

## Summary

# Data on freight transport. Current statistics and new sources of data

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*Technological developments contribute to increases in both the quantity of available data, and the richness of these data. New electronic data also bear high relevance for transport research, which, amongst others, is observed from the increasing demand for more detailed analyses. This report highlights current practice and challenges with regards to data on transport by road, sea, and rail, and discusses how new data can enrich and improve research on, and analyses of freight transport.*

## Data on traffic and transport

In this report, we describe today's main sources for traffic data (vehicle- and vessel movement) for road, rail, and sea, and discuss challenges and shortcomings with regard to the consistency between different data sources. We further discuss the opportunities stemming from new data, but also the challenges, which often relate to privacy and confidentiality issues.

Next, we also describe today's main data sources, characteristics, and shortcomings for transport data (which is related to freight- and transport flows). In addition, we discuss how data from the professional systems of freight owners and shipping firms can complement today's data on freight transport and verify transport models. Current challenges with regard to transport data mainly concern (differences) in geographical levels of detail, different levels of commodity aggregation, and missing information on transport chains. In addition, we discuss several examples of transport portals, which may help improve our insights in transport chains, but currently still face challenges around availability, interoperability, and missing data.

## Experiences with using new data sources

We further discuss some experiences with the use, coupling, and testing of new(er) data sources (amongst others the Commodity Flow Survey (CFS) and cases from TakeCargo,<sup>4</sup> Jernbaneverket's TIOS-database,<sup>5</sup> Statistics Norway's Port statistics, AIS (Automatic Identification System for ships), and SafeSeaNet)<sup>6</sup>. Particularly for sources for sea transport, we illustrate inconsistencies and challenges, and provide a number of recommendations for improvement.

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<sup>4</sup> A large transport portal in Norway

<sup>5</sup> TIOS stands for Traffic Information and Follow-up System

<sup>6</sup> SafeSeaNet is a European reporting system for maritime transport, and is taken over by Maritime Single Window (MSW) in Norway.

Especially for the CFS, much effort was put into validating the raw data, and into contributing to Statistics Norway's efforts on identifying double counting, and the imputation of values for missing firms. At the time of publication of this report, challenges in these data still remain in that estimates of freight volumes and transport performance in national transport corridors are high compared to current statistics. This particularly applies to longer transports.

Despite these challenges, the survey also enriches the scope of data on freight transport, and contains information on deliveries from a large number of firms, industries, and locations in Norway. The survey also contains information on the timing of transport (divided by e.g. month, weekday, and time of day). One of the survey's weaknesses is however that only few firms report the transport mode used.

For sea transport, the Port statistics, AIS and SafeSeaNet individually enrich the scope of transport data. Coupling the sources together, however, provides additional insights, such as detailed information on in which section of a harbor district different good types most likely are loaded or unloaded.

We also tested and attempted to use National Railway Authority's TIOS-database for generating freight flow matrices for timber. In practice, using TIOS has proven challenging, as train numbers often change at terminals other than the destination. TIOS is better suited for analyzing variability and reliability of freight trains, but this too, has proven challenging, as trains changing slot times are also assigned new train numbers.

## **Automated data extraction**

A need exists for better coverage of freight transport in urban areas, in either the national freight model, or in more specific models for larger urban areas. Eventually, one would like to extract more detailed information through automated data extractions from e.g. firm's own systems, and from transport portals such as TakeCargo. This should make data collection easier, improve the level of detail, and reduce the number of links in the collection of the data. In turn, this should improve both the richness and the quality of these data. However, higher levels of detail will also lead to bigger challenges with regards to privacy and confidentiality.

Reporting information currently still entails a large (manual) administrative burden. This also applies to several statistics for which data are collected by Statistics Norway. Reusing information after its first registration could reduce the administrative burden for the parties involved.

Future data collection exercises should, regardless of the form of transport, therefore include:

- Common formats
- Common coding lists, or coding lists that can be coupled
- A range of ID-details which persist throughout the full transport chain

With electronic data collection, it may for some segments be difficult to identify the total population, and data will be reported differently than with today's samples that are used to derive national estimations. On the other hand, electronic data collection will result in more observations for the segment in question. This implies that more geographically detailed data can become more precise for the selection one has data for.

A national standard should be established for electronic reporting, to - at minimum - ensure compliance with the requirements in Eurostat's statistics directive. In addition, the automatic collection of data should be better facilitated, for example by using professional systems and data portals of relevant actors. While many professional systems still lack the desired data, a

trend exists towards increased availability of these data. In addition, most professional systems can relatively easily be adapted in order to report data in well-defined formats.

To avoid considerable cost increases for parties involved, it is important to communicate clear reporting requirements and standards to suppliers of these systems, and to provide incentives for automated and correct reporting.

## **Recommendations**

In this report, we discuss several areas where we believe that the quality of transport statistics can be improved by means of relatively easy changes (see particularly the last chapter). Although we refrained from pointing out which actors should be made responsible, an advantage of involving e.g. Statistics Norway is that this will ensure accessibility for the highest number of users of the statistics. Another advantage is that Statistics Norway can use the statistics law to get access to data. Finally, it should be emphasized that the different elements that we identified have not been discussed in detail with Statistics Norway.

