

Article

# Development of the Annual Survey of Goods and Services

To provide information on the development of the Annual Survey of Goods and Services, a new survey developed to more accurately measure the UK service economy.

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# 1 . Introduction

The Annual Survey of Goods and Services (ASGS) was launched by Office for National Statistics (ONS) in summer 2017 in response to one of the main recommendations from [Professor Sir Charles Bean's independent review of economic statistics](#). This recommendation was to provide more comprehensive and detailed statistics of the services industries for the UK, which were not captured by existing surveys.

The ASGS replaced an existing ONS survey, the Services Turnover Survey (STS), which was last conducted in 2015. The data collected from the ASGS will feed into the [Services Producer Price Index](#) and the [national accounts supply and use tables](#), which are a central component of the national accounts balancing process and sets the annual level of nominal gross domestic product (GDP).

The main purpose of the ASGS is to measure turnover, broken down into the individual services and goods that a business provides. As businesses are becoming more diverse, there is a need to measure secondary activities outside their main industrial classification as well as activities in their main classification.

This article describes how the survey was designed and developed. Future work is discussed based on the further development of the survey.

## 2 . Purpose of the Annual Survey of Goods and Services

The purpose of the Annual Survey of Goods and Services (ASGS) is to provide comprehensive measurement of the UK services sector and produce more detailed estimates than were previously available. This will improve the quality of product breakdowns in the supply and use tables, and in turn the quality of balancing and gross domestic product (GDP), a main economic indicator. Additionally, ASGS data will inform the Services Producer Price Index (SPPPI), which provides a measure of inflation for the UK services sector and are used as deflators in the [Index of Services \(IoS\)](#) and the output measure of [GDP](#).

The ASGS collects information on a business's turnover, broken down into the individual services and goods provided, as well as whether the turnover was generated from customers based inside the UK or customers based outside the UK. Turnover consists of sales to any individual, business entity or other parts of an organisation.

[IFF Research](#) was contracted by Office for National Statistics (ONS) to assist with development of the ASGS. IFF Research is a full-service independent research company with expertise across a range of important sectors, including business and enterprise. They were awarded a contract by ONS to run the ASGS following a full invitation to tender exercise under Official Journal of the European Union (OJEU) regulations.

The ASGS met requirements by engaging with stakeholders, including the devolved administrations, the Department for International Trade, the Department for Business, Energy and Industrial Strategy, and the Department for Digital, Culture, Media and Sport.

## 3 . History

The Annual Survey of Goods and Services (ASGS) was launched in 2016, replacing the Services Turnover Survey (STS), which was last run in 2015. The STS was conducted biennially and collected turnover data for various services provided by 42 different services industries, with a sample size of 20,000.

The ASGS was developed to have a wider services industries coverage, use a product classification (CPA) harmonised with the [Standard Industrial Classification \(SIC\)](#) and collect information about products a business produces outside its main industrial classification. This helped to meet Bean review recommendations. The use of a harmonised product classification also enables comparisons with other national statistics institutes (NSIs). The ASGS has a sample size of approximately 40,000.

Within the UK, the services industries represent a large proportion of gross domestic product (GDP) (80%), in comparison with the manufacturing industries (10%). However, whilst a detailed survey exists for the manufacturing industries (UK Manufacturers' Sales by Product, also known as ProdCom), the services industries were not being measured in a sufficient level of detail. The STS did not provide a full coverage of the services industries and did not use an internationally-recognised product classification. An existing Office for National Statistics (ONS) survey, the [International Trade in Services \(ITIS\) survey](#), measures UK services industries exports and imports, however, it does not measure the domestic supply of services.

Therefore, to fully capture services industries turnover, the ASGS was developed to collect a detailed breakdown of the services provided and whether they were provided to customers inside or outside the UK.

## 4 . Main survey information

The following section describes the concepts and methods of the Annual Survey of Goods and Services (ASGS).

The ASGS measures UK services industries only and therefore does not collect data from the production and construction industries (sections A, B, C and F of the Standard Industrial Classification (SIC)). It covers a large element of the service economy, excluding notable industries such as public administration. The exact inclusions and exclusions of services industries are detailed in this section.

### Survey coverage

Inclusions:

- Electricity, gas, steam and air conditioning supply (section D)
- Water supply; sewerage, waste management and remediation activities (section E)
- Wholesale and retail trade; repair of motor vehicles and motor cycles (section G)
- Transportation and storage (section H)
- Accommodation and food service activities (section I)
- Information and communication (section J)
- Financial and insurance activities (section K) (64.3, 64.9, 65.1, 65.2, 65.3)
- Real estate activities (section L)
- Professional, scientific and technical activities (section M)
- Administrative and support service activities (section N)
- Education (section P)
- Human health and social work activities (section Q)
- Arts, entertainment and recreation (section R)
- Other service activities (section S)

#### Exclusions:

- Financial and insurance activities (section K) (64.1, 64.2, 66.1, 66.2, 66.3)
- Public administration and defence; compulsory social security (section O)
- Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (section T)
- Activities of extraterritorial organisations and bodies (section U)

## **IFF Research collaboration**

IFF Research is an independent market research agency which was appointed by Office for National Statistics (ONS) to work on the ASGS, following an invitation to tender exercise under Official Journal of the European Union (OJEU) regulations. IFF research has played an important role in the development and implementation of the ASGS. This included supporting the design and technical development of the electronic questionnaire and supporting businesses and answering their queries when completing the questionnaire.

## **Electronic questionnaire**

Unlike the STS, which administered a paper questionnaire, the ASGS was conducted using an electronic questionnaire, built in collaboration with IFF Research. Electronic questionnaires have various strengths compared with paper surveys as the results can be directly uploaded, allowing efficient validation and monitoring of the data.

An innovative search facility was built into the questionnaire, which allows respondents to type in key words to search for the services they provide (Figure 1). This has greatly reduced respondent burden and improved data quality.

Figure 1: Screenshot of the search facility in the electronic questionnaire

Office for National Statistics

IFF Research

**Annual Survey of Goods and Services for**  
Period: 1 January 2017 to 31 December 2017

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### Other service turnover

#### Which other services did the business provide?

For each additional service the business provides, enter keywords into the box below. Please select the category that most closely describes the service the business provides. As you type the full list of possible service categories will be filtered down. Multiple services may be selected.

Type keywords here

- [Hairdressing services for women and girls \[960211\]](#)
- [Hairdressing and barbers' services for men and boys \[960212\]](#)
- [Hairdressing and barbers services, cosmetic treatment, manicuring and pedicuring services, at home \[960214\]](#)

[Alternatively, click here to download a full list of services \(PDF\)](#)

[Save and continue](#)

[Save and complete later](#)

**Sections**

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- ✓ [Reporting period](#)
- ✓ [Total turnover](#)
- ✓ [Service turnover](#)
- [Other service turnover](#)
- Service turnover breakdown
- Turnover from production
- Comments and contact details
- Summary

Source: Office for National Statistics

User testing and cognitive testing were carried out with various businesses to ensure the wording in the questionnaire was easy to understand and that the electronic questionnaire was as user-friendly as possible. Consultation with internal and external stakeholders also contributed to the final design.

## Survey questions

The ASGS questionnaire covers both generic questions and those tailored to the industry of the business. The questionnaire is split into nine sections, as described in Table 1.

**Table 1: Annual Survey of Goods and Services questionnaire structure**

Section A: About this survey	This section contains information about completing the survey, what data is required and the legal obligations.
Section B: Reporting period	This section allows respondents to confirm if they can report for the reference period. If they are unable to report for this period, they can select which dates their return will cover.
Section C: Total turnover	This section asks respondents if any of the business' total turnover was generated from customers based inside the UK and/or outside the UK, and the value.
Section D: Service turnover	The respondent is asked to confirm from a list of industry specific services, which, if any, they provide.
Section E: Other service turnover	The respondent can search for other services the business carries out.
Section F: Service turnover breakdown	The respondent is asked to confirm if the services selected are provided to customers in the UK and/or outside the UK. They are also required to provide the turnover value split for customers inside and outside the UK.
Section G: Turnover from production	The respondent is asked if the business generated turnover from the manufacture of goods or other production; whether this was for customers inside or outside the UK, the industry area and total turnover value.
Section H: Comments and contact details	The respondent can provide comments about the turnover figures or questionnaire. They are also asked to confirm their contact details and how long it took to complete the questionnaire.
Section I: Summary	A summary of the data is provided and the respondent has the option to print a copy for future reference. The respondent can then submit the questionnaire.

Source: Office for National Statistics

The ASGS currently has 51 questionnaire types, with an average of 22 questions. All questionnaires contain generic questions regarding reporting period and total turnover, with an industry-specific list of services then presented. The list presented is determined by the business's SIC. All businesses are given the option to search for additional services they provide, not presented in the list, using a search function. Businesses are also able to report whether they generate any turnover from production, which includes manufacturing goods, construction and construction works, agriculture, forestry and fishing, and mining and quarrying.

A comprehensive list of all products required can be found in the [Classification of Products by Activity explanatory notes](#).

## Determination of sample size

A programme of work to determine an appropriate sample design was undertaken and various options explored with a range of different sample sizes tested. The relative quality of the different samples was assessed by comparing the coefficients of variation for the estimate of total turnover.

Data are collected by ONS from around 40,000 businesses across the UK. The sample is selected randomly from businesses being grouped by employment size-band and SIC. Five employment size-bands are used: 0 to 9, 10 to 49, 50 to 99, 100 to 299 and 300 and over employees. All business with 300 and over employment are automatically included in the sample to ensure that the businesses generating the most turnover are selected.

## Validation of the estimates

Various editing and validation rules were put in place to reduce errors and improve data quality. These validations and editing rules include:

- sum of products must match to total turnover
- reporting periods must be within the specified date range
- query the data if 75% of turnover is from production, suggesting misclassification
- query the data if more than 75% of the business's total turnover has been allocated to products outside their main industrial division (two-digit SIC)

Due to the use of an electronic questionnaire, it is possible to query data with the respondent whilst they are still completing the questionnaire. For example, if the sum of turnover for the individual services selected, is different to the total turnover figure provided at the start of the questionnaire, the question shown in Figure 2 is asked.

Figure 2: Screenshot of online validation

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## Service turnover breakdown

### Is the breakdown of turnover you entered for inside the UK correct?

Total turnover given at the start of this survey from customers based inside the UK:

£1,000,000.00

1 million pounds

Services turnover entered from customers based inside the UK:

£10,000,000.00

10 million pounds

Difference:

£9,000,000.00

9 million pounds

Yes  No

[Save and continue](#)

[Save and complete later](#)

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Source: Office for National Statistics

This online validation has reduced the number of errors in data submitted, resulting in a decreased need to call back respondents to validate their figures, therefore reducing burden on both the business and ONS.

However, as the data collected in the ASGS are collected for the first time, there is no comparison with previous year data. This poses problems with validation at this initial stage as there is limited data to compare against. To overcome this current limitation, the total turnover figures from the [Annual Business Survey \(ABS\)](#) and the [Inter-Departmental Business Register \(IDBR\)](#) have been used for comparison, as well as exports information from the ABS and the [International Trade in Services \(ITIS\)](#) survey. The ABS is an annual survey collecting financial information from businesses representing the UK non-financial business economy. The IDBR is a comprehensive list of UK businesses used by the government for statistical purposes. It contains turnover information, which is updated using administrative data from Her Majesty's Revenue and Customs (HMRC), Companies House, Dun and Bradstreet, as well as information from ONS business surveys.

## Challenges implementing a new survey

New surveys pose various challenges. This can include developing an appropriate questionnaire design, reaching a response rate strong enough to have valid data or ensuring the quality of the survey is adequate. The initial results had a strong response rate of 78% for the 2016 reference period, which allowed for quality estimates to be produced for the population while also identifying areas where further methodological work could be completed.

In the first year of a survey, there are challenges in quality-assuring and validating the data from businesses, particularly for the breakdown of service product turnover, which had never been collected at such a low level of detail. ONS surveys usually compare results with previous surveys, both at a micro- and macro- level. At the microdata level, it was possible to compare total turnover and total exports for businesses who returned for both the ASGS and the ABS. It was also possible to compare total exports for businesses who returned for both the ASGS and the International Trade in Services (ITIS) survey.

Detailed product information was not available from existing data sources, however, a second year of ASGS estimates will aid in the validation process of both the 2016 and 2017 estimates.

For preliminary estimates from the ASGS 2016, see the [Annual Survey of Goods and Services 2016](#) release.

## 5 . Next steps

Following the results of the 2016 Annual Survey of Goods and Surveys (ASGS), a continuous development approach is being used to improve the survey from both the perspective of Office for National Statistics and the respondents:

- the electronic questionnaire has been improved to make it easier for respondents
- industry profiling where the product classification (CPA) does not accurately capture all services typical of that industry
- additional validation in the electronic questionnaire to aid data quality at the point of entry

The ASGS is currently in its second year, with data currently being collected for reference period 2017. The comparison between first- and second-year data would better validate the data and determine any changes in the services industries, with the aim of a more detailed publication in 2019, once data has undergone further quality assurance.