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The recycling industry in Sweden 1995

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Summary

This report is written by Statistics Sweden on commission by Eurostat. According to module 8920, the turnover and the number of employees for the sectors classified as recycling are presented.

The turnover of the recycling industry was 8.5 billion Swedish crowns and the number of employees were approximately 2 800 people in 1995.

The following sectors are classified as recycling according to the Swedish standard industrial classification, SNI 92; recycling of metal waste and scrap (SNI 37100), recycling of non-metal waste and scrap (SNI 37200), wholesale of waste and scrap (SNI 51570) and collection and sorting of non-hazardous waste (SNI 90002).

The figures above, does not include sector 90002, collection and sorting of non-hazardous waste. In this sector it's difficult to make an appropriate calculation of the number of employees as well as the turnover at enterprise level. In this sector, all municipalities are included that have the responsibility of the handling of non-environmentally hazardous waste and the calculations can therefore give a faulty picture of the actual figure.

In this report some suggestions for future work are given, e.g. to study the pulp and paper industry as this is a sector which uses a lot of recycled goods.

Introduction

The interest for recycling has increased dramatically during the last couple of years in Sweden as well as in other industrial countries. An constant increase in waste made the government and parliament to pass the Bill of Eco-cycling in the spring of 1993. This means that anything extracted from the nature shall be used, reused, recycled and processed without damaging the nature. This shall also be done in a way which entails the minimum possible consumption of natural resources.

The objective with this paper is to estimate the turnover and the number of employees in the recycling sector. Who are then the producers of these goods? This study has listed all enterprises in Sweden that are classified as

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recycling industries. The report also describes the difficulties with the classification used by the business register (CFAR).

Background

During 1994/95 the Environmental Statistics at Statistics Sweden made a study considering the recycling industry in Sweden. The study performed, investigated which enterprises were classified as recycling according to the Swedish standard industrial classification (SNI 92). The following sectors are classified as recycling in this study:

- * 37100 recycling of metal waste and scrap
- * 37200 recycling of non-metal waste and scrap
- * 51570 wholesale of waste and scrap
- * 90002 collection and sorting of non-hazardous waste.

The study was performed at establishment level, where an establishment is defined as a locally independent unit within an enterprise which engages in a single kind of activity within what is usually a single defined sector. In some cases the establishment might practise more activities and will therefore get a primary branch of business and one or more secondary branches of business.

In that survey the number of establishments for each sector was counted, what secondary sector an establishment had if recycling was the primary and vice versa, i.e. what sector was the primary one if recycling was listed as secondary. As an example an enterprise can have recycling of non-metal waste and scrap (SNI 37200) as primary sector and semi-manufactured plastic goods (SNI 25210) as secondary. An employment study was also made for those establishments which had recycling as primary sector and a sizeclassification was made.

In the previous survey it was not possible to obtain figures of the turnover for the recycling enterprises. The results showed amongst other things that a very large proportion of the recycling enterprises had five employees at the very most. This led to that no figures for the turnover were available from the industrial statistics which was the source meant to be used for this information. In the industrial statistics only companies with at least ten employees are surveyed or if it is an enterprise with more than one establishment, every establishment with at least five employees are included in the survey. There is also only the manufacturing industry that is included in the industrial statistics which means that no figures had been available for the sectors wholesale of waste and scrap (SNI 51570) and collection and sorting of non-hazardous waste (SNI 90002).

Methods

To be able to produce a list of the recycling industries in Sweden the first step was to define the population. According to Nomenclature Générale des Activités Economiques dans les Communautés Européennes (NACE Rev.1) are recycling of metal waste and scrap (37100), recycling of non-metal waste and scrap (37200), wholesale of waste and scrap (51570) classified as recycling. Collection and sorting of non-hazardous waste (90002) are also included in the study.

From Statistics Sweden's Business register (CFAR) were all establishments that are classified as recycling listed. The list was made of those establishments that had either of these sectors as primary or secondary branch of business.

CFAR is an administrative register which has all enterprises and establishments in Sweden listed. It's brought up to date continuously. It contains name, address and identification information such as a identification-number as well as information about sizegroup of employees and branch of business. Each enterprise has an enterpriseidentificationnumber as well as an establishmentidentificationnumber. If an enterprise has more than one establishment they have the same enterpriseidentification but different establishmentidentifications.

To get information about the turnover for these sectors, the VAT-register was used. In the VAT-register all enterprises/establishments that have to pay VAT are listed. Information is given about the turnover for these enterprises. Each enterprise has the same identificationnumber as in CFAR. The CFAR-establishmentidentificationnumber is given each establishment when the register comes to Statistics Sweden. This made it possible to study the turnover. When this study was performed, no figures were yet available at establishment level so the figures refer to the enterprises for 1995.

The establishments that were of interest from CFAR were combined with the VAT-register and were correlated by the enterpriseidentificationnumber.

All establishments belonging to the same enterprise were added together for the calculations of the employment.

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The statistics concerning the number of enterprises and the number of employees are based upon those enterprises that have recycling as primary sector. In the figures of the turnover also those enterprises with recycling as secondary sector have been included.

If an enterprise has more than one sector, a 60 % - 40 % rule has been used to distribute the turnover, i.e. if recycling is the primary sector, 60 % of the turnover has been calculated for this. If recycling is the secondary branch, the turnover is estimated as 40 % of the total amount.

Results

In this report the number of enterprises divided into sector and sizegroup are shown as well as the sectors turnover. The figures refer to 1995.

Table 1 - 3 refers to enterprises and not establishments. In table 4 there is a report of the number of establishments divided per sector and sizegroup, in number of employees.

In the following tables where the employment is shown there is a large proportion of companies with 0 employees. This relates among other things to the fact that the owners of trading enterprises are not included in the statistics of the number of employees.

Table 1 shows that there are 40 enterprises with approximately 400 employees within the sector of recycling of metal waste and scrap (37100). The distribution on sizegroups show that 24 out of 40 enterprises, about 60 %, have less than 5 employees. This can be compared with the total manufacturing industry where the corresponding figure is 58 %. There is consequently a large number of small enterprises in Sweden. 10 % of the larger companies are in the sizegroup with 50 - 100 employees.

The turnover for this sector was 925 million Swedish crowns where 2 million arose from secondary industry according to recycling. For the whole manufacturing industry there is only a figure available for 1993 for the turnover and it was 900 billion Swedish crowns.

If enterprises with recycling as secondary activity are added to the figures of the employment for the sector with recycling of metal waste and scrap, only 3 % of the employees arose from secondary activity.

Table 1

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Number of enterprises and employees divided per sizegroup and their turnover in 1995 for recycling of metal waste and scrap (37100).

Sector	Size-group	Number of enterprises	Number of employees	Turnover in MSEK
37100	0	12	0	
	1 - 4	12	23	
	5 - 9	9	62	
	10 - 19	3	50	
	20 - 49	-	-	
	50 - 99	4	279	
	Total		40	414

In table 2 below there is a similar figure of the turnover for recycling of non-metal waste and scrap (37200), roughly 890 million Swedish crowns, where 3 million arose from industries with recycling as secondary sector. There are very small amounts that these two sectors represent in the whole manufacturing industry.

Table 2
Number of enterprises and employees divided per sizegroup and their turnover in 1995 for recycling of non-metal waste and scrap (37200).

Sector	Size-group	Number of enterprises	Number of employees	Turnover in MSEK
37200	0	8	0	
	1 - 4	7	16	
	5 - 9	5	34	
	10 - 19	2	..	
	20 - 49	1	..	
	Total		23	107

For recycling of non-metal waste and scrap (37200) there are only 23 enterprises with a total of about 100 employees. Also for this sector there are approximately 65 %, 15 out of 23, small enterprises, i.e. they have less than 5 employees. For the sizegroups 10 -19 and 20 - 49 no figures can be presented though no individual information can be given when there are less than three observations in a cell.

If the enterprises with recycling as secondary activity are added to the figures of the employment, there were approximately 4 % of the employees that arose from secondary activity.

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Wholesale of waste and scrap (51570) is a large sector compared with the two recycling sectors, see table 3. There are almost 700 enterprises in this sector, with about 2 300 employees. As in the two previous cases there are many small enterprises among these. In this case the sizegroup with 0 employees counts for 50 % of the total, 330 of 686 enterprises. If the sizegroup with 1 - 4 employees is included the figure is 80 %. There are 3 enterprises with more than 100 employees.

The turnover for these enterprises were 6.6 billion Swedish crowns in 1995. If enterprises with wholesale of waste and scrap as secondary activity were added to the figures, less than 1 % arose from enterprises with recycling as secondary activity. In comparison with the total wholesale trade in Sweden does this sector count for 1 %. The turnover for all sectors within the wholesale trade were 596 billion Swedish crowns in 1994.

Table 3
Number of enterprises and employees divided per sizegroup and their turnover in 1995 for wholesale with waste and scrap (51570).

Sector	Size-group	Number of enterprises	Number of employees	Turnover in MSEK
51570	0	330	0	
	1 - 4	227	436	
	5 - 9	89	591	
	10 - 19	29	377	
	20 - 49	7	168	
	50 - 99	1	..	
	100 - 199	1	..	
	200 - 499	2	..	
	Total	686	2 295	6 673

For the three largest sizegroups there are no figures of the number of employees because there are too few observations in the cells. It's difficult to say anything about the number of employees that arise from secondary activity though there are many of those enterprises that have 0 employees.

At this time, it's difficult to make any conclusions concerning the sector collection and sorting of non-hazardous waste (90002) at enterprise level for 1995. In many places, the municipalities take care of this business so the figure will give a faulty picture of the sector as a total. There are yet no figures available at establishment level. Table 4 shows the number of establishments. For this sector, figures can be given for 1994. The turnover

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was 3.8 billion Swedish crowns and the number of employees in this sector calculated for the establishments were 5 400.

In table 4 the number of establishments divided per sector and sizegroup are shown for May 1996 in comparison with November 1994 when the last study was made.

For the two sectors recycling of metal waste and scrap (37100) and recycling of non-metal waste and scrap (37200), the number of establishments have increased with more than 50 % since the last survey. The largest increase is shown in the sizegroup 5 - 9 employees. For wholesale of waste and scrap (51570) and collection and sorting of non-hazardous waste (90002), the number of establishments have decreased a little. This relates especially to the two smallest sizegroups with less than 5 employees. In similarity with the two previous sectors there is an increase in the sizegroup 5 - 9 employees.

Table 4
Number of establishments divided per sector and sizegroup for May 1996 and November 1994.

Sectors	37100		37200		51570		90002	
	1996	1994	1996	1994	1996	1994	1996	1994
Sizegroup								
0	21	11	12	7	444	474	104	123
1 - 4	16	9	9	4	264	272	201	188
5 - 9	12	..	5	..	130	116	73	65
10 - 19	7	5	4	-	51	51	71	81
20 - 49	1	..	-	..	11	8	49	47
50 - 99	3	..	-	-	1	..	20	18
100 - 199	-	-	-	-	-	-	4	4
200 - 499	-	-	-	-	-	-	2	2
Total	60	29	30	13	901	922	524	528

Table 5 below shows the recycling sectors with the number of employees and the turnover for these sectors.

Table 5
Number of employees and turnover divided per sector for 1995

Sector	Number of employees	Turnover in MSEK
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37100	414	925
37200	107	888
51570	2 295	6 673
Total	2 816	8 486
90002 *	5 475	3 826
Total	8 291	12 312

* The figure refers to 1994 and is calculated at establishment level.

If sector (90002), collection and sorting of non-hazardous waste, excludes from the total recycling industry, there are 2 800 employees. These enterprises turnover are approximately 8.5 billion Swedish crowns. If 1995 is supposed to be like 1994 for sector (90002) and this sector is included in the calculation, the turnover will be about 12 billion Swedish crowns and the number of employees approximately 8 200.

Classification problems

In this study only establishments/enterprises classified as recycling according to CFAR has been studied. According to this register the industrial establishments are classified from what they produce according to Statistics Sweden's industrial statistics. An establishment/enterprise will therefore have its branch of business from what the final product is. It doesn't matter that the company uses e.g. recycled plastic in the manufacturing process, if the final product is plastic bottles this decides the classification.

There might be some enterprises that are not included in the calculation because they are not classified as recycling even though they are users of recycled products. The only possible way to detect these enterprises is to study the goods used in production.

Statistics Sweden has started a new survey for goods used in the production. This survey is going to show the industrial usage (in quantity, money and import-proportion) of different services, packages and rawmaterial/semi-manufactured goods/consumable supplies. This statistics might be of use in the future to be able to recognize more enterprises that should be included in the recycling industry. There are a few limitations for this statistics. It has recently been initiated and at the earliest in the autumn of 1998 will all sectors be covered. Only enterprises with more than 19 employees will be investigated. No completed information is given about recycling, the nomenclature that is used cannot always separate virgin goods from reused goods.



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Plans for the future

There is evidence to support that there are enterprises not classified as recycling enterprises even though they use a large amount of recycled goods as intermediate consumption. It would be of interest to study a certain sector, e.g. the pulp- and paperindustry to see if it is possible to obtain further data about the size of the recycling sector.

It's very difficult to produce any figures of sector (90002), collection and sorting of non-hazardous waste, at enterprise level. It would be of great interest to study this sector further more.

It would be interesting to separate the municipalities from the private waste collectors.