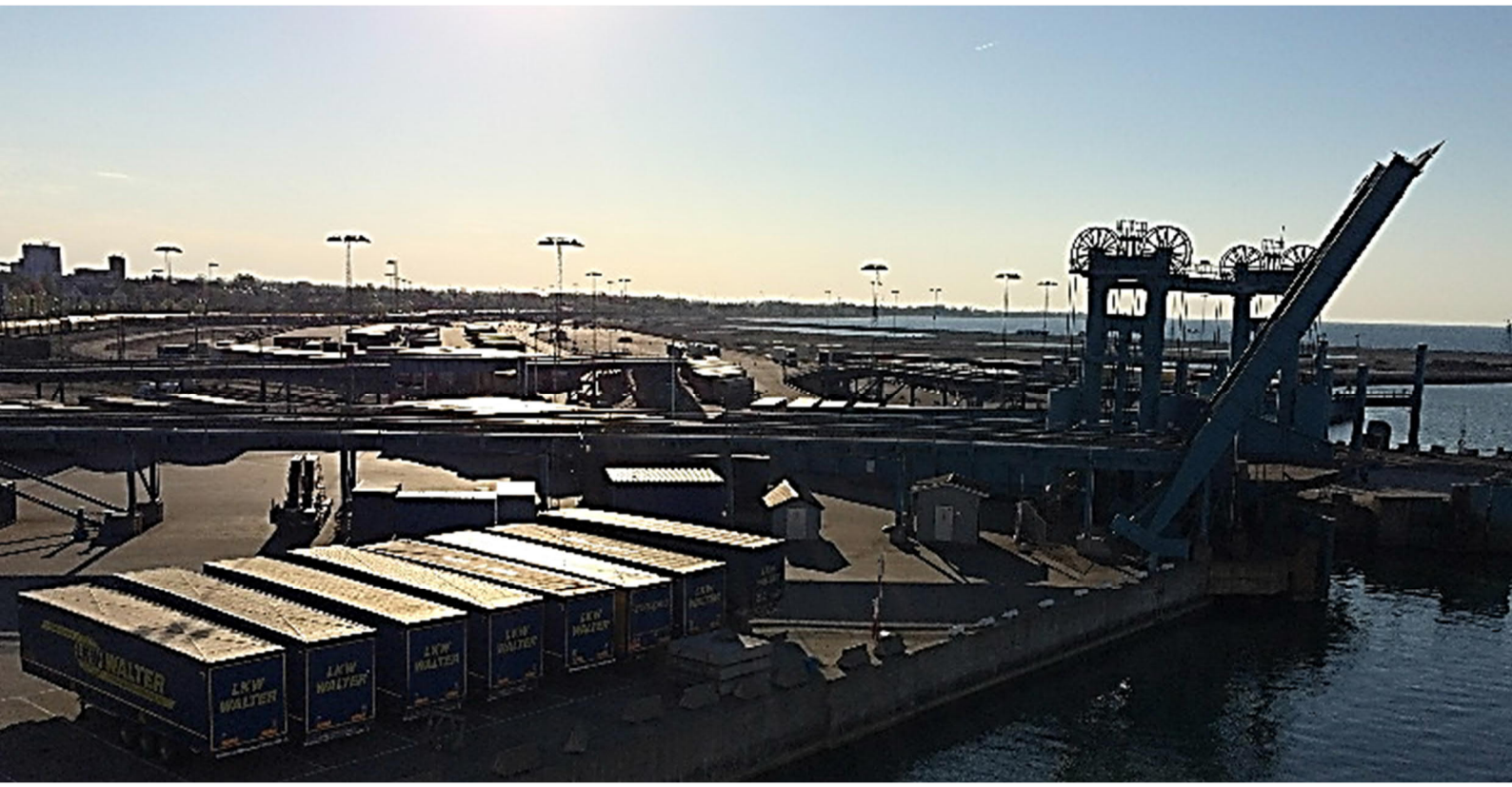
TRAFIKVERKET

REPORT – SHORT VERSION

Survey of road freight through RoRo-ports along the south and west coast of Sweden

Results from interviews with 2 500 truck drivers



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FLAGSHIP

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Title: Survey of road freight through RoRo-ports along the south and west coast of Sweden – Short version. Results from interviews with 2 500 truck drivers

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Date: 2018-06-29
Ärendenummer: TRV 2018/57804
Version: 1.0

Publikationsnummer: 2018:170

1. Introduction

In 2006, Vägverket (the Swedish Road Administration) published the report ”Road freight through Skåne and Blekinge” (“Godstransporter genom Skåne och Blekinge”[1]), a survey of goods transport in the two counties focusing on road freight flows generated by the ferry operations in the RoRo[2]-ports.

During 2016, Trafikverket Region South and Trafikverket Region West conducted a similar survey as a follow up. This time road freight through the RoRo-ports in the counties of Västra Götaland, Halland, Skåne and Blekinge as well as the Öresund Bridge were included. The survey was co-funded by Scandria®2Act[3], an initiative of regions located along the Baltic Sea Region stretch of the Scandinavian-Mediterranean Core Network Corridor for a harmonized corridor development.

Purpose

The purpose of this study is to describe and analyse road freight transports, related to ferry operations, passing through RoRo-ports in the counties of Västra Götaland, Halland, Skåne and Blekinge as well as the road freights on the Öresund Bridge. This is achieved through the following studies:

- The port study – interviews with truck drivers in RoRo-ports (including observations of vehicles)

- The Öresund Bridge study – interviews with haulage companies operating on the Öresund Bridge

Furthermore, a brief study of rail freight to and from the RoRo-ports is included. The analysis chapter includes selected comparisons with results from the 2005-2006 study.

The ambition is for the results to be useful in national and regional infrastructure planning and for ports (usually owned by the municipalities), shippers and road freight companies.

Scope

The following ports have been included in the survey:

- Strömstad
- Göteborg: Göteborg RoRo, Denmark terminal and Germany terminal
- Varberg
- Helsingborg
- Malmö
- Trelleborg
- Ystad
- Karlshamn
- Karlskrona

As for 2016, the above eleven RoRo-terminals handled about 80 percent of the total number of units within the RoRo-segment in Swedish ports[4].

[1] VV 2006:109 Kartläggning av godstransporter genom Skåne och Blekinge, Vägverket, 2006
[2] Roll on, Roll off = the freight is rolled on and off the ferries (usually by trucks)
[3] http://www.scandria-corridor.eu/index.php/en/projects/scandria2-act
[4] Port statistics category ”Trailers and trucks etc” and category ”Misc RoRo freight”

The results of the port study are based on almost 2 500 interviews with truck drivers on 14 ferry lines. Furthermore, more than 3 300 observations have been carried through. In total, there are results for almost 4 000 vehicles. The interviews have been carried out on site in each port, in connection with the outbound transport from Sweden.

The results of the Öresund Bridge are based on 166 telephone interviews with road freight companies in Denmark and Sweden that regularly use the Öresund Bridge.

The questions in the interviews have mainly focused on points of origin and destination, which roads that have been used, type of goods and data about the vehicles and drivers. The method is described in the main report, section 1.3 and associated appendix 1.

2. Summarised conclusions

This chapter contains a summarised description of the most important results from the study:

1. The RoRo-segment has seen a higher growth than the Swedish foreign trade
2. Large shares of regional and international transit transports to/from RoRo-ports
3. The hinterland for a RoRo-port is largely determined by the driving and rest time's daily allowance
4. Three out of four vehicles are at least 75 % fully utilized
5. A large share of truck drivers originate from other countries than Sweden
6. Vehicles are modern, but run on diesel
7. Low use of railway transport to and from the RoRo-terminals

In the following segment 2.1 a number of factors are listed that may influence the future development of these results (also see section 7.9 in the main report).

1. The RoRo-segment has seen a higher growth than the Swedish foreign trade

The total RoRo-traffic (excluding railway wagons) in the studied ports and on the Öresund Bridge has increased by more than 520 000 units (about 23 %) between 2005 and 2016 (see figure 1). The increase in the ports alone is about 16 % and on the Öresund Bridge alone about 70 %.

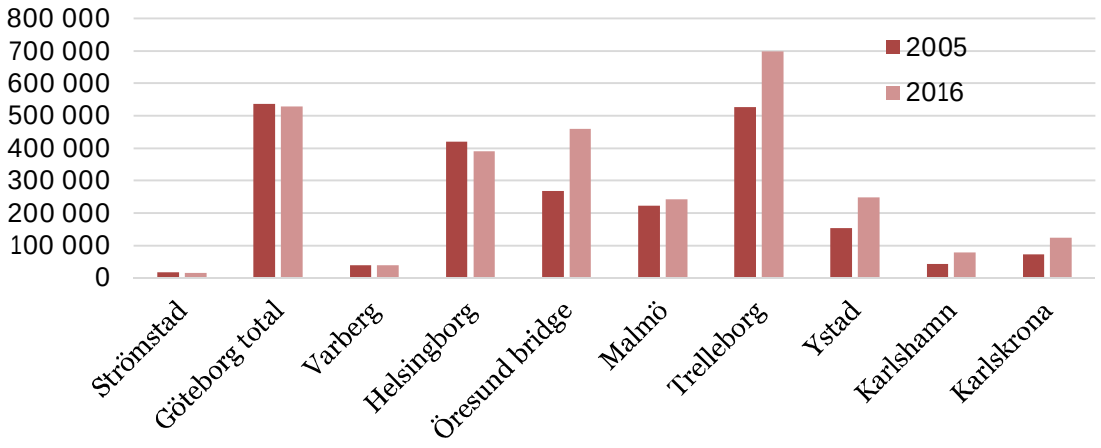

Figure 1: Total flow of traffic by truck and trailers and misc RoRo freight (railway wagons excluded) in the studied ports during 2005 and 2016. Source: Sveriges Hamnars statistik 2005 and 2016, Trafikanalys Sjötrafik. 2016.

During the same period, Swedish foreign trade (in tonnes) increased by 12 % and road freight transports on Swedish roads in general by 19 %. Thus, the traffic in the RoRo-segment has increased faster than the Swedish foreign trade in general.

The largest increases, except for the Öresund Bridge, have occurred in the port of Trelleborg and the other ports east of Trelleborg. The largest increase in absolute numbers has taken place in Trelleborg (+170 000 units) and percentage wise in Ystad (+60 %), Karlshamn (+80 %) and Karlskrona (+70 %). In these ports the ferry lines connect Sweden with Poland, the Baltic countries and Poland respectively, and the increase mirrors the fact that Swedish trade with eastern European countries has amplified since the study in 2005.

In total, since 2005, the RoRo-volumes have increased by about 24 % in the studied ports in Skåne and Blekinge and decreased by 1 % in the ports in Halland and Västra Götaland.

On the Swedish side of the ferry connection, the point of origin or destination for the transport is usually one of the larger cities on the south and west coast (Göteborg, Malmö, Helsingborg, Jönköping and Halmstad) or the logistics hubs in the middle of Sweden (Stockholm, Örebro, Norrköping and Linköping).

On the foreign side of the ferry connection, the points of origin or destination are spread all over Europe. The most significant sender and receiver countries are neighbouring Sweden; Denmark, Germany and Poland. Also Holland holds a noteworthy share of the total volume.

2. Large share of regional and international transit transports to/from RoRo-ports

The study shows that the points of origin or destination of the transport relations to an average of 70 % are found outside the county where the port is located (figure 2). On average, 10 % of the transport relations start or finish in the same municipality as the location of the respective port. For the largest RoRo-port in Sweden – Trelleborg – the study shows that only 2 % of the transport relations start or end in the municipality of Trelleborg (and 24 % in the county of Skåne).

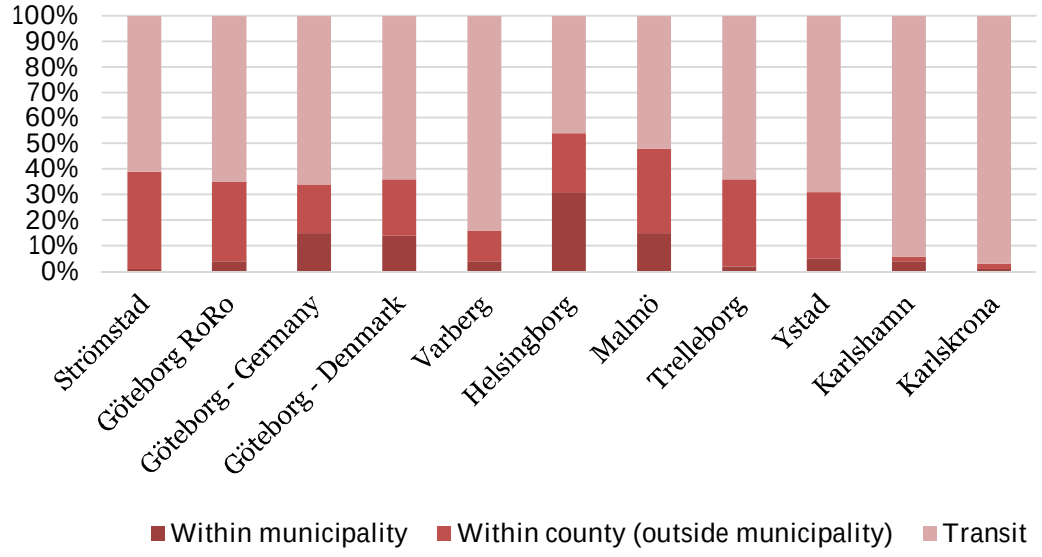

Figure 2: Share of traffic with origin or destination in the municipality or county where the port is located as well as transit traffic to other counties or outside Sweden

Karlskrona, Karlshamn and Varberg have the largest shares of transports to and/or from locations outside their own county. RoRo-terminals in manufacturing and warehouse intense areas like Helsingborg, Malmö and Göteborg have the highest shares of start and finishing points within the own municipality.

This suggests that several of the RoRo-ports, often owned by the municipalities, predominantly serve trade and industries further away than the municipality and county where the port is located.

For some ports, the share of international transit transport is significant, mainly for road freight to and/or from Norway. Swedish ports are also used for international transit transports to and from Denmark, Finland and the Baltic countries.

In Karlshamn, the share of international transit traffic is almost 30 %. The connection Karlshamn–Klaipeda places Karlshamn in two international transit corridors; Norway–the Baltics and Denmark–the Baltics. The Göteborg Germany terminal also has a significant share of transit traffic (25 %), mainly related to Norway.

3. The hinterlands for a RoRo-port is largely determined by the driving and rest time's daily allowance

When the point of origin and destination are analysed on a NUTS2[5] level, the general conclusion is that the start or end point of the transport relation predominantly is located within the own or in the neighbouring NUTS2 region. There is a strong concentration to southern and western Sweden followed by Småland (see section 7.2 in the main report). This shows that the ports mainly provide the own and neighbouring NUTS2 regions with road freight.

Accordingly, the three most northern NUTS2 areas of Sweden (Northern Middle Sweden, Middle Norrland and Upper Norrland) generally have a weak exchange with the ports of the study. The exceptions are Karlskrona and the Göteborg Denmark and Germany Terminals, for which Northern Middle Sweden (counties of Värmland, Dalarna och Gävleborg) sums up to more than 10 % of the transport relations.

The regulations for driving and rest times dictate the working day and working week for the driver and by that influences the distance for a cost effective road transport. The study shows that the start or finish point of the transport relation largely is found within a distance from the port which can be reached during half a day or one full day (a radius of 300 – 500 km). Approximately 80 % of the transports have their first unloading or loading within such a distance. In this context, the port of Varberg has the highest share (more than 90 %) and Karlskrona the lowest (about 65 %).

4. Three out of four vehicles are at least 75 % fully utilised

For outbound transports from Sweden (through a port), paper mass/paper products, metal products and timber products are the most common types of goods. For inbound transports to Sweden (through a port), the most common freight are metal products, timber products and food/pet food.

The survey shows that more than 75 % of the vehicles are at least 75 % fully utilised (use of loading capacity). About 60 % of the transports are carried out with full load and about 10 % with no load. In general, the vehicles are more frequently fully loaded on the inbound (to Sweden) routes (see figure 3).

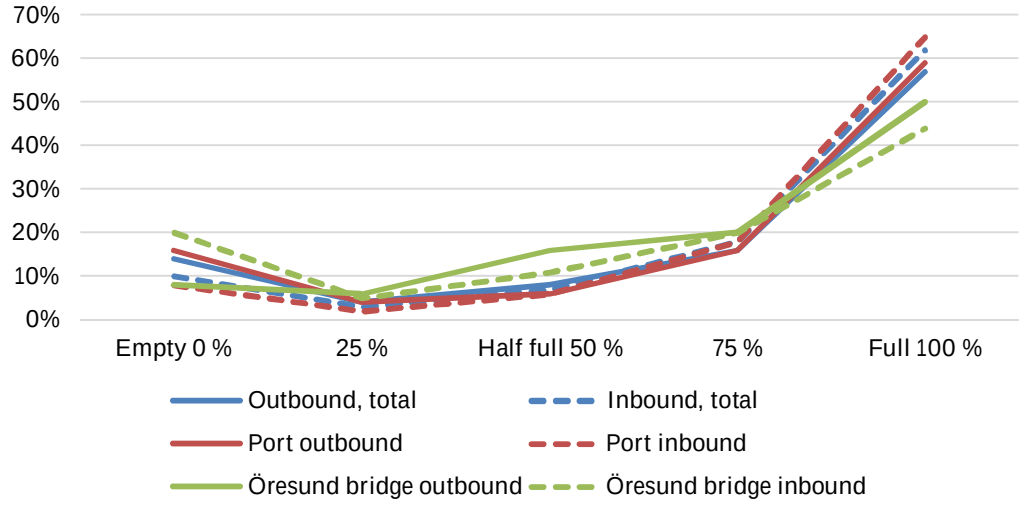

Figure 3: Loading rates based on the direction of the transports, through harbours and on the Öresund Bridge[1]

[5] NUTS = Nomenclature des Unités Territoriales Statistiques. NUTS is the regional division used in the EU for reporting statistics in Sweden.

The limitation for the vehicle's loading capacity varies between different types of goods, most often weight, volume or loading meters.

Based on the 2016 port statistics, it may be concluded that in the ports of the study the average payload per unit is 14-15 tonnes.

Furthermore, the study shows that the share of transports with dangerous goods to/from the ports and on the Öresund Bridge in total is about 3 %. The share is higher for the Öresund Bridge (7-8 %), than in the ports (4 % outbound and 2 % inbound). One explanation may be that dangerous goods transports are allowed on the Öresund Bridge 24/7, while there are certain schedule related limitations on the ferries (not all departures allow for dangerous goods).

5. A large share of truck drivers originate from other countries than Sweden

In total, the share of truck drivers that originate from other countries than Sweden is very high. The most common country is Poland (more than 30 %), while the share of Swedish drivers is about 10 %. The distribution between the drivers' country of origin varies greatly between the ports of the study.

In many cases the country of origin of the driver, as well as of the vehicle, is one of the countries connected by the ferry line. This is most clear in the ports of Ystad, Karlshamn and Karlskrona, with connections to Poland, Lithuania and Poland respectively:

- Ystad: almost 80 % of the drivers originate from Poland.
- Karlshamn: more than 75 % of the drivers originate from Lithuania.
- Karlskrona: more than 90 % of the drivers originate from Poland.

Apart from the countries connected by ferries, Bulgaria (8 %) and Rumania (7 %) are the most common countries of origin for the truck drivers.

6. Vehicles are modern but run on diesel

Out of the different types of vehicles, semi-trailer truck (up to 18.75 m) is by far the most common (84 %). However, on the Öresund Bridge truck with trailer (up to 25.25 m) is the most common configuration. Also, the share of truck without trailer is much more common on the bridge than in the ports.

Compared with the survey from 2005-2006, there has been a concentration of transports carried out by trucks with trailer to the Öresund Bridge, while semi-trailer trucks mainly go through the ports. One reason for this is the fact that Denmark in 2008 introduced trials with module vehicles, truck rigs with a maximum length of 25.25 meters.

The study also shows that the vehicle fleet overall is relatively modern, with about 40 % of the vehicles produced in 2014 or later. About 80 % of the vehicles are Euro 5 or Euro 6. The frequency of newer vehicles, and therefore higher Euro classes, varies between the ports. The largest share of Euro 5 and Euro 6 vehicles is found in the Göteborg Germany terminal, and the lowest shares in the ports of Karlshamn and Karlskrona (figure 4) respectively.

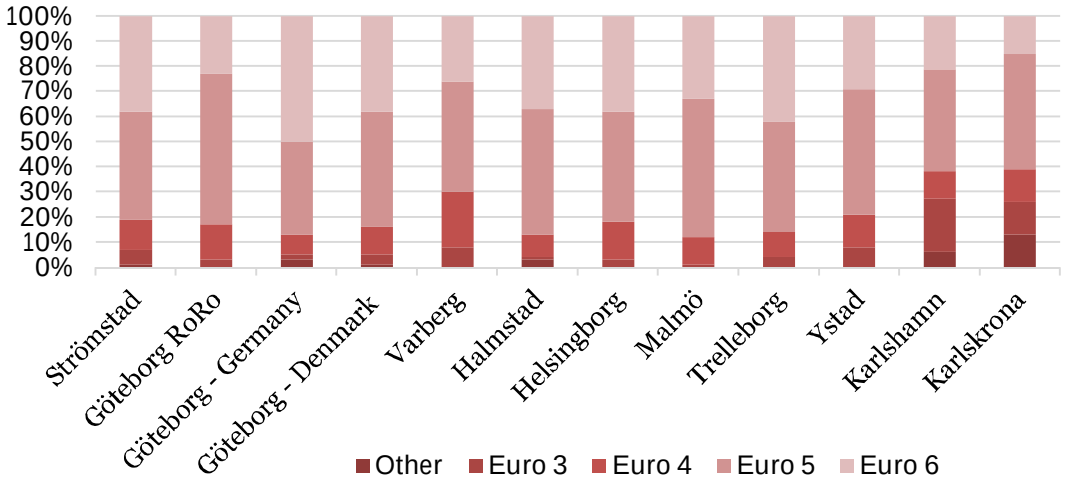

Figure 4: Distribution of Euro classes in each port.

In some cases, the environmental regulations in other countries may influence which vehicles use which ferry connection. Stricter environmental regulations in Germany may make haulage companies use older vehicles on the routes between Poland and Sweden (rather than Germany–Sweden).

Only a very small percentage of the vehicles are run on alternative fuels (on average 1-2 %). Instead, diesel is the dominating fuel type (98-99 %). The only exceptions, where the share of alternative fuels exceeds 2 %, are the Göteborg Denmark and Göteborg RoRo terminals. Thus, there is a very large potential to increase the use of alternative fuels for transports to and from the RoRo-ports.

7. Low use of railway transport to and from the RoRo-terminals

Most of the studied ferry terminals (except for Strömstad and the Göteborg Denmark and Germany terminals) have the infrastructure for supporting the ferry and RoRo-operations with land transports on railway.

Nevertheless, the share of RoRo-units transported to the ferry terminals by railway is very low. In only three of the RoRo-terminals (Trelleborg, Malmö and Göteborg RoRo) there is a regular exchange between the railway and ferry/RoRo operations, and it amounts to less than 5 % of the total number of units going through the terminals.

Based on freight volumes and start/end points of the goods, it should be relevant to further study the basis for multi modal transports by railway from Skåne mainly towards Göteborg/Norway and Stockholm/Mälardalen. For these relations the transport distances are long enough for the railway to be a realistic alternative.

In conclusion, it appears as if the railway solutions, even for distances of 300–600 km, struggle to compete with road transports, both in terms of time or cost.

Thus, based on freight volume, there is a large potential to increase the share of freight transports on railway to the RoRo-ports. For this to be realised the competitiveness of the railway transport solutions has to be strengthened. The goods owners and/or freight forwarders choose the mode of transport on an open market and usually the price is the determining factor when making these choices.

In regards to modal shift, it is important to point out that the point of origin or destination for the transport relation always is located in a foreign country (mainly Germany, Denmark and Poland) and that Swedish ports are used for international transit transports. Measures to promote modal shift for long distance freight transports from road to railway (as well as to sea) must consider the real start and/or end points for the freight transports and design the measures based on the actual transport relations.

2.1 Factors which may influence the development

Based on the results of this study it can be concluded that road freight within the RoRo-segment has had a strong development from 2005 to 2016, with a higher growth than the Swedish foreign trade overall. This suggests that goods transportation with truck and trailer is highly competitive for the distances relevant for Swedish export and import to and from Europe.

Prognosis show that the demand for freight transports will continue to increase, especially when considering the general growth of the Swedish economy and the large dependence on foreign trade. Traditionally, Sweden mostly trade with neighbouring or other close by countries, i.e. countries within a relatively short distance where sea, railway and road transports all can compete.

The question arises whether the development for 2005-2016 will continue for the coming decade. The current distribution between modes of transport can either remain or change.

Below a number of important factors are listed, which may potentially influence the future development and change the goods' owners or freight forwarders choice between different modes of transport:

- The introduction of measurements and/or incentives to change the competition between the modes of transport, based on the ambition to shift goods from trucks to rail- and seaways.
- The growth of driver salaries, especially for truck drivers from Eastern and Central Europe.
- The development of e-commerce, influencing logistic arrangements and services.
- The introduction of longer and/or heavier vehicle configurations in more European countries.
- Increased degree of containerisation for intra-European transports, potentially effecting the competitiveness of short distance shipping.
- The opening of the Fehmarn Belt Fixed Link, effecting the competitiveness of railway transports between Sweden and continental Europe.

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