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STUDY ABOUT THE ROAD TRANSPORTATION COSTS AND FISCALITY IN THE ROMANIAN COMPANIES

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The economic development of the European countries in the second half of the XXth century, and also the increase of commercial international exchanges, generated the transportation development in general, and especially the road transportation. The road transports knew an ascendant evolution due to their advantages: superior mobility; fast adaptability to every land conditions, without special investments; the capacity to complete the other modalities of transportation, in order to achieve the transportation chain; the only one type or transportation which can be done by self; the insurance of wares perishability, without require supplementary manipulations during the transportation. It's obvious that, there are also negative aspects like: pollution and supplementary fuel consumption. On the level of Romanian companies, transports rise problems related on their costs, the costs structure and the directions to make this activity profitable.The Romanian government established fiscal measures, in order to make the companies more responsible in the vehicles use and their efficient exploitation.

Keywords: transportation, vehicle, variable costs, fixed costs, fuel costs, drivers wage, maintenance and repairs
Jel Code: L91, O18, R40, R42

1. Introduction

The activity of road transportation includes the following elements: traffic ways, vehicles and transportation management.
Its advantages are:

- assures the wares transportation "door to door", without their deterioration or loss;
- accelerates the wares circulation, by using big commercial speeds;
- requires reduced investments, without expensive installations (like ports and airports);
- makes possible the transportation of a large range of products, especially perishable;
- requires reduced expenses regarding the roads use taxes, fuel, drivers allowances etc.;
- allows the wares loading at the place where they are, due to the vehicles access;
- it can be used in mixed transports.

In Romania, the road transportation development has been possible due to the following factors: existence and development of its own vehicles industry and the road network.

The EU agreement in the road transportation area, to which Romania joined, involves social, technical, fiscal, safety and environmental protection settlements. Among the most important, are those regarding: the possession of a driver license accepted by EU and the vehicles dimension and weight.

The application of these settlements in Romania, domain in which Romania has made significant progresses, is conditioned especially by the existence of financial resources. (Pascal, Deaconu, 2004)

Also, in the road transportation area, Romania must focus on the fiscal harmonization. If for settlements like: the taxation of heavy wares vehicles for using special infrastructures, or the application of settlements for the foreign transportation companies, the implementation was achieved, there are also measures for which Romania required a transition period (the establishment of a maximum dimension accepted in the national and international traffic and the maximum accepted weights in the international traffic for certain vehicles, until 31.12.2022).

Romania has also signed agreements and bilateral conventions which allow mutual facilities, like (Pascal, Deaconu, 2004):

- mutual exemption of taxes (with England and Turkey);

- mutual exemption of taxes for an established number of trips, based on authorization (with Switzerland, Holland, Denmark, Sweden, Finland);
- partial reduction of taxes for an established number of trips (with Austria, Belgium, France);
- granting of trips based on authorization, with the entire payment of taxes (with Italy).

For the national transportation of general wares, in Romania there are used only vehicles according to the law respecting the following conditions:

- they respect the safety standards;
- they are homologated;
- they are definitively or temporary registered in circulation;
- they have the periodic technical inspection made. (ARR)

The national vehicle park includes: the general use park, the local use park and the own use park.

The vehicle park organized in specialized unities has also advantages and lacks.

Advantages: the possibility of checking, maintenance and repairs, using performant devices; the satisfaction of transportation request in conditions of efficient vehicles and employees exploitation; the increase of employees qualification with less costs.

Lacks: high tariffs because the bureaucracy; the rigidity to the transportation request because of the established structure of the vehicle park, which can be diversified or renewed only in conditions of efficiency. (Caraiani, 1998)

2. The wares transportation elements inside the company

The transportation development, diversity and modernization, were determined by the production and trade spreading and diversification. The transportation is the activity which moves the goods from the place of their production to the place of their consumption on the internal and international market.

In the production area, by a good organization of transportation, it can realize the reduction of production cycle, the increase of rotation speed for the stocks, debts and cash, and the bettering of financial situation.

The company production is served not only by the internal transportation, but also by the external one, proving the importance of this activity.

The main transportation elements are: road and vehicle elements related by constructive and functional parameters.

The road determines not only the vehicles mobility, but their exploitation degree, also the organization of roads network determines the road transportation development.

In the road transportation process, three types of itineraries can be made: itinerary with load; itinerary without load and zero itinerary (from the garage to the loading place, or from the unloading place to the garage).

The run is made based on an established itinerary, which includes the road that the vehicle will cross between two points, considering the speed end stations on the road.

The itinerary is established considering: the roads lengths and their technical status; the traffic intensity and the road declinations.

The road transportation on the company level can be classified by:

- the load type (wares, luggage, post, passengers etc.);
- the development area: local, between localities, international;
- the place and number of manipulations: **direct**, **for gathering** (the loading is made successively from many lace, and the unloading, in only one place); **for distribution** (the loading is made in only one place and the unloading, successively, in many places); for **gathering and distribution** (mixes the two types). (Caraiani, 1998)

In terms of transportation, the main feature of roads is the circulation capacity.

The circulation capacity is calculated considering the nonuniform distribution of vehicles in space and time and represents the maximum number of vehicles which can cross them in both senses, during one hour.

This one can be calculated by many models, based on different calculation hypothesis like: to establish the circulation in time and space, the circulation speeds the probability of overtaking number, a certain structure of vehicles traffic etc.

The circulation capacity can be bettered through measures like:

- constructive measures: road elements projection in order to assure the good circulation, the localities avoidance, the crossings arrangement; the increase of traffic lanes number, the passages avoidance etc.;

- exploitation measures: the station settlement at rush hours, the circulation limitation for heavy vehicles; the gas stations arrangement etc.

A negative influence for the circulation capacity there has:

- the reduced breadth of traffic lanes, the less visibility degree, the percentage of heavy vehicles in the traffic etc.

Directly related on the circulation capacity, is the transportation capacity.

The transportation capacity of roads represents the maximum volume of transportation, measured in conventional tones, which can be transported during one hour, in only one sense of circulation. (Caraiani, 1998)

The increase ways of transportation capacity are:

- increase of traffic lanes number;
- rationalization of circulation in crossing places;
- reduction of waiting times;
- bettering of technical status roads, in order to allow bigger circulation speeds.

It depends on the vehicle types and transportation capacity:

$$C_t = C_c \times q_m \text{, where}$$

C_c – circulation capacity
q_m – average number of tones transported by a vehicle
In the wares transportation, the vehicles circuit is organized according to the following elements:

1. The total transportation time

$$T_t = t_m + t_{id} + t_{as} + t_s \text{, where}$$

t_m – run time
t_{id} – loading – unloading time
t_{as} – preparing and waiting time
t_s – station time (technical reasons, driver rest etc.)

2. The total quantity of transported ware

$$Q = \sum_{i=1}^{n} q_{mi} \text{, where}$$

n – number of runs
q_{mi} – the wares quantity transported in each run

3. The transportation cycle

The company can choose one of the following run types: (Caraiani, 1998)

a. the swinging run – repeats the movement between two fixed points of loading and unloading, determined by a certain traffic current;
b. the ring run – the vehicles move between many points of loading and unloading, in order to form a circle;
c. the radial run – the same vehicle moves between the same loading (unloading) point and many unloading (loading) points;
d. the gathering run – the same vehicle moves between more successive loading points and only one unloading point;
e. the distribution run – the same vehicle moves between only one loading point and many unloading points.

In the itinerary organization, there are considered many elements like: traffic quantity (tones); traffic current (the quantity transported in one sense, in an hour): traffic performance (the volume of wares itinerary on an established road, in an hour); uneven running, as a rapport between the maximum volume to transport and the average volume, established in a period.

The companies specialized in road transportation have the following duties: (Tatar, Petreanu, Petreanu, 2000)

- to inform their employees about the settlements in the area and to assure themselves about their respecting, through the employees training;
- the assure an appropriate technical status for the vehicles;
- to elaborate the transportation program, in conditions of work time respecting;
- to assure the transportation documents and their evidence;

- to keep the evidence for the drivers work time;
- to assure the evidence of the tachograph diagrams.

As transporters, they provide to the sender the vehicle and transportation service in an established term, in change of a tariff based on a contract, to the client mentioned by the sender in the transportation document.

The transportation contract can be considered also like a services convention, because the activity has a commercial character.

According to the contract, the transporter has the following duties: (Tatar, Petreanu, Petreanu, 2000)

a. at the start place:
- to accept the transportation request, to provide the appropriate vehicle, to take and load the goods from the sender; to elaborate the transportation document;

b. during the transportation:
- to respect the itinerary, the term, the wares conservation until its delivery at the destination;

c. at the destination place:
- to announce the client, to unload the wares at the established place and date, to weigh the wares, to identify the lacks (quantitative and qualitative), based on reception note.

The certification of transportation execution is made on specific documents:

- Transportation order of the sender, followed by the accept from the transporter, includes: type and weight of wares; number of parcels; packing mode; invoice, loading place, client name and address, account and payment modality, vehicle capacity, special arrangements.
- Wares transportation letter (CMR) – is elaborated by the sender and proves the achievement of transportation contract. It includes: transporter name and address, sender and client name and address, ware type and weight, packing type, itinerary, tariff, transportation tax, transportation documents.
- Run paper – is considered the base for the road transportation evidence and assures: the legality of circulation, vehicle driver and company identification, the confirmation of vehicle function status, the registering of information, necessary to calculate the tariff, the consumption, the driver wage and the transportation value. It helps to obtain: tariffs and transportation invoices; debts; fuel and oils standardization; driver work standardization; itineraries achievement evidence; contracts elaboration and their execution evidence.
- Tachograph Diagram – registers data regarding the driver activity, speed and distance, during 24 hours. The driver receives it at the run start, and includes the date, the vehicle number and the km index. The information from the run papers and commercial documents, the exploitation time and station time must be related with those from this diagram.
- Road Tax – represents the tax that must be paid by the drivers, having the validity written on the paying document (the fiscal note).
- TIR Register – is used for the international road transportation. It's elaborated in the sender country and rests available until the finish, at the destination custom. It is presented at each departure, transit and destination custom office.
- Transportation paper – is used to register successively a daily runs number, applying the tariff on hour and km – when the wares circulate without weight and expedition note, the sender doesn't impose the arrival and departure hour for each run, and the distances between the work points are previously established. It includes: start hour, identification data for the vehicle and the runs. At the end of the day, the driver presents this paper to the sender, as a document which confirms his activity.
- Transportation note – is used as a confirmation document for each run, when the tariff on hour and km is applied – for the contracted transports or, for the case when the determination of vehicle use time requires the evidence on each run for the loading, circulation and unloading time. It registers all the transportation stages.

The company emits the note with hour and date – at the loading point, the ware name and weight is registered, and, at the unloading point, the ware reception is certified.

In change of transportation service, the transporter cashes from the sender the transportation tariff, according to the official tariff, calculated in terms of transportation costs increase.

These tariffs can be: for transportation, for special conditions and for connected operations. The sums calculation is made, based on the transportation documents (transportation letter and tariff situation), the invoice is elaborated, and the transportation letter is attached.

3. The costs structure in the road transportation

The transportation costs measure the consumptions that the transport supplier must make, in order to produce transportation services. We can talk about fixed costs and variable (operating) costs, depending on many factors like: distances, infrastructure, energy etc.

It's known the fact that, nowadays, the transport cost represents ≈ 10% of the total cost of a product, having a complex structure, influenced by: the goods nature, the available infrastructure; the technology, the distances between origins and destinations of goods.

The impact of the transportation costs on the company profitability is considerable (in competitive conditions, if the transport cost increases with 10%, it reduces the trade volume with more than 20%). (Victoria Transport Policy Institute, 2013)

They are related by the rates practiced by the transport companies – the price of transportation services paid by the client. The rates are established by political decisions, according to demand and supply, often under pressure. They are negotiated and don't always reflect the real transport cost. The explanation is that, the difference between the rate and transport cost is the company profit, which the company aims to increase it.

The influence factors for the transport costs are the following:

- distance and accessibility;
- type of wares (many wares require packing or careful handling, because they are perishable: vegetables, fruits, fresh flowers etc.);
- possibility of large quantities transport (coal, oil, grains) – in this case, the cost for unit decreases;
- energy, because the transport is a large consumer (≈60% from the global oil consumption);
- infrastructure – if an inappropriate infrastructure gets high costs, delays and loss, a modern one means low costs and, finally, profit;
- transportation type – different types have different costs (the containerized type is more profitable);
- environment protection – imposes low costs, in order to attract the client;
- settlements – tariffs, cabotage laws, security, labour, safety, insurance – are aspects which impose additional transport costs;
- transport time – frequency, punctuality etc.

In order to reduce the transportation costs and time, many intermediary companies providing transport services appeared end developed (freight forwarders, custom brokers, warehousing, insurance agents and banking etc.).

Some authors group the transportation costs in: (Rodrigue, Notteboom, 2013)

- terminal costs – relating to loading at the origin and unloading at the destination;
- linehaul costs – including labour and fuel;
- capital costs – including amortization of the vehicles involved in the transportation activity.

The resources for measuring transportation costs and benefits are considered the following: vehicle costs, travel time costs road and parking costs, congestion costs, traffic, environmental costs, fuel externalities, land use. (Victoria Transport Policy Institute, 2013)

Costs and benefits have a mirror image relation, because the cost represents a reduction in benefit, and the benefit is a reduction in cost. Transportation benefits are usually measured in terms of costs decrease.

★**Vehicle costs** – are direct (internal) user expenses for vehicles, which are often divided in:

- vehicle ownership (fixed costs);
- vehicle operating (variable) costs of driving.

The last ones are: fuel and oil, tyre wear, tools, maintenance and parking fees. The largest part of vehicle operating costs is fuel, for which, a long-term analysis proves a growth trend of price.

An important problem regarding the vehicle costs is the fact that many expenses classified as "fixed" are actually partly variable:

- driving a vehicle increases the depreciation, reducing their resale value and operating life;
- additional mileage increases the frequency of maintenance, repairs, failures, replacements, vehicle crashes (which can cause direct costs and higher insurance premiums) and, for the leased vehicles, the fees increase.

In conclusion, reducing vehicle mileage generates greater benefits for consumers.

★**Travel time costs** – are among the largest transport costs and the savings in this area represent the greatest benefits. They include drivers wages and rates and costs for delays.

★ **Road and parking costs** – include the taxes for roadway construction and maintenance and the parking taxes (for facilities and good conditions).

★ **Congestion costs** – are generated by the vehicle operating costs and delay.

★ **Traffic costs** – include material damages and lost productivity – they are represented by insurance payments (internal fixed costs – 20%) and uncompensated losses (internal variable costs – 80%).

★ **Environmental costs** – include waste products that can impose externalities (used tyres, batteries, oil – resulted from vehicles maintenance).

★ **Fuel externalities** – fuel production and consumption can impose various external costs like financial subsidies and environmental damages (greenhouse gas emissions).

★ **Land use** – increases the vehicle use and the travel time.

Another classification of transportation costs grouped these ones into: (Victoria Transport Policy Institute, 2013)

★ **Internal fixed** – users bear a direct cost that doesn't vary significantly with the mileage (costs with vehicle ownership, parking etc.);

★ **Internal variable** – users bear a direct cost that increases with the mileage (travel time, cost crash cost, vehicle operation, roadway cost etc.);

★ **External** – users don't directly bear the cost (traffic cost, environmental cost, land value, fuel externalities etc.).

Less than half of the total costs of vehicle use are internal-variable. Approximately a quarter of all vehicle costs are external, and another quarter are internal-fixed. The relation between mileage and various costs is reflected by the elasticity (the percentage of cost change that results from a percentage of mileage change).

Another classification for the transportation costs are into: fixed, variable and semi-fixed. (Q&A Revision Guide on Transport, 2013)

★ **Fixed costs** – are independent of the mileage: car purchases / replacement, interest on loans, depreciation of vehicle due to age.

★ **Variable costs** – are dependent of the mileage: fuel costs, time cost (opportunity cost), depreciation from mileage.

★ **Semi-fixed costs** – are part fixed and part variable (by employing idle drivers who last the rest time).

On the company level, the cost structure has the following general form:

- variable costs per km (CK) – fuel, tyres, maintenance and repairs, road taxes;
- daily costs with the drivers (CC) – wages and rates, allowances;
- daily fixed costs per vehicle (CV) – insurance, taxes, ownership;
- daily structural costs (CC).

In these terms, the cost structure for a vehicle of general transportation in Romania, on the level of the year 2012 was (Transport Profesional, 2012):

a. Direct costs per km:

Fuel	0,381 €	28,9%
Tyres	0,033 €	2,5%
Maintenance and repairs	0,082 €	6,2%
Road taxes	0,044 €	3,3%
Total per km	0,540 €	40,9%

b. Daily costs with the drivers:

Wages and overheads	135,75 €	22,7%
Wages rates	45,9 €	7,6%
Allowances	18,66 €	3,1%
Total per exploitation day	200,31 €	33,4%

c. Daily costs with the vehicle:

Maintenance cost	64,51 €	10,8%
Insurance	12,6 €	2,1%
Taxes	2,28 €	0,4%
Total per exploitation day	79,39 €	13,2%

d. Other information:

Average consumption at 100 km	34,4 l
Fuel price (without VAT)	1,0945 €
Annual cost of tyres	3441 €
Annual cost of maintenance and repairs	8437 €
Annual cost of road taxes	4538 €
Annual cost of vehicle financing and ownership	11361 €
Vehicle and ware insurance	2484 €
Drivers wages and overheads	2294,25 €
Wages rates	46,96%

Structural daily costs: 74,91 € → 12,5%
Costs synthesis: 135868 € → 100%

The "trinom formula": (Transport Profesional, 2012)
- ❖ kilometre element (for one km of run) = 0,540 €
- ❖ hour element (for one hour of work) = 19,08 €
- ❖ daily element (for one day of vehicle exploitation) = 154,30 €

The costs structure shows us that almost half of total costs are direct costs. Among these it's obvious the fact that the biggest expenses are those with fuel consumption (28,9%), more than 2/3 of the direct costs. The divers wages represents 22,7%, more than 2/3 of the daily exploitation costs. Comparing these information with the previous year, transportation cost increased in average with 5,3% (fuel price with 3%, wages with 1,1%; allowances with 1,7%, materials with 9,6%).

Thus, the measures of costs reduction must be oriented into two main directions:
- ◊ reducing the fuel consumption, because the trend of fuel price can't be influenced by to the company policy;
- ◊ reducing the wages expenses, by employing a less number of drivers and an efficient time work use (reducing the station time, using efficient itineraries etc.)

4. The road transportation fiscality in the Romanian companies

The Fiscal Code stipulates various settlements for the transportation activity, in order to encourage the transporters and to avoid the loss.

a. Deductibility for the transportation expenses

For the vehicles used by the management, the expenses with function, maintenance and repairs have a limited deductibility, for only one vehicle, and the fuel expenses are entirely not deductible.

The fuel expenses are deductible for the vehicles used for wares transportation, repairs, security and protection, employees transportation, passengers transportation etc.

In order to deduce the fuel expenses, the company must prove: (Codul fiscal, 2013)
- ❖ the activity, by registering it as its object;
- ❖ the fuel consumption justified by the run papers;
- ❖ the transport invoices emitted to the client.

b. Exemption for VAT payment in the following situations:
- ❖ transportation and connected services, related on the exports;
- ❖ sales in EU, representing new vehicle to a client who is VAT nonpayer.

★*How does the Romanian transporter bill the transportation service to a client EU member?*
- ○ if the client is VAT payer in his country, the invoice is emitted without VAT and the taxation will be made in the client country;
- ○ if the client is registered in Romania as VAT payer, the invoice will be emitted with VAT, as a regular transportation activity which starts in Romania and finish in other EU state, or starts in other EU state and finish in Romania;

- if the client is not established in Romania, and he isn't VAT payer, or he is established in Romania, but is not VAT payer, the invoice will be emitted with VAT, like any transportation which starts in Romania.

★ *How does the Romanian transportation client receive the transport invoice from a transporter EU member?*

- if the client is established in Romania and registered as VAT payer, he receives the invoice without VAT and will register inverse taxation (deductible and collected in the same time);
- if the client is registered only for EU acquisitions activity, he pays the tax to the budget, and elaborates the special VAT Declaration;
- if he announces a VAT Code from another EU state, the transportation isn't considered taxable in Romania;
- if he's not registered as VAT payer in Romania, he has not the duty to pay the tax for the EU transportation.

The transporter from abroad will bill, with VAT, the transportation from Romania, or from an EU member which starts in another EU member.

If the transportation place is in Romania, the transporter pays VAT.

If the transporter isn't established in Romania (even if he's registered as VAT payer in Romania), and the client is registered as VAT payer in Romania, the client has the payment duty. (Codul Fiscal, 2013)

5. Conclusions

The wares road transportation is essential for the normal activity of the companies, making possible the internal and international economic exchanges.

Being influenced by many factors like: distance, infrastructure, wares transported type, environment conditions, fuel consumption and price, transportation puts many problems in terms of costs.

It's known the fact that the transportation cost is a part of goods price and is finally supported by the consumer. Transportation cost is a main part of companies logistics spend. For this reason, the companies pay a special attention to the transportation cost structure and promote a permanent policy of cost reduction, as a factor of their own profitability increase.

It's obvious that, they have difficulties regarding the bad infrastructure, the high price of fuel, but also the inefficient mentality of employees, who tend to not respect the run time, loading-unloading time etc.

The optimization of vehicles exploitation times, and also of itineraries, the respecting of fuel consumption standards and repairs term, the efficient use of vehicles park, their permanent renovation and modernization – are just few action directions on the way of transportation profitability increase. The main target of transportation companies must be to provide a qualitative transport, at the right time and at the right price.

References

1. *ARR (Autoritatea Rutiera Romana) – Caiet de sarcini al licentei de transport rutier public*
2. *Caraiani, G. (1998). Transporturi si expeditii internationale de marfuri, Ed. Independenta Economica, Braila.*
3. *Ministerul Finantelor Publice. (2013). Codul Fiscal 2013.*
4. *Pascal, I., Deaconu, S., Vrabie. C., Fabian, N. (2004). Politica in domeniul transporturilor, Ed. Centrul de resurse juridice, Bucuresti.*
5. *Q&A Revision Guide on Transport (2013). Transport economics – Transport costs, US, 2013.*
6. *Rodrigue, J. P., Notteboom, Th. (2013). Transport costs, New York.*
7. *Tatar, I., Petreanu, D., Petreanu, A. (2000). Manualul operatorului de transport rutier, Ed. Institutul de formare profesionala in transporturi rutiere, Miercurea-Ciuc.*
8. *Transport Profesional (2012). Ghidul costurilor pentru transportul rutier de marfuri 2012.*
9. *Victoria Transport Policy Institute (2013). Resources for measuring Transportation Costs and Benefits.*