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**RESEARCH RELATED TO FINNISH AND ESTONIAN ROAD
TRANSPORT REGULATION POLICY AND DIFFERENCE IN COST
STRUCTURE**

Case: Heikkilä Transport Oy

Thesis

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Thesis Abstract

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Name of Thesis RESEARCH RELATED TO FINNISH AND ESTONIAN ROAD TRANSPORT REGULATION POLICY AND DIFFERENCE IN COST STRUCTURE Case: Heikkilä Transport Oy		
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<p>The main attempt of this thesis project is to make comparison of transportation costs structures between Finland and Estonia based on statistical data. From that implies following that according to business related approach of the company will be made attempt on research about cost structure difference between Finland and Estonian transportation cost classifications and terms.</p> <p>The commissioner of research is a company which provides road transport service is Heikkilä Transport Oy.</p> <p>The scope of the research is the theoretical and methodological issues of the managing the logistics activities inside the company and comparing of legislation policy of road freight transport and cost structure between Finland and Estonia.</p> <p>In the process of implementation are used survey methods and the matching methods of organizing across all supply chains of the company, as well as methods of economic and statistical data analysis.</p> <p>Finally, the realization of this research can bring a positive effect directly on the company efficiency, improve the performance of the business rates and bring more revenue.</p>		

Key words

Logistics, road transport, cost structure, legislation, financial analysis, regulations

ABBREVIATIONS

EU – European Union

NAFTA - North American Free Trade Agreement

ASEAN - Association of South-east Asian Nations

WTO – World Trade Organization

GDP – Gross Domestic Product

ERP – Enterprise Resource Planning

LGV – Large Good Vehicle

INCOTERMS – International Commercial Terms

FOB – Free On Board

FAS – Free Alongside Ship

FCA – Free Carrier

EXW – Ex Works

CFR – Cost and Freight

CIF – Cost, Insurance and Freight

CIP – Carriage and Insurance

DAF – Delivered as Frontier Paid to

DES – Deliver Ex Ship

DEQ – Delivered Ex Quay

DOU – Delivered Duty Unpaid

DDP – Delivered Duty paid

IRU – International Transport Union

TIR - International Road Transport (French: Transports Internationaux Routiers)

TPI – Transportation Price Index

SKAL – Finnish Transport and Logistics (Finnish: Suomen Kuljetus ja Logistiikka)

CEMT - European Conference of Ministers of Transport

ERAA – Association of Estonian Road Carriers (Estonian: Eesti Rahvusvaheliste Autovedajate Assotsiatsioon)

ABSTRACT

ABBREVIATIONS

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1. INTRODUCTION

Transport is one of the most important industries of any country, and key factor in economic development. Growth of market economic relations increases the role of transportation. The main mission of transport becomes more urgent and necessary – acceleration of property's turnover, delivery of finished goods, exchange of material. This directly affects to suppliers, manufacturers and consumers.

A special role of transportation in production field is that those transportation businesses are usually separate or independent segments of business and require other capital investments. But on the other hand it's differentiating in that it is a forwarding of a production process for the goods exchange process of manufacturing company.

The most common mode of transportation is the road transportation. It's more mobile and less dependent on external factors. In most countries, including Finland, road transportation has a leading position in freight and cargo forwarding across the country. This type of transportation is extremely flexible regarding the traffic schedule and routes. Trucks are able to carry goods from door to door, eliminating vendors from additional transportation issues. According to the research trucks are a cost-effective mode of transport for the short-distance carrying of extremely valuable goods. And in many cases, trucking rates and tariffs are competitive and comparable with railway transportation, but the truck transportation provides more high efficiency of services.

Nowadays, there is a big requirement to use right logistic approach of the transportation companies and providing of transport services. It can be explained by following reasons. Firstly, integration of logistic tools, which ones creates by methodology of general systems, such as engineering, marketing, management and other disciplines, due to which organization will be able to solve problems which occur through the flow of material from their manufacturers to the final clients. Secondly, the right logistics creates the conditions for removing controversy between the various stakeholders of freight forwarding process, as it implies the combination of economic interests of all participants in the supply chain. (<http://www.siam.org/journals/1657>)

In this an attempt will be made to apply logistic approach to the concrete road freight forwarding organization. Object of analysis and investigation is transportation company Heikkilä Transport. Due to the fact that company is member of SCAL (www.scal.fi Finnish Transport and Logistics association) and has certificates of standards OHSAS 18001 and ISO 9001 (see on APPENDIX

1/1) it is possible to say that the company is providing reliable and high quality transportation services for contractual and charter transportation and is one of the elements of transport system in Pohjois-Pohjanmaa region in Finland.

The main objectives are:

Research related to transport regulations;

Comparison of cost structures between Finland and Estonia in order to decrease unexpected costs;

The importance of analysis stems from the fact that only a company with a high quality management can achieve efficient operation in the market.

Main approach of thesis project is to make analyze of transportation cost structure in Estonia and compare it with Finnish transportation cost classification and terms. The realization of these purposes can bring a positive effect directly on the company efficiency, improve the performance of the business rates and bring more revenue.

2. OVERVIEW OF HEIKKILA TRANSPORT OY

Heikkilä Transport Oy is a family owned limited liability company, which was established in year 1992 by the Heikki Heikkilä. Organization operates in Finland and Baltic countries. The main activity of the H. transport is delivering of metal goods produced by Rautaruukki, and transportation of different goods with different weight across Finland.

The scope of the company from establishing hasn't changed. Heikkilä Transport Oy head office can be found at Vierimaantie 5, 84100 Ylivieska, in Pohjois-Pohjanmaa region of Finland.

Company registration id is: 0890599-8 and company ownership divided by three persons; Hannu Heikkilä 47%, Heikki Heikkilä 31% and Juha Heikkilä 22%.

The purpose of business is providing transportation services to legal entities and individuals. Volume of service provided for 2013 year is 1 507 671 euro, from where delivery in Finland is 49,4 % and abroad 50,6 %.

Number of vehicles is equal to 5 units, of which 4 trucks and one passenger car. The main customers of H. Transport services are Rautaruukki in Finland and Estonia, and KONTINO in Vantaa.

By year 2012 list of organization's staff was mentioned as 7 people from which 5 are drivers and 2 are office workers

Company has certificates of standards in year 2004 ISO 14001 after that in 2007 OHSAS 18001 and next in 2008 ISO 9001. (See APPENDIX 1/1)

3. THEORETICAL FRAMEWORK

3.1 Development factors of logistic

The rational organization of cargo transportation is based on the study of freight and cargo with environment where transportation companies are facing in their business.

Significant aspect in shipping process is technological and organizational activities and operations performed by the transport company for forwarding goods from point A to point B. This structure of transport process includes: market research for freight forwarding companies, and on the basis of market, development of rational routing schemes. Then, selecting of right trailer combination for certain transportation of goods, which one will be more effective in that case. Analysis of road conditions can be taken to the consideration as well. Operational control during the way of truck can be achieved by modern information technologies. (Stroh 2006, page 123-127.)

Logistics is a system of management which promotes material flow, materials management and distribution management. The aim of logistics is to ensure or control that receiving or delivery of goods to the consumer proceeded at the right time and time with the possible lowest cost of labor, material and financial resources. (<http://www.csustan.edu/market/williams/3410-15-10.htm>)

The goal of logistics activities considered as achieved when the six conditions are fulfilled:

- The right product
- With required quality
- Delivered in the required amount
- At the right time
- To the right place
- With minimal expenses

Logistics system includes such aspects as supply (purchase) with transportation service (delivery of finished goods or products to the consumer)

According to this there are following functional areas of logistics:

Transport. Includes, logistic approach not only transport of goods from the supplier to the consumer, on a warehouse, warehouse to warehouse, but also delivery from the

warehouse to the consumer. The main characteristics of transport are cost and reliability. (Blecker & Kersten & Herstatt 2008, 231.)

Information. Any logistic system is controlled by the information and subsystems. For instance by Enterprise Resource planning software systems, such as SAP, Oracle etc. These systems transmit orders, requirements on the shipment and transportation of products, maintain inventory levels. (Blecker et al. 2008, 231.)

The basic requirements of logistics: links between logistics and corporate strategy, improving the management of material flow, necessary information and its timely processing by new technologies, effective management of labor resources, accounting of profit from logistics in the system of financial indicators, optimization of logistics services in order to improve profitability, accurate development of the logistics operations (Stock & Lambert 2001, 123-145).

Significant impact on the development of logistics occurs because of need of movement from seller's to a buyer's or from supplier to customer, accompanied by significant changes in the strategy of production and distribution system (Stock et al. 2001, 123-145).

Adjusting to the interests of clients in a highly competitive environment requires from the manufacturers of products an adequate response to these conditions, and the result of this is improved quality of service, and reducing lead times and agreed delivery schedule. Due to this, factor of timing along with the price and quality of products is a way to the success in today's market (Stock et al. 2001, 123-145).

Works on optimization of different fields of goods movement are actively developed, e.g. solving the problem on the optimal placement of warehouses, determining the optimal size of parties supplies of goods, optimal schemes of transport routes, etc. (Stock et al. 2001, 123-145).

Logistics formation was accelerated by development of theory of compromises. According to the first issue of goods movement has been regarded as a complex, which, among other things, meant that acceptable results cannot be obtained with the emphasis on one of the sides of the logistics field. The most important requirement of theory is a mandatory review of all aspects of the processes in supply chain and their internal or external relationships (Stock et al. 2001, 123-145).

Resolving relationships between logistics aspects became possible by the theory of compromise. According to that theory we can achieve effect, which balances the all supply chain systems.

An important role in creating been objective possibilities for the development of logistics and technical progress has played by communication and information technology. This allowed a higher level of conduct monitoring all primary and secondary processes of goods movement. Automatic control system monitors all movements of goods or material, inventories, shipments of materials and the place where the goods are on the way from the supplier to the consumer. (Blecker et al. 2008, 309-312.)

Freight forwarding distribution system of products: forwarders (in our case H. Transport) plan, organize and implement the delivery of goods from their places of production to places of consumption and provide additional services to prepare for transportation of shipments using the best ways and methods to ensure that the needs of production and trading companies in the efficient distribution of goods. (Blecker et al. 2008, 309-312.)

This activity includes the issuing of documents, payment for shipping, management of loading and unloading activities, storing issues, information allowance of the transport process, insurance, consolidation of small shipments, simplification of customs aspects and issues.

Study of the demand for transport services indicates that consumers regard as the basic requirement for the delivery of goods to be on-time delivery.

The key requirements for the consumers of transport services are as follows:

Reliable transportation;

Duration of delivery;

Regular delivery of goods;

Guaranteed on time delivery

Safety;

Availability of additional services;

Adaptability to customer requirements (flexibility of service);

Organized system of information flow and documentation;

Cargo forwarding to the final destination;

Organization of delivery door to door;

Reliable cost of transportation. (Blecker et al. 2008, 324-327.)

3.2 Aspects of international trade

Within development and globalization there has occurred special software to monitor goods internationally. Advantages of this program is that there is such a tool to assist company managers to follow all needed documentation requirements, finance issues, trade aspects, export and import procedures, also monitoring the orders. Those aspects can contribute the transportation companies by giving more free movement between countries and eliminates barriers between them. And basically it can reduce transportation costs if export and important procedures will be more simplified.

In today's world, there are about 300 international trade agreements and economic unions with a wide, medium and narrow composition of the participants, such as European Union (EU), North American Free Trade Agreement (NAFTA), Association of South-east Asian Nations (ASEAN), World Trade Organization (WTO) and others. The main role in the formation of world economic unions and agreements is trade flow across world market. It gives possibility to reduce tariff barriers and currency restrictions on international trade. Also other barriers that may be equally effective in hindering trade include import quotas, taxes, and diverse means of subsidizing domestic industries.

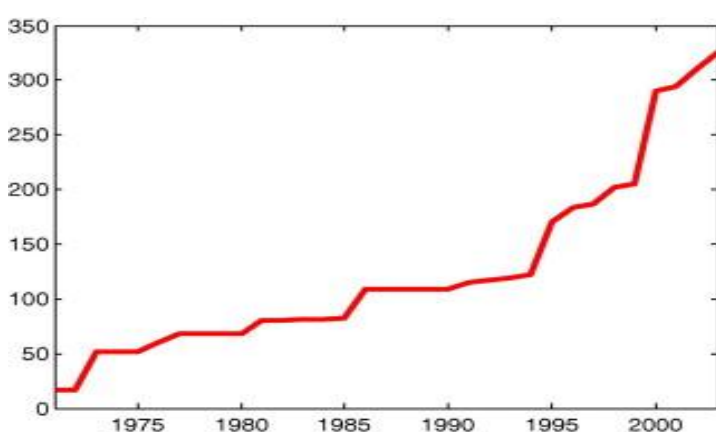


DIAGRAM 1. Growth of trade agreements

(adapted from <http://www.sciencedirect.com/science/article/pii/S0305750X11003093>)

This diagram shows the growth of number of trade agreements around the world, which means that countries are engaged in a free trade system between them. For instance, as a free trade agreement or customs union like EU, ASEAN or WTO.

International integration – this is an association of economic cooperation. The result of the integration process is a common economic policy in relation to third countries, the creation of common household objects.

To successfully integrate union work, you need a combination of objective and subjective factors. First of all, it is the economic factors of the country that should have the same high level of socio-economic development and the high rate of GDP growth. It is the total market value of all final goods and services produced in a country in a given year, equal to total consumer, investment and government spending, plus the value of exports, minus the value of imports. Political factors such as the desire to guide countries and their willingness to create necessary for the functioning of supranational integration organization structure as well as geographical proximity, cultural and historical community of countries are also important.
(www.sciencedirect.com)

3.2.1 Economic integration.

Types of trade associations differ in the degree of integration of national markets, the level of intensity of economic relations, the degree of consistency of economic policy in relation to third countries. By start of development of integration, associations which sign trade agreements between them and number of which in the last decade is growing rapidly.
(www.sciencedirect.com)

3.3 Supply chain planning

So called enterprise-wide information systems are an important innovation and a development target for most of the companies in our days. They are known as Enterprise resource planning systems (ERP).

Many of companies are using such ERP systems as SAP, Oracle, SSA Global. It should be mentioned that installation of such programs requires a lot of investment and should be entered very carefully according to all issues and factors which influence the organization. Every

company works on its own individual way and this has to be taken to the consideration. Only after all required issues will be carefully planned and implemented into ERP system, company business will run with successful result. (Rushton & Croucher & Baker 2006, 532.)

In case of H. Transport, such system can be excessive and too costly. A company can face some problems with such applications and simply there is no need for such complex software because they provide only pure logistics service. At first it is expensive to purchase, and requires a lot of training for the company members. Basically if such program can be simplified and implemented for H. Transport supply chain then in this case it can be considered as positive availability for the organization, because this can ensure and accurate some of business stages with positive result and increase possible errors and reduce some costs in business.

Optimization of operating costs by reducing the costs can increase the profitability of operations. Also supply chain planning can contribute with controlling the cost structure of the company. For example, how much they are spending for truck operation, wages and in comparison with other common structure. It gives possibility to see in total where money goes, and area where it might be needed to control more carefully. ERP helps to increase accuracy in cost structure as well. (Rushton et al. 2006, 535.)

3.4 Vehicle fleet management

In transportation business can be used such management system as, “Vehicle fleet management”.

This kind of system assists managers of transportation company in monitoring of their vehicles fleet. Information (see in APPENDIX 1/2) according to the truck activities will record as follows:

- Mileage, kilometers traveled
- Vehicle details- age, weight, type of body, axle configuration, engine capacity etc.
- Tones carried
- Idle time
- Maintenance details
- Fuel used
- Driver details
- Details of deliveries made.

Such information might be used to precede key performance indicators for the vehicle fleet:

- kilometers per liter,
- tones per mile
- average drop size
- tire cost
- maintenance cost
- fuel cost
- whole life cost for the truck

(Rushton et al. 2006, 537.)

3.5 Cost structure or classification and terms of use.

Payment for the services provided by transport organizations, are carried out with the help of transport tariffs. Rates include a fee charged for the carriage of goods; fees for additional operations associated with the transport of goods, rules of calculation of fees and charges. (<http://people.hofstra.edu/>)

As an economic category freight rates are a form of product prices of transport. Their construction must ensure:

To shipping company - Refunding of operating costs and the possibility of making a profit;

To the customer of transport service – understanding of cost spent for transport services and the choice of more cost-effective mode of transportation.

One of the significant factors that influence the choice of the freight forwarding company is the cost of transportation. The fight for customers in a competitive environment can also make adjustments in transport fees. (Bhatnagar 2009, 187.)

Pricing of transportation is connected to issues and undertakings that drive costs. To organize efficient supply chain strategy, it is important to investigate these factors. According to transportation economics is possible to divide pricing of transportation by four aspects:

1. Factors which it give transport costs
2. Cost structure or classification
3. Carrier pricing
4. Transportation rates (Bhatnagar 2009, 187.)

3.5.1 Factors influencing to transportation costs

Transportation costs can be influenced by seven separated factors. They are distance, weight, density, possibility to stow, handling, responsibilities and trade aspects. (Bhatnagar 2009, 188.)

About distance it is possible to say, that it is the main factor which influences transportation costs, because it directly depends on such variable costs like fuel, labor and maintenance costs (Bhatnagar, 2009, 188).

Weight is very important aspect especially in transportation, because load volume of cargo contributes to transportation cost. Because transportation cost per item of carriage minimizes as load capacity rises, this happens because the fixed costs of pickup and delivery as well as administrative costs can be spread over extra volume. (Bhatnagar 2009, 188.)

Next aspect is product density. It is possible to say that density is a mix of weight and volume, because weight depends on volume and opposite. Basically transportation operators look for ways to improve density of the product so that truck's trailer utilization can be totally used. (Bhatnagar 2009, 188.)

Possibility to stow is also an important factor for transportation cost. For instance, a product with a small weight and volume can be really big and it doesn't fit a trailer is inside and it's difficult to stow them. (Bhatnagar 2009, 188.)

For handling is required special equipment to load and unload trucks. In addition to special handling equipment, the way in which products are organized together in boxes or on pallets for transport and storage will affect handling cost. (Bhatnagar 2009, 188.)

Responsibility includes product characteristics that can result in damage and potential claims. Carriers must either have insurance to protect against possible claims or accept financial responsibility for damage. (Bhatnagar 2009, 188.)

Trade factors depend on such factors like economics situation of country, crisis, demand etc. (Bhatnagar 2009, 188.)

3.5.2 Cost Structure or classification

As second aspect of transportation service costing can be taken such concept as cost allocation. It's directly a hauler concern, and he is responsible for cost allocation, but from that time when

cost structure affects by negation possibility, shipper's perspective is also significant. Due to this fact costs can be divided by several categories. (Bhatnagar 2009,189.)

➤ Variable Costs

It is costs which are changing in a recognizable way, according to the level of operation. Such costs can be reduced or totally avoided by not moving vehicle. Regarding to transportation business transport rates have to cover at least those costs. (Bhatnagar 2009, 189-191.)

➤ Fixed Costs

Mostly it is expenses which are changing in a short time of period and will be taken even when organization is not working. For instance wages, rent, sick leave and so on. Fixed costs are not affected by shipment process. (Bhatnagar 2009, 189-191.)

➤ Joint Costs

Such costs which ones are modified for offering a certain service. For instance, when a company requires from the customer who is ordering theirs service in transportation from one point to another. The company who is a customer has to pay additional cost for transportation of an empty vehicle to the point of origin. Usually such costs are included in the service price from the beginning. (Bhatnagar 2009, 189-191.)

➤ Common Costs

As common costs can be called costs for expenses of managerial or terminal activities. Mainly it is overhead costs. They are always allocated to the operator regarding the level of operations. This way might assign costs not properly. (Bhatnagar 2009, 189-191.)

3.6 Common European Union legislation

Around the world there is a real need to regulate road transport activities. And most of the time it's under government responsibility. This means such aspects like driver's work hours, traffic regulations, operators and driving licensing, weight and dimensions, vehicle maintenance control etc.

Legislation can help to improve quality and safety of transportation activities. But differences in national or regional legislations can bring problems into international transportation movements.

EU has made a huge impact on harmonization of regulation between all European countries, but there are still some barriers which can cause problems for transportation activities. (www.skaf.fi, www.iru.org)

In following chapter will be explained common European Union road freight transport legislation aspects (see chapter 3.6.1)

3.6.1 Operator licensing

Road transport operators, who transport goods with commercial purposes, on the public roads between EU countries are obligated to have Community license for a period up to ten years with possibility to renew this. The operator license is supposed to be registered in name of freight forwarding company.

(http://europa.eu/legislation_summaries/transport/road_transport/tr0038_en.htm)

3.6.2 Driver licensing

According to European type of driving licenses, which are divided by several categories of allowance for driving different kinds of vehicles, A,B,C, categories (starting from motorbikes, B-category is passenger car with ultimate mass no more than 3.5 tones and no more than 8 seats counted with driver's seat. From C-category starts from large good vehicles)

C-category allows driving large good vehicle (LGV)

Large good vehicle categories separated in few sub-categories. To have this kind of license a driver is supposed to have B category and be at least 21 years old. To increase mass of vehicle up to 7.5 tones the driver must pass additional test and get C1-category.

(http://europa.eu/legislation_summaries/transport/road_transport/index_en.htm)

3.6.3 Driver hour's regulations

Drivers who operating in European Union area should follow EU driving hour's rules:

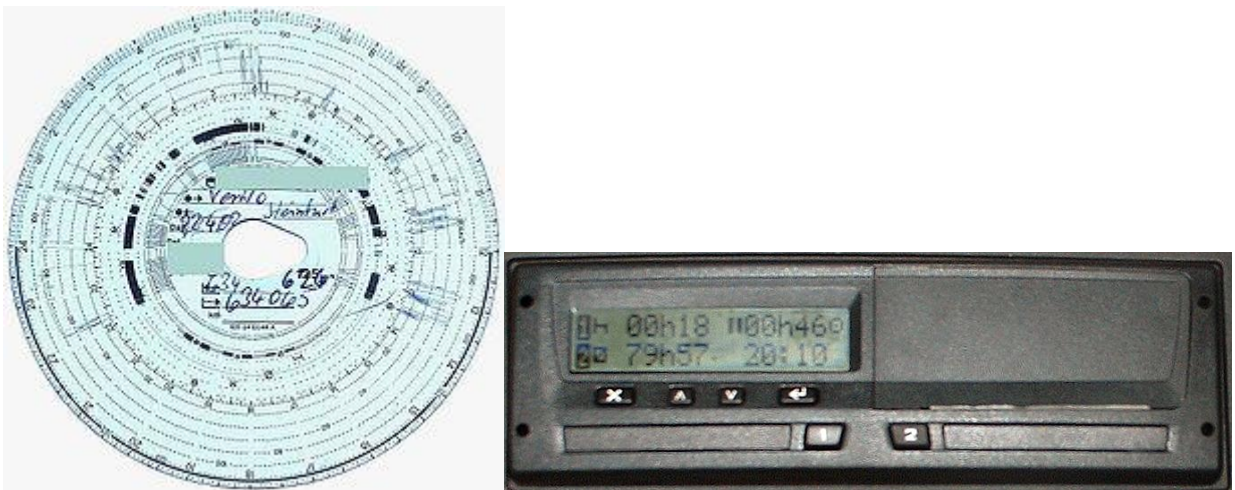
- Daily driving time can't exceed 9 hours.
- Weekly driving time should be not more than 56 hours.

- Total driving time during two weeks can't be more than 90 hours.
 - Driver should record all work on the tachnograph even when he is not driving.
 - Every 4.5 hours of driving have to be break in period of 45 minutes or the same driving period divided by three 15 minutes breaks.
 - Between two weeks rest periods a driver can't take more than 3 reduced days offs.
- (http://europa.eu/legislation_summaries/transport/road_transport/index_en.htm)

3.6.4 Tachnographs

It's the equipment which records the driving time, speed, breaks during the trip. Every truck or transport vehicle for commercial purposes has to have on.

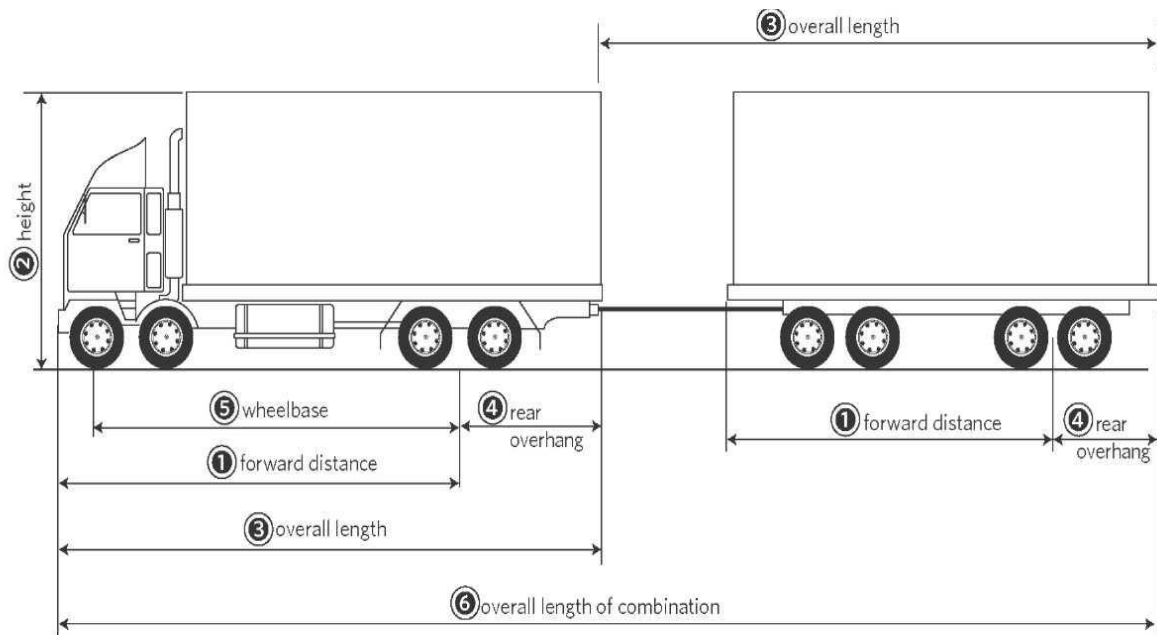
In these pictures we can see example of mechanical and digital tachnograph. Nowadays only digital ones are in use.



PICTURE 1. Shows example of tachnographs.

(adapted from <http://en.wikipedia.org/wiki/Tachograph>)

3.6.5 Vehicle dimensions



PICTURE 2. LGV's trailer combination

(adapted from <http://www.nzta.govt.nz/resources/factsheets/13/vehicle-dimensions-and-mass.html>)

In this picture is possible to see LGV's combination and there are special restrictions on weight, length and width of them.

-rigid vehicle is 12 meters

-Articulated vehicles 16.5 meters

-Draw-bar vehicles 18.75 meters.

3.7 Terms of Trade.

It is very useful to have an awareness of international transport methods and restrictions. There is certain amount of ways through which goods or materials can be transferred across the borders. To get to know more in case of international trade is such rules indicate responsibilities about payment or transportation shown between seller and buyer, also known as Incoterms.

Incoterms gives basic conditions of foreign delivery. They influence the formation of the organization costs, and accordingly, the financial results for the export-import operations.

Incoterms are conditions of sharing the obligations of the parties of foreign trade to deliver the goods from the seller to the buyer, and establishing the time of transfer of risk of accidental loss or damage to the goods from the supplier to the buyer, and the time of execution of the exporter or the importer is obligated to deliver the goods. Basic terms of install base contract price.

(http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

First six terms are directly relates to the road transportation and from that implies that it can influence to the cost of transportation and structure.

Free Carrier (FCA) - means that the seller fulfills his obligation to deliver when he delivers the goods cleared from export duties, to the carrier sated by the buyer at the certain place. Specified place of delivery affects the obligations of loading and unloading the goods in such place. If delivery occurs at the seller's buildings, the seller is responsible for loading. If delivery occurs at any other place, the seller is not responsible for the shipment.

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Carrier - means any person who, under a contract of carriage, undertakes to manage transport by rail, road, air, sea, inland waterways or a combination of such modes. If you receive your goods the buyer nominates a person other than the carrier, in this case the seller fulfills his obligation when the goods have been delivered to that person and responsibility moves to a buyer.

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Ex Works (EXW) - Seller's liability ends when the transfer of goods to the customer or the carrier hired them in the seller's buildings (warehouse, store, etc.), the seller is not responsible for loading the goods to the trucks, the buyer pays all costs for the taking out of goods from the warehouse, transportation, customs clearance, and so on.

((<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Carriage and Insurance Paid to (CIP) - The term means that the seller delivers the goods to the named carrier. In addition, the seller must pay the costs associated with the transportation of goods to the said destination. Seller's responsibility ends when they deliver the goods to the carrier, which has been chosen by the buyer. If there are several carriers, the responsibility ends after delivery of the goods to the first carrier. The buyer takes all risks and any additional costs occurring after the goods have been delivered. That term is similar to the CPT, except that the

seller also covers insurance costs. The seller is required to obtain insurance only with minimum cover. Additional insurance is under buyer responsibility or specified between both sides.

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Delivered At Frontier (DAF) - Can be used by rail or road transport. Seller takes responsibilities of transporting the goods to the border and tax payment as well. Buyer takes responsibilities on border bureaucracy acts and delivery from border to own location. Risks are moving at the moment when the load of the border.

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Delivered, Duty Paid (DDP) - used with the location of arrival, the seller's responsibility ends when the goods are delivered to the specified location in the buyer's country all the risks, all the costs of delivering the goods (taxes, fees, etc. etc.), responsible for the loss or damage of goods, including duties and other payments paid at import, up to this point is the seller, as it is responsible for customs clearance, can be added provisions that exempt the seller from the payment of certain additional formalities, this type of allocation of responsibility can be used irrespective of the mode of delivery.

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Delivered Duty Unpaid (DDU) - used with the location of arrival, the seller's responsibility ends when the goods are delivered to the specified location in the buyer's country all the risks, all the costs of delivering the goods (taxes, fees, etc. etc.), liability for loss or damage of goods (excluding duties and other fees to be paid for imports) up to this point is the seller, if the buyer is not had time to prepare the goods to be imported, he is responsible for it, can be added provisions requiring the seller to pay some extra formalities, this type of allocation of responsibility can be used irrespective of the mode of delivery)

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Free On Board (FOB) - FOB terms provide that the seller must deliver the goods to the port and load on a ship specified by the buyer, the costs of delivery of the goods on board have to be born by the seller. In some ports as a rule of the FOB, costs of loading are born by buyer. The risk of accidental loss or damage to the property goes to the seller - until the goods pass the ship's side and the buyer - from that point. Usually, property rights passes from the seller to the buyer at the

same time with the changing of responsibility.

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf> and

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Free Alongside Ship (FAS) - Means that the seller pays expenses of delivery to the departure from the port. The seller fulfills his obligation to deliver the goods at the time when the goods are placed alongside the vessel on the quay or on lighters (depends of port shipment rules). The buyer pays the costs of loading, insurance, unloading and delivery to the destination.

Responsibility moves to the buyer at time of delivery to the port dock.

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Cost and Freight (CFR) – CFR means that the seller pays for shipping of the goods to the port, loading of freight to the ship, and also provides customs procedures for export of goods (including fees payment). Buyer pays insurance of the product. The risk of loss or damage, as well as additional costs after the goods pass the ship's borders passes to the buyer. CFR used only for the carriage of goods by sea or river transport.

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Cost, Insurance and Freight (CIF) - CIF means that the seller delivers when the goods pass the ship's border at the port of shipment and the sales price includes the cost of the goods, the freight or transport costs, as well as the cost of insurance for shipping.

Terms of CIF are identical with terms of CFR. In addition to the responsibility for the delivery terms CFR, CIF terms for the seller must obtain an insurance policy allowing the transfer to cover the risks associated with the delivery of cargo and insurance companies. The insurance policy must cover the CIF-price plus 10 percent and, if possible, be in the currency mentioned in the contract. Seller's liability for the goods ends when the goods have been delivered or sea carrier was loaded on board of ship, depending on agreement's conditions.

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Delivered Ex Ship (DES) – based on international buying, selling agreement terms. Seller fulfills conditions of the contract only when he provides documentation about not certified board of vessel for import goods on buyer responsibility in port of destination. Seller should pay all costs and take risks involved in bringing the goods to the named port of destination before unloading.

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Delivered Ex Quay (DEQ) - Means that the seller delivers when the goods are at the disposal of the buyer not cleared for import on the quay of the port of destination. Seller shall bear all costs and risks involved in bringing the goods to the named port of destination and discharging the goods on the quay. DEQ term requires the buyer to clear the goods for import and pay for all formalities taxes, duties and other charges on imports. This differs from the previous version of Incoterms, which requires the seller to carry out clearing to import. If the parties wish to include in the seller's obligations all or part of the costs paid when importing goods, it should be made clear by adding explicit words in this regard in the contract of sale. This term can be used only when the goods are delivered by sea or inland waterway or multimodal transport when the goods are unloaded from the ship to the pier (dock) at the port of destination. However, if the parties wish to include in the seller's obligations the risks and costs of moving goods from the quay to another place (warehouse, terminal, transport station, etc.) in or outside the port of the port, you must use the terms DDU or DDP.

(<http://www.ism.ws/files/Products/UpdatedGlossaryIncoterms.pdf>,

http://www.zurich.ch/internet/zurich-ch/SiteCollectionDocuments/site/en/INCOTERMS_e.pdf)

Chart of Responsibility

Charges/Fees	Any Transport Mode		Sea/Inland Waterway Transport				Any Transport Mode				
	EXW	FCA	FAS	FOB	CFR	CIF	CPT	CIP	DAT	DAP	DDP
	Ex Works	Free Carrier	Free Alongside ship	Free On Board	Cost & Freight	Cost Insurance & Freight	Carriage Paid To	Carriage Insurance Paid To	Delivered at Terminal	Delivered at Place	Delivered Duty Paid
Packaging	Buyer/Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Loading Charges	Buyer	Seller*	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Delivery to Port/Place	Buyer	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Export Duty & Taxes	Buyer	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Origin Terminal Charges	Buyer	Buyer	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Loading on Carriage	Buyer	Buyer	Buyer	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Carriage Charges	Buyer	Buyer	Buyer	Buyer	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Insurance						Seller		Seller			
Destination Terminal Charges	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Seller	Seller	Seller	Seller	Seller
Delivery to Destination	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Seller	Seller
Import Duty & Taxes	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Seller

*Seller is responsible for loading charges, if the terms state FCA at seller's facility.
This chart is designed to provide a basic level of understanding of Incoterms® 2011 Rules and Definitions.

CHART 1. Chart of Responsibility (adapted from <http://genuardis.net/incoterms/dawnsg.com>)

This chart shows obligations of seller and buyer in terms of international trade rules, and gives clear view of responsibilities. This chart built on trade terms from Incoterms approved by International Chamber of Commerce.

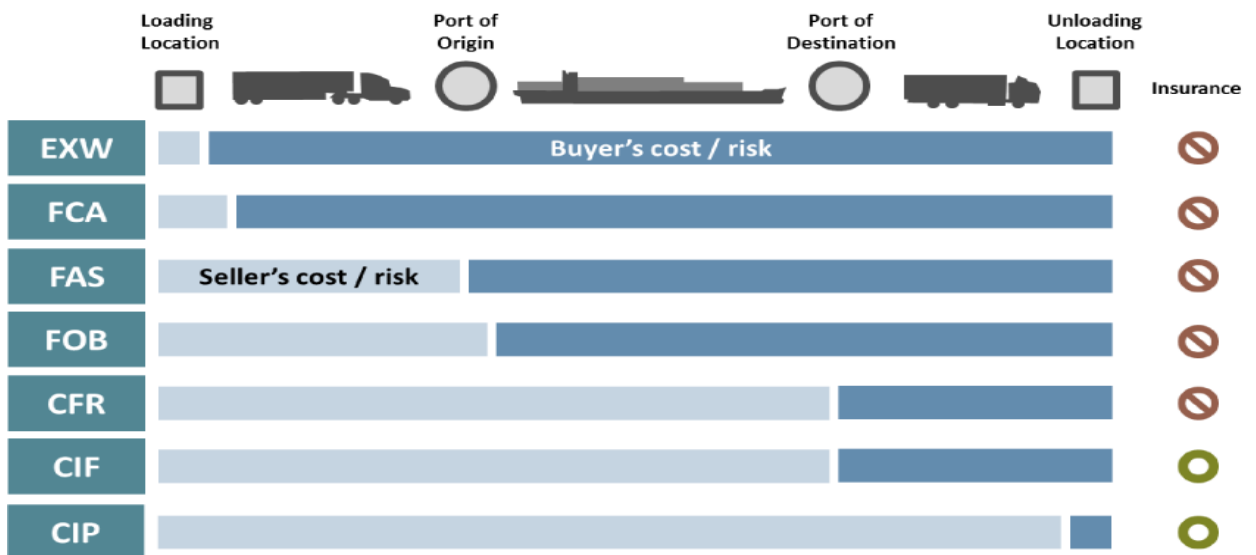


CHART 2. Division of risks between seller and buyer (adapted from International Chamber of Commerce)

3.8 Finnish road transport regulations

Rules of Traffic and required regulations are written down in Finnish road traffic act. Main aim is to increase safety on roads and control traffic flow on the road. Especially in transport of goods administration staff works in improvement of road transportation market with rise of costs and development of new logistics aspects. (http://www.lvm.fi/web/en/road_safety)

TABLE 1. On the table shown divided responsibilities between Finnish authority bodies (adapted from <http://www.internationaltransportforum.org/IntOrg/road/ctrlbodies/rdfinland.pdf>)

FINLAND							
Items to be controlled	Control authorities						
	State police	Local police	Customs	Transport Ministry	Road administration	Authorised technical experts/workshops	Other authorised bodies or officers
Traffic regulations and driving licences	X	X	X				
Authorisations for international road transport (bilateral, EU, ECMT...)	X	X	X				
Special authorisations for carriage of passengers and other related documents (e.g. list of passengers)	X	X	X				
T1 documents or TIR Carnets	X	X	X				
Weights and dimensions	X	X	X				
Certificate for carriage of perishable foodstuffs and special equipment to be used for such carriage (ATP)	X	X	X				
Documents on veterinary and phytosanitary control	X	X	X				
Road user charges ⁰	X	X	X				
Technical conditions of motor vehicles	X	X	X				X
Regulations on driving hours and rest periods	X	X	X				X
Regulations on transport of dangerous goods	X	X	X				X

3.8.1 Traffic regulations and documents needed for that

Following rules apply to international road transport in Finland:

Only Finnish customs are eligible to change transportation of bilateral goods requirements according to operators who is travelling thru Finland. For instance, permits between Estonia and Finland.

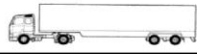






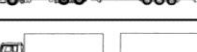


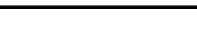
Goods which are brought from third countries have to be controlled by Finnish transport safety Agency and required to have ECMT license. Also aspects like oversized or overweighed have to be taken into consideration. In such case companies have to request for entering according to rules and charged by certain amount of money regarding to size of cargo. Additionally such aspect like tires condition and drunk driving and usage of seatbelt can be checked. (www.trafi.fi, www.iru.org)

Drivers of truck with cargo must have the permission and needed license for driving vehicle of such category. Most of the time license is controlled by police. Responsibility of Transport Safety Agency is checking condition of vehicle book of maintenance information in data register. (www.trafi.fi)

3.8.2 Weight and dimensions of vehicle

In following table is possible to see allowed dimansions of vehicles for commerical purposes in goods transportation. Due to the fact, that variation and deviation of truck combination allowed for certain counties are different, it can diriectly affect to the maximum cargo load volume and accordingly to the price of transportation.

TABLE 2. Types of vehicle combination (adapted from the Finnish Transport Safety Agency webpage: www.trafi.fi)

Type of vehicle combination		Length	Width	Height	Weight
A1	 2-axle semi-trailer truck + 2-axle semi-trailer	16.50 m or 17.00 m*	2.60 m	4.20 m - 4.30 m*	36.00 t
A2	 2-axle semi-trailer truck + 3-axle semi-trailer	16.50 m or 17.00 m*	2.60 m	4.20 m - 4.30 m*	42.00 t
A3	 3-axle semi-trailer truck + 2-axle semi-trailer	16.50 m or 17.00 m*	2.60 m	4.20 m - 4.30 m*	44.00 t
A4	 3-axle semi-trailer truck + 3-axle semi-trailer	16.50 m or 17.00 m*	2.60 m	4.20 m - 4.30 m*	44.00 t
B1	 2-axle centre-axle trailer truck 2-axle centre-axle trailer	+ 18.75 m - 20.25 m**	2.60 m	4.20 m - 4.40 m**	36.00 t
B2	 2-axle centre-axle trailer truck 3-axle centre-axle trailer	+ 18.75 m - 20.25 m**	2.60 m	4.20 m - 4.40 m**	42.00 t
B3	 3-axle centre-axle trailer truck 2-axle centre-axle trailer	+ 18.75 m - 20.25 m**	2.60 m	4.20 m - 4.40 m**	44.00 t
B4	 3-axle centre-axle trailer truck 3-axle centre-axle trailer	+ 18.75 m - 20.25 m**	2.60 m	4.20 m - 4.40 m**	44.00 t
C1	 2-axle lorry + 2-axle full-trailer	22.00 m	2.60 m	4.20 m	36.00 t
C2	 2-axle lorry + 3-axle full-trailer	22.00 m	2.60 m	4.20 m	44.00 t
C3	 3-axle lorry + 2-axle full-trailer	22.00 m	2.60 m	4.20 m	44.00 t

3.8.3 Technical condition of vehicle

The national competent authority who is responsible for checking of vehicle's condition is Finnish Transport Agency and competent control authority is Finnish Police. Maintenance of vehicles should be regularly controlled and provided and checked after each year by Transport agency. Technical condition of vehicles for commercial purposes have to be controlled and maintained regularly by specialised companies and it's under operators or owner of LGV-s.

The Ministry of Transport and Communications is responsible for the legislation concerning traffic regulations, the technical requirements of vehicles, the use, registration and inspection of vehicles, and driving tests and driving licences (www.lvm.fi).

3.8.4 Access to Finnish market or International transport of goods by road

Companies which are involved in transportation to Finland have to obtain following permits:

Every company who wants to transport through Finland should have a permit given by European Conference of Ministers of Transport (CEMT), without exceptions. Finnish Transport Safety Agency is responsible for checking permits and can ask for that in any kind of freight transport.

Truck and trailer must meet the EURO3, EURO4 or EURO5 standard. Finnish Transport Safety Agency and inspection stations issue certificates for the standard for trucks and trailers.

The pages of the transport diary must be detached and sent to the Finnish Transport Safety Agency within two weeks of the end of each calendar month. (<http://www.lvm.fi>, www.trafi.fi)

3.8.5 Road using charges

According to my research currently in Finland there are no direct road using charges, but there are car tax, annual vehicle tax and fuel tax, which are obligated and controlled by such authorities like Ministry of Finance (www.vm.fi) and Board of Customs (www.tulli.fi). For transportation companies those taxes are directly contributed to the transportation costs and in overall cost for operating company. All companies who are operating in Finland are obligated to pay vehicle taxes and fuel taxes. Fuel taxes are implemented only to diesel, not to the petrol. Usually LGV are working on diesel.

3.8.6 Transportation of dangerous goods

Finnish Safety and Chemicals Agency supervises and promotes the technical safety and conformity of Transporting dangerous goods in Finland. Their aim is at a safe, reliable and ecologically sustainable environment (<http://www.tukes.fi>).

3.8.7 Social regulations on driving and resting time

The Finnish labour and occupational safety legislation is applied to all employees working for Finnish employers regardless of their nationality. This applies to the working hours amount, payments of overwork, salaries, holidays money and so on. (<http://www.tyosuojelu.fi/fi/>)

Directly for truck drivers:

Breaks and rest periods for truck drivers was based on Regulation 3821/85/EC from this follows that driving period of no more than 4.5 hours, a driver must rapidly take a break of at least 45 minutes or divide break by 15 minutes in three parts during 4.5 driving period.

(<http://www.transportsfriend.org>)

3.8.8 Customs and transit regulations

They are very complex to investigate and requires a lot of knowledge. They are controlled by national Custom authorities in every country. In Finland it is Board of Customs and website is www.tulli.fi.

3.8.9 Association of International road transport operators

In Finland the main association of road transport operators is board of Finnish transport and logistics SKAL (www.skal.fi).

SKAL is membership of transporting companies.

SKAL represents all fields allocated to the transportation. For instance, such as transportation technology, legislation, training, economics and communications.

Activity of SKAL covers following fields: operating licence qualifications and process, matters regarding to establishing a haulage company, training of haulage entrepreneurs and drivers, vehicle measures and masses, cost structure, technical norms and the legislation guiding the haulage sector, as well as environmental regulations, road maintenance, and traffic safety.

(www.skal.fi)

3.9 Estonian road transport regulation

TABLE 3. In the table shown is division of responsibilities between Estonian authority bodies (adapted from <http://www.internationaltransportforum.org/IntOrg/road/ctrlbodies/rdestonia.pdf>)

ESTONIA								
Items to be controlled	State police	Local police	Customs	Control authorities			Authorised technical experts/workshops	Other authorised bodies or officers
				Transport Ministry	Road administration			
Traffic regulations and driving licences	X	X		X	X			X(1)
Authorisations for international road transport (bilateral, EU, ECMT...)	X	X	X	x				X(2)
Special authorisations for carriage of passengers and other related documents (e.g. list of passengers)	X	X		X				X(3)
T1 documents or TIR Carnets			x					X(2)
Weights and dimensions	X	X	X	X	X			X(1)
Certificate for carriage of perishable foodstuffs and special equipment to be used for such carriage (ATP)								X(1)
Documents on veterinary and phytosanitary control								X(4)
Road user charges								
Technical conditions of motor vehicles	X	X		x				X(1)
Regulations on driving hours and rest periods	X	X		x				X(5)
Regulations on transport of dangerous goods	X	X		X				X(1)
1	Estonian Road Administration							
2	Association of Estonian International Road Carriers (ERAA)							
3	Estonian Police and Border Guard Board and ERAA							
4	Veterinary and Food Board							
5	Labour Inspectorate							

3.9.1 Traffic regulations and documents needed for that

In Estonia it is required a common licence or permit for transport of goods, like in all European countries of the European union, including Norway.

As an exception there is a need for authorization based on bilateral agreement for companies from Kyrgyz Republic, Macedonia, Moldova, Romania, Russia, Turkey, Ukraine, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Georgia and Kazakhstan.

For vehicles registered in countries other than the above, applications for authorisation may be made to the Ministry of Transport and Communications. (www.mnt.ee)

3.9.2 Weight and dimensions of vehicle

In following table shown maximum allowed weights and dimensions of goods transport in Estonia

TABLE 4 (Continues) Allowed weights and dimensions for LGV's types and combinations (adapted from www.eraa.ee)

Height	4.00m
Width	
Motor vehicle/trailer	2.55m
Refrigerated vehicle	2.60m
Length	
Motor vehicle	12.00m
Trailer	12.00m
Articulated vehicle	16.50m
Road train	18.75m
Weight per axle	
single axle	10.0t
drive axle	11.5t
tandem axle of a motor vehicle, with a distance between the axles of	
× less than 1.00m	11.5t
× 1.00m to <1.30m	16.0t
× 1.30m to <1.80m	18.0t
× 1.30m to <1.80m, and the drive axle is fitted with twin tyres and pneumatic suspension or equivalent, and the weight per axle does not exceed 9.5t	19.0t
tandem axle of a trailer or semi-trailer, with a	

distance between the axles of	
× less than 1.00m	11.0t
× 1.00m to <1.30m	16.0t
× 1.30m to <1.80m	18.0t
× 1.80m or more	20.0t
tridem axle of a trailer or semi-trailer, with a distance between the axles of	
× 1.30m or less	21.0t
× over 1.30m to 1.40m	24.0t
Maximum permitted weight	
Motor vehicle	
× with 2 axles	18.0t
× with 3 axles	25.0t
× with 3 axles, and the drive axle is fitted with twin tyres and pneumatic suspension or equivalent	26.0t
× with 4 axles, two of which are steering axles	31.0t
× with 4 axles, two of which are steering axles, and the drive axle is fitted with twin tyres and pneumatic suspension or equivalent	32.0t
Trailer	
× with 2 axles	18.0t
× with 3 axles	24.0t
Articulated vehicle	
× with 4 axles (2+2)	36.0t
× with 4 axles (2+2), and the distance between the axles of the semi-trailer is over 1.80m and the drive axle of the motor vehicle is fitted with twin tyres and pneumatic suspension or equivalent	38.0t
× with 5/6 axles (2+3, 3+2/3)	40.0t
× with 5/6 axles (3+2/3) for the combined transport of 40' ISO containers	44.0t

Road train	
× with 4 axles (2+2)	36.0t
× with 5/6 axles (2+3, 3+2/3)	40.0t

For trucks which exceed maximal allowed weights and dimension should be made an application for special authorization to Estonian National Road Administration.

(<http://www.mnt.ee/index.php?id=13020>) is direct link for overweight vehicle permission with fees rates.

3.9.3 Technical condition of vehicle

The national competent authority who is responsible for checking of vehicle's condition is Estonian Road Administration and competent control authority accordingly is Police.

Maintenance of vehicles should be regularly controlled and provided and checked after each year by special places or directly in location of Estonian Road administration. Technical condition of vehicles for commercial purposes have to be control and maintain regularly by special companies and it's under responsibilities of operators or owners of vehicles. (www.mnt.ee)

3.9.4 Access to Estonian market or International transport of goods by road

As we know, Estonia locates in Baltic region neighbouring with Russia, Latvia, and Finland through a short distance across the Baltic sea. It is possible to say that it is heart of Baltic sea region. This gives possibilities to transfer goods from northern part of Europe to the other side. Estonian transportation and transit rules follow the EU regulations and legislative acts.



PICTURE 5. Location of the Estonia in Baltics Sea region.

(adpated from <http://www.agri.ee/eng/map/1.html>)

3.9.5 Road using charges

Currently in Estonia there are no direct road using charges, but there are car tax, annual vehicle tax and fuel tax, which controlled by such authorities like Estonian Ministry of Economics and Communication. As exception are trucks with dangerous or overweighted goods. (www.mlm.ee)

3.9.6 Transportation of dangerous goods

In Estonia there no speacial authority to control the movement of dangerous goods. It's totally under responsibilty of courier. One issue to know is, that in Estonia it is forbiddent to transport dangerous goods during weekend and officical holidays. (www.mnt.ee, www.politsei.ee)

3.9.7 Social regulations or driving and resting time

Breaks and rest periods for truck drivers in Estonia was based on Regulation 3821/85/EC Act. from that follows that driving period of no more than 4.5 hours, a driver must rapidly take a break of at least 45 minutes or devide break by 15 minutes in three parts during 4.5 driving period, as in all EU countries. (www.iru.org)

3.9.8 Customs and transit regulations

In Estonia, for hauliers from Non-European countries carriage of goods across the border require the common transit procedure regulated by International Road Transport Convention (TIR Convention) to get document called as TIR carnet (Internationally recognised guaranteed document). Common transit procedure might be applied to each haulier which is passing the Estonian border.

Common transit procedure is based on the Convention on a Common Transit Procedure of 20 May 1987 (the agreement between the EU and the EFTA). (www.emta.ee)

3.9.9 Association of International road transport operators

In Estonia it's Association of Estonian Road Carriers (ERAA). And this association was founded in 1991 and from 1992 became a member of International Transport Union.

Prime goal is to develop road transportation in Estonian region and protect rights of participants. Each company located in Estonia can apply to be a candidate or become as a member of ERAA. Main duties of ERAA are assisting the hauliers in questions of decision makings connected to transportation issues and preparation of TIR documents according to de laws. (www.eraa.ee)

Conclusion:

As conclusion of that regulation information from Estonia and Finland, I would like to explain mine subjective opinion. According to previous research all mentioned legislation issues can directly effect on operational cost of transportation company. Especially in international market, where companies are influenced by local regulation and legislation. And if companies won't follow those rules it will issue at least increasing the operational costs. For example, if company won't follow restrictions concerning to dimensions and weights before transporting goods to another country they can be charged by additional cost or even not allowed to pass border.

4. PLANNING AND DEVELOPMENT OF ACTIVITIES TO IMPROVE TRANSPORTATION SYSTEM BASED ON PRINCIPLES OF LOGISTICS

4.1 Reasons why transport operations have to be organized

There are several reasons why road freight transport operations have to be cautiously organized and planned. One of the major keys of developing an efficient and useful logistics operation is to get correct balance across consumer service and all applicable costs.

This definition is applied to several transport elements, which include:

4.1.1 Assets

Road freight transport includes variety of cost valuable assets, such as trailers, trucks with rigid drawbar trailers etc. Driver's labor power and efficient scheduling keep these vehicles active and moving on the road. Double-triple shifting of vehicles gives possibility to minimize their use and waste period. Routing and scheduling plays a main role in achieving the maximum utilization. Also it includes utilization of time, space and load. And those factors have to be taken into consideration throughout all planning period. (Rushton et al. 2006, 183.)

4.1.2 Service

Delivery is one of the main activities in supply chain which shows at the interface of the company to the client. It means that all customers' requirements have to be met with positive result. Basically, for transport this means mainly the delivery frames and shipment time. Computing routings and scheduling can assist in achieving such needs. (Rushton et al. 2006, 183.)

4.1.3 Maintenance

It is very important to make sure that all transportation units are maintained regularly. It helps to reduce the occurrence of break downs accidents on road. Wrong maintenance management can bring company big loss in service and increase operational cost. (Rushton et al. 2006, 183.)

4.1.4 Driver management

This part of management can be improved by such tool as tachnograph analysis. Positive things are that tachnograph analysis can give a more clear and accurate overview of fleet efficiency. Also it can be implemented in order to monitor productivity of certain driver. (Rushton et al. 2006, 183.)

4.1.5 Replacement

For any transport manager it is very important to know when a vehicle has to be replaced or which type of activity is most productive and being undertaken. So a good fleet management plan most probably will give this information. (Rushton et al. 2006, 184.)

4.1.6 Security and tracking

Modern technology gives possibility to monitor tracking online in real time. This tool enables moment information to the customer about location of his or her order. It can improve effectiveness of transportation operations. (Rushton et al. 2006, 184.)

4.2 Optimization transportation process in road freight forwarding system.

Intensive development of all sectors of economy leads businesses to a significant increase for all modes of transportation, including road freight transport. Movement of goods and material from productions side to point of consumption is the main function of transportation industry. The correct definition of the problems of planning, resourcing, management is the basis of efficient utilization of transport and optimization of all elements if transportation process in road freight forwarding system.

For the sharing of freight between different types of transport modes is typical the lowering at the share of rail, and river transport and growth of road, pipeline and sea transport. Along with freight rate percentage of delivery increases significantly demand and speed of delivery.

The most valuable indicator of the road freight forwarding company is speed of delivery, i.e. average speed of cargo from the moment of its loading to delivery to the customer. This figure is for each shipment to be found by the formula.

Term of delivery is determined by the formula: (Crainic 2002, 51.)

$$t_0 = \frac{2 \cdot \ell_{\text{erA}}}{V_t} + t_{\text{n-pA}} + t_{\text{n-pB}}$$

$$t_0 = 2 \cdot 200 / 40 + 0.5 + 0.5 = 11 \text{ h,}$$

Where: ℓ_{erA} – distance in one direction, $\ell_{\text{erA}} = 200 \text{ km}$;

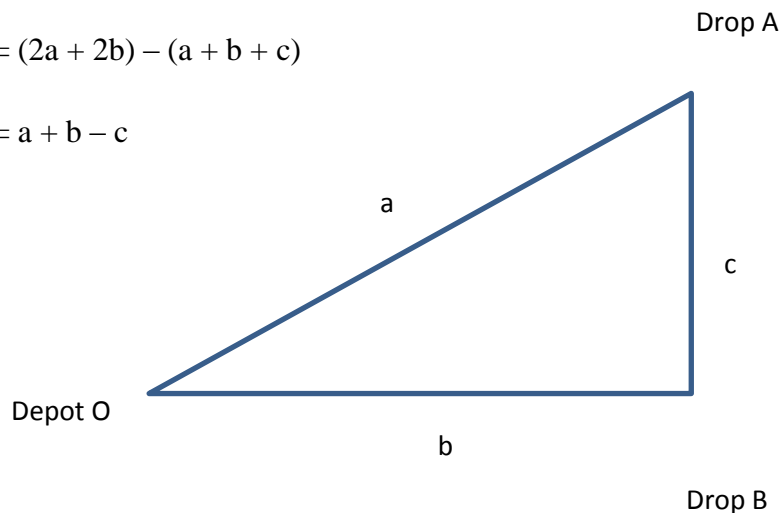
V_t – speed of vehicle, $V_t = 80 \text{ km/h}$;

$t_{\text{n-p A}}$ and $t_{\text{n-p B}}$ – waiting time before loading – unloading in point A and B, $t_{\text{n-p A}} = t_{\text{n-p B}} = 0,5 \text{ h}$.

Savings in the distance or time saved by combining the ways

$$= (2a + 2b) - (a + b + c)$$

$$= a + b - c$$



To solve the problem of optimal control of processes of freight transport routes it is needed to consider a number of specific examples of the optimization of processes and the development of mathematical models of continuous transport process for freight. In this connection, the economic criteria must be selected to affect the degree of organization of movements involving the various transport sectors and to develop methods that enable to successfully carry out such monitoring during operation of the transport system. (Crainic 2002, 51.)

In order to improve the efficiency of the transport process involving road transport it is needed to investigate the following problems:

- Construction of the complex inter-industry models for solving the problems of optimal use of technology in transportation process;
- The establishment of a system of tariffs for transportation of goods by road;
- Definition of common comparable indicators of vehicle performance;
- Optimization techniques and management structure of the transportation process in transportation process;
- Improvement of current and future planning of transportation business;
- Optimal choice of vehicle. (Crainic 2002, 9-15.)

At the same time plays a big role is played in the investigation and implementation by the practice of modern economic and mathematical models of optimal planning and management processes of freight road transport.

In order to solve problems of transportation process in the given company it is necessary to ensure the following:

- Investigate the nature and methodological bases of management of the transport system in the company;
- Get to know the scientific basis for the organization of management of the transport rules in the company;
- Monitor changes in the legal framework of transport management; (Crainic 2002, 9-15.)

In transport operations by road transshipment points play an important role. The most pressing problems of optimal control in transfer points are:

- Rational managing of the vehicle fleet of the company;
- Development of the optimal plan of the vehicle fleet and facilities based on certain situation;
- Right operation of the vehicles and additional trailer; (Crainic 2002, 9-15.)

At the same time, in order to optimize the process at the transshipping cargo operations research needs to be expanded on a vehicle on the following set of problems:

- Queuing theory and the transport process;
- Analysis of the non-uniformity of traffic;
- Improvement of the organization and mechanization of loading and unloading of the cargo. (Crainic 2002, 9-15.)

5. ANALYSIS OF H. TRANSPORT FINANCIAL ACTIVITY AND RESEARCH RELATED TO FINNISH AND ESTONIAN ROAD TRANSPORT REGULATION POLICY AND DIFFERENCE IN COST STRUCTURE.

5.1 Analysis of financial situation of Heikkila Transport Oy

To assess the financial condition of the company it is necessary to analyze its financial operations and to calculate key performance indicators for the balance of financial statement given by the H. Transport Oy in year 2011 and 2010. These results gives possibility to make overview of the company's financial situation and consider do they managing well and able to pay theirs liabilities or not.

For calculating the key figures and ratios was used software for analyzing company's financial situation named as Navita Yritysmalli.

(The calculation results are summarized in APPENDIX 4/1-4/5)

5.1.1 Benchmarking of Heikkilä Transport Oy

Benchmarking is the process of identifying, understanding and adapting existing examples of the effective operation of the company in order to improve their own work. It equally involves two processes: evaluation and comparison. (www.wikipedia.org and <http://danmont.hubpages.com/hub/Benchmarking-Definition-and-Benchmarking-Process>)

Usually take a sample of the "best" products and marketing process used by direct competitors and firms working in similar areas to identify possible ways to improve the company of its own products or services. (www.wikipedia.org and <http://danmont.hubpages.com/hub/Benchmarking-Definition-and-Benchmarking-Process>)

Benchmarking can be considered as one of the areas strategically oriented marketing research based on competitor's business analysis. (www.wikipedia.org and <http://danmont.hubpages.com/hub/Benchmarking-Definition-and-Benchmarking-Process>)

Disadvantages: the difficulty of obtaining objective indicators because of the closed companies. The existing system of financial and tax accounting is not always possible to obtain real data for various areas of activity. (www.wikipedia.org and <http://danmont.hubpages.com/hub/Benchmarking-Definition-and-Benchmarking-Process>)

The purpose of benchmarking - increasing the efficiency of its own operations and gain competitive advantage. Benchmarking is the subject of technology, manufacturing processes, methods of production and marketing of products. Benchmarking results together with the results of market research are used in the formulation of goals and strategies of organizations.

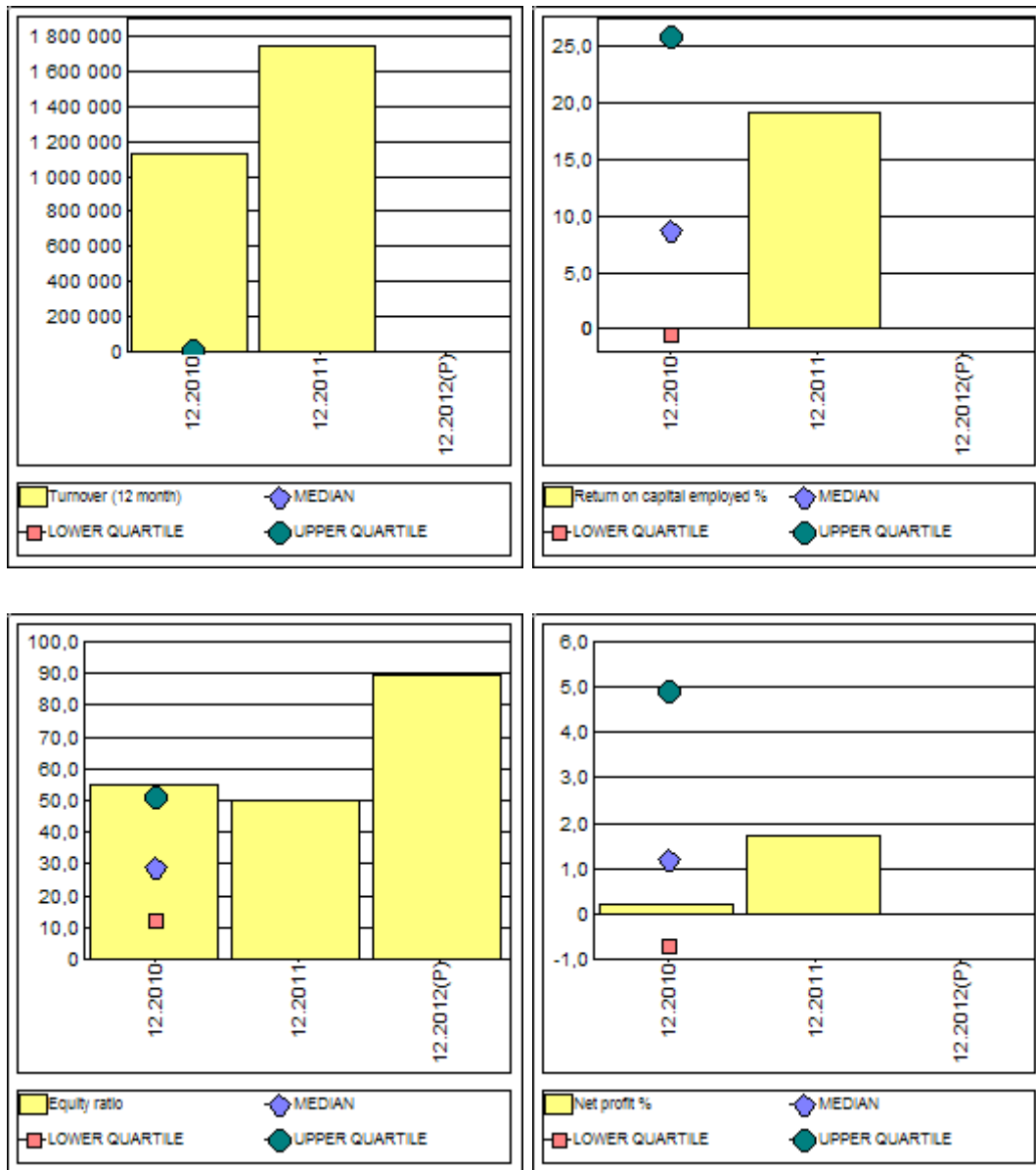
(www.wikipedia.org and <http://danmont.hubpages.com/hub/Benchmarking-Definition-and-Benchmarking-Process>)

Benchmarking was made on software called as Naviita Yritysmalli with Kuljetus ja Varastointi (Delivery and Warehousing) industry. Turnover can't be compared; however there is a possibility to benchmark the ratios of the companies. The data is available only for the year 2010.

TABLE 5. Navita industry benchmarking (adapted from Navita Yritysmalli benchmarking report)

	2010	2011
Turnover(12 month)	1 128 440	1 739 391
UPPPER QUARTILE	10 400	
MEDIAN	3 860	
LOWER QUARTILE	2080	
Return on capital employed %		19.3
UPPER QUARTILE	25.9	
MEDIAN	8.8	
LOWER QUARTILE	-0.4	
Equity ratio	54,7	50,0
UPPER QUARTILE	51.5	
MEDIAN	29.3	
LOWER QUARTILE	12.3	
Net profit %	0.2	
UPPER QUARTILE	4.9	
MEDIAN	1.2	
LOWER QUARTILE	-0.7	

In the table possible to see that equity ratio of Heikkila Transport Oy was its average compared to the rest of companies in this business area.



GRAPH 1. Benchmarking of H. Transort Oy and Kuljetus ja Varastointi in Navita.

5.1.2 Profitability

TABLE 6. Shows figures which one indicates business operations of the H. Transport Oy.

	2010	2011
Turnover	1 128 440	1 739 391
Operating profit	5 140	43 578
Profit for the period	2 496	30 239
Operating margin, %	3,2	4,5
Operating profit, %	0,5	2,5
Return on capital employed, %		19,3
Return on investments, %		13,4
Return on equity,%		17,8

The company's consolidated turnover had risen in 2011 from 1 128 440 EUR to 1 739 391 EUR showing that the company is developing and taking majorly steps to improve their situation after the financial crisis.

Presented operating margin figures show that the company had improved their situation due to the market recovery. Increase of incoming orders mainly in metals market area improved the situation as well. Operating margin of 4,5% is positive.

Operating profit had improved from 0,5 % to 2,5% that is a really positive trend, and it shows that company can meet their tax and financial obligations very easily.

Return on capital employed has positive results for the 2010-2011 periods showing that the company's business operations result is able to meet the total capital used in the operations.

5.1.3 Liquidity

Liquidity is a category of measurements that determine company's ability to pay its liabilities or debts to creditors.

TABLE 7. Shows quick and current ratios and debtor's possibility to pay their liabilities to H. Transport based on financial analysis in Navita Yritysmalli.

	2010	2011
Quick ratio	0,9	1,1
Current ratio	0,9	1,1
Trade debtors, days	30,5	27,2

Comparing to the whole company's situation the liquidity ratios are quite fine. Quick ratio represents the company's ability to meet its short-term liabilities and it equals 1,1 % and that figure was risen from previous year and still shows positive result. However the current ratio is not so good and can be considered as a poor state.

5.1.4 Solvency

Solvency is the current assets to current liabilities of a company referring to an ability of a company to meet its long-term fixed expenses and long term growth. The following table shows the solvency of the company.

TABLE 8. Shows the solvency of the H. Transport Oy.

	2010	2011
Debt equity ratio,%	0,4	0,3
Gearing,%	38,7	3,5
Equity ratio,%	54,7	50
Trade creditors, days	21,5	24,6
Z-ratio,%	-1,7	-1,5

Debt to equity ratio is pretty low and that is positive.

Equity ratio has a positive trend because it's decreased from 54.7% to 50% in year 2011.

Z-ratio of the Company is good and in one year they improved their situation quite well.

Debt to equity ratio is pretty low that is positive. However it decreased in 2011 to 0,3 that is not too big change and it's still a positive trend.

Equity ratio shows the proportion of the total assets that are financed by stakeholders, not creditors. It means that by one year percentage of owning of assets by stakeholders decreased from 54,7% to 50 %.

H. Transport Oy Company's ability to pay to their trade creditors is really good as measuring it by days, it takes them 21,5 days in 2010 and 24,6 days in 2011 it's quite good results considering that that common number of days to pay their liabilities is not more than 90 days.

Z-ratio of the Heikkila Transport is in good condition; its decreased from to -1.7 to -1,5% that does can be mentioned as positive trend.

5.1.5 Summary of financial situation

In general the financial situation of Heikkila Transport Oy is quite stable and progressive. During one year (from 2010 to 2011) turnover of the company has risen, operating profit increased, company is able to pay for fixed costs, and company's business operations result is able to meet the total capital used in the operations. Considering key ratios of the company we can say that it has good position on the market and company has a positive tendency for developing and growing in the future.

5.2 Finnish transportation price index

Transportation Price Index or TPI monthly indicates changes in prices paid for transportation services. Base on changes in economics and affected by ots of factors. For instance, Fuel price change, demand, growth, GDP, etc.

TABLE 9. Price index for transportation activities in Finland. (adapted from www.stat.fi)

	Vans and light trucks	% change	Medium and heavy trucks	% change	Trailer combinations	% change	Overall index	% change
2011	103,7	3,7	105,2	5,2	106,5	6,5	105,9	5,9
2012	108,9	5,1	110,4	5,0	113,0	6,1	112,1	5,8
01.2013	109,7	2,2	111,2	1,5	113,5	1,2	112,7	1,3
02.2013	109,9	0,6	111,5	0,5	114,1	0,5	113,1	0,5
03.2013	110,8	1,4	112,0	0,8	114,2	0,4	113,4	0,6

As we can see from the Table 7. Index from last month changed +1,4% for vans and light trucks, +0,8% for medium and heavy trucks and +0,4 for lorry combinations. In overall change of index was 0,6% from last period. This change contributes to price of transportation service.

Accordingly to that to transportation price index included

- Driver wages
- Indirect labour costs
- Daily allowance
- Fuel
- Repair and Service
- Tyres
- Depreciation of capital
- Interest costs
- Insurance
- Transport charges
- Administration
- Maintenance.

5.3 Estonian transportation price index

TABLE 10. Service price index of courier activities in year for all types of trucks.

(adapted from www.stat.ee)

	1 st quarter	2 nd quarter	3 rd quarter	4 th quarter	Change % over the year
2008	99.81	99,99	100,08	100,12	
2009	104.07	103,88	104,80	105,68	4,6
2010	104.44	103,31	105,17	105,91	0,3
2011	114,94	116,55	117,05	116,95	11,1
2012	128,98	132,13	128,07	131,58	11,9

Unfortunately change in service price index from first three months or quarter is not available yet in social data statistics sources.

5.4 Cost structure of Finnish transport company

Cost structure of transport includes driver wages, fuel cost, depreciation, charges for transport, indirect labor costs, repair and service, interest costs, administration costs, daily allowance, tyres cost, insurance and maintenance.

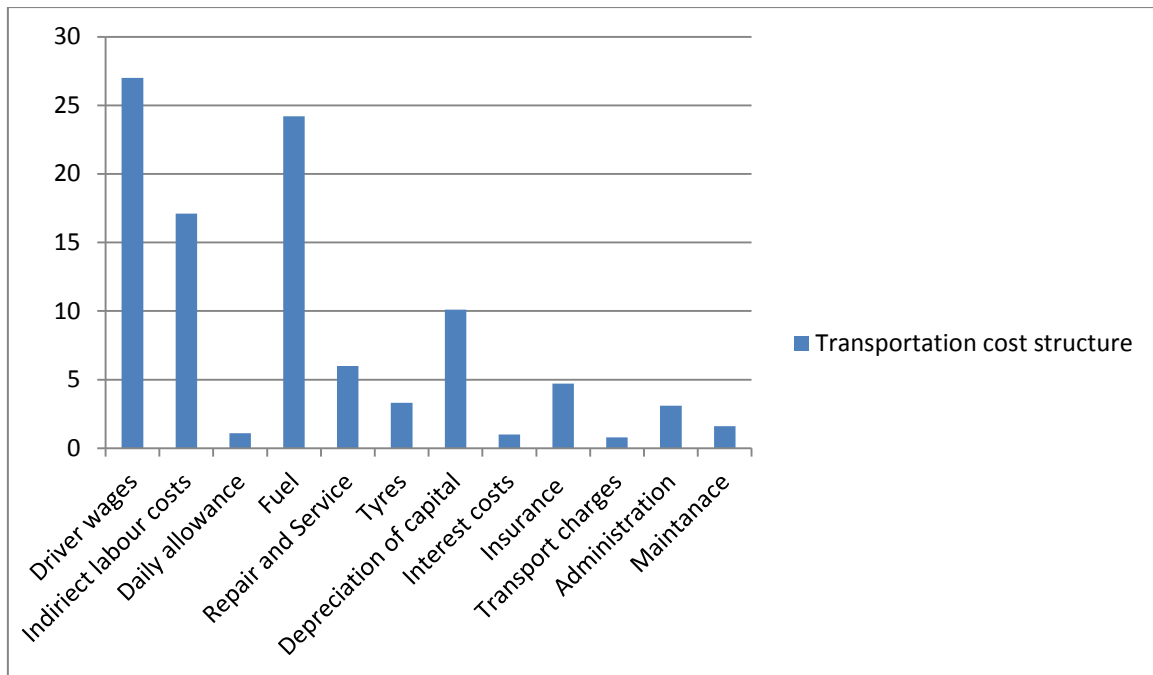


DIAGRAM 2. Shows average percentage share of different costs which ones are included in transportation cost structure in Finland. (adapted from Finnish statistic webpage: www.stat.fi)

5.5 Cost structure of Estonian transportation company

Cost structure of Estonian transportation company includes the same costs like in Finland, but percentage share for most of aspects are smaller if compare to Finnish ones.

Driver wages – 26%

Indirect labour costs – 15%

Daily allowance – 1%

Fuel – 22%

Repair and Service – 4%

Tyres – 4%

Depreciation of capital – 13%

Interest costs – 1%

Insurance – 6%

Transport charges – 4%

Administration – 3%

Maintanace – 1%

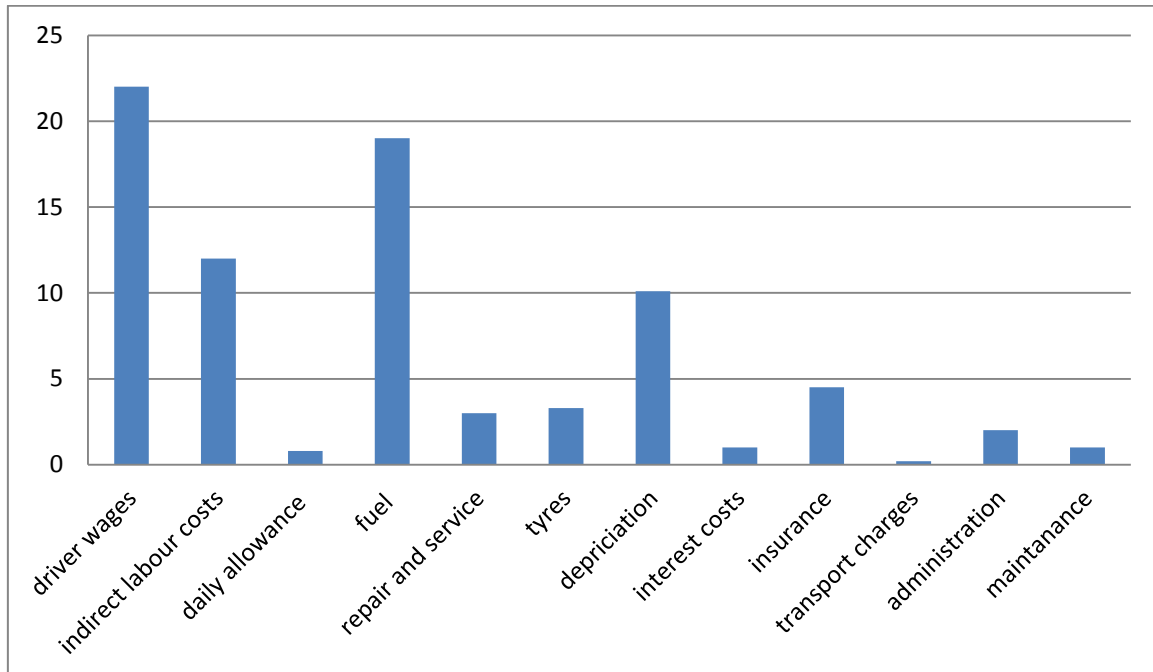


DIAGRAM 4. Shows avarage percentage share of different costs which ones are included in transportation cost structure in Estonia. (adpated from Estonian statistic webpage: www.stat.ee)

5.6 Difference in transportation cost structure between Finland and Estonia

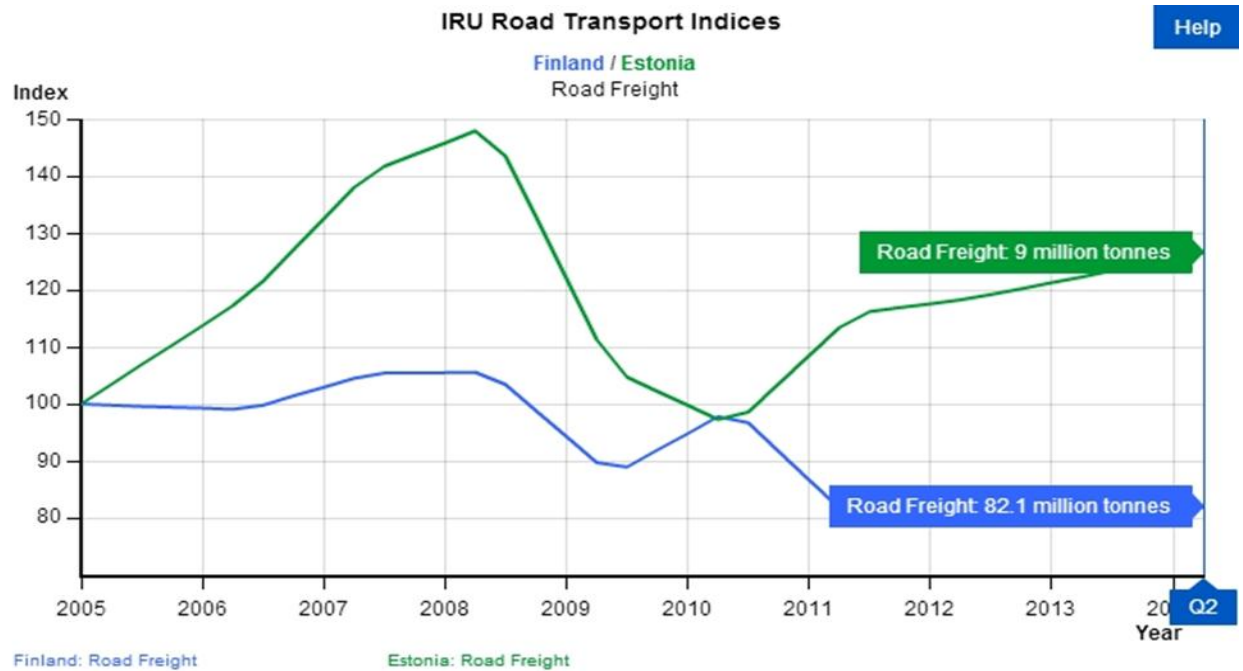


DIAGRAM 5. Road transport indices of Estonia and Finland. (adapted from www.iru.org)

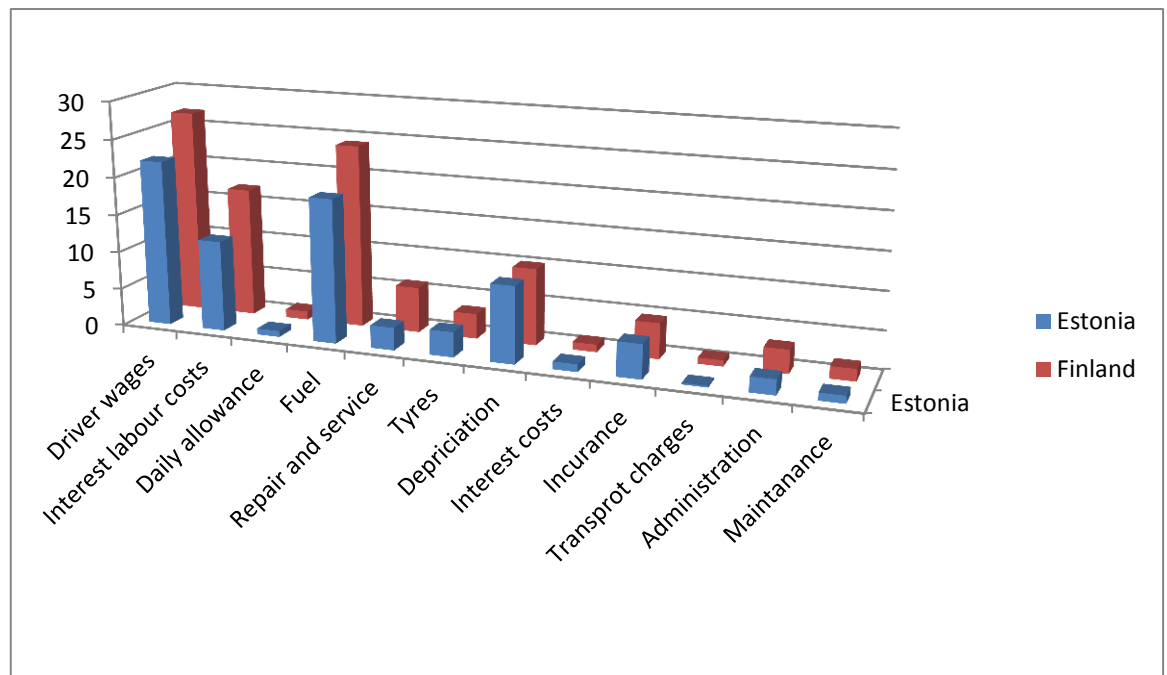


DIAGRAM 6. Difference in cost structure between Finland and Estonia. (adapted from www.stat.fi, www.stat.ee)

Difference in economic development gives ways for economic growth, because transportation links together the factors of production in a relationship between manufacturers and consumers. In the example of two countries with different economical level we can compare those ties only for transportation cost structure and dependencies between them.

Collected information about Estonian and Finnish cost structure and percentage share of aspects which affecting directly to the transportation cost is not clearly illustrates difference between both countries. Such aspects like driver salaries and fuel cost have biggest share from transportation cost. In Estonia, regarding average statistical data, share for driver salary is 26 percent from all transportation cost and in Finland 27 percent. Basically, percentage division between costs included in transportation cost structure in Finland and Estonia are not the main issue. The reason why price for transportation is cheaper in Estonia is different level of economic development. Some of internal factors are influencing as well. For instance, if come back to the aspects included in transportation cost structure like fuel, tyres, transport charges, labor costs or administration costs, all of them are significantly lower than in Finland, this means price for previously mentioned factors, not the percentage share in total cost structure. From that follows that transportation cost can be decreased accordingly to level of domestic prices.

CONCLUSION

On the basis of the attempt which was made in this thesis project it is possible to say, that road transport can be characterized by such aspects like size, type, maneuverability and load capacity. The effectiveness of the road transport used can be determined by such factors as the cost of transportation, cost structure, performance, etc. Cost for transportation can be calculated by following factors: distance, weight and volume of loaded trailer, time of use and area where shipment actually was made. And costing for services directly contributes to additional costs included. They are driver wages, labor costs, maintenance, tires waste, and insurance and administration fees. (See theory page 10-12)

Results were obtained from Finnish statistics database and compared to results of Estonian cost structure. (See DIAGRAM 6.) In overall percentage will be a bit different, because level of economics is not the same like in Finland. But if to consider most Estonian hauler companies having business internationally, those relatively small costs and wages can give advantages regarding to profitability to Estonian courier more than to Finnish one, which is doing the same operation but in the opposite way. Because a company located in Finland and is obligated by Finnish rules and laws and pays local fees. This implies that for Estonian company it is more beneficial to have international business than for Finnish one, because domestic costs are smaller, and it means fewer expenses for operation.

To conclude, all research what was done while working on this thesis project. Appropriate to mention that, freight forwarding business will continue and be in use for long time period of time because any kind of manufacturing of products requires a transportation of material by supplier or ready product to the consumer or distribution point in their logistics supply chain. But on the other hand there is a big fight for prices in the present competitive market. And each company providing transport service has to control their activities jointly with accurate cost revision. Using benchmarking techniques can contribute and give positive results for the company as well. (See page 35.) Accordingly to those suggestions and theoretical explanations provided previously we can bring a positive result for improving transportation business or data which can be considered before starting courier business in Estonia or Finland.

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PKY-LAATU®

SERTIFIKAATTI

Nro 249,5

FINLOG AUDIT OY

todistaa täten, että

HEIKKILÄ TRANSPORT OY

on ylläpitänyt 2000 käyttöön ottamaansa toimintajärjestelmää.

Uusinta-auditoinnissa saatiin osoitus, että tämä järjestelmä täyttää vaatimukset:

ISO 9001:2008

laadunhallintajärjestelmästandardista

ISO 14001:2004

ympäristöjärjestelmästandardista

OHSAS 18001:2007

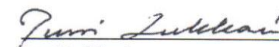
työterveys- ja turvallisuusjohtamisjärjestelmästandardista.

Sertifioitu toimintajärjestelmä kattaa seuraavat toimialat ja palvelut:

kappaletavaran kotimaankuljetukset,
kappaletavaran ulkomaankuljetukset,
kuljetussuoritteiden markkinointi, myynti,
ajojärjestelyt, toimistotyöt ja seuranta.

Sertifiointi on voimassa 3. lokakuuta 2015 saakka.

Sotkamossa 3. lokakuuta 2012


Pasi Korhonen
Toimitusjohtaja
Jussi Lukkari
Ulkoisen auditoija

EMISTRA

YRITYKSEN YMPÄRISTÖRAPORTTI 2012

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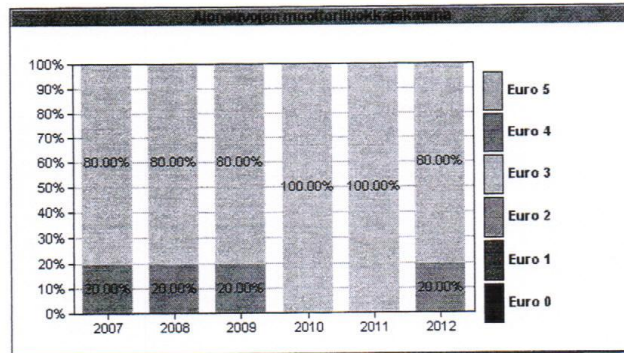
Liikevaihto t€	0
Henkilöstön määrä	7
Autojen lkm	5
Ajokilometrit km/v	0

Kuljetuspäästöt vuonna 2012

Rek nro	Tunn.	Suonteala	Ajetut kilometrit	Tonni-kilometrit	CO (kg)	HC (kg)	NO _x (kg)	PM (kg)	CH ₄ (kg)	N ₂ O (kg)	SO ₂ (kg)	CO ₂ (t)	Kulutus (l)	Keskikulutus (l/100km)
BMF-452		Kappaletavar	102 454	-	24,5	14,9	757,0	7,2	1,1	3,6	0,7	109,1	41 025	40,0
EXN-467		Kappaletavar	130 007	-	28,5	17,3	880,2	8,3	1,2	4,2	0,8	126,9	47 704	36,7
FHF-698		Kappaletavar	133 918	-	32,3	19,7	1 000,1	9,5	1,4	4,7	0,9	144,2	54 200	40,5
URF-301		Kappaletavar	68 645	-	20,6	12,5	762,7	7,2	0,9	2,4	0,5	71,4	26 851	39,1
UMZ-160		Kappaletavar	122 972	-	27,4	16,7	846,2	8,0	1,2	4,0	0,8	122,0	45 859	37,3
Yhteensä			557 996	0	133,3	81,1	4 246,2	40,2	5,8	18,9	3,7	573,6	215 638	

Yrityksen ajoneuvojen moottoriluokat

	Euro-0	Euro-1	Euro-2	Euro-3	Euro-4	Euro-5
2007	0%	0%	20%	80%	0%	0%
2008	0%	0%	20%	80%	0%	0%
2009	0%	0%	20%	80%	0%	0%
2010	0%	0%	0%	100%	0%	0%
2011	0%	0%	0%	100%	0%	0%
2012	0%	0%	20%	80%	0%	0%



TOTEUTETUT ENERGIATEHOKKUUSSTOIMENPITEET

Alla on listattu yrityksen EMISTRA -seuranjärjestelmään syöttämät toteutetut energiasäästötoimenpiteet. Energian säästö perustuu yrityksen itse antamaan lukemaan.

Toimenpide	Kattavuus	Toteutunut säästö	Toteutusajankohta
Ei energiatehokkuustoimenpiteitä vuonna 2012			

AJETUT KILOT

	<u>Omat</u>	<u>Aiovälitys</u>	<u>Yhteensä</u>	<u>Viro / mene</u>	<u>Viro / paluu</u>
2012	17 369 946	9 732 350	27 102 296	7 700 000	3 402 000
2011	19 438 288	16 500 197	35 938 485	12 000 000	6 900 000
2010	17 234 971	8 026 969	25 261 940	5 400 000	5 900 000
2009	16 669 171	5 120 481	21 789 652		
2008	25 860 130	22 889 240	48 749 370		
2007			55 597 996		

APPENDIX 1/4

28.04.2013 03:41 Page 1/15

Heikkila Transport OY

INCOME STATEMENT 1000 EUR	2010/12 12		2011/12 12		2012/12 12(P)
Turnover	1 128 440	100,0	1 739 391	100,0	
Purchases during the period / Materials usage	226 288	20,1	344 583	19,8	
External services	450 583	39,9	865 990	49,8	
Wages and salaries	225 032	19,9	232 559	13,4	
Pension costs	37 943	3,4	38 169	2,2	
Other staff costs	11 177	1,0	15 871	0,9	
Depreciation on fixed assets	30 648	2,7	34 335	2,0	
Other operating costs	141 629	12,6	164 306	9,4	
Operating profit	5 140	0,5	43 578	2,5	
Other interest and financial income	161		215		
Interest and other financial expenses	2 781	0,2	2 576	0,1	
Financial items, total	2 620	0,2	2 362	0,1	
Profit after financial items	2 519	0,2	41 216	2,4	
Profit after extraordinary items	2 519	0,2	41 216	2,4	
Income tax	24		10 978	0,6	
Profit for the period	2 496	0,2	30 239	1,7	
Turnover growth percentage			54,1		-100,0
Average turnover growth %			54,1		
Operating margin %	3,2		4,5		
Operating profit %	0,5		2,5		
Return on capital employed %			19,3		

APPENDIX 2/4

1000 EUR

Heikkila Transport OY 1000 EUR		2010/12 12	2011/12 12	2012/12 12 (P)
105 Goodwill / investments (P)	0 Absolute			
107 Other intangible assets / investments (P)	0 Absolute			
108 Advances paid on intangibles / change (P)	0 Absolute			
109 Land and water areas / investments (P)	0 Absolute	13 470	13 470	
110 Buildings / investments (P)	0 Absolute	38 102	35 435	
111 Machinery and equipment / investments (P)	0 Absolute	137 098	139 530	
112 Other tangible assets / investments (P)	0 Absolute			
113 Advances paid and construction in progress / change (P)	0 Absolute			
119 Other shares and holdings / investments (P)	0 Absolute			
120 Other receivables / change (P)	0 Absolute			
121 Raw materials and consumables	0 Absolute			
122 Work in progress	0 Absolute			
123 Finished goods	0 Absolute			
124 Other stocks	0 Absolute			
125 Advances paid	0 Absolute			
126 Long-term trade debtors / change (P)	0 Absolute			
129 Deferred long-term tax asset / change (P)	0 Absolute			
130 Long-term loans receivable / change (P)	0 Absolute			
133 Other long-term receivables / change (P)	0 Absolute			
136 Long-term prepayments and accrued income / change (P)	0 Absolute			
139 Current trade debtors	0 Absolute	95 562	131 359	
142 Deferred current tax asset	0 Absolute			
143 Current loans receivable	0 Absolute			
146 Other current receivables	0 Absolute			
149 Current prepayments and accrued income	0 Absolute	521	1 028	
153 Other shares and holdings	0 Absolute			
154 Other securities	0 Absolute			
155 Cash and bank balances	0 Absolute	2 852	43 978	
201 Subscribed capital / change (P)	0 Absolute	8 829	8 829	
202 Share premium account / change (P)	0 Absolute			
203 Revaluation reserve / change (P)	0 Absolute			
204 Fair value reserve / change (P)	0 Absolute			
205 Own shares or holdings reserve / change (P)	0 Absolute			

1000 EUR

Heikkila Transport OY 1000 EUR		2010/12 12	2011/12 12	2012/12 12 (P)
206 Reserve fund / change (P)	0 Absolute			
207 Reserve for invested non-restricted equity / change (P)	0 Absolute			
208 Other Articles of Association or statutes reserves / change...	0 Absolute			
209 Other reserves / change (P)	0 Absolute			
210 Retained profits / change (P)	0 Absolute	146 393	143 779	
211 Profit for the period (A)		2 496	30 239	
214 Accumulated depreciation difference / change (P)	0 Absolute			
215 Voluntary reserves / change (P)	0 Absolute			
216 Pension provision	0 Absolute			
217 Tax provision	0 Absolute			
218 Other provisions	0 Absolute			
219 Long-term subordinated loans / change (P)	0 Absolute	22 988	20 915	
220 Long-term debentures / change (P)	0 Absolute			
221 Long-term convertible loans / change (P)	0 Absolute			
222 Long-term loans from financial institutions / change (P)	0 Absolute			
225 Long-term pension fund loans / change (P)	0 Absolute			
226 Long-term advances received / change (P)	0 Absolute			
227 Long-term trade creditors / change (P)	0 Absolute			
230 Long-term bills of exchange payable / change (P)	0 Absolute			
231 Deferred long-term tax liability / change (P)	0 Absolute			
232 Other long-term liabilities / change (P)	0 Absolute			
235 Long-term accruals and deferred income / change (P)	0 Absolute			
238 Short-term subordinated loans	0 Absolute			
239 Current debentures	0 Absolute			
240 Current convertible loans	0 Absolute			
241 Short-term loans from financial institutions	0 Absolute	40 898	29 502	
244 Short-term pension fund loans	0 Absolute			
245 Short-term advances received	0 Absolute			
246 Current trade creditors	0 Absolute	40 494	82 576	
249 Current bills of exchange payable	0 Absolute			
250 Deferred current tax liability	0 Absolute			
251 Other current liabilities	0 Absolute	25 590	38 882	
254 Current accruals and deferred income	0 Absolute	842	11 004	

1000 EUR

Heikkila Transport OY 1000 EUR		2010/12 12	2011/12 12	2012/12 12 (P)
301 Number of employees	0 Absolute			
302 Dividends	0 Absolute			
303 Funded receipts	0 Absolute			
304 Funded taxes	0 Absolute			
305 Increase in equity (A)				
306 Adjustments in tax forecast	0 Absolute			
307 Tax percentage		25	25	25
308 Inflation index	0 Absolute			
309 Adjustment item in cash flow statement	0 Absolute			
310 Number of shares	0 Absolute			
311 Average number of shares				
312 Dividends for the period				
313 Share price				
314 Fixed asset adjustment	0 Absolute			
315 Stock adjustment	0 Absolute			
316 Financial asset adjustment	0 Absolute			
317 Reserve adjustment	0 Absolute			
318 Liability adjustment	0 Absolute			
319 Risk-free return on equity %	0 Absolute	2	2	
320 Market risk premium %	0 Absolute			
321 Beta coefficient	0 Absolute	1	1	1
322 Excess liquidity	0 Absolute			

1000 EUR

Heikkila Transport OY 1000 EUR		2010/12 12	2011/12 12	2012/12 12 (P)
1 Turnover	0 Absolute	1 128 440	1 739 39...	
2 Change in stocks of finished goods and WIP (A) (increase +)				
3 Production for own use (A)				
4 Other operating income	0 Absolute			
5 Purchases during the period (A) / Usage (P)	0 Absolute	226 288	344 583	
6 Change in stocks (A) (increase +)				
7 External services	0 Absolute	450 583	865 990	
8 Wages and salaries	0 Absolute	225 032	232 559	
9 Pension costs	0 Absolute	37 943	38 169	
10 Other staff costs	0 Absolute	11 177	15 871	
11 Depreciation according to plan	0 Absolute	30 648	34 335	
12 Amounts written down fixed assets	0 Absolute			
13 Exceptional amounts written down current assets	0 Absolute			
15 Other operating costs	0 Absolute	141 629	164 306	
24 Income from other investments	0 Absolute			
26 Other interest and financial income	0 Absolute	161	215	
27 Exchange gains and losses	0 Absolute			
29 Amounts written down financial fixed assets	0 Absolute			
30 Amounts written down other securities	0 Absolute			
32 Interest and other financial expenses	0 Absolute	2 781	2 576	
33 Extraordinary income	0 Absolute			
34 Extraordinary expenses	0 Absolute			
37 Change in depreciation difference (increase +)	0 Absolute			
38 Change in voluntary reserves (increase +)	0 Absolute			
39 Income tax	0 Absolute	24	10 978	
40 Tax on extraordinary items	0 Absolute			
41 Change in deferred tax liability (increase +)	0 Absolute			
42 Change in deferred tax asset (increase +)	0 Absolute			
44 Taxable target profit (P)	0 Absolute			
101 Formation expenses / investments (P)	0 Absolute			
102 Research expenses / investments (P)	0 Absolute			
103 Development expenses / investments (P)	0 Absolute			
104 Intangible rights / investments (P)	0 Absolute	925	925	