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## **NACE 52 Warehousing and support activities for transportation**

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<b>1. DEFINITION OF SERVICE AND STANDARD CLASSIFICATION STRUCTURE</b>	<b>- 3 -</b>
<b>2. SERVICES BEING MEASURED</b>	<b>- 4 -</b>
2.1 Warehousing and storage	- 4 -
2.2 Other transportation support services	- 4 -
<b>3. STRUCTURE OF THE SWEDISH MARKET</b>	<b>- 5 -</b>
<b>4. THE SWEDISH SURVEY</b>	<b>- 6 -</b>
4.1 Pricing method and quality adjustment	- 6 -
4.2 Sampling and weights	- 7 -
4.3 Data collection	- 8 -
<b>5. RESULTS</b>	<b>- 8 -</b>
<b>6. EVALUATION OF COMPARABILITY OF PRICE INDEXES WITH TURNOVER DATA AND NATIONAL ACCOUNTS CONCEPTS</b>	<b>- 9 -</b>
<b>7. SUMMARY</b>	<b>- 10 -</b>

## 1. Definition of service and standard classification structure

The services of warehousing and support activities for transportation are comprised of division 52 according to NACE Rev. 2 and ISIC Rev.4. The division is divided in 52.1 warehousing and storage and 52.2 support activities for transportation.

The group 52.1 includes warehousing and storage for all kinds of goods e.g. general merchandise warehouses, refrigerated warehouses and storage tanks. The group excludes parking facilities for motor vehicles, operation of self storage facilities and rental of vacant space.

52.2 includes a lot of different services for supporting the transport of passenger and freights, such as operation of terminal facilities, roads, car parks, loading and unloading goods and forwarding of freight. It excludes courier activities, activities of travel agencies and tour operators.

NACE Rev. 2		
Group	Class	Description
<b>52.1</b>		Warehousing and storage
	52.10	Warehousing and storage
<b>52.2</b>		Support activities for transportation
	52.21	Service activities incidental to land transportation
	52.22	Service activities incidental to water transportation
	52.23	Service activities incidental to air transportation
	52.24	Cargo handling
	52.29	Other transportation support activities

**Table 1 Division 52 Warehousing and support activities for transportation according to NACE Rev. 2 and ISIC Rev. 4.**

The Swedish SPPI only covers 52.10, 52.24 and 52.29. The Swedish classification system, SNI 2007, has a further breakdown for 52.24 which consist of Harbour cargo handling (52.241) and Other cargo handling (52.249). Also 52.21 consist of two subclasses, Towing incidental to land transportation (52211) and Other service activities incidental to land transportation (52219). According to turnover data Other transportation support activities accounts for the absolutely largest share of the division. Mostly because companies that arrange and organise transport operations are classified within this class.

This paper will focus on Warehousing and storage and Other transportation support services.

## **2. Services being measured**

### **2.1 Warehousing and storage**

The pricing unit of measure represents the storage and warehousing of a certain amount of goods. In some cases the price includes, not only the space but, additional services as labelling, packing and order picking. Besides the additional services the most important price depending factors are type of goods, volume and storage time.

The class is closely connected to transportation and logistics services, since warehousing and storage can be seen as a link between the transport of the good and further use. Also because of the largest companies, that are primary classified in transportation and support activities for transportation. In this way the warehousing is just a part of their logistic chain.

### **2.2 Other transportation support services**

The main activity within Other transportation support services is organising and arranging transports i.e. forwarding. In contrast to warehousing, that is a part of the logistic chain, freight forwarding is the hub. They organise the shipment for corporations to get goods from the producer to the market. The transport might involve multiple carriers types such as ships, airplanes, railroads and trucks. And consequently the goods might be repacked at terminals and stored at warehouses as parts of the total transport. The forwarder either handle the transport by themselves or use a third company. The price being measured doesn't only include the arrangement of the transport, but the total transport. It implies that the price/index will largely depend on changes in other industries e.g. Freight transport by road 49.41.

Like many other services the freight forwarders sells a unique product that is individually tailored for each customer. It is therefore difficult to find services that are directly comparable to each other. Also, pricing depends on a number of different and continuously changing factors. It can be problematic to distinguish one service from another since they sell a package that actually consists of many services. The most important price

depending factors are customer, type of freight, transport type and place of departure and destination.

### 3. Structure of the Swedish market

In 2007, the total turnover of Warehousing and support activities for transportation was approximately 140 billion Swedish kronor (21.5 billion U.S. dollar), which represents 2.2 percent of total turnover excluding financial services. As previously mentioned Other transportation support activities is by far the largest class of the division covering 74 percent of total turnover. Besides 52290, Service activities incidental to land- and air transportation represents a large share of the total turnover in the division. Mainly because operation of terminal facilities such as railway stations and airway terminals are included within these sub-classes.

SNI 2007	Number of enterprises	Turnover	Share of total turnover
52100 Warehousing and storage	185	3,3	2,3%
52211 Towing incidental to land transportation	179	0,6	0,4%
52219 Other service activities incidental to land transportation	665	12,2	8,5%
52220 Service activities incidental to water transportation	197	2,6	1,8%
52230 Service activities incidental to air transportation	155	10,6	7,4%
52241 Harbour cargo handling	85	5,8	4,1%
52249 Other cargo handling	149	1,7	1,2%
52290 Other transportation support activities	1556	106,0	74,2%
<b>52 Warehousing and support activities for transportation</b>	<b>3171</b>	<b>142,8</b>	<b>100,0%</b>

Table 2 Number of enterprises and turnover (billion SEK) according to Structural business statistics SNI 2007, 2007

Table 3 shows the number of enterprises and turnover by size of the enterprise, in terms of number of employees. The division is dominated by

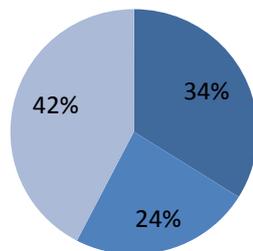
the smallest and largest companies that employ less than 20 or more than 250 persons. Roughly the enterprises can be divided in two groups were the large ones operate on a global market providing services for both Swedish and foreign customers and the smaller firms are locally established.

Number of employees	Number of enterprises	Turnover	Share of total turnover
0-19	2922	34,9	24,5%
20-49	142	16,0	11,2%
50-99	47	15,8	11,1%
100-249	38	20,3	14,2%
250+	22	55,6	38,9%
<b>Total</b>	<b>3171</b>	<b>142,8</b>	<b>100,0%</b>

Table 3 Number of enterprises and turnover specified by size of enterprise of division 52, 2007

The three largest companies cover approximately one third of the total turnover in both Warehousing and storage and Other transportation support activities.

#### Other transportation support activities



#### Warehousing and storage

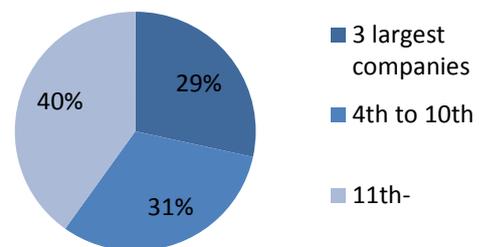


Figure 1 Distribution of total turnover by largest companies

## 4. The Swedish survey

### 4.1 Pricing method and quality adjustment

The main method being used to measure prices is contract pricing for both Warehousing and Other transportation support services. The method is a quite natural choice since freight forwarders and warehouses make long-term contracts with clients to handle the transport or warehousing for a certain period of time. The method is also appropriate because of the uniqueness of the service, as the contract and price is unique for a particular client. In order to fulfil the requirements for this method, i.e. to

avoid different mixes, the services are well specified. The specification of a transport service often includes: client, carrier type, type and weight of goods and departure and destination of the transport. Services in warehousing are specified by client, measure of space (cubic- or square meter), type of good. Other information concludes additional services as order picking and packing.

The contract is often regulated with an index or a combination of indexes measuring currency, oil, rent and salary.

When the index for Other transportation support services first was developed, in 2003, the aim was to use model pricing. The enterprises were asked to choose a representative contract that they had entered into with another enterprise during the 4th quarter 2002. They were then asked to quote in each period their price if the contract was renegotiated. Even though model pricing might be a better method, as it captures the price development when an old contract is replaced by a new, it was practically difficult to use. In many cases the respondents had difficulties to understand what is wanted and needed to put in a lot of effort to give accurate prices.

Large price movements often occur due to renegotiation of contracts. The new contract might include additional services. The respondent are asked to estimate how the quality change affects the price, in order to make a quality adjustment. As described above, one disadvantage with contract pricing is to quality adjust when a contract is replaced by another. Most often it is a totally different route and other kinds of products (volume) and the respondent is not able to estimate the “pure” price change. In those cases a method of overlap will be used.

It’s often easier to make a quality adjustment when a contract is replaced in Warehousing than in Other transportation support services. Because changes in space can be used to make a quantity adjustment. But it might be a totally different product that needs special care, for example another temperature and hence more difficult to quality adjust.

#### **4.2 Sampling and weights**

The Business register provides information of the population, i.e. all establishments that has employees and/or turnover, within classes of NACE 52. The sample is drawn randomly based on pareto PPS (probability proportional to size). In this case the size is measured by turnover. The method can give inclusion probabilities that are greater than one to “large” companies. These companies forms their own stratum and each company represents themselves, as they are given a weight equal to their share of the total turnover. The other stratum consists of “small” companies, and the remaining weight is distributed equally between them.

A new sample is drawn and weights are calculated each year. The ambition is to replace 20 percent of the small companies, while the larger companies are not replaced.

The current sample of Other transportation support services consists of 40 companies and 176 observations, whereof 12 companies are considered as large representing 64 observations. Variance analysis indicates that the sample is too small and will probably be increased by the sample of 2014. The sample of Warehousing and storage consists of 4 large companies and 10 small, in total 33 observations.

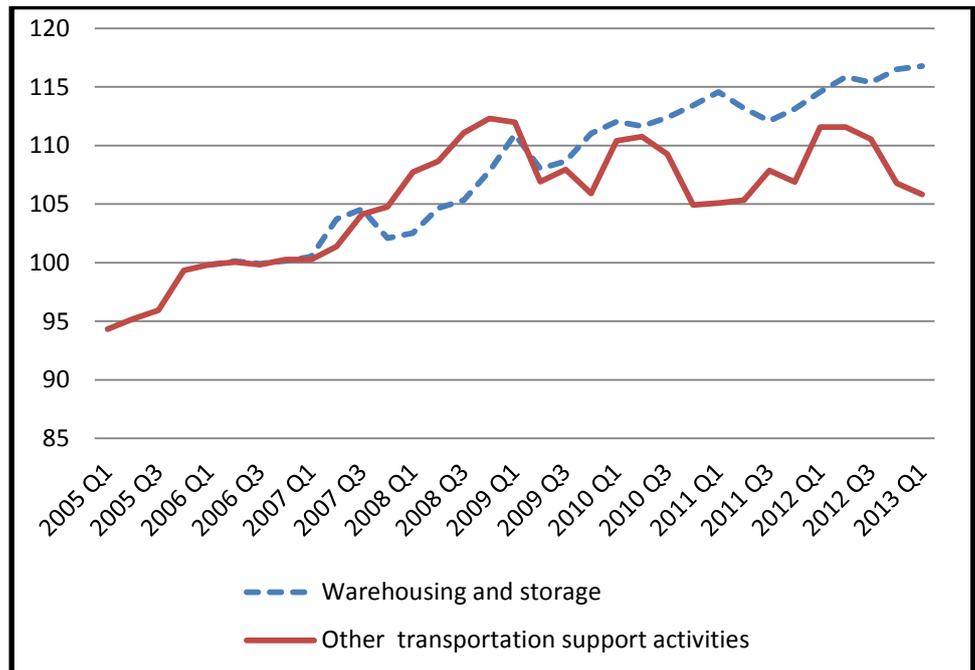
#### **4.3 Data collection**

Prices are collected every quarter with an electronic questionnaire. Besides the price, the respondent are asked questions about the representativity of the contract. If it is not, the respondent are requested to specify a new contract within the same group. There is also a question about if any changes, that will affect the comparability, of the service has occurred since last quarter. If the change in price is greater than 10 percent since last quarter the respondent is requested to specify a reason of the development. The response rate is about 90 percent.

When a new company enter the sample they are asked to specify either six contracts if it is a “large” company or three if it is a “small” one. The contracts should be representative for the establishments and covered by the NACE definition.

## **5. Results**

Figure 2 shows the development of the price indexes from the first quarter 2005 until first quarter of 2013. Warehousing and storage was first published in the first quarter of 2006.



**Figure 2 Price index for Warehousing and storage and Other transportation support services, 2006=100**

Basically both indexes follows the general economic development, but Warehousing is more steady and does not drop as much as Other transportation support services. Possibly because it is more dependent on wage level which rarely decreases.

In contrast to Warehousing, Other transportation support services fluctuate a lot especially in times of global economic crises. The greatest drops of the index can be derived to observations were freight includes transportation by sea.

## **6. Evaluation of comparability of price indexes with turnover data and National accounts concepts**

Information about turnover is collected monthly by Short Term Statistics on industry level and annually on industry- and product level by Structural Business Statistics.

As described in Table 2 a substantial part of the industry consisting of Other service activities incidental to land transportation, Service activities incidental to air transportation and Harbour cargo handling is not covered by SPPI. In order to deflate these external data is used as proxy for price development, for example changes in the total number of passenger by flight.

Previously National account calculated the production for Other transportation support as a supposed supplement charge on the production of the transport sector. As a net production of the service. But since the service include other activities than only the transport they have changed to calculate gross values. The change should make price index more appropriate for deflation purpose. Since the price index represents the total and not only the arrangement of the transport.

## **7. Summary**

The division 52 Warehousing and support activities for transportation includes a diverse set of services for supporting the transport of passenger and freights. The Swedish SPPI cover classes 52.10 Warehousing and storage, 52.24 Cargo handling and 52.29 Other transportation support activities. The classes are closely connected to each other and, as the name of the division reveals, to “pure” transportation services. Especially Other transportation support activities which comprises arrangement of the transport. Hence, the service can include most of the parts in the logistic chain.

The services within Warehousing and support activities for transportation are often unique and consist of a bundle of different services. The prices that are measured consists of contract prices between companies active in the division and their clients. Because of the uniqueness of the services it is often difficult to make a explicit quality adjustment.