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Overview of selected costs incurred in transport activity⁶

Introduction

Cost as a term is the use of tangible fixed assets, services and labour, which aims to provide relevant results by the selected study period. It is the use of physical and natural, which is expressed in monetary units [2].

All economic activities are inextricably linked, among others, with two economic concepts - the revenue and expense. The essence of business is to achieve a level of income that not only covered their costs, but provide the expected profit. Obtaining a positive financial result determined by the interaction of elements such as maximizing revenues and minimizing costs. This follows from the principle that in order to get profit from business activity, the costs should be kept at an appropriate level, and the revenue generated from the sale of higher than this. Expenses and revenues condition the business activity, if revenue growth is stronger than the dynamics of the cost. Therefore, the company is constantly striving to reduce costs [3].

The costs incurred by transport companies translate into unit cost of transport services provided. At the same time they provide a competitive carriers in the transport market. It is therefore necessary to take certain actions that focus on the control of the current business, reduce their costs and improve financial results [5].

Also, a systematic study of the average unit costs of truck road transport companies in Poland, conducted at the Institute of Road Transport [7], are of interest to many institutions. Research results are used for comparisons transport companies of their competitive position. Knowledge of the average cost of one kilometre course in different segments of the industry should be the basis for negotiating freight rates by carriers.

Also, the institutions responsible for transport policy in the country through various ranges of truck transport market monitoring, should have an appropriate understanding of the situation regarding the level and structure of transport costs, among others, having regard to the arguments and interests of Polish carriers.

Alongside its own costs incurred by companies involved in the wider transport function of the transport infrastructure costs and external costs. Depending on the specific modes of transport and organization of the market in transport infrastructure costs can also be part of the cost of their own, while the external costs of transport are not covered by an individual carrier, but are caused by the use of means of transport. External costs include costs [5]:

- related to accidents,

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⁶ Artykuł recenzowany.

- caused by noise,
- related to emission, including changes in the climate, nature and landscape,
- additional costs in urban areas,
- additional costs associated with energy production and transportation, and construction and maintenance of transport infrastructure.

In each accounting period (usually a year), there is a complex system of relationships between different types of transport expenses and disbursements and costs of the company. Transportation expenses are formed in the “transport services”. It should be understood by the realm of commercial provision of transport services. In this area during the tax period arise various expenses and expenditures that may be only partially included in the cost of their transportation. External costs of transport are determined outside the accounting system of the transport undertaking in accordance with tax regulations are not deductible business expenses [1].

The issue of optimizing the transport costs incurred as part of ongoing logistics processes is regarded as one of the toughest and most complex problems faced by the operators of the logistics industry. Therefore the importance of issues related to the transport costs for the primary objective of carriers in the long-term goal of maximizing profit, it becomes a very important element. The starting point for activities aimed at reducing the level of transport costs is to understand the complex nature of the multiple logistic systems linkages in supply chains [6].

The article presents selected costs associated to conducting transport business. Knowledge of these costs is essential to the proper management of the transport company.

Fuel costs

In addition to the costs incurred by transport companies analogous as in other areas of the economy, the cost are functioning which determine the cost-effectiveness of the provision of transport services and are closely connected with the ongoing tasks. Such costs include expenses related to the purchase of fuel, not just those directly incurred and visible, but hidden in the price of the propellant.

In a matter of running a transport fuel costs is important. It is estimated that the total costs of transport fuel cost share is nearly 50%. Thus, changes in prices in this area strongly determine the profitability of road transport and affect the level of costs incurred by businesses. It is worth emphasizing that the cost of carrying on transport activities in recent years showed an upward trend line with the increase in fuel prices.

Figures 1 and 2 show changes in fuel prices in recent years.

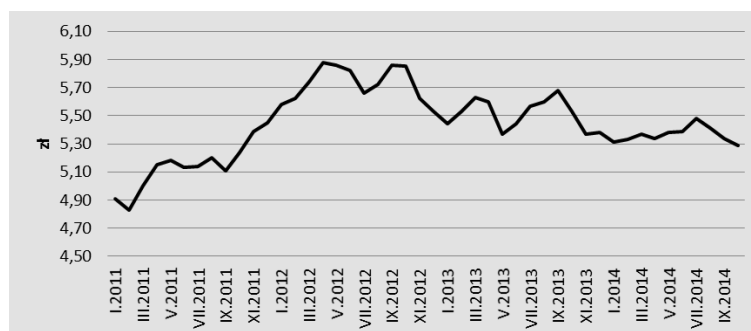


Fig. 1. The prices of 95 octane petrol in 2011-2014

Source: own on the base of GUS

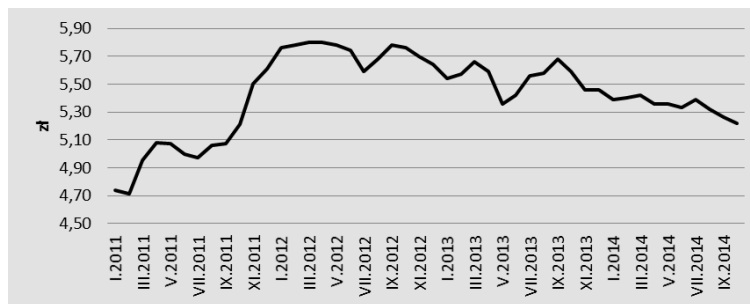


Fig. 2. Diesel prices in 2011-2014

Source: own on the base of GUS

In 2009-2011 fuel prices gradually increased from a level below 4 zł to almost 6 zł at the turn of the 1st and 2nd quarter of 2012. In the last months of 2014 the situation on the fuel market has stabilized.

Analysing the level of fuel prices, which translates into the amount of costs incurred by entrepreneurs involved in the transport industry, it is worth paying attention to the components of these prices. Figure 3 shows the share of individual elements that determine the amount of the fee per liter of fuel.

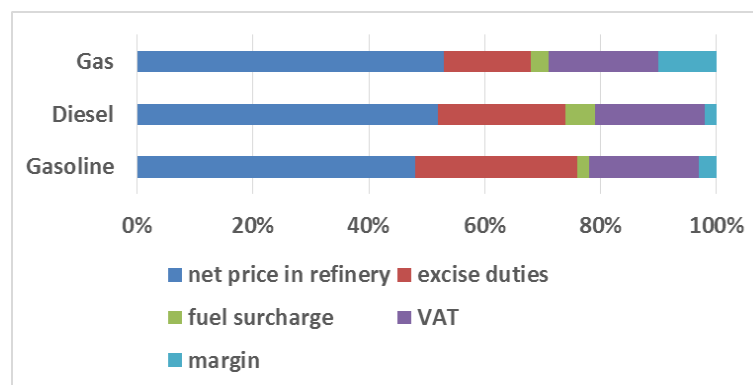


Fig. 3. Elements of fuel prices

Source: own on the base of http://www.popihn.pl/struktura_ceny_paliwa.php

The net cost of acquiring liters of fuel from the refinery and imposed margin a little more than 50% of the final price which shall be borne by the buyer. An important part in this price are VAT, excise duty and fuel charge.

Excise tax is an indirect tax imposed on some consumer goods. Excise duty is levied on goods in order to reduce their intake, or due to the high accumulation of profit – low production costs and high consumption. Formerly, excise tax was called tax of luxury, because they were covered by it, among others perfumes, furs and hunting weapons. Currently, excise duty is part of a policy aimed primarily at maximizing budget revenues. A great example of this is budget revenues from the excise tax on tobacco and fuel. It could be said that means flowing only from these two titles are the crucial element of the Polish budget. Another aspect related to the excise tax policy is the assumption that the tax cover products which, for various reasons (in addition to implementing the fiscal function) should be more expensive, for example due to climate policy (fuel, electricity), or health policy (alcohol, cigarettes).

The provisions of the tax system of the European Union requires the Member States on the structure and rates of excise duty on excisable goods, apply specified for individual products the minimum level of the tax. Member States may, however, always be established and applied on the basis of its own fiscal policy higher excise duty. These rates are expressed in:

- an amount per unit of product,
- a percentage of the tax base,
- percentage of maximum retail price,

- the amount per unit of product and percentage of maximum retail price.

The current taxes on certain excise goods are:

- gasoline – 1565.00 zł / 1.000 l,
- diesel – 1196.00 zł / 1.000 l,
- liquefied gas for combustion engines – 695.00 zł / 1.000 kg.

Another expense is fuel for a fuel surcharge. This fee was introduced by the act [10]. Motor fuels subject to the payment of a fee, ie., motor gasoline (CN codes 2710 11 45 and CN 210 11 49), diesel (CN code 2710 19 41), and gas and other products (natural wet gas). The funds obtained from this source are transferred in 80% of the National Road Fund and 20% to the National Railway Fund. The rates of fuel duty from 1 January 2015. Are for gasoline 129.41 zł / m³ for diesel 288.05 zł / m³ and for gas (LPG) 159.71 zł / m³.

Changes in the amount of fuel duty in the last years is shown in Table 1.

Table 1. The amount of fuel duty in 2009-2015 in Poland

Year	The amount of fuel duty zł/m ³	
	Gasoline	Diesel
2009	87,40	97,82
2010	92,87	233,99
2011	95,19	239,84
2012	99,19	249,92
2013	103,16	259,92
2014	104,20	262,52
2015	129,41	288,05

Source: own on the base of <http://www.e-petrol.pl/notowania/rynek-krajowy/stawki-oplat>

Dynamics of changes in the level of the fuel surcharge is generally insignificant. Most important, because more than two-fold increase of this charge was the diesel fuel in 2010.

Road tolls

An important element of the costs incurred by transport companies are tolls. Until June 30, 2011 in Poland apply the so-called vignettes - Toll card. Currently, the system of electronic toll – the so-called ViaToll.

This system works in microwave technology and is mandatory for all vehicles (and combinations of vehicles) with a maximum mass exceeding 3,5 tones and for buses with more than 9 seats. Electronic charge covers a network of national roads (or sections) of the following classes:

- A – highways,
- S – expressways,
- GP – the main road of accelerated movement,
- G – main roads.

A detailed list of roads and stretches of toll and fee rates in the electronic system includes a regulation [9]. Toll rates are presented in Table 2 and Table 3.

Table 2. Electronic charge a network of national roads of classes – A and S, or sections

Vehicle category	Electronic toll rate for driving 1 km of the national road (zł)			
	The vehicle classes in EUR, depending on the exhaust emission limits			
	max EURO 2	EURO 3	EURO 4	min EURO 5
Vehicles with a maximum mass exceeding 3,5 tonnes and less than 12 tons	0,40	0,35	0,28	0,20
Vehicles with a maximum mass at least 12 tonnes	0,53	0,46	0,37	0,27
Buses regardless of the maximum permissible weight	0,40	0,35	0,28	0,20

Source: <http://www.viatoll.pl/pl/pojazdy-ciezarowe/system-viatoll/stawki-oplat>

Table 3. Electronic charge a network of national roads of classes – G and GP, or sections

Vehicle category	Electronic toll rate for driving 1 km of the national road (zł)			
	The vehicle classes in EUR, depending on the exhaust emission limits			
	max EURO 2	EURO 3	EURO 4	min EURO 5
Vehicles with a maximum mass exceeding 3,5 tonnes and less than 12 tons	0,32	0,28	0,22	0,16
Vehicles with a maximum mass at least 12 tonnes	0,42	0,37	0,29	0,21
Buses regardless of the maximum permissible weight	0,32	0,28	0,22	0,16

Source: <http://www.viatoll.pl/pl/pojazdy-ciezarowe/system-viatoll/stawki-oplat>

Currently, the system viaToll does not include toll motorways managed by private concessionaires. An obstacle stood the problem of settlements stemming from the fact that on the highways concessions are separate kilometric calculation. Another is the classification of vehicles – categories are determined depending on the number of axles, and not permissible total weight and EURO emissions standards as it is viaToll system.

The Directive [8] identified two basic types of fees required:

- for use (access) the infrastructures,
- for tolls (depending on the number of kilometres).

Simultaneously directive [8] left the Member States free to choose the system of charges. Hence, in the EU there is a large variety of approaches to the implementation of EU legislation. Although in some countries they coexist two, or even three, forms of charging of vehicles engaged in transportation of goods, pointing to the dominant form of fees in the EU countries are charged according to the following systems [4]:

- no fees, Cyprus, Estonia, Finland, Latvia, Malta, United Kingdom. The use of the road network in these countries is generally free, although there are single road (UK) or road objects (tunnels, bridges) for which you need to bring charges;

- vignettes: Bulgaria, Lithuania, Romania, Hungary. Classic charges for access to infrastructure, valid for periods from one week to one year. The prices of vignettes depend mostly on vehicle mass and performed emissions standards by the vehicle. Increasingly, vignette stickers are being replaced by electronic vignettes;
- euro vignette: Belgium, Netherlands, Luxembourg, Denmark, Sweden. The euro vignette is the proper name of the single vignette system in force in the 5 countries of the EU. Buying euro vignette (at any point) authorizes to use of the road network in these countries. Price depends on the period for which it was purchased and the type of vehicle and EURO emissions standards;
- toll roads: Greece, Ireland, Slovenia. The amount of fees depends on the length of the road and run over the section. Using a toll road does not require any devices in a vehicle. Receivables can be adjusted both in cash and by using electronic instruments (depending on the country - credit cards, fuel cards and fleet);
- toll roads (optional e-myto): France, Spain, Italy. Electronic toll systems in these countries are voluntary and act as the option to pay their dues for the ride toll roads. Their advantage is no need to stop at toll booths and automatic clearance of payments to the different managers of the different roads;
- electronic payment (e-myto): Austria, Czech Republic, Germany, Poland, Portugal, Slovakia. In these countries, in the case of vehicles, the use of the electronic system is mandatory. On-board equipment communicate with the monitoring network, making known the actual number of kilometres travelled by the vehicle. The toll is calculated by multiplying the number of kilometres travelled and the rates per 1 kilometre. In the system of electronic toll kilometre rate is uniform throughout the network covered by the system, taking into account the diversity depending on the type of vehicle, its weight and emissions standards. That uniformity of kilometric toll system distinguishes the system of toll roads, where in various ways (or even sections) may be different rates (for the same vehicle), depending on individual calculation made by the manager of the road.

The introduction of electronic toll system in Poland caused a sharp rise in the costs of road transport.

However [4] shows that in comparison to other European electronic toll systems, Polish system does not seem to be particularly expensive. Polish kilometre rates are among the lowest in Central Europe, and the number of kilometres to be travelled possible for the amount of the average salary gives us second place in terms of the length of the route on the motorways and expressways and first on main roads for EURO5.

Other costs

In the case of transport companies, from the point of view of the financial burden important role play the remuneration for work. In this aspect important is accepted drivers employment system. Carriers may offer such forms of employment, as:

- the employment contract,
- contract of mandate,
- self-employment.

From the point of view of the employee most preferred is a form of the employment contract. In this case, drivers employee is entitled to all the rights and obligations of paying social security contributions and tax advances lays on the carrier.

With the self-employed drivers run their own business and self incur charges for income tax advances and regulate social security contributions. Whereas the carrier pays for their work on the basis of the invoice issued by the driver. Additionally, drivers can receive compensation for corporate travels. These receivables are called diets, the employers, the owners of transport companies (non-state entities or budgetary zone) may grant claims for the diet in any amount, but only up to the limit specified in the applicable regulations.

Another group are the costs of external services, or services obtained from outside. The most commonly purchased by transport companies include services:

- equipment,
- renovation,
- construction and assembly,
- telecommunications,
- bookkeeping,
- rental,
- lease and operating lease,
- municipal services.

The level of costs arising from the implementation of these services results generally negotiated the terms of contracts with their suppliers.

Transport companies also bring charges for air emissions so. environmental fee. The fee depends mainly on the amount of introduced pollutants into the air, and what's involved on the amount of spent fuel and emission standards of the vehicle. The rates of duty charges are specified in the relevant regulation in zł / ton. Hence the need to convert a quantity of liters of fuel consumed (given on invoices) to kilograms, using the density fuels. Conversion of spent fuel from volume per unit mass are:

- gasoline 0,755 kg / l,
- diesel 0,84 kg/l.

Among the costs incurred by transport companies are also property insurance related to transport activities in general, ie:

- liability,
- hull insurance,
- cargo insurance,
- civil liability of road transport,
- others.

Liability insurance is compulsory and covers civil liability of motor vehicle owners for damages arising out of the use of vehicles owned by them and damage incurred as a result of embarking or disembarking, loading and unloading, parking and garaging. Third party liability insurance contract is concluded for a period of 12 months, and the cost of such insurance depends on the engine capacity, type of vehicle (make, model) and age.

Other listed insurance is voluntary insurance, but often transport companies decide to purchase them due to providing adequate protection vehicle owner, user or fleet itself.

In addition, civil liability insurance of road transport is essential for the functioning of the market of transport services. The carrier is forced to take out this insurance, because according to the law he is responsible for the transport entrusted to his charge all its assets. In the absence of such insurance company will not get any orders.

Conclusion

Costs, fees and taxes are concepts without which it is difficult to imagine the occurrence of functioning in today's economic times, any company or institution. Also, in the case of transport companies these are the elements inevitably associated to conducting business or within Polish borders, the European Union or in other countries – the market so-called East.

Transport undertakings are obliged to bear the costs the same as other entities operating in Poland and in addition these costs and fees that are specific to this type of activity.

Operating costs of transport companies are closely linked to the level of liquid fuel charges and fluctuations in this market, as well as changes in exchange rates, strongly determine the level of its costs, as the share purchase costs of fuel is significant to the unit cost vehicle kilometre. Simultaneously fuel costs are heavily fiscalized ie. on the amount of fees for propellants, borne by transport companies are strongly influenced by taxes.

Analysing the transport costs should not be forget about the toll incurred in moving transport on public roads, costs of employing staff or insurance, which are an essential element to be taken into account in the budget transport company.

Abstract

The basis of business management, is knowledge about sources of revenue and the knowledge of cost drivers. This article is devoted to this second element, and so the cost that exist in the enterprise. Particular attention was paid to the costs incurred by the operators of the activities related to transport. Among these costs may be mentioned costs associated with the purchase of fuel, passing on public roads, employment of workers, insurance. Knowledge of these costs determines the correct management of a transport company. It also allows you to plan appropriate measures aimed at developing the company.

Przegląd wybranych kosztów ponoszonych w działalności transportowej

Streszczenie

Podstawą zarządzania przedsiębiorstwem, jest wiedza na temat źródeł pozyskiwania przychodów, jak i znajomość czynników kosztotwórczych. Niniejszy artykuł został poświęcony temu drugiemu elementowi, a więc kosztom, jakie w przedsiębiorstwie występują. Szczególną uwagę zwrócono na koszty jakie ponoszą podmioty gospodarcze prowadzące działalność związaną z transportem. Pośród tych kosztów można wymienić koszty związane z zakupem paliwa, przejazdem po drogach publicznych, zatrudnieniem pracowników, ubezpieczeniami. Znajomość tych kosztów warunkuje poprawne zarządzanie firmą transportową. Umożliwia również zaplanowanie odpowiednich działań mających na celu rozwój firmy.

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