

Services Producer Price Inflation QMI

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Release date:

24 February 2015


Next release:

To be announced

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1 . Methodology background

National Statistic	
Survey name	Quarterly Inquiry for Services Producer Price Inflation
Frequency	Quarterly
How compiled	Sample based survey
Geographic coverage	UK
Sample size	Approx. 2,200 businesses
Last revised	24 February 2015

2 . Executive summary

The Services Producer Price Index (SPPI) provides a measure of inflation for the UK services sector. It is constructed from a statutory quarterly survey, which measures changes in the price received for selected services provided by UK businesses to other UK businesses and government. Individual SPPIs are available, which provide information on price change for a selection of services industries. These individual price indices are also aggregated together to create a services industry SPPI with limited coverage (it does not provide full coverage of the “services sector”).

The primary use of the SPPI is as a deflator in the UK National Accounts. However, it is also important as an inflationary measure to inform monetary policy and to account for inflation in long-term service procurement contracts. For more information on the use made of the SPPI please see the separate report [Users of Services Producer Price Index data](#). The services sector currently accounts for around 79% of the UK economy based on its weight in gross domestic product (GDP).

The Office for National Statistics (ONS) does not currently produce an SPPI for every industry in the services sector and so the SPPI aggregate is a partial, best estimate, of the overall inflation to UK businesses from the services sector.

Currently, we estimate that the SPPIs produced represent around 60% of the total services sector at industry level. As resources allow, we will continue to review the existing SPPIs and expand coverage through developing SPPIs for new industries. As such, the aggregate SPPI will change composition from time to time but will always remain our best estimate of overall inflation to UK businesses

from the services sector. The fact that coverage may change over time should be considered by users when deciding which indices best meet their needs.

The [SPPI statistical bulletin](#) is published on a quarterly basis, providing information about price changes within specified industries and sections within the UK services sector.

This report contains the following sections:

- Output quality
- About the output
- How the output is created
- Validation and quality assurance
- Concepts and definitions
- Other information, relating to quality trade-offs and user needs
- Sources for further information or advice

An article was published alongside the Producer Prices Index release, outlining [upcoming changes and improvements due to be delivered to the Services Producer Price Index \(SPPi\) and Producer Price Index \(PPI\)](#) throughout 2017 to 2018.

3 . Output quality

This report provides a range of information that describes the quality of the output and details any points that should be noted when using the output.

We have developed guidelines for [Measuring Statistical Output Quality](#); these are based upon the five European Statistical System (ESS) Quality Dimensions. This report addresses these quality dimensions and other important quality characteristics:

- relevance
- timeliness and punctuality
- coherence and comparability
- accuracy
- output quality trade-offs
- assessment of user needs and perceptions
- accessibility and clarity

More information is provided about these quality dimensions in the following sections.

4 . About the output

Relevance

The degree to which the statistical outputs meet users' needs.

Prices for services representative of specified UK services industries are collected on a quarterly basis. The movements in these prices are weighted together, to reflect their importance within the relevant services industry and aggregated into a price index.

It is important to note that the SPPI is currently a business-to-business (B2B) survey and, as such, collects information specifically about the change in price received by businesses when providing a service to another UK business or government department.

It should also be noted that, while the SPPI is a measure of inflation for the UK services sector, prices are not currently collected from Northern Ireland for any of the services industries that are collected as part of the quarterly survey. However, as part of the SPPI improvement work commencing in May 2017 sample coverage will be broadened to include transactions between UK businesses and all customers as well as surveying businesses in Northern Ireland. This work will be fully implemented by the end of 2019.

The majority of price collection is carried out by the Office for National Statistics (ONS) using postal questionnaires sent to businesses, though a number are compiled from administrative data provided by third parties. These indices are:

- repair of motor vehicles – Retail Prices Index (RPI)
- sewerage services – The Water Services Regulation Authority (Ofwat)
- business rail fares – Office of Rail Regulation (ORR)
- real estate – Investment Property Databank (IPD)
- banking – Bank of England (BoE)
- business telecommunications – Office of Communications (Ofcom)
- national post parcels – Parcelforce

Information about the statistical use of administrative data can be found on our website: [Statement of administrative sources](#). The [Statistical Office of the European Communities \(Eurostat\)](#) requires the provision of quarterly SPPI data under the [short-term business statistics regulation](#).

The main users of the SPPI include other areas of ONS, for instance the [national accounts](#), where SPPIs are used as deflators in the [Index of Services \(IoS\)](#) and the output measure of [gross domestic product \(GDP\)](#). External to ONS, [Her Majesty's Treasury \(HM Treasury\)](#), [Bank of England \(BoE\)](#) and the [Department for Business, Energy and Industrial Strategy \(BEIS\)](#) all use SPPI for purposes such as escalating contracts, monitoring inflation within the services sector and informing on economic policy decisions. SPPIs are also used by private companies and within the [Ministry of Defence \(MoD\)](#) to escalate contracts in line with inflation experienced within the services sector.

Further information about the use made of SPPI as well as the main strengths and limitations of these statistics for use as deflators, for contract escalation and for monitoring inflation in the services sector are available in the separate report [Users of Services Producer Price Index data](#).

Timeliness and punctuality

Timeliness refers to the lapse of time between publication and the period to which the data refer. Punctuality refers to the gap between planned and actual publication dates.

The SPPI is published on a quarterly basis. The release is published approximately 7 weeks after the end of the quarter to which it relates, on the second or third Tuesday in February, May, August and November. The release has consistently met the announced publication deadlines.

For more details on related releases, the UK National Statistics Release Calendar provides 12 months' advance notice of release dates. If there are any changes to the preannounced release schedule, public attention will be drawn to the change and the reasons for the change will be explained fully at the same time, as set out in the Code of Practice for Official Statistics.

5 . How the output is created

The SPPI measures the change in prices received by businesses in the services sector when providing services to other UK businesses or UK government departments. The majority of the data are collected using forms dispatched from the Office for National Statistics (ONS) specifically for the purpose of obtaining these data, though where appropriate administrative data are available this is used instead. The use of administrative data reduces both costs and respondent burden. As at March 2017, around 1,700 respondents provide about 4,000 prices each quarter.

The current sample is drawn from the [Inter-Departmental Business Register \(IDBR\)](#), using a stratified random sampling method. However, sample improvement work commencing in May 2017 will use the [Services Turnover Survey \(STS\)](#) as a sampling frame, allowing sampling at a product level. The sample is stratified by turnover. The index is calculated using a Laspeyres method.

The changes to the prices received are quality-assured using “validation gates”. These work by highlighting any price movement above a certain percentage. This movement is then checked by contacting the respondent, to ensure that it is representative of a genuine change and to ascertain the reason for the change. Any unrepresentative changes can then be adjusted, based on the information provided by the respondent. Non-response is imputed for, based on the average of changes seen in similar service product groups.

The weights in the SPPI are calculated at three levels. The weights for each service being priced are calculated using turnover data provided at the point of recruitment, allowing these services to be weighted into the appropriate service product group of the industry in question. These are referred to as item weights.

The service product groups are then weighted together to form industry-level indices using data collected from the STS. These are referred to as “index to index” weights.

Industry-level indices are then combined into divisions, sections and the aggregate SPPIs using data from the STS. Where suitable STS data are unavailable, a proxy is calculated using data from the [Annual Business Survey \(ABS\)](#).

The SPPI is currently rebased every 5 years. This process involves updating the weights to be more representative of recent spending within the services sector and referencing the index to a more recent period. Currently the index is referenced to 2010 equals 100.

The disclosure controls used in the SPPI mean that all indices below the “industry” level are not publishable.

No SPPIs are currently seasonally adjusted.

6 . Validation and quality assurance

Accuracy

The degree of closeness between an estimate and the true value.

The index is subject to a number of potential sources of error, which may affect the accuracy of the indices.

Non-response and imputation error

Non-response error occurs where the responses of respondents differ from the potential responses of non-respondents.

As a quality assurance method, all SPPIs target a response rate of at least 78% for the first quarter in which they are published. In the second quarter 90% is targeted. This ensures that all service product groups have a sufficient number of price quotes when price movements are calculated. This practice also ensures that where imputations are calculated for non-response data, they are based on as much available information as possible.

Sampling error

Since a sample doesn't include all the members of a population, statistics gathered from that sample generally differ from those that would be gathered from the entire population. Since the intention is to use the sample to determine information about the population, these differences are called sampling errors.

Sampling errors are usually estimated through the calculation of standard errors. These are not currently calculated for the SPPI, so it is not possible to estimate the sampling error affecting the index. We plan to introduce the annual calculation of standard errors for SPPI over the next 12 months to provide users with this estimation.

Coverage error

The existing SPPI sample was drawn from the IDBR. This is not an ideal sampling frame for the SPPI, as it does not provide information on business-to-business service transactions or the particular services provided by each business. This means that when samples are drawn, they often include inappropriate units, or units that should be available for selection are not in the scope of the sampling frame.

The sample improvement work starting in May 2017 will use the STS as a sampling frame. It is expected that the samples drawn using this method will be more representative than those drawn from the IDBR.

Processing error

A processing error is one that arises from the faulty implementation of a correctly planned methodology. In the SPPI this is mostly minimised by the use of the automated data take on system. This scans the questionnaires received and automatically transfers the data to the system. There are, however, occasions where the scanner cannot interpret the data. Where this occurs the data are manually entered onto the system, creating the potential for data to be entered incorrectly.

Quality or specification changes can also lead to error, as these currently have to be manually handled on a case-by-case basis, usually with the resulting adjustment having to be calculated based on the best evidence available.

Revisions

The SPPI is subject to revisions. For the most part, the revisions shown in the SPPI are within the “spectrum” periods. This spectrum is 5 quarters long and data are subject to revisions for this length of time.

If late prices are received that have a significant effect on the index, it is possible that these figures could be revised outside of the spectrum periods. Such an event is rare and would only be done where the effect on users is justified by the impact of the revision.

Coherence and comparability

Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain, for example, the geographic level.

All European Union countries are required to produce SPPIs and submit them to Eurostat under the Short-Term Business Statistics Regulation. While the coverage of various sectors may not be equal in all countries (that is, not all countries cover the same services industries), the use of the European classification [Nomenclature statistique des activités économiques dans la Communauté européenne \(NACE\)](#) (implemented as the [Standard Industrial Classification 2007: SIC 2007 in the UK](#)) ensures that all activities are measured in a way that allows comparability across Europe. Furthermore, since NACE is based on the [United Nations International Standard Industrial Classification of All Economic Activities, Rev.4 \(ISIC Rev. 4\)](#), SPPIs are broadly comparable internationally.

The SPPI measures price change in industries that are also covered by the Consumer Prices Index (CPI). The results of these indices will often vary, due to conceptual differences in what the indices are trying to measure. The CPI measures the change in prices paid by consumers for goods and services, while the SPPI measures the price received by UK services providers when providing a service to another UK business or UK government. This is the main difference between the indices, though it should also be noted that the CPI is produced using a chain-linking methodology. This ensures that their weights are updated every year, rather than every 5 years for the SPPI. This difference is another potential source of variation between the indices.

Comparable [time series](#), in some cases available back to the year 1996, can be downloaded, though this varies depending on the date at which the index was developed and published.

7 . Concepts and definitions

Concepts and definitions describe the legislation governing the output and a description of the classifications used in the output.

The provision of quarterly SPPI data is required by Eurostat under the Short-Term Business Statistics Regulation. The collection of SPPI data is governed by the Statistics of Trade Act 1947. This ensures that it is mandatory for businesses within Great Britain to provide data. The structure of the SPPI is based on the Standard Industrial Classification: SIC 2007. This classification system provides a framework for the collection and presentation of data, as well as promoting uniformity in statistics produced across all European countries. This is because the SIC 2007 matches the NACE classification system, used by all European countries, at all but the lowest level. The SIC is subject to change over time. The most recent of these changes (SIC 2003 to SIC 2007) was adopted into the SPPI structure in 2010.

8 . Other information

Output quality trade-offs

Trade-offs are the extent to which different dimensions of quality are balanced against each other.

A trade-off between accuracy and timeliness is made to produce the quarterly SPPI. The statistical bulletin is released 7 weeks after the quarter to which the statistics relate and is based on a response rate of 82%. If the statistical bulletin was less timely than this, the first estimates could be made using a higher response rate and would be likely to be more accurate and less prone to revision. However, many users of SPPI would like the statistics to be timelier than they are currently.

Assessment of user needs and perceptions

The processes for finding out about uses and users, and their views on the statistical products.

User engagement for SPPI is conducted mainly by responding to queries via the dedicated SPPI inbox and by telephone. The views of users are welcomed at any time and this is highlighted in the statistical bulletin and in the signature block of all emails sent from the SPPI inbox. Any feedback received is then used during the process of making any changes or improvements.

Users are consulted ahead of any changes proposed for the SPPI and will be notified of any consultations via the SPPI statistical bulletin, the ONS website and by emailing known users directly.

Meetings are also held directly with main users to seek their feedback and keep them updated of any proposals for change.

9 . Sources for further information or advice

Accessibility and clarity

Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the release details, illustrations and accompanying advice.

Our recommended format for accessible content is a combination of HTML web pages for narrative, charts and graphs, with data being provided in usable formats such as CSV and Excel. Our website also offers users the option to download the narrative in PDF. In some instances other software may be used, or may be available on request. Available formats for content published on our website but not produced by us, or referenced on our website but stored elsewhere, may vary. For further information please refer to the contact details at the beginning of this report.

The latest SPPI [statistical bulletin](#), with accompanying tables, can be downloaded from our website at 9.30am on the day of publication. [Time series data](#), containing complete data series, are also available for download.

General enquiries about the SPPI series data, compilation methods, development articles, quality information or difficulties in finding the latest figures can be emailed to the SPPI team at SPPI@ons.gov.uk.

For information regarding conditions of access to data, please refer to the links:

- [Terms and conditions \(for data on the website\)](#)
- [Copyright and reuse of published data](#)
- [Pre-release access \(including conditions of access\) \(ended from 1 July 2017\)](#)
- [Accessibility](#)

In addition to this Quality and Methodology Information, basic quality information relevant to each release is available in the Quality and methodology notes of the relevant SPPI statistical bulletin.

Other useful links:

- [SPPI - methods and guidance document](#)
- [SPPI - summary of index composition](#)
- [Impact of rebasing the SPPI to 2010 equals 100](#)