among the top fifteen largest container ports of the world.

Over 600 thousand companies dealing with freight transport with the use of all available means of transport are active on the European market, that is almost twice more than the companies providing passenger railway transport services. As it was already mentioned, the total length of roads and railways in the European Union amounts to 5,392 m. km, being a significant advantage in comparison to United States (4,697 m. km) or China (3,237 m. km). It is also worth mentioning that in 2004-2009 the highway network in Europe increased by 13%.

It should be stressed that in almost every case the choice of the means of transport mostly depends on the price (having in mind that the costs of logistics – freight transport and storage – constitute about 10-15% of the final cost of the product). In case if the price of alternative means of transport is comparable, other factors are important, such as time and quality of the provided services. Having in mind that the cost of railway transport is significantly influenced by the state (e.g. adjustment of charges) than the cost of road transport within the EU on a distance shorter than 200 km – it remains more competitive due to a lower price, flexibility and speed, clarity of the offer, easiness of border crossing or the possibility of reaching the final destination directly. Statistics show a significant advantage of road transport over rail transport in the competition between modes in freight transport within the EU.

The situation on the transport market in the European Union indicates that road transport has still stronger arguments in the fight over the customer – the share of railway transport in the freight transport market decreases in favour of road transport (from 12.6 % in 1995 to 11% in 2011). The railway market regained its share after the unprofitable years of 2009 and 2010, when the indicator fell to the lowest level, respectively to 9.9% and 10.2%.

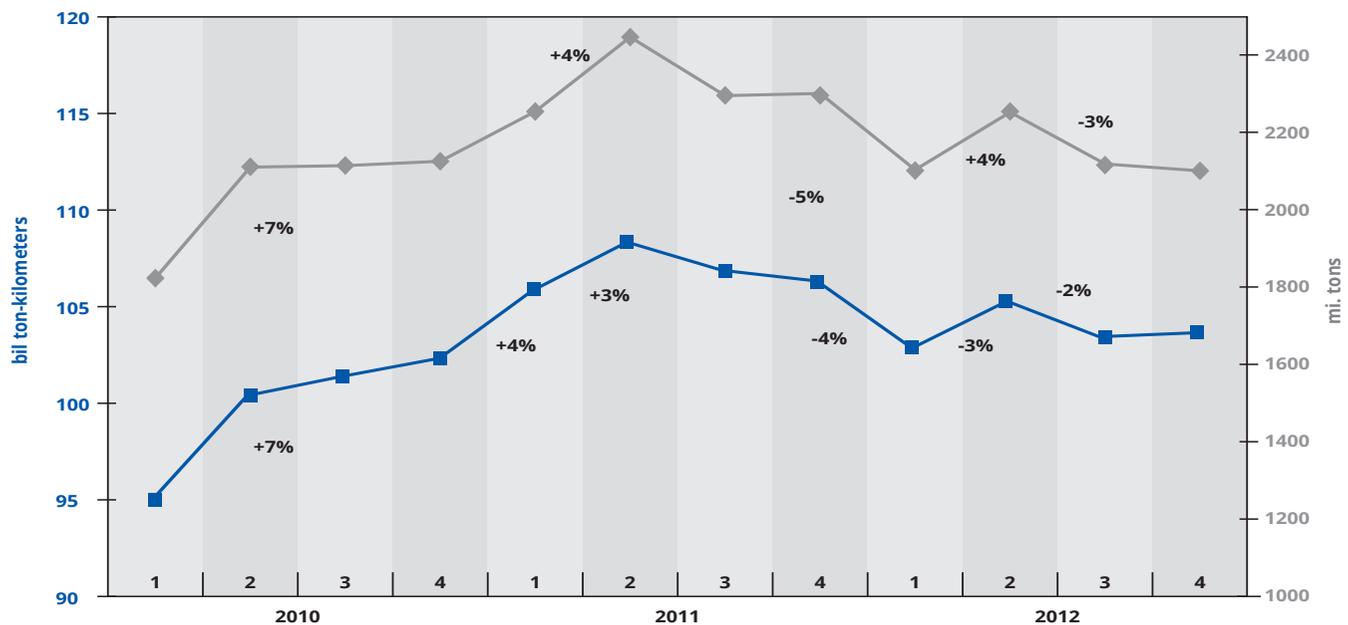
The growing share of road transport results from several factors. First of all, the railway carriers are less flexible when it comes to negotiation of service charges with final recipients, when due to the vast dispersion of the companies providing road transport services compete between one another lowering their margins to the minimum. Thanks to the final recipients their offer is more attractive concerning prices than the offer of railway carriers. Road transport dominates also in more frequent highly processed freight transport. Potential ordering parties often renounce railway transport due to the lack of possibility to reach the preferred collection destination due to the limited number of handling points. Other factors influencing the choice of other means of transport than rail in case of freight transport is the insufficient frequency and punctuality, low speed, which directly influences the extension of delivery time, lack of adjustment of the offer to small freight volumes, lack of sufficient number of door-to-door offers, complicated contract conclusion process, difficulties in access to additional services such as e.g. shipment tracking, packaging and storage as well as frequent lack of competitive and clear price list. It is also important to indicate the problem of insufficient information about the possibilities and offer of railway transport, which are more available and clear in case of road transport.

The share of car transport in freight transport on the European market is growing. The amount of freight transported by rail is falling.

3.1.2. Railway freight transport in Europe

In 2012 concerning the weight of transported goods, on the basis of estimates we can assume that EU countries went through a decrease of 4-5 % in comparison to the previous year. In case of transport performance expressed in tonne-km, we can assume a 5-6% decrease of this coefficient.

Graph 28: The weight of goods and transport performance in individual quarters of 2010 – 2012 in the EU

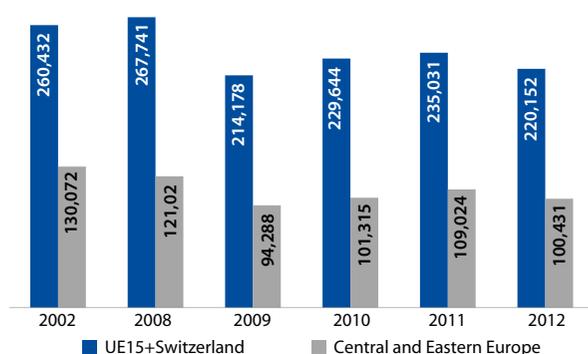


/Source: prepared by UTK on the basis of Eurostat estimates/

The falling tendency concerning transport performance is confirmed by the CER organization, which noted an average decrease by 6.8%. The transport performance counted for the countries of the so called "old fifteen" and Switzerland fell by 6.3%, for the countries of Central and Eastern Europe by 7.9%. Due to the decreases the European market was not able to regain the transport volume from before the crisis. The transport performance level from October 2012 was still by 15.8% lower than in the EU15 and Switzerland and by 18.2% lower than in the countries of Central and Eastern Europe in comparison to the level noted in the relevant period of 2008, despite the increase of transport performance on the European market observed in two previous years. The data gathered by the CER organization may be considered as indicative, because they cover 87% of the entire transport performance (tonne-km) of the countries of the "old fifteen" and Switzerland and 75% of the transport performance of the countries of Central and Eastern Europe (12 members who accessed the EU in 2004, including Croatia). The decrease tendencies in case of freight transport on the European market match the tendencies on the domestic market.

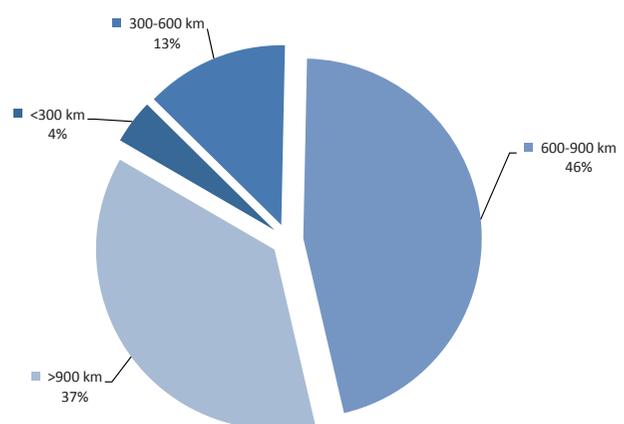
The characteristics of intermodal transport market in Europe can be presented on the data gathered by the UIRR organization. According to this data, in 2012 due to the economic slowdown and some infrastructure based obstacles, the decrease in the transport volume and performance were noted also in the domain of combined transport – by 11% and 5% respectively. Despite the fact that there was less freight, it was in average by 5% heavier and it was transported on longer distances (in average on a distance of 670 km, that is by 5% further than in the preceding year), which is a further distance than in case of this type of transport in Poland. Moreover, over 96% of freight was transported on a distance of over 300 km. 20% of freight was transported within the country and 80% was transported across the border of EU countries. In Poland intermodal transport noted an increase to a record level. This increase however slowed down at the end of the year, which was also caused by the general economic slowdown.

Graph 29: Transport performance in the EU15 + Switzerland and the countries of Central-Eastern Europe (freight transport) in 2007-2012



/Source: prepared by UTK on the basis of CER data/

Graph 30: The distances of freight intermodal transport in Europe in 2012



/Source: prepared by UTK on the basis of UIRR data/



3.2. Competition between modes on the Polish freight transport market

In 2012 1.84 billion tonnes of goods were transported in Poland via all modes of transport, including 231 m. tonnes by railway transport. Road transport was still dominating in this segment with 1.55 billion tonnes of goods.

Tab. 7: The volume of transported goods in Poland in 2001-2012

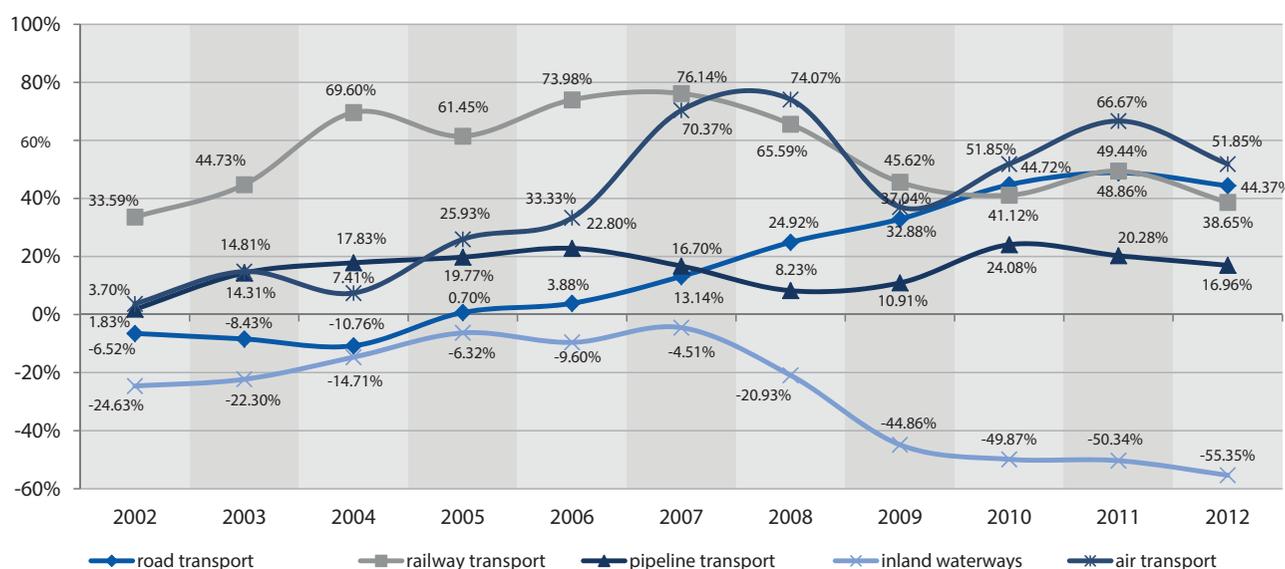
Freight transport market in Poland in 2001 – 2012												
transport mode	Year											
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
in m. tonnes												
in total	1,294.75	1,279.16	1,283.24	1,302.09	1,413.06	1,469.12	1,569.85	1,672.96	1,723.79	1,848.70	1,905.18	1,837.06
road transport	1,072.30	1,002.37	981.96	956.94	1,079.76	1,113.88	1,213.25	1,339.47	1,424.88	1,551.84	1,596.21	1,548.11
railway transport	166.86	222.90	241.50	283.00	269.40	290.30	293.90	276.30	242.98	235.47	249.35	231.35
pipeline transport	45.30	46.13	51.78	53.38	54.26	55.63	52.87	49.03	50.24	56.21	54.49	52.99
inland waterways	10.26	7.73	7.97	8.75	9.61	9.27	9.79	8.11	5.66	5.14	5.09	4.58
air transport	0.03	0.03	0.03	0.03	0.03	0.04	0.05	0.05	0.04	0.04	0.05	0.04

/Source: prepared by UTK on the basis of GUS data/

At the end of 2012 the share of the volume of goods transported by car amounted to 84.3%, which is by 0.5 percentage points more than in the previous year. The railway's share in the total volume of transported goods fell from 13.1% to the level of 12.6%. 2011 witnessed a dynamic increase of aggregate transport, which as a consequence translated into a better result of railway transport than in 2012. The volume of raw materials

transported via pipelines fluctuates around the same level as in the previous years. In 2012 the volume of raw material transport amounted to 53 m. tonnes, which was a 2.9% share of this transport segment. The share of inland waterway transport and air transport in the volume of transported freight is of marginal significance. At the end of last year the share of both modes amounted to less than 0.25%.

Graph 31: The dynamics of freight mass volume in individual segments of transport in 2002-2012 (2001=0%)



/Source: prepared by UTK on the basis of GUS data/

A characteristic phenomenon of the last few years was further change in the division of freight transport market between branches resulting in a significant decrease of the role of railway transport and an increase of the meaning of road transport. This trend is rooted in the changes in the structure of economy but also in the rapid changes within the road transport sector itself. Low barriers of entering the market and relatively low costs are the reason why several dozen road transport companies were established in the transformation period. Growing competition made the road transport offer evolve while the prices remained low. Due to high barriers to enter and operate on the market,

including high, disproportionate costs of access to the infrastructure, railway transport noted dynamic decrease of its share – by 9% only in 2004-2012 (in terms of transported freight volume).

In 2012 there was a 2.8% increase of transport performance in freight transport conducted by all means of transport. Expressed in absolute values it was an increase by 8,251 m. tonne-km. Road transport achieved the best result which exceeded 76% of market share in 2012. The share of railway transport according to the transport performance amounted to 16%, which is by 2.2 percentage points less than in 2011.

Tab. 8: Transport performance concerning freight transport in 2001-2012

transport mode	Freight transport in Poland in 2001 – 2012											
	Year											
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	in m. tonne-km											
in total	144,752	144,495	152,381	188,500	196,176	216,713	238,399	248,420	259,098	297,313	297,361	305,612
road transport	74,403	74,679	78,160	110,481	119,740	136,416	159,527	174,223	191,484	223,170	218,888	233,310
railway transport	47,913	47,756	49,392	52,053	49,664	53,291	53,923	51,570	43,601	48,842	53,974	49,039
pipeline transport	21,093	20,854	23,871	24,806	25,388	25,640	23,513	21,247	22,908	24,157	23,461	22,325
inland waterways	1,264	1,126	871	1,066	1,277	1,245	1,338	1,274	1,020	1,030	909	815
air transport	79	80	87	94	107	121	98	106	85	114	129	123

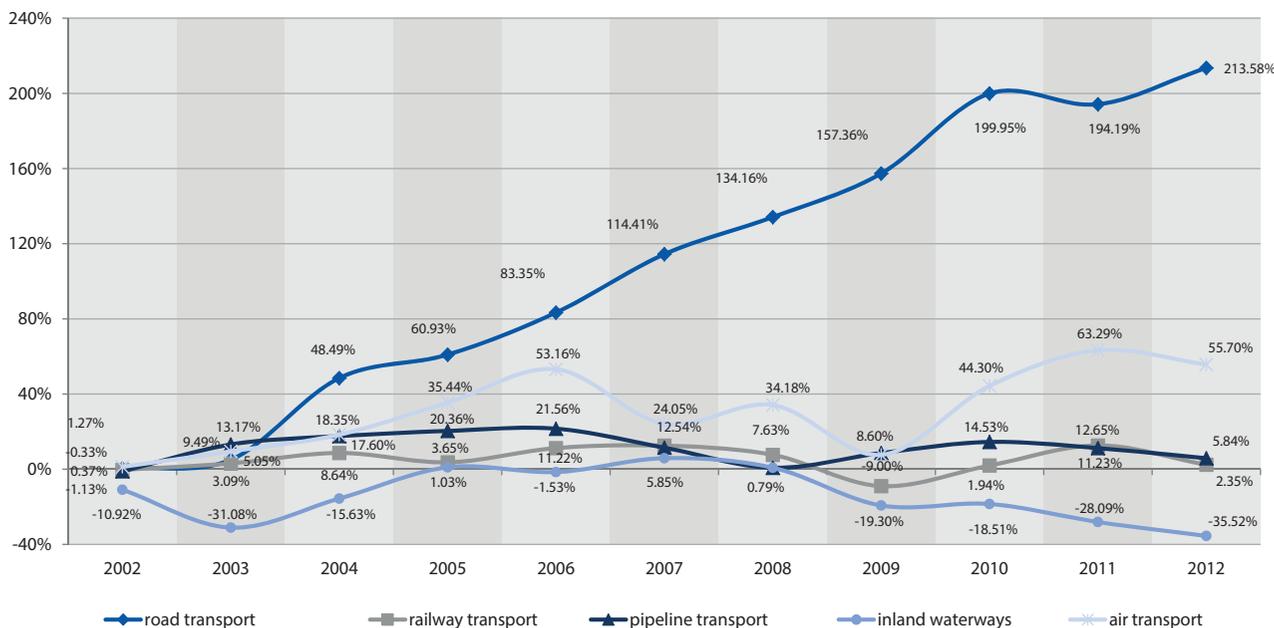
/Source: prepared by UTK on the basis of GUS data/

In 2012 only road transport showed an increase of transport performance by 14 billion tonne-km more than in 2011. The remaining branches of transport showed a falling tendency, including i.a. railway transport – by 9.1%. It is important to stress that the volume of air transport performance was slight and amounted to only 123 m. tonne-km. In the same period road transport performed 233.3 billion tonne-km. In pipeline trans-

port, due to large distances of the transport of raw materials, the transport performance amounted to 22.3 billion (decrease by 4.8%), which constituted 7.3% of market share (decrease by 0.6 percentage points). The share of inland waterways transport and air transport was insignificant amounting to 0.3% and 0.04% respectively.



Graph 32: The dynamics of transport performance in individual branches of transport in 2002-2012 (2001=0%)



/Source: prepared by UTK on the basis of GUS data/

Numerous economic changes influenced the alteration of market roles of individual branches of transport. Poland, similarly to the rest of the EU countries, witnessed a decrease in the importance of freight transport by rail in 2001-2012 in favour of road transport, the advantage of which is still the price, time and the possibility to provide „door-to-door” transport without changing the means of transport in-between – a key element when it comes to the choice of the means of transport by the customer. The disadvantage of this branch of transport is the limited possibility to take on large freight volumes. In the transport structure, especially in road transport, the share of highly processed goods is dynamically growing.

3.2.1. Polish freight railway undertakings

In 2012 railway freight transport was conducted by 49 licensed railway carriers, including 48 railway carriers on regular-gauge lines and 1 railway carrier on wide-gauge line. Additionally, four railway carriers declared that they provided transport services on narrow-gauge lines. It should also be stressed that there is no obligation of licensing the provision of services on narrow-gauge lines.

In 2012 the following companies conducted licensed activity:

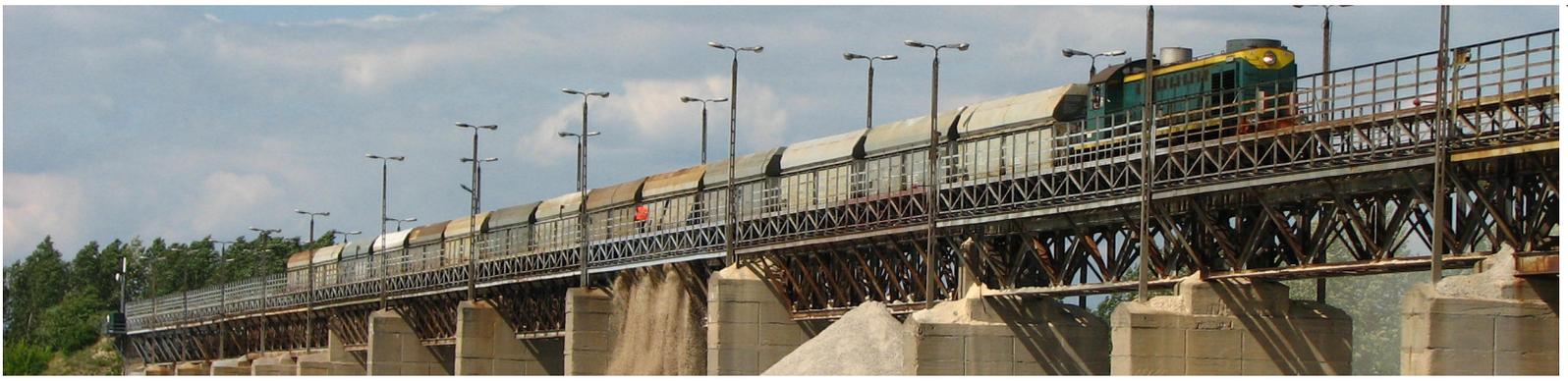
- four PKP Group companies:
 - PKP Cargo S.A. (hereinafter: “PKP Cargo”)
 - PKP LHS Sp. z o.o. acting on a separate wide-gauge line, (hereinafter: “PKP LHS”)
 - PKP Energetyka Sp. z o.o. providing transport only for own purposes of maintenance and repair works
- on energy supply infrastructure (hereinafter: “PKP Energetyka”), and
- PKP Cargo Service Sp. z o.o. (hereinafter: “PKP Cargo Service”),
- eight companies of the CTL Group:
 - CTL LOGISTICS Sp. z o.o. (hereinafter: “CTL Logistics”)
 - CTL Rail Sp. z o.o., (hereinafter: “CTL Rail”)
 - CTL Train Sp. z o.o., (hereinafter: “CTL Train”)
 - X-TRAIN Sp. z o.o. (from December 2012 CTL Północ Sp. z o.o.), (hereinafter: “X-train” or “CTL Północ”)
 - CTL Express Sp. z o.o., (hereinafter: “CTL Express”)
 - CTL Reggio Sp. z o.o., (hereinafter: “CTL Reggio”)
 - CTL Kolzap Sp. z o.o., (hereinafter: “CTL Kolzap”)
 - CTL Kargo Sp. z o.o., (hereinafter: “CTL Kargo”)
- two companies of the DB Schenker group:
 - DB Schenker Rail Polska S.A., (hereinafter: “DB Schenker Rail” or “DB Schenker Rail Polska”)
 - DB Schenker Rail SPEDKOL Sp. z o.o., (hereinafter: “DB Schenker Rail Spedkol”)
- twenty eight freight transport railway carriers:
 - PUK KOLPREM Sp. z o.o., (hereinafter: “PUK Kolprem” or “Kolprem”)

- POL-MIEDŹ TRANS Sp. z o.o., (hereinafter: "Pol-Miedz Trans")
- LOTOS KOLEJ Sp. z o.o., (hereinafter: "Lotos Kolej" or "Lotos")
- TRANSODA Sp. z o.o., (hereinafter: "Transoda")
- KP "KOTLARNIA" S.A., (hereinafter: "Kotlarnia")
- ZIK Sandomierz S.J., (hereinafter: "ZIK Sandomierz")
- RAIL POLSKA Sp. z o.o., (hereinafter: "Rail Polska")
- KOLEJ BAŁTYCKA S.A., (hereinafter: "Kolej Bałtycka" or "Bałtycka")
- ORLEN KOL-TRANS Sp. z o.o., (hereinafter: "Orlen Kol-Trans")
- GATX Rail Poland Sp. z o.o., (hereinafter: "GATX")
- EURONAFT TRZEBINIA Sp. z o.o., (hereinafter: "Euronaf Trzebinia")
- Lubelski Węgiel Bogdanka S.A., (hereinafter: "Lubelski Węgiel Bogdanka" or "Bogdanka")
- PTK Koltar Tarnów Sp. z o.o., (hereinafter: "PTK Koltar" or "Koltar")
- STK S.A., (hereinafter: "STK")
- MAJKOLTRANS Sp. z o.o., (hereinafter: "Majkoltrans")
- CEMET S.A., (hereinafter: "Cemet")
- Freightliner PL Sp. z o.o., (hereinafter: "Freightliner" or "Freightliner PL")
- Hagans Logistics Sp. z o.o., (hereinafter: "Hagans")
- S&K Train Transport Sp. z o.o., (hereinafter: "S&K")
- ExTrail Sp. z o.o., (hereinafter: "Ex Trail")
- Transchem Sp. z o.o., (hereinafter: "Transchem")
- ITL Polska Sp. z o.o., (hereinafter: "ITL")
- Dolnośląskie Linie Autobusowe Sp. z o.o., (hereinafter: "Dolnośląskie Linie Autobusowe" or "DLA")
- PHU Lokomotiv Bronisław Plata, (hereinafter: "PHU Lokomotiv" or "Lokomotiv")
- Wiskol W. Sołtys, J. Sołtys S.J., (hereinafter: "Wiskol")
- Philip Sp. z o.o., (from October 2012 JD Trade Sp. z o.o.) (hereinafter: "Philip" or "JD Trade")
- Tabor Szynowy Opole S.A., (hereinafter: "Tabor Szynowy Opole")
- Zakład Przewozów i Spedycji SPEDKOKS Sp. z o.o., (hereinafter: "Spedkoks")
- NBE Rail Polska Sp. z o.o. (hereinafter: "NBE")
- and seven companies providing only transport connected with construction, maintenance and modernization of railway infrastructure:
 - DOLKOM Sp. z o.o.,
 - Przedsiębiorstwo Napraw Infrastruktury Sp. z o.o.,
 - Pomorskie Przedsiębiorstwo Mechaniczno-Torowe Sp. z o.o.,
 - PNiUIK w Krakowie Sp. z o.o.,
 - PRKiI Wrocław S.A.,
 - PRK KRAKÓW S.A.,
 - TORPOL Sp. z o.o.

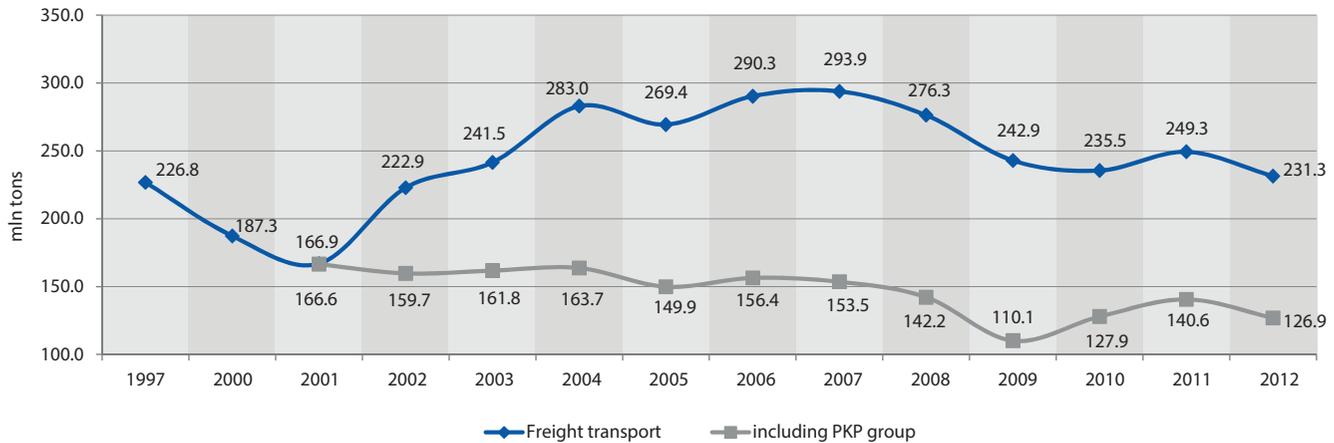
In 2012 railway carriers transported 231.3 m. tonnes of freight, realizing transport performance of 49,039 m. tonne-km. In comparison to 2011 it was a decrease of transported freight weight by 7.22% and of transport performance expressed in tonne-km by 9.14%. The decrease of transport in 2012 was mainly caused by the reduced demand on the transport of materials used for infrastructure investments and the fall of demand for goods of the group of aggregates, sand, gravel and clay used for road investments during the preparations to the EURO 2012 championship. This group went through a decrease of nearly 18.3%. The dynamics of the transport of oil refinement products and hard coal also slowed down.

Similarly to previous years Polish railway transport was based on the transport of mass goods, mostly raw materials. The transport of coal, metal ores and products of mining in 2012 constituted 68% of the total volume of weight and 56.3% of the transport performance of the railway carriers.

Further dynamic growth of railway intermodal transport of freight was noted in 2012. 644.6 thousand loading units of a total weight of 8.1 m. tonnes were transported, 31.8% and 36.4% respectively more than in 2011. The performance of railway companies in this respect amounted to 3.0 billion of tonne-km – an increase of nearly 25%. At the end of 2012 the share of railway transport in the total of intermodal transport, measured by the weight of transported units, amounted to 3.48% of the total volume of freight transport in Poland (increase of share by 1.11 percentage points). Taking under consideration the value of the transport performance, the share of intermodal transport reached 6.21% (in comparison to 4.5% in 2011).



Graph 33: Railway freight transport in 1997 – 2012 (according to weight)³

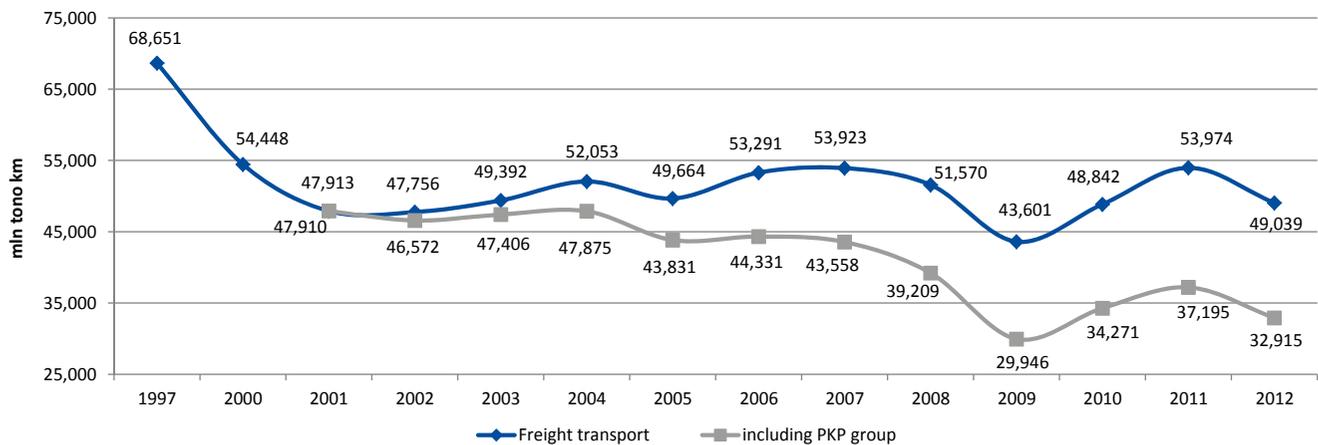


/Source: prepared by UTK/

Biomass transport was a dynamically developing market segment in 2012. Railway carriers transported over 1.8 m. tonnes of biomass, which is by 638.6 thousand tonnes more in comparison to 2011 (increase by 54.1%). The analysis of transport

performance dynamics confirms this tendency – in 2012 the transport of biomass covered 457.6 m. of tonne-km, which is by 201.3 m. more than in 2011 (an increase by 78.5%).

Graph 34: Transport performance in railway freight transport in Poland in 1997 – 2012



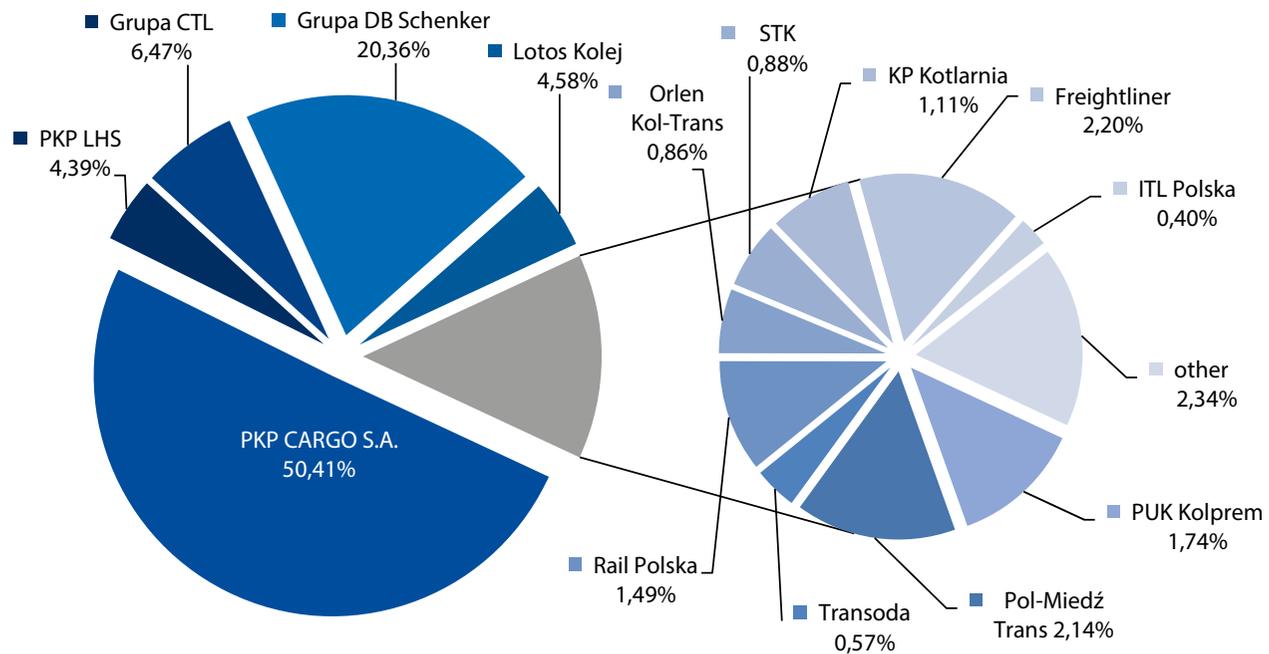
/Source: prepared by UTK/

The larger group of entrepreneurs who provide railway services noted a decrease of freight transport volume in 2012. The company PKP Cargo, after a short period of market share growth in 2010 and 2011, noted a market share decrease in 2012 concerning both transported weight and transport performance. At the end of 2012 the market share of PKP Cargo fell by 1.71 percentage points in comparison to the previous year (in respect of the transported weight). The dynamic increase of market share of the Lotos Kolej company concerning transport performance should

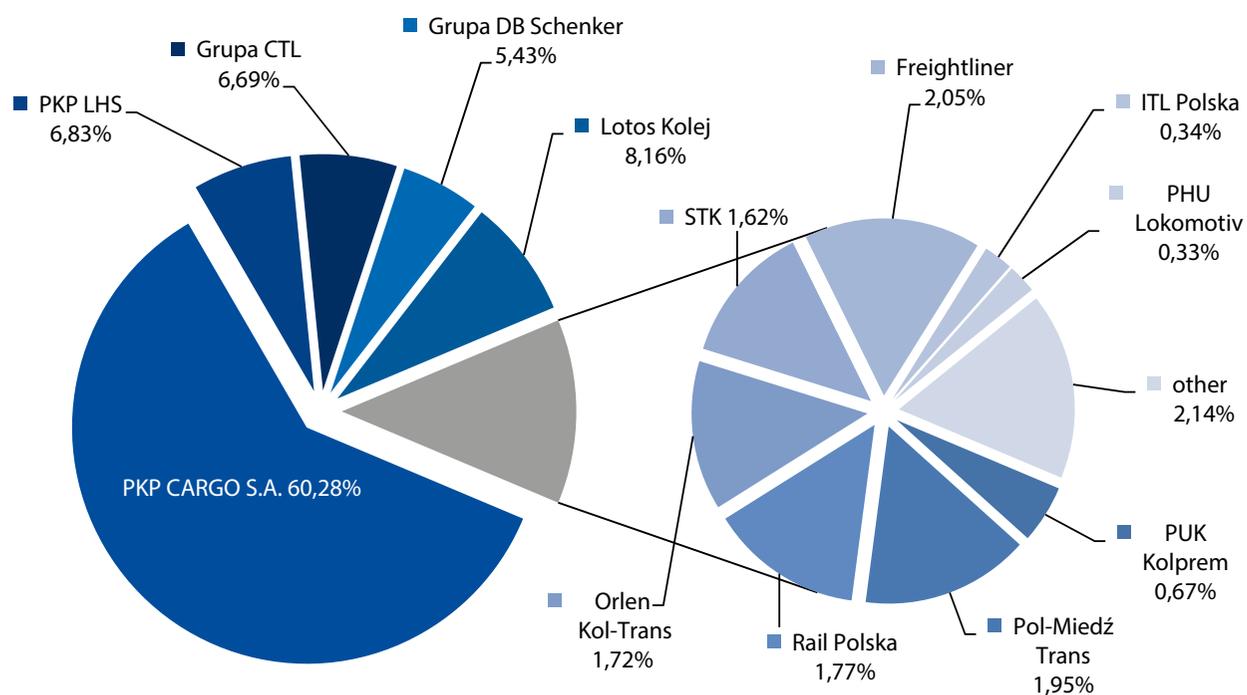
also be noticed. In 2012 the company ranked as second with a market share of over 8%, whereas PKP LHS – railway carrier of the PKP group providing transport services on an organizationally separated wide-gauge line - ranked as third concerning transport performance. The transport growth measured by the transported freight weight and the transport performance was less dynamic than in 2010/2011 when it amounted to 18%, nonetheless it allowed to reach 6.83% of market share concerning transport performance.

³ Until 2009 part of manoeuvre transport conducted by licensed railway undertakings was included in the total volume of transport.

Graph 35: Market share of largest railway carriers according to the weight of transported goods in 2012



Graph 36: Market share of largest railway carriers according to transport performance in 2012



/Source: prepared by UTK/

The company Lotos Kolej was second concerning transport performance, which was the result of a dynamic increase of transport provided by companies dealing with transport of freight from a certain market segment or financially related with production enterprises (production of fuel and oil refinement products). Within this group, a significant increase (by 4.74% concerning transport weight and 20.65% concerning transport performance) was achieved by Pol-Miedź Trans - a company focused mainly on the transport of metal (iron) ore.

When analyzing the data concerning the transport in particular months it should be stressed that after a dynamic increase in June-October 2012 the tendency reversed. In the months of November-December 2012 there was a significant fall in the transported weight of goods. In October 2012 the railway transport companies transported the largest amount of freight in the last two years of 2011 and 2012. In December 2012, on the other hand, the weight of transported goods fell to the level of 17,893 K tonnes - by 17.4% less than in October 2012 and by 12% less in comparison to the relevant period in December 2011.

Graph 37: Freight transport in Poland according to weight in individual months of 2011 and 2012

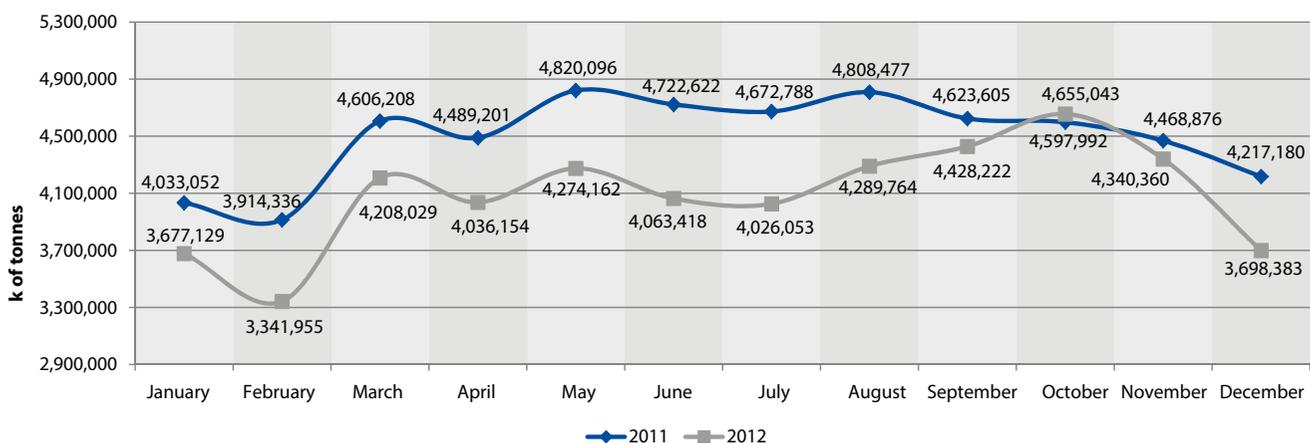


/Source: prepared by UTK/

In 2012 the railway carriers executed the largest transport performance in October – over 4.65 billion tonne-km. At the end of the year there was a fall in the transport performance,

similar to the decrease of transported weight (to the level of 3.7 billion tonne-km).

Graph 38: Freight transport in Poland according to transport performance in individual months of 2011 and 2012



/Source: prepared by UTK/

The results of the comparison of transported weight and transport performance in 2011 and 2012 indicate that the level of both parameters was lower in 2012. The monthly average of weight transported in 2011 amounted to 20.8 m. and in 2012 to 19.3 m. tonnes (a decrease by 7.2%). The monthly average of transport performance amounted to 4.5 m. tonne-km in 2011 and 4.1 billion tonne-km in 2012 (a decrease by 8.9%).

When analyzing the data for 2012 it is important to notice the results concerning import. In comparison to the previous year the fall of transport volume in this segment amounted to 14.6% concerning transport weight, and 5.8% concerning transport performance. Over 35 m. tonnes of freight were transported, which is by 6 m. less than in 2011. In 2012 there was an export increase in both transported weight and transport performance by 6.04% and 8.12% respectively.

When analyzing the structure of transport dynamics (concerning the transported weight) in individual communications within the last couple of years, the changes in the import and export dynamics in 2012 in comparison to 2011 are quite considerable.



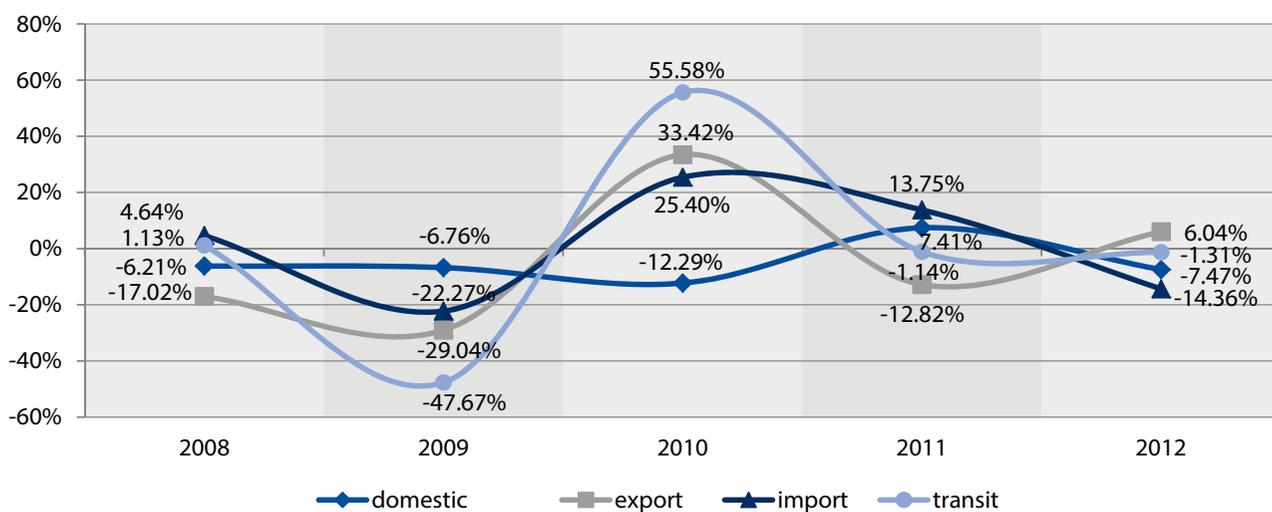
Export in 2011 fell by 12.82% in comparison to 2010. In 2012 there was an increase of 6.04% comparing to the previous year. The volume of import, which increased significantly in 2010 and 2011 (by 13.75%), fell in 2012 by 14.36% in comparison to 2011. Transit is still decreasing, but the dynamics of this decrease is falling in comparison to 2011. The share of transit in the total of international communications (import + export + transit) is still rather small, amounting to 8%. The share of export and import amounted to 38% and 54% respectively.

when analyzing the dynamics of transport measured by transport performance in individual communications. In this case the dynamics of transit increase is positive, which means that transport performance in 2012 grew in comparison to 2011.

In 2012 a growth in freight mass volume and in transport performance was identified

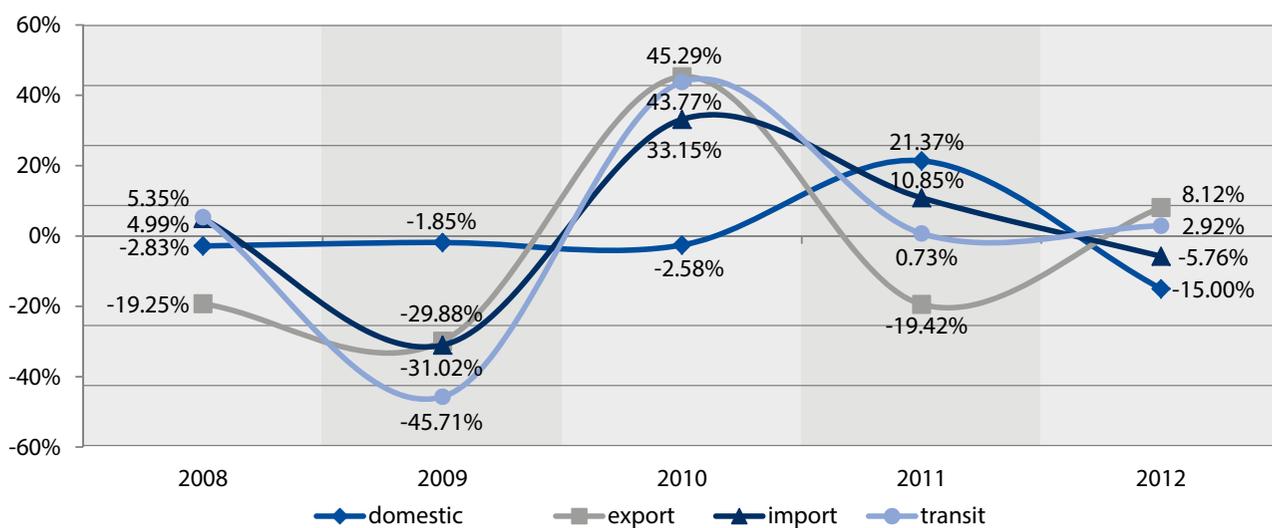
Similar tendencies (increase of export dynamics, decrease of transport within the country and transit) can also be observed

Graph 39: Dynamics of transport in individual communications according to volume of goods [year to year change]



/Source: prepared by UTK/

Graph 40: Dynamics of transport in individual communications according to transport performance [year to year change]

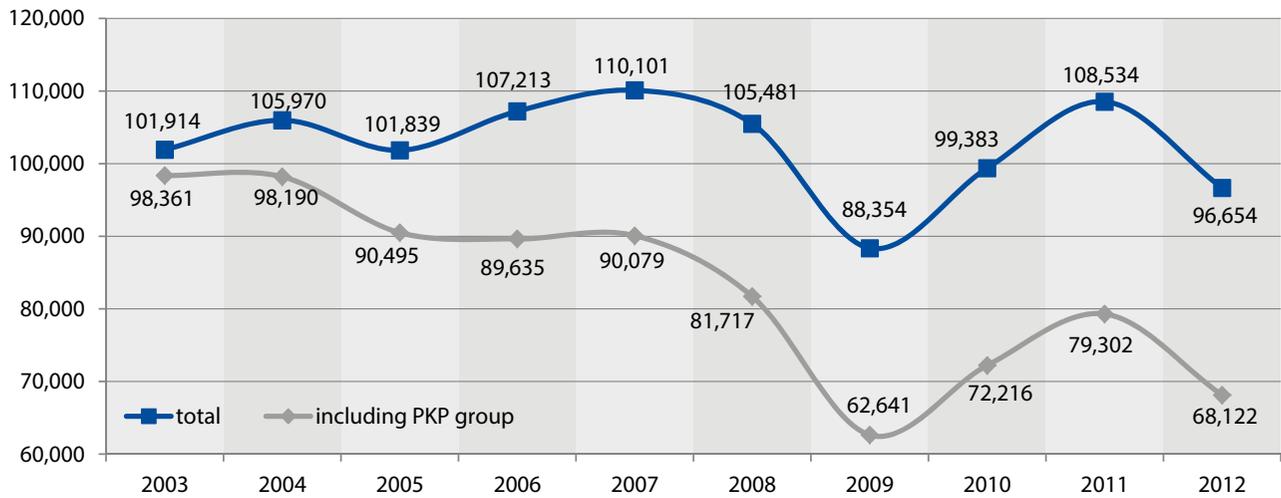


/Source: prepared by UTK/

International transport is most susceptible to the change of economic factors. The fluctuation on these markets translates indirectly into the total value of Polish railway transport volume. In 2012 there was a decrease in both domestic and international

traffic. The reason was global decrease of demand, which always results in the decrease of demand for transport services.

Graph 41: Gross performance on the infrastructure network in freight transport [gross m. tonne-km] in 2003-2012



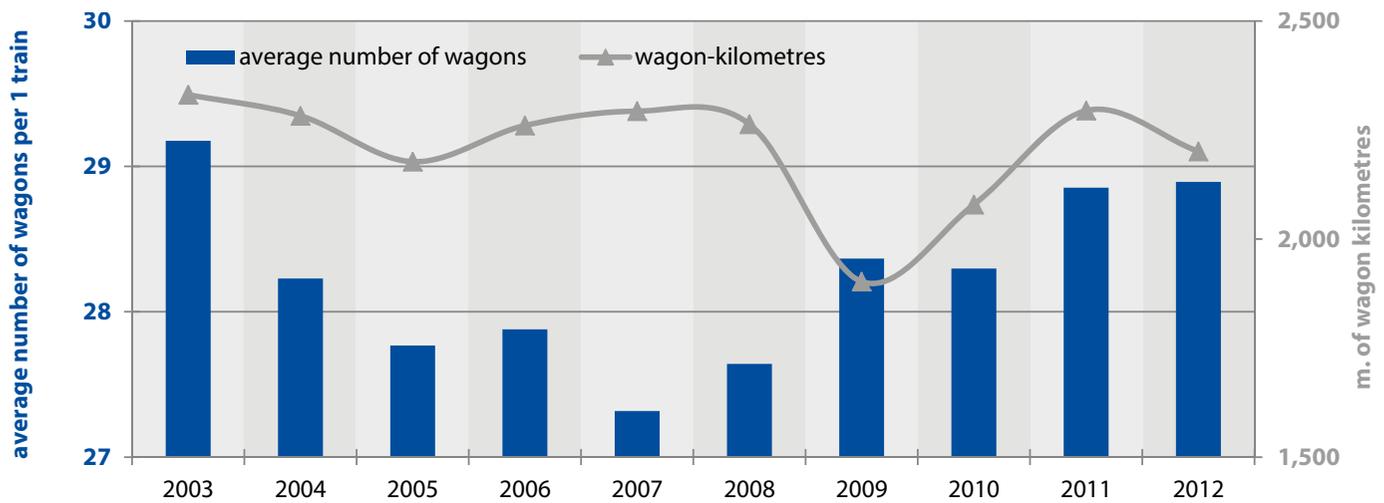
/Source: prepared by UTK/

In 2012 the transport performance of freight transport companies on the network of infrastructure administrators (together with own weight of wagons included in the train set, own weight of the locomotive and weight of freight loaded on cars) amounted to gross 96.7 billion tonne-km. In comparison to 2011 the decrease of transport performance amounted to 10.9% (gross 11.8 billion tonne-km). The PKP group's share

in the transport performance on the network of infrastructure administrators amounted to 70.5% (by 2.6 percentage points more than 2011). This decrease of gross transport performance stands for a change of the trend witnessed in 2010-2011, when transport performance grew after previous falls in 2008 and 2009.

The analysis of the market in respect of transport performance of wagon rolling stock, understood as the sum of mileage of individual cars counted in kilometres, both loaded and empty in all launched trains of railway carriers, shows a decrease similarly to other parameters in 2012. In 2011 railway carriers provided transport services of 2.294 billion wagon-kilometres, and in 2012 2.200 billion wagon-kilometres (decrease by 4.1%). As far as the parameter of average wagon number per one launched train is concerned, in 2012 its value remained at similar level. In 2012 there were 28.89 items compared to 28.85 items in the previous year. It should be stressed that this value changed significantly in the last few years and fluctuated around the level of 28 items

Graph 42: The total of mileage of freight cars in km compared to the average number of wagons assigned to 1 launched train of a railway carrier in 2003-2012



/Source: prepared by UTK/

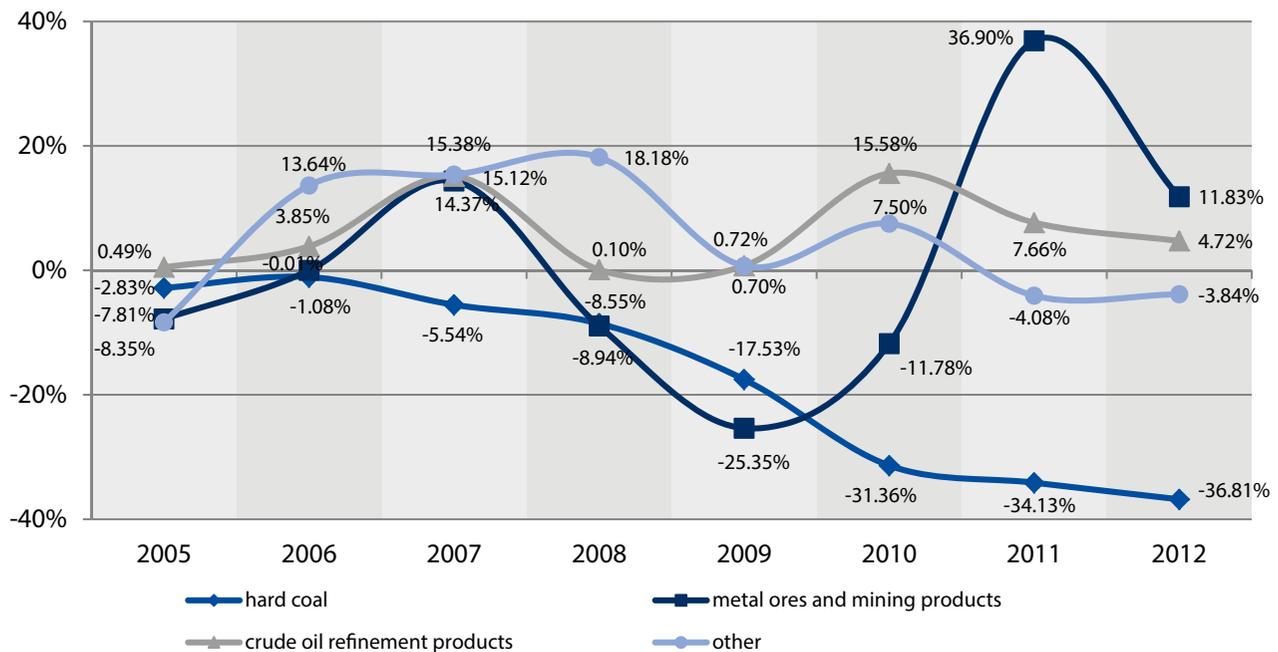


3.2.2. Polish freight railway market structure

Polish railway transport is based on the transport of mass goods, mostly raw materials. In 2012 the transport of coal, metal ores and mining products constituted 68% of the whole volume of transported weight and 56.3% of the transport performance of railway carriers. The highest market share concerning transported weight belonged to hard coal transport – 41.8% (96.2 m. tonnes). It should also be stressed that the volume of hard coal transport by rail has been dynamically falling since last

couple of years. In 2006-2012 the volume of this transport fell by nearly 37% (54.7 m. tonnes). This is caused by i.a. the change of fuel demand structure, including the increase of importance of lignite, the production of which is relatively cost-effective thus translating into low costs of electric power production. Due to the fact that lignite is highly humid, railway transport is usually not applied to transport this kind of material. Therefore, lignite is mostly used on local markets and lignite fuelled power plants are mostly established in the vicinity of its deposits, where coal is transported by band conveyors, industrial rail or cars.

Graph 43: Dynamics of raw material transport in 2005-2012 according to transported weight [2004=100%]



/Source: prepared by UTK/

In 2012 there was an 18.3% decrease in metal ore and mining products transport caused by i.a. the limitation of infrastructure investments and large demand for aggregates, sand and gravel during the preparations to the Euro 2012 championship. Transport in this group of goods in the peak year of 2011 reached the level of 74.2 m. tonnes. The increase dynamics in comparison to 2011, measured by the transported weight of goods, concerned: chemicals 4.1%, transport equipment 5.9%, foodstuffs 25.6% as well as metal and finished metal products 30.4%.

According to the indicator of transport performance on the railway infrastructure network, the greatest performance concerned the transport of hard coal, lignite, mineral oil and natural gas 31.1% (15.3 billion tonne-km) as well as metal ore

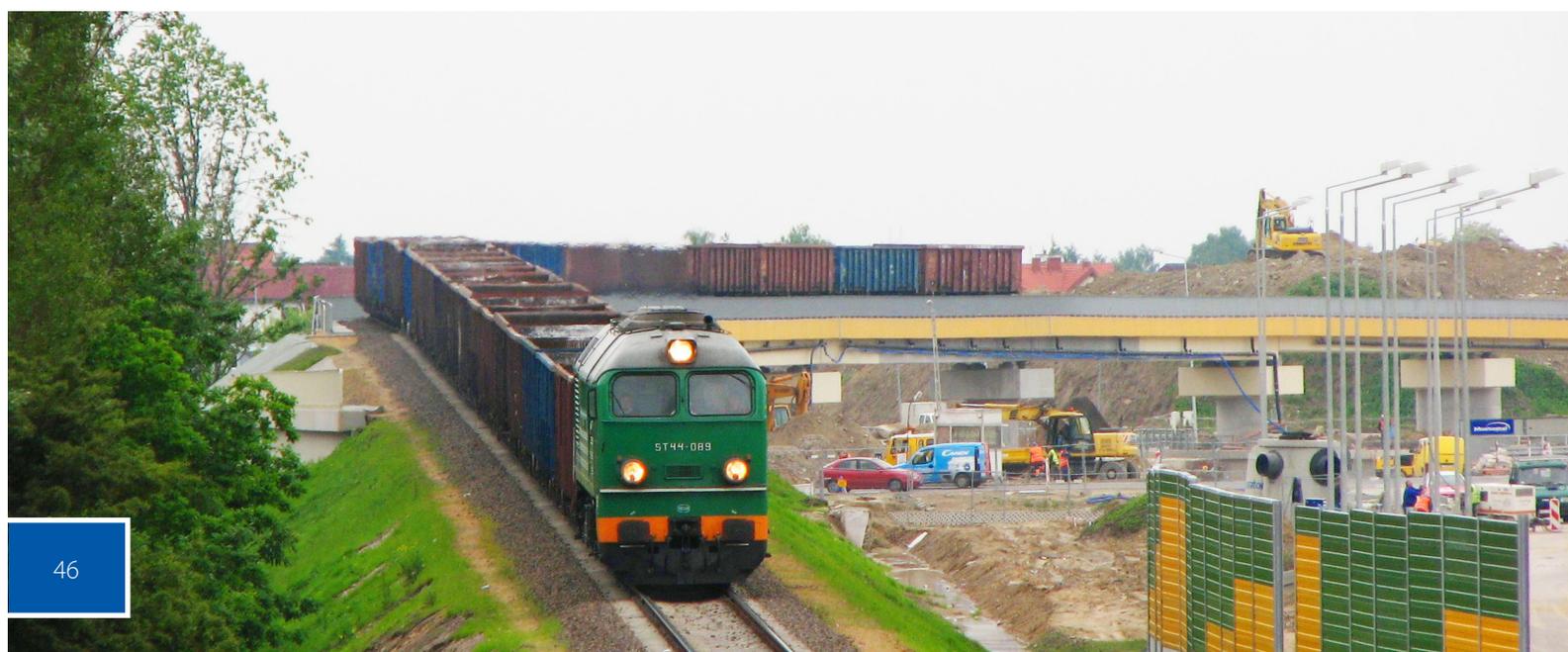
sand mining products 25.6% (12.6 billion tonne-km). The greatest dynamics of the performance of railway carriers concerned the transport of: empty packaging 86.1%, metals and finished metal products 41.1%, transport equipment 31.7%, foodstuffs, beverages and tobacco products 12.2% as well as agricultural, hunting, forestry, fishing and fishery products 7.5%.

The table below includes a detailed analysis of individual groups of goods transported by rail, according to weight and transport performance, including narrow-gauge transport.

Tab. 9: Amount of transported weight of goods according to groups (in K of tonnes) and market share in 2012

Weight of goods		
Groups of goods	In total (K tonnes)	Market share [%]
TOTAL	4,477.171	100,00%
agricultural, hunting, forestry, fishing and fishery products	188.350	1.93%
including corn	97,815.957	0,08%
hard coal, lignite, crude oil and natural gas	96.668.457	42.27%
including hard coal	60,597.778	41.77%
metal ores and other mining and quarrying products	10.980.975	26.19%
including iron ores	44.913.210	4.75%
aggregates, sand, gravel, clay	1,525.664	19.41%
foodstuffs, beverages and tobacco products	18.510	0.66%
textiles and clothing, leather and leather products	1,467.687	0.01%
wood, wooden and cork goods, straw goods, paper and paper goods, printing goods and recordings	24,144.399	0.63%
coke, briquettes, products of crude oil refining, gases manufactured with industrial methods	14.769.016	10.43%
Including product of crude oil refining	10,114.433	6.38%
chemicals, chemical products, artificial fabric, goods made of rubber and plastic, nuclear fuel	3,366.172	4.37%
non-metal mineral products	2.310.218	1.45%
Including cement, lime, gypsum	885.675	1,00%
other building materials	10,414.931	0.38%
metal finished products (except for machines and facilities)	215.956	4.50%
machines, appliances, electric and electronic equipment	1,041.965	0.09%
transport equipment	115.091	0.45%
furniture, other ready-made goods	2,559.152	0.05%
recyclable, municipal waste	0.000	1.11%
letters, packages and courier's parcels/shipment	836.392	0.00%
empty packaging	1.342	0.36%
loads carried during the move, remaining loads which are not subject to trade	676.599	0.00%
mixed goods, without food products	5,504.261	0.29%
non-identifiable goods	6,509.531	2.38%
other goods	6 509,531	2.81%

/Source: prepared by UTK/



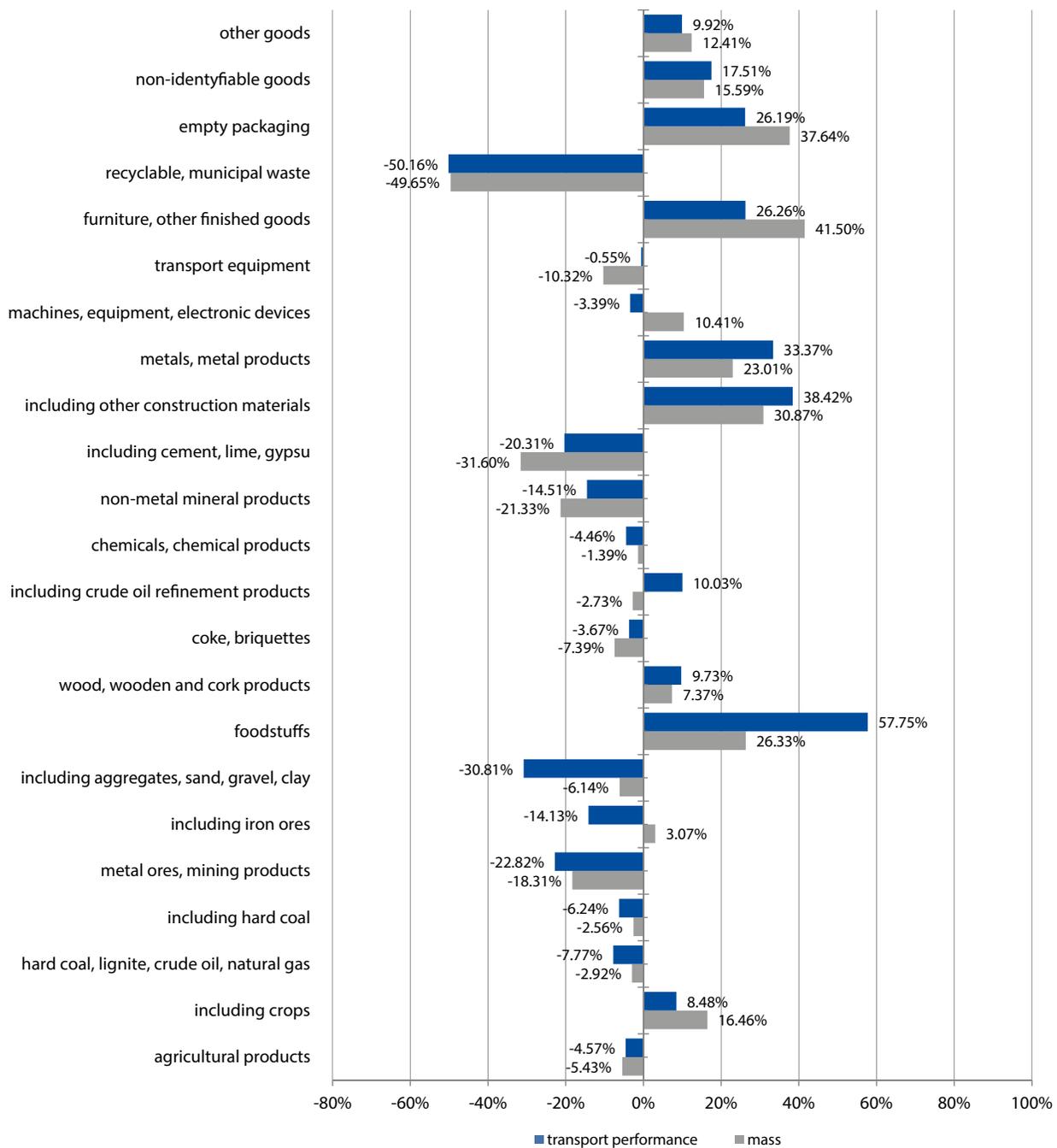


Tab. 10: Transport performance according to groups of goods (in K of tonne-km) and market share in 2012

Weight of goods		
Groups of goods	In total (K tonnes)	Market share [%]
TOTAL	49,039,416.880	100,0%
agricultural, hunting, forestry, fishing and fishery products	1,683,436.465	3.43%
Including		
Corn	37,135.179	0.08%
hard coal, lignite, crude oil and natural gas	15,266,876.802	31.13%
including		
hard coal	15,030,601.737	30.65%
metal ores and other mining and quarrying products	12,572,622.580	25.64%
including		
iron ores	2,438,403.180	4.97%
aggregates, sand, gravel, clay	8,211,222.414	16.74%
foodstuffs, beverages and tobacco products	298,788.412	0.61%
textiles and clothing, leather and leather products	3,573.875	0.01%
wood, wooden and cork goods, straw goods, paper and paper goods, printing goods and recordings	457,271.377	0.93%
coke, briquettes, products of crude oil refining, gases manufactured with industrial methods	7,378,922.943	15.05%
Including		
product of crude oil refining	5,189,118.305	10.58%
chemicals, chemical products, artificial fabric, goods made of rubber and plastic, nuclear fuel	3,203,174.510	6.53%
non-metal mineral products	1,000,942.312	2.04%
including		
cement, lime, gypsum	769,320.690	1.57%
other building materials	180,677.517	0.37%
metal finished products (except for machines and facilities)	2,746,703.610	5.60%
machines, appliances, electric and electronic equipment	71,099.747	0.14%
transport equipment	265,431.239	0.54%
furniture, other ready-made goods	39,102.470	0.08%
recyclable, municipal waste	627,298.372	1.28%
letters, packages and courier's parcels/shipment	0.000	0.00%
empty packaging	339,861.716	0.69%
loads carried during the move, remaining loads which are not subject to trade	514.000	0.00%
mixed goods, without food products	111,793.223	0.23%
non-identifiable goods	2,216,540.159	4.52%
other goods	755,463.069	1.54%

/Source: prepared by UTK/

Graph 44: Transport volume changes concerning individual groups of goods 2012



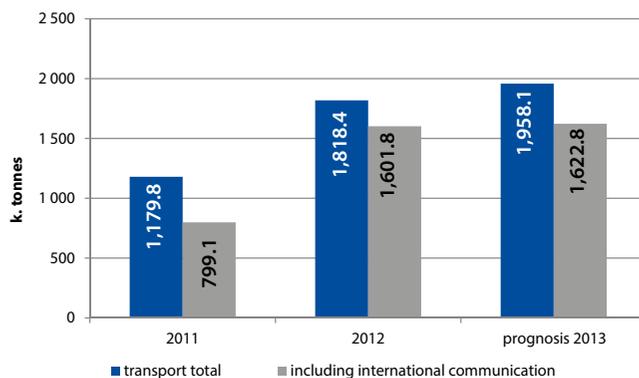
/Source: prepared by UTK/

Despite the decrease in hard coal transport volume, the structure of Polish freight transport by rail concerning transported materials is still dominated by the transport of mass loads, including fuels. It is important to notice the growing importance and demand for biomass transport, including biodegradable solid and liquid substances of vegetable and animal origin, derived from the products, waste and remains from agricultural and forestry production as well as from the industry processing these products, and part of the remaining biodegradable waste. The main factor causing the growth of demand for this kind of transport are the more and more severe environmental protection standards and the implementation of climate related policy of the European Union, assuming a reduction of carbon dioxide emissions, including numerous investments in energy production based on

In the structure of goods transported by rail in Poland, despite the fall in the volume of coal transported, the transport of mass goods, including energy is still dominating.

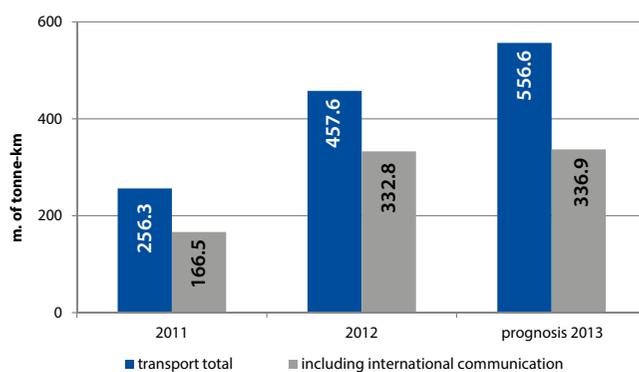
biomass combustion and coal co-combustion. In 2012 railway carriers transported over 1.8 m. tonnes of biomass, which is by 638.6 thousand tonnes more than in 2011 (increase by 54.1%). The biomass transport market measured by transport performance shows a similar tendency. The transport performance of railway carriers amounted to 457.6 m. tonne-km, which is by 201.3 m. more than in 2011 (78.5% increase).

Graph 45: Biomass transport in 2011-2012 and prognosis for 2013 (weight)



/Source: prepared by UTK/

Graph 46: Biomass transport in 2011-2012 and prognosis for 2013 (transport performance)



/Source: prepared by UTK/

The share of biomass transporting companies in the total transport volume in the end of 2012 amounted to 0.79% concerning transported weight and around 0.93% concerning transport performance. The transport of vegetable products dominated in 2012 (35.8% of the total volume of the transported biomass), wood including sawdust and other timber waste (33.2%) as well as oilseed cake and other fat and vegetable oil extraction products (28%). The remaining products constituted less than 3% of the total transported weight. Biomass was mainly transported in the domestic communication and imported from Eastern Europe.

3.2.3. Freight transport in international communication

In this chapter the parcels sent for transport abroad or received from abroad by land or through sea havens (including the ones trans-shipped in havens) for further transport to the final station situated within the country and transited through the territory of the country were included in the calculation of railway transport in international communication. The volume of transport performance was calculated as the sum of the products of individual parcels transported in wagons and the distance of the transport on the territory of the country.

In 2012 freight transport in international communication was provided by twenty-one licensed railway carriers, including:

two companies of the PKP group:

- PKP Cargo S.A.,
- PKP LHS Sp. z o.o.,

four railway carriers of the CTL group:

- CTL Logistics Sp. z o.o.,
- CTL Rail Sp. z o.o.,
- CTL Express Sp. z o.o.,
- CTL Kargo Sp. z o.o.,

two railway carriers from the DB group:

- DB Schenker Rail Polska S.A.,
- DB Schenker Rail Spedkol Sp. z o.o.

and the railway carriers provided below:

- PUK Kolprem Sp. z o.o.,
- Lotos Kolej Sp. z o.o.,
- Rail Polska Sp. z o.o.,
- Kolej Bałtycka S.A.,
- Koleje Czeskie Sp. z o.o.,
- Euronafit Trzebinia Sp. z o.o.,
- STK S.A.,
- ITL Polska Sp. z o.o.,
- ORLEN KolTrans Sp. z o.o.,
- NBE Rail Polska Sp. z o.o.,

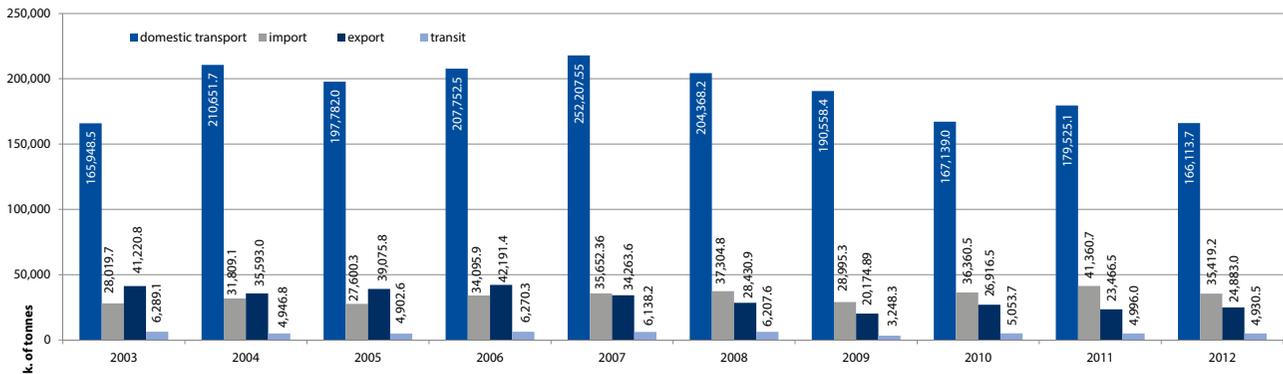
Freight railway transport market

Freight transport in international communication

- Transchem Sp. z o.o.,
- Freightliner PL Sp. z o.o.,
- PHU Lokomotiv.

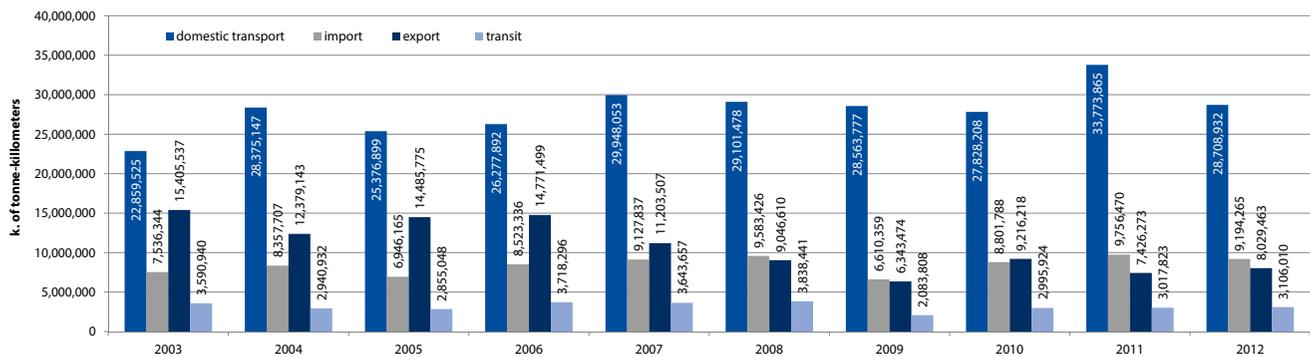


Graph 47: Weight of transported goods in domestic and international communication in 2003-2012



/Source: prepared by UTK/

Graph 48: Transport performance in freight transport in domestic and international communication in 2003-2012

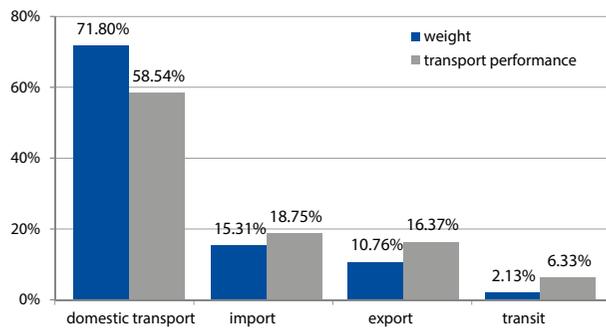


/Source: prepared by UTK/

In 2012 in international communication the railway carriers transported in total 65.2 m. tonnes of goods and their transport performance amounted to 20.3 m. tonne-km. It should be stressed that the volume of weight in comparison to the previous year fell by 6.5% and the transport performance by 0.5%. Over 54% of international transport (by around 6% less than in 2011) consisted in imported freight. The exceptionally low level of transport in transit relations, despite convenient geographical location of Poland, remains an interesting phenomenon. The share of this market segment in international transport in respect of freight weight, similarly to the situation in 2010 and 2011, exceeded only 7%, and in the whole railway market it exceeded the level of 2%.

Despite the favourable geographical location of Poland, the low level of transport in transit relations is quite unsettling.

Graph 49: Transport share in domestic and international communication in respect of the weight of transported freight and transport performance in 2012



The largest share in international communication belonged to the PKP group – 84% concerning to the weight of transported goods, and 86% concerning transport performance.

/Source: prepared by UTK/

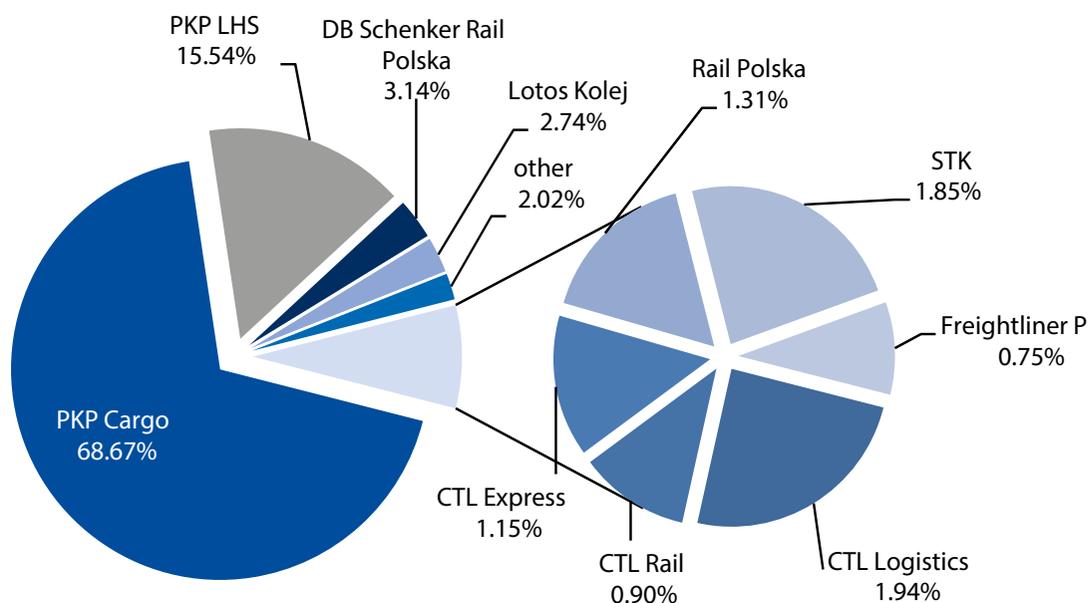
In 2012 the increase of transported mass of freight was noted only in export, amounting to 6%. Taking under consideration the transport performance it increased by 8.1%. The decrease of mass volume was visible both in import and in transit: by 14.4% and 1.3% respectively. Domestic transport went through a volume decrease in comparison to 2011. Almost 13.4 m. tonnes of freight less than in the previous year were transported, which is a fall by 7.5%, and the transport performance fell by 5.1 m. tonne-km, that is by 15%. The transport share in international communication measured by transported weight of freight is still rather small. In 2003-2009 it fluctuated on the level of 25-30%, in 2010 it amounted to 29%, in 2011 to 28%, and in 2012 to around 28.2%. Due to the distance of transport in this communication (in 2012 in average 312 km), the market share concerning transport performance is respectively higher. Until 2006 it fluctuated on the level of 50%. In the following years there was a slight decrease of this share, in 2010 to the level of 43% and in 2012 to 41.5%.

largest transport performance expressed in net tonne-km was reached in the import segment, 9.2 billion in total.

The companies of the PKP group still held the largest share of international transport. Their share (including PKP Cargo and PKP LHS) has fluctuated on a similar level of 85-90% for the last couple of years. At the end of 2012 it amounted to: according to mass – 84.2%, according to transport performance – 86%. The market share of the remaining railway carriers has changed significantly. The largest market share was held by companies of the capital groups DB Schenker and CTL, according to freight mass 3.2% and 4.1% respectively, according to transport performance 2.8% and 3.1%, and concerning mass and performance to the companies Lotos Kolej – 2.7% and 2.9%, STK – 1.9% and 3% and Rail Polska – 1.3% and 0.7%. The share of the remaining companies in the transported freight mass did not exceed 1%. Through the acquisition of certificates allowing for independent transport in the countries of Central and Eastern Europe Polish companies such as i.a. PKP Cargo S.A. can provide transport services in Czech Republic, Germany, Slovakia, Romania, Bulgaria, Slovenia, Austria and Hungary independently.

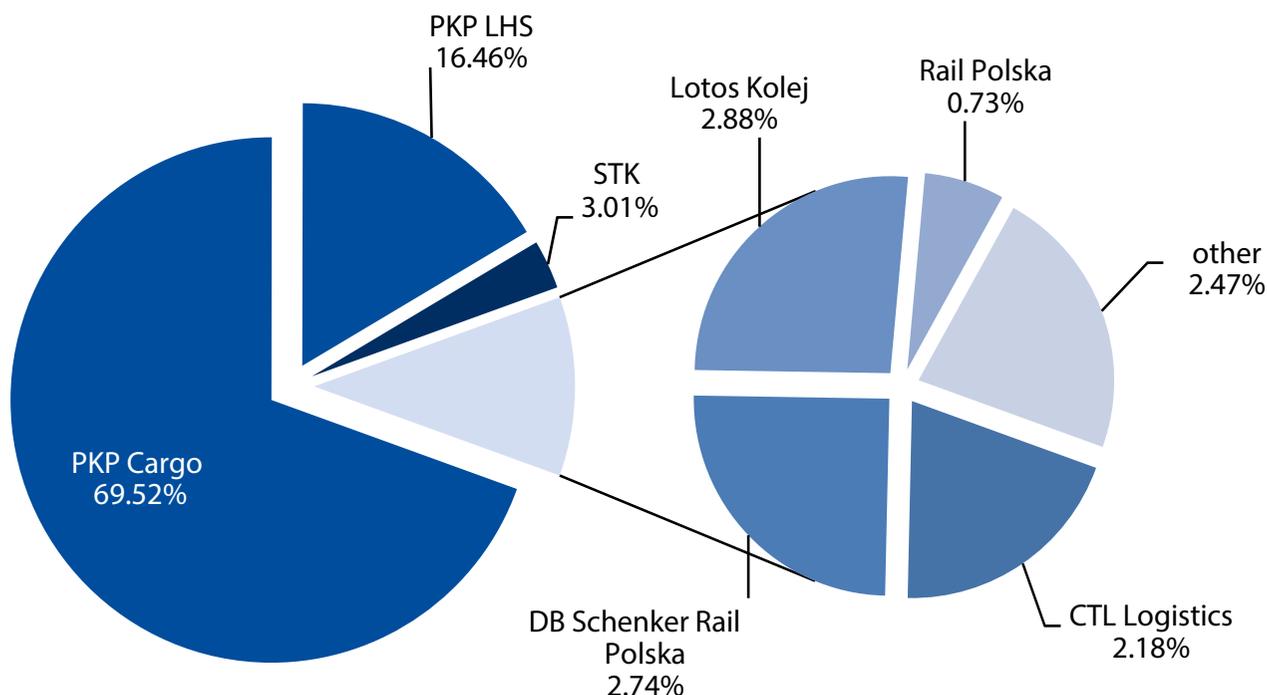
In 2012 the largest weight was transported in the import segment – 35.4 m. tonnes. The worst result was achieved in the scope of transit – less than 5 m. tonnes of freight mass. The

Graph 50: Railway carriers' share in international communication in 2012 according to the weight of transported freight (over 0.5%)



/Source: prepared by UTK/

Graph 51: Railway carriers' share in international communication in 2012 according to transport performance (over 0.5%)

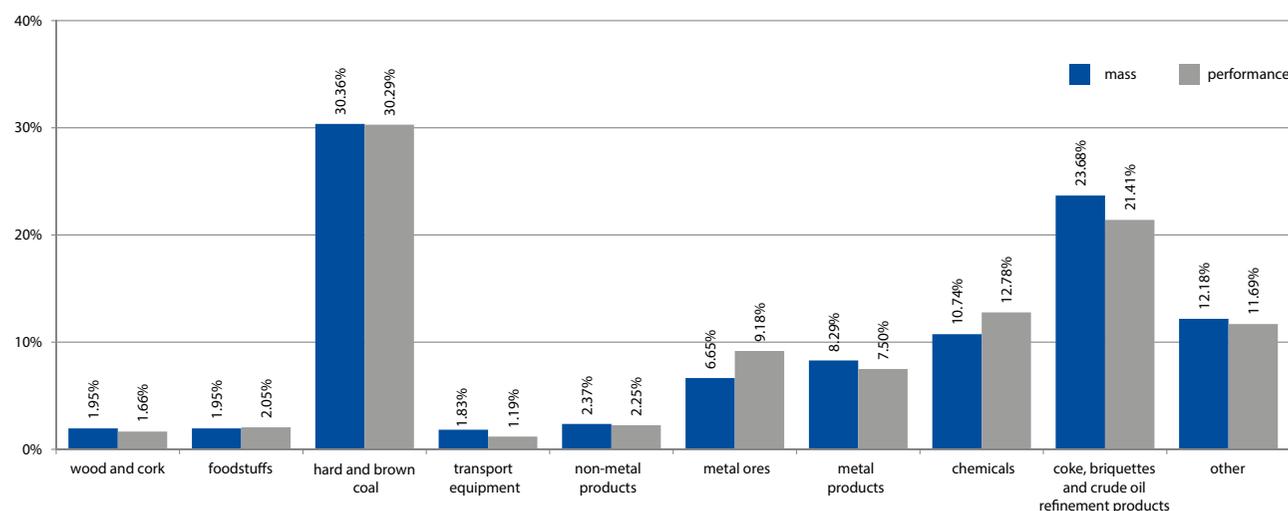


/Source: prepared by UTK/

When analyzing the structure of international market concerning transport objects, the hard coal transport share is significant, similarly to the previous years. Despite the fact that in 2012 the general level of transported mass of coal fell by 12.5% it was still high and amounted to 18.2 m. tonnes. 52% of it (9.5 m. tonnes) constituted import mostly from Eastern Europe, including Russia. The remaining part mostly consisted of export (e.g. to Germany) – almost 42%. In this market segment, the transport of raw materials such as coal, coke, briquettes and mineral oil

refinement products is still dominating. The largest amount of transported freight included coal (hard coal and lignite) with a share of 30.4% according to mass and 30.3% according to transport performance and freight such as coke, briquettes, mineral oil refinement products – 23.7% and 21.4%. A large of transport market share belonged to chemicals: 10.7% and 12.8% respectively. It should be noted, that the share of highly processed and general cargo goods is still insignificant and does not exceed a dozen or so percent.

Graph 52: Structure of goods transported internationally in 2012

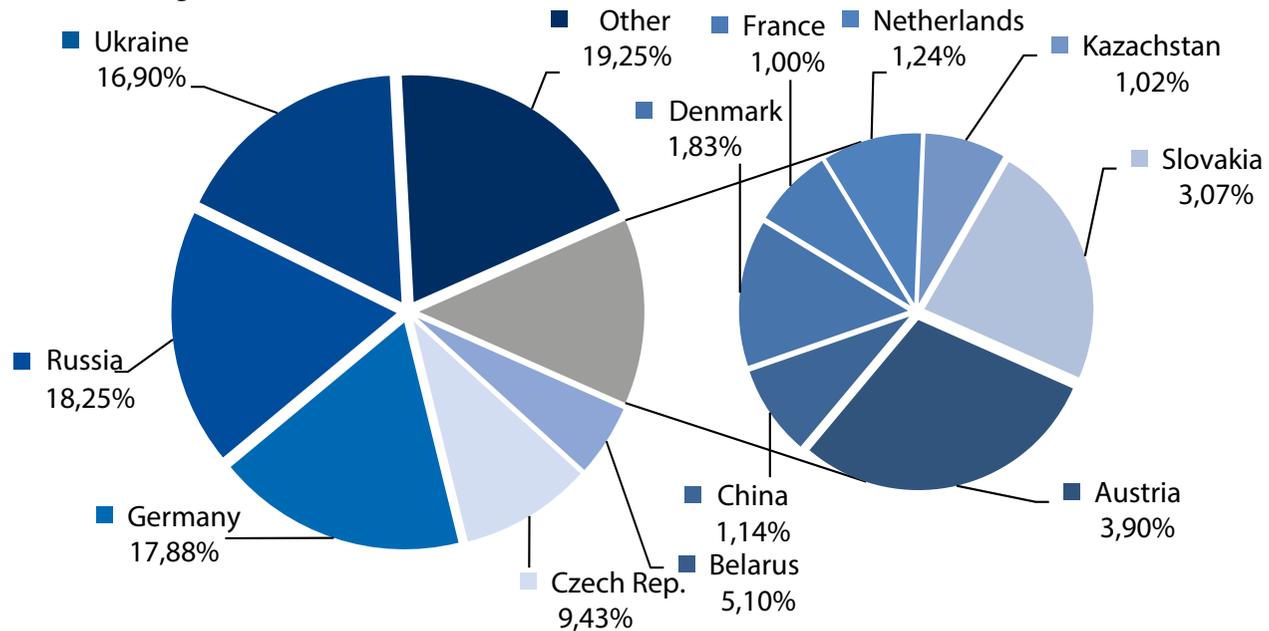


/Source: prepared by UTK/

The largest partners for Poland in the trade exchange remain Germany, Russia, Ukraine and the Czech Republic. Due to this fact, also the share of railway transport in these directions is the highest, totally nearly 65% of transported freight weight. According to the place of shipping and destination of goods (according to shipping lists), the transport between Poland and Russia constituted the largest share – 18.3% - of general volume of goods. In 2012, 11 m. tonnes in total were transported between those countries, delivering a transport performance at the level

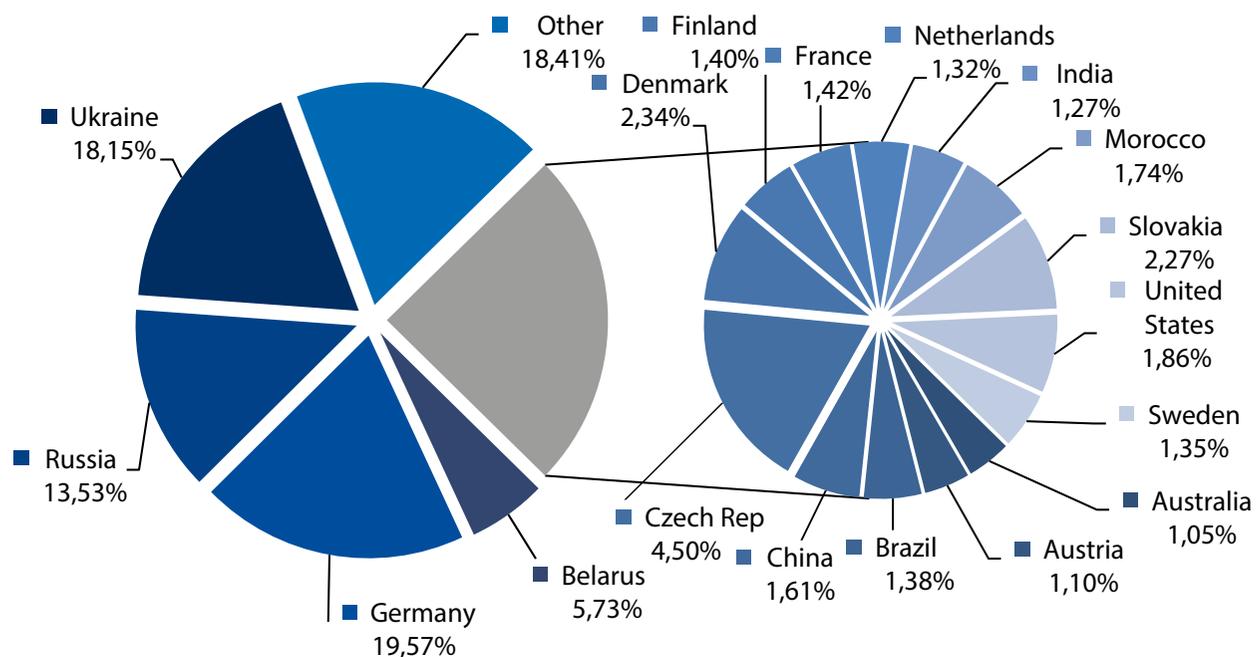
of 2.3 billion of tonne-kilometres. It should be pointed out that transport to and from Russia, in comparison to 2011, decreased considerably - by 10.2% in terms of transported weight. In terms of transport performance there was an increase by 22.5%. An important partner in trade exchange with Eastern countries is also Ukraine. The share of transport between Poland and Ukraine concerning the weight of transported goods amounted to 16.9% and to 18.2% concerning transport performance.

Graph 53: Share of transport (export and import altogether) according to the place of shipping and destination – freight weight in 2012v



/Source: prepared by UTK/

Graph 54: Share of transport (export and import altogether) according to the place of shipping and destination of goods – transport performance in 2012

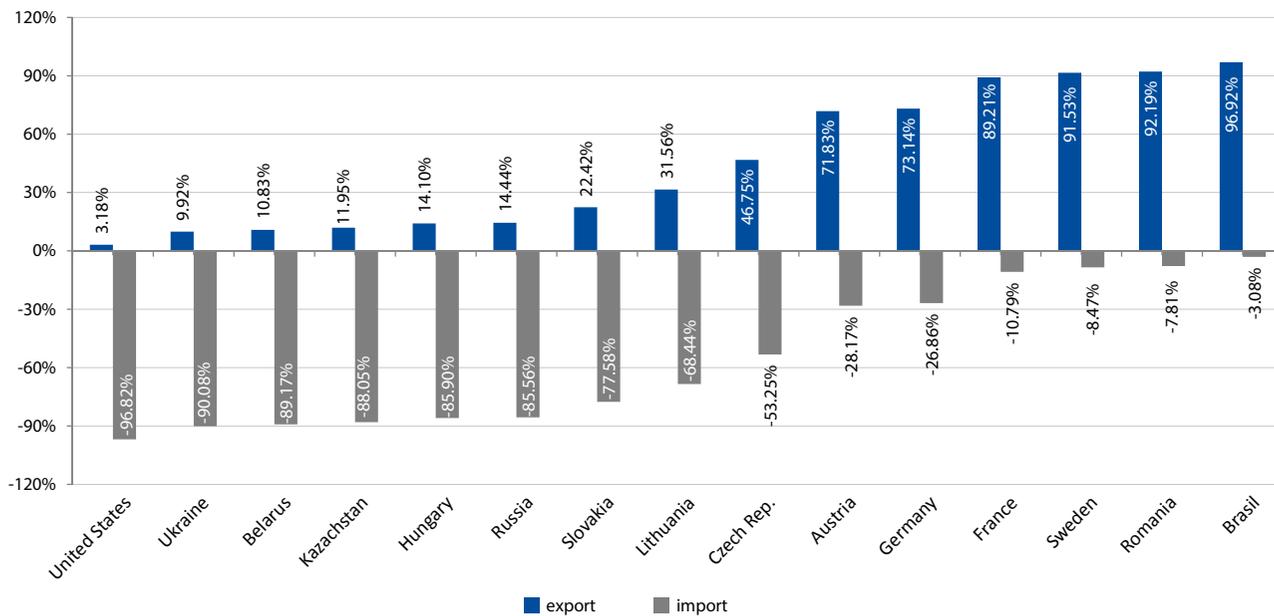


/Source: prepared by UTK/

Import from the United States of America had large share in the category of freight transport between individual countries – nearly 97%. Import dominated the sphere of railway transport between Poland and Eastern countries amounting to 90.1% from Ukraine, around 89.2% from Belarus and 88.1% from Kazakhstan. Transport from Eastern countries includes mainly hard coal, iron ore and minerals.

In 2012 railway carriers transported over 231 m. tons of goods. Yet their weight fell by over 7% in comparison to 2011.

Graph 55: Export and import share in transport between individual countries (according to the country of sending and reception of parcels) in 2012

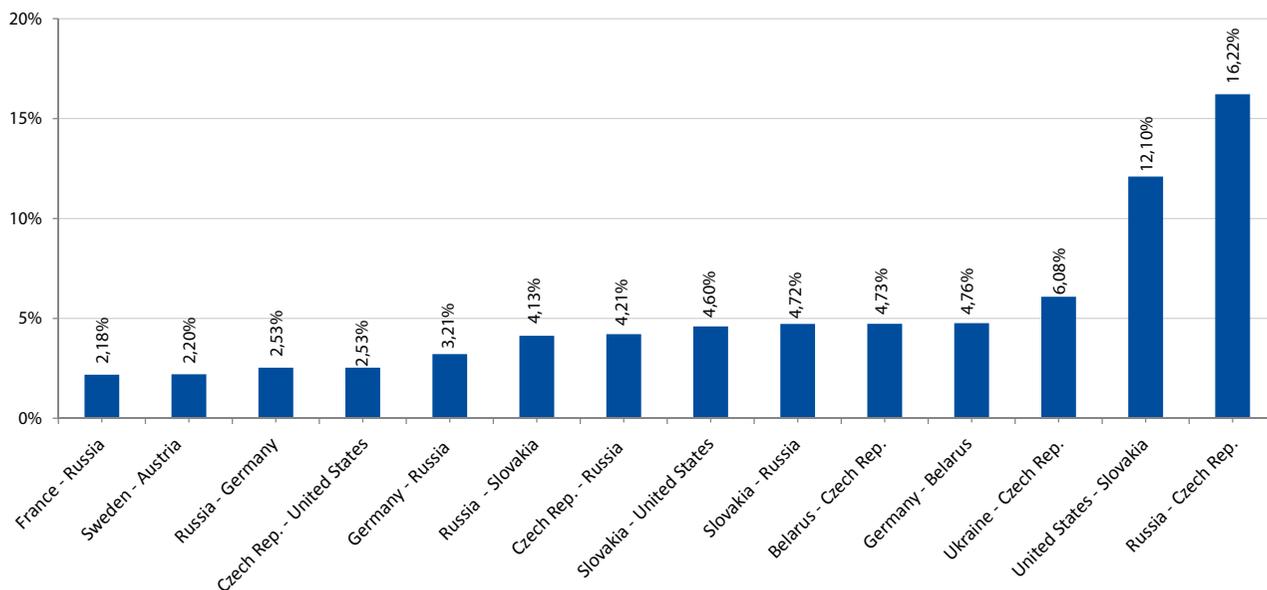


/Source: prepared by UTK/

The low level of transit transport, despite the convenient geographical location of Poland, is still catching attention. Their main share in the general volume of freight transport does not

exceed 2%. The freight transported most frequently is: hard coal – 22.1%, final metal products – 18.5% and iron ores 12.8%.

Graph 56: Share of transit transport between individual countries in 2012



/Source: prepared by UTK/

In 2012 railway carriers transported a record number of load units. Their number in comparison to 2011 grew by nearly 32%.

- DB Schenker Rail Polska S.A.,
- CTL Express Sp. z o.o.,
- CTL Logistics Sp. z o.o.,
- STK S.A.,
- Majkoltrans Sp. z o.o.
- Rail Polska Sp. z o.o.

The transport to Czech Republic, including the transport from Russia – over 16.2% of transit through Poland, United States – 12.1% and Ukraine – 6.1% - had definitely the largest share in transit. Further development of transit transport will depend on the possibilities offered by infrastructure facilities, mostly on the eastern border, to trans-ship freight efficiently. An important element is also the assurance of short time of transport through the territory of Poland, which can be achieved by the modernization of line infrastructure, including mostly the infrastructure in transport corridors. It is important to stress that, irrespective of the expensive, large-scale modernization works conducted on Polish railway infrastructure, its state can be improved by smaller revitalization measures aimed at the elimination of the so called "bottlenecks".

It should be pointed out that although two new entities -Majkoltrans and Rail Polska - entered the market in 2012, the general number of railway carriers performing intermodal transport is rather small, which proves that new railway carriers are not interested in entering the intermodal transport market; instead they focus on the transport of mass goods, such as hard coal or aggregates.

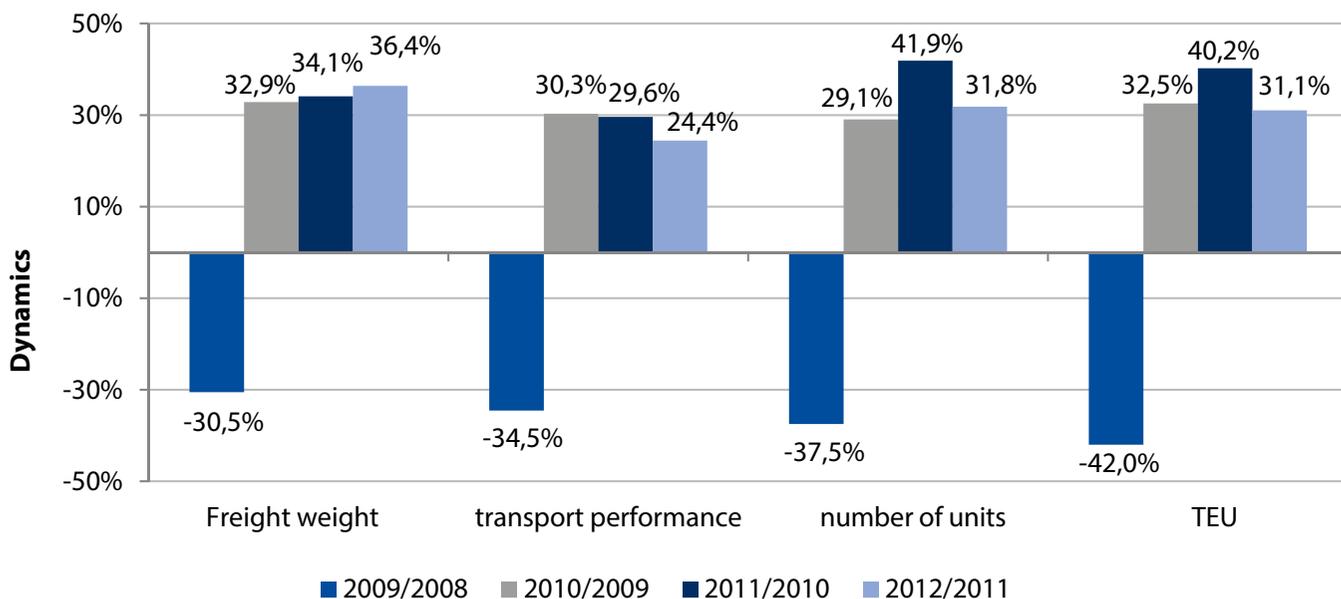
3.2.4. Intermodal transport

In 2012, intermodal transport was performed by nine licensed railway carriers (including two companies of the PKP group):

- PKP Cargo S.A.,
- PKP LHS Sp. z o.o.
- Lotos Kolej Sp. z o.o.,

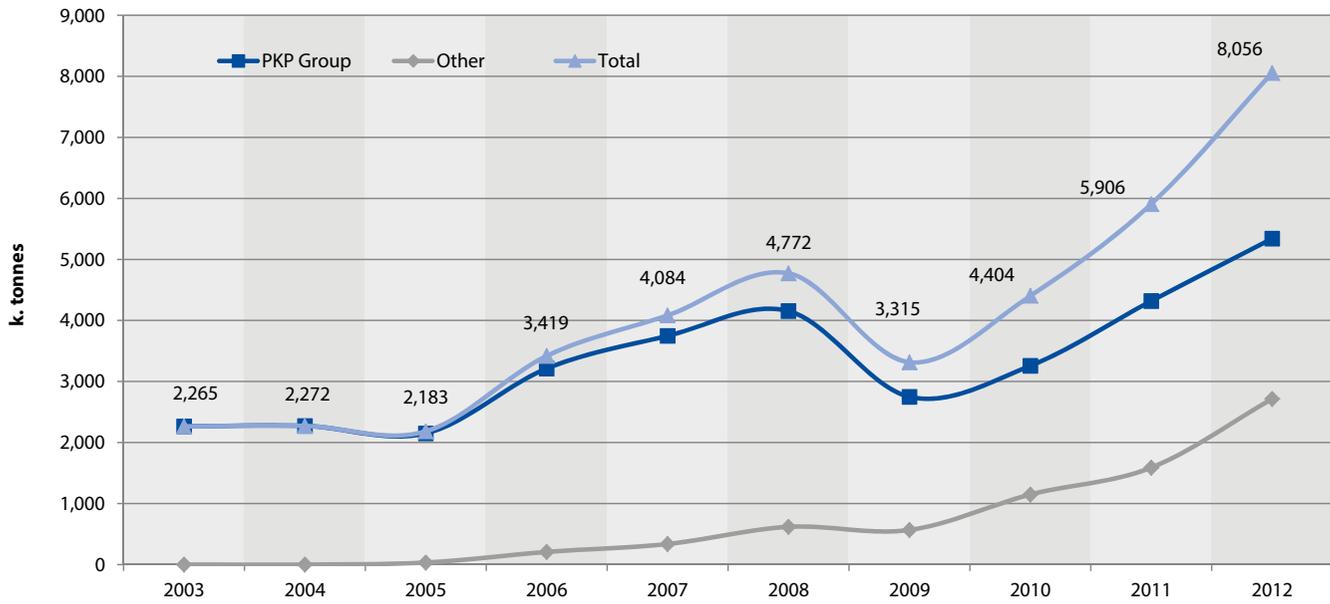
In 2012, railway carriers transported a record number of unit loads -644.6 thousand pieces in total - including 635 thousand containers, which constituted nearly 1.032 thousand TEU. In comparison to the previous year, the number of transported units increased by 31.8%. The total weight of transported loads exceeded 8 m. tonnes and the transport performance equaled 2.4 billion tonne-kilometres. Comparing the data to the results from 2011 it constituted an increase of transport by 36.4% and 24.4% accordingly. It should be stressed that this is the best outcome recorded in the Polish history of intermodal railway transport.

Graph 57: Dynamics of intermodal transport in 2008–2012



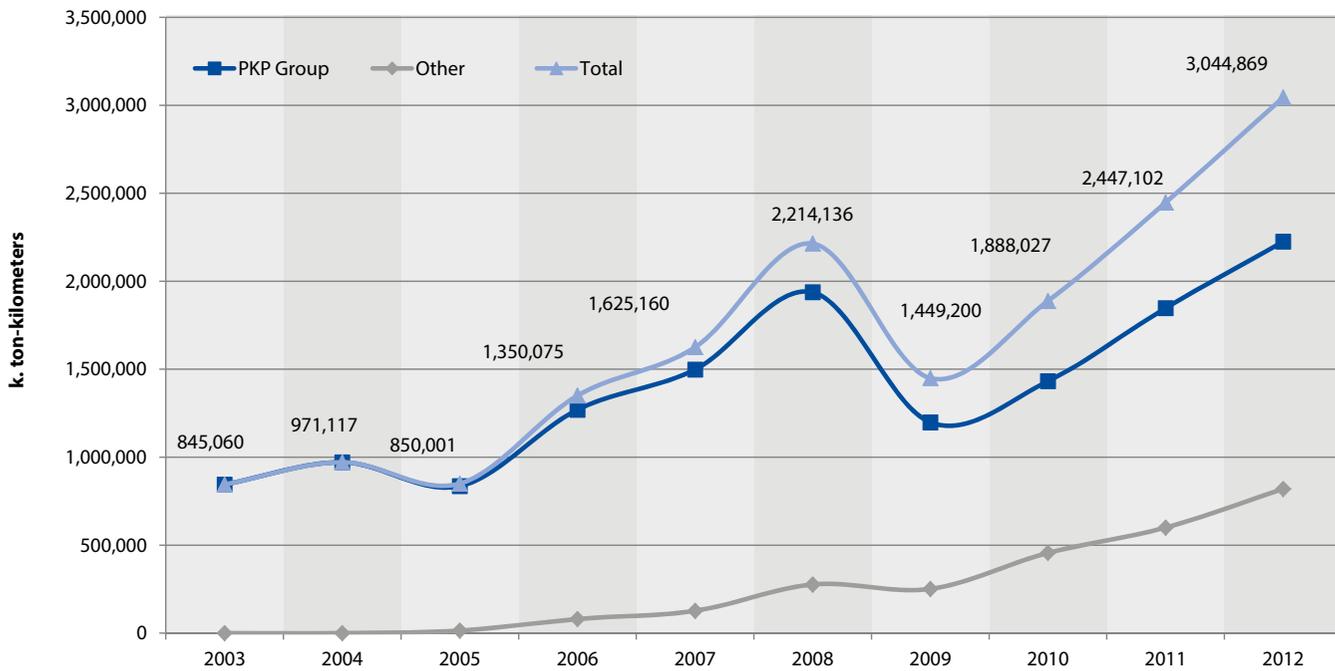
/Source: prepared by UTK/

Graph 58: Intermodal railway transport in Poland according to weight



/Source: prepared by UTK/

Graph 59: Intermodal railway transport in Poland according to transport performance

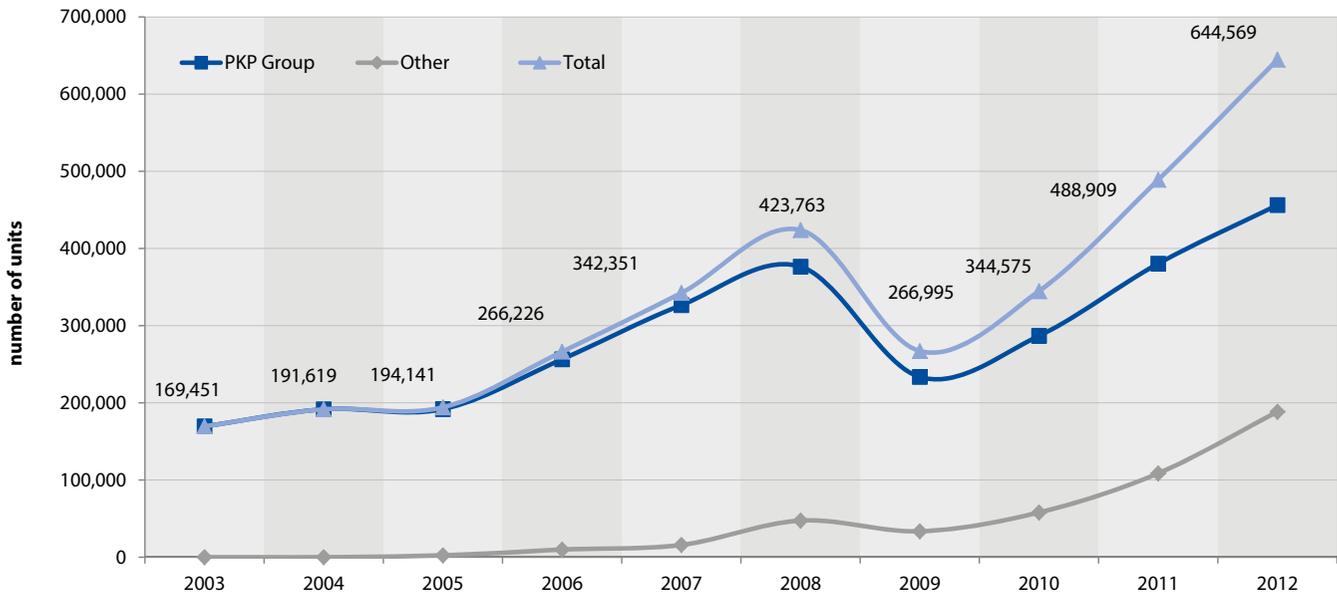


/Source: prepared by UTK/



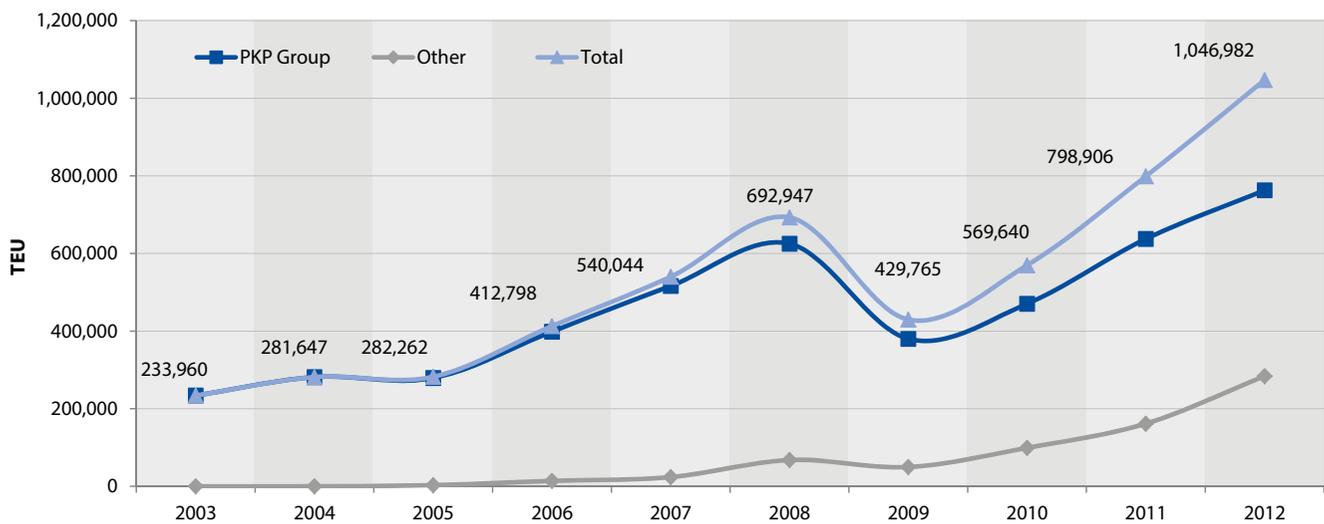


Graph 60: Intermodal railway transport in Poland according to the number of units



/Source: prepared by UTK/

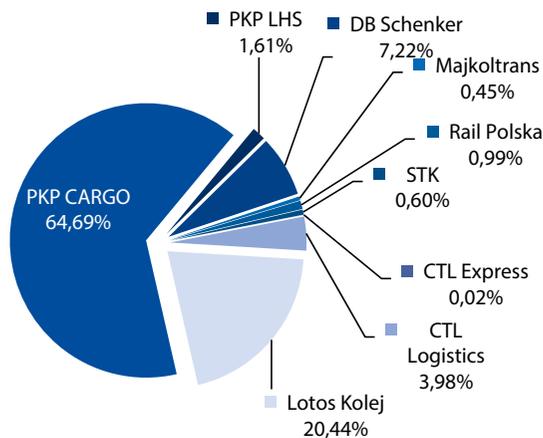
Graph 61: Intermodal railway transport in Poland in TEU



/Source: prepared by UTK/

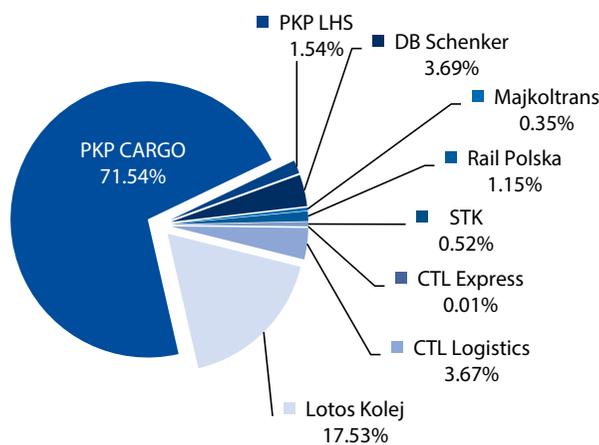
Similarly to 2011, the main actors in this market segment are the companies of the PKP group. At the end of 2012 the market share of PKP Cargo and PKP LHS increased by 66.3% concerning the weight of units transported and 73.1% concerning transport performance.

Graph 62: Share of railway carriers in the intermodal transport market according to weight in 2012



/Source: prepared by UTK/

Graph 63: Share of railway carriers in the intermodal transport market according to transport performance in 2012

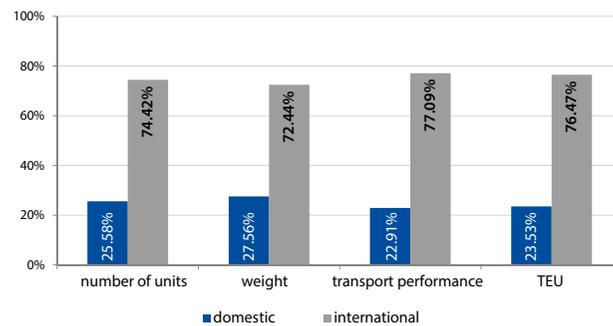


/Source: prepared by UTK/

The second railway carrier, as far as volume of intermodal transport is concerned, was the Lotos Kolej company. This company's share in the market, taking into consideration the freight weight and transport performance, amounted accordingly to 20.4% and 17.5%. The total share of the remaining companies including the capital groups of CTL and DB Schenker amounted to 13.3% concerning weight and 9.4% concerning transport performance.

Similarly to the previous years, the national transport share measured by transport performance, did not exceed 23%. Due to high costs of performing such transport by rail - disproportionate to the road transport costs - and low quality of the railway line parameters (including the average commercial speed not exceeding 35 km/h), the transport of containers on short distances is unprofitable. The share of international transport is still very high and fluctuates around the level of 77% concerning transport performance.

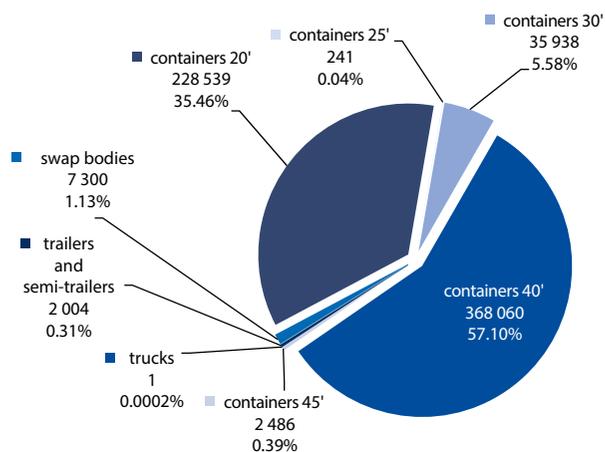
Graph 64: Transport share in domestic and international communication in intermodal transport 2012



/Source: prepared by UTK/

Taking under consideration international transport, the share of individual types of communication according to the number of transported units amounted to respectively: import – 26.84%, export – 26.28% and transit – 21.30%. Polish intermodal transport is mostly based on land transport, which makes 80% (concerning transport performance) of the whole intermodal transport volume. The share of transport through seaports is still small - in 2012 it amounted to 20%.

Graph 65: Share of particular units in the intermodal transport in 2012



/Source: prepared by UTK/

Intermodal transport is performed with the use of containers, the share of which in the general number of units amounted to 98.57% at the end of 2012. 40 feet unit transport dominated in this segment, constituting 57.10% of the entire container transport. The share of remaining containers amounted accordingly to: 20 feet – 35.46% and 30 feet – 5.58%.

Tab. 11: Share of particular types of units in intermodal transport in 2008–2012

Year		Containers	Trucks with semi trailers	Semi-trailers and trailers	"Swap body"
2008	Load weight	97.848%	0.003%	0.000%	2.149%
	Transport performance	98.614%	0.003%	0.000%	1.383%
2009	Load weight	96.376%	0.000%	0.001%	3.622%
	Transport performance	97.099%	0.001%	0.001%	2.900%
2010	Load weight	96.852%	0.003%	0.017%	3.128%
	Transport performance	97.301%	0.003%	0.008%	2.688%
2011	Load weight	97.234%	0.000%	0.040%	2.727%
	Transport performance	97.808%	0.001%	0.023%	2.167%
2012	Load weight	97.744%	0.000%	0.599%	1.657%
	Transport performance	98.266%	0.000%	0.308%	1.426%

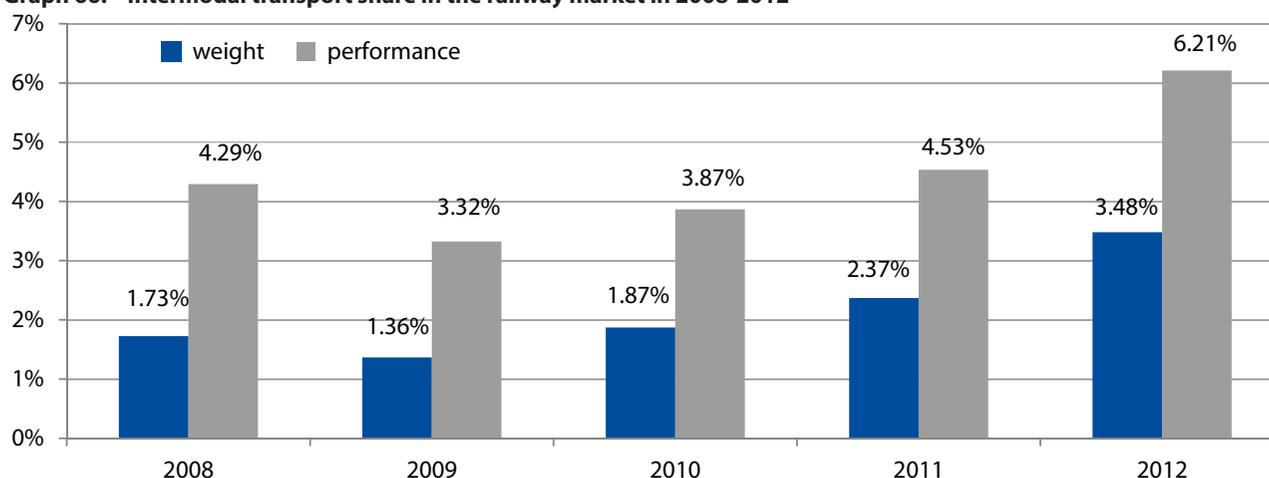
/Source: prepared by UTK/

In 2012 full containers (including load) dominated in this transport segment, reaching a share of 63.7% (concerning their number), which was by 2.8% more than in 2011. In 2012 there was a drop in the transport of the so called "swap body" transport containers, amounting by the end of the year to 1.1% (a fall by 0.6 percentage points in comparison to 2011). Loose semi-trailers and trailers, without engine powered cars, constituted 0.31% (an increase by 0.29 percentage points).

In 2012 the share of intermodal transport in the overall railway transport market measured by the weight of goods reached almost 3.5% and was by 1.1 percentage point higher than in 2011.

In 2012 the share of intermodal transport in the railway transport market measured by load weight reached almost 3.5%. It was by 1.1 percentage points higher than in 2011. The intermodal transport performance share amounted to 6.21% - an increase by 1.68 percentage points in comparison to 2011. Unfortunately, the market volume and share is still placing Poland quite low on the list of all European countries. In 2012 the EU average concerning the weight of this type of load exceeded 10%, and around 18% concerning transport performance.

Graph 66: Intermodal transport share in the railway market in 2008-2012



/Source: prepared by UTK/

Assuming that the preferences will be sustained at the present level (stable discounts concerning the access charge amounting to 25%) and that a unified mode of granting discounts for intermodal trains (for example, for the block trains irrespective of the number of loaded and empty wagons) will be introduced, the intermodal transport share in the railway market may still grow to reach several percent in 2020. It should also be stressed that in order to reduce the disproportions between Poland and other European Union countries the share of this segment in the railway market should grow in a pace of around 1-2% per year, which depends on the preferential conditions for railway carriers to operate on the market as well as on the introduction of a stable policy of intermodal transport support in a longer time-perspective.

3.2.5. Transport of dangerous goods

The number of entities conducting economic activity in form of transport of dangerous freight is still growing. In 2012 this type of transport was declared by twenty-five licensed railway carriers (in comparison to 23 in 2011 or 22 in 2010), including the following companies:

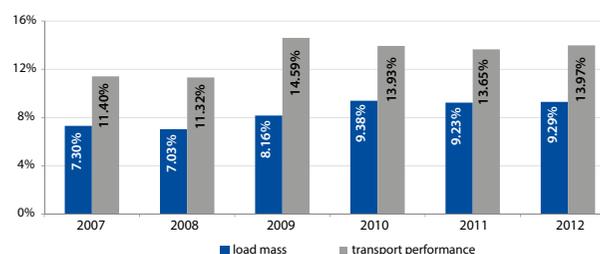
- of the PKP group:
 - PKP Cargo S.A.;
 - PKP LHS Sp. z o.o.;
- of the CTL group:
 - CTL Express Sp. z o.o.;
 - CTL Kargo Sp. z o.o.;
 - CTL Rail Sp. z o.o.;
 - CTL Logistics Sp. z o.o.;
 - X-Train Sp. z o.o. (from December 2012 CTL Północ Sp. z o.o.);
- of the DB Schenker group:
 - DB Schenker Rail Polska S.A.;
 - DB Schenker Rail Spedkol Sp. z o.o.
- and other railway carriers:
 - Euronaft Trzebinia Sp. z o.o.;
 - Freightliner PL Sp. z o.o.;
 - Hagans Logistics Sp. z o.o.;
 - ITL Polska Sp. z o.o.;
 - Kolej Bałtycka S.A.;

The share of intermodal transport in the railway market may still grow and reach between ten and twenty percent in 2020.

- Lotos Kolej Sp. z o.o.;
- Majkoltrans Sp. z o.o.;
- Orlen Kol-Trans Sp. z o.o.;
- Pol-Miedź Trans Sp. z o.o.;
- PUK Kolprem Sp. z o.o.;
- PTK Koltar Tarnów Sp. z o.o.;
- Rail Polska Sp. z o.o.;
- S&K Train Transport Sp. z o.o.;
- STK S.A.;
- Transchem Sp. z o.o.;
- Wiskol Sp.J.

Railway carriers transported in total 21.5 m. tonnes of dangerous load (1.5 m. tonnes more than in the previous year), which made a transport performance of 6.9 billion tonne-kilometres (decrease by 0.5 billion tonne-kilometres in comparison to 2011).

Graph 67: Share of dangerous load transport in the railway market in 2007-2012



/Source: prepared by UTK/

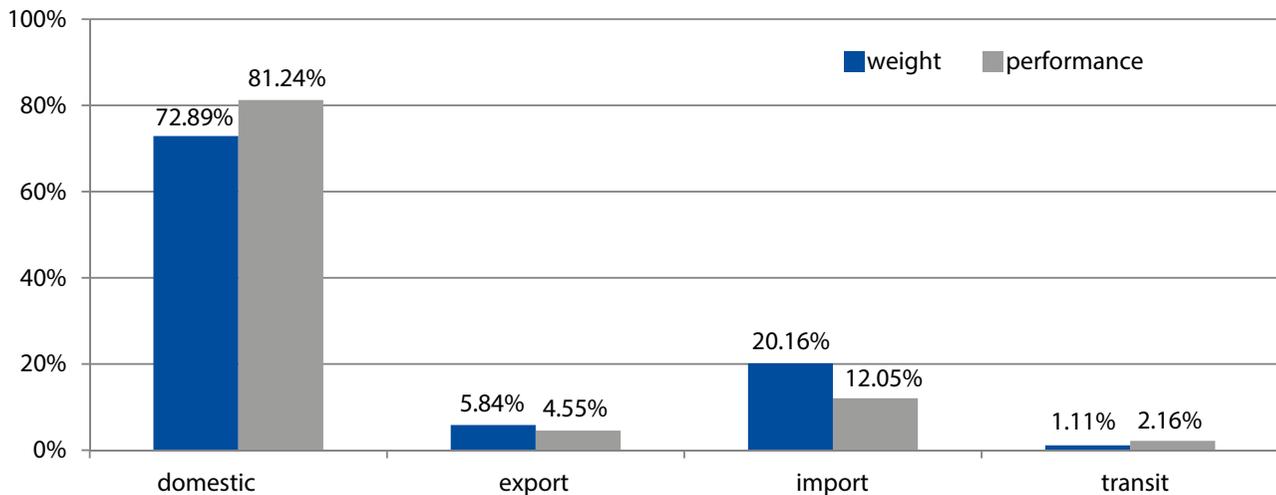
The transport of dangerous goods' share in the railway market amounted to 9.3% in terms of weight and in terms of transport performance – 14%. It needs to be pointed out that despite the increase of general volume of transport of dangerous goods, since 2009 there is a decline of their market share, mainly in terms of transport performance. In 2009-2011, this sector's share diminished from 14.6% to around 14%. This type of market behaviour is not an effect of production decrease in the chemical

industry, but it results from the takeover of a part of railway transport by road transport.

Transport of dangerous goods is performed mainly by domestic traffic, which constituted over 73% of the entire traffic as far as weight is concerned and 81.2% in terms of transport perfor-

mance. International communication in this kind of transport is rather insignificant. For example, the export's share fluctuated around 4.5% in terms of transport performance, and the transit's share slightly exceeded 2%.

Graph 68: Share of communications in the dangerous freight transport in 2012

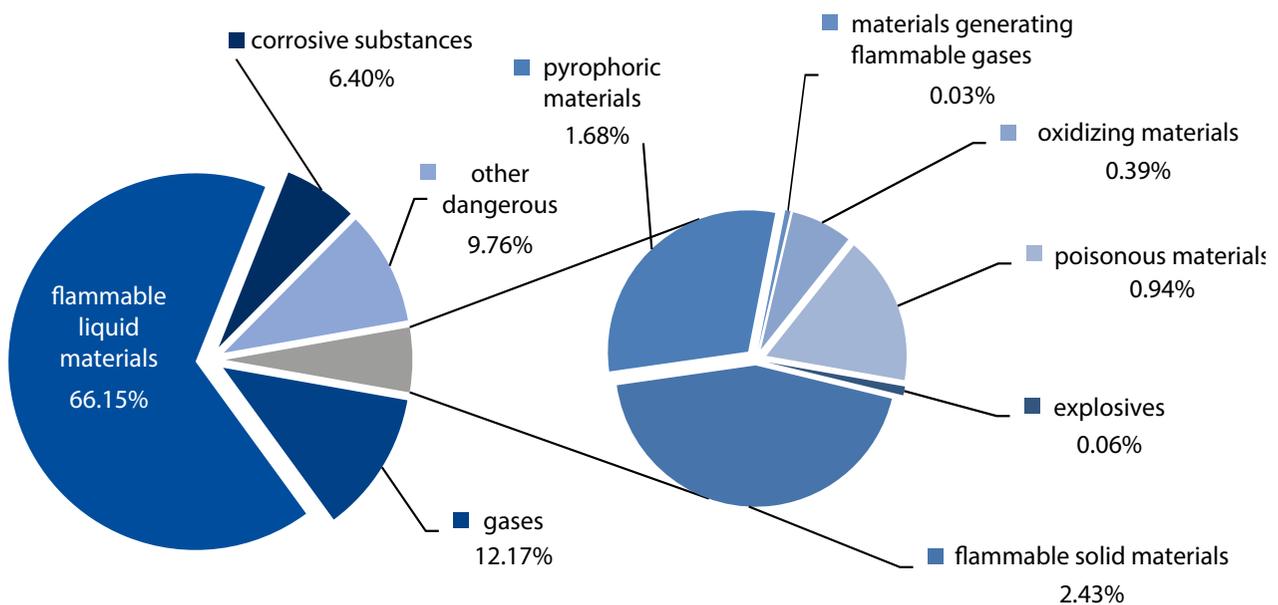


/Source: prepared by UTK/

In 2011, similarly to the previous year, over 66% of transported dangerous goods included flammable liquid materials (crude oil and petroleum products, e.g. fuels, diesel oil). In comparison to the previous year it was a decrease by 6.4%. According to the classification of dangerous goods (provided for in the RID regulations for international railway transport of dangerous

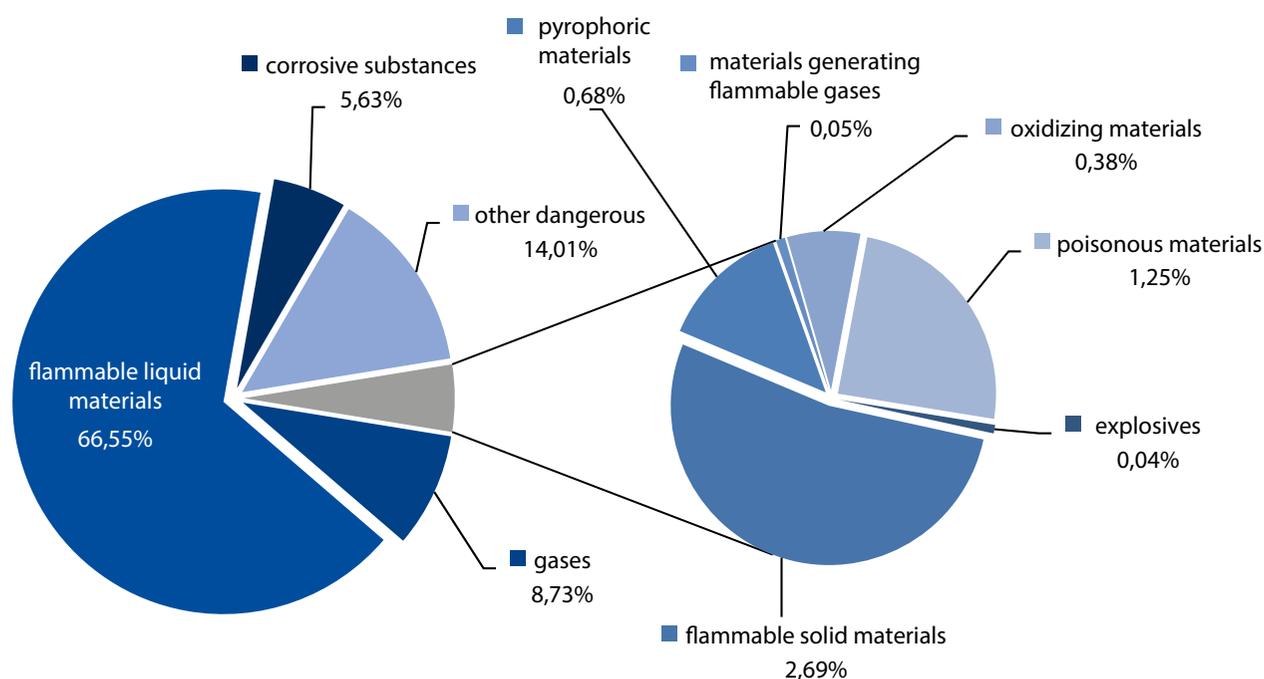
load) apart from flammable liquid materials the largest share in transport was held by class 2 – gases (12.2% according to weight and 8.7% according to transport performance), class 8 – caustic materials (respectively 6.4% and 5.6%) and class 4.1 – flammable solid materials (2.4% and 2.7%).

Graph 69: Share of transport of individual groups of dangerous load in 2012 (according to weight)



/Source: prepared by UTK/

Graph 70: Share of transport of individual groups of dangerous load in 2012 (according to transport performance)



/Source: prepared by UTK/

3.2.6. Structure of the rolling stock held by freight railway carriers

When analyzing the data concerning the rolling stock held by railway carriers transporting freight, in 2012 a decrease in the stock of locomotives and wagon rolling stock was observed. The total number of locomotives fell by 33 items to the level of 3,677, while the number of wagons fell by 2,000 (99,511 items in

total). More than 60% of the total number of locomotives were diesel units (2,212 items, 21 less than in 2011). The number of electric locomotives fell slightly from 1,457 down to the level of 1,445 items (by 0.8%). Taking into consideration the stock of wagons most of them were coal wagons – almost 59% (58,500 items). Comparing to 2011, their number decreased by 2.5% (1,478 items). A significant decrease in the number of locomotives used by the railway carriers in 2008 was caused mainly by the takeover by PKP Intercity of a part of the traction rolling stock held by PKP Cargo.

Tab. 12: Number of traction and wagon rolling stock of railway carriers in 2003-2012

Type of rolling stock	Year									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
locomotives in total	4,308	4,467	4,432	4,398	4,462	3,988	3,944	3,699	3,710	3,677
electric locomotives	1,831	1,857	1,855	1,884	1,831	1,506	1,512	1,488	1,457	1,445
diesel locomotives	2,477	2,590	2,557	2,494	2,610	2,461	2,410	2,189	2,233	2,212
steam locomotives	0	20	20	20	21	21	22	22	20	20
wagons total	106,911	114,839	111,897	103,733	105,017	104,446	99,534	92,945	101,511	99,511
covered wagons	10,840	11,125	10,469	9,754	9,807	8,961	7,609	5,814	4,898	4,563
coal wagons	65,166	68,261	67,169	66,714	67,493	66,281	63,166	58,724	59,978	58,500
tank wagons	12,816	15,556	14,702	13,472	13,801	14,877	14,873	15,041	14,665	15,746
refrigerated wagons	181	95	17	4	0	0	0	0	0	0
wagons with sliding roofs	874	763	984	1,019	954	1,015	1,015	1,201	1,197	1,238
special	4,253	5,801	5,611	5,754	7,825	8,253	8,261	8,129	8,815	8,128
other - freight	0	0	0	0	0	0	0	0	0	111

/Source: prepared by UTK/

The decrease in the number of wagons was accompanied by the decrease of transport capability measured by the load capacity of wagons. The capacity amounted to 5.315 m. tonnes in total, which is by 178.3 thousand less than in 2011. Average load

capacity of one wagon amounts to 53.4 tonnes (a decrease by 0.7 tonne). Coal wagons had the largest load capacity – 3.335 m. tonnes - and tank wagons had a capacity of 787 K tonnes.

Tab. 13: Load capacity of wagon rolling stock of railway carriers (in K of tonnes) in 2003-2012

load capacity of the rolling stock	Year									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
wagons total	5,660.09	6,211.15	6,052.70	5,921.02	6,109.37	6,014.76	5,804.11	5,439.38	5,493.68	5,315.38
covered wagons	451.03	454.34	421.41	386.48	386.44	339.41	288.07	207.94	160.91	146.08
coal wagons	3,570.34	3,906.90	3,852.36	3,829.23	3,896.39	3,778.96	3,639.19	3,391.59	3,473.83	3,335.26
flat wagons	740.44	753.38	739.63	731.09	740.44	756.55	731.82	694.78	680.00	643.18
tank wagons	695.91	837.23	781.01	706.56	729.02	766.59	768.93	779.64	769.30	786.63
refrigerated wagons	3.53	1.85	0.33	0.08	0.00	0.00	0.00	0.00	0.00	0.00
wagons with sliding roofs	43.01	37.77	49.90	51.08	48.20	53.00	53.00	62.02	62.21	63.56
Special	155.83	219.68	208.05	216.50	308.89	320.27	323.12	303.43	347.43	340.67

/Source: prepared by UTK/

The process of rolling stock exchange is still proceeding slowly, yet it has no significant effect on the extension of transport offer. Entrepreneurs still focus on bulk transport, e.g. hard coal and aggregates. There is no sufficient number of special wagons on the Polish market e.g. for transport of containers in the intermodal system and transport of high-processed goods. Fast modernization of rolling stock would allow for a significant reduction of both external costs and costs of providing transport, including the increase of transport potential, speed, safety and reduction of wear and tear of train paths as well as noise factor reduction. The potential of intermodal transport is appreciated by railway carriers – they are trying to acquire modern rolling stock for combined transport. It is important to stress that still vast part of railway carriers subjects their investment plans to the possibility of acquiring long-term transport contracts, which is only possible through the establishment of long-term development strategy and financial support for this market segment, including allowances and preferences in charges for the access to railway infrastructure.

Most locomotives held by railway carriers are diesel units. The most popular series are SM42 and SM48 –at the end of 2012 railway carriers held respectively 932 and 314 units of these types. The share of electric locomotives amounted to nearly 40%. The most popular type of electric unit is the locomotive ET22. In total railway carriers held 853 locomotives of this type (by 52 less than a year ago). Electric ET41 locomotives constituted the largest share in the rolling stock (in total 148 units) and there were 98 EU07/EP07 units in operation. The rest were steam locomotives amounting to 20 units by the end of 2012.

The freight rolling stock in Poland is still strongly worn – the average age of locomotives at the end of 2012 was 33.4 years (by 1.1 year elder than a year ago), and the average age of wagon rolling stock is 27 years (by 0.1 year less than in the previous year). It is important to stress that Polish railway carriers hold one of the largest rolling stocks in the European Union concerning both the number of wagons and traction facilities serving the purpose of freight transport. Unfortunately, vast part of the rolling stock has been withdrawn from operation, and the

condition as well as technical parameters of the operating cars diverge strongly from the European average. The use of traction rolling stock in Poland in 2012 fluctuated around 48%, which proves that more than half of the locomotives were not used for transport purposes.

According to the information provided by railway carriers dealing with freight transport, in 2013 they are planning to conduct a number of rolling stock investments, aimed at both modernization and acquisition of new assets. Part of the plans is actually a continuation of the investments from 2012, when PLN 717.8 m. was assigned to investments in freight rolling stock (of which about 62% for the modernization of the present units, and the remaining

PLN 271 m. for the acquisition of new rolling stock). According to the declarations of the railway carriers, in 2013 the amount assigned for investment purposes will fall to the level of about PLN 430 m. Half of the amount will be assigned for purchase, the other half for the modernization of the rolling stock.

Straight majority of railway undertakings shapes their investment plans according to the acquisition of long-term transport contracts.

3.2.7. Volume, structure and efficiency indicators of freight transport market

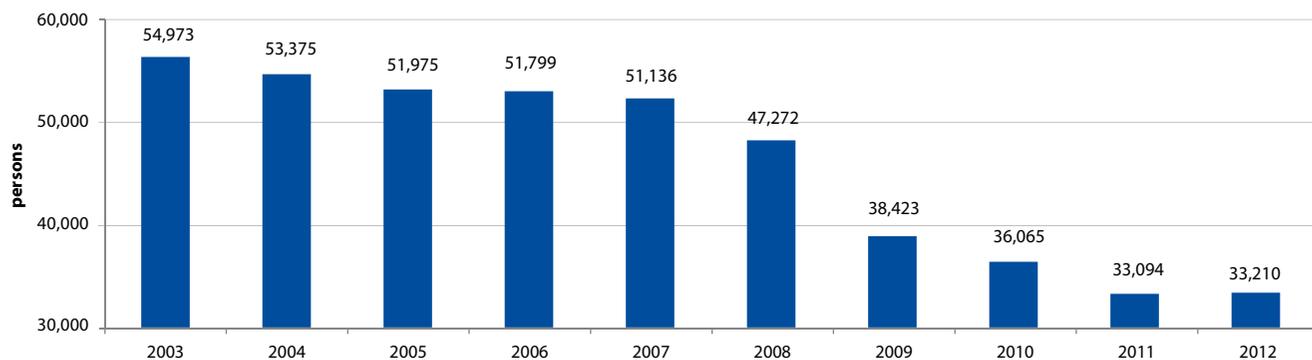
The volume of Polish railway freight transport in 2012 can be characterized by the following parameters:

number of licensed railway carriers	74,
number of railway carriers providing transport services	53,
annual market income	PLN 8.068 m.,
annual costs of railway service provision	PLN 7.845 m.,
employment in the railway sector	33,210 people,
transported weight of freight	231.4 m. tonnes,
transport performance	49.0 m. tonne-km,
performed exploitation works	76.2 m. train-km,
number of locomotives	3,677 units,
number of freight wagons	99,511 units.

As far as the number of employees in companies providing railway transport services are concerned, the trend started in 2003 finally changed in 2012 – for the first time there was a slight increase in the number of employees. At the end of 2012 the number of employees reached 33,210 people, which is an increase by 0.35% in comparison to 2011.

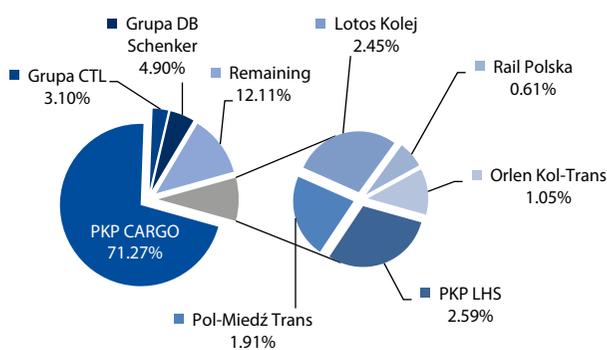
48% of all employees were directly employed in the area of railway traffic operation and safety. Their number amounted to around 15 K people, including: 8.6 K engine drivers (including about 1 K multi-task engine drivers and engine drivers of heavy units used in railway construction and for railway traction network), about 500 engine driver's assistants, about 2.2 K rolling stock auditors, about 1 K manoeuvre drivers and about 2.4 K shunters.

Graph 71: Employment in the railway freight transport sector in 2003-2012



/Source: prepared by UTK/

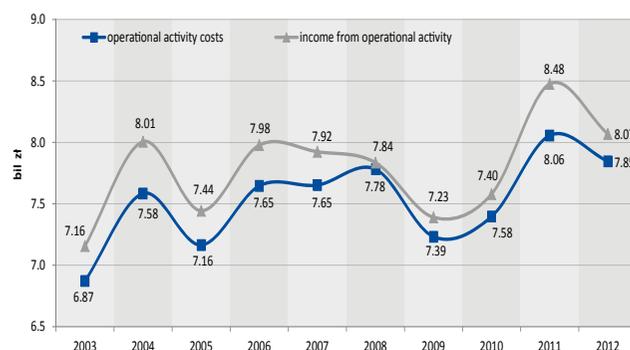
Graph 72: Employment structure in 2012 (share)



/Source: prepared by UTK/

The largest percentage of employees were employed by PKP Cargo - 71% of all railway transport sector employees, DB Schenker – 4.9%, CTL group – 3.1%, PKP LHS – 2.6%, Lotos Kolej 2.45% and Pol-Miedź Trans 1.9%. The share of all remaining companies did not exceed 1%.

Graph 73: Financial results of railway carriers (in PLN m.) in 2003-2012



/Source: prepared by UTK/

Total income of railway carriers fell to the level of PLN 8.07 billion (a 4.53% decrease in comparison to 2011). Railway carriers achieved a profit of nearly PLN 222 m. (a decrease by over 50% in comparison to 2011). The decrease of income and profitability of the freight transport sector was caused by the completion of numerous infrastructure investments.

3.2.8. Licensing of railway freight transport

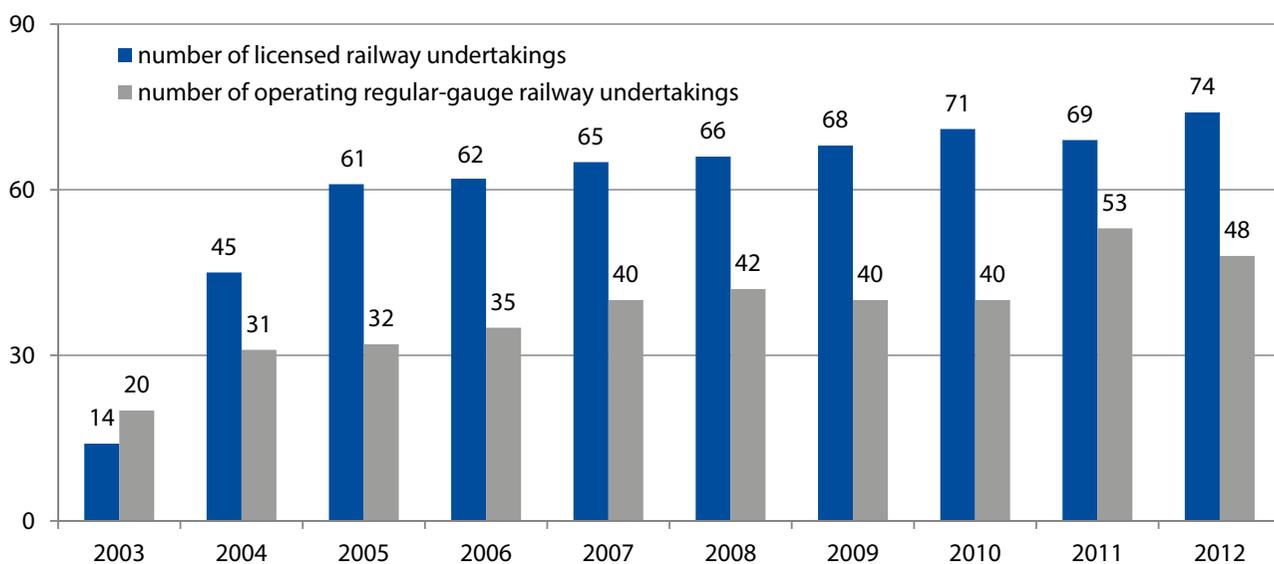
In 2012 the President of UTK granted 8 licenses for the provision of railway freight transport services according to the provisions of Article 10 item 1 paragraph 2 of the act on railway transport - that is more than in the previous years when this number fluctuated around 4-7 per year. At the end of the previous year active licenses (excluding the suspended ones) authorizing to conduct railway transport activity were held by 74 railway carriers, including 5 licenses of railway carriers providing narrow-gauge line transport services.

From the very beginning of operation of UTK the President of the Office issued 104 licenses for the provision of this type of

transport services. Many of the licenses issued in 2003-2005 were connected with the implementation of the provisions of the so called First Railway Package, on the basis of which Poland introduced the obligation to license freight railway transport.

In the past years we have been witnessing the process of numerous property-related changes. Therefore, despite the fact that new licensed entities emerged on the market, the number of authorized entities and those actually providing services changed significantly. Yet in 2012 there was a significant increase in the number of entities actually providing transport services. 13 new railway carriers started to provide licensed transport services.

Graph 74: Number of licensed railway carriers authorized to provide transport services and operating on the railway market in 2003-2012



/Source: prepared by UTK/

The number of railway carriers holding licenses for transport of goods in 2012 amounted to 79, including: suspended- 5, narrow-gauge - 5, wide-gauge- 1.

The period from the beginning of the second half of 2003 until the end of February 2004, was a transitory period, when the legal state allowed railway carriers for the provision of transport services on the basis of concessions granted by the Minister of Transport or on the basis of a license granted by UTK. Therefore, in 2003 the number of railway carriers providing transport services was higher than the number of railway carriers authorized on the basis of the acquired licenses.

In 2012 48 carriers (almost 65% licensed entities) provided transport services. It is a vast increase in comparison to the previous years, when their number did not exceed the level of 42. It may be an evidence of a gradual increase of interest in and demand for the provision of services on railway transport market.

As a result of the administrative proceedings conducted routinely in the period from 1 January until 31 December 2012, the President of UTK issued decisions concerning licensing transport of goods via rail, including:

- four decisions altering the data in licenses for railway transport provision,
- one decision suspending the license for railway transport provision,
- two decisions withdrawing licenses for railway transport provision,
- two decisions granting railway carriers a 6 months longer period for the beginning of licensed activity,
- one decision repealing the decision concerning license suspension.

From the beginning of its existence UTK granted 104 licenses allowing for the performance of freight transport services.



4. Railway infrastructure

4.1. Changes on the markets of European Union countries

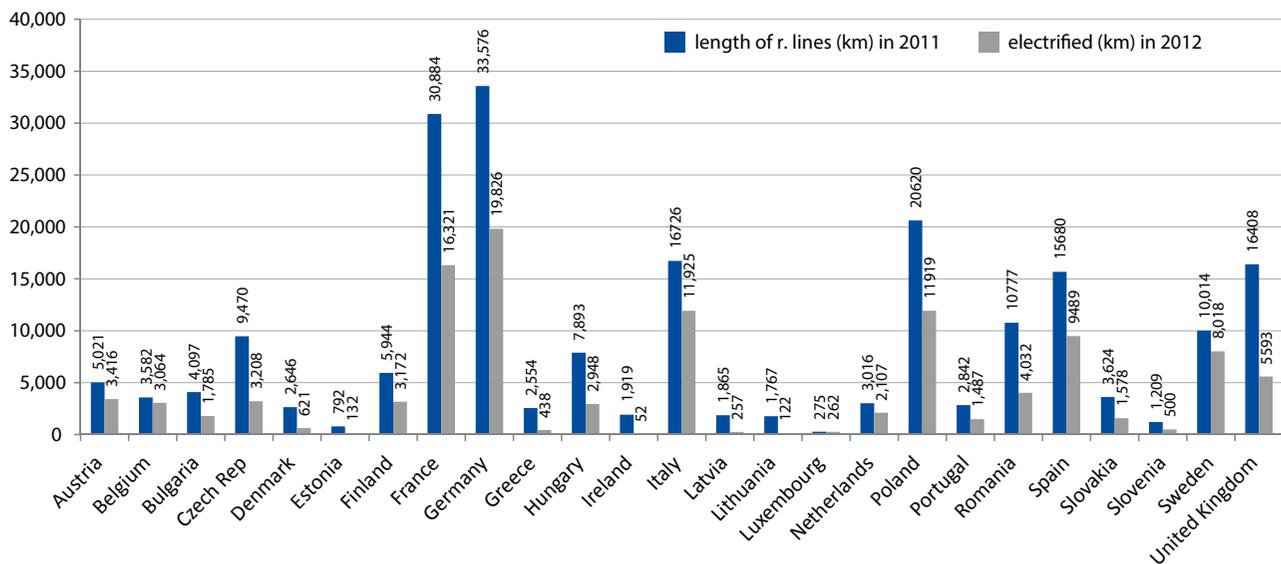
Therefore, the electrified line constituted 52.7% of the whole infrastructure network. Poland had one of the longest railway networks in the entire European Union –the utilized lines constituted almost 10% of the European network.

4.1.1. European line infrastructure

In 2011 the total length of the railway (line) infrastructure of all European Union countries amounted to around 213.2 K km. This number includes 112.3 K km equipped in contact lines.

The longest infrastructure was the German one (33.6 K km) and French one (30.9 Kkm). The shortest length of railway lines was the one in Luxemburg (275 km) and Estonia (792 km).

Graph 75: The length of railway lines utilized in the EU at the end of 2011 (data for Poland at the end of 2012)



/Source: prepared by UTK/

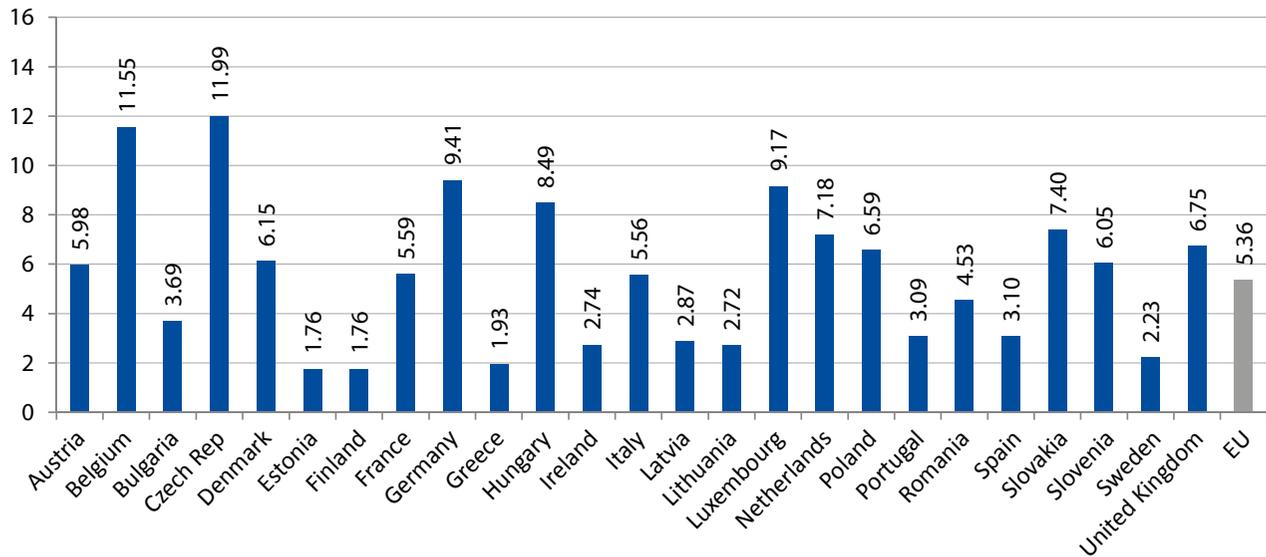
Taking under consideration all member states of the European Union in the period of 1990-2011 there was a decrease of the length of utilized railway lines by nearly 10%. The largest increase was noted by the countries holding the largest infrastructure network, that is France, Germany and Poland. In these countries the decreases amounted to several thousand kilometres and contributed to a large extent to the decrease of the European average. The most significant increase of the length of the utilized railway infrastructure within the last two decades was observed in Spain (from 14.5 K km to 15.7 K km) and Italy (from

16.1 K km to 16.7 K km), mainly thanks to the construction of the high-speed railway line. In the last decades there was a strong increase in the dynamics concerning the line length allowing for the provision of railway services with the speed of over 250 km/h. Since 1985 the length of high-speed railway lines increased over ten times: from 643 km to 6,830 km in 2011. The longest infrastructure of this kind was the Spanish one (2,144 km), the French one (2,036 km), the German one (1,285 km) and finally the Italian one (923 km).

The average density of railway network in the EU countries in 2011 (including conventional lines and high-speed lines) amounted to 5.4 km of line per 100 km² of area of all countries. Czech Republic and Belgium had the largest network density –

11.99 km/100 km² and 11,55 km/100 km² respectively. Finland and Estonia on the other hand, had the lowest level of network density – 1.76 km/100km².

Graph 76: Density of railway network in the EU countries (km/100 km²) in 2011 (data for Poland at the end of 2012)



/Source: prepared by UTK/

The density of railway infrastructure in Europe depends i.a. on geographical as well as economic and historical factors. The countries in central part of Europe (e.g. Benelux, Germany, Czech Republic and Hungary) have a significantly more dense railway infrastructure network in comparison to countries situated at the peripheries of the EU (e.g. Scandinavian countries, the countries of the Iberian Peninsula, Greece and Bulgaria). Particularly large density of the railway network can be observed in agglomerations of the European capitals, such as Berlin (about 70 km/100 km²) and Prague (about 50 km/100 km²). Typically, the regions of traditionally strong industry connected with steel production and coal mining have particularly dense railway infrastructure network (assigned mostly to transport freight), e.g. in Poland it is the śląskie province (around 16,81 km/100 km²).

The density of railway network in the European Union reaches 5.4 km per 100 km² of area in average and is lower than the average network density in Poland, which amounts to 6.6 km per 100 km².

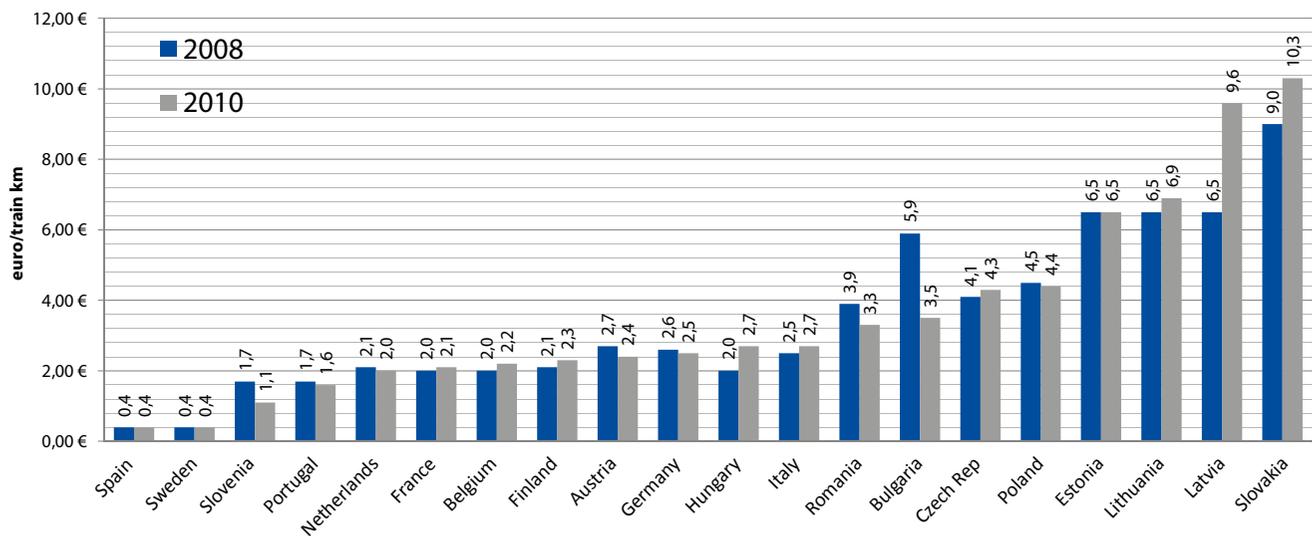


4.1.2. Charges for the access to line infrastructure in the European countries

In the moment when this document was being elaborated the overall data from the European Union for 2011 and 2012 concerning average rates for access to the infrastructure were inaccessible. The analysis provided below is based mainly on the data for 2010.

The comparative analysis shows that the level of Polish charges in freight traffic situates Poland above the European average. To compare, the amount of average rate of one basic charge in Poland is more than twice as high as in France and 75% higher than in Germany (in countries where the freight transport volume is high). The highest level of rates for access to the railway infrastructure was reported in such countries as Latvia and Slovakia. In 2010 it fluctuated on the level of EUR 10 in average for one train-kilometre of transport on the given network. The lowest level of rates was reported in Spain and Sweden – about EUR 0.4 for 1 train-kilometre.

Graph 77: Level of average rates for individual access of freight trains in the EU countries

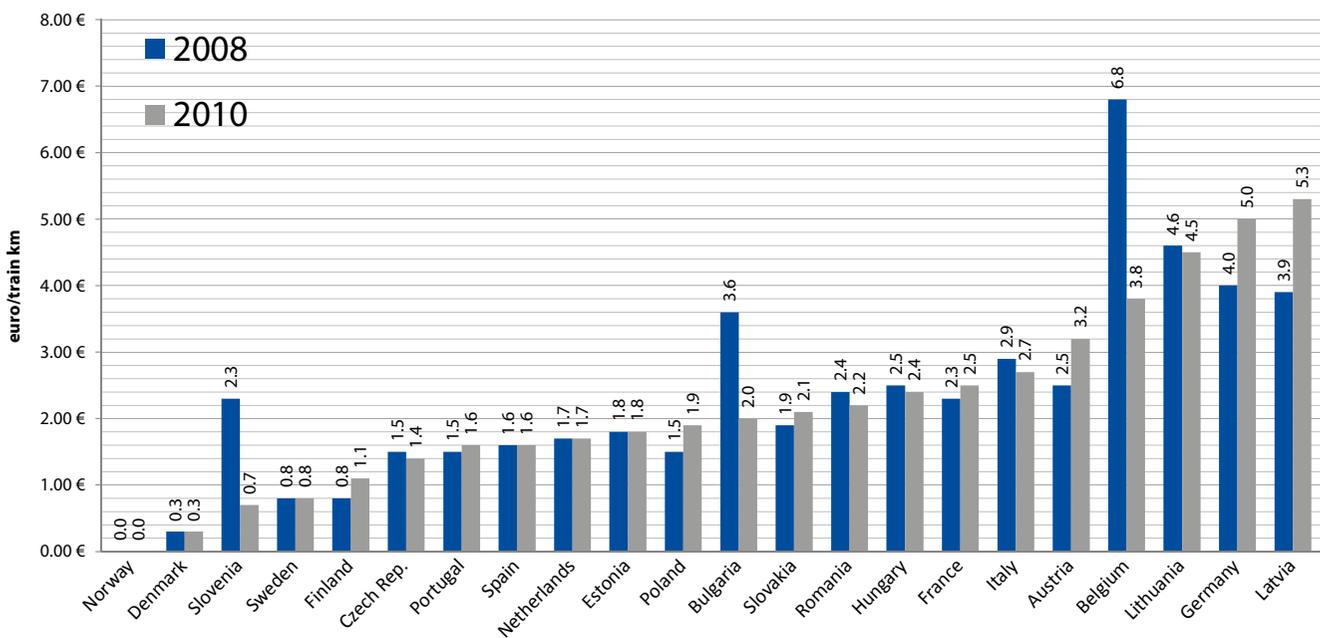


/Source: prepared by UTK on the basis of RMMS questionnaire and Rail Liberalisation Index 2011/

The level of rates for passenger traffic in the timetable 2011/2012 amounted to PLN 6.91 (about EUR 1.65). It is important to stress that the decisive elements influencing the demand for railway

services, apart from the access fees, are the quality parameters of the infrastructure, the scope of services offered, transport speed, punctuality and promptness.

Graph 78: The level of average individual fees for passenger trains in the EU countries



/Source: prepared by UTK on the basis of RMMS questionnaire and Rail Liberalisation Index 2011/

It is also important to stress that in the scope of railway transport in Poland the operating railway carriers that are dealing with freight transport bear significantly higher costs of access to the infrastructure than the ones dealing with passenger transport. The coefficient of rate for freight trains in comparison to passenger trains is one of the highest in Europe. Taking under consideration

the Polish rates for access to infrastructure for freight trains it should be pointed out that it is twice as high as for passenger trains. In developed countries, mostly in Western Europe (such as Germany and France) the rates for railway transport is similar to road transport – an element of sustainable transport policy (road infrastructure relief).

The price-quality relation is also an important aspect, including: technical quality of the infrastructure and transport speed (maximum

speed on the line), which translate into regularity, punctuality and promptness of transport. It is important to stress that in this respect the Polish infrastructure differs from most European countries, mostly those where the railway transport market is highly liberalized. Taking under consideration the quality coefficient (price for access to infrastructure / average speed in railway transport), the indicator mentioned above is three times lower in Poland than in Germany. According to the document issued by Bundesnetzagentur, entitled Railway Market Analysis 2011, the costs of infrastructure access in 2007-2010 fluctuated at the level of 18-19% of commercial turnover in case of freight transport. In Poland, freight transporters declare that the fees for infrastructure access are too high and in some cases amount to about 35% of their transport costs.

According to the sustainable transport policy, in highly developed countries of Western Europe the level of railway transport charges is similar to the charges in car transport.

4.2. Polish railway infrastructure

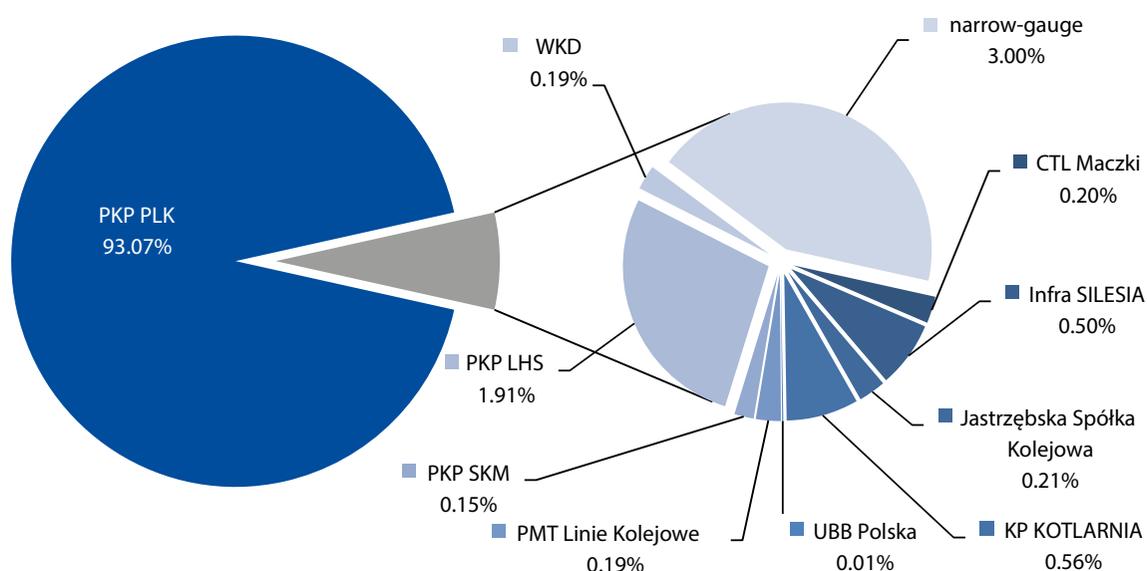
4.2.1. Polish railway infrastructure managers

At the end of 2012 the activity consisting in the management of railway line infrastructure was conducted by 10 entities, 7 of which provided such services exclusively:

- PKP Polskie Linie Kolejowe S.A.,
- Infra SILESIA S.A.,
- „Kopalnia Piasku Kotlarnia – Linie Kolejowe” Sp. z o.o.,
- Jastrzębska Spółka Kolejowa Sp. z o.o.,
- CTL Maczki-Bór S.A.,
- UBB Polska Sp. z o.o.,
- PMT Linie Kolejowe Sp. z o.o.

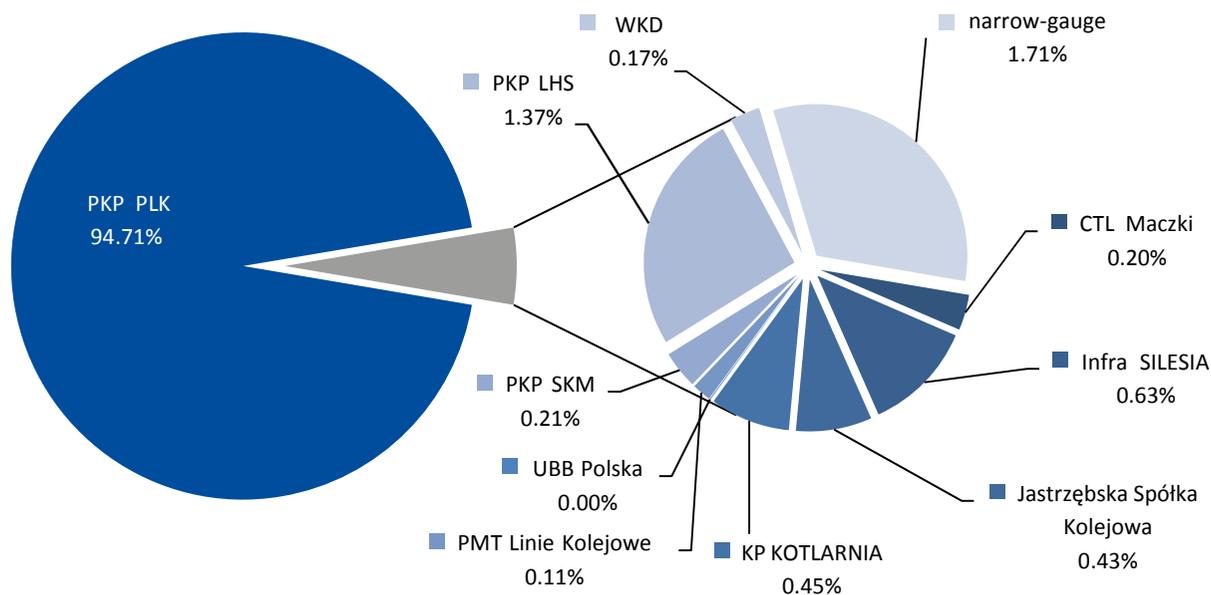
Additionally, the company PKP SKM w Trójmieście Sp. z o.o., as the only one had the function of railway carrier and the administrator of commonly accessible railway infrastructure. The two remaining entities, including Warszawska Kolej Dojazdowa Sp. z o.o. and PKP LHS Sp. z o.o. (having only the 1,520 mm wide-gauge line), combined the function of a railway carrier and infrastructure manager, but did not make their own infrastructure available to other railway carriers. On narrow-gauge lines transport was provided by 22 operators that combined the role of service provider (mostly passenger transport services) and infrastructure user/owner.

Graph 79: Share of individual infrastructure managers according to the length of exploited railway as of 31 December 2012



/Source: prepared by UTK/

Graph 80: Share of individual infrastructure managers according to the length of exploited railway tracks as of 31 December 2012



/Source: prepared by UTK/

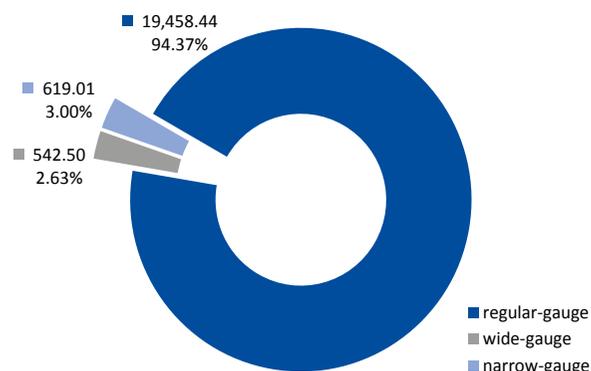
Taking under consideration the length of the utilized railway infrastructure, the largest share at the end of 2012 was held by PKP PLK – 93.07%. The share of the remaining managers was insignificant, except for narrow-gauge railway (with a share of 3%), the largest share was held by PKP LHS – 1.91% (only wide-gauge line) as well as Infra Silesia and KP Kotlarnia – 0.55% and 0.56% respectively. The share in total length of utilized track has similar structure: PKP PLK – 94.71%, PKP LHS – 1.37%, Infra Silesia – 0.63% and KP Kotlarnia – 0.45%.

4.2.2. Polish railway infrastructure managers market structure

In 2012 the length of the railway lines utilized by all infrastructure managers, including wide-gauge and narrow-gauge lines, amounted to 20,619.95 km. In comparison to the previous year the total length of the railway network decreased by 96.49 km. In the total number of lines there was 619.01 km of narrow-gauge lines of a gauge of up to 1,435 mm. Their length in comparison to the previous year remained stable. The total length of railway lines utilized by the main infrastructure managers - PKP PLK – fell by 107.7 km (that is by 0.56%) amounting at the end of 2012 to 19,191.22 km. This change was caused mainly by the adjustments of infrastructure to the changing transport needs.

Lines with gauge of 1,520 mm had 542.5 km of total length within the Polish infrastructure (all managers, that is PKP PLK and PKP LHS) – identically as in 2011. 94.37% of the Polish railway network constituted standard-gauge lines.

Graph 81: Structure of railway lines utilized in Poland, as of 31 December 2012



/Source: prepared by UTK/

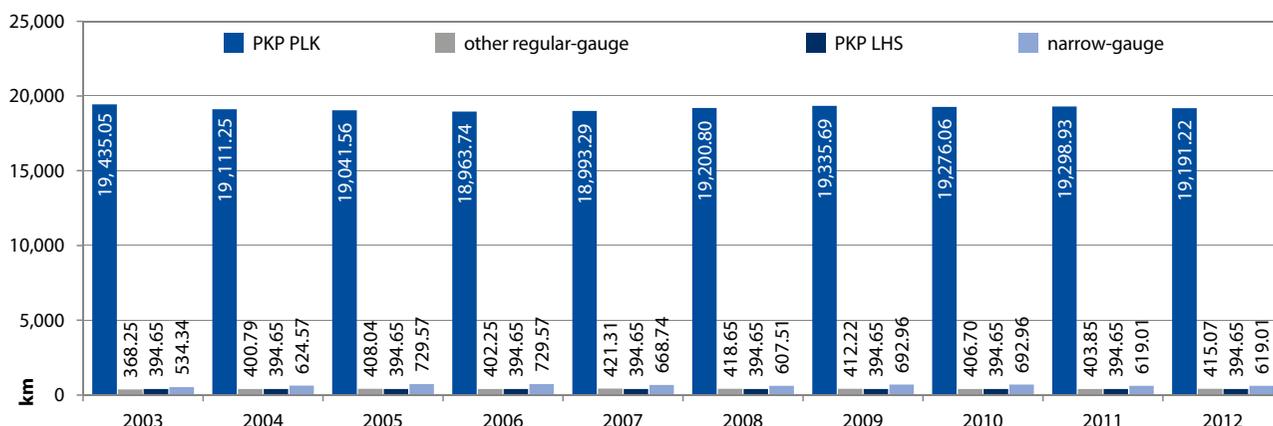
Similarly to 2011 the railway lines with 1,520 mm gauge constituted around 2.6% of the entire network. Their length was made up of railway lines belonging to two managers: PKP LHS Sp. z o.o. – 394.6 km and PKP PLK – 147.8 km. Thanks to its track gauge the infrastructure of the company PKP LHS allowed for direct transport from the station Sławków to the border crossing Hrubieszów – Izov, so that the company PKP LHS had direct access to the network of Ukrainian railway, and thus access to i.a. transsiberian main line. The narrow-gauge railway lines had a total length of 619 km.

In 2012 21,431.08 km of railway lines remained under the administration of PKP PLK, which is by 303.9 km less than in 2011. This number included 2,387.71 km (11.1 %) of lines which were excluded from use. The company was the only one to administer infrastructure of national importance, which at the end of 2011 constituted 60% of all utilized lines. Their length increased slightly at the end of 2012 amounting to 11,497.32 km in comparison to 11,496 km in 2011.

PKP SKM, providing transport services in Tri-City, realized both transport services and tasks consisting in the administration and provision of railway infrastructure for railway carriers. The company utilized and administered a 31.1 km long standard

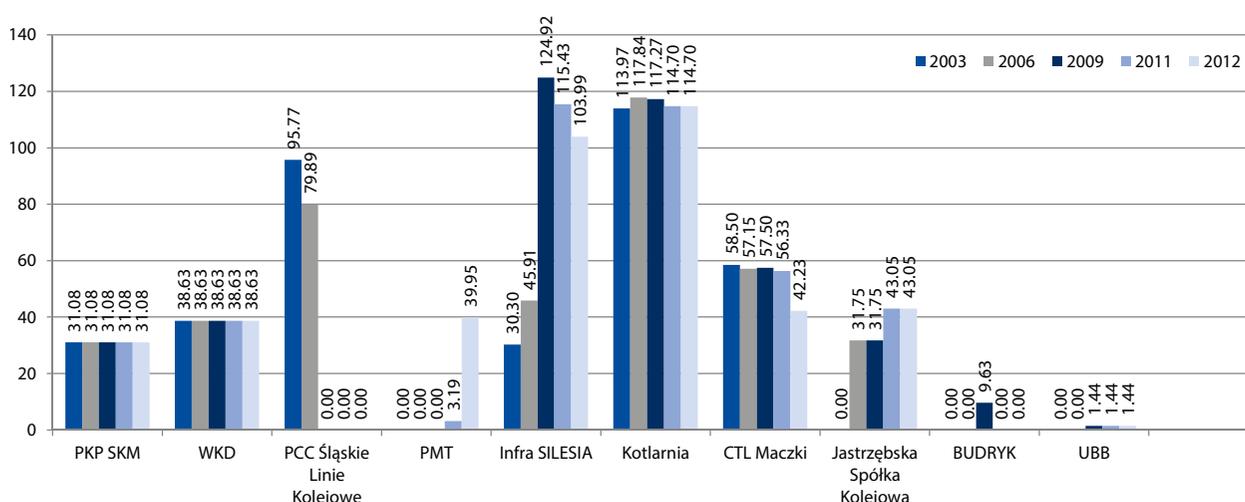
line section. The manager's network is entirely electrified. The company PKP LHS utilized 394.65 km of line with a 1,520 mm gap. The infrastructure held by this manager is not made available to other railway carriers.

Graph 82: Length of the utilized railway lines in 2003–2012



/Source: prepared by UTK/

Graph 83: Length of railway lines utilized by other infrastructure manager (including non-existing ones) in chosen years of the period 2003–2012



/Source: prepared by UTK/

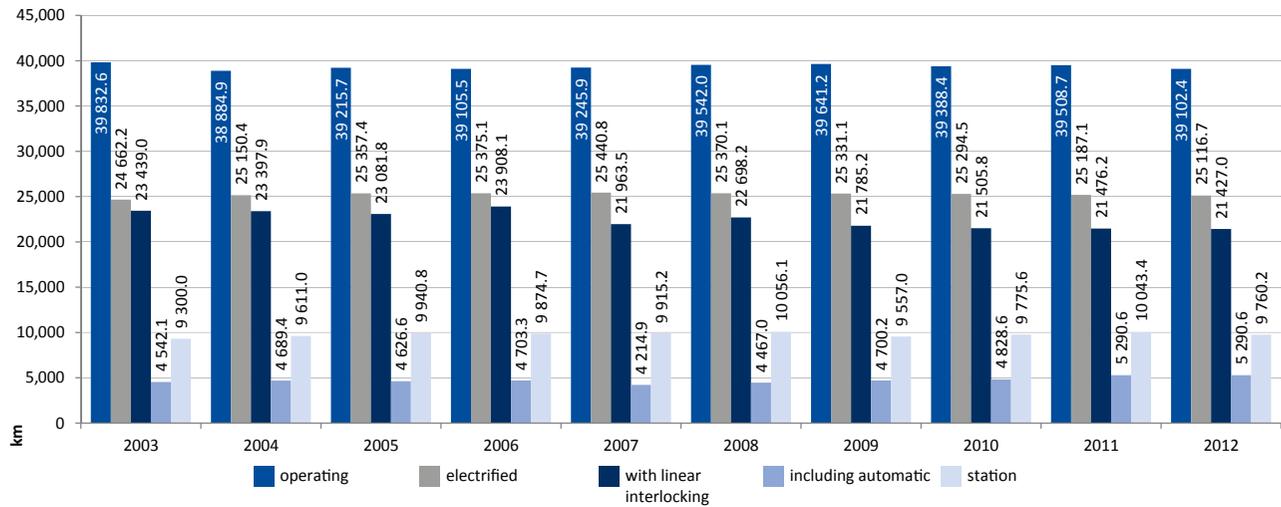
The remaining managers of standard-gauge infrastructure (except for PKP companies) including: Infra Silesia, KP Kotlarnia, Jastrzębska Spółka Kolejowa, CTL Maczki-Bór, UBB Polska, PMT Linie Kolejowe and WKD, administered and utilized 384 km of railway lines in total in comparison to 372.8 km in 2011. The longest infrastructure within this group was held by: Kopalnia Piasku „Kotlarnia” – Linie Kolejowe – 114.7 km and Infra Silesia – 103.99 km (a decrease by 11.4 km in comparison to the previous year). The decrease of line length from 56.33 km to 42.33 km was also noted by CTL Maczki-Bór. The company PMT Linie Kolejowe increased the utilized line length from 3.19 km to 39.95 km by winning a tender for the administration of railway line sections in the dolnośląskie and zachodniopomorskie provinces.

use of all railway infrastructure managers in Poland amounted to 11,919.3 km (by 36.5 km more than a year ago), which constituted 57.8% of the total line length. The companies of the PKP group (PKP PLK and PKP SKM w Trójmieście) held 99.1% of the electrified lines.

The total length of the utilized tracks on the lines of all infrastructure managers in 2012 amounted to 39,102.37 km (by 406.63 km less than in the previous year), including the electrified ones - 25,116.68 km (a decrease by 70.32 km). The total length of station tracks amounted to 9,760.34 km, tracks with block system - 21,476 km, including automatic block - 5,290 km.

The length of the administrated narrow-gauge railway lines amounted to 969.5 km. The length of electrified railway lines in

Graph 84: Changes in the structure of railway track length in 2003–2012

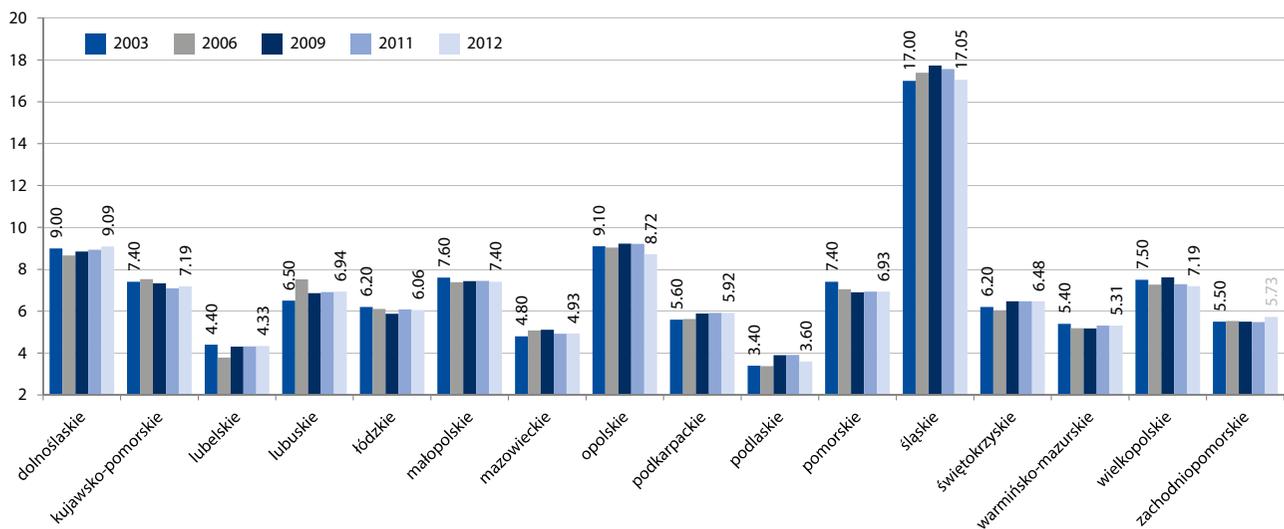


/Source: prepared by UTK/

Total number of railway station tracks of all infrastructure managers amounted to 20,491 pieces in comparison to 20,640 pieces in 2011. The number of switch circles amounted to 2,400 in comparison to 2,529 in the previous year. The density of railway network in particular regions, measured by km of lines per

100 km², has not changed considerably between 2003-2011. In 2012 it amounted to the level from 3.60 km/100 km² in podlaskie province up to 17.05 km/100 km² in śląskie province. At the end of 2012 the national average amounted to 6.59 km/100 km².

Graph 85: Density of railway network in Poland (km/100 km²) in 2003–2012



/Source: prepared by UTK/



For a better characteristics of the technical structure of railway infrastructure remaining at the disposal of its managers, below you will find information concerning the buildings and facilities used for railway traffic operation.

In 2012 the infrastructure managers' network consisted of 44 thousand sets of crossovers and track crossings. The total number of level-crossings in the rail level amounted to 13,875 and 528 gangways in the rail level. The utilized traction was 25.1 thousand km long. 18,890 sets of EOR facilities were installed on the network. The railway network was equipped in 3,203 sets of station control facilities. On 4,956 km of line block system (SBL) has been installed. Half-automatic block (PBL) was installed on 16,275 km of lines, which is 139 km more than in the previous year. The network of infrastructure managers was equipped in 20,696 sets of train driving control facilities, facilities for the control of driver's vigilance or train speed control facilities (436 sets more). 1,040 km of the entire network were lines with remote railway traffic control, enabling remote control and adjustment of railway traffic operations well as submitting reports on their state. In 2012 168 DSAT (rolling stock failure detection) were used, facilities for detection of wagon failures and irregularities in freight loading. The railway network was also equipped in railway telecommunication facilities, including i.a.: wireless train communication (it was installed on 18,415 km of lines), wireless road and maintenance communication – 17,643.5 km. 938 sets of wireless maneuver communication were operating on the railway network. There were 1,893 sets of facilities for wired telephone communication between stations and railway traffic. 1,047 sets of CCTV were installed on the network as well for the purpose of track and train surveillance. This number

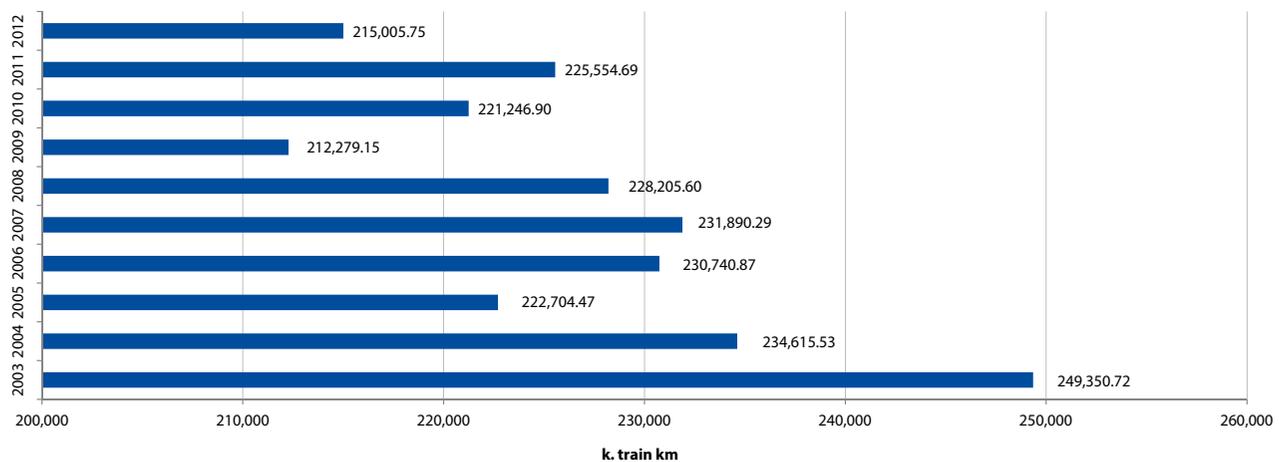
included 705 sets for the purpose of the surveillance of traffic situation on railway crossings.

4.2.3. Granting access to the infrastructure for railway carriers

In 2012 eight infrastructure managers provided services of granting access to railway infrastructure for railway carriers. PKP SKM w Trójmieście as the only one played the role of both railway carrier and manager of the commonly accessible railway infrastructure. The main and largest manager granting access to railway infrastructure on the market was PKP PLK. In 2012 all infrastructure managers sold in total 2.65 m. routes of a total length of 218.01 m. km. Their entire length decreased by 10.7 m. km (4.7%). PKP PLK held the dominating market position among infrastructure managers. All managers sold 2.40 m. routes of a total length of 215 m. km.

The company PKP PLK holds a dominating position on the infrastructure managers' market. In 2012 this manager sold 2.4 m. routes of a total length of 215 m. km.

Graph 86: The length of routes sold by the manager PKP PLK in 2003–2012



/Source: prepared by UTK/

Most routes realized by PKP PLK were those submitted to the annual timetable (1.756 m. altogether) - 73.26% of all launched routes. Routes realized "ad-hoc" - not submitted to the annual or individual timetable - constituted less than 0.67%. The manager charged PLN 2.325 billion from railway carriers for granting minimum access to the infrastructure-about PLN 155 m. less than in the previous year. In the total amount, the reservation charges for the routes unused by the railway carriers amounted to PLN 25.97 m. Additionally, the manager received PLN 77.89 m. payments for basic access to the facilities connected with

train operation and PLN 32.87 m. additional fees. At the end of 2012 the market share of PKP PLK in terms of granting access to railway infrastructure and sales of routes, measured by exploitation performance on the railway network, amounted to 98.6%. It is important to stress that in the last few years the market share of PKP PLK changed significantly, fluctuating on a similar level of 97.5-98.5%.

Taking under consideration the remaining infrastructure managers, the largest number of routes was realized by PKP SKM w

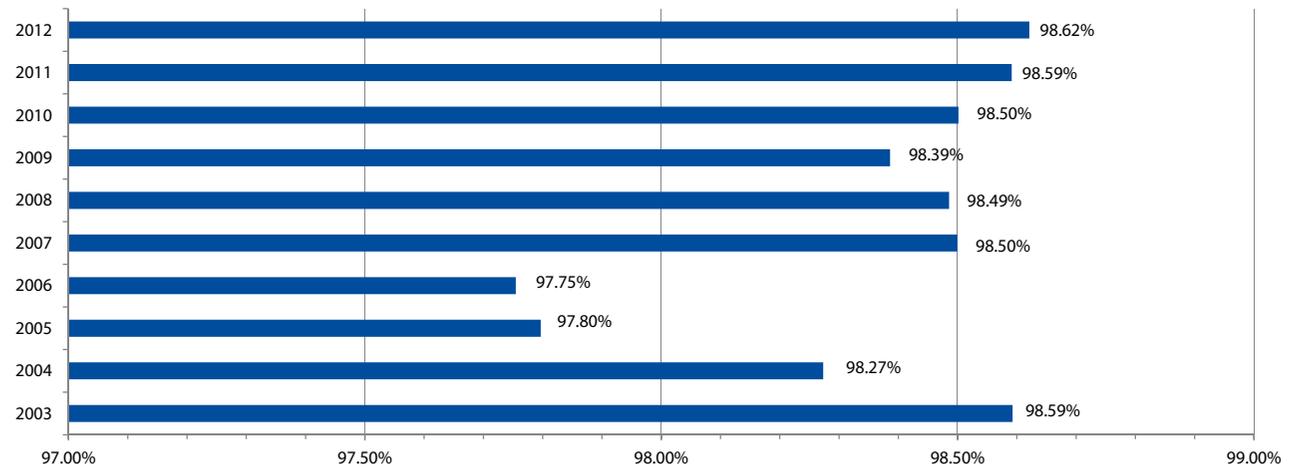
Railway infrastructure

Granting access to the infrastructure for railway carriers

Trójmieście - 103.15 thousand in total (10.1% less than in 2011). It is also important to point out that this amount includes 84.29 thousand routes realized for own transport purposes. The total length of routes amounted to 2.07 m. km, by 1.43% less than in the previous year. At the end of 2012 the market share of

the company concerning granting access to the infrastructure amounted to 0.95%. The share of the remaining managers, measured by the length of routes sold, was rather insignificant, amounting to 0.43%.

Graph 87: Market share of PKP PLK according to the length of routes realized in 2003–2012



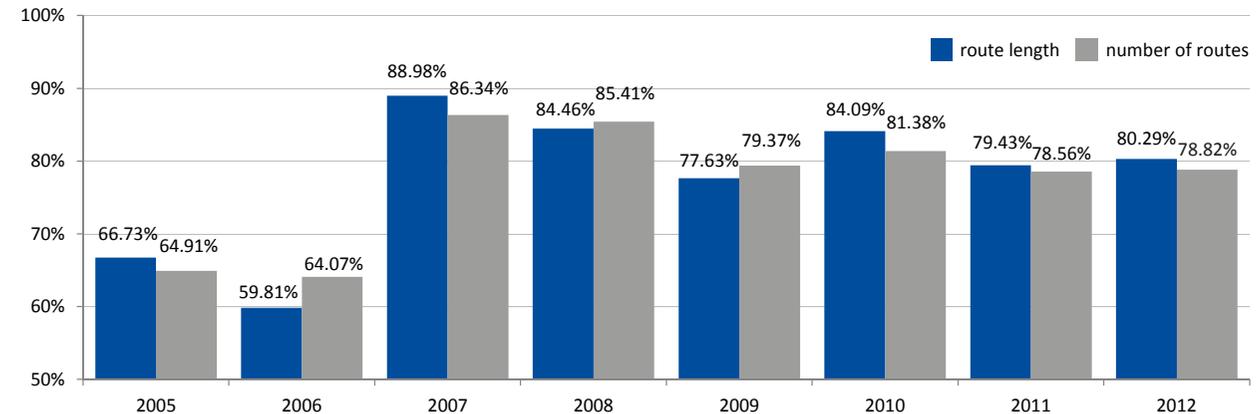
/Source: prepared by UTK/

In 2012 railway carriers ordered 3.04 m. of paths in total by PKP PLK for the annual and individual timetable (11.84% less than in the previous year) – their total length amounted to 267.79 m. km (a decrease by 7.92%).

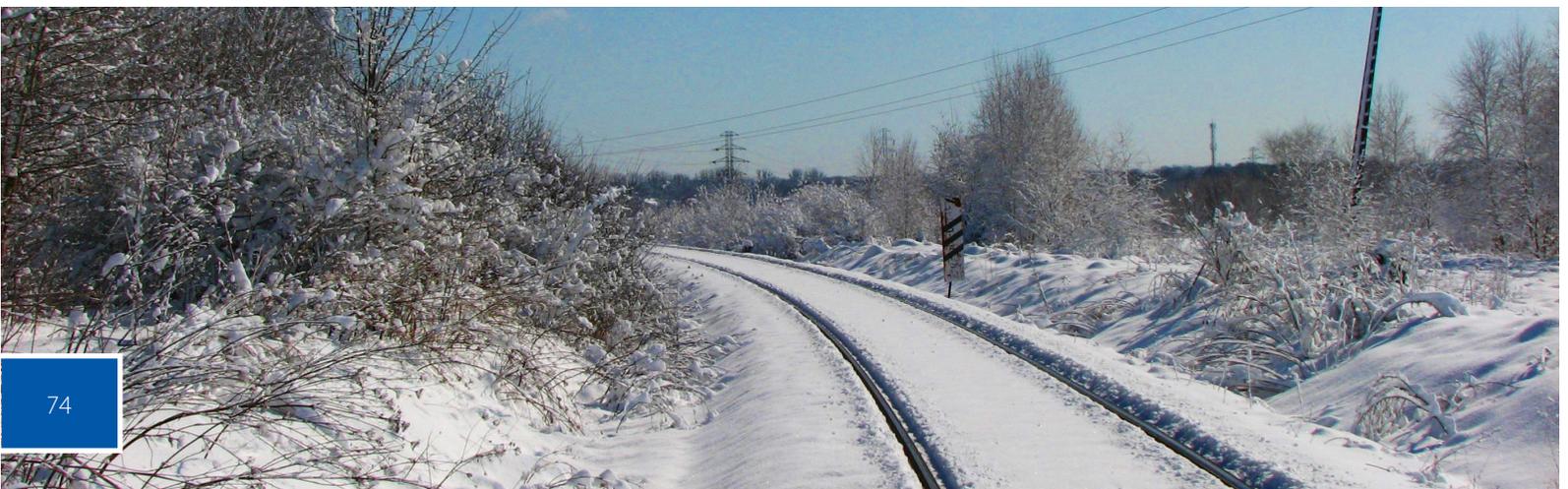
respectively. The coefficient of route utilization increased slightly, by 0.26 and 0.85% respectively, compared to the previous year. The increase of realization level in 2007 was caused mainly by the introduction of a charge for ordered and unused routes by infrastructure managers.

In comparison to the total number and length of purchased routes, the utilization coefficient amounted to 78.82% and 80.29%

Graph 88: Share of paths sold in the overall number of paths ordered by railway carriers in PKP PLK in 2005-2012



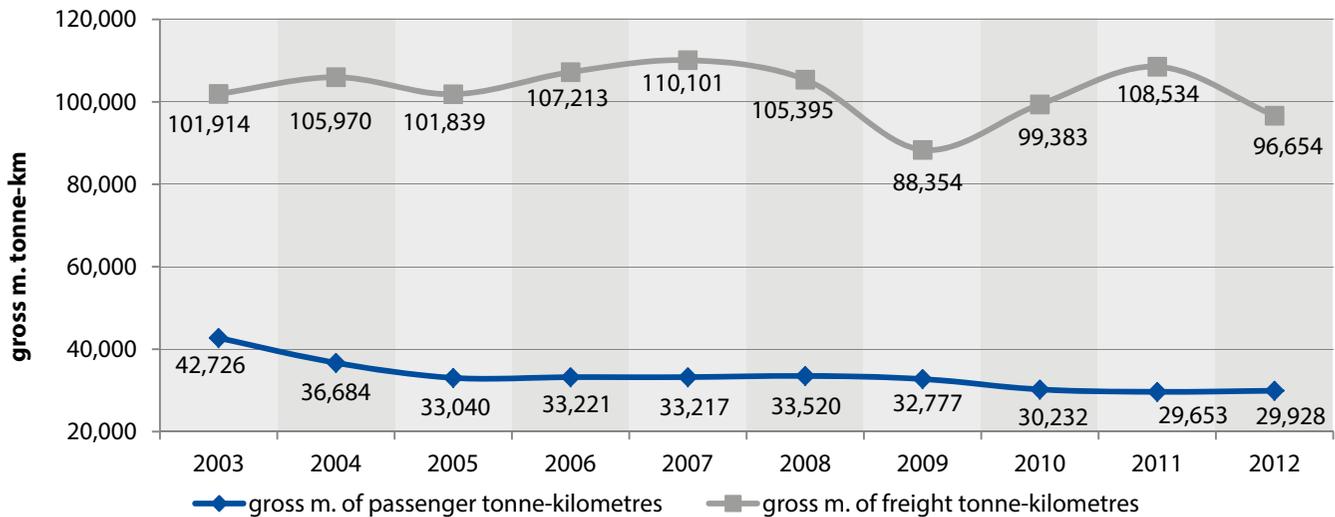
/Source: prepared by UTK/



In 2012 137.73 m. gross tonne-kilometres of transport performance was realized on the PKP PLK network, which was a decrease of 11.15 billion tonne-kilometres (8.8%) in comparison to the previous year. The gross performance realized in freight

transport constituted 76.4% (78.5% in 2011), the remaining part was realized by railway carriers providing passenger services – 29.9 billion gross tonne-kilometres.

Graph 89: Infrastructure load – volume of transport performance (gross milion tonne-kilometres) in 2003-2012

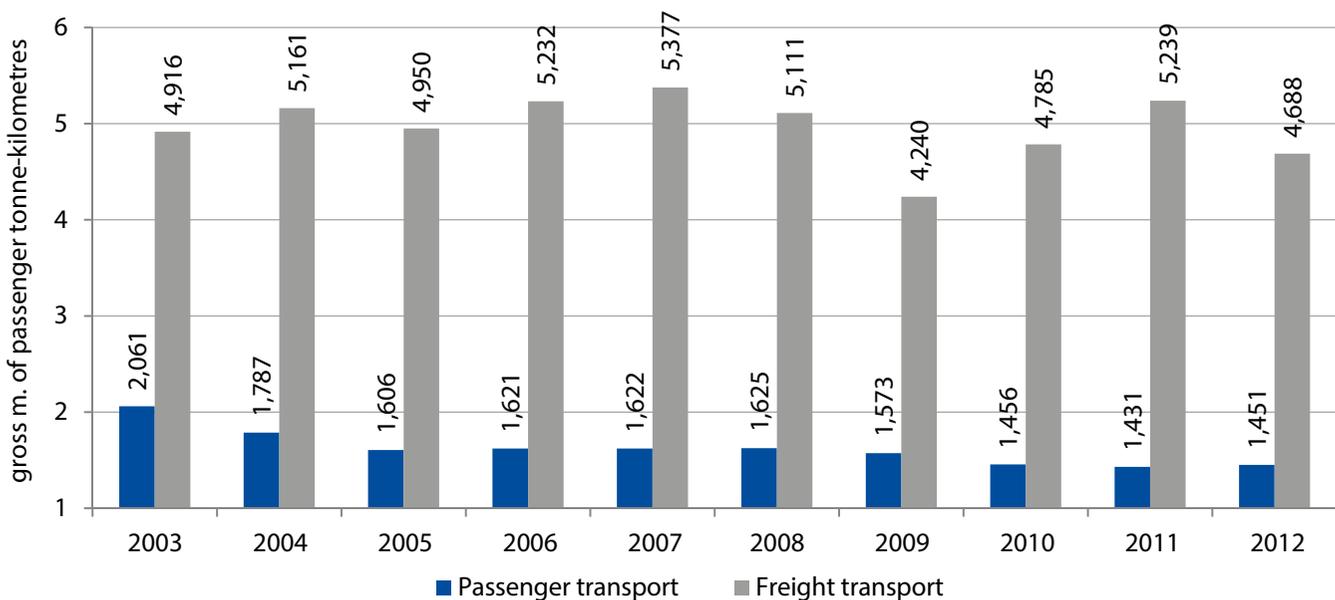


/Source: prepared by UTK/

Average load of one kilometre of railway line in 2012 amounted to about gross 6.14 m. tonnes, which is by 0.53 m. less than in 2011. The decrease concerned freight transport, whereas passenger transport remained on the same level. The gross freight transport performance of railway carriers per one km of railway line was by 551 thousand tonnes smaller. In 2012 average load for this type of transport amounted to gross 4.688 m. tonnes per kilometer of railway line. The same coefficient for passenger transport

amounted to 1.451 m. tonnes per kilometre. It is important to stress that in the last couple of years this coefficient remained on a lower level for railway carriers providing passenger services, mainly through the implementation of a smaller number of train sets and lighter train sets e.g. in regional traffic (with the use of railbuses and lightweight railway vehicles) and shorter train sets in interregional traffic.

Graph 90: Load of railway line concerning transport performance (m gross tonne-km per 1 km of railway line) in 2003-2012



/Source: prepared by UTK/

4.2.4. Charges for access to Polish railway infrastructure

By the end of 2012 ten railway carriers were administering railway infrastructure, seven of which focused only on this activity. The companies PKP LHS and WKD do not grant access to their own infrastructure to other railway carriers. PKP SKM w Trójmieście was the only one to play the role of both railway carrier and manager of commonly accessible railway infrastructure. In the end of 2012 eight infrastructure managers were obliged to submit rates for individual charges for access to railway infrastructure to the President of UTK.

The charges for access to railway infrastructure, paid by railway carriers to the benefit of infrastructure managers in exchange for the possibility to use it, are calculated according to the legal provisions of the act as the quotient of the number of services provided and the unit rate. The project of rates of individual charges (basic and additional) is submitted by the manager for approval of the President of UTK 9 months prior to the introduction of the train timetable.

The system of calculation of individual rates for infrastructure access for 2012 was based on the provisions of the act on railway transport and the order of the Minister of Infrastructure on the conditions for access to and utilization of railway infrastructure.

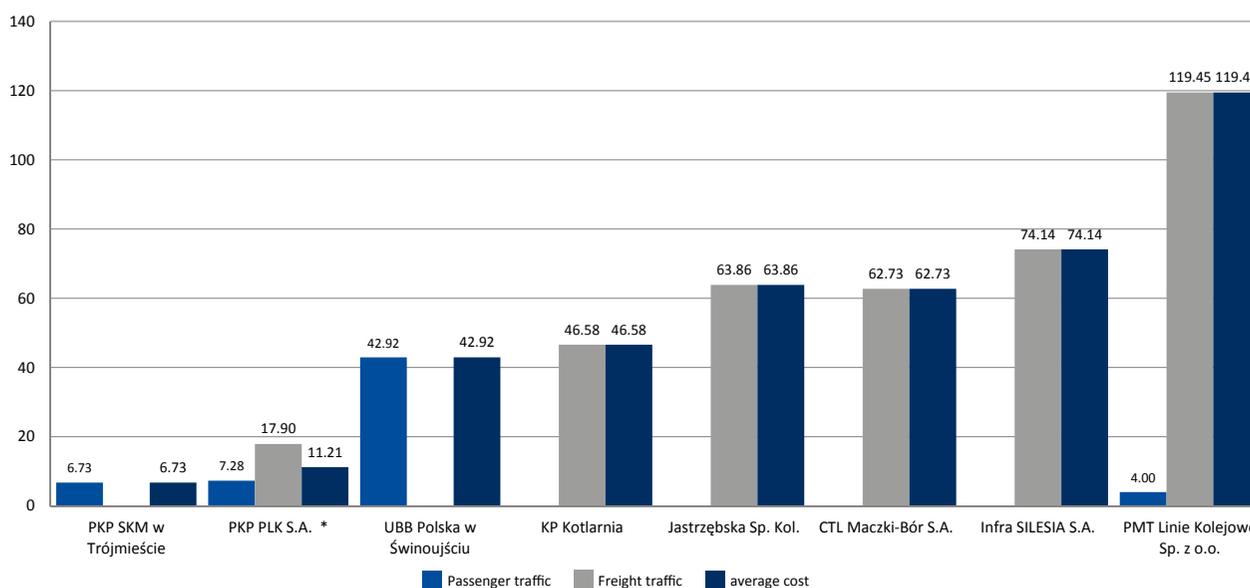
The charges for railway infrastructure access are calculated "ex ante", that is on the basis of data as planned for future periods – the planned costs of granting access to railway infrastructure.

The President of UTK examines the compliance of the calculation of unit rates for access to railway infrastructure in the project submitted by the manager with the rules provided for in the aforementioned act and order. After this phase is closed, the President of UTK issues an administrative decision confirming or declining the approval of rates. It is important to stress that according to the provisions of article 33 item 8 of the act on railway transport the President of UTK refuses to approve the submitted project only in case if it has been prepared with violation of regulations specified in article 33 item 2 – 6, article 34 of the act and the regulations issued on the basis of article 35 of the act.

The UTK may verify the application of individual rates "ex post" through the control of the correctness of their calculation based on the charges paid. The Office exercises this entitlement by making periodic controls of railway infrastructure managers or by launching administrative proceedings ex officio.

The graph below pictures the average cost of access to railway lines of infrastructure managers in 2013 (the so called basic charge for minimum access to the infrastructure).

Graph 91: Average cost of train-kilometer for the minimum access to the railway infrastructure for the 2012/2013 timetable

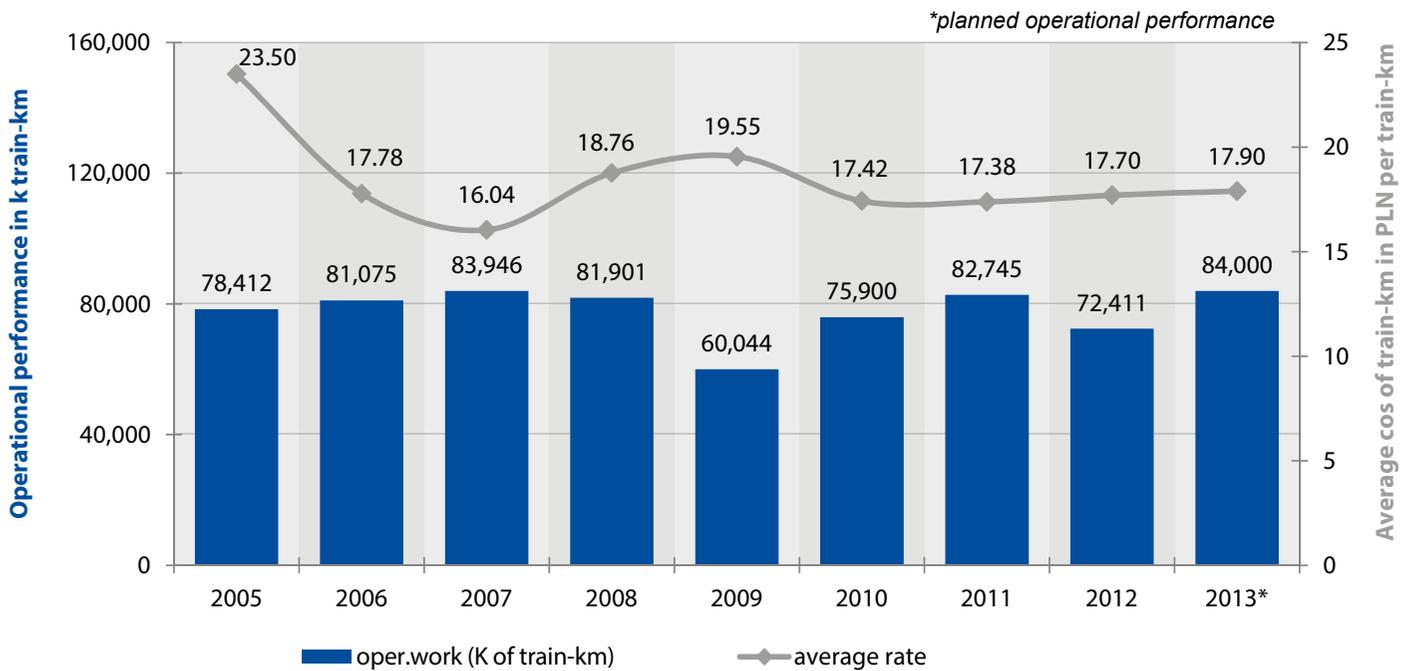


/Source: prepared by UTK/

In freight transport the basic factor influencing transport volume is the economic situation on world markets, including the level of economic exchange between countries and internal demand for mass freight transport, e.g. coal and aggregates. In freight transport in 2006 and 2007 there was a dynamic increase of transport volume and a decrease of rates caused mainly by significant increase of economic exchange (increase of transport

in international communication amounted to almost 16%). Despite the fact that charges remained on a similar level not exceeding PLN 20.00 per km, in 2008-2009 there was a decrease of transport caused by global economic crisis.

Graph 92: Rates for access to infrastructure compared to the dynamics of freight railway transport in 2005-2013



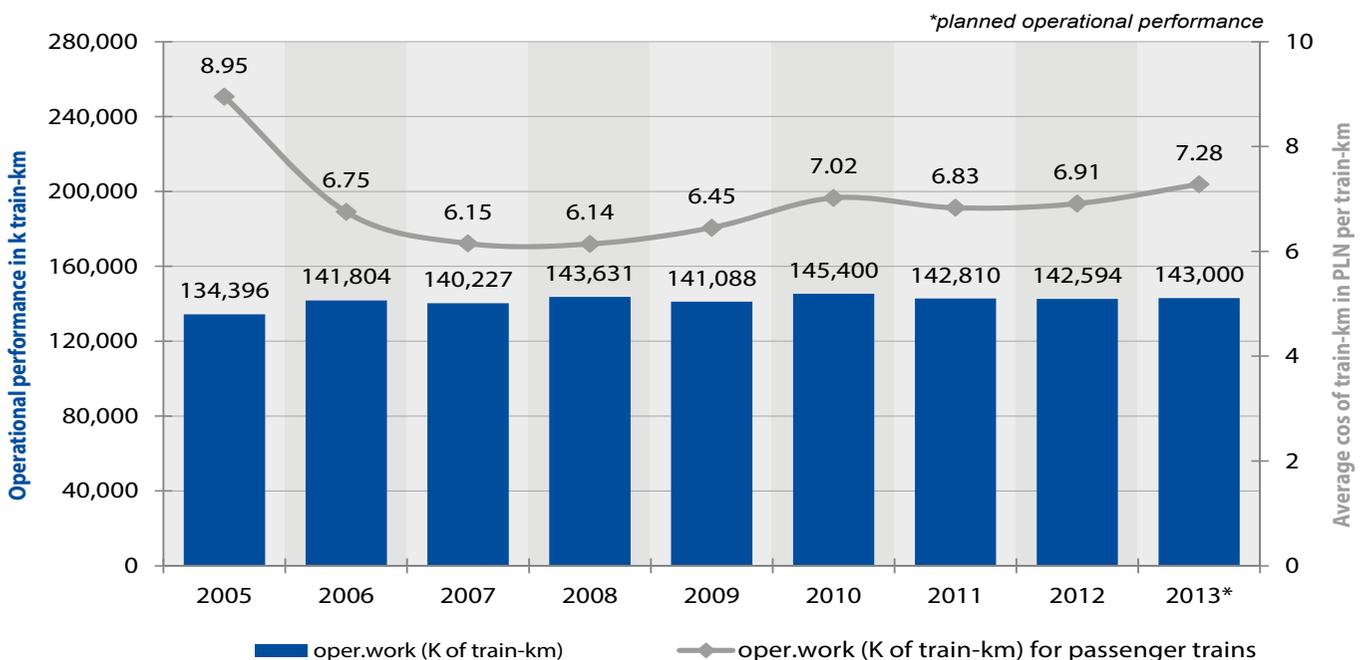
/Source: prepared by UTK/

In 2010 and 2011 dynamic increase of transport volume was mainly the result of demand for aggregates, sand and gravel. In 2012 the decreases on the freight transport market are a result of a reduced number of investments in infrastructure and thus a decrease in the transport of freight used for its construction. Since last few years there has been a visible tendency of a reduction of demand for coal transport by rail. A reversed tendency can be observed in case of intermodal transport, despite the fact that also in this segment the increase tendency was gradually slowing down in the second half of 2012. It is important to mention that despite the lack of significant correlation between the level of rates and the annual transport volume or the volume

in several years' time, in a longer time perspective the drop of prices for access to the infrastructure may cause an increase of importance and share of railway transport in comparison to the remaining transport modes.

In passenger transport the decrease of transport volume observed in the first half of the last decade was mainly an effect of the development of individual transport. The most important factors influencing the passenger railway transport volume are mainly economic factors, including i.a. economic development, unemployment rate or the level of fuel prices.

Graph 93: Rates for access to infrastructure compared to the dynamics of passenger railway transport in 2001-2012



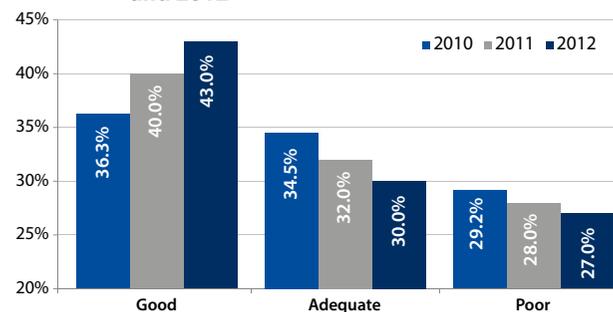
/Source: prepared by UTK/

In the timetable for 2010/11 the manager PKP PLK granted a 25% concession in charges for trains providing intermodal transport. Similarly to the previous timetable, the concession was granted only in case of transport in block trains, where all wagons were loaded – if there was one empty wagon there was no possibility to apply for concession. In the 'Regulation of train paths allocation and use of the allocated train paths by the licensed railway carriers for the 2011/2012' the infrastructure manager PKP PLK S.A. changed the principles of granting concessions, allowing for commissions for block trains with empty wagons adjusted for intermodal units which performed intermodal transport. The changes in the regulations contributed to further increase of the number of routes of the launched intermodal trains.

4.2.5. Railway infrastructure quality assessment

The technical condition of the Polish railway line infrastructure remains inadequate. At the end of 2012, only 43% of all railway lines were described as being in „good” technical condition compared to 40% recorded in 2011. The remaining portion of railway lines requires direct repairs and/or a complete modernization. Approximately 30% of the railway lines were considered to be in a „satisfactory” technical condition (vs. 32% in 2011), and 27% were considered as „unsatisfactory” (vs. 28% in 2011). Quality of the infrastructure directly influences the transport speed of passenger and freight trains, which currently is much lower in comparison to most European countries. Since 2010 the number of railways in good technical condition has been visibly growing. In 2012 the average commercial speed of freight transport on the lines of all infrastructure managers was 25 km/h.

Graph 94: State and quality of the PKP PLK S.A. railway infrastructure in the period between 2010 and 2012

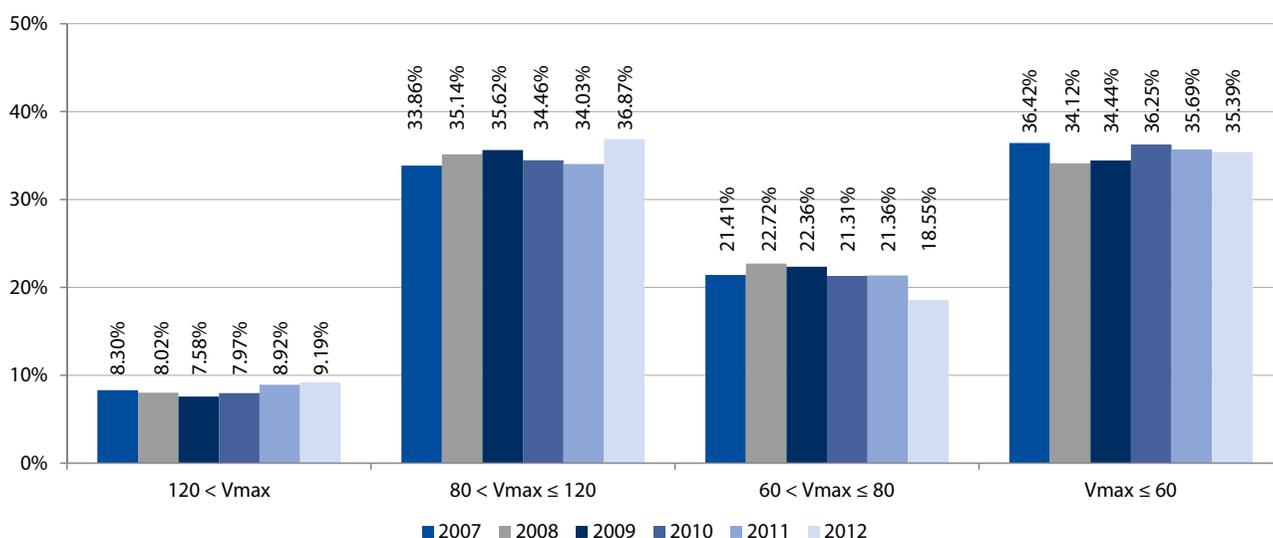


/Source: prepared by UTK based on data provided by PKP PLK/

Three criteria were considered to evaluate the quality of infrastructure (technical condition of tracks). “Good” quality means that the railway lines operated within expected operational parameters, requiring only maintenance works. “Satisfactory” quality means that the railway lines could be operated with diminished operational parameters, e.g. with lower timetable speeds, speed limits at certain points, and required, apart from maintenance works necessary to uphold operational parameters, immediate repairs involving replacement of damaged track portions. “Unsatisfactory” quality means that the operational parameters of a line are considerably limited, resulting in low timetable speeds, considerable speed limits or decreased approved axle loads; the lines are qualified for complete replacement of the railway superstructure.

At the end of 2012, 9.19% of the total number of lines was capable of supporting travel speeds in excess of 120 km/h. This value has been slowly rising since 2010. The share of lines, which allow travel with speeds from 80 to 120 km/h, has increased as well from 34.03% to 36.87%. The length of lines with a speed limit of 60 km/h or under has decreased from 35.7% to 35.4% in the preceding year. The share of railway lines with the maximum transport speed limit between 60-80 km/h decreased as well, from 21.36% to 18.55%.

Graph 95: Distribution of railway lines per the maximum speed limit, yrs. 2007-2012

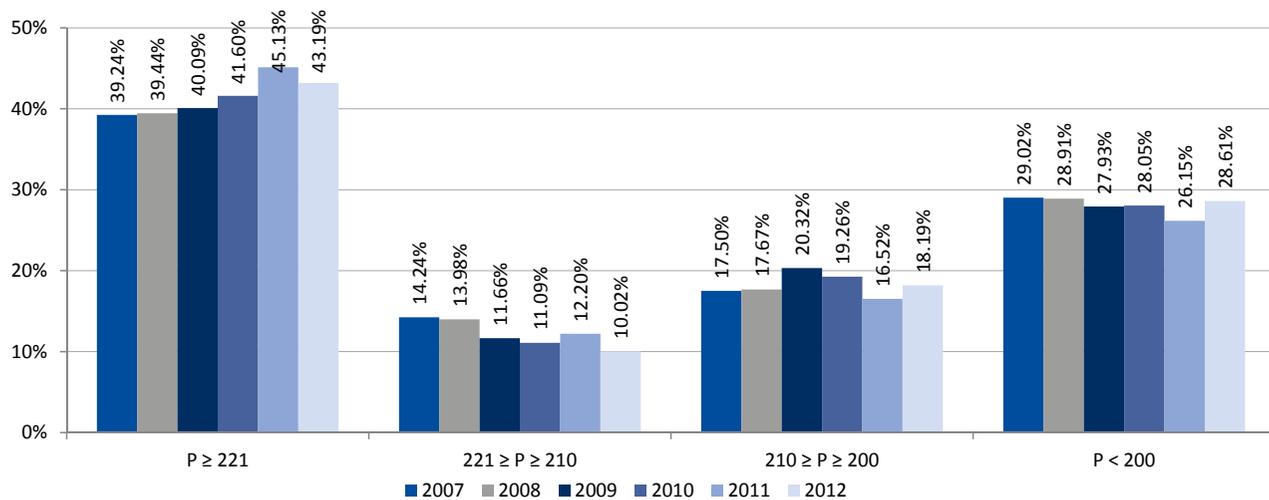


/Source: prepared by UTK/

In 2012, the share of railway lines with a maximum allowable axial load of over 221 kN, i.e. equal to or exceeding 22.5 tonnes per axle, decreased to 43.19% from 45.13% in the preceding year. The share of lines with a maximum allowable axial load of 200

kN per axle has increased to 28.61% vs. 26.15% in the preceding year. Lines with a maximum allowable axial load between 210 and 221 kN still have the lowest share in the infrastructure, which decreased to 10.02% vs. 21.2% in the preceding year.

Graph 96: Distribution of railway lines per the maximum axial load limit, yrs. 2007-2012

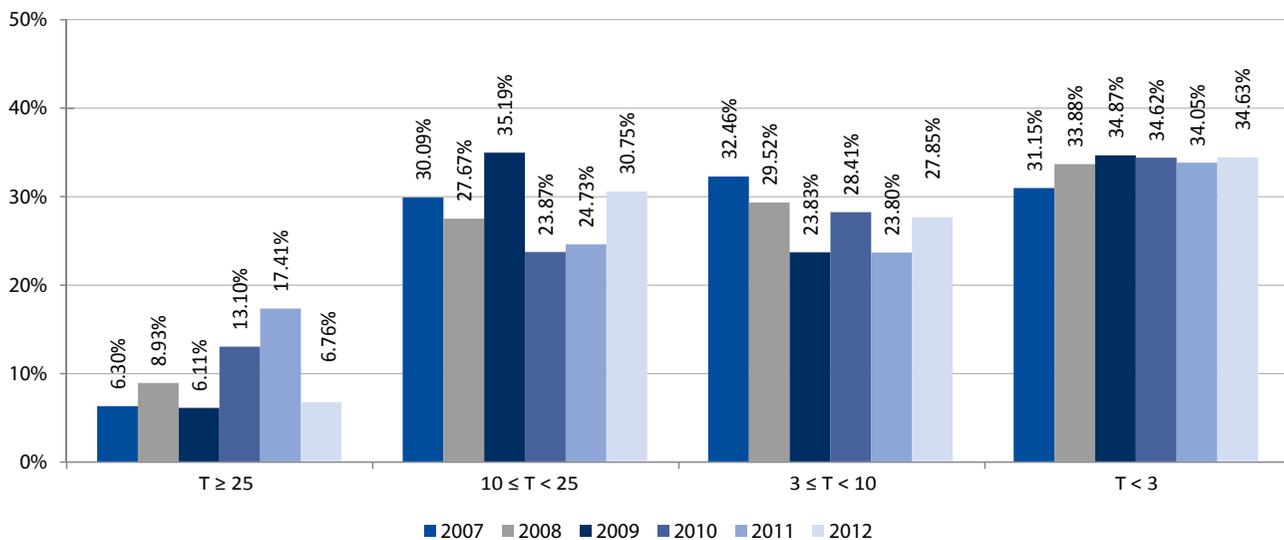


/Source: prepared by UTK/

In 2012, due to the noticeable slowdown in the freight transport segment — mostly related to heavy raw material transports — the share of lines with an annual transport load exceeding 25 m. tonnes per year decreased to 6.76% from 17.41% in the preceding year. The largest share of railway lines, where the

annual transport load does not exceed 3 m. tonnes, increased slightly to 34.63% (vs. 34.05% in the preceding year), which is testament to very large reserves and low utilization of the Polish railway infrastructure. Only three to four train pairs are travelling through these lines daily.

Graph 97: Distribution of railway lines per average yearly transport load, yrs. 2007-2012



/Source: prepared by UTK/

The Polish railway infrastructure still does not allow for transport with speeds exceeding 160 km/h. Lines with a transport speed of 120 to 160 km/h make up a mere 9% of the entire railway infrastructure. Adaptation works are currently conducted on selected railway lines, to allow for transport speeds exceeding 160 km/h. According to the plans of the infrastructure manager, PKP PLK, the selected sections of the Central Railway Main Line, and going forward, all passenger train lines will be upgraded to

support speeds up to 200 km/h. It requires, among other things, liquidation of all level crossings and implementation of ERTMS (European Railway Traffic Management System).

Still, the condition of the railway infrastructure facilities, including terminals with access to railway transport, is not satisfactory. Polish terminals differ considerably from the European infrastructure, mostly in terms of the size of storage yards,

warehouses and capacity. One should also note the technical condition of these facilities, low quality of pavement on the terminals and their storage yards, as well as the poor technical condition of loading-unloading equipment and access roads. Currently, most terminals require urgent extension, repair and modernization, including their railway components, i.e. the loading and unloading track system should be expanded to allow for servicing of 600m or longer trains. One disadvantage, which considerably influences the volume of railway transport, is the lack of sufficient number of domestic and regional logistics centres with access to a railway, with a few or a dozen located within the area of the largest agglomerations. It currently causes considerable dispersion of the stream of transported loads and as thus hinders the railways' ability to capture such transports (e.g. by providing regular full train-load transport services). Low technical parameters and shortage of specialized equipment of the railway infrastructure facilities are the reason for depreciation of railway transport, including container transport. Thus, intermodal transport is much less competitive than in other European countries, where the quality of the railway infrastructure – both facilities and lines — is considerably higher, i.e. the service at terminals is much faster, commercial speeds on the line are higher, and the fees for access to the railway infrastructure are lower (two times less in France, for example).

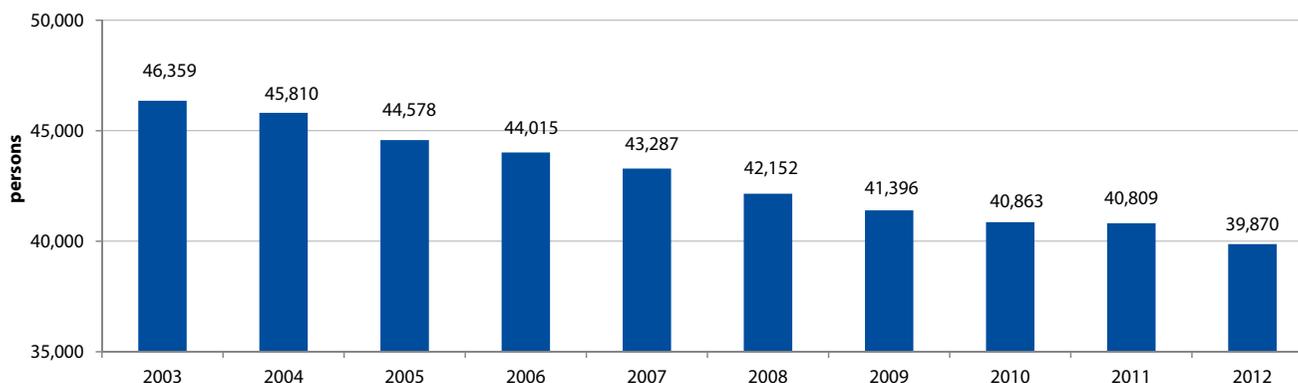
4.2.6. Volume, structure and efficiency indicators of the railway infrastructure access market

The volume of the Polish market for railway infrastructure managers in 2012 can be characterized with the following parameters:

number of infrastructure managers	10 including
infrastructure access providers (PKP LHS and WKD do not provide access to infrastructure)	8
yearly revenues for the market	PLN 4,008 billion
yearly operating costs of railway services	PLN 5,210 billion
employee headcount in the railway sector	39,870 persons
train operation	217.6 m. train-kilometres
number of routes sold	2,784 m

The headcount reduction process continued throughout 2012 in the infrastructure management sector. At the end of 2012, the number of employees in this sector amounted to 39,870, a decline of 2.3% year over year and a decline of 14% vs. the year 2003. Headcount reduction was effected primarily in the company of the main infrastructure manager, with 998 redundancies. 97% of the total workforce of infrastructure managers was composed of PKP PLK employees.

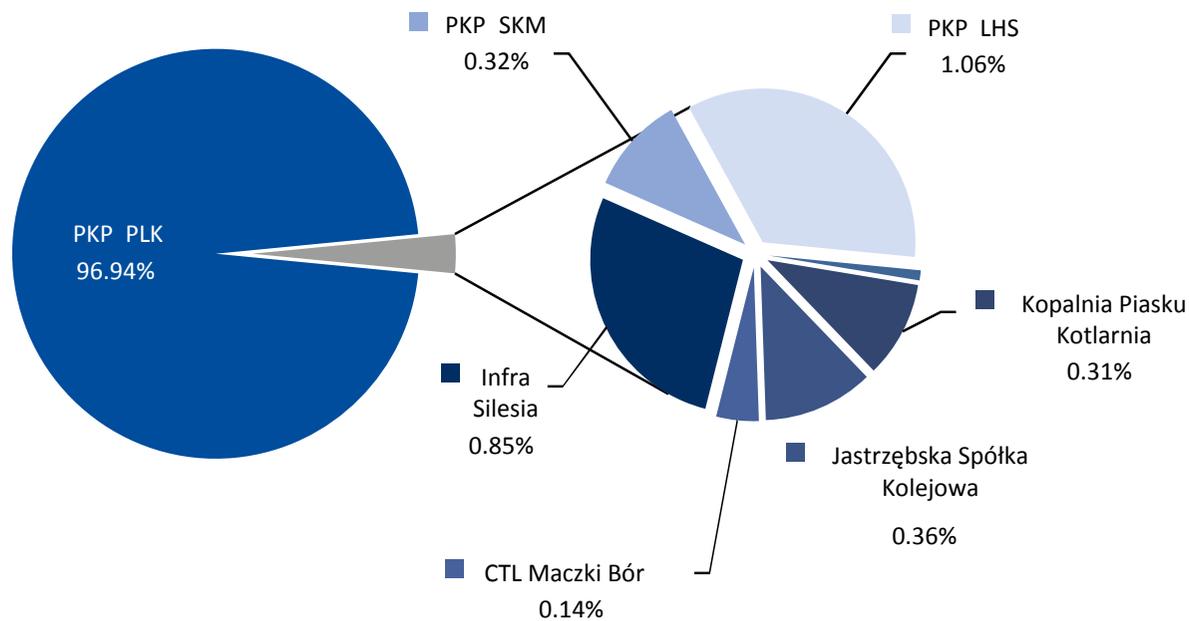
Graph 98: Employment in infrastructure managers in the years 2003-2012



/Source: prepared by UTK/



Graph 99: Employment structure in 2012 (share)



/Source: prepared by UTK/

Increased costs and revenues were observed in 2012. Year over year, costs increased by 8.1%, while revenues increased by 3.9%. Differences in growth of these two factors are a result of declining intensity of train operation. In total, the market again recorded

a loss of PLN 1.2 billion (a trend that has been continuing at this level since 2009), which is a 20% year over year increase, as in 2011 the loss amounted to approx. PLN 1 billion.

Graph 100: Operational results of infrastructure managers (billion PLN) for yrs. 2003-2012



/Source: prepared by UTK/

The coefficient used to characterize operational performance of infrastructure managers, calculated as the amount of train operation per one employee, fell slightly in 2012. The value of this indicator fell by approx. 1.2% year over year. Despite the decreased value of this indicator

for PKP group companies, the operational efficiency levels of PKP SKM in the Tri-City area and PKP PLK were considerably higher than those of other infrastructure managers (16.3 and 5.64 K train-kilometres per employee respectively). This is mainly a result of high route utilization by carriers, i.e. the high number of trains running on these lines and consequently, high train operation values.



5. Summary

The image of Polish railways in the context of railway transport in the European Union begins to change. Even though Polish railways continue to be an object of criticism in crucial EU reports (such as ERA report on railway safety, Gallup report on railway passenger satisfaction), many facts and indicators show more positive aspects of railway development in Poland.

In 2012, Polish railways passed its „trial by fire” during the EURO 2012 Championships. The organizer of the championship, a company named PL.2012, estimated that the train would be the main mode of transportation for football fans. Even though the preparations for the championship had not inspired confidence in both the public and media, the total outcome was positive. The availability of seats in the trains and the service (especially for foreign passengers) did not disappoint, and all entities active on the market demonstrated high flexibility and the ability to quickly react to any event. In addition, football fans could see the new showpieces of the Polish railways, such as the overhauled train station in Wrocław, the overhauled Warsaw Central and Warsaw East train stations, and the finally completed railway line leading to the F. Chopin Airport. Furthermore, new stations were built near the Gdańsk and Wrocław stadiums, and a new train station was built in Poznań. In addition, the railway line between Poznań and Gdańsk was revitalized, which resulted in shorter travel times. Many investments could not be completed in time, but nevertheless football fans did not view the Polish railway in negative light. According to the data collected by PBS, 73% of foreign football fans have positively assessed railway transport. It should also be noted that the EURO 2012 Championship provided a stimulus to commence many investments which may have not been finished, but ultimately will be completed. This is a great chance to change the image of Polish railways in their entirety.

The success of EURO 2012 is happy news for one more reasons: it caused every actor of the railway market — both public and governmental — to engage in cooperation.

Rail-based passenger transport is changing dynamically. Even though there is much work ahead of us, one cannot dismiss such changes, as ongoing repairs of railway stations, introduction of new and modernized rolling stock, new approach to the passenger, better use of electronic means of communication in the travel process (such as the online ticket distribution channel).

Railways must do everything in their power to recapture passengers lost during the troublesome modernization process, especially in routes between provinces. The fight will not be easy, as competing with both personal and collective road transports, which is often cheaper, faster and more flexible than rail, is a tough proposition. Efficient completion of the modernization and revitalization projects seems to be key, as it will considerably shorten travel times and increase travel comfort, thus allowing for an attractive offer (in terms of time vs. quality vs. price).

The Railways will have to rebuild their image of a safe mode of transportation, which has been tarnished due to train crash near Szczekociny, and media reports, which found out that in many cases railway traffic was managed in an unsafe manner.

Particular attention should be paid to passengers travelling by rail on regional and intra-agglomeration routes who, for financial and time reasons, had chosen to travel by rail in 2012. In subsequent years, due to the expanded network of ring-roads, highways and roads, such passengers will be inclined to use road-based modes of transportation. Better care for these groups of passengers will cause them to travel by rail not only by necessity, but by conscious choice. To achieve this, the passenger must be provided with a trustworthy offering (a well-planned timetable, low prices and short travel times), and an excellent communication between passengers, the mass transit organizer, and the carrier, as well as between the carriers themselves and the carriers and the infrastructure manager. Unlike road-based transport, proper operation of railway transportation services in a liberalized market requires appropriate coordination of all its constituents. Uncomfortable stopovers, cancellations and delays are especially problematic for commuters.

Wanting to provide better quality of railway-based services, province marshals established their own railway companies. The example of Koleje Śląskie (Silesian Railways) shows that high-quality service cannot be achieved without qualified personnel with expert knowledge and excellent organization. However, the number of educational facilities offering opportunities to improve one's railway transport qualifications has been diminishing. The lack of train drivers' proper preparation for service can also be explained by an ever-widening generation gap, which is most easily seen in the locomotive operator community. Deficiencies in this area must be urgently remedied, for the sake of safety. For railway services, safety is always a top priority. Lack of safety causes millions of losses in a best case scenario and death in a worst case scenario.

To stimulate railway-based freight transport, one must ensure that such services are competitive and more flexible. To this end, the infrastructure manager should implement an incentive policy, which would enable the carrier to lower their infrastructure access costs. The manager's policy should be appropriately long-term, so that the carrier would consider investing in quality of service (such as modern rolling stock) as a profitable endeavour. In this scope, the State should act as a coordinator, who ensures good cooperation at each organizational rung of the railway transport ladder. This would limit, among other things, the negative effects of modernization efforts and allow for better organization of these works, so that they would impede railway freight transport to a lesser extent. At the same time, infrastructure improvements are absolutely necessary to increase speed and capacity for freight trains.

However, in recent years, mass freight transport has been in decline on the Polish freight carriage market, giving way to the dramatic rise of intermodal transport. Although intermodal transport achieved its record level in 2012, the growth trend has visibly slowed down. According to data provided by UIRR, the year 2012 was, in the European Union, a year of decline for intermodal transport. Therefore, efforts should be made to stimulate the development of intermodal transport in Poland, in order to stop the current decline. Otherwise, the lack of container railway transport services will result in the freight being carried by road, and thus generate enormous external

costs for the State. This danger is more real as the network of roads and motorways in Poland has been extended and improved, whereas the railway network is still undergoing wide-ranging modernizations. In this aspect, the railway may have a chance, provided that the maximum allowed freight mass for trucks carrying intermodal units is thoroughly verified, the infrastructure managers' policy allows for maximum possible reductions in rates for intermodal transport, and an overall sustainable transport policy is implemented. A good example of an action contributing to the development of intermodal transport is the Intermodal Council established by the minister in charge of transportation. Similar coordination should be ensured for international cooperation, as one should remember that approximately 80% of all intermodal transport volume is international traffic.

The role of the State in railway transport is essential. The State should not only act as a coordinator, but also appropriately finance the railways. Expenses from the State Treasury will provide a return in the form of taxes and savings on external costs (environmental protection, accidents, terrain occupation). Thanks to the good coordination of intermodal freight traffic on roads and waterways, including international traffic, Poland will fully utilize the strategic potential of its geographical location.

Transportation is an interconnected system. The success of railway transport shall be ensured, if its intra- and intermodality are at their highest, both in passenger and freight transport





PART II ASSESSMENT OF RAILWAY TRAFFIC SAFETY IN THE YEAR 2012



6. Primary background for railway safety

The report on the state of safety of the Polish railway system in 2012 should be started off by providing outlines of basic legal and organization conditions, which are related to safety within this branch of transport, and which have a significant impact on social acceptance.

One of the key rules concerning the railway sector relates to responsibility. In accordance with the approach adopted in both national and European law, **all entities operating within the railway system bear responsibility for its safe operation.** Railway infrastructure managers and railway carriers play a special role in this area, as their operations influence the safety in the entire sector. However, this fact does not exempt other entities operating within the railway system from ensuring safety, and each one is accountable for such in a capacity appropriate for their function and scope of obligations. The responsibility for the safety of the entire system is therefore a collective effort of such entities, as users of railway side-tracks, vehicle manufacturers or any enterprises handling their maintenance.

The rule for accountability is implemented in practice with the use of specific tools. To ensure the safety of operations, managers of the railway infrastructure, who are providing such to railway carriers, and any railway carriers providing services using this infrastructure, are obligated to prepare, certify and implement in practice the so-called **SMS (Safety Management Systems)**. These systems constitute a collection of procedures, which regulate key areas of company operations from a safety standpoint. Regardless of the relevant area (such as management, compliance with requirements, personnel competence building), these systems are based on mechanisms for identification of risk with a given area of business (including risk generated by subcontractors or third parties), implementing measures for controlling such or ensuring effective exchange of information. Development and implementation of safety management systems in a given organization is a prerequisite for obtaining a permit necessary for conducting business in the railway sector — a security certificate (with sections A and B) for a railway carrier, as well as a security authorisation (with sections A and B) for infrastructure managers. Management systems, based on mechanisms for estimation, assessment and

risk acceptance, fully integrate the rule for sole accountability for one's operations, including the safety of interaction with other entities operating both within and outside the railway system.

Railway carriers and infrastructure managers, who are exempt by law from the obligation to obtain certification and safety authorisations (such as managers of separate infrastructures and carriers providing services solely on this infrastructure), as well as side-track users, are operating within the railway transport sector on the basis of the so-called safety certificates. The

approach adopted in this scope also guarantees a specified level of safety of operations but, in contrast to the approach based on safety management systems, is not a process. The use of various legal organizational solutions does not exempt any of the entities operating within the railway system from responsibility for maintaining safety.

In 2012, per the information provided in the first part of this report, over 60 railway carriers operated within the territory of the Republic of Poland, providing services in passenger and freight transport market segments. 10 entities operated as infrastructure managers:

- PKP Polskie Linie Kolejowe S.A.;
- PKP SKM w Trójmieście Sp. z o.o.;
- PKP LHS Sp. z o.o.;
- Infra Silesia S.A.;
- CTL Maczki-Bór Sp. z o.o.;
- Jastrzębska Spółka Kolejowa Sp. z o.o.;
- Kopalnia Piasku Kotłarnia – Linie Kolejowe Sp. z o.o.;

All entities operating within the railway system bear responsibility for its safe operation. Railway infrastructure managers and railway carriers play a special role in this area, as their operations influence the safety in the entire sector

- PMT Linie Kolejowe Sp. z o.o.;
- Warszawska Kolej Dojazdowa Sp. z o.o.;
- UBB Polska Sp. z o.o.

Most of these (8 entities) operated on the basis of a safety authorisation (system-based approach), whereas two of these entities (namely Warszawska Kolej Dojazdowa Sp. z o.o. and UBB Polska Sp. z o.o.) operated on the basis of a safety certificate.

Solutions similar to those used by railway carriers and infrastructure managers have also been functioning since 2012 in the rolling stock maintenance sector. Before entering service, each railway vehicle must be assigned an ECM (*Entity in Charge of Maintenance*). Entities in charge of maintenance of freight cars must be certified. In order to obtain an ECM certificate, an entity must develop and implement a MMS (*Maintenance Management System*), within which full responsibility for the maintenance process of a given vehicle (process planning, process management and the performance of maintenance operations) is borne by a specialized entity.

For the purposes of establishing a common policy for safety management on an international scale, with particular focus on ongoing liberalization of the railway transport market and the presence of new market participants, who more often than not are operating between national borders, **Common Safety Methods (CSM)** were developed at an European level. This concept includes mandatory legal regulations, which specify common procedures for selected processes, which are critical for maintaining safety. The methods are meant to be used by entities operating in the railway sector (infrastructure managers, railway carriers, entities in charge of maintenance), as well as the so-called national safety authorities, discussed in later parts of this document. In addition, one method is intended solely for the European Railway Agency, which supports the establishment of a common approach to safety management within the European railway sector. Critical processes supported by common safety methods include the following:

- Risk evaluation and assessment (Commission regulation (EC) No 352/2009),
- Assessing conformity with the requirements for obtaining railway safety certificates (Commission regulation (EU) No 1158/2010) and safety authorisations (Commission regulation (EU) No 1169/2010),
- Monitoring of appropriate application and effectiveness of implemented management systems (Commission regulation (EU) No 1078/2012),
- Supervision by national safety authorities after issuing a safety certificate or safety authorisation (Commission regulation (EU) No 1077/2012).

Aside from the railway sector entities, one should mention specific conditions, which constitute a basis for the establishment of a common understanding of railway system safety at the level of

public administration. As mentioned above, in contrast to common belief that government bodies are accountable for safety in the railway sector, the entities of the railway sector bear full responsibility in this scope. The role of appropriate administrative bodies boils down to three basic issues:

- **Risk evaluation and assessment** (Commission regulation (EC) No 352/2009),
- **Assessing conformity with the requirements for obtaining railway safety certificates** (Commission regulation (EU) No 1158/2010) and safety authorisations (Commission regulation (EU) No 1169/2010),
- **Monitoring of appropriate application and effectiveness** of implemented management systems (Commission regulation (EU) No 1078/2012),
- **Supervision by national safety authorities** after issuing a safety certificate or safety authorisation (Commission regulation (EU) No 1077/2012).

Due to the ongoing liberalization of the railway sector, with an ever-increasing number of entities participating in the market, public authorities cannot and shall not be able to assume responsibility for the safety of both individual enterprises and the railway sector as such.

Aside from the railway sector entities, one should mention specific conditions, which constitute a basis for the establishment of a common understanding of railway system safety at the level of public administration. As mentioned above, in contrast to common belief that government bodies are accountable for safety in the railway sector, the entities of the railway sector bear full responsibility in this scope. The role of appropriate administrative bodies boils down to three basic issues:

- **Provide an appropriate legal framework**, which would allow for the operation of enterprises in the railway transport sector;
- **Verify that given entities are capable of fulfilling applicable legal requirements** and operating in safe manner within the railway transport sector, before said entities can enter the market;
- **Monitor ongoing compliance with the requirements** constituting basis for entering the market.

Due to the ongoing liberalization of the railway sector, with an ever-increasing number of entities participating in the market, **public authorities cannot and shall not be able to assume responsibility for the safety of both individual enterprises and the railway sector as such.** This state of affairs stems from the fact that the risks within the system is generated by specific entities, and thus can be controlled and identified by these entities alone, thanks to the use of safety management systems and common, mandatory tools, such as the aforementioned common safety methods.

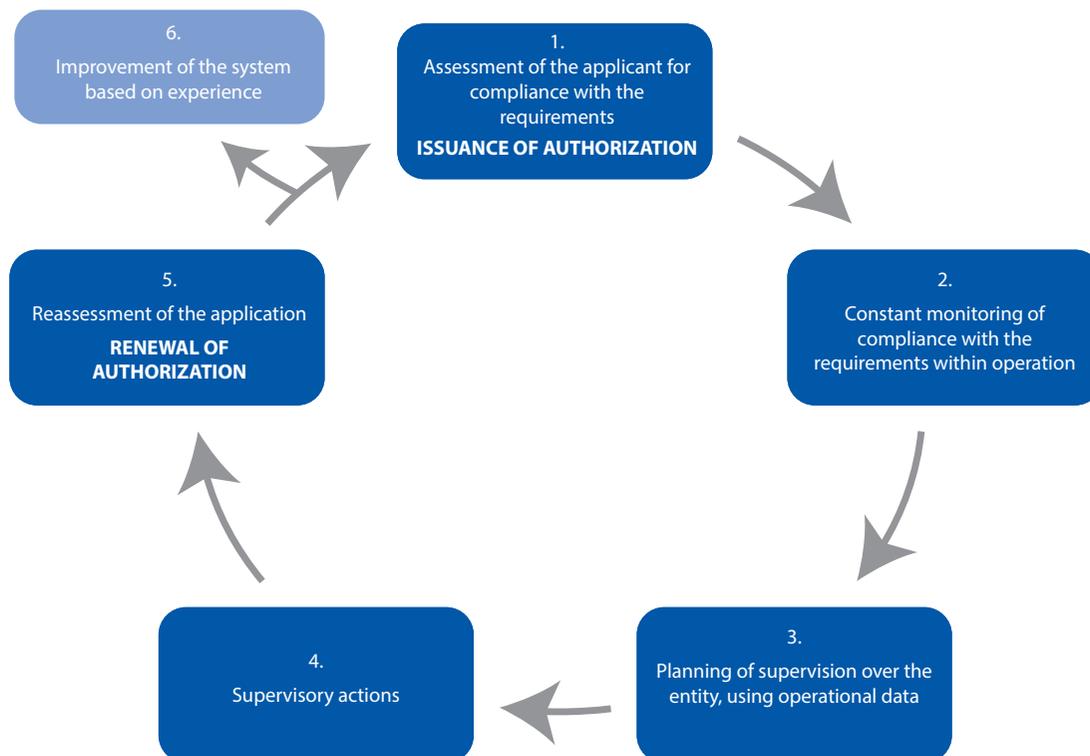
The primary public entity operating in the railway transport safety sector is the so-called National Safety Authority (NSA), whose role in Poland is fulfilled by the President of UTK. As concerns railway system safety, the President of UTK has a number of responsibilities, specified both in national and community regulations, which can be classified within the following subject groups:

- Issuing authorisation to entities and authorising internal documents,
- Monitoring the safety levels of entities and the entire railway system,

- Supervision over entities operating in the railway sector,
- Development of safety in the railway sector.

The aforementioned safety-related responsibilities of the President of UTK can be presented in the form of a schematic. This schematic includes six basic stages, within which the public administration may positively influence the safety level of railway enterprises and the entire railway system. This schematic assumes that each market enterprise has a certain life cycle. This cycle includes the market entry stage (assessment of competences performed by government administration), everyday operation stage (administrative supervision), and authorization renewal stage, which enables an entity to continue operating on the market. An important, but unfortunately often underestimated aspect of this cycle is the continuous improvement of the safety requirement system. This is because the aforementioned model assumes that the information collected by government administration during specific stages of the cycle (experiences from the certification and supervision process) should result in continuous improvement of the legal requirement system.

Graph 101: Cycle of influence of safety authorities on the safety of the railway system



Source: Prepared by UTK

7. Railway events analysis

Due to the applicable regulations of national law, the *railway event* is defined as any accident, serious accident or incident on a railway line.

An **accident**, as defined in the Act on Railway Transport, is an unintended, sudden event or a chain of events involving a railway vehicle, which has negative consequences for human health, property or the environment. Accidents include in particular: any collisions, derailments, railway crossing incidents, events involving people, caused by a moving railway vehicle, and fire of a railway vehicle. Therefore, the definition of “accident” is very broad.

A **serious accident** is an event fitting the definition of a railway accident, but fulfils additional specified criteria. Serious accidents include situations caused by collision, derailment or any other similar event, which have an obvious impact on safety regulations and/or safety management, and which involve:

- At least one fatality or at least five seriously injured persons, or
- Significant damage of a railway vehicle, railway infrastructure or environment, which may be immediately evaluated by the assessment committee at least EUR 2 m.

Incident is an event other than an accident or a serious accident, related to railway traffic and influencing its safety.

At the European level, railway events are classified somewhat differently. Not all accidents are monitored within the Community — only those, which result in a specified amount of damages, number of a casualties or hindrance in the operation of a railway

system. Therefore, the European classification does not cover all events, but only significant accidents and serious accidents.

A **significant accident**, as defined in Community classification, means any accident involving at least one railway vehicle in active railway traffic, which results in:

- at least one fatality or one serious injury, or;
- serious damage to rolling stock, infrastructure, facilities or the environment, valued at 150,000 EUR or more;
- considerable disruptions in traffic, which result in halted movement of the main railway line for at least 6 hours.

At the same time, accidents in workshops, warehouses and railway vehicle storage yards, are not included in the definition of a significant accident.

The definition of a significant accident was introduced to the text of the Regulation of the Minister of Infrastructure of 20 July, 2012 on common safety indicators. The definition used in European classification is identical to the definition used in national law, which was provided earlier. Therefore, in national law, railway events are divided into three categories: accident, serious accident and incident, whereas in European law, the classification includes two levels, i.e. serious accidents and significant accidents. In addition, events leading up to accidents or resulting in accidents (precursors) are a significant factor in



European statistics, but have not been transferred into national law in a satisfactory scope.

The statistical data analysis portion of the railway traffic safety assessment for the year 2012 is based on information, which is provided on an ongoing basis to the President of UTK by railway sector entities (formal notifications of events) and registered in the so-called Railway Event Register. The collected information were verified and corrected during submission by entities responsible for formal safety reports, which, according to the law, are provided to the President of UTK on an annual basis, no later than to June 30 of the year following the report year.

When analysing compiled data, one should remember that analysis of information collected in the Railway Event Register, prepared by the President of UTK, shown that despite the tragic railway accident, which happened in 2012 near Szczekociny, the safety level of the national railway system is constantly improving, both in terms of number of recorded events and in terms of fatalities and serious injuries in railway-related events.

Despite the tragic railway accident, which happened in 2012 near Szczekociny, the safety level of the national railway system is constantly improving, both in terms of number of recorded events and in terms of fatalities and serious injuries in railway-related events.

- Failure to stop in front of “Stop” or “Manoeuvres forbidden” signs;
- Premature dissolution of a route;
- Activation of a switch under a moving vehicle;
- Erroneous dispatch, acceptance or transfer of the train;
- Improper operation of interlocking devices, etc.

It should be noted that in 2012 only 21% of accidents were a result of factors originating directly within the railway system. These events resulted in the deaths of 16 people and serious injuries of 63 people. Almost all of these casualties have occurred during a single event, i.e. the tragic accident near Szczekociny (all fatalities and 61 serious injuries). In comparison, each day an average of 9.8 persons die and 125.4 persons are injured on Polish roads⁴.

Events occurring at **interaction areas between the railway system** and the third party, with most being independent by principle from the actions of railway sector entities, are:

- Involving unauthorized persons present within the railway area (in violation of regulations concerning the entry and presence within the railway area);
- Involving persons actively acting to harm the railway system;
- Involving passengers (hopping in and out of a running train);
- Involving railway vehicles left on the tracks, away from railway crossings;
- Events on railway crossings.

In 2012 a total of **571 of such events** were recorded, resulting in **260 fatalities**. These events are by principle independent from the railway system, and in many cases the railway system is powerless to eliminate them. Unfortunately, in the eyes of the public, the railway system remains accountable, which results in lowered trust in railways as the safest (after civilian aviation) mode of transportation. The events in question constitute **79% of all events**. When presenting statistical information, one should note that the statistics include only accidents and serious accidents, excluding suicides, which are a separate category and are also independent from the railway system.

7.1. Railway events dependent and independent of the railway systems

While analysing the safety level of the railway system, one should point out the very important issue related to the source of most events within the railway system. Global event statistics include events, which are directly dependent on the railway system and occurring solely within this system, and events, which result from interactions between the railway system and external entities, the majority of which was caused by actions or negligence of entities operating outside of the railway system.

Events occurring **within the railway system** have primarily the following causes:

- Damage or bad technical condition of the railway surface or technical structure;
- Bad technical condition of the rolling stock;

⁴ Źródło: Mały rocznik statystyczny 2013.

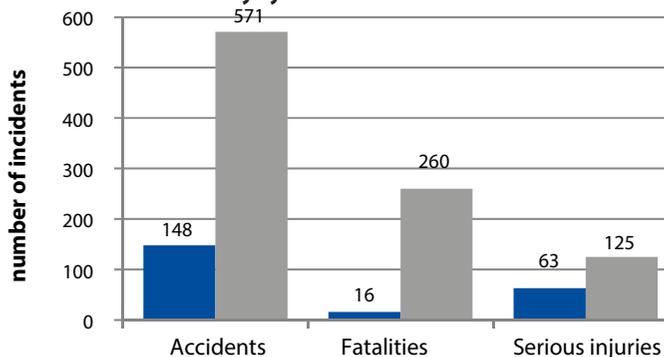
Tab. 14: Events in 2012 and their effects, separated into dependent and independent of the railway system

No.	ACCIDENTS	Number of events	Fatalities	Serious injuries
1.	Within the railway system	148	16	63
2.	Within interactions between the railway system and a third party	571	260	125
3.	TOTAL NUMBER OF EVENTS	719	276	188

/Source: prepared by UTK based on the basis of the Railway event register./

In 2012 only 21% of accidents were a result of factors originating directly within the railway system. These events resulted in the deaths of 16 people and serious injuries of 63 people. Almost all of these casualties have occurred during a single event, i.e. the tragic accident near Szczekociny

Graph 102: Events in 2012 and their effects, separated into dependent and independent of the railway system



/Source: Prepared by UTK based on the basis of the Railway event register./

The data presented in the aforementioned distribution clearly shows that the railway system is intrinsically safe. The primary problems of this system, in terms of safety, are activities of external entities, which generate a great majority of events involving the railways.

In the opinion of the President of UTK, improvement of safety in terms of events caused by interactions of the railway sys-

tem and a third party (which cannot be tightly controlled by railway sector entities), requires increased activity of all railway enterprises and public administration appropriate for the scope of railways, as well as a nationwide joint effort. Said effort should be directed towards increasing awareness of citizens in terms of dangers related to crossing railway lines and the necessity to adhere to appropriate regulations in this scope, as well as towards increasing the cooperation between managers of road- and railways, and the acceptance of joint responsibility for improving safety on railway crossings.

In the opinion of the President of UTK, any effective action towards safety requires a joint understanding between road- and railway organizational units and the state administration that the railway crossings are a common risk area, and an involvement of all interested parties.

Primary actions should be focused on sustained construction and development of the safety culture amongst the public (appropriate education in pre-schools, schools and driver's license courses), increased flexibility of procedures aiming to adopt railway crossing categories to actual traffic parameters, increase the clarity of markings between the road- and railway area, and possible elimination of any pathological situations (systematic inspection of illegal railway crossings, fencing particularly dangerous areas and increasing trust in the operation of safety devices).

In the opinion of the President of UTK, improvement of safety in terms of events caused by interactions of the railway system and a third party (which cannot be tightly controlled by railway sector entities), requires increased activity of all railway enterprises and public administration appropriate for the scope of railways, as well as a nationwide joint effort.

7.2. Railway events divided into types

In 2012, the number of accidents and serious accidents on the national, public railway line and separated networks (infrastructure managed by a total of 10 entities) **decreased by 15.3%**, from a general number of **849** accidents in 2011 to **719** accidents in 2012. Aside from any events, over which the railway system has no direct control, one can state that the **number of accidents depending on the railway system decreased year over year by 27.1%, from 203 to 148 occurrences.**

Furthermore, the number of **incidents** also **fell by 14%**, from a general number of **285** occurrences in 2011 to **245** occurrences in 2012. According to these statistics, the number of **suicides** **more than tripled**, from **28** occurrences in 2011 to **82** occurrences in 2012. The statistics in this last scope are not authoritative — the increase in the amount of events classified as suicide stems mainly from the intensified efforts of the Prosecutor's Office to properly classify occurrences of this type, and the improved flow of information between involved parties. Statements of the Prosecutor's Office are a basis for including suicides in railway statistics. Despite the aforementioned positive symptoms, the President of UTK believes in continued improvement in Railway Commission activity in terms of cooperation with the Police and the Prosecutor's Office.

To sum up, the total number of events (accidents, serious accidents, incidents including suicides), which occurred within the national railway system, **fell by 116** occurrences year over year, i.e. from **1162** occurrences in 2011 to **1046** occurrences in 2012. This constitutes a **total decrease of 10.0%**. An overview of railway events in yrs. 2011 and 2012 is presented in the table below. A percentage share for specific types of occurrences is provided on an accompanying figure.

Tab. 15: Statement of railway events in yrs. 2011 and 2012

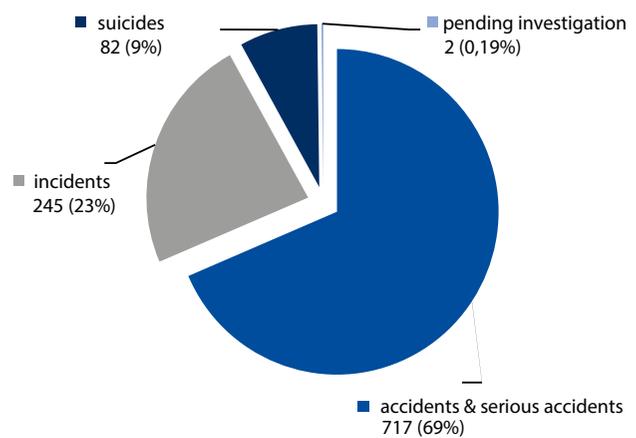
No.	EVENT	2011	2012	CHANGE
1.	Serious accidents	84	1	-98.8%
2.	Accidents	765	718*	-6.1 %
3.	Incidents	285	245	-14.0%
	TOTAL NUMBER OF EVENTS	1134	964	-15.0%
4.	Suicides	28	82**	+192.9%
	TOTAL	1162	1046	-10.0%

* including two occurrences where causes are pending investigation

** including two occurrences resulting in serious injuries of two people (failed suicide attempts)

Source: Prepared by UTK based on the basis of the Railway event register.

Graph 103: Structure of events within the railway network in 2012



Source: Prepared by UTK based on the basis of the Railway event register.





7.3. Railway events divided into categories

Regardless of the aforementioned division of events into types (sorted by outcome), said events may be classified using following categories:

- Train collisions;
- Train derailments;
- Events on road vehicle and pedestrian railway crossings;
- Accidents involving people, caused by a moving railway vehicle (excluding suicides);
- Railway vehicle fires;
- Other accidents.

The table below contains a compilation of data per the European classification, separated into significant accidents, serious accidents and other events that can be classified as accidents. As mentioned earlier, the European definition of a significant accident includes serious accidents and only a portion of other accidents classified in the national system, i.e. those, which com-

ply with the criteria of casualties or material loss value specified in the definition.

The information mentioned below concerns events, which happened within the general railway system, and include data on the separated systems (a total of 10 infrastructure managers). In addition, to ensure coherence of information provided in the table, data concerning other events (not included in the definition of a serious/significant accident) is provided in a separate column.

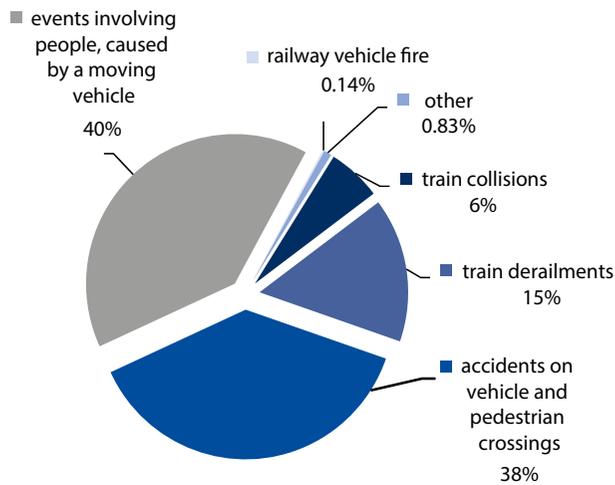
The presented information shows that currently, the most numerous group of accidents (with a share of 40%) within the railway line are **accidents involving people outside of railway vehicle and pedestrian crossings** (i.e. collisions with people illegally present on the railway area or people jumping in or out of the moving train). These events result from undeveloped safety culture and the lack of elementary knowledge concerning the operation of the railway system amongst people and entities operating outside the railway system (lack of knowledge on traffic rules, railway vehicle stopping distances, warning signals cautioning about an approaching railway vehicles). Dangers in this scope cannot be minimized solely through the actions of entities operating in the railway sector, but rather should be a common effort of interdisciplinary teams operating within the areas of education and railways.

Tab. 16: Event types (general access and separate networks) in yrs. 2011 and 2012

No.	TYPE OF EVENTS	SIGNIFICANT ACCIDENT				Serious accidents and other accident-type events, which are not included in EU classification	
		2011		2012		2011	2012
		accident	serious accident	accident	serious accident		
1.	Train collisions	8	0	2	1	19	39
2.	Train derailments	22	1	14	0	82	98
3.	Events on railway crossings	61	27	82	0	165	190
4.	Accidents involving people, caused by a moving railway vehicle	315	53	280	0	9	6
5.	Railway vehicle fire	0	0	0	0	4	1
6.	Other	4	1	3	0	78	3
7.	TOTAL	492		382		357	337

Source: Prepared by UTK based on the basis of the Railway event register.

Graph 104: Structure of events within the railway network in 2012, divided into event types



Source: Prepared by UTK based on the basis of the Railway event register.

Another group, constituting 38% of all accidents, includes accidents occurring on vehicle and pedestrian railway crossings,

which, due to their specific nature, are described in detail in a later part of this document.

Collisions and derailments, constituting approximately 21.4% of all railway accidents, are usually due to general faults of the railway system, i.e. technical condition of technical devices, effectiveness of procedures and the human factor (within the railway carrier or infrastructure manager). The ability to limit the number of these two types of events depends directly on the actions conducted by the entities of the railway market — not only infrastructure managers and railway carriers, but also designers, manufacturers, vendors and construction/maintenance contractors.

While presenting statistical data concerning yrs. 2011 and 2012, especially in the context of visible trends, it should be noted that such a significant year over year fall in the number of serious incidents recorded in 2012 stems from an erroneous interpretation of a definition of a “serious accident” on the part of Railway Commissions in 2011. To ensure that the data is as reliable as possible over a long span of time (which is necessary to establish any trend), in 2013 the President of UTK shall work with infrastructure managers and carriers to conduct assessment and corrective actions on historical data.

Tab. 17: Railway event measuring instrument for yrs. 2008 - 2012

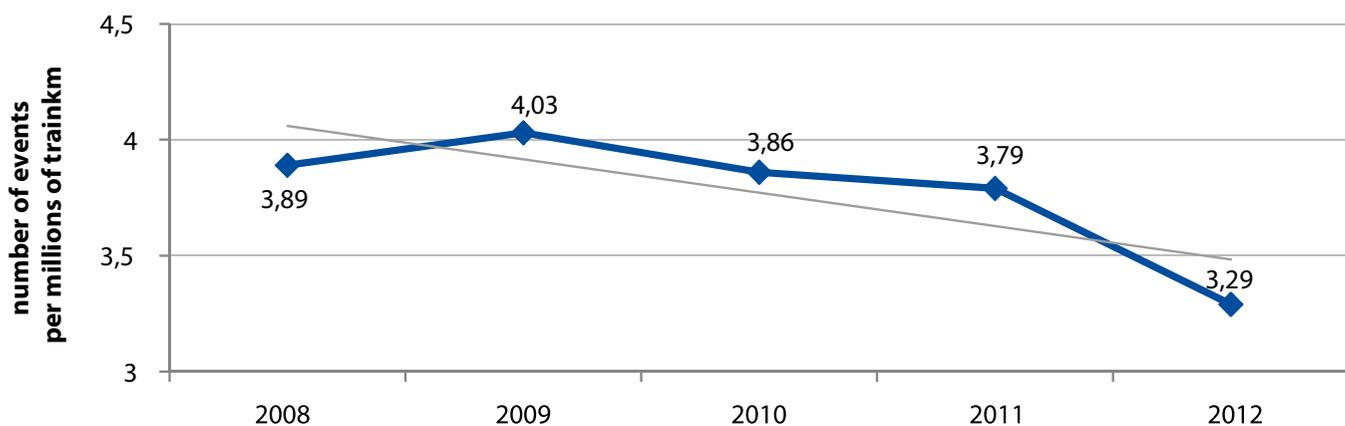
No.	YEAR	TRAIN OPERATION [in m. train-km]	NUMBER OF ACCIDENTS [occurrences]	MEASURING INSTRUMENT [no. of occurrences per m. train-km]
1.	2008	229.75	894	3.89
2.	2009	209.76	845	4.03
3.	2010	220.37	851	3.86
4.	2011	223.83	849	3.79
5.	2012	218.47	719	3.29

Source: Prepared by UTK based on the basis of the Railway event register and yearly reports.

Regardless of the deficiencies in some of the historical data (such as erroneous classification of events into categories), the President of UTK, in order to provide better transparency and improve presentation of trends in the railway safety sector, provides annual calculations of the so-called railway event meter, using data on the total number of events and train operation in

a given year. **The value of this measuring instrument in 2012 has been lowest since 2008, which confirms that the safety of the national railway sector has indeed improved.** The table presented above contains changes in the measuring instrument during the last five years. This data is presented graphically on the following figure, with a trend line added.

Graph 105: Railway event measuring instrument for yrs. 2008 - 2012



Source: Prepared by UTK based on the basis of the Railway event register and yearly reports.

7.4. Railway accident casualties

The number of accident casualties within the general railway network and separated networks in 2012 amounted to 464, with 276 being fatalities and 188 — serious injuries. A detailed classification of event casualties, complete with a yearly trend, is presented in the table below.

The number of fatalities is directly correlated to the number of events of a given type. The most numerous groups of accident-related fatalities in 2012 was by far the group of unauthorized persons present on railway areas (185 fatalities, a 67% of the total fatality count) and the group of vehicle/pedestrian railway crossing users (62 fatalities, a 23% of the total fatality count).

Tab. 18: Statement of accident-related fatalities in yrs. 2011 and 2012

No.	No. FATALITIES	2011 r.	2012 r.	CHANGE
1.	unauthorized person	246	185	-24.8%
2.	passenger	10*	14**	40.0%
3.	vehicle/pedestrian railway crossing user	60	62	3.3%
4.	employee or subcontractor	2	15***	650.0%
5.	other	4	0	-----
6.	TOTAL	322	276	-14.3%

* Including 2 people involved in a serious accident at the Baby station

** Including a serious accident near Szczekociny, involving 11 passengers

*** Including a serious accident near Szczekociny, involving 5 employees

Source: Prepared by UTK based on the basis of the Railway event register.

The most numerous groups of accident-related fatalities in 2012 was by far the group of unauthorized persons present on railway areas (185 fatalities, a 67% of the total fatality count) and the group of vehicle/pedestrian railway crossing users (62 fatalities, a 23% of the total fatality count).

Tab. 19: Statement of accident-related fatalities in yrs. 2011 and 2012

No.	TYPE OF EVENT	FATALITIES			SERIOUS INJURIES		
			2012	CHANGE	2011	2012	CHANGE
1.	Train collisions	0	16**	-----	6	63**	950 %
2.	Train derailments	2*	0	-----	34*	0	-----
3.	Events on railway crossings	62	62	0 %	53	36	-32.1 %
4.	Accidents involving people, caused by a moving railway vehicle	253	198	-21.7 %	116	86***	-25.9 %
5.	Railway vehicle fire	0	0	-----	0	0	-----
6.	Other	5	0	-----	2	3	50.0 %
7.	Total	322	276	-14.3 %	211	188	-10.9 %

* Including 2 people killed and 34 seriously injured a serious accident at the Baby station

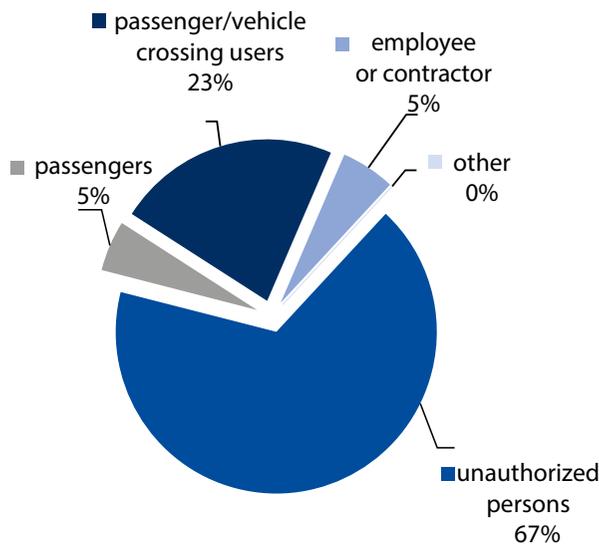
** Including a serious accident near Szczekociny, involving 16 fatalities and 61 serious injuries

*** A reduction stemming from an increased number of events qualified as suicides.

Source: Prepared by UTK based on the basis of the Railway event register.



Graph 106: A structure fatalities occurring in accidents in 2012



Source: Prepared by UTK based on the basis of the Railway event register

The most numerous group of serious injuries in the analysed period (80 persons) included passengers. This is largely a result of the tragic accident near Szczekociny, which resulted in 59 injuries. The remaining 19 passenger injuries are a result of people jumping in and out of a moving train or failing to exercise proper care when the train is entering the platform, and 2 passengers were injured when unknown perpetrators pelted a train with stones.

The second most numerous groups of accident-related serious injuries was the group of unauthorized persons present on railway areas (65 serious injuries, a 34% of the total injury count) and the third group constitute vehicle/pedestrian railway crossing users (36 serious injuries, a 19% of the total injury count).

The comparison of number of railway accidents in 2011 and 2012 clearly shows that the aforementioned year over year increase in casualty numbers amongst passengers and employees is a result of the tragic accident near Szczekociny. The casualties of this accident constituted 78.6% of all fatalities and 76.2% of all serious injuries amongst passengers, and 33.3% fatalities and 33.3% serious injuries amongst employees.

In terms of vehicle/pedestrian railway crossings, the data collected in 2012 does not differ considerably from the data of

2011, whereas year over year, the number of accidents amongst unauthorized people within the railway area has fallen.

The aforementioned data includes an overview of a casualty count, separated into specific types of events, confirm that most casualties within the railway system occur as a result of events involving people and a moving railway vehicle, which should be divided into:

- Collisions of a railway vehicle with an unauthorized person present in non-designated areas;
- Accidents resulting from passengers jumping in and out of moving trains.

It should be emphasised that in 2012, there was a positive change in the number of events involving people crossing the tracks outside of assigned crossing zones on stations and routes (a fall of 24.8% in fatalities and a fall of 30.1% in serious injuries). However, it is possible that this result is not authoritative, due to the aforementioned improvement in classification of suicide events.

In the analysis of the year 2012, the fatality/serious injury count was heavily influenced by the serious accident near Szczekociny, which resulted in the deaths of 16 people, and 61 serious injuries. The total number of fatalities and serious injuries should include suicides — with 80 dead and 2 seriously injured — in order to obtain a total number of casualties in railway events, which amounts to 356 and 190 respectively.

7.5. Railway events per the categories specified in MT Regulation

The nature of the event and its direct reason is specified by a category defined and assessed by PKBWK, per the schedule provided in Annex 6 to the Regulation of the Minister of Transportation of April 30, 2007 on serious accidents, accidents and incidents on railway lines.

Categories of serious accidents, accidents and incidents occurring in 2012 per the information collected in the Railway Event Register, are provided in subsequent tables, divided in accordance with the aforementioned regulation.



Tab. 20: Serious accidents and accidents 2012 — categorized per the regulation of the MT

No.	Cause description	Number of accidents	
1.	Directing a railway vehicle of a occupied track, which is closed, opposite or is running in a wrong direction	2	
2.	Expedition, acceptance or travel of a railway vehicle on an improperly laid railway or improver operation of railway or improper operation of interlocking devices	16	
3.	Failure to stop the railway vehicle before the "Stop" signal, or at an intended stopping point, or moving a railway vehicle without required permission	17	
4.	Exceeding highest allowed speed limit	1	
5.	Performance of a manoeuvre, which endangers the safety of railway traffic	1	
6.	Convergence of railway vehicles	5	
7.	Damage or poor maintenance of railway surface, bridge or viaduct, including improper performance of works, such as unacceptable unloading of materials, surfaces, or abandonment of materials and/or equipment on the track or vehicle gauge	53	
8.	Damage or poor technical conditions of a railway wagons (including an act of running into a structural part of the car)	21	
9.	Damage to or improper operation of interlocking devices	2	
10.	Collision of a railway vehicle with another railway vehicle or another obstacle (brake skid, baggage cart, mail cart etc.)	11	
11.	Premature dissolution of a route and switching of railway track under the railway vehicle	10	
12.	Improper loading, unloading, irregularities in the load securing process and other irregularities in loading activities	3	
13.	Collisions with road vehicles and persons on vehicle/pedestrian railway crossings	Collision of a railway vehicle with a road vehicle or vice versa (cat. A of the crossing metric)	9
14.		Collision of a railway vehicle with a road vehicle or vice versa on a railway crossing with automatic signalling and half-width barriers (cat. B)	16
15.		Collision of a railway vehicle with a road vehicle or vice versa on a railway crossing with automatic signalling but without full- or half-width barriers (cat. C)	52
16.		Collision of a railway vehicle with a road vehicle or vice versa on a railway crossing without automatic signalling and barriers (cat. D)	158
17.		Collision of a railway vehicle with a road vehicle or vice versa on a private crossing (cat. F)	2
18.		Collision of a railway vehicle with persons crossing a guarded vehicle/pedestrian crossing	9
19.		Collision of a railway vehicle with persons crossing the tracks through a railway crossing with an automatic signalling system (Cat. B, C)	10
20.		Collision of a railway vehicle with persons crossing other types of vehicle/pedestrian crossings	16
21.		Total number of collisions with road vehicles and personson road vehicle and pedestrian railway crossings	272
22.		Collision of a railway vehicle with a road vehicle or vice versa outside of railway crossings, on stations and routes or on a communication/access track leading to the side-track	7
23.	Train fire	1	
24.	Malicious, hooligan's or careless acts against the railway (e.g. pelting a train with stones, placement of an obstacle on the track, destruction of energy facilities, communications systems, interlocking devices, the railway structure and any interference in the operation of these devices)	6	
25.	Collision of a railway vehicle with persons crossing the railway tracks outside of railway crossings on stations and routes.	255	
26.	Events involving persons and a moving railway vehicle (jumping into a moving train, falling out of a train, fast approach or sudden braking of a railway vehicle)	31	
27.	Separation train cars, which did not result in overlap of railway cars	2	
28.	Defective operation of structures and devices used to direct railway traffic and railway crossings as a result of theft	1	
29.	Category is being determined	2	

Source: Prepared by UTK based on the basis of the Railway event register.

Tab. 21: Serious accidents in 2012 — categorized per the regulation of the MT

No.	Cause description	Number of incidents
1.	Directing a railway vehicle of a occupied track, which is closed, opposite or is running in a wrong direction	2
2.	Expedition, acceptance or travel of a railway vehicle on an improperly laid railway or improver operation of railway or improper operation of equipment	6
3.	Failure to stop the railway vehicle before the "Stop"	16
4.	signal or at an intended stopping point, or moving a railway vehicle without required permission	1
5.	Convergence of railway vehicles	1
6.	Premature dissolution of a route and switching of railway track under the railway vehicle	12
7.	Improper loading, unloading, irregularities in the load securing process and other irregularities in loading activities	17
8.	Damage to or improper operation of interlocking devices, resulting in the following issues: non-activation of a "Stop" sign in the line block occupied by the railway vehicle, activation of a clearance signal on an improperly composed route, improper operation of devices designating unoccupied tracks or turnouts, improper operation of station or line block equipment	2
9.	Damage or poor technical condition of a self-propelled railway vehicle or a special railway vehicle, resulting in the necessity to take it out of service	5
10.	Damage or poor technical condition of a rail car, resulting in the necessity to take it out of service	77
11.	Train fire	19
12.	Fire in a building etc. located within the boundaries of a railway area, forest fire within the boundaries of a fire-break, crop, straw or railway substructure fires within the railway area	3
13.	Uncontrolled release of a dangerous material from a railway wagon or container, which requires the use of measures for liquidation of fire, chemical and biological hazards within the station	3
14.	Collision of a railway vehicle with an obstacle (brake skid, baggage cart, mail cart etc.), which does not cause derailment or casualties	21
15.	Natural disasters (such as floods, snowdrifts, ice blockages, hurricanes, landslides)	3
16.	Malicious, hooligan's or careless acts against the railway (e.g. pelting a train with stones, placement of an obstacle on the track, destruction of energy facilities, communications systems, interlocking devices, the railway structure and any interference in the operation of these devices)	19
17.	Events involving persons and a moving railway vehicle (jumping into a moving train, falling out of a train, fast approach or sudden braking of a railway vehicle), which do not result in casualties	36
18.	Failure of a road vehicle to stop before a full or half-batter on a railway crossing, resulting in damage to the barrier and/or road signals	1
19.	Defective operation of structures and devices used to direct railway traffic and railway crossings as a result of theft	1

Source: Prepared by UTK based on the basis of the Railway event register.

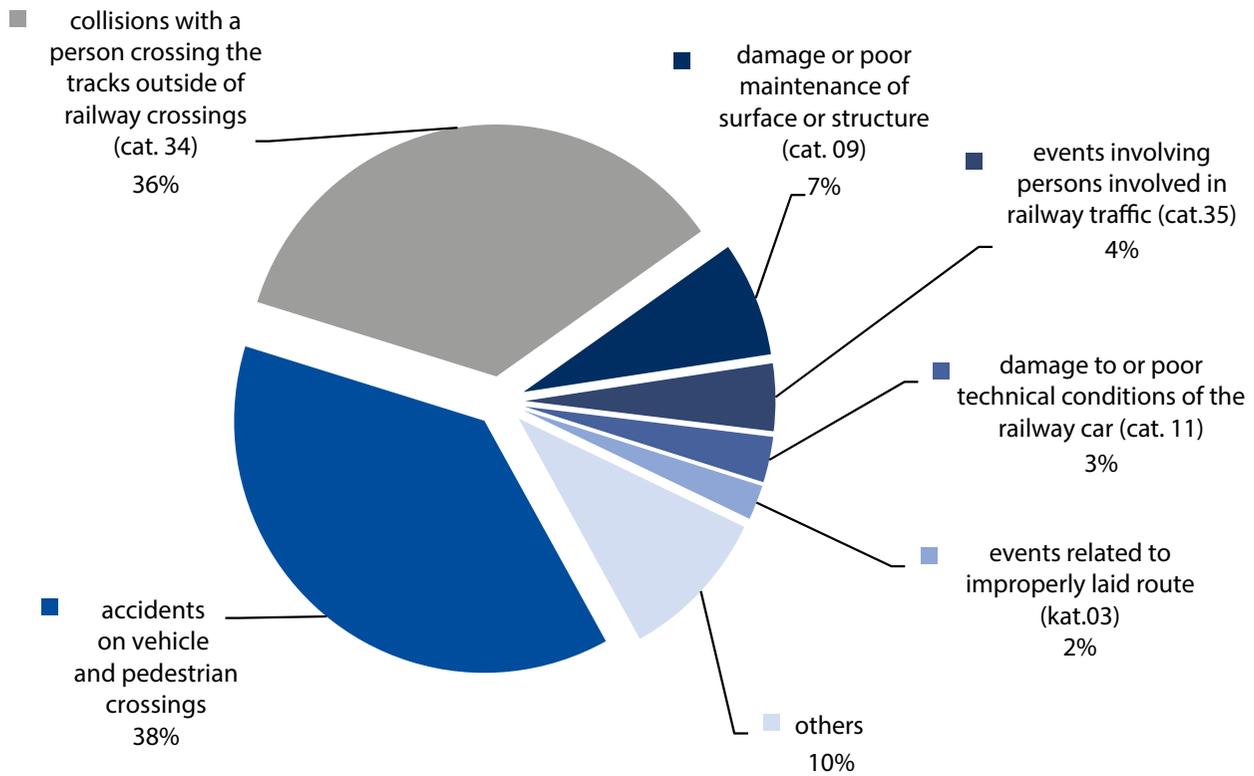
In the analysed year 2012, most accidents were caused by collisions of railway vehicles with persons crossing the railway tracks on vehicle/pedestrian crossings or outside of such crossings, and collisions of railway vehicles and road vehicles at a railway crossing. Most accidents can be categorized as collisions between trains and people, who are crossing the tracks in inappropriate places. Accidents on railway crossings are discussed in detail in a later part of this document.

Considering the qualification of causes adopted in the Regulation on serious accidents, accidents and incidents on railway lines, accident involving road vehicles and collisions with people on vehicle/pedestrian crossings (and outside of such crossings) constituted **74.3% of all accidents within the railway network.**

The other 25.7% belong in remaining accident categories. Most common accidents include: events resulting from damage or poor technical condition of the railway surface or a technical facility, events involving persons and a moving railway vehicle, accidents caused by a poor technical condition of a railway car, accidents caused by the failure to stop a railway vehicle or moving such without permission, as well as accidents caused by the movement of a railway vehicle on an improperly laid, non-secured route or improper operation of interlocking devices, and the collision of a railway vehicle with another railway vehicle or an obstacle.



Graph 107: Structure (classification) of events in 2012 per the categories provided in the MT regulation



Source: Prepared by UTK based on the basis of the Railway event register.



8. Safety on railway crossings

Railway crossings, i.e. intersections of railway lines with public roads in a single plane are one of the most critical spots in the railway system, due to the interaction between two modes of transportation (rail- and road-based).

Railway crossings are also a part of the system, where the railway sector has limited ability to minimize risk, which is generated in large part by entities operating outside of the railway system (i.e. road users). Accidents on railway crossings result in significant material damages, limitations or interruptions in traffic, and often, unfortunately, fatalities and/or serious injuries.

Events occurring on railway crossings are mostly generated by improper behaviour of road users (acting against regulations), i.e. drivers and pedestrians, but also, in a limited scope, by maintenance works on infrastructure equipment and components of the railway crossings, and any technical faults of such, as well as errors in conduct of railway personnel.

To ensure an appropriate level of safety for users of railroad crossings, these areas are outfitted with various safety devices, which are used to warn road users of dangers caused by an incoming train, and to close the crossing with road barriers. Initialization of safety devices may be generated by manually, by railway personnel or automatically, by an approaching train.

8.1. Railroad crossing safety categories and methods in Poland

National solutions in terms of safety of single-level crossings between railway lines and roads are based on the requirements laid out in the Regulation of the Minister of Transportation and Water Management of February 26, 1996 on the technical requirements for crossings between railway lines and public roads, and the location of such. This regulation allows the use of 6 categories of single-level railway-road crossings, on railways with a maximum speed limit of 160 km/h. Pursuant to the aforementioned regulation, vehicle and pedestrian railway crossings are classified to an appropriate category, depending on the product of traffic volume and road category. Furthermore the regulation specifies active and passive safety systems, which may be used within each category, including:

- Barrier devices,
- Road signal lights,
- Barrier lights,
- Audio signals.

The aforementioned traffic conditions and types of used safety systems allow for the establishment of the following crossing categories:

- Category A – public crossings with barriers or without barriers, where road traffic is directed by signals controlled by railway employees, and/or signal lights;
- Category B – public crossings with automatic signal lights and half-width barriers; the crossings are activated by rolling stock riding over rail-based sensors;
- Category C – public crossings with automatic signal lights; operating in the same way as Category B crossings, without half-width barriers;
- Category D – public crossings without full-width or half-width barriers, as well as without automatic signal lights (without railway traffic control devices);
- Category E – public crossings, sometimes fitted with warning equipment in the form of signal lights, labyrinths and barriers activated by a railway employee;
- Category F – non-public vehicle and pedestrian crossings, equipped with road barriers, which are opened / closed by the user (such as the owner of the premises, factory, or field).

Tab. 22: Number of crossings on general access and separate railway networks at the end of 2012

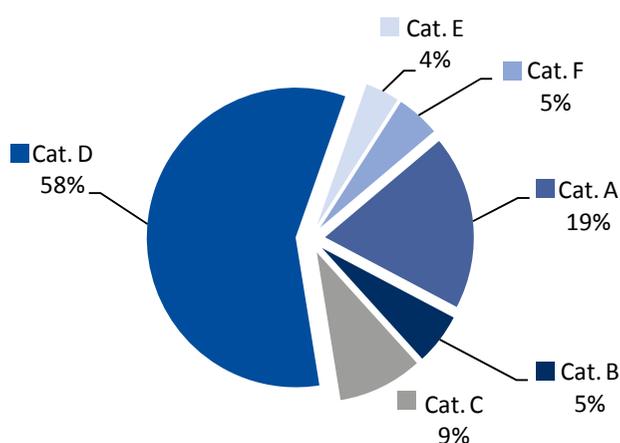
No.	INFRASTRUCTURE MANAGER	CROSSING CATEGORY						TOTAL
		A	B	C	D	E	F	
1.	PKP PLK S.A.	2 633	789	1 302	7 967	512	661	13 864
2.	WKD Sp. z o. o.	0	0	11	27	1	1	40
3.	PKP SKM w Trójmieście Sp. z o. o.	0	0	0	1	1	0	2
4.	PKP LHS Sp. z o. o.	33	4	8	183	9	9	246
5.	Infra SILESIA S.A.	16	0	2	37	2	2	59
6.	CTL Maczki – Bór Sp. z o. o.	6	0	0	19	1	2	28
7.	Jastrzębska Spółka Kolejowa Sp. z o. o.	11	0	0	13	2	2	28
8.	Kopalnia Piasku Kotlarnia – Linie Kolejowe Sp. z o. o.	8	0	0	80	2	7	97
9.	PMT Linie Kolejowe Sp. z o.o.	1	4	2	24	1	0	32
10.	UBB Polska Sp. z o.o.	0	0	0	0	1	0	1
TOTAL NUMBER OF EVENTS		2,708	797	1,325	8,351	532	684	14,397

Source: Prepared by UTK on the basis of safety report data for 2012.

In addition, to ensure safety of traffic on railway crossing, the railway network is fitted with warning signs for train drivers, which relay information on the safety level of an upcoming railway crossing. Warning signs are placed before a railway crossing, within braking distance of the fastest train allowed at a given railway line.

As of December 31, 2012, 14,397 vehicle and pedestrian crossings were operational within the national railway network, managed by 10 infrastructure managers. Category D crossings are the most numerous, with 8,351 crossings constituting 58% of the total amount. The second most numerous is category A, with 2,708 crossings constituting 19% of the total amount, while the third is category C, with 1,325 crossings constituting 9% of the total amount. The number of Cat. B crossings is 797, constituting 6% of the total amount, whereas Category F, with 684 crossings constitutes 5% of the total amount. 532 Category E pedestrian crossings constitute 4% of the total amount.

Graph 108: Percentage share of road-railway crossings, divided into categories, within the general access and separate networks as of the end of 2012



Source: Developed on the basis of data presented by infrastructure managers in their reports for the year 2012.

8.2. Problems with the operation of railway crossings

As mentioned in the introduction to this chapter, the safety of traffic on the railway crossing depends on whether the road users adhere to the applicable rules, whether the crossing is appropriately marked at the railway line and the road, and whether the infrastructure and equipment of the crossing are in good technical conditions and are operational. Furthermore, the expertise and responsibility of employees servicing and diagnosing the crossing, and the assurance of appropriate visibility within the crossing area, also play an important part in maintaining safety.

Traffic safety devices, which are currently operational, are a mix of various technologies, starting with the oldest, key-based solutions, up to modern, hybrid and microprocessor-based equipment. Only a relatively small number of railway crossings are secured with devices designed after 1990, with design and technology compliant with European standards on railroad crossing safety.

The table below contains a set of information concerning railway crossings functioning within the general access and separate networks, organized in accordance with the European classification of railroad crossing safety devices. As is evident from the table below, 58% of all railway crossings within the general access network are fitted with passive safety systems.

Tab. 23: Number of vehicle and pedestrian crossings in 2012, divided by safety system

No.	NUMBER OF OPERATIONAL CROSSINGS	TOTAL
1.	Railway crossings with active safety systems, including:	5,419
2.	a) Automatic user warning system	1,306
3.	b) Automatic user safety system	0
4.	c) Automatic user safety and warning system	411
5.	d) Automatic user safety and warning system, and a track safety system	444
6.	e) Manual user warning system	38
7.	f) Manual user safety system	1,658
8.	g) Manual user safety and warning system	1,562
9.	Railway crossings with passive safety systems, including:	8,978
10.	ALL CROSSINGS IN TOTAL	14,397

Source: Prepared by UTK on the basis of yearly safety report data for 2012.

Considering the causes for railway events on railway crossings, the biggest detailed factors influencing the operation of these crossings, and thus the safety of traffic of single-level crossings between railways and roadways, were identified as follows:

- Failure to comply with traffic regulations on the part of road vehicle users;
- State of the road or railway infrastructure in the vicinity of the road-railway crossing;
- Activation of safety devices on a railway crossing happens too early or too late;
- Lack of trust in the technical condition of safety devices (such as long closure times), which results in drivers attempting to circumvent safety systems.
- Traffic organization in the crossing area, caused by a multitude of intersections between roads and/or railway in its direct vicinity;
- Deficiencies in lighting on the crossing;
- Inadequate visibility of oncoming trains;
- Inadequate visibility of full-width and half-width barriers near the crossing area;
- Incomplete and/or illegible signage on the crossing.

Graph 109: Example of direct adjacency of two intersections with both active and inactive railway lines. Both photos show the same location from different perspectives



Source: Internet (Google Maps)

A specific type of danger is caused by direct vicinity of multiple rail and road intersections, especially when the road intersects in multiple points with active and inactive railway lines. An illustration of these situations has been presented on the figure above. Subsequent intersections with active and inactive railway lines lower the guard of road vehicle drivers, who cease to pay adequate attention on a railway crossing with an active railway line. The indicated close proximity of road and railway intersections definitely has a negative impact on the safety of the railway system. The situation is further complicated due to the number of road signs and no clear indication which railway tracks are inactive, which confuses road users.

Tab. 24: Density of railway crossings within the general access network (separate network excluded) as of the end of 2012

No.	NUMBER OF CROSSINGS OPERATING ON THE RAILWAY LINES	FREQUENCY OF OCCURENCE
1.	All vehicle and pedestrian crossings	14,357
2.	Per kilometre of a railway line	0.73 pc./ km of a railway line

Source: Developed on the basis of data presented by infrastructure managers in their reports for the year 2012

Density of railway crossings on railway lines operated within the general access railway network (excluding separate network) is presented in the table above. According to this information, in Poland, the average distance between intersections at a railway level is 1.38 km.

8.3. Accidents at vehicle railway crossings

As demonstrated in the statistics part of this document, accidents occurring on railway crossings constituted 30% of the total number of events within the railway system² in 2011 and approximately 38% in 2012. Each collision on such a crossing may endanger the lives and health of people, safety of freight carried both by railway and road vehicles, and generates significant social costs caused by interruptions and limitations in traffic.

According to the collected information, a total of 272 accidents occurred in 2012 on pedestrian and vehicle crossings, resulting in 62 fatalities and 36 serious injuries. Detailed data in this scope, divided into railway crossing categories, is presented in the table below. These data may undergo small corrections in the future, as some post-accident proceedings have not been completed.



Tab. 25: Number of accidents occurring on railway crossings within general access and separate railway networks in 2011 and 2012

No	CROSSING CATEGORY	EVENTS		
		2011	2012	CHANGE
1.	Category A	13	18	+38.5 %
2.	Category B	28	25	-10.7 %
3.	Category C	46	53	+15.2 %
4.	Category D	152	165	+8.6 %
5.	Category E*	10	9	-10.0 %
6.	Category F**	4	2	-50.0 %
7.	TOTAL NUMBER OF EVENTS	253	272	+7.5 %

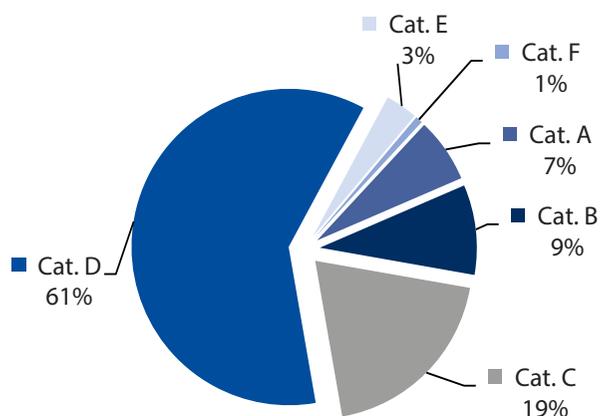
* pedestrian crossings

** non-public vehicle and pedestrian railway crossings

Source: Prepared by UTK based on the basis of the Railway event register.

Two-thirds of the total number of events on crossings occurred on railway crossings, which were not equipped with warning devices (light signals) or safety devices (barriers or half-barriers). One in six accidents occurred on crossings secured by barriers or half-width barriers (Category A or Category B). Percentage of accidents within specific categories of vehicle and pedestrian crossings is provided on the chart below.

Graph 110: Percentage of accidents on pedestrian and vehicle railway crossings in 2012, divided into crossing categories



Source: Prepared by UTK based on the basis of the Railway event register.

The chart merely illustrates a percentage of events occurring within specific crossing categories, and does not include actual number of crossings within any given category, which operate on the rail network, which would allow for determination of

an accident rate indicator. This indicator is present in another table, in a later part of this document.

Tab. 26: Number of casualties per crossing categories in yrs. 2011 and 2012

No.	CROSSING CATEGORY	FATALITIES			SERIOUS INJURIES		
		2011	2012	CHANGE	2011	2012	CHANGE
1.	Category A	8	5	-37.5 %	0	6	-----
2.	Category B	15	9	-40.0 %	6	1	-83.3 %
3.	Category C	12	7	-41.7 %	13	6	-53.8 %
4.	Category D	21	34	+61.9 %	29	21	-27.6 %
5.	Category E*	6	7	+16.7 %	4	2	-50 %
6.	Category F**	0	0	-----	1	0	-----
7.	TOTAL NUMBER OF EVENTS	62	62	0 %	53	36	-32.1 %

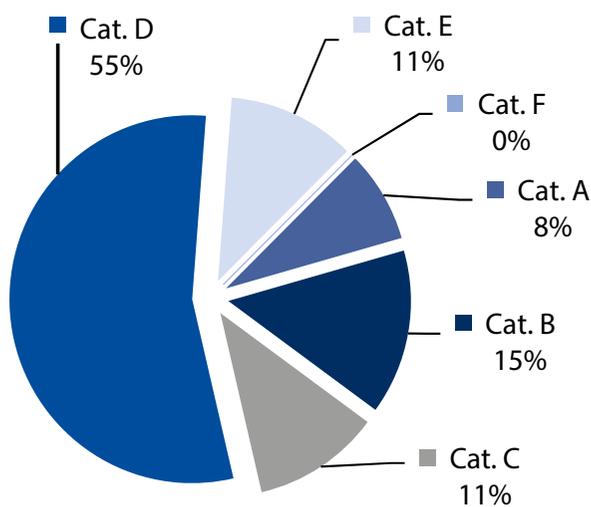
* pedestrian crossings

** non-public vehicle and pedestrian railway crossings

Source: Prepared by UTK based on the basis of the Railway event register.

The number of fatalities and serious injuries, divided into categories of crossing, where accidents occurred, is presented in the table above. In contrast, the graphical distribution of the number of fatalities and serious injuries, divided into categories of crossing, where accidents occurred is presented below:

Graph 111: Percentage of fatalities per crossing category in 2012

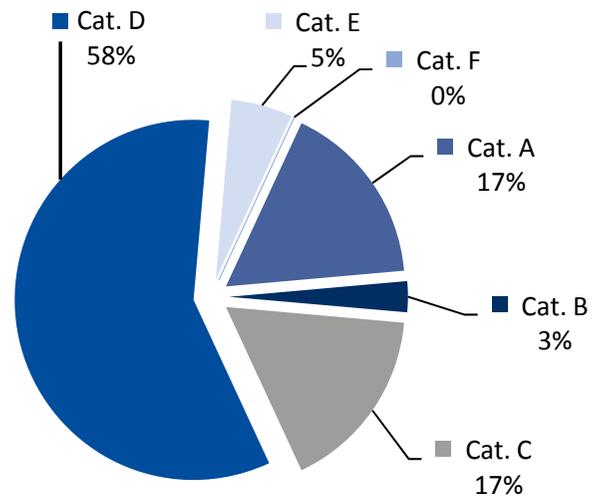


Source: Prepared by UTK based on the basis of the Railway event register.

A definite majority of accidents of railway crossings were caused by road users, who did not adhere to the rules of the highway

code, and did not take appropriate care while crossing. One should also note the employment discipline of some railway employees operating category A crossings, which did not close the barriers before the approaching train in the required time, or have opened them after the first train has passed without checking whether a second train is following the former.

Graph 112: Percentage of serious injuries per crossing category in 2012



Source: Prepared by UTK based on the basis of the Railway event register.

Examples of improper operation of crossings by railway employees, which resulted in events on railway crossings, include:

- The event of January 6, on a Category A crossing, which resulted in one serious injury. This event involved a collision of a train with a passenger wagon driving through the crossing, while the crossing barriers were open. Cause: barriers remained open despite an approaching train.
- Event of April 3, at a Category A crossing (no casualties) where a train collided with a passenger wagon driving through the crossing, while the crossing barriers were open.

Due to the aforementioned events, the examples of which have been provided above, preventative and assessment actions are being taken. As a result of events of April, the Accident Commission recommended sending employees on an assessment exam and psychological tests, in order to check their suitability for their current jobs. Oftentimes, the accidents are discussed during period reviews.

According to the statistical data shown above, the number of accidents on railway crossings and automatic signal light and half-barrier system (category B and C crossings) is twice as low than the number on crossings fitted with passive systems (category D crossings). As mentioned earlier, one should remember that crossings belonging to this last category are the most numerous on the railway line, and on the other hand, the traffic products for these crossings should be as low as possible.

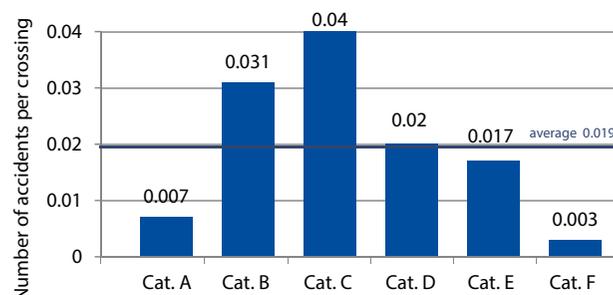
However, in the view of the President of UTK, the accident rate indicator, which shows a relation of number of events on a crossing of a given category to the general number of these crossings, would be a better method to illustrate safety on particular crossing categories. The accident rate indicator per each crossing category was presented in the table and on the chart below.

Tab. 27: Accident rate indicator on railway crossings in 2012, divided by category

No	CROSSING CATEGORY	NUMBER OF CROSSINGS	NUMBER OF ACCIDENTS	INDICATOR
1.	Category A	2 708	18	0.007
2.	Category B	797	25	0.031
3.	Category C	1,325	53	0.040
4.	Category D	8,351	165	0.020
5.	Category E	532	9	0.017
6.	Category F	684	2	0.003
7.	TOTAL	14,397	272	0.019

Source: Prepared by UTK based on the basis of the Railway event register.

Graph 113: Accident rate indicator on railway crossings in 2012, divided by category



Source: Prepared by UTK based on the basis of the Railway event register.

Taking the number of crossings into account, it is clear that the railway crossings with light signalling (Category C) and railway crossing with light signalling and half-width barriers (Category B) have the highest accident rate indicators. It should be noted that in **97% of cases, the accidents occurred in spite of properly operating safety devices**, and were caused by road vehicle users ignoring the regulations of the Highway Code. One should also remember the theoretically smaller traffic intensity on these crossings (in many cases, the actual increase in traffic product does not change the category of the crossing).

8.4. Improve safety on railway crossings

As mentioned above, the majority of accidents occurring at a single-level intersection of rail- and roadways are caused by people acting outside the railway system, i.e. pedestrians and vehicle drivers, who commonly ignore regulations (although some cases are a result of crossing equipment failure or employee errors). To increase safety on railway crossings, infrastructure managers perform numerous investments and informational activities. These measures include:

- Liquidation of single-level vehicle and pedestrian crossings (including the illegal ones), and the replacement of such with tunnel, viaducts and/or footbridges.
- Modernization of railroad crossings to upgrade them to a better category, i.e. fitting such with additional warning and safety devices;
- Intensified maintenance operations on existing vehicle and pedestrian crossings;
- Social campaign and increased inspections by the Police and the Railway Protection Guard.

To visualise the effort going into increasing the safety level of the railway system in the area of railway crossings, we have presented the activities in this scope of the largest infrastructure manager,

PKP PLK S.A., with 97% management share of the general access railway network, which provides services to a total of 96.5% of all vehicles operating within that network. As a manager of the national railway line, this provider has access to EU funds and various investment programmes. The table below contains a number of railway crossings, divided by year, on railway lines managed by PKP PLK S.A.

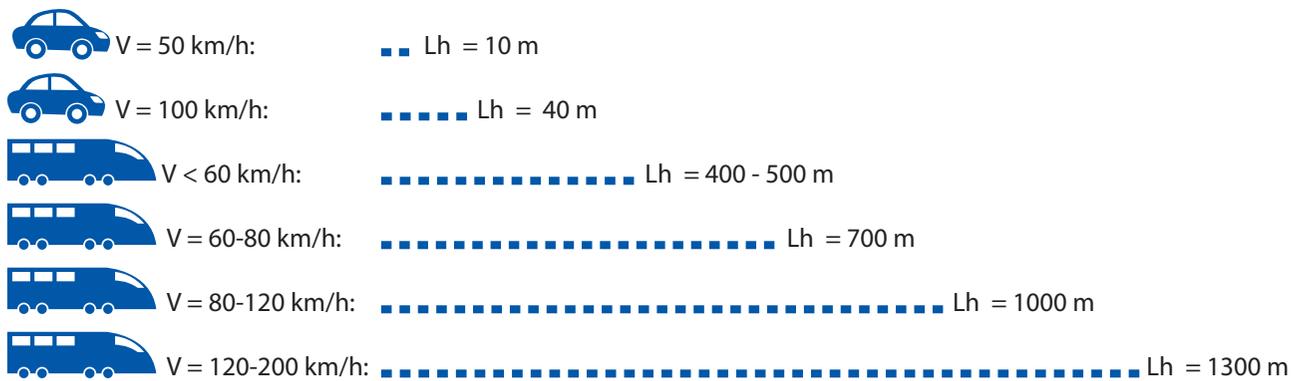
97% of cases, the accidents occurred in spite of properly operating safety devices, and were caused by road vehicle users ignoring the regulations of the Highway Code

Tab. 28: Number of crossings operated on lines managed by PKP PLK S.A. in yrs. 2007 – 2012

No.	YEAR	Cat. A	Cat. B	Cat. C	Cat. D	Cat. F	TOTAL
1.	2007	2,834	561	1,303	8,333	682	13,713
2.	2008	2,772 (-62)	645 (+84)	1,285 (-18)	8,362 (+29)	676 (-6)	13,740 (+37)
3.	2009	2,724 (-48)	665 (+20)	1,313 (+28)	8,314 (-48)	682 (+6)	13,698 (-42)
4.	2010	2,712 (-12)	684 (+19)	1,311 (-2)	8,270 (-44)	680 (-2)	13,657 (-41)
5.	2011	2,676 (-36)	728 (+44)	1,304 (-7)	8,155 (-115)	684 (+4)	13,547 (-110)
6.	2012	2,633 (-43)	789 (+61)	1,302 (-2)	7,967 (-188)	661 (-23)	13,352 (-195)

Source: Developed on the basis of information presented by the infrastructure manager, i.e. PKP PLK S.A.

In its effort to modernize and revitalize Polish railway lines, PKP PLK S.A. is reconstructing railway-road crossings and pedestrian railway crossings, equipping them with additional safety and/or warning devices, and in many cases removes single-level vehicle and pedestrian crossings, replacing them with viaducts (footbridges) or tunnels. Construction of two-level crossings is more expensive, but undoubtedly is the only way to completely eliminate risk of accidents on intersections between railway lines and roads.



where: V = vehicle speed Lh = braking distance

Investment plan for the years 2012 – 2014, included in the update of the Multi-annual Railway Investment Programme of September 28, 2012, assumes the following:

- Repairs and modernizations of railway crossing surfaces: in 2012 – 415 pcs. (corrected to 373 pcs, actually implemented: 239 pcs.), in 2013 – 438 pcs. and in 2014 – 376 pcs.;
- Construction of automatic line crossing signals on railway crossings: in 2012 – 113 pcs. (corrected to 114 pcs, actually implemented: 94 pcs.), in 2013: – 114 pcs. and in 2014 – 120 pcs.;

Modernization of selected road and railway crossings is encompassed in two separate investment projects realized within the Infrastructure and Environment Operational Programme. In total, these projects will result in category upgrades for 436 railway crossings, which should help in reducing accident rates on said crossings, and contribute to the safety of railway and road traffic.

The President of UTK believes that in addition to hard projects, i.e. investments in railway crossing safety systems, attention should be paid to implementation of soft projects, aiming to raise awareness of railway crossing users and persons living near railway lines about the dangers of crossing a railway line. It should be noted that versus a rolling train, a pedestrian – or even a car driver and his passengers – have little chance for survival in case of an accident. Furthermore, some people do not realize the differences in braking distance between a train and a car, and that the train takes considerably longer than a road vehicle to stop due to its enormous mass. As an example, differences in braking distances of a passenger car and a passenger train, for various speeds, are presented below:



The train needs as much as 1300 m. to come to a standstill. Many drivers ignore STOP signs or red pulsing lights in front of railway crossings, failing to stop and yield to a railway vehicle. The train always has the right of way.

The train needs as much as 1300 m. to come to a standstill. In this context, it is important to note that many drivers ignore STOP signs or red pulsing lights in front of railway crossings, failing to stop and yield to a railway vehicle. Furthermore, some drivers erroneously believe that the railway vehicle slowing down before the railway crossing is actually yielding to road vehicles.

However, one should remember that there are no exceptions to this simple rule: the train always has the right of way.

In addition, PKP PLK S.A. undertakes informational efforts to improve safety on railway crossings. This is particularly important for Category D crossings, as virtually all accidents in these locations are caused by the drivers, who do not pay adequate attention while crossing the railway line. Drivers ignore STOP signs and signal lights, drive around closed half-barriers, or drive directly below closing barriers. Therefore, the managing entity has been continuously running a campaign entitled "Crossing safely – stop and live". Its VIII edition launched in May 2012. The first four editions were held in summer months, but since 2009 the campaign has been running all year. The campaign is directed to all road users (drivers, bikers, pedestrians), adults, children and teens alike, as well as to media, companies and institutions. These actions are supported by governmental and non-governmental organizations, the Police, the military, firefighters, transport companies, media, the press, as well as prominent figures from the world of culture and art. The campaign involves: educational meetings in kindergartens, schools and driver schools, simulations of accidents on railway crossings, press briefings and conferences, family picnics, "driving" banners, informational leaflets and posters, etc. The message of the campaign is supplemented by the participation of PKP PLK S.A. representatives in debates about safety and various radio and television programs. The campaign is supported by the Railway Protection Guard, which conducts informational and preventative campaigns on specific crossings, informing drivers of the dangers of not paying enough attention when crossing the railway line.

8.5. Summary of issues related to crossings and experiences of others

Accidents on railway crossings are mainly caused by improper behaviour of road users (99% of occurrences), although a small number of such events are attributable to the railway system, i.e. due to damaged or improperly operation rail crossing equipment.

As indicated by the event statistics, the human is the weakest link in the safety system chain. Offences, which are occurring most often on railway crossings, include the failure of keeping extra attention when approaching and driving through the railway crossing, including:

- Not reacting to "Stop" road signs;
- Entering the railroad crossing while the barriers are closing;
- Driving around closed barriers;

- Not reacting to audio and light signals informing about an approaching train.

In the opinion of the President of UTK, improvement of traffic safety on railway crossings requires the continuation and commencement of the following actions:

- Increase the number of modernizations aiming to improve the technical conditions of railway crossings and their safety equipment;
- Observe and intensify inspections of those crossings, where rule breaking is commonplace, and fine the offenders for endangering ground-based traffic by attempting to drive around a safety barrier.
- Marking particularly dangerous crossings with signage informing about the number of accidents recorded on this particular crossing along with the number of fatalities and serious injuries;
- Introduce automatic, microprocessor-based railway crossing signalling systems into common use, complete with comprehensive automatic control, event registration and technical diagnostics functions, which allow for remote transmission of event and fault information;
- Tightening sanctions for misdemeanours of railway crossing users, so that fines are more painful and would act as a deterrent.

At present, efforts are being made to construct non-collision intersections on high-traffic railways and roads. Similar situation occurs with crossings on high-speed railways, which should have two levels as well. New technological solutions for automatic crossing signals and their efficiency are of particular importance for the issues of traffic safety. The increased safety of computer-based automatic crossing signal systems stems mainly from the use of programmable logic controllers, separation of programs into two channels, the ability to immediately detect equipment faults, and the possibility to monitor the operation of the automatic signalling system and record every occurring event and fault.

While analysing the problem of accidents on vehicle and pedestrian railway crossings, and potential solutions for improvement of this situation, one should mention the experiences of other European countries related to the implementation of crossing safety improvement programs. The United Kingdom is one of the better examples in this scope, as it achieved one of the best results in safety on pedestrian and vehicle crossings.

The British Office of Rail Regulation responsible for railway transport safety, has developed a strategy for railway crossings, in which it analyses safety issues on said crossings and works out solutions, which it will try to implement to decrease the risk related to their use. As emphasized by the ORR, railway crossings are one of the most serious risk sources in the railway system, in part due to the fact that the railways are not able to control the behaviour of pedestrian/vehicle crossings users. Therefore,

putting the responsibility for safety on railway crossings solely on the railways is neither reasonable nor effective.

Thus, the British safety authorities indicates a problem, that has been raised in Poland for many years, but has not been satisfactorily solved as of yet. This is because the railway system cannot solely bear costs for the operation of railway vehicles, but this is what happens in light of the Polish law. This situation is especially baffling in light of information on accidents on railway crossings, which are caused in 99% by road users. As a result, the railways are victims of careless drivers, and have to bear the economic cost of their decisions.

In its strategy, the ORR indicated a number of key activities, which it intends to implement. Primarily, efforts should be made to intensify supervision of railway crossings, assess the level of implementation and effectiveness of procedures used by infrastructure managers, and tighten cooperation with entities operating in this sector to identify problems and work out solutions to these problems. ORR is also actively participating in the process for publishing good practices on railway crossings, aimed at railway crossing managers and users. A significant part of ORR strategy includes cooperation with entities from outside the railway sector, whose activities influence the safety on railway crossings, such as owners of workplaces located nearby, whose employees are crossing the railway crossing in question, as well as local and/or governmental authorities.

Furthermore ORR has clearly indicated that apart from special cases, new railway crossings should not be constructed at railway level, and existing crossings should be replaced with newer and safer devices as they age. Crossings equipped only with light signals (without barriers) should be obligatorily replaced per the agreement of the primary manager of the British railway infrastructure with the ORR, which was made after a tragic accident in Halkirk, Scotland, which resulted in the deaths of

three people. The report provided by the fact-finding commission shown that the infrastructure manager contributed to the accident by “not providing appropriate risk control” – namely, failing to include four previous accidents (including one fatality) on this railway crossing in its risk analysis. The results of the performed risk analysis were underrated, therefore preventing the accelerated implementation of better control measures, which could have been done before the accident occurred.

Considering the comprehensive nature of the discussed ORR safety policy for railway crossings, and in light of the different role and responsibilities of the British safety authorities, one should note that in the Polish environment, the implementation of a similar complex plan would have to be done on a level of an entire member state. In this context, the so-called crossing projects and other actions aimed at modernization of railway crossings should be considered a step in a very good direction, but in light of British experiences it must be noted that this program should constitute a part of a greater whole, which would involve, among other things, changes in the law, so that the costs of operating vehicles would be justly shared between the railways, the roads and other entities contributing to the risk of accidents at railway crossings.

With this in mind, and the new approach to railway system supervision stemming from a common safety supervision method, the President of UTK intends to make use of British experiences and begin involvement in activities contributing to safety on railway crossings in the following years. One of the key areas of activity in this scope will involve focusing supervisory activities on the issues of operation and maintenance of railway crossings, especially in terms of supervising the operation and functioning of appropriate procedures in safety management systems and adherence to the appropriate legal requirements concerning railway crossings.



9. Vandalism within the railway network

In recent years a worrying trend has been observed in railway transports, involving various incidents of hooliganery, which endanger the safety of railway traffic and result in temporary limitation or suspension of railway traffic. Most popular occurrences of hooliganery include:

- Theft and devastation of railway safety devices;
- Train robberies and theft of cargo;
- Pelting of trains;
- Placement of obstacles on railways;
- Unauthorized emission of alarm systems, resulting in the activation of the Radiostop system.

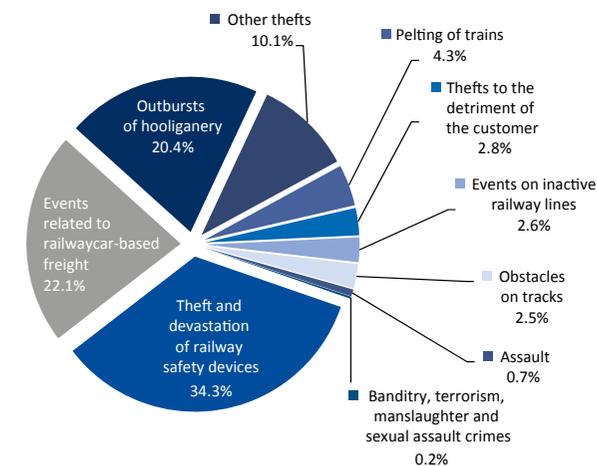
These events, despite their potential and significant danger to railway safety, are not met – in the opinion of the President of UTK – with appropriate interest and response. In part this is due to the fact that these events are very hard to combat effectively, as in most cases, the perpetrators remain unknown. These events can only be prevented in a limited fashion, due to the lack of appropriate resources within the railway system, especially the Railway Protection Guard

9.1. Theft and devastation of railway safety devices

In the scale of the entire country, theft and devastation of railway safety devices are the most serious problem for railway transport safety, constituting nearly 34% of all crimes and misdemeanours registered by the Railway Protection Guard. This group was dominated by thefts (3550 cases), with 1250 cases of devastation. Detailed information on all occurrences recorded by the Railway Protection Guard Headquarters in 2012 is presented on the figure below.

The more detailed data for years 2010 and 2011 show that the railway safety devices includes primarily interlocking devices, control-command system devices, and electrical energy system equipment. Most thefts and devastations occur against interlocking devices, which are critical to railway transport safety (approx. 65% of cases in 2011).

Graph 114: Percentage of specific crime and misdemeanor categories registered by the Railway Protection Guard in 2012



Source: prepared by UTK based on data provided Railway Protection Guard Headquarters.

In comparison to 2005, when the Railway Protection Guard began collecting data on theft and devastation of traffic safety devices on active railway lines, the number of reported crimes and misdemeanours in this scope fell by approximately 1/3 – from 6490 in record year of 2006 to 4600

in 2012. The chart shows a period of an even bigger dip in recorded events of this type, to as little as 3000 occurrences in the years 2008 – 2010. In the next two years, the level of recorded events stabilized at approx. 4.6 thousand.

Theft and devastation of devices result primarily in defects and faults in the operation of railway interlocking devices, which results in lowered traffic safety. Due to the fact that the interlocking devices are a complicated, intertwined system, a theft of even a small element may result in the inability to manage railway traffic in an organized manner, on approved and secured routes. As a result, railway traffic on posts hit by thieves is managed on the basis of the so-called auxiliary signals, which necessitates the use of a larger number of procedures.

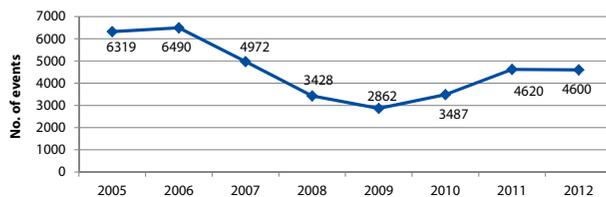
In most cases, the period when traffic is managed using auxiliary signals is relatively short and usually lasts no more than few hours; however there are cases when this period is considerably

In recent years a worrying trend involving which endanger the safety of railway traffic and result in temporary limitation or suspension of railway traffic.

longer. According to the data released by the main infrastructure manager, of 102 cases of long-term management of traffic using auxiliary signals (longer than 7 days), 21 were a result of theft or devastation of infrastructure components, which therefore constitutes the second most popular cause (with modernization works being first, at 40 occurrences).

Theft and devastation of devices result primarily in defects and faults in the operation of railway interlocking devices, which results in lowered traffic safety.

Graph 115: Events related to theft and devastation of traffic safety devices in yrs. 2005 – 2012

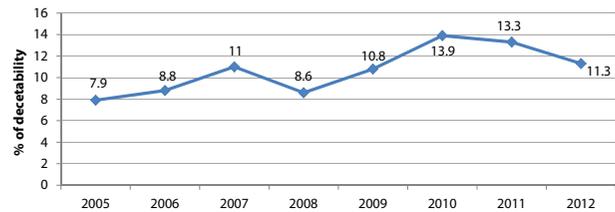


Source: prepared by UTK based on data provided Railway Protection Guard Headquarters.

Theft and devastation of devices also generate significant economic costs for railway managers. For the largest of the managers, the costs of repair of devices damaged due to the theft and devastation in 2012 have run a total of over PLN 6.2 m. This value is nearly 23% lower in comparison to 2011, when it reach PLN 8 m, but it still remain a significant financial burden, especially in light of limited resources available to the railway manager. One should also emphasis that in 2009, the costs of repairs of interlocking devices damaged due to theft and devastation slightly exceeded PLN 4 m, whereas in 2010, this amount reached as high as PLN 5.38 m, which confirms the data provided by the Railway Protection Guard Headquarters concerning the intensification of this event.

Furthermore, the thefts and devastation of railway equipment have significant consequences for railway carriers, passengers and freight transport customers. Primarily, it results in delays and cancellations of trains. In extreme cases, theft of select devices may result in long-term traffic suspension and the necessity to establish an axillary line of communication. Incidents of theft of electrical equipment, such as contact line devices, have particularly severe consequences for the railway system

Graph 116: Detectability of perpetrators of theft and devastation of traffic safety devices, in percent



Source: prepared by UTK based on data provided Railway Protection Guard Headquarters.

For example, in 2011 delays in passenger train runs caused by thefts and infrastructure devastations totalled 176,685 minutes, which is over 122 days. One should also indicate that the frequent occurrences this type, resulting in delays and disturbance in railway traffic, negatively impact the image of railway transport and services offered by specific carriers.

Combating theft and devastation of railway safety devices is difficult due to the low detectability of perpetrators. Per the information of the Railway Protection Guard, only 8 to as much as 14% of all perpetrators are caught, and this is not enough of a deterrent to any would-be criminals.

Noticing the importance of the problem of theft on railway infrastructure, the Presidents of UTK, URE and UKE commenced working on a "Memorandum on cooperation towards counteracting the activities of infrastructure theft and devastation". Signatories of this memorandum, which include the aforementioned offices as well as other entities operating on the telecommunications, energy and railway markets – undertake to jointly combat infrastructure theft and devastation, by raising public awareness in this scope and improve cooperation between law enforcement authorities, public institutions and the justice system.

Considering the fact that at least a portion of these events occur in the same or similar location, the President of UTK began monitoring "problem areas", including those where infrastructure theft is rampant. Data collected in this way, upon analysis, shall be used to compile a comprehensive data set for law enforcement authorities, listing identified critical points where similar incidents repeatedly occur. In the opinion of URK Chairman, this information and appropriate cooperation with law enforcement may limit the scale and nuisance of theft of railway safety equipment.

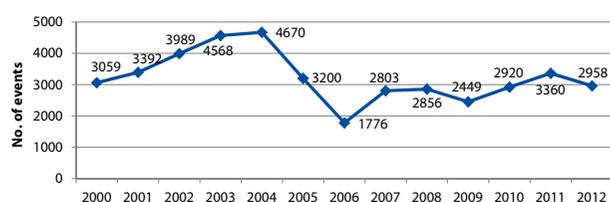
9.2. Train robberies and theft of cargo

The second category of problematic events includes theft of cargo from rail cars. In 2012, similar events constituted more than 22% of the total number of crimes and misdemeanours recorded by the Railway Protection Guard, which is 12% less than the number of thefts and devastation of devices related to traffic safety.

As shown by the data presented on the figure below, the number of recorded cargo thefts from railway cars reached its high in 2004, and subsequently fell by over 60% in the next two years. This trend has since stopped and starting from 2006, the frequency of all discussed cases has been steadily rising. In 2012 a total of 2958 events related to railway cargo thefts were recorded, which is 11% less than in the preceding year.

This category primarily includes dumping, which means cases where perpetrators would intentionally open the doors of freight cars carrying bulk material (usually coal or coke), to pour the railway car's load onto the tracks. In most cases, it is not possible to remove the entirety of the spilled goods from the tracks, and the remains become an easy target for the thieves.

Graph 117: Events related to theft of cargo from railway cars in yrs. 2000 – 2012



Source: prepared by UTK based on data provided Railway Protection Guard Headquarters.

The problem of dumping is very significant for railway transport safety, due to the sheer boldness of thieves, who are resorting to increasingly more dangerous methods to achieve their goal. As a rule, the thieves attempt to open rail wagon doors during stops at semaphores, but as infrastructure managers are making efforts to minimize such stops, criminals now attempt to stop the moving train by placing obstacles on the railway track or simply open the doors in a moving train.

Robberies of moving trains are particularly dangerous due to the fact that open wagon doors extend outside of the train gauge, and may result in damage to adjacent infrastructure elements, such as contact line equipment or semaphores. As an example, on July 10, 2012 on Dąbrowa Górnicza Ząbkowice station, unknown perpetrators have opened doors in three railway cars belonging to a train of a private carrier, causing small-scale dumps of culm. Open wagon doors resulted in serious damage and deformation of contact line pylons, which as a result halted the entire railway traffic,

A similar situation occurred on February 28, 2012 on the route between Szabelnia and Katowice Zawodzie (line No. 138), when unknown perpetrators decoupled 12 railway cars from the rolling stock and opened 13 doors in total, spilling approximately 40 tonnes of bulk load. Clean-up of the aftermath required routing of railway traffic on a single railway track.

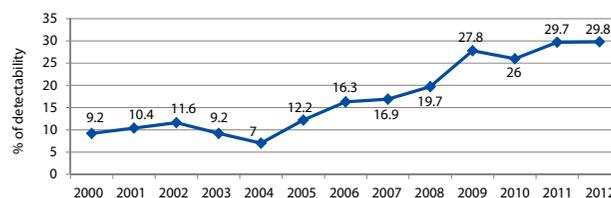
An even more dangerous situation occurred on May 28, 2012, again on the Dąbrowa Górnicza Ząbkowice station, where unknown assailants closed the main line tap at the 12th railway wagon in the set, which resulted in a tear of the train. As a result,

the rear part of the train remained on the station, whereas the locomotive and 12 cars continued on the route. The doors of one of the abandoned cars were opened, and approximately 5 tonnes of coal were dumped.

Due to the strategy adopted by the thieves, interventions of the Railway Protection Guard are not able to stop the problem. As reported by the media⁵, in the majority of cases trains are being stopped and opened by minors, whose dexterity helps them navigate the train and escape the scene of the crime, as well as evade pursuit of Railway Protection Guard officers. The guards are often pelted with rocks, and in some cases face armed opposition.

In 2012, the President of UTK performed a total of 886 inspections, which included in their scope the full complement of issues specified in the Railway Transport Act, and related, among other things, to railway traffic safety, railway transport regulations, compliance with passenger rights, and inspection of railway products.

Graph 118: Detectability of perpetrators of crimes related to theft of cargo from railway cars in yrs. 2000 – 2012, in percent



Source: prepared by UTK based on data provided Railway Protection Guard Headquarters.

Regardless of these difficulties, detectability of crimes related to theft of cargo is relatively high in comparison to that of other events, amounting to approx. 30%. As indicated in the presented data, results in this scope have improved significantly in the years 2004 – 2011, but the theft of cargo continues to be a plague, especially in Silesia. As indicated in the aforementioned article, the thieves strike most often in the region of Ruda Śląska, Zabrze, Bytom and Siemianowice, as well as in Katowice-Szopienice and Myslowice.

Railway carriers attempt to minimize the risk of theft from railway cars by using better security methods, but this is not possible in every situation. Carriers operating newer rolling stock have an easier task, as their cars cannot be unloaded from the side (only from the top), which eliminates the danger of having the side wagon doors opened.

5 Ataki na pociągi z węglem paraliżują Śląsk, Polskie Radio (*Attacks on coal trains paralyse Silesia*), 31 listopada 2011 r., <http://www.polskieradio.pl/5/3/Artykul/470746,Ataki-na-pociagi-z-weglem-paralizuja-Slask>

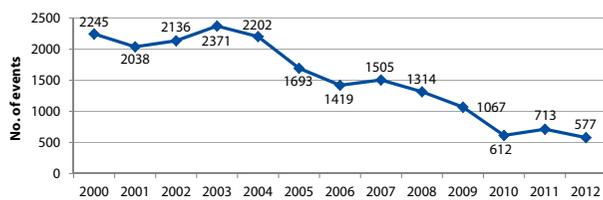
To ensure more effective protection of specific trains, some carriers hire protection services, specializing in providing services for the railway sector. Employees of these services protect the train while it is moving and is stopped on the train. Protection covers transports of coal, coke, liquid fuel and cars.

9.3. Pelting of trains

Another serious problem related to hooliganery within the railway area, which diminishes the safety of railway transport, involves cases of trains being pelted with stones or other items, which are mainly thrown off viaducts and footbridges located over the tracks. According to the data compiled by the Railway Protection Guard Headquarters, 2.5% of the total number of crimes and misdemeanours in 2012 involved such situations.

As illustrated below, the number of cases in which the trains were pelted with stones, has been decreasing in the past years. The maximum number of recorded cases of this type amounted to 2371 in 2003, whereas the minimum was recorded in 2012, with 577 cases. Therefore, in total, since 2003 the number of cases of this type has decreased over 4-fold, which is being accompanied by a decreasing share of train pelting in the total number of recorded crimes and misdemeanours – from 13.7% in the year 2000 to 4.3% in 2012.

Graph 119: Events related to train pelting in yrs. 2000 – 2012



Source: prepared by UTK based on data provided Railway Protection Guard Headquarters.

One should welcome any decreasing trend for events of this type, but pelting of trains continues to pose a real threat to the safety of railway traffic. Obviously, train drivers are the most vulnerable to these types of attacks, and they are key in assuring the safety of the moving trains.

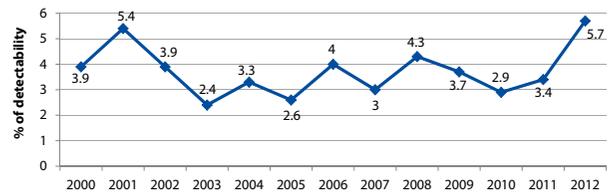
For instance, in 2012, due to the trains being pelted with various items, in four cases the train driver or passenger were injured, and required assistance of paramedics. In other cases, thrown items damaged the vehicles of the train (mainly breaking windows).

The very low detectability of perpetrators committing such crimes is also worrying. In comparison to the data presented in sections on theft or devastation of traffic safety devices, the detectability indicator is nearly twice as low and oscillates within a few per cent.

Therefore, the URK Chairman decided to implement monitoring activities in this scope, aiming to identify locations where occurrences of this type are most common. Information collected in this manner will be used to illustrate to appropriate

law enforcement authorities and the justice system the scale of these events, and their potential consequences.

Graph 120: Detectability of perpetrators of train pelting in yrs. 2000 – 2012, in percent



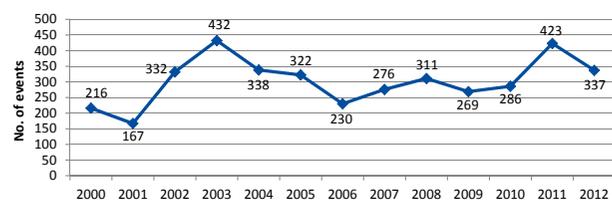
Source: prepared by UTK based on data provided Railway Protection Guard Headquarters.

In some cases, train pelting seems to be a misguided teenage past time. Therefore, it seems prudent to supplement the efforts related to monitoring of problem areas in this scope and increasing the detectability of perpetrators, with educational campaigns, which would provide information on the scale of the danger, possibly based on the “Stop and live” campaign concerning railway crossings.

9.4. Obstacles on tracks

Another category of events, which must be mentioned when describing dangers to the safety of railway traffic, is the placement of obstacles on railway tracks. As evidenced by the statistics of the Railway Protection Guard, this occurrence seems to be on the rise in recent years. In 2012, the railways have recorded a total of 337 occurrences of intentional placement of obstacles on railway tracks by unknown perpetrators, which constituted 2.5% of all crimes and misdemeanours recorded by the Railway Protection Guard. In most cases, obstacles laid on the tracks include stones, branches or tree trunks, and in some cases even concrete blocks or other heavy items.

Graph 121: Events related to placement of obstacles on tracks in yrs. 2000 – 2012



Source: prepared by UTK based on data provided Railway Protection Guard Headquarters.

Most serious consequences of collisions with track obstacles include damage to the train’s braking systems (mainly valves), which results in their opening and a fall in pressure within the main line, and thus sudden train braking. Some cases also result in damage to other components of the train.

However, one should note that most situations related to the placement of obstacles on the track have relatively small con-

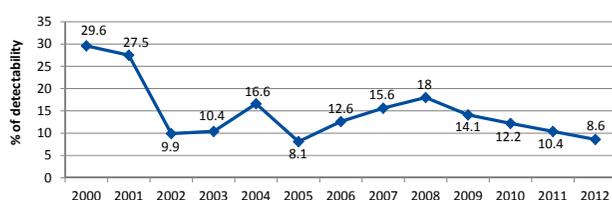
Vandalism within the railway network

Unauthorized transmission of Radiostop signals

sequences. Therefore, it would stand to reason that the issue of obstacles on tracks is not currently a priority for safety, but the President of UTK maintains that this is an issue worth monitoring and counteracting.

In this context, one should mention the detectability of perpetrators of such events, which unfortunately remains low, with only 8.6% in 2012. In addition, this value has been consistently dropping throughout recent years. Undoubtedly, combating these occurrences is not an easy task, as the perpetrators simply leave the crime scene without leaving any trace.

Graph 122: Detectability of perpetrators laying obstacles on railway tracks, yrs. 2000 – 2012, in percent



Source: prepared by UTK based on data provided Railway Protection Guard Headquarters.

One effective form of preventing such events would be to launch a social campaign, which would educate the public about the dangers stemming from such actions, and motivate members of the public to intervene upon noticing such acts near the railway lines, and – similar to train pelting prevention campaigns – organization of free time for teens, to keep it from spending their leisure time in this manner.

9.5. Unauthorized transmission of Radiostop signals

The last issue, which needs mentioning in the context of hooliganery against the railway track, is the unauthorized transmission of alarm signals through the railway radio communications system, which result in the activation of the Radiostop system. Reception of this system results in the automatic activation of the train's braking system. This solution is used as a method to stop every train in the vicinity of the signal emitter in an emergency.

Unauthorized transmission of this signal is particularly bothersome in urban areas, i.e. on the Warsaw Cross-City Line, where such incidents disrupt the entire railway traffic.

The most known cases of unauthorized emission of Radiostop signals were recorded in 2011, when three people had been stopping trains in various locations between Warsaw and Łódź, including the Warsaw Cross-City Line, for over a year. In 2012, a similar problem with regular unauthorized emission of the Radiostop signal had occurred, among other regions, near Zielona Góra and Czerwieńska.

In 2013, the President of UTK took actions aiming to continuously monitor for such events and assess the true scale of this problem.





10. Railway traffic safety in Europe

When assessing railway traffic safety in Poland, it would be prudent to provide some background in the form of an overview of railway traffic safety within the entire European Union.

This is because Poland, and its railway system, constitutes a significant link in the chain of the European railway system, and any events on the railway system greatly influence railway traffic safety within the entire European Union, as reflected in the Common Safety Indicators. CSI provide a unified description of selected aspects of railway safety. The European Railway Agency uses them to determine the overall safety level in particular countries.

First and foremost, one should emphasize that the safety of the European railway sector is rated highly in the context of safety in other branches of transportation, which is further evidenced by the comparison of risk of fatalities amongst passengers (users) of various modes of transport. The table below shows that railway transport is one of the safest methods of transportation, with 0.156 of a fatality per billion passenger-kilometres

However, efforts should be made to maintain this high standard of safety, and improve it in those areas, where it is reasonable and rational. Despite these achievements, railway accidents continue to occur (in 2012: Poland, Szczekociny – train collision resulted in 16 fatalities (including 5 employees)⁶

and 61 serious injuries (including 2 employees); Germany, Hanau – train collision resulted in 3 fatalities and 6 serious injuries; Holland, Amsterdam – train collision resulted in 1 fatality and 23 serious injuries; Italy, Rossano: accident on a railway crossing resulted in 6 fatalities; Hungary, Shombathely – Kosheg, an accident on a railway crossing resulted in 3 fatalities and 3 serious injuries. These accidents, due to their incidental nature and media attention, brand railways as one of the most dan-

gerous mode of transportation in the European Union. This is a situation analogous to air transport, where one incident completely skews the public perception of such mode of transport in terms of safety

Tab. 29: Risk of passenger fatalities

No.	Mode of transport	Risk of passenger fatalities (2008-2010) per billion passenger-kilometres
1.	Plane	0,101
2.	Railway	0,156
3.	Passenger car	4,450
4.	Bus	0,433
5.	Motorbike/scooter	52,593

Source: "Intermediate report on the development of railway safety in the European Union", European Railway Agency, 2013.

However, despite the details provided above, the data published by the European Railway Agency, which are

based on information released by national safety authorities of every Member State, indicates clearly that in recent years, the number of significant accidents within Europe has been falling. We also see a fall in the total number of fatalities and serious injuries in comparison to preceding years.

The two categories with the greatest contribution to the total number of significant accidents recorded within Europe (as of

⁶ Intermediate report on the development of railway safety in the European Union, Europejska Agencja Kolejowa, 2013.

2011) and Poland continue to be “accidents involving people, caused by moving rolling stock” and “accidents on railway crossings”. Other accident categories, such as train collisions, train derailments, rolling stock fires and other events, constitute a clear minority in the total number of significant accidents recorded within the EU.

The number of “accidents involving people, caused by moving rolling stock” is directly correlated to the number of fatalities and serious injuries in the category of “unauthorized persons in a railway area”, which have risen in 2011 (year over year), despite a general falling trend in the number of fatalities occurring in railway accidents. While assessing the safety of railway transport on a European level, one should note that out of the total number of fatalities recorded within the European railway system, passenger and employee fatalities are marginal, 3.2% and 2.5% respectively. The share of serious injuries of passengers and employees in the total number of serious injuries in accidents is slightly different, and amounts to 21% and 7% respectively. Despite this, the assessment of a high level of railway safety on a European level remains high. While assessing the high number of fatalities within the category of “unauthorized persons within the railway area” one should note that the railway system has very limited influence on the ability to reduce the potential number of casualties.

A similar situation can be observed with the number of suicides recorded within Europe, which in 2011 has been the highest since 2006. The railway also is limited in its ability to reduce this indicator in subsequent years. In addition, in terms of the number of suicides, one should remember that whether the event is classified as a suicide or an accident involving unauthorized persons within the railway area also plays an important part in this context. Appropriately classifying a given event isn't always easy and clear-cut.

The number of significant accidents on railway crossings has been visibly falling between

2008-2011. Although the number of fatalities and serious injuries on railway crossings has also been falling, this fall is not as evident, as with the number of accidents on railway crossings. **The aforementioned information confirms that the issue of accidents on railway crossings, along with related numbers concerning fatalities and serious injuries, continues to be a significant component on the map of factors of railway safety within Europe.**





11. Supervision over railway market entities

Influence of state administration on the safety of the railway system may be illustrated as a closed cycle. In broad terms, the activity of the President of UTK may be considered as supervision, due to the fact that it always involves tasks of assessing whether the entities of the railway sector conform to appropriate regulations.

Therefore, such approach to supervision includes the appropriate document issuing stage, but primarily involves the performance of monitoring, inspection and auditing tasks.

Inspectors of seven field departments play a key role in supervisory activity of the President of UTK, and their actions are coordinated by the Supervision Department.

11.1. Legal regulations in the scope of implementing supervision

Rules for implementation of supervision by the President of UTK are laid out in two primary legal acts, i.e. the Freedom of Economic Activity Act of July 2, 2004 and the regulation of the Minister of Transport of March 12, 2007 on the method of supervision used by the Chairman of the Railway Transport Office.

Pursuant to current legal regulations, the only form of supervision conducted by the President of UTK is inspection. The aforementioned legal acts precisely specify the procedures for action of the President of UTK within the framework of

inspection, define accompanying documents and put certain restriction on inspectors.

The concept of inspection, which is very specifically defined in national law, is a certain problem

in the context of the new requirements of supervision per the European model. The gradual migration from the current system of legal framework for safety, based on detailed laws regulating the activity of entities to the model, based on self-management of these entities through internal risk management systems, requires that the supervision system rely in larger parts on management system audits, replacing current supervision activities, which often resemble inspections.

In terms of new legal regulations on supervision, one should definitely mention the Regulation 1077/2012 of the European Commission, on the common safety method for supervision by national safety authorities after issuing a safety certificate or safety authorisation, which places a number of new requirements on the President of UTK as the national safety authority. The most important requirement concerns supervision planning, which, pursuant to new regulations should be more focused

on specific enterprises and their safety results, and less focus on the problems of the railway system as a whole. Therefore, the supervisory activities of the President of UTK should be directed at enterprises, whose activity generates the most risk, which can be quantified, for example, by the largest scale of business activity or current poor history of accidents or incidents, which illustrates weaknesses in the safety management system of a given enterprise.

The requirement for the new safety method is also being developed by the national supervision strategy authority, which specifies priorities for supervision or methods for specifying such, supervisory methods to be used, the use supervisory techniques or resource allocation mechanisms. In addition, the new method focuses on the key meaning of relations between certification and supervisory processes, especially in terms of collection and exchange of information concerning a given entity.

Due to the requirements for a new common safety method for supervision, as outlined above, the current method of supervision of the President of UTK must be significantly modified. As mentioned, the first activities within this scope have already begun, but the implementation of this new approach is a gradual process, which will take the next two years to complete.

11.2. Characteristics of supervision realized by the President of UTK in 2012

In the scope of safety of railway traffic and operation, including technical solutions connected to these issues, the supervisory tasks of the President of UTK include in particular:

- Inspection whether railway carriers and managers fulfil the conditions or requirements included in their security authorizations, security certificates, safety certificates, and whether they perform their business in compliance with the regulations of the European Union and the national law in terms of railway transport safety;
- Supervision of entities authorized to train and test people applying for a train operator's
- license and certificate, who maintain a register of entities authorized to hold exams for train driver's license;
- Inspection of whether the railway managers, carriers and side-track users fulfil their obligations concerning the safety of railway transport, and in particular:
 - Regulations for operating railway traffic and signals;
 - Technical conditions for operation of railway vehicles, including the validity of technical condition certificates and any other documents, which should be present in a moving railway vehicle;
 - Requirements for train operators, persons employed on positions directly related to the operation and

safety of railway traffic, driving specific types of railway and metro vehicles;

- Supervision of safety in railway transport, as well as appropriate maintenance and operation of railway lines and side-tracks.
- Audit of transportation of dangerous goods via railways.

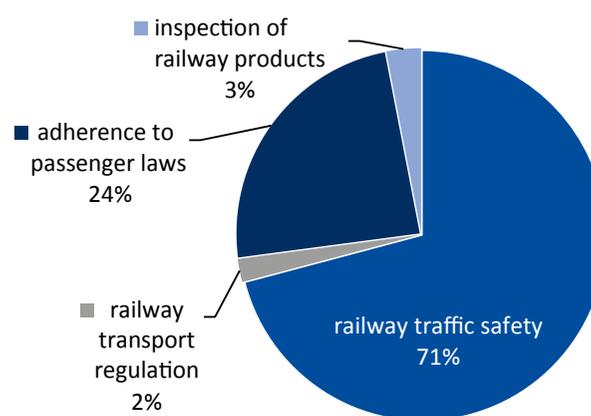
In 2012, the President of UTK performed a total of 886 inspections, which included in their scope the full complement of issues specified in the Railway Transport Act, and related, among other things, to railway traffic safety, railway transport regulations, compliance with passenger rights, and inspection of railway products. The distribution of the President of UTK supervisory activity is presented below.

Tab. 30: Number of inspections realized by the President of UTK in 2012, divided into types

No.	TYPE OF INSPECTION	NUMBER OF INSPECTIONS
1.	railway traffic safety	628
2.	railway transport regulation	18
3.	compliance with passenger rights	213
4.	railway product inspection	27
TOTAL	886	886

Source: Prepared by UTK

Graph 123: Percentage distribution of inspections performed by the President of UTK in 2012



Source: Prepared by UTK

Safety inspections performed by the President of UTK in 2012 were primarily directed at railway infrastructure managers, people and freight carriers, and users of railway side-tracks. It should be noted that in practice, the inspections do not always cover a single area of subject scope. Examples include inspections of compliance with passenger's rights, which are partly related

to issues of safety, and the qualification of such inspections depends on their basic scope or goal.

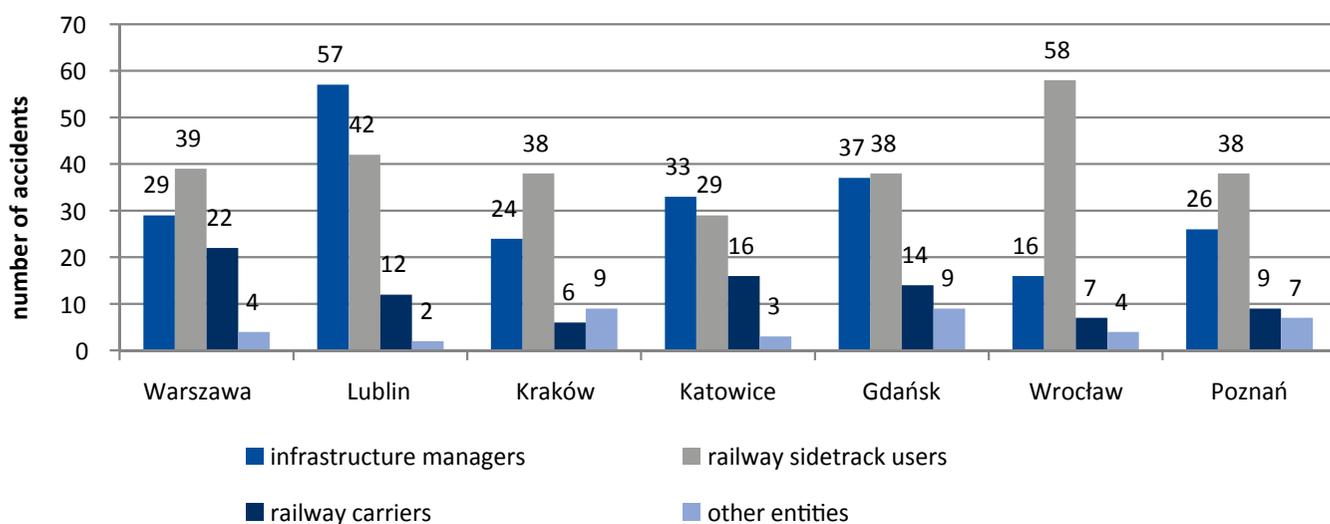
The distribution of each entity in the supervisory activity of the President of UTK is presented in the table and figure below.

Tab. 31: Number of safety inspections performed in 2012, divided into specific railway entities and UTK Field Departments, which handled actual inspection work.

Lp.	ENTITY	FIELD DEPARTMENTS							TOTAL
		Warszawa	Lublin	Kraków	Katowice	Gdańsk	Wrocław	Poznań	
1.	infrastructure managers	29	57	24	33	37	16	26	222
2.	railway carriers	39	42	38	29	38	58	38	282
3.	railway side-track users	22	12	6	16	14	7	9	86
4.	other entities	4	2	9	3	9	4	7	38
TOTAL		94	113	77	81	98	85	80	628

Source: Prepared by UTK

Graph 124: Number of safety inspections performed in 2012, divided into specific railway entities and UTK Field Departments, which handled actual inspection.



Source: Prepared by UTK

Inspections of infrastructure managers concerning safety and maintenance of railway crossings

In 2012, the UTK Chairman performed 22 inspections dedicated solely to issues of safety on railway crossings. It should be noted that supervisory activity concerning vehicle and pedestrian crossings at a railway level was realized during other supervisory activities, such as inspections of railway line segments or test drives. Most important discrepancies, found out during these supervisory activities, included the following:

- Improper maintenance and poor technical condition of railway-road crossings (poor condition of the railway surface, lack of, or limited visibility within the crossing);

- Failure to remove all occurring faults and irregularities, as specified in records
- of periodic diagnostic tests of the routes;
- Improper signalling on railway crossings, both on the roadway and the railway;
- Deficiencies in the duties to properly maintain coherent route documentation;
- Failure to update data on traffic product (as the railway infrastructure managers do not have access to current information on railway traffic intensity).

Inspections of infrastructure managers concerning the technical condition of railway line infrastructure

In 2012, 55 inspections focused on railway line infrastructure were performed. The most popular discrepancies include:

- Poor technical condition of track infrastructure and engineering structures;
- Failure to remove all occurring faults and irregularities by infrastructure managers, as specified in protocols from periodic diagnostic test of tracks, turnouts, railway substructures, engineering structures;
- Failure to remove faults in turnouts by infrastructure managers (exchange of turnout components) detected during technical examinations of said turnouts.

Inspections of infrastructure managers concerning interlocking devices

In terms of interlocking device maintenance, the President of UTK performed 31 inspections in 2012. The most numerous discrepancies discovered during these inspections were:

- Poor technical condition of railway traffic interlocking devices, which forced trains onto non-organized routers.
- Poor technical condition or improper operation of railway interlocking devices;
- Failure to conform to procedures concerning the use and technical maintenance of railway interlocking devices and crossing traffic safety equipment, in terms of e.g. obtaining a permit for works on active devices.
- Failure to remove all occurring faults and irregularities specified in protocols from periodic diagnostic test of railway interlocking devices, and the failure to promptly remove any faults discovered by the operating personnel;
- The high level of wear of interlocking devices, resulting in the necessity to run railway traffic by reporting train movements by telephone and/or using non-organized routes in the long-term (even for several years); and in the scope of operation of railway interlocking devices;
- Lack of or improper records in the technical and operational documentation.

Inspections of railway carriers concerning railway vehicles

Inspections of railway vehicles carried out by the President of UTK were performed, in various scopes, during most other inspection activities against railway carriers, including inspection of compliance with passenger's rights. During inspection of this area, the most prominent discrepancies found were:

- Inimproper maintenance of railway vehicle maintenance;

- Outdated or missing Maintenance System Documentation (MSD) concerning railway vehicles;

- Performance of the maintenance process is incoherent with the owned Maintenance System Documentation.

Inspection of carriers and infrastructure managers in the scope of Safety Management Systems

In 2012, the President of UTK performed 14 inspections of railway managers and carriers in terms of implementation of a Safety Management System. The most prominent discrepancies found were:

- Not implemented procedures for the Safety Management System;
- Incomplete provisions in the Safety Management Systems procedures;
- Failure to implement organization changes in the documentation of the Safety Management System.

Supervision of railway personnel qualifications

In 2012, a total of 477 examination committees were established in the year 2012. In 2012, the URK Chairman appointed 190 and recalled 78 examination committees. Detailed information in this scope is presented in the table below. The information on performed supervisory tasks concerning train driver training, based on the implemented regulations of European law, is presented in the table below.

Tab. 32: Number of examination committees established by Directors of UTK Field Departments in 2012.

No.	NUMBER OF EXAMINATION COMMITTEES	FIELD DEPARTMENT						TOTAL	
		TO2	TO3	TO4	TO5	TO6	TO7		
1.	number of established committees	9	2	78	66	9	15	11	190
2.	number of recalled committees	8	0	0	40	1	23	6	78
NUMBER OF COMMITTEES ACTIVE AS OF THE END OF 2012		43	29	78	82	69	121	55	477

Source: Prepared by UTK

Tab. 33: Supervision of entities authorized to train and test people applying for a train driver's licence and certificate in 2012

No.	EDUCATIONAL ENTITY	NUMBER OF INSPECTIONS
1.	CS Szkolenie i Doradztwo	1
2.	Centrum Kształcenia i Doskonalenia Szkolenie Kadr Kolejowych S.C.	1
3.	„Przewozy Regionalne” Sp. z o.o.	1
4.	„ATTYKA” sp. z o.o.	1
5.	Niepubliczna Placówka Kształcenia Ustawicznego Hagans Logistic	1
6.	CARGO Master Sp. z o.o.	1
7.	PKP CARGO S.A.	1
8.	Centrum Kształcenia Ustawicznego Samorządu Województwa Łódzkiego w Łodzi	1
9.	Arriva RP Sp. z o.o.	1
10.	„PKP Intercity” S.A.	1
11.	BKHW Logistic	1
12.	Usługi Szkoleniowo-Handlowe JB Józefa Boczkowska	1
13.	„Koleje Mazowieckie-KM” Sp. z o.o.	1
14.	Rail Services Europe Sp. z o.o.	1
TOTAL		14

Source: Prepared by UTK

All entities active on the market were inspected, mainly for compliance with the requirements of Annex 6 of the Regulation of the Minister of Infrastructure of February 18, 2011 on train driver licences (Dz.U. [OJ] of 2011, issue 66, item. 346 as amended), including conditions on the premises, educational staff and course flow.

Furthermore, the President of UTK supervises the examinations performed by the examination committees established at infrastructure managers, railway carriers and training entities.

In addition, in 2012 the President of UTK inspected a single entity authorized to perform medical examinations and establish whether a person fulfils the physical, medical and psychological criteria for receiving and/or revalidating a railway driver license – Portowa Przychodnia Zdrowia przy spółce PUS PORTUS sp. z o.o.

Detailed supervisory activities of the President of UTK, undertaken in connection to the serious accident on the Sprowa – Starzyny route

Due to the serious accident, which occurred on March 3, 2012 on the Sprowa – Starzyny route, railway line No. 64 between Kozłów — Koniecpol, a special inspection was carried out to check whether the infrastructure manager PKP PLK S.A. and railway carriers „PKP INTERCITY” S.A. and „Przewozy Regionalne” sp. z o.o. properly performed their duties in terms of railway traffic safety.

In the scope cornering the infrastructure manager, each railway centre within the operational area of each UTK Field Department was inspected, with 33 stations and posts in total. Main conclusions from these inspections are as follows:

- In terms of up-to-datedness and correctness of technical regulations for railway stations, the inspection revealed a considerable number of faults were found, with 9 cases of out of date regulations per 33 inspected stations and branch posts. The aforementioned is testament to inadequate supervision of basic documentation governing the rules of railway traffic on stations and adjacent routes, both from the Facilities and the Central station.
- In terms of compatibility of precincts with technical regulations of the station, only one non-compliance was found, on the Szydłowiec station;
- In terms of adherence to the rules of appropriate railway traffic guidance on switching stations, irregularities were found on 5 stations and posts. In terms of irregularities concerning the Trzebinia station, the President of UTK gave an order, which limits the speed of trains in its vicinity;
- In terms of introducing and limiting railway traffic as a result of improper operation of interlocking devices, failures of such devices were found on 20 stations out of 33 inspected facilities between January 1, 2012 and March 13, 2012, which amounts to 60% of inspected stations and branch posts. Therefore, the technical condition of interlocking devices on the inspected posts was barely adequate. However, the inspection did not reveal any irregularities in the procedures for introduction and use of limits during ongoing failure of railway interlocking devices;

Characteristics of supervision realized by the President of UTK in 2012.

- In the scope of supervising and control system of the railway infrastructure managers over its employees on traffic posts located on seven stations and branch posts, irregularities were found in 21% of 33 inspected facilities, in the form of inadequate number of inspections performed by the manager and their unsatisfactory level of thoroughnesses.

All facilities of PKP INTERCITY S.A. were inspected. Main irregularities included:

- In the scope of inter-train radio communication and automatic train braking, faults and irregularities were found in two facilities;
- In the scope of adherence to maximum work times of track teams in given settlement periods of two facilities – faults and discrepancies were found in 50% of cases.
- In the scope of implementation of safety recommendations of the Chairman
- of the National Railway Accident Analysis Committee, discrepancies were found in one inspected facility. The Southern Facility has not introduced the recommendations of the NRAAC, due to the lack of a written notification from the company's headquarters.

Furthermore, inspections were made in 4 facilities of Przewozy Regionalne Sp. z o.o., and revealed the following discrepancies:

- In the scope of inter-train radio communication and automatic train braking, faults and irregularities were found in two facilities;
- In the scope of adherence to maximum work times of track teams in given settlement periods of two facilities, faults and discrepancies were found.

Supervision of preparations and handing the UEFA EURO 2012 Europe Football Championships

As a result of Poland co-hosting the EURO 2012 Football Championship,

the President of UTK intensified in 2012 his supervisory activities, to ensure that the railway system can transport football fans arriving to Poland to see the Championships in an effective and safe manner. Inspections related to EURO 2012 included a number of aspects, concerning, among other things, the assurance of procedures in emergency situations, and the transportation of dangerous materials during the championships.

In total, **89 inspections** were conducted in connection to the EURO 2012 Championship, revealing 263 discrepancies. Statistical data concerning inspections related to safety during EURO 2012 is presented in the table and figures below.

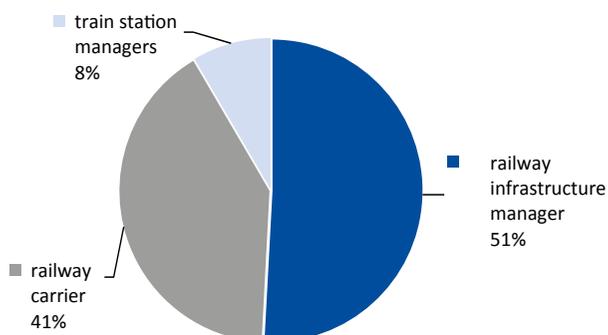
In addition, it should be noted that during the EURO 2012 Championships, the President of UTK, within the scope of his monitoring and supervisory works, has also performed tasks aiming at increasing the quality of passenger transport during the championship.

Tab. 34: Number of safety inspections realized by the President of UTK during the 2012 Football Championships

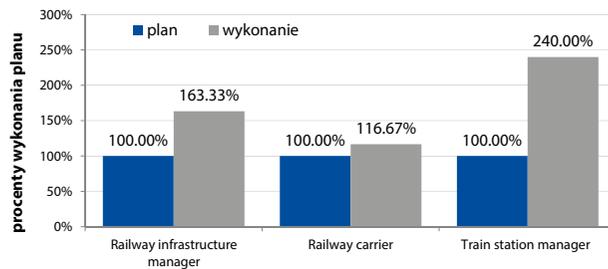
No.	RAILWAY ENTITY	NUMBER OF INSPECTIONS PERFORMED ACCORDING TO SCHEDULE		NUMBER OF ADDITIONAL INSPECTIONS
		planned	wykonanie	
1.	railway infrastructure manager	30	100%	19
2.	railway carrier	24	100%	4
3.	train station manager	5	100%	7
TOTAL		59	100%	30

Source: Prepared by UTK

Graph 125: Number of safety inspections realized by the President of UTK during the 2012 Football Championships



Source: Prepared by UTK

Graph 126: Performance of the safety inspection plan related to EURO 2012

Source: Prepared by UTK

11.3. Supervision summary

Amongst key conclusions in terms supervision, one should note that the inspections of implementation of Safety Management Systems have shown that said systems were not implemented in practice either in their entirety or in a critical scope, by railway carriers and railway infrastructure managers who were tasked with doing so. In the new approach to organization of safety within the railway sector, stemming from EU regulations, Safety Management Systems play a critical role. Furthermore, it should be noted that the issue of management systems as primary safety tools is a new one in Poland, and most entities has had no sufficient prior experience with these systems.

In addition to the discovered systemic problem related to the practical use of SMS in everyday operations of enterprises, the inspections performed by the President of UTK in 2012 allowed for the specification of the following high-risk areas:

- Improper operation of interlocking devices, resultant in the necessity to direct railway traffic on well-organized routes, and the actions of personnel in these situations;
- Improper operation of railway interlocking devices – and the actions of personnel in these situations;
- Long-term (sometimes lasting even several years) faults of the infrastructure;
- Railway crossings;
- Adherence of railway carriers and infrastructure managers to the Maintenance System Documentation concerning the owned railway vehicles.

The aforementioned areas should be included in supervisory tasks in subsequent periods of action, and where reasonable, coordinated and managed from the UTK headquarters.

Due to the poor quality of the infrastructure, regular test runs should be performed on selected line segments, along with verification whether the infrastructure managers adopt a systemic approach to identification and minimization of existing risks. In subsequent period, more focus should also be put on verifying whether the guidelines are being implemented.





12. Summary and observation

Regardless of the problems within the entire scope of activities performed by the President of UTK as a national safety authority, as identified in this document, including systemic problems related to low awareness and inadequate implementation of new, European safety requirements, the safety level of the national railway sector is systematically improving, both in terms of the number of recorded events and the number of fatalities/serious injuries.

Within the total number of 719 accidents occurring within the railway system in 2012, events involving only the entities of a railway sector amounted to only 21% (148) occurrences. These events resulted in the deaths of 16 people and serious injuries of 63 people, with most of these casualties being the result of one tragic event near Szczekociny.

An overwhelming majority of events (79%, or 571 occurrences) involve an entity external

to the railway system, including in particular any persons, who were present within the railway area without authorization, persons on railway and road crossings, as well as persons intentionally acting against the railway system. These events resulted in the deaths of 260 people and serious injuries of 125 people. In comparison, each day an average of 9.8 persons die and 125.4 persons are injured on Polish roads.

From the perspective of the railway system, counteracting events generated by unauthorized persons and railway crossing users is extremely difficult, as the railways have little power to influence the behaviour of these entities. The most effective solution, albeit the most expensive, would be to convert crossings into two-level intersections, thus completely eliminating the risk of accident. Such risk can also be decreased by modernizing railway crossings through the installation of modern equipment and increasing their classification category.

In this context, it should be noted that in accordance with the Polish law, responsibility of the maintenance of railway crossings lies solely with railway infrastructure managers. This regulation is not perfect in light of the fact that the great majority of accidents is caused by road users. Therefore, it seems prudent to undertake actions aimed at establishing a just division of obligations and costs for maintenance of railway crossings, so that

road managers would be included in the effort to ensure safety on railway crossings, and bear costs in relation to this effort.

Police also play a significant role in ensuring safety on railway crossings, as increased monitoring of the most dangerous railway crossings would help discipline its users. In addition, an interesting idea to build social awareness of the problem, would be to mark particularly dangerous crossings, providing the number of fatalities and serious injuries.

The first analytical efforts performed by the President of UTK on the basis of external information have also shown a worrying scale of hooliganery (such as theft and destruction of railway safety equipment, placement of obstacles on the tracks, pelting of railway vehicles with objects, and unauthorized use of the "Radiostop" system). The situation in this context is worsened by the low detectability of these acts and their classification by law enforcement, which does not take into account actual dangers of such acts to the safety of the railway system.

