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Summary:

Freight statistics in Norway

Current shortcomings and suggested improvements

Norwegian freight statistics suffer from several shortcomings. The consistency between modes is weak and the information on domestic freight flows is quite deficient.

A feasibility study for a simplified commodity flow survey is therefore recommended. Other recommendations include the expansion of the port statistics into a data base on origin-destination freight flows, and the collection of electronic shipment data from the four most important forwarders operating in Norway. The latter procedure will provide useful information on terminal use, as well as on intra-urban transports that are not covered by today's statistics.

Finally, the annual road freight survey made by Statistics Norway needs to be improved, so as to also include cabotage (foreign vehicles carrying load in Norway) and the transport performed by vehicles lighter than 3.5 tons. Information is needed on the whole chain of transports involved, not only on the individual leg. An improvement in this respect could be obtained if carriers were asked at which type of terminal the goods are picked up and delivered.

Introduction

The only source of geo-referenced information on freight transport activities in Norway is the road freight survey which is carried out quarterly by Statistics Norway.

An important freight mode in Norway is the sea. Here we lack geo-referenced information, although we do have information on where sea bound domestic and international goods are being transhipped.

The same situation as described for sea bound goods also applies to air cargo. For goods shipped by rail the situation is even worse, as we do not have any information on regional activities. Only national aggregates exist.

This contrasts strongly with the abundance of information on the passenger travel market. The fifth national travel survey, comprising all modes of travel, was recently carried out and published, the first one dating back to 1985. At best, there is thus a 25 year gap between the two transport areas, as no freight transport survey comprising all modes is in the pipeline yet.

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Application Areas of the Statistics

Freight statistics have varying areas of application - from observing trend developments to the assessment of modal split within various commodity classes at the national level. The revived interest, on the part of carriers, forwarders and shippers, in modelling and understanding freight flows has led to an increased awareness of the importance of accurate freight statistics.

National Transport Planning

The Norwegian National Transport Plan (NTP) is a uniform plan of investment for all governmental transport bodies depending on the central government. When the statistical information is inconsistent, this has repercussions on the NTP efforts. The freight statistics have not been tuned and organised to cover the information needs transport modelling and planning.

There are thus reasons for concern regarding the outcome of the planning process. The coverage of freight transport statistics may appear more or less arbitrary. The responsible statistical institution - Statistics Norway - has its focus on what is demanded by Eurostat in order to fulfil the Norwegian government obligation to the European Community. For several reasons, this is not concurrent with the needs of national planning.

In order to compensate for the flaws of information concerning transport modes, the analysts have turned to use the economic statistics. These statistics have quite detailed commodity information as well as geo-referenced information on the economic activities. However, the delivery pattern between economic activities is not covered. If we compare the economic statistics with the information obtained from available transport statistics, we see that these two are quite consistent.

Regional and local planning objectives

At the regional level there is need for freight input data for the cost-benefit analyses carried out by the local government administration. Is this or that transport corridor (road or sea route) actually used, or do the transporters prefer other routes? This is a frequent asked questioned.

The transport statistics could have been used to analyse bottlenecks within a network of roads, railways and seaways and to identify consequences of alternative locations of ports and terminals for both railways and lorries. The information input for such analyses needs to be specified at a highly local level, for example a town or city area.

Carriers

Carriers need statistics in order to analyse the market and decide where their activity should be based and focused. Information needs concern the direction of flows, the types of goods involved, and the handling equipment needed for optimal decisions on business tactics and strategy.

Research and Development (R&D)

Frequently, research work presupposes rather detailed cross-section and time series data with a high degree of disaggregation and accuracy.

Shortcomings of the freight statistics

Commodity flows

The general issue here is that we do not have information on where the production of goods captured from economic statistics is used domestically. For foreign trade the situation is different. Here the statistics include information on tons, values, place of origin and destination, type of transport, as well as detailed type of commodity.

Sea transport

Although there is evidence that domestic sea transport has grown more than other modes between 1995 and today, we lack vital survey data to substantiate this. Such data might have shown important changes in terms of distance and shipment size.

Railway transport

In accordance with Eurostat's legislative decree, Statistics Norway started a survey on railway transport in 2003. Two main problems were encountered in relation to publication. Since one big operator controls most of the market, data could not be disclosed on account of anonymity concerns. Secondly, since most shipments are carried in containers, the content is usually not known to the railway operator.

Air cargo

Domestic air cargo being collected at the terminals, it comes without any geo-referenced delivery information. On account of its limited market share, we have not given priority to the compilation of improved air cargo statistics.

Lorry transports

The road freight survey provides good domestic data quite different from the other freight modes. The surveys have been carried out continuously since 1993. Prior to 1993, larger periodic surveys were carried out every 5th year. The road freight survey is detailed enough for the compilation of interregional, domestic freight flows in terms of vehicle and ton kilometres.

These statistics do have weaknesses, however. They do not include information on foreign vehicles operating in Norway or on freight carried by smaller vehicles (with payload less than 3.5 tons). Also, there is no information on transport chains.

Freight prices

Until 2002, information about freight rates for the various types of goods was included in the road freight survey questionnaire. But the information received was unreliable and incomplete. Hence this variable was dropped when the scope of the survey was reduced.

Bottlenecks in the collection of freight statistics

The main bottlenecks in the collection of freight data are listed in the following. We also comment on the difficulties in solving some of the problems involved.

Costs in collecting freight statistics

The costs to collect freight statistics are high. This applies especially to survey data. When, in order to cut costs, the sample is minimized, the most interesting regional dimension may be lost.

The data requirement

Statistics Norway is conscious about the burden placed upon the industry in providing data. The exploitation of existing data sources and registers is generally preferred to questionnaire surveys. Obtaining support for a large survey by Statistics Norway can therefore represent a hurdle.

The Statistics Act

According to the Norwegian Statistics Act, Statistics Norway has the sole authority to require statistical information from private and public entities. The use of this prerogative is decided by Statistics Norway from case to case. Without it, survey response rates tend to be significantly lower. The prerogative is, however, limited to Norwegian registered companies.

Electronic capture of data

All the big transport operators and larger companies have data systems geared to their own needs rather than to the production of public statistics. Systems differ between companies, so that any statistics produced may not be comparable. If the companies were to adopt a common statistical nomenclature, the production of statistics would be facilitated. However, within each individual company the incentive to do so is small. Such a process would need external support and public funding.

Competition

For reasons of competition, private companies are reluctant to release information about their core business and activities. This is so even when the data are to be handled only by researchers.

Freight rates are particularly sensitive data and will not be released if the company believes that this may hurt its competitiveness. In such a case, only doctored data can be expected from each individual company.

Statistics Norway has taken this into account when refraining from publishing absolute freight rates. A price index for road freight will, however, be published in the autumn 2006.

Actions to improve the freight statistics

The most important statistical indicators of freight are the following:

- Tons transported
- Transport distance
- Ton kilometres performed
- Vehicle kilometres driven

Commodity matrices will answer the first three characteristics stated above. In order to work out the forth, one also needs information on which mode of transport is use on each leg.

Commodity flows

The most important set of statistics to be compiled relates to interregional, domestic commodity flows. Such data are crucial to the understanding of delivery patterns in general and to freight demand modelling in particular.

Sea transport

There is a big backlog in the information on domestic sea transports. The last national survey was carried out for the year 1993, and there are reasons to believe that the patterns have changed dramatically over the last 15 years.

To resolve this problem, one might to start by developing the present, ongoing port statistics (PortWin). A proposal for improving these statistics has been made by Statistics Norway. It can be done by combining the various port reports for a given ship, as identified by the continuous, unique AIS signals and the IMO number. This type of data will improve on the statistics on seaborne commodity flows compared to periodic, domestic surveys. A substantial part of the sea freight is carried by foreign companies, that will not be captured by a domestic survey.

Road transport

The road freight survey is done according to harmonised standards in all EU member states. This means that freight carried by foreign companies operating in Norway is covered and can be extracted from European statistics.

There is a need for the road freight survey to include information on whole chains of transports. Such information would improve our knowledge on intermodal transports in Norway. Much would be gained from the inclusion of a single, additional question about origin or destination terminal.

Network based transport services

In the market for general cargo there are several terminal networks operating in parallel. The domestic market is served by four big forwarders. The only statistical information published on these operators' activities is Eidhammer et al (2005).

If the four forwarders agreed to release data, the compilation of statistics would probably be fairly straightforward.

Rail

In order to obtain more information on regional freight, one would have to lift the ban on publishing data for operators holding more than 60 per cent of the market.

For rail, data on vehicle kilometres can be obtained easily from the time schedules published by the operators.

Plan of Action

When formulating a plan of action one has to bear in mind that not all users will have access to public funding. The list of priorities should be set up so as ensure public funding in the most important areas.

This topic has been discussed in the reference group for the project and one has come up with the priority given below *(the first has the highest priority and so on)*:

1. *A pilot feasibility study for a simplified commodity flow survey is recommended. Most users of freight transport statistics will benefit from enhanced knowledge of the freight markets in Norway. Today only freight by road is covered in the regular statistics.*
2. *The railway statistics should be given a regional dimension.*
3. *The coastal freight transport statistics should be developed on the basis of the existing port statistics, so as to develop origin-destination matrices. The reference group insisted that all markets should be included, and not only bulk transport, as proposed by Statistics Norway.*
4. *The efforts to implement electronic data capture among road hauliers should be intensified. One should start with the four large freight forwarding companies operating in Norway. As a by-product one would be able to obtain data on terminal turnover. It is also recommended to give further work on electronic data collection enhanced priority. For example, timber transport data can be obtained through the transport invoicing system owned by SkogData AS.*
5. *The freight statistics on road transports should improve its coverage by including information on foreign companies operating in Norway. It is important to know the share of road freight covered by the national road freight survey. It is also recommended to establish a quinquennial survey among smaller freight vehicles not covered by the present road freight survey.*

Estimated costs related to the Plan of Action

The estimated cost of carrying out the above 5-point Plan of Action is estimated at NOK 7 million or close to € 0.900 million. This estimate is exclusive of VAT.

This estimate is discussed further below:

Statistics Norway has estimated the cost of a pilot Commodity Flow Survey (CFS) at NOK 0.45 million excl VAT. The costs of a full-scale CFS for Norway are difficult to estimate. The pilot study will provide some answers. We have estimated the total costs of a Norwegian CFS described above to maximum of NOK 4 millions. The basis for this estimate is the costs of the Swedish CFS, which was SEK 8 millions, and the fact that the Norwegian CFS will be smaller and less frequent (once versus three times per year).

No costs are assumed for the extension of the rail freight statistics so as to encompass the regional dimension. The data are already being collected by the operators, and the decision to make them available depends only on a decision by the ministry or by the Norwegian Rail Administration.

A *domestic sea survey* must be done in close cooperation with the present and ongoing port statistics. According to a robust cost estimate, within *a budget frame of NOK 0.5 milion* one should be able to include the larger bulk transports and some of the main features of the general cargo shipped by sea. But in order to assess the pattern of sailings for the general cargo one would have increase the financial frame to NOK 1 million (ex VAT).

The implementation of improved *electronic capture of data* should not comprise too much work. One could start by coordinating the databases of the four large freight forwarding companies operating in Norway. The most demanding and difficult part of this task is that of persuading the forwarders to make their data available. The direct costs involved in such cooperative project is *NOK 0.3 million*. Further work to exploit electronic data bases, as recommended by Statistics Norway, is estimated to cost approximately NOK 0.3 million.

Finally, to extend the coverage of the road freight survey so as to include the foreign companies operating in the domestic Norwegian market should be of no costs, since Statistics Norway already receives the necessary information from Eurostat. A simplified, quinquennial survey covering smaller freight vehicles would cost an estimated to *NOK 0.6 mill* per survey.