

# THE COMPARISON OF COST REGIONAL PASSENGER TRANSPORTATION IN LITHUANIA RAILWAY AND ROAD TRANSPORT

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The railway and road transport are rival in the regional passenger transportation of the country.

The cost is a general index of passenger transportation. So, this article deals with the cost of the regional passenger transportation in the railway and road transport.

The cost is comparable to 1 passenger kilometres, according to train types and according to expense elements. There are described the factors influenced to the cost transportation in the every transport means in the given study.

**Keywords:** *regional passenger transportation, railways and roads transport, train, bus, cost, route*

## 1. Introduction

During the latter thirteen years the tariffs of local passenger railway transport have been constantly growing – if on 1 July 1993 the tariff was 1.6 Lithuanian cents (ct) per passenger/kilometre, so on 5 December 1999 it reached already 10 ct, and from 1 October 2006 it already grew to 20 ct at the 3rd class carriage and to 23 ct at the 2nd class carriage (with distance-related reduction).

The cost of long-distance passenger transportation by bus depends on the route, passenger flows at the route, bus type, and bus deterioration, salaries of drivers at the enterprise, fuel costs and other factors. Opinion polls showed that the cost of *1 bus/kilometre on long-distance routes fluctuates from 1.09 to 2.64 Lit (Lt)*.

## 2. Comparison of Tariffs of Passenger Transportation in Lithuania by Rail and by Road

The policy of costs has a direct influence on passenger flows, as the passenger transportation market is very sensitive to the proposed cost of service. Due to the increased tariffs of railway transport on 1st October, 2006, the passenger flows in June 2007, if compared with June 2006, decreased in certain sections from 14 % (Vilnius–Kaunas section) even up to 30 % (Vilnius–Kena and Radviliskis–Klaipeda sections).

If *in railway transport local tariff is applied on the whole territory of Lithuania* (except international trains), so *in road transport there are two tariffs – local/suburban* (related to the transportation on the territory of one municipality, and in certain cases on the territories of two adjacent municipalities) and *long-distance transportation tariff* (related to transportation on the territories of more than two municipalities).

The tariff of long-distance passenger transportation by regular routes in road transport has also been growing:

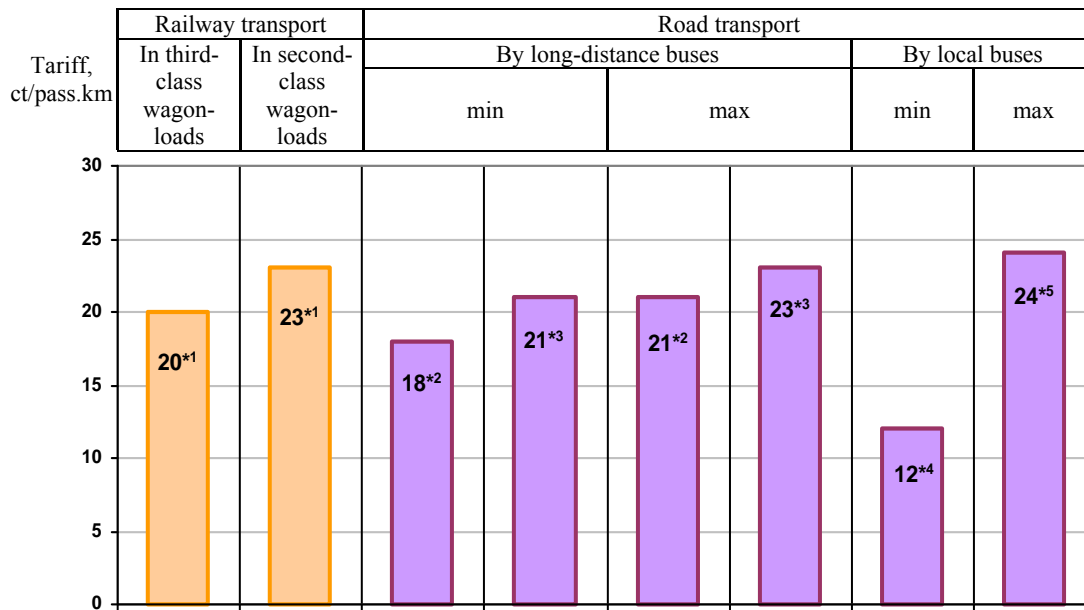
– In 1997 m. the tariff of long-distance passenger transportation by coach buses made 10 ct per passenger/km, in 2000 – 12.5 ct (with further reduction according to the distance of transportation), and on 2nd August, 2007 the tariff grew up to 21-23 ct (comparing with 1997 it grew by 2.1-2.3 times);

– In 1997 m. the tariff of long-distance transportation by buses with hard seats was 8 ct per passenger/km, in 2000 it grew up to 12.5 ct (with further distance-related reduction), and on 2nd August, 2007 the tariff grew to 18-21 ct (comparing with 1997 it grew by 2.25-2.63 times).

In 2000 the least tariff of local passenger transportation by road (suburban routes) was in Siauliai – 11 ct per passenger/km; however the highest tariff was in Pasvalys – 18 ct. The least tariff in 2007 was in Vilnius district – 12 ct (it grew only by 1.09 times, if compared with the year 2000); the highest tariff then was in Kretinga district – 24 ct (it grew by 1.33 times, if compared with 2000). It should be noted that in 2007, in many districts the maximum tariff made 18 ct (as much as it was in Pasvalys in 2000), and in other districts it was even less considerable – 15-17 ct (Klaipeda, Siauliai, Panevezys, Kedainiai, Rokiskis).

It should be also noted that the tariff of local passenger transportation by railway routes in 2000 was less than the local passenger transportation by long-distance buses (respectively 10 ct and 12.5 ct per passenger/km) and also less than local/suburban passenger transportation by bus (relatively 10 ct and 11–18 ct per passenger/km).

The comparison of tariffs of passenger transportation by railway transport and by road transport is presented on Figure 1.



**Remark:** \*<sup>1</sup> – reduction by drive distance;  
 \*<sup>2</sup> – by buses with hard seats (without VAT);  
 \*<sup>3</sup> – by buses with soft seats (without VAT);  
 \*<sup>4</sup> – in Vilnius region;  
 \*<sup>5</sup> – in Kretinga region.

Figure 1. The comparison of tariffs at passenger transportation by road and railway, ct/pass.km

- It should be noted that in 2007 passenger transportation tariffs for longer distances were similar both in road and railway transport:
- In railway transport the local transportation tariff at 3rd class carriages is 20 ct per passenger/km (with distance-related reduction), and in long-distance road transportation by simple type buses the tariff fluctuates between 18 ct and 21 ct;
- In railway transport the local transportation tariff at the 2nd class carriage is 23 ct per passenger/km (with distance-related reduction), and in road transport the tariff of long-distance transportation by coach buses fluctuates between 21 ct and 23 ct.

### 3. Comparison of Passenger Transportation Cost in Road and Railway Transport

The cost of local passenger transportation has considerably increased within the period of 2000-2002 – it grew from 33.36 ct per 1 passenger/km to 48.922 ct, i.e. by 1.47 times. In 2004 the cost decreased and made 47.118 ct, and in 2006 it grew insignificantly – to 49.177 ct. During the period of 2002–2006 the cost grew only by 0.5 %. **So it can be stated that during the period of 2002-2006 the Lithuanian Railways managed to stabilise the transportation cost of 1 passenger/km.**

It is reasonable to review the components of local transportation cost formation according to the elements of costs.

The most considerable part of cost in local passenger transportation consists of salaries; however within the period of 2000 to 2006 their share receded from 40.2 % to 27.4 %. **Nevertheless, amortization accountancy has considerably increased – during the mentioned period it increased from 16.5 % to 21.7 % and makes the second largest part of the cost.**

The third largest part of the cost consists of miscellaneous expenses – their share grew from 4.3 % to 15.2 %. The fourth largest part is the fuel – its share decreased from 15.3 % to 10.1 %.

Aging rolling-stock raised the capital repair costs – their share in the cost grew from 2.3 % to 9.3 %. Social insurance share is also large – it has increased from 12.6 % to 15.2 %.

**It should be noted that high infrastructure charges are characteristic to railway transport. One third of the cost in passenger transportation belongs to infrastructure costs, which influences the transportation cost, while in road transport there are no infrastructure charges for carriers.**

The opinion poll carried out by the authors at various enterprises showed that the cost of long-distance passenger transportation by bus depends on the route, the passenger flow on the route, the bus type and its deterioration degree, drivers' salaries at companies, fuel costs and other factors. *The poll demonstrated that the cost of 1 kilometre on long-distance bus routes fluctuates from 1.09 to 2.64 Lt.*

The largest share of passenger transportation by long-distance buses belongs to the amount of fuel – even 27.4 %, then goes the amount of salaries – 16.7 %, in the third place is the degree of bus deterioration – 12.3 %, indirect production costs – 10.9%, general and administrative costs – 9.9 %, spare parts – 7.1 %, social insurance instalments – 4.5 %, etc. (according to the data of one of the largest national passenger transportation company).

## Conclusions

1. The cost of local passenger transportation has considerably increased within the period of 2000-2002 – it grew from 33.36 ct per 1 passenger/km to 48.922 ct, i.e. by 1.47 times. In 2004 the cost decreased and made 47.118 ct, and in 2006 it grew insignificantly – to 49.177 ct. During the period of 2002-2006 the cost grew only by 0.5 %. So it can be stated that during the period of 2002-2006 the Lithuanian Railways managed to stabilise the transportation cost of 1 passenger/km.

2. The most considerable part of cost in local passenger transportation consists of salaries; however within the period of 2000 to 2006 their share receded from 40.2 % to 27.4 %. Nevertheless, amortization accountancy has considerably increased – during the mentioned period it increased from 16.5 % to 21.7 % and made the second largest part of the cost.

3. The cost of long-distance passenger transportation by bus depends on the route, the passenger flow on the route, the bus type and its deterioration degree, drivers' salaries at companies, fuel costs and other factors. The poll demonstrated that the cost of 1 kilometre on long-distance bus routes fluctuates from 1.09 to 2.64 Lt.

4. It should be noted that railway transport requires large infrastructure charges. One third of the cost of passenger transportation by rail consists of infrastructure costs, thus causing the increase of transportation cost, while in road transport there are no infrastructure charges for carriers.

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