

# Statistical survey of road freight transport performance indicators

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**Abstract** This paper deals with the statistical survey of road freight transport performance indicators in the Slovak Republic and Europe. The aim is to point out disagreements in statistical data. The data will be compared in the databases of the Statistical Office of the Slovak Republic and Eurostat databases. These disagreements concern performance indicators for road freight and transport of passengers. The first part of the article describes the role of the Statistical Office of the Slovak Republic and Eurostat. Further, the survey data is shown. In the middle part there are disagreements in the statistics. At the end of the article are explained problems with collecting data from road freight transport companies.

**Keywords** statistical survey, road freight transport, transport of goods

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## 1. Introduction

Transport is one of the key sectors that have a significant impact on socio-economic development and the growth of living standards. It is also necessary to measure and express certain indicators to measure the market situation and possibly to anticipate developments.

Measuring performance in transport, whether costly or personal, is an important factor in gaining a picture of the transport market. We should not forget to monitor the development of costs and prices in transport. Nevertheless, Regulation (EC) No 1071/2009 of 21 October 2009 shows that statistics on transport costs and prices need to be monitored, the Statistical Office of the Slovak Republic does not provide this information. The objective of this Regulation is also to establish common rules applicable to market access in the international carriage of goods by road in the EU and the conditions under which non-EU carriers may operate transport services in that country.

## 2. Transport Performance Measurement of the Statistical Office of the SR and the Statistical Office of the European Union

### 2.1. Performance indicators monitored by the Statistical Office of the Slovak Republic

According to the Statistical Office of the Slovak Republic, the transport activities of persons engaged in the transport of goods and persons in national and international transport, including auxiliary transport activities (excluding travel agencies), are included in the transport. Other land transport includes road transport, urban public transport and taxis.

Statistical Office of the Slovak Republic monitors these indicators:

- transport of goods,
- performances,
- passengers-kilometres.

More detailed information concerning the calculation of the distribution of these indicators is available at the Statistical Office of the Slovak Republic > Statistics > Sector Statistics > Transport and Postal Services > Methodological Explanatory Notes - selected data.

Table 1 shows the road freight traffic indicators monitored by the Slovak Statistical Office

**Table 1.** Indicators of road freight transport monitored by the Statistical Office of the Slovak Republic

<b>Transport of goods / Performances</b>	<i>transport of goods for own account and hire account together</i>	thous. tons / mil. tkm
	<i>of which: national transport</i>	
	<i>import</i>	
	<i>export</i>	
	<i>cross trade transport</i>	
	<i>international cabotage</i>	

## 2.2. Performance indicators in road transport monitored by Statistical Office of the European Union

The aim of Regulation (EU) No 70/2012 with recast version of Council Regulation (EC) 1172/98 of 25 May 1998 and the subsequent changes are to consolidate the legal basis for the collection of road transport data and align it with the Treaty of Lisbon.

This Regulation shall be binding in its entirety and directly applicable in all Member States. Member States shall compile statistical data relating to the following areas:

- vehicle, journey and goods.

In road freight transport are indicators divided to:

- **type of operation and type of transport** (1000 t, Mio Tkm, Mio Veh-km)
- **type of goods and type of transport** (1000 t, Mio Tkm)
- **transport by region of loading** (1000 t, Mio Tkm, 1000 Jrnys)
- **transport by region of unloading** (1000 t, Mio Tkm, 1000 Jrnys)
- **transport by distance class** (1000 t, Mio Tkm, Mio Veh-km, 1000 BTO)
- **transport by distance class with breakdown by type of goods** (1000 t, Mio Tkm, Mio Veh-km, 1000 BTO)
- **transport by axle configuration** (Mio tkm, Mio Veh-km, 1000 Jrnys)
- **transport, by age of vehicle** (Mio Tkm, Mio Veh-km, 1000 Jrnys)
- **transport by maximum permissible laden weight of vehicle** (Mio Tkm, Mio Veh-km, 1000 Jrnys)
- **transport by NACE Rev. 2** (Mio tkm, Mio Veh-km, 1000 Jrnys)
- **transport vehicle movements, loaded and empty, by reporting country** (Mio Veh-km, 1000 Jrnys)
- **transport of dangerous goods, by type of dangerous goods and broken down by activity** (Mio Tkm, Mio Veh-km, 1000 BTO)
- **transport by type of cargo and distance class** (1 000 t, Mio tkm, Mio Veh-km, 1000 BTO)

More detailed information on the collection of these data, vehicle variables, driving, goods is contained in EC Regulation no. No 70/2012 of the European Parliament and of the Council of 18 January 2012 on statistical returns in respect of the carriage of goods by road.

## 2.3. Comparison of statistical data on road freight traffic between Statistical Office of the European Union and the Statistical Office of the Slovak Republic

During comparison categories, it was found that data from Eurostat and the Statistical Office of the Slovak Republic corresponded to the categories listed in Table 2.

**Table 2.** Appropriate categories of identified indicators

Category		Unit
Statistical Office of the European Union	Statistical Office of the Slovak Republic	
total transport	transport of goods for own account and hire account together	thous.tons / mil.tkm
loaded vehicle - national transport	of which: national transport	
freight transport - goods unloaded in reporting country	import	
freight transport - goods loaded in reporting country	export	
cross trade transport	cross trade transport	
Road cabotage transport	international cabotage	

In the further examination of the categories, it was found that Eurostat has data on the Slovak Republic in the category "International transport - loaded vehicles together", which the SR does not provide. This category consists of the categories - import, export, cross trade transport and cabotage.

Furthermore, Eurostat has the categories: no-loaded vehicles together, no-loaded vehicles - domestic transport and no-loaded vehicles - international transport together. There is no data about Slovak Republic in these categories.

For the appropriate categories was made statistical comparisons were also made where differences were found.

**Table 3.** Differences in statistical data on road freight

	Category	Average difference [%]
<b>Transport of goods</b> [thous. tons]	<i>transport of goods for own account and hire account together</i>	<b>0,087</b>
	<i>of which: national transport</i>	<b>0,0153</b>
	<i>import</i>	<b>1,8334</b>
	<i>export</i>	<b>0,6914</b>
	<i>cross trade transport</i>	<b>0,6459</b>
	<i>international cabotage</i>	<b>7,9319</b>
<b>Performances</b> [mil. tkm]	<i>transport of goods for own account and hire account together</i>	<b>0,3998</b>
	<i>of which: national transport</i>	<b>0,3666</b>
	<i>import</i>	<b>1,739</b>
	<i>export</i>	<b>0,9649</b>
	<i>cross trade transport</i>	<b>0,433</b>
	<i>international cabotage</i>	<b>16,446</b>

In table 3 are the average differences (expressed in absolute value) for each category separately. The average differences were calculated for the period from 2004 to 2015,

where the basis for comparison was data from Statistical Office of the Slovak Republic. The most significant differences are in the category of international cabotage, up to 7.9319% in the freight transport (thousand tons) and 16.45% in the freight transport performance (mil. tkm). The smallest differences are in the category domestic transport of goods (thousand tons), namely 0.0153%.

Differences in personal transport data were also investigated, where differences were also found. However, due to the limited number of pages, it is not possible to publish this data.

#### 2.4. Performance tracking in road transport companies

The Statistical Office of the Slovak Republic performs statistical surveys to obtain information on the state and development of the economy and society of the Slovak Republic and for international comparisons.

The reporting obligation to fill in the statistical form results from the transport company from § 18 of Act 540/2001 Coll. on State Statistics as amended. If the transport undertaking did not carry out any activity or did not carry out the activity covered by this statistical survey during the reference period, it shall submit a report filled in by the available data.

In the case of statistical surveys, the selection of intelligence units is divided into two groups. The first are the intelligence units (transport companies) with the number of employees max. 19 and the second group are companies with a number of 20 or more employees. For the first group (up to 19 employees), a sample survey is conducted, with a sample of about 600 to 700 organizations. For statistical units with a staff of 20 or more, exhaustive surveys are under way (approximately 600 organizations). These sample organizations are selected from the registry of statistical units, which is available to the Statistical Office of the Slovak Republic in Bratislava. Furthermore, this collection of selected organizations is sent to the statistical office of the Slovak Republic in Zilina (Department of Transport Statistics). The Transport Statistics Department is tasked with sending individual reports to selected statistical units and then evaluating them.

The Transport Statistics Department sends these reports to selected statistical units:

- annual report of transport,
- monthly report of transport,
- weekly report of the operation of a road motor vehicle.

The reporting agents are required to complete this report each month and send it no later than the 17th day of the following month.

##### *Annual report of transport*

The annual report on transport mainly identifies the following:

- public and non-public road transport, domestic and international road transport,
- transport by type of goods, import and export, transport of dangerous goods, transport performance.

##### *Monthly report of transport*

Because of the scope of the article, it is not possible to list all the data. Template of this report is on the website of the Statistical Office of Slovak Republic in the section metadata / industry statistics / transport and postal services / monthly transport report

##### *Weekly report of the operation of a road motor vehicle*

This weekly survey has been introduced in the EU since 1997. The sample is made up by the operators of the vehicle to which the VEH is assigned and the payload of the vehicle is greater than 1 000 kg.

This sample consists of 250 vehicles per week. Monitoring and verifying the accuracy of data provided by statistical units is subject to internal controls. These are done when irregularities are found in the evaluation of reports. Subsequently, a check is in order to verify the accuracy of the data or to explain irregularities.

### 3. Problems related to collecting statistical data of road freight transport companies

After a meeting at the workplace of the Statistical Office of the Slovak Republic in Zilina with Ing. Eva Sopoušková, Head of Transport Statistics, has found that one of the main problems of statistical surveys in road haulage enterprises is news discipline.

In the past there was a situation where the carrier was willing to pay a fine for not complying with the obligation to fill in the statistical form (Section 18 of Act No. 540/2001 on State Statistics as amended) to provide data to the Office. The question arises as to the capacity of the Statistical Office of the Slovak Republic in Zilina to legally resolve these rejections.

Another problem mentioned was contacting respondents. Even though the carrier by Act No. 56/2012 on road transport implies the obligation to publish the transport rules at its website, there are still companies that do not even have this seat. There are also foreign companies that often do not have the contact information listed. Written calls sent by post are returned to the undelivered office. In this way, their activity can not be monitored.

The problematic aspect of the survey of transport statistics is foreign companies, which are based in the Slovak Republic, but their vehicles are still outside Slovakia because they are not even addressed by the SR.

A complicated part of the survey is that the SO SR does not contact persons who have a trade to run a foreign motor vehicle. Employees of the Statistical Office of the SR obtain data contacting the statutors of companies, who often fail to respond to the call to complete the transport report. This situation could be solved by contacting not the company's lawyer, but the transport manager, who may, under certain conditions, lose the license of transport. Under this threat, intelligence discipline may gradually improve.

Weaknesses in the acquisition of statistical data can also occur by the fact that the Statistical Office of the Slovak Republic monitors (distributes) the enterprises according to the number of employees. Office does not monitor the number of vehicle licenses operated in company. This may lead to a situation where a company falls into a group with fewer than 20 employees, but actually operates many more vehicles (for example 70 vehicles). This could be removed by linking multiple databases. The Single Road Transport Information System has a database of individual transport companies and licenses issued to them. If this information were interconnected with the database on the number of employees, it would be possible to eliminate the misstatement of reporting units in the above-mentioned statistical groups.

At present, the license to practice a road transport operator is currently issued by district offices at the headquarters of the county. These authorities verify all the conditions necessary for the granting of this authorization and thus have all the necessary information regarding the applicant. The communication of the Statistical Office of the Slovak Republic and the district authorities could help to remove the aforementioned problems.

#### 4. Conclusions

Tracking the transport market is a necessary step to make transport as such as better and more efficient. Currently regulates market access Regulation (EC) No 1071/2009 and Regulation (EC) No 1071/2009 of 21 October 2009. These regulations show not only that states are to monitor transport performance in the transport market, whether in passenger or freight transport, but also to monitor the development of costs and prices in transport.

Statistical survey of indicators in road freight transport is currently an important factor. Incorrect data can lead to inconsistencies. When selling a transport company, one of the important factors is also the market share of the company. If statistics are poor, this leads to further mistakes.

The statistical survey should be as accurate as possible and the results should give a real picture of the transport market.

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