Services producer price index for
Industrial cleaning

Industry description for SNI group 74.7
SPPI report no 18

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Private services production has made up a large share of Sweden's gross domestic product (GDP) for a long time, but relevant price indices were not developed to any great extent before the year 2000. This can in part be explained historically; commodities have previously made up a dominant part of the economy. Economic statistics have also been focused on commodities. Another reason is the fairly complicated nature of measuring price trends in services. As part of the process to improve economic statistics, producer price indices for services, Services producer price indices (SPPIs), were developed a few years ago. SPPIs are developed for the most common services in industries where either the Swedish National Accounts or the EU requires them to be. This report is one of a series of SPPI reports that discuss the trend in services producer price indices in different industries. The aim of these reports is both to give a description of the statistics for external users and to provide a basis for producing new services producer price indices. It also gives a general description of how services producer price indices can be calculated.

Acknowledgement
Thanks to our data providers - private individuals, companies, authorities and organisations - Statistics Sweden is able to provide reliable and up-to-date statistics that satisfy society's need for information.
Contents

Foreword..................................................................................................................2

1 Summary.................................................................................................................4

2 Background ..........................................................................................................5
  2.1 Conditions for statistical work in the SPPI field...........................................6
  2.2 Requirement for price indices in the national accounts.............................6

3 Description of the industry.....................................................................................7
  3.1 Structure of the sub-industry and statistical classification...........................7
  3.2 Key ratios and facts about the industry..............................................................8
    3.2.1 Cleaning of premises..................................................................................8
    3.2.2 Disinfecting and exterminating activities..................................................10
    3.2.3 Chimney sweeping.................................................................................12
  3.3 Pricing mechanisms and pricing methods.......................................................13
    3.3.1 Cleaning of premises................................................................................13
    3.3.2 Disinfecting and exterminating activities..................................................16
    3.3.3 Chimney sweeping...................................................................................17

4 Test survey structure.............................................................................................18
  4.1 Sampling procedure.........................................................................................18
  4.2 Data collection procedure...............................................................................18
  4.4 Evaluation of the test survey...........................................................................18
  4.5 Test results and conclusions............................................................................19

5 Design of the future survey...................................................................................19
  5.1 Sampling procedure.........................................................................................19
  5.2 Data collection procedure...............................................................................20
  5.3 Pricing methods...............................................................................................20
  5.4 Weights and index calculations.......................................................................21
1 Summary

This report discusses the development of a producer price index for services in the industrial sector SNI 74.7 Industrial Cleaning and also includes an industry description. This industry is divided into three sub industries (detailed groups); Cleaning of premises (74.701), Disinfecting and exterminating activities (74.702) and Chimney sweeping (74.703). Within Cleaning of premises the prices are largely determined by the cost for the personnel that carry out the services and the pricing mechanisms are often time based. A large part of the services are contracted which implies that Contract Pricing is a suitable pricing method. Within Disinfecting and exterminating activities the prices are generally more standardised than within cleaning of premises and not as labour-intensive. As many companies use price lists, these can be used to measure the price trends. Many companies have price lists that are customer specific and to use prices from these can be considered equal to using “Contract Pricing”. Other usable pricing methods for both these sub industries are Model Pricing and Unit Value. Chimney sweeping separates from the other sub industries since it mainly consists of activities that are regulated by law. The municipalities are responsible for the chimney sweeping and fire protection control and write contracts with suppliers of the services. The prices are regulated by Chimney Sweeping Index, a cost index that is compiled by The Swedish Association of Local Authorities and Regions. The price trend can be measured with this index.

During the probationary year sub industry indices are calculated for cleaning of premises, disinfection and exterminating activities and chimney sweeping respectively. These are weighted together to a total index for the whole service group using turnover weights.
2 Background

The Swedish service industry's value added amounts to about 62 percent of the business sector's total value added. Calculated as a share of GDP, the business sector's service production constitutes about 50 percent. For most of the 1990s, this share was just under 40 percent of GDP and rose gradually towards the end of the century. As service production's share of GDP has grown, the need for correct volume calculations of service production has also increased. To calculate trends in individual industries, value added must be purged from inflation. Price trends for different products and services must be measured and indices calculated before the current prices can be converted into fixed prices. In order to cover most of the groups of services in Sweden's national accounts and to fulfil international requirements, new indices for the service industries are continuously developed.

The services producer price index (SPPI) is a producer price index for services that aims to measure price trends in industries that produce business services. There are currently SPPIs for just over 40 percent of the business sector's services production. The majority of the SPPIs produced today have been developed since 1999. SPPIs for rents (for business premises), hotel services and domestic air travel began to be developed during the 1990s.

A joint Eurostat-OECD working group was established in 2002 in order to develop a common method for European services price indices and to provide practical help to countries in the process of developing them. A manual with, among other things, practical descriptions of SPPI for different industries was developed. The manual refers to the existing SPPI manual for index theory and practice. SPPI development and production work is currently regulated by Council Regulation (EC).  

\[1 \text{ Methodological guide for developing producer price indices for services. Website: http://www.oecd.org} \]


\[3 \text{ 1165/98 concerning short term statistics.} \]
2.1 Conditions for statistical work in the SPPI field

SPPI is a producer price index that aims to show the average price trend in the producer chain for services supplied by domestic producers. The index figure is for one quarter and the price data is to be an average per quarter. The measurement should refer to transaction prices, i.e. the prices the purchaser actually pays after discounts.

When developing a services price index for a new industry, specific industry-related price measurement problems must be solved. For example, it is not always obvious how to define the service. Another problem is that the services supplied are often tailor-made for a specific customer and are only supplied once. This makes it difficult to find comparable services to follow over time. These problems are some of the things discussed in this report for the industry in question: For which services are the prices to be measured? What does the industry's price formation look like? And in what way can we include the prices in a way that reflects the price trend without placing too much of a burden on data providers?

2.2 Requirement for price indices in the national accounts

As a result of the Stability Pact in Maastricht, the EU established criteria for the reporting principles for Member State national accounts in fixed prices. For fixed price calculations, it is recommended that production and input consumption be deflated separately using approved, quality-adjusted price indices. This means that the indices are only to reflect changes that can be assigned to price changes whilst changes regarding quantity, quality or composition of the product/service should not influence the indices. As long as these recommendations are followed, the index will be considered an A-method for fixed price calculation. All EU Member States have ranked their methods, under the supervision of Eurostat, as A, B or C methods. As from 2006, no C-methods may be used in Member State national accounts unless
dispensation has been granted. For a more detailed description, please refer to the European System of National Accounts, ENS 1995, Chapter 10.

3 Description of the industry

3.1 Structure of the sub-industry and statistical classification

In the Swedish Standard Industrial Classification 2002 (SNI 2002)\textsuperscript{4} the group Industrial cleaning (SNI 74.7) belongs to the main group Other business activities (SNI 74). Industrial cleaning is divided into three detailed groups; Cleaning of premises (SNI 74.701), Disinfecting and exterminating activities (SNI 74.702) and Chimney sweeping (SNI 74.703).

Table 1: Detailed groups in SNI 74.7 Industrial cleaning

<table>
<thead>
<tr>
<th>SNI</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>74.7</td>
<td>Industrial cleaning</td>
</tr>
<tr>
<td>74.701</td>
<td>Cleaning of premises</td>
</tr>
<tr>
<td>74.702</td>
<td>Disinfecting and exterminating activities</td>
</tr>
<tr>
<td>74.703</td>
<td>Chimney sweeping</td>
</tr>
</tbody>
</table>


Standard for Swedish Product Classification 2002 (SPIN 2002) is a standard linking products to activities (industries) in SNI 2002. SPIN 2002 is the Swedish equivalent of the EU’s Classification of Products by Activity (CPA).

\textsuperscript{4} Swedish Standard Industrial Classification 2002 is based on the EU recommended standard NACE Rev.1.1.

Statistics Sweden
Table 2: Detailed groups in SPIN 74.7 Industrial cleaning

<table>
<thead>
<tr>
<th>Industry</th>
<th>SPIN 2002</th>
<th>CPA 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning of premises</td>
<td>74.701</td>
<td>74.70.12-13 &amp; 74.70.16</td>
</tr>
<tr>
<td>Disinfecting and exterminating activities</td>
<td>74.702</td>
<td>74.70.11 &amp; 74.70.14</td>
</tr>
<tr>
<td>Chimney sweeping</td>
<td>74.703</td>
<td>74.70.15</td>
</tr>
</tbody>
</table>

Source: SPIN 2002: structure, SCB/MP.

3.2 Key ratios and facts about the industry

This section is based on data from 2005 from the Statistics Sweden Business Register, companies without revenue have been excluded. The data about number of employees and net turnover only includes activities within the industry (some companies are active in many different industries). Other facts about the sub industries (detailed groups) have been acquired during meetings with trade associations and enterprises.

3.2.1 Cleaning of premises

Table 3: Structure of the Cleaning of premises industry.

<table>
<thead>
<tr>
<th>No of employees</th>
<th>No of companies</th>
<th>%</th>
<th>No of employees</th>
<th>%</th>
<th>Net turnover, Milions of SEK</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;249</td>
<td>11</td>
<td>0,2</td>
<td>18 284</td>
<td>51,2</td>
<td>5 329</td>
<td>41,8</td>
</tr>
<tr>
<td>100-249</td>
<td>30</td>
<td>0,5</td>
<td>4 542</td>
<td>12,7</td>
<td>1 536</td>
<td>12</td>
</tr>
<tr>
<td>50-99</td>
<td>37</td>
<td>0,6</td>
<td>2 599</td>
<td>7,3</td>
<td>896</td>
<td>7</td>
</tr>
<tr>
<td>20-49</td>
<td>112</td>
<td>1,9</td>
<td>3 391</td>
<td>9,5</td>
<td>1 230</td>
<td>9,6</td>
</tr>
<tr>
<td>2-19</td>
<td>1 087</td>
<td>18,1</td>
<td>6 226</td>
<td>17,4</td>
<td>2 562</td>
<td>20,1</td>
</tr>
<tr>
<td>0-1</td>
<td>4 722</td>
<td>78,7</td>
<td>662</td>
<td>1,9</td>
<td>1 208</td>
<td>9,5</td>
</tr>
<tr>
<td>Total</td>
<td>5 999</td>
<td>100</td>
<td>35 704</td>
<td>100</td>
<td>12 761</td>
<td>100</td>
</tr>
</tbody>
</table>
In Table 3 we see that a large number of companies (5999) are active in the cleaning of premises industry, and that their total turnover is almost 12.8 billion SEK, which is approximately 75 % of the turnover in SNI 74.7. The majority of the companies (78.7 %) have 0-1 employees. This group however only makes up 1.9 % of the total number of employees and 9.5 % of the net turnover in the industry. The dominant group is instead the 11 companies that have more than 249 employees, which make up a good half of the number of employees and 41.8 % of the net turnover. The second largest group regarding number employees and net turnover is the companies with 2-19 employees. Together the 11 largest companies and the 1 087 companies with 2-19 employees make up 68.6 % of the number of employees and 61.9 % of the turnover in the industry.

Most companies in the industry has regular cleaning (cleaning of offices, industrial buildings and shops) as their main activity; but also offer other services such as window cleaning, cleaning of carpets, floor care and spring-cleaning. There are also companies that specialise in a certain type of service, partly the already mentioned services but also for example cleaning of vehicles. The industry has developed a lot during the last 15 years as many companies have stopped cleaning their own premises and instead have started buying cleaning services from specialised firms. Through this the industry has grown, cleaning is more professionally run than earlier and the prices have been pressed downwards. Many cleaning companies see them selves as service companies, strive for a broader business activity and sell general solutions where they offer a number of different services, for example administrative tasks. The industry as a whole is to a large part governed by costs. The competition between the companies is hard and the profit margin is usually around 2-3 %. The customers are very interested in what costs the cleaning companies have and often want these reported. The customers can be divided into public and private purchasers where the public contracts constitute around 30 % of the market. There are large differences between these two groups of clients; all public contracts are under the jurisdiction of the public procurement law and these contacts are always valid for three years. During public procurements there is a very strong price pressure and generally the prices seem to be lower for public than for private customers.
3.2.2 Disinfecting and exterminating activities

Table 4: Structure of the disinfecting and exterminating industry

<table>
<thead>
<tr>
<th>No of employees</th>
<th>No of companies</th>
<th>%</th>
<th>No of employees</th>
<th>%</th>
<th>Net turnover, Milions of SEK</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;249</td>
<td>2</td>
<td>0,4</td>
<td>689</td>
<td>18,4</td>
<td>857</td>
<td>25,3</td>
</tr>
<tr>
<td>100-249</td>
<td>5</td>
<td>0,9</td>
<td>647</td>
<td>17,3</td>
<td>351</td>
<td>10,4</td>
</tr>
<tr>
<td>50-99</td>
<td>3</td>
<td>0,5</td>
<td>242</td>
<td>6,5</td>
<td>228</td>
<td>6,7</td>
</tr>
<tr>
<td>20-49</td>
<td>29</td>
<td>5,3</td>
<td>879</td>
<td>23,5</td>
<td>588</td>
<td>17,4</td>
</tr>
<tr>
<td>2-19</td>
<td>190</td>
<td>34,5</td>
<td>1208</td>
<td>32,3</td>
<td>1171</td>
<td>34,6</td>
</tr>
<tr>
<td>0-1</td>
<td>322</td>
<td>58,4</td>
<td>71</td>
<td>1,9</td>
<td>193</td>
<td>5,7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>551</strong></td>
<td><strong>100</strong></td>
<td><strong>3 736</strong></td>
<td><strong>100</strong></td>
<td><strong>3 388</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The disinfecting and exterminating industry makes up approximately 20 % of the turnover in SNI 74.7. In Table 4 we see that the industry is substantially smaller and has a different structure compared to the cleaning of premises industry. While the cleaning of premises industry was dominated by companies with more than 249 employees, the disinfecting and exterminating industry is dominated by companies with 2-19 employees, both in terms of employees (32,3 %) and turnover (34,6 %). Regarding turnover the two companies with more than 249 employees takes second place with 25,3 % of the total turnover, while the group with 20-49 employees is in second place regarding number of employees with 23,5 % of the total number of employees. Just as in the cleaning of premises industry the group with 0-1 employees is largest regarding number of companies but only makes up a small part of the number of employees and turnover (1,9 % and 5,7 % respectively).

The disinfecting and exterminating industry can be divided into three different branches, these are:

- Industrial service
- Damage service
- Nuclear service
These different markets are different to each other not only regarding activities but also regarding for example cost structure and frequency of performance of the services. Below follows information about the different branches.

**Industrial service**

This is the largest of the branches. The largest customers are paper mills, the car industry and oil refineries. Also the food producers are large customers. These activities are capital-intensive; means of assistance as high pressure pumps, robots and mud sucking cars are used to sanitise for example buildings, ventilation channels and chimneys. Within this branch it is quite common that the services are recurrent. A contract is written regarding, for example, a weekly sanitation of a lacquering robot in the car industry or a daily sanitation of a slaughterhouse.

**Damage service**

This branch is about half as big as the previous one and consists of companies handling things like water damages (dehumidification), fire damages and sanitation of electronics. Included here is also graffiti and pest sanitation. The municipalities are large customers since public premises often are exposed to sabotage as fires and floods. The largest customers are though the insurance companies, they are the ones having to pay for the damages and they are also often taking care of the purchasing of sanitation.

**Nuclear service**

Nuclear service is a special market, partly because the number of power plants is small and partly because the activity is surrounded by an extensive regulation. Because of this only a small number of companies offer this kind of service. In this branch it is common with contracts that run for several years. Sanitation at nuclear power plants is very seasonal and most work is done during a limited time of the year when the plants are shut down. In this branch there has been a development towards more full service contracts where the supplier that gets the contract takes care of all kinds of service at the plant.
3.2.3 Chimney sweeping

Table 5: Structure of the chimney sweeping industry

<table>
<thead>
<tr>
<th>No of employees</th>
<th>No of companies</th>
<th>%</th>
<th>No of employees</th>
<th>%</th>
<th>Net turnover, Milions of SEK</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;25</td>
<td>3</td>
<td>0,9</td>
<td>84</td>
<td>5,8</td>
<td>53</td>
<td>5,9</td>
</tr>
<tr>
<td>20-25</td>
<td>4</td>
<td>1,2</td>
<td>91</td>
<td>6,2</td>
<td>35</td>
<td>3,9</td>
</tr>
<tr>
<td>11-19</td>
<td>31</td>
<td>9,4</td>
<td>431</td>
<td>29,6</td>
<td>256</td>
<td>28,3</td>
</tr>
<tr>
<td>6-10</td>
<td>65</td>
<td>19,7</td>
<td>489</td>
<td>33,6</td>
<td>289</td>
<td>32</td>
</tr>
<tr>
<td>2-5</td>
<td>101</td>
<td>30,6</td>
<td>331</td>
<td>22,7</td>
<td>205</td>
<td>22,7</td>
</tr>
<tr>
<td>0-1</td>
<td>126</td>
<td>38,2</td>
<td>31</td>
<td>2,1</td>
<td>65</td>
<td>7,2</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100</td>
<td>1 457</td>
<td>100</td>
<td>903</td>
<td>100</td>
</tr>
</tbody>
</table>

As we can see in Table 5 the chimney sweeping industry is the smallest of the three detailed groups in SNI 74.7. With its 903 million SEK it does not constitute more than just over 5 % of the total turnover. The companies are also much smaller than in the other two industries, there are only three companies with more than 25 employees. The dominant group, both regarding number of employees and turnover, is the companies with 6-10 employees, closely followed by the companies with 11-19 employees. Together these two groups make up 63,2 % of the employees and 60,3 % of the turnover in the industry.

The chimney sweeping industry is special since there are two different areas of activity with very different market conditions. The first area consists of activities that are regulated by law and the second consists of activities that are not regulated by law. About 2/3 of the chimney sweeping industry consists of regulated activities and 1/3 unregulated. These two areas and their characteristics are described below.
• The first area consists of activities that are regulated by the Civil Protection Act; it includes chimney sweeping and fire protection control. The law says that the municipalities in a fire preventive aim are responsible for chimney sweeping and fire protection control. The municipalities often solve this by writing contracts with chimney sweeping companies. The law gives the municipalities right to, after application, allow the inhabitants to let someone else than the operator directed by the municipality to carry out chimney sweeping on their own property. The largest part of the chimney sweeping is though taken care of by the operator(s) that the municipalities have contracted.

• The second area consists of procured work. This area is totally different to the first one since it is not regulated, which means that it is much more competitive. Activities included here are for example ventilation service and inspection of fireplaces and chimneys. Even if this is a free market it is still, according to the industry, dominated by the chimney sweepers. One reason for this is that some activities used to be regulated; up to 2004 cleaning of a so-called imm-channel (a channel in a chimney where the hot air flows) was regulated by law and was taken care of by the chimney sweepers. When the chimney sweepers were in place it was usual that they also cleaned other channels. After the deregulation many people have continued to buy these services from the chimney sweepers.

3.3 Pricing mechanisms and pricing methods

This section is based on information obtained during meetings with trade associations and companies.

3.3.1 Cleaning of premises

As mentioned above the cleaning of premises industry is very much governed by costs. This means that the price of a service to large extent is determined by what it costs to produce it. As the largest
part of the cost is made up of labour cost (normally over 80%), the price trend in the industry is to a very large extent determined by the development of wages. Since the labour cost (the wage) is time based, the cost calculations almost always take their starting point in how long time it takes to carry out the service. The company then uses an hourly rate for the service that shall be carried out and multiplies it with the estimated number of hours needed. This hourly rate varies depending on how qualified staff that is required for the service. For “ordinary” cleaning inexperienced staff with minimum wage is usually used, while as more qualified services require staff with special authorities. The more qualified staff’s higher wages imply a higher price. Continuous cleaning is almost always contracted. For private customers new contracts are almost always written for two to three years and are during this time linked to some index, usually “Städindex”. When the commitment period is over the contract converts to a running contract with a term of notice, and the prices can be renegotiated. There is though a difference between private and public buyers; all public contracts are under the jurisdiction of the public procurement law and these contracts are always valid for three years. As mentioned earlier there is a very strong price pressure during public procurements and generally the prices seem to be lower for public customers. There exist generally two kinds of contracts for continuous cleaning:

1. Instruction based contracts – traditional contracts where the customer orders for example a certain number of hours or a certain number of square metres to be cleaned frequently.

2. Result based/Functional contracts – contracts where the customer orders a certain quality and does not specify numbers of hours, frequency etc. The quality is regulated by a Nordic standard called INSTA 800 where every level is precisely defined with exact limits for the amount of dirt and rubbish that is allowed on a stated area after the cleaning is carried out.

These two types of contracts can seem very different, but regarding pricing mechanisms there is in practise no large difference – it is

\[ \text{Städindex (cleaning index) is a factor price index that is produced by Statistics Sweden in cooperation with Almega Service Employers' Association. It measures changes in costs for cleaning activities.} \]
always the used time that determines the price. Instruction based contracts are most common and also in these some kind of minimum quality requirement is stated (for example that the floors shall be clean and the bins emptied). In the functional contracts the amount of time that should be spent at the client is not stated, but also in these cases the cleaning companies take their starting point in estimated time consumption when they set the price.

Other activities than continuous cleaning, like spring-cleaning and floor care, are often sub ordered. Also in these cases the estimated time consumption determines the price and it is unusual with standardised prices. Window cleaning, and to some extent carpet cleaning, is on the other hand more standardised and especially within window cleaning it is common with pricelists that states price per window or square meter.

During meetings with the companies in the industry it was discussed in what way the price trend could be measured, and it was clear that different companies had different possibilities to report prices. Since the continuous cleaning almost always is contracted a suitable pricing method pricing method for this activity is Contract Pricing. This method implies that a number of contracts are surveyed every period and can be used when a repeated service is performed by the same producer for the same customer. Since the contracts often are unique and all price determining characteristics in a contract not can be expected to be repeated in another contract, it is hard to keep the quality constant and a quality adjustment is often required when a contract is replaced. Since it is hard to compare contracts with each other each contract can also be seen as a unique service. This means that also Model Pricing is a suitable pricing method. This method implies that the respondent states a price for a “model service”; a standard service whose specification is held constant. The model can either be totally fictive or based on data from a service that has been sold in the recent past, for example a contract from the previous period. For every new period the respondent is then asked to re-estimate all price determining

6 See “Methodological guide for developing producer price indices for services” from “Joint OECD/Eurostat task force” for a description of different pricing methods
components. A third possible method is Unit Value, a method where the services are divided into homogeneous sub-sets for which value and quantity data are available. A unit price is then calculated by dividing the output values with the corresponding quantities. Since the homogeneity requirement is difficult to meet, even if a very detailed sub-division of output is used, this method is not preferable and should only be used in exceptional cases. For services where the prices are more standardised (foremost window cleaning) price lists can be used.

3.3.2 Disinfecting and exterminating activities

The pricing mechanisms within the Disinfecting and exterminating industry is generally more standardised than in the cleaning of premises industry, although it also here is common with negotiations. Just as in the cleaning of premises industry the disinfecting companies say that the price pressure is harder for public customers. Since the three markets that were described in 3.2.2 are different regarding cost structure and frequency of services they are also different regarding pricing mechanisms.

Within both industrial service and damage service it is common with price lists where hourly rates for labour and hourly or daily rates for machines are stated. The labour cost does here not make up such a large part of the total cost as in cleaning of premises, these activities are more capital-intensive. There often exists a standard price list that is used for small jobs for new customers. Frequent customers usually have their own, customer specific, price lists that are updated annually. It also happens that contracts are written with frequent customers. In these contracts the price is usually negotiated and the price is expressed per square meter or working moment. When making the price calculation the company takes into account how much staff and which means of assistance that are required and how large the time consumption is expected to be.

Within nuclear service long term contracts that run for several years are common. The price is then usually fixed or is escalated with some index. As mentioned above there has been a development towards more full-service contracts where the supplier that gets the
contract for a nuclear power plant handles all service. The part of this service that is included in SNI 74.702 is “radioactive cleaning” and for this service there exists an hourly rate that is stated in the contract.

Since many companies in the disinfecting and exterminating industry use price lists one can from these choose a number of with high turnover and measure the price trend for these. Since all companies have declared that the customer specific price lists follow the same price trend as the standard price list one alternative is to only use the standard price list. Another alternative is to use a number of customer specific lists. To use customer specific price lists is equivalent to a form of Contract Pricing. In cases where contracts are written for recurring services it is possible to measure the price trend by surveying a number of contracts. Since unique services also are rather common also Model Pricing is a suitable method.

### 3.3.3 Chimney sweeping

Since the two areas of activity within the chimney sweeping industry that were described in 3.2.3 are very different regarding market conditions they are also very different regarding pricing mechanisms. For activities regulated by the Civil Protection Act (chimney sweeping and fire protection control) the prices are formally set by the municipalities, but in practice also the chimney sweepers have great influence on the price since they keep together and do not sign contracts that they not accept. The prices are regulated by The Chimney Sweeping Index, a cost index that is produced by The Swedish Association of Local Authorities and Regions and consists of 80 % labour cost and 20 % CPI, the index is updated annually. Around 90 % of the municipalities use The Chimney Sweeping Index outright in their contracts and most of the other municipalities use the index as a guideline when renegotiating contracts. Within the non-regulated activities the pricing mechanisms are totally different. Here it works more or less like in the disinfecting and exterminating industry.

The price trend for the regulated activities can be measured with The Chimney Sweeping Index. The non-regulated activities make
up only one third of the chimney sweeping industry, which makes up slightly more than five percent of the turnover in SNI 74.7. This means that the non-regulated activities make up less than two percent of the turnover in SNI 74.7. Because of this it was decided, in consultation with National Accounts, that The Chimney Sweeping Index gets to represent the price trend for all chimney sweeping activities.

4 Test survey structure

4.1 Sampling procedure

The sample consisted of 11 companies, which were drawn from the Business Register. Six of these were active within SNI 74.701 and five within SNI 74.702. Before the test survey was conducted the companies were visited and during these visits pricing methods and which service the companies considered most representative for their business were discussed. The companies were asked to choose 1-10 services for which they, except price and a thorough description of the service, should state customer, volume, time in the day, region and other price determining factors.

4.2 Data collection procedure

For nine of the companies information and questionnaires were sent out via post. The companies were asked to return the questionnaires in an enclosed pre-addressed envelope. One company preferred to receive the questionnaire in electronic form via e-mail and one company did not want any questionnaire at all, instead they sent an Excel-file via e-mail.

4.4 Evaluation of the test survey

Of the eleven companies nine responded. Generally the rest survey gave positive answers. All responding companies reported figures that were possible to use for index calculation. Some companies had
misunderstood the questionnaire and expressed the price in another way than intended. The reported prices were expressed in a number of different ways: price per day, price per hour, price per square meter, price per deal, price per seat, price per cabin and price per square meter-year.

4.5 Test results and conclusions

The test questionnaire had consciously been made “general” to be able to be used by companies with very different activities. Since a number of companies filled in the questionnaire in another way than intended, it seems like the questionnaire was unclear and maybe not sufficiently detailed. Since it is desirable that all companies in the survey can use the same questionnaire also the final questionnaire will be “general”. To reduce the risk of misunderstandings all respondents will, in connection with the first price collection, get a detailed description of different ways to report prices.

5 Design of the future survey

5.1 Sampling procedure

A sample of respondents has been drawn from the Business Register with the help of a PPS sample of companies within SNI 74.701 and 74.702. As measure of size turnover within the industrial sector was used. In both samples an intentional under-coverage was employed with the help of cut-off points. In SNI 74.701 ten employees was used as cut-off point and in SNI 74.702 five employees. This means that companies with fewer than ten (five) employees not are included in the sampling frame since they are not intended to be surveyed. The reason for this is mainly that the reporting burden would be large for these companies since they often have small resources for handling administrative work and costs. From SNI 74.701 35 companies were drawn that together make up 55.4 % of
the turnover in the industry. From SNI 74.702 15 companies were
drawn that together make up 45.2% of the turnover in the industry.

5.2 Data collection procedure

Via post the respondents will receive passwords and user-id’s for
reporting prices on the SPPI web page. At the first price collection
the respondents will though instead receive a printed questionnaire
with plenty of space to describe the services’ characteristics. The
reason for this is that it has been hard to create a web questionnaire
that is at the same time sufficiently “general” to fit different types of
pricing methods and easy to use. With help of the filled-in paper
questionnaires staff from Statistics Sweden will fill in the web
questionnaires. In the following price collections only passwords
and user-id’s will be sent out, unless the company has specifically
demanded a paper questionnaire.

5.3 Pricing methods

At the first price collection (the base quarter) the companies get to
choose between one and six services that they consider
representative for their activity within the industry. At the next
quarter prices are reported for the same services and a price relative
is calculated for each service. If the exact same service has been
carried out at different prices during the quarter the average price is
requested.

In cases where Contract Pricing is used it is important that the
sample of contracts is representative regarding point of time in the
contract period and length of the contract, this to ensure a correct
proportion of new or renegotiated in each period. When contracts
are replaced it is important to consider quality changes. If the
respondent reports list prices it has to be settled that these are really
representative. When using Model pricing it is important to make
sure that all factors that affect the price are specified in the model
and that the respondents consider changes in labour costs, overhead
costs and market conditions. In cases where Unit Value is used the
services have to be carefully specified and divided into homogenous
groups.
5.4 Weights and index calculations

Producer Price Indices for Services are produced quarterly.

**Step 1** is to calculate an index for each company; this is done by calculating a geometric mean of the price relatives for the selected services:

\[
I_{0,a}^i = \prod_{i=1}^m \left( \frac{p_{a,i}^t}{p_{a,i}^0} \right)^{1/m}
\]

Where \( I_{0,a}^i \) = index with base time 0 for company a at time t

\( p_{a,i}^t \) = price of service i, company a, at time t

\( p_{a,i}^0 \) = price for service i, company a, at base time

\( m \) = number of services within company a

**Step 2** is to geometrically weigh the company indices together to an industry index (detail group index). The largest companies get weights based on their turnover and the smaller companies share the remaining weight.

The industry index is given by:

\[
I_{0,A}^i = \prod_{a=1}^n (I_{0,a}^i)^{w_a}
\]

Where \( I_{0,A}^i \) = index with base time 0 for industry A at time t

\( I_{0,a}^i \) = index with base time 0 for company a at time t

\( w_a \) = weight for company a

\( n \) = number of companies in the survey for the industry

\[
\sum_{a=1}^n w_a = 1
\]
Step 3 is to arithmetically weigh the industry indices together to a total index for the whole service group. The industries get weights based on their turnover.

The total index is given by:

\[ I_{0,T}^t = \sum_{i=1}^{N} (I_{0,A}^t)w_A \]

Where \( I_{0,T}^t \) = total index with base time 0 at time \( t \)

\( I_{0,A}^t \) = industry index with base time 0 for industry \( A \) at time \( t \)

\( w_A \) = weight for industry \( A \)

\( N \) = number of industries in the service group

\[ \sum_{a=1}^{n} w_A = 1 \]