

**SCOPE FOR AUTOMATION
IN THE SWEDISH
COMMODITY FLOW
SURVEY**

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INTRODUCTION

- The Swedish Commodity Flow Survey (CFS) is one of few large-scale surveys on freight transportation in the world
- The objective of this presentation is to give a brief review of
 - The Swedish CFS
 - Freight data sources that can complement the CFS
 - The scope for data sharing
 - Possible steps ahead

REVIEW OF SWEDISH CFS

- Purpose of CFS is to describe firms' domestic and international movement of freight by all modes
- The CFS contains records of individual shipments to or from a company in Sweden, with detailed information about each shipment.
- Focus on movement of freight, not vehicles and vessels



REVIEW OF SWEDISH CFS

- The CFS is used to produce official statistics and conduct analyses of the freight transportation sector
- Users include researchers, government agencies and private companies
- Transport analysis responsible for producing the survey
- The survey is conducted every 4-6 years
 - Conducted in 2001, 2004/05, 2009 and 2016
 - The next survey is due 2021

Variable	Description
Shipment-level variables	
Value	SEK (based on invoice value, excl. VAT and transport cost)
Weight	KG
Cargo type	liquid bulk solid bulk container palletized swap bodies and trailers Other
Commodity type	NST 2007
Transport mode	Road, rail, sea, air or multi-/intermodal
Place of origin	Zip code (only within Europe), country code
Place of destination	Zip code (only within Europe), country code
Firm-level variables (from business registers)	
Sector	NACE code
Size	Number of employees

SURVEY METHODOLOGY

- Sample survey of 12,000 workplaces
 - Firms leave information about shipments for some specific week(s) in the survey year
 - Mainly Web-based survey
 - Mandatory participation
- Data also based on administrative records and business registers
 - Covers firms in the forestry, agriculture, sugar production and petroleum industry

Fig: Screenshot from survey
Source: Transport Analysis

A Avgående varusändningar inom Sverige och till utlandet

1 **Datum**
Datum för avgående varusändning eller fakturadatum

2 **Postnummer om annan adress**
Ange postnummer om varusändningen skickats från annan adress än arbetsstället/ordinarie adress. Det kan exempelvis gälla om all redovisning sker hos en annan varusändningen fysiskt hanteras av en logistikpartner.

3 **Varukod**
Ange godsets varukod enligt kodförening på sida 18

4 **Fakturavärde exklusive moms och fraktkostnader**
Uppskatta varuvärdet (i SEK) om fakturavärde saknas eller inkluderar fraktkostnader

5 **Vikt exklusive emballage**
Ange varans nettovikt i kilo, exklusive emballage (dvs. inte fraktkostnad vikt). Uppskatta vikten om den är okänd, om emballage inte kan exkluderas eller om ni endast har tillgång till volymuppgift.

6 **Lasttyp**
Ange godsets lasttyp enligt kodförening på sida 19 för att beskriva hur varorna var lastade när dessa avgick från arbetsstället eller anlåt: lagertransportföretag.

Datum (mån, dag)	Postnummer om annan adress	Varukod	Fakturavärde i SEK (exkl. moms och fraktkostnader)	Vikt (nettovikt i kg) Om vikten är i gram eller i ton, markera med kryss	Lasttyp
01,0,3		92	1,0,0,0,0	6,2,1,0 <input type="checkbox"/> gram ton	9
01,0,3		92	8,0,0,0,0	4,7,1,2,0 <input type="checkbox"/> <input type="checkbox"/>	9
01,0,4		1,0,8	1,1,0,0,0	7,5,0 <input type="checkbox"/> <input type="checkbox"/>	9
A01					
A02					
A03					
A04					
A05					
A06					
A07					
A08					
A09					
A10					
A11					
A12					

SURVEY LIMITATIONS

- High production costs
- Response burden of firms
- Small samples and limited geographic resolution
- Motivates automated data collection methods

SCOPE FOR AUTOMATION: DATA AVAILABILITY

- Data availability investigated in development projects (Transport Analysis, Swedish Transport Administration)
- **Information about movement of freight available in**
 - Transport Administration (TA) Systems
- **Information about movement of vehicles and vessels available in**
 - Fleet Management Systems (FMS)
 - Automatic Identification System (AIS)
 - Registries maintained by air and railway traffic regulators

SCOPE FOR AUTOMATION: DATA SHARING

- Firms' views on data sharing investigated in development projects (Swedish Transport Administration 2019)
- **Shippers (commodity owners)**
 - Generally positive to data sharing
 - Motivation: finding bottlenecks to optimize freight flows and increase fill rates
 - Motivation: enable consolidation of shipments and use of longer and heavier vehicles
- **Carriers**
 - Some were willing to share their data given that they benefitted from increased efficiency
 - Others feared increased price competition due to data sharing
 - Unwilling to provide information about specific customers

SCOPE FOR AUTOMATION: DATA SHARING

- **Logistics service providers**
 - Data sharing viewed as a threat to business model
 - Feared that collaboration would violate competition rules
- **Providers of transport administration (TA)-systems**
 - Some were willing to provide aggregated data
 - Others saw little scope for data sharing due to contractual agreements with their clients

SCOPE FOR AUTOMATION: GOING FORWARD

- Strategy for the Commodity Flow Survey (Transport Analysis 2020)
- Short term development (1-4 years)
 - Conduct pilot projects for development of new data collection methods
 - Replace survey with data from company registers (shippers, carriers and/or LSPs)
 - Start with sectors in which freight flows are stable and regular (e.g. paper and steel)

PILOT STUDY 2021

- Recruit companies (commodity owners/shippers)
- Data collection
 - define variables and concepts for data capture and validation
 - test data collection, feed back to/from respondents
- Evaluation of quality and costs
- International outlook and regional cooperation
- Conclusions and step forward

CONCLUSIONS

- Swedish Commodity Flow Survey describes the movement of freight
- Degree of automation of data collection currently low
- Companies in the transportation sector are currently collecting data on freight and transportation that could be used in the CFS
- Firms' views on data sharing differ and are related to the associated costs and benefits
- Future steps towards automation of data collection in the CFS likely to occur in small-scale pilot projects
- Degree of automation of the CFS appears to remain limited in the near future

QUESTIONS OR COMMENTS?

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