

Guidelines document on Approximations of deflators when SPPIs are not available

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Regulations and Manuals

Standards for the production of producer price indices and the approximation of deflators:

- Eurostat-OECD Methodological Guide for Developing Producer Price Indices for Services
- Regulation on European business statistics in association with its implementing regulation
- Eurostat, Handbook on prices and volume measures in national accounts
- European Commission, Eurostat: Guide on developing an Index of Services Production (ISP)



Brief outline of the rules for approximating deflators from the Eurostat ISP-manual

This manual discusses 3 different solution approaches:

- Use of B2B Service Producer Price Indices (SPPIs) as approximations for Business to All
- Use of Consumer Price Indexes (CPIs) as approximations for B2All SPPIs
- Combination of B2B SPPIs and CPIs.



Brief summary of the classification criteria from European Manual on Price and Volume Measurement

Definition of A-, B- and C-methods:

A-method:

- it is an index of the (domestic market and export) price(s) of exactly the same goods (groups of goods);
- the index takes into account changes in the quality of the good(s);
- price developments are considered at producer prices;
- the underlying concepts correspond to those of the national accounts.



Brief summary of the classification criteria from European Manual on Price and Volume Measurement

Definition of A-, B- and C-methods:

B-method:

- a less suitable SPPI
- a consumer price index (CPI)

C-method:

- Input methods
- secondary indicators, i.e. indicators not directly related to production
- SPPIs, CPIs that do not correspond at all to the good(s) in question



Types of estimators: Sub-aggregate of CPI

The use of CPIs, whether alone or in combination with another price measure, can be helpful as a proxy for B2C transactions.

Minimum requirements

- Some consumer facing activity not already covered by the B2All SPPIs.
- Data to calculate weights for the CPI and any other prices being used.
- Good alignment between the CPI used and service covered.
- Ideally, changes in tax rates such as VAT should be removed.

Strengths and weaknesses

- Can improve coverage of the deflator when the SPPI does not sufficiently cover B2C activities. The quality of some CPIs may be greater than SPPIs (for example with larger sample sizes).
- The CPI may be based on a different classification system to any SPPIs which can cause challenges in identifying a suitable CPI.



Types of estimators: Sub-aggregate of CPI

Examples UK:

For consumer-facing services:

- Primarily consumer facing services deflated with the most relevant CPIs
e.g. veterinary services (CPA 75) , consumer airfares (CPA 51) and hotels (CPA 55).
- Sometimes, these are combined with SPPIs where available and appropriate. For example, the CPI is used for consumer airfares, and the SPPI for business travelers.

As a proxy:

- Until 2023, an average of the all-items CPI and Average Weekly Earnings was used as an alternative to the SPPI in the output measure of GDP.
- Based on the assumption that intermediate consumption and wages were the primary costs in services and therefore heavily related to these prices.
- These measures have been gradually replaced by SPPIs where available, but are still in place where SPPIs are unavailable, such as deflating CPA 72, Research and Development (R&D), output.



Types of estimators: sub-aggregate of another price statistic

Price developments for products at the producer level that can be assumed to be similar to those for which no suitable price index is available. This is highly likely if a product is the main input for the output of a service.

Minimum requirements

limiting the approximation to the price development of one input component can only be justified if this component accounts for a very large share of the total costs.

Strength and weaknesses

- In the case of an estimate using another producer price index, the main advantage is that the same rules apply to the inclusion or exclusion of fees and taxes.
- Even if it is certain that the price of the output depends to a large extent on the price of a single input component, the question of the time lag arises.



Types of estimators: sub-aggregate of another price statistic

Examples: Germany

In Germany, due to the lack of more suitable deflators, most price developments for leasing are approximated under this assumption that the price of the output depends to a large extent on the price of a single input. For

- NACE 77.1 'Rental and leasing of motor vehicles',
- NACE 77.31 'Rental of agricultural machinery and equipment',
- NACE 77.32 'Renting of construction machinery and equipment' and
- NACE 77.33 'Renting of office machinery, data processing equipment and facilities',

the corresponding producer price indices for industrial products are used.



Types of estimators: recalculation from microdata of another price statistic

Where the CPI collects prices for the same products as would be required for an SPPI, it may be useful to filter the CPI microdata to better match the SPPI definitions. For example, C2C transactions or offers from foreign suppliers can be excluded from the index calculation.

Minimum requirements

- Aggregates of SPPI and CPI focus on the same products
- Products are predominantly demanded by private households
- Prices are adjusted for value added tax

Strength and weaknesses

- the microdata for the recalculation is adjusted to the definition of the market being observed
- less suitable if a significant proportion of the services in the industry under review are B2B services
- the filter criteria needed to define the market appropriately must be included in the collected data



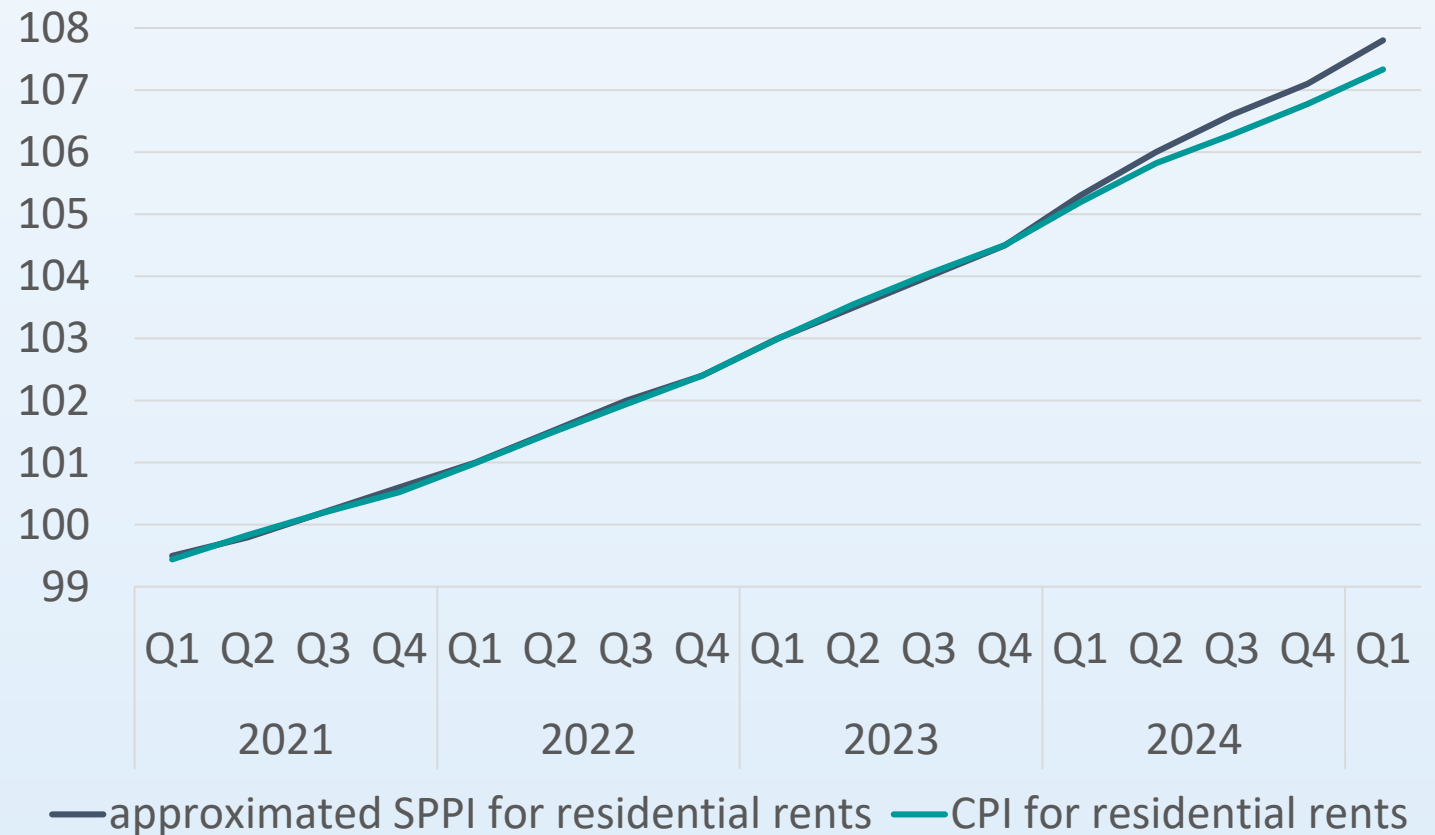
Types of estimators: recalculation from microdata of another price statistic

Examples: Germany

The relatively large sample of residential rents collected for CPI purposes covers the rental market in Germany very well. It includes both apartments rented from private individuals and apartments let by commercial landlords. C2C rents are not included in the SPPI calculation.

Nevertheless, the SPPI data collected would be limited to the prices of companies whose economic focus is on renting. This information is not available in the CPI data.

Comparison of the CPI for residential rents and the corresponding approximated SPPI





Types of estimators: Other countries' SPPIs

There may be situations where the use of other countries' SPPIs is helpful as a proxy for a domestic SPPI. This can be to supplement domestic price indices, or in place of them.

Leveraging existing data sources can help alleviate pressures in producing domestic SPPIs.

Most useful in situations where the trade (and particularly the import) of services is significant.

Minimum requirements

- Having a clear alignment between the SPPI chosen and how it's used is essential.
- There should also be considerations of quality and availability; using another countries' data introduces a risk of them discontinuing the series or changing methodology.
- If the country in question uses a different currency, there should be some consideration of currency exchange rates.

Strengths and weaknesses

- As with other examples given, drawing from alternative data sources can be useful in supplementing domestic SPPIs.
- There may be some risk that the SPPI is discontinued, or classification changed such that it no longer meets requirements when used as a proxy.



Types of estimators: Other countries' SPPIs

Examples: UK

GFCF deflator for computer software:

- Ideally, we would use an SPPI for domestic computer software publishing (CPA 58.2).
- This is not available, and most of UK's pre-packaged software is imported from the USA.
- UK uses the USA's SPPI for pre-packaged software in place of a domestic series.

Trade SPPIs:

- UK is currently introducing SPPIs from other countries as a proxy for import SPPIs.
- This is in place of other countries' CPIs which had been used for a number of years.



Types of estimators: External Data Sources

Covers any number of alternative data sources and methods which may have a use in the creation of SPPIs. It is most helpful on occasions where standard survey-based price collection has limitations (e.g. coverage).

Minimum requirements

- The data source should be from a reliable provider and delivery should be guaranteed. Using administrative data sources are likely to be the most suitable
- The data needs to be of a suitable level of granularity to meet the purpose needed.

Strengths and weaknesses

- Leveraging existing alternative data sources can allow for better outcomes than relying on traditional surveys and methods, as well as potentially reducing the need for some standard SPPIs.
- Introducing a reliance on external data sources can have limitations in availability and reliability;
- Other data providers are also likely to produce and publish data on different timescales to SPPIs, so there may be a lag in data availability which needs to be planned for.



Types of estimators: External Data Sources

Example: UK

Telecommunications deflator (CPA 61)

- Uses revenue and volume data from the regulator Ofcom and a unit value approach.
- Includes the use of data (i.e. internet) which had not been covered in the SPPI.
- Shows a significant fall in price as accounts for quality improvements and increased data usage.

