

# PRODUCTION OF THE STATISTICS

## Producer and Import Price Index

### Subject area

Prices and consumption

### Statistical area

Producer and import price index

### Product code

PR0301

### Reference time

2022, month, quarter, and year

### Contact details

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## 1 Context of the statistics

The statistical product and survey *Producer and Import Price Index* (PPI) aims to measure and present the average development for producer and import prices, in total and for different product groups. The prices are measured when the products are delivered from Swedish producers (domestic market and export/exit) <sup>1</sup> and the first stage of purchase when the products enter Sweden (import/entry). “Products” refer to both goods and services.

This document contains a description of the plan and implementation of the surveys that form the basis for the statistics on the Producer and Import Price Index. Read about the quality of the statistics in the quality declaration, which is available at [www.scb.se/PR0301](http://www.scb.se/PR0301), under the heading *Documentation*.

## 2 Survey design

### 2.1 Target characteristics

The target characteristic is the price index for product groups on various markets. Sales at the production stage on the Swedish market is referred to as the domestic market. Sales at the production stage outside Sweden is referred to as the export market. Import/entry to Sweden from abroad is referred to as the import market.

The target population is defined as all the transactions related to sales at the production stage and the import/entry to Sweden from abroad, respectively of products under product groups in Sections A to E, G to N, R, and S according to SPIN 2015 (see Table 1).

**Table 1.** Overview of sections\* of product codes, defined in SPIN2015.

| Section | Description   |
|---------|---|
| A       | Agriculture, forestry and fishing                                 |
| B       | Mining and quarrying  |
| C       | Manufacturing   |
| D       | Electricity, gas, steam and air conditioning supply               |
| E       | Water supply, sewerage, waste management and remediation services |
| G       | Wholesale and retail trade  |
| H       | Transportation and storage services                               |

<sup>1</sup>“Export” refers to products that are sent to countries outside the EU. “Exit” refers to products that are sent to countries within the EU.

|   |  |
|---|--|
| I | Hotels and restaurants   |
| J | Information and communication services                                   |
| K | Financial and insurance services   |
| L | Real estate services   |
| M | Professional, scientific and technical services                          |
| N | Rental and leasing services and travel agency and tour operator services |
| R | Arts, entertainment and recreation services                              |
| S | Other services   |

*\*Each section includes main groups, each of which consist of subgroups, consisting of detail groups. The lowest aggregation level of product codes within each section is seven digit groups.*

## 2.2 Frame procedure

The frame population is based on other surveys at Statistics Sweden: Production of commodities and industrial services (Prodcum), Structural Business Statistics (SBS), Foreign trade - exports and imports of goods (FTG), and Foreign trade in services (FTS). These surveys contain information at the product level. The sample frame is created by summing up all transactions during a year related to sales in the production stage, and import/entry to Sweden from abroad respectively, per market, product group and enterprise. Any given annual transaction is a frame element.

The reason for the use of several surveys as a basis for the sample frame is that the different markets affect each other, since the domestic market is defined as production minus export/exit. Import/entry that only passes through Sweden, known as re-export, is removed from both the export and import side.

Channels of communication are primarily directed from existing respondents to the survey. New data sources (i.e. enterprises) are contacted via letter, in which the respondent is encouraged to choose a representative product within a selected product group.

The observation unit consists of the price of a transaction for a certain product, referred to as a product offering, within a given product group for each survey period. A product offering is the combination of enterprise and product to be priced. A data source can submit information on several observation units.

## **2.3 Procedures for sampling and exclusion**

### **2.3.1 Sampling procedure**

The frame elements are divided into strata that consist of one or more product groups according to SPIN. A frame element can have two different types of status, drawn by accuracy or by probability. Units with large transaction values are drawn by accuracy, i.e. with the probability of 1, and then removed from the frame. Next, a probability sample, known as a PSS sample, is drawn from the remaining units and sample uncertainty can thus be calculated. A coordinated sample is not carried out. A PPS sample is drawn ahead of each new year for each stratum and market.

The allocation method used is a Neyman allocation, in which the cost function is set uniformly for all strata on a market. The allocation provides the number of observations to be drawn in each stratum.

### **2.3.2 Exclusion from sampling (cut-off)**

A cut-off limit of no less than SEK 10 million in turnover per frame element is applied in each stratum. Contributions from enterprises below the cut-off are not estimated, but are assumed to have the same price development as the data collected.

## **2.4 The collection procedure**

### **2.4.1 Data collection methods**

Prices on transactions in the producer and import stage are often not publicly available. For this reason, prices for the Producer and Import Price Index are mainly collected directly from enterprises. In the absolute majority of cases, electronic collection is used, via [www.insamling.scb.se](http://www.insamling.scb.se). Some collection is also done via paper forms, e-mail, homepages and other surveys at Statistics Sweden.

The collection period begins on the first workday in the period after the end of the reference period, when respondents receive login details via e-mail or letter.

### **2.4.2 Measurement**

The average transaction price during the period for a particular product is reported. In addition, respondents can state whether some characteristic of the product has changes, such as terms of delivery, customer, price data or anything else that may affect comparability with previous periods. If a transaction price cannot be reported, a list price or hourly rate is also accepted.

The questionnaire contains built-in controls (see Section 2.6.1.). See Appendix 1 for the questionnaire.

For more information on variables, see  
<http://www.metadata.scb.se/?produkt=PR0301>

#### **2.4.3 Follow-up of non-response**

The weighted non-response in percent is measured at the end of every period. Continuous reminders, both by e-mail and by telephone, are made during the period to keep the non-response rate as low as possible.

#### **2.5 Processing**

The index is calculated based on prices recalculated to Swedish kronor. Prices are to be reported in the trade currency and then recalculated to Swedish kronor by Statistics Sweden.

Missing information, irrespective of whether due to non-response or if there was not transaction during the period, is imputed. The imputation method used is a mean value imputation with the price development of products within the same product group that have been reported during the period. Price data that cannot be verified by the respondent can also be imputed.

#### **2.6 Editing**

The data material is processed and continuously edited to maintain a high level of quality of the statistics. By continuously editing microdata and macro data during the measurement periods, Statistics Sweden ensures that the statistics maintain a high level of quality. Any product or price changes are detected during the editing of microdata. The price development shall not include changes in the price that are a consequence of changed quality. In principle, only strict price changes, which are reflected in the pricing of comparable transactions, are to affect development.

##### **2.6.1 Editing during collection**

When reporting price changes on individual product offerings greater than +/- 10 percent compared with the previous period, respondents are obliged to submit a comment in the form.

##### **2.6.2 Editing of microdata and collected statistical values**

Price changes on individual product offerings greater than +/- 10 percent compared with the previous period are validated. When necessary, the respondent is contacted for a more detailed explanation of the price change if it has not already been submitted in the form.

### **2.6.3 Editing of macro data**

Editing of macro data begins when sufficient data has been received during the period. A meeting is held about three days before data collection ends, by which time normally about 90 percent of the data has been collected. Preliminary results are edited and explanations for major price differences and changes that have a large impact on the total change compared with the previous period are examined.

### **2.6.4 Review of accounts**

After making the calculations, the result is reconciled with the preliminary result and three to five people edit the most important events that have happened during the period.

## **2.7 Estimation procedure**

### **2.7.1 Principles and assumptions**

The Laspeyres-type chain index is created by calculating the average price development for product groups according to SPIN at different levels and then aggregating to higher SPIN group levels and in total within each market.

Uncertainties in the data during the estimation procedure include that the weights are from a previous period than the price base period. This is adjusted with a price update so that they correspond to the value quantity in the product basket at the same price level as for the price base period.

In order to eliminate the effect that arises in the event of quality differences during product changes, various types of quality adjustments are made, some of which are based on model assumptions.

In some cases, transaction prices cannot be reported by the respondents. In such cases, list prices or hourly rates may be reported, assuming that their price development follows the price development for the actual transactions in the longer term.

Contributions from enterprises below the cut-off are not estimated, but are assumed to have the same development as the data collected.

### **2.7.2 Estimation procedure for target characteristics**

For all measurements in the sample, price quotas, the price change for the current product offering between the comparison period and the price base period, which is December in the previous year (or the fourth quarter of the previous year for sections H to N and R and S) are calculated (see Table 1).

$$Priskvot = \frac{p_{i,a}^t}{p_{i,a}^b},$$

where

$p_{i,a}^t$ : price in the period  $t$  for product  $i$  from company  $a$ .

$p_{i,a}^b$ : price in the base period  $b$  for product  $i$  from company  $a$ .

The price quotas are weighed together for different aggregates, product groups according to SPIN 2015, markets and in total.

The index is calculated with the current period  $t$  year  $y$  as the comparison period and with the last period in the previous year as the price base period. an index link can be written as

$$I_{y-1,dec;g}^{y,t} = \sum_s \frac{V_s^*}{\sum_u V_u^*} \times \frac{p_{y,t;s}}{p_{y-1,dec;s}},$$

for product offerings  $s$  included in product group  $g$ , where  $p_s$  are prices for the selected specification. The first factor is the value weight, the value of the transaction volume in year  $y - 2$  that the specification  $s$  represents of the total transaction volume for group  $g$  converted with a price index to the price situation in the last period of the previous year (below noted as dec).

$$V_s^* = V_{y-2;s} \times I_{y-2;s}^{y-1,dec}, s \in g.$$

A chain index number, with base year 2015 is calculated for period  $t$  year  $y$  as

$$I_{2015}^{y,t} = \frac{100}{\frac{1}{12} \sum_{t=1}^{dec} I_{2014,dec}^{2015,t}} \times \prod_{Y=2015}^{y-1} I_{Y-1,dec}^{Y,dec} \times I_{y-1,dec}^{y,t}$$

The first factor after the equals sign indicates the price situation as a percentage of the average price situation in 2015 (the base year is set at 100). The second factor is the chain price development from 2014 to year  $y - 1$  and is a product of annual links. Finally, the last factor indicates the price development from the base period year  $y - 1$  to period  $t$  year  $y$ .



### **2.7.3 Estimation procedure for accuracy**

Uncertainty measures are not calculated because non-sample uncertainty is not directly measurable.

### **2.7.4 Disclosure control**

Disclosure control is carried out annually when weighting figures have been determined. Minimum requirements are set for the number of companies that submit information within a product group in order for data to be published. Requirements are also made that one or more companies are not too dominant in the product group if publication is to take place.

## **3 Implementation**

### **3.1 Quantitative information**

Prices on about 6 000 product offerings are collected on a monthly basis. Prices on about 4 000 product offerings are collected quarterly. The index is calculated for just over 400 detail groups according to SPIN 2015. The weighted non-response is between 3 and 20 percent per collection period. The weighted proportion of imputations is between 8 and 25 percent per collection period. In total, the sample covers just over 43 percent of the frame population in terms of value (see Section 2.2 above).


### **3.2 Deviations from the survey design**

There have been no deviations from the survey design.

During the first quarter of 2020, the Covid-19 virus started to spread in Sweden and all over the world. During this period the following was expected; 1. A higher rate of over-coverage (mainly due to increased number of bankruptcies and restrictions due to the pandemic), and 2. A higher rate of non-response. The observed levels of over-coverage and non-response was however not significantly higher during 2020 compared to 2019. Over-coverage has mainly increased in product groups highly affected by the pandemic, such as hotels, travel services and similar services. Overall is the effects of the pandemic assessed to not have affected the overall accuracy of the published statistics. The same target characteristics and methods as before, have been used in 2020.

## Appendix 1

### Questionnaire for Sections A-E



PI09\_PPI\_PROD  
Oktober 2018 PI09\_PPI\_PROD 2018 Ins 10  
STATISTISKA CENTRALBYRÅN

Inskickad till SCB 2018-10-26  
ES/PR SCB

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### Svenska marknaden

|          | Produkt           | KN-nummer |
|----------|-------------------|-----------|
| 10006179 | Test Hemmamarknad | 99937000  |

**1. Är ovanstående produkt fortfarande representativ och typisk för er produktion av egna produkter, vid försäljning på den svenska marknaden, inom angivet KN-nummer (statistiskt nr/tullnr)?**

Ja

Nej. Specificera en ny produkt inom samma KN. [Sök på KN](#)

Skriv även en kommentar om varför produkten utgått. Svara sedan på fråga 2 för den nya produkten.

**2. Fyll i produktens försäljningspris till kund i första ledet för den svenska marknaden för aktuell period. I priset ska inte moms eller andra varuskatter ingå. Om priset har förändrats, skriv orsaken.**

- Om det tillfälligtvis inte skett någon försäljning av produkten på den svenska marknaden, markera kryssrutan "Ingen transaktion".
- Om ny produkt har specificerats, skriv om möjligt in föregående månads pris på den nya produkten i kommentarsfältet "Orsak till ev. prisförändring" och beskriv hur de skiljer sig åt.

| Månad     | Pris | Valuta | Enhet <span style="font-size: x-small;">i</span> | Prisunderlag <span style="font-size: x-small;">i</span> | Leveransvillkor | Kommentar <span style="font-size: x-small;">i</span> |
|-----------|------|--------|--|---|-----------------|--|
| September | 1,00 | SEK    | TIMME  | Transferpris/ I   | Carriage Paid   |  |
| Oktober   | 1    | SEK    | TIMME  | Transferpris/ I   | Carriage Paid   | Orsak till ev. prisförändring                        |


Ändra här: ▼ Ändra ▼ Ändra ▼ Ändra ▼

Ingen transaktion

◀ Bakåt

Fortsätt ▶

## Questionnaire for Sections G-N, and S



PI09\_TPL\_SYSTEST  
2:a kvartalet 2018 2018 kvartal 2  
ES/PR SCB

Kopia av Producentprisindex för tjänster  
00000001

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### Svenska kunder

| SCBid    | Produkt | SPIN   | Tjänsteområde                            |
|----------|---------|--------|--|
| 10013491 | Test    | 52.230 | Tjänster i anslutning till lufttransport |

**1 Är ovanstående produkt fortfarande representativ och typisk för ert utbud av tjänster till svenska kunder inom angivet tjänsteområde?**

Ja

Nej. Specificera en ny produkt inom samma tjänsteområde. Skriv även om ytterligare egenskaper har tillkommit (se fråga 2).  
[Se koder](#)

Skriv även en kommentar om varför produkten utgått. Svara sedan på fråga 2 och 3 för den nya produkten.

**2 Kontrollera om beskrivningen för nedanstående egenskap/egenskaper är korrekta. Om någon egenskap har ändrats, skriv den nya beskrivningen i kommentarsfältet "Ny beskrivning".**

| Egenskap | Beskrivning | Ny beskrivning |
|----------|-------------|----------------|
|          |             |                |

**3 Fyll i produktens pris till svenska kunder för aktuell period. I priset ska inte moms och andra skatter ingå. Om priset har förändrats, skriv orsaken.**

- Om det tillfälligtvis inte skett någon försäljning av produkten till svenska kunder, markera kryssrutan "Ingen transaktion".
- Om ny produkt har specificerats, skriv om möjligt in föregående månads pris på den nya produkten i kommentarsfältet "Orsak till ev. prisförändring" och beskriv hur de skiljer sig åt.

| Kvartal        | Pris | Valuta | Enhet | Prisunderlag <span style="font-size: small;">i</span> | Kommentar <span style="font-size: small;">i</span> |
|----------------|------|--------|-------|---|--|
| Kvartal 1 2018 | 1,00 | SEK    |       | Transaktionspris (faktureri)                          |  |
| Kvartal 2 2018 |      | SEK    |       | Transaktionspris (faktureri)                          | Orsak till ev. prisförändring                      |

Ändra här: ▼ Andra ▼ Andra ▼

Ingen transaktion

[Bakåt](#)

[Spara](#) [Spara och fortsätt](#)