

Compendium

# Transformation of Economic Statistics

A summary of recent transformation of gross domestic product and economic statistics and a look ahead to changes in 2019.

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# 1 . Introduction

We have embarked on an ambitious plan to transform our economic statistics over the coming years, informed by our Economic Statistics and Analysis Strategy, with the aim of increasing the robustness and quality of UK economic statistics. We have provided annual updates to users through the ONS Economic Statistics and Analysis Strategy publication, which sets out our priorities. This strategy has been published for [2016](#), [2017](#) and [2018](#).

In this article we provide an overview of progress against some of these priorities and highlight the next steps between now and the publication of Blue Book 2019. Topics include our move to a new publishing model for gross domestic product (GDP), changes to input-output and supply and use tables, inclusion of new data sources and the development of enhanced financial accounts.

Alongside this edition we also publish the scope of Blue Book 2019 changes and an article setting out our chosen approach for implementing double-deflation using supply and use tables in previous year's prices.

## 2 . Latest developments

Here we recap on our latest developments related to the transformation of gross domestic product (GDP), data sources and financial accounts. A wider assessment of progress across economic statistics is found in this year's [Economic Analysis Strategy](#).

### Blue Book

In July 2018 we introduced [improvements](#) as part of our annual Blue Book publication round. These changes included improvements to [trade processing systems](#), [pension calculations](#) and [net spread earnings](#). Real-time HM Revenue and Customs (HMRC) estimates of Pay-As-You-Earn (PAYE) total pay were used to help guide the growth of the wages and salaries component, whilst we continued to use [VAT turnover data](#).

Today we publish an article containing the [scope](#) of change for Blue Book 2019. 2019 is a significant year for our transformation with changes set to include:

- transformation of the GDP Framework
- improvements to trade statistics
- enhancements to data sources
- changes to methodology for the measurement of capital stock
- further use of VAT data

### Gross domestic product publishing model

This year we introduced a new publishing model for GDP following a [user consultation](#). This model moved us from three estimates of GDP for a quarter (month 1 – output, months 2 and 3 – output, income and expenditure), to two estimates. In pushing the first estimate back by around two weeks, we now include data from all three measures of GDP – output, income, and expenditure – as opposed to an output only estimate in the previous publishing model. Whilst the first estimate in our publishing model is now later by two weeks, estimates would be expected to be more accurate and see few revisions. Aligned to this change we have also introduced [monthly GDP](#), providing a more timely view of the key services sector and evolution of the economy over time.

# Supply and use and input-output analytical tables

## Input-output analytical tables

Updated [Input-output analytical tables](#) (IOATs) were published in March 2017 for reference year 2013, consistent with Blue Book 2016 and in March 2018 for reference year 2014, consistent with Blue Book 2017.

The IOATs are required to be delivered to Eurostat every five years, for years ending in 0 or 5. The next update of IOATs will be delivered to Eurostat by the end of 2018 for reference year 2015. There was therefore no legal requirement to update IOATs until 2018 for reference year 2015. However, in response to increased user demand and request from stakeholders following the EU Referendum, we took the decision to update the tables early, including an additional EU and non-EU split of trade for the 2013 reference year. These additional data are an important tool for policymakers in understanding supply chain impacts. The further update provided for 2014 tables is a step towards our aspiration to publish annual input-output analytical tables.

## Supply and use tables in previous year's prices

We have [previously published](#) our plans to implement double-deflation using supply and use tables in previous year's prices (PYP SUTs). Double-deflation is considered the optimum approach for setting GDP in volume terms. This implementation meets a key recommendation of the Bean Review.

Today (11 October 2018) we publish a further [article](#) on our chosen approach, which is consistent with guidelines set out in the [UN Handbook on Supply, Use and Input-Output Tables](#). The article sets out changes to source data, benefits, challenges and next steps. We also provide users with a timetable for future communications.

## Enhanced financial accounts

Working in partnership with the Bank of England and Financial Conduct Authority, a significant element of our transformation work is the development of enhanced financial accounts – in particular more detailed “flow of funds” (FoF) statistics – to meet evolving user needs and improve the quality, coverage and granularity of the UK financial statistics.

An [article published on 14 July 2016](#) sets out the rationale for the project and our plans and aspirations for the future. We aim to improve the quality, coverage and granularity of the UK financial accounts, including counterparty information using regulatory, administrative and commercial data sources.

We have made significant progress evaluating new data sources, trailblazing the potential use of commercial and regulatory data in addition to developing existing surveys to enhance financial accounts statistics. We have published regular update and analysis [articles](#) (over 30 in total) highlighting progress and seeking stakeholder views and feedback. These publications include experimental equity and credit reference data, experimental regulatory Solvency II insurance data, new experimental estimates of shadow banking, pensions in the national accounts as well as updates to the [existing FoF statistics](#).

Over the next 12 months, we will continue to share progress with, and seek feedback from, our stakeholders through articles and other stakeholder engagement activities culminating in the publication of a full suite of experimental statistics in Quarter 4 (Oct to Dec) 2019.

## New data sources

## Value Added Tax (VAT) data

In [December 2017](#), we implemented [VAT data into our measurement of GDP](#). This was one of the first steps towards the way we use large externally-sourced data instead of data collected via Office for National Statistics (ONS) surveys, in this case the Monthly Business Survey (MBS).

VAT was introduced into our measurement of GDP for smaller, less complex firms. Within this edition of the Economic Review we publish new analysis on future uses of VAT and explore how its use will be expanded, reducing the reliance on the MBS, allowing more disaggregated analysis whilst also reducing the burden on businesses.

## Annual Survey of Goods and Services

A key recommendation from the [Bean Review](#) of economic statistics was to improve the information and detail of the services provided by the UK service economy. As businesses are becoming more diverse, there is a need to understand secondary activities outside their main industrial classification as well as activities in their main classification. The recent creation of the Annual Survey of Goods and Services (ASGS) meets this need with the collection of business turnover, broken down into the goods and services that a business provides. The ASGS covers a large element of the service economy, with some exceptions such as public administration and certain elements of the financial sector.

In August 2018, the [ONS published for the first time](#) estimates produced from the ASGS 2016 dataset. This included high level product by industry group turnover estimates (15 product groups by 14 industry groups) with a further detailed product and industry level breakdown also provided. This more detailed level is consistent in structure, but not concept, with the combined use matrix within the supply and use tables (SUT) publication, although it does not map exactly as the ASGS only covers the service industries.

The information collected by ASGS will improve the quality of product breakdowns in the supply and use tables, and in turn the quality of balancing and GDP, a key economic indicator. Additionally, ASGS data will inform the Services Producer Prices Index (SPPI), which provides a measure of inflation for the UK service sector and are used as deflators in the [Index of Services \(IoS\)](#) and the output measure of [gross domestic product \(GDP\)](#).

An article describing the [development of the ASGS](#) was also released in August 2018 and describes the use of an electronic questionnaire to capture the detailed information required but in a user friendly and dynamic approach. This was the first time for this collection approach within ONS for such a large complex annual questionnaire and we were able to query data with the respondent whilst they were still completing the questionnaire. This approach also led to increased response in a shorter time frame.

In the first year of a survey, there are challenges in quality assuring and validating the data. In the ASGS the breakdown of service product turnover had never been collected at such a low level of detail. ONS surveys usually compare results to 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.

This approach led to a successful data collection for the service sector, with an overall response rate of 78.1% for the 2016 ASGS, based on data returned from 40,000 respondents. The response for each UK country was:

- England – 78.6%
- Scotland – 74.5%
- Northern Ireland – 71.7%
- Wales – 77.5%

Further transformational changes are planned, for example, we are already focused on:

- improving the electronic questionnaire to make it easier for respondents to complete
- industry profiling where the product codes do not accurately capture all services typical of that industry
- increasing 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 already being collected for reference period 2017. The comparison between first and second year data would further 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.

## Annual Purchases Survey

The current breakdown of products purchased by businesses within the supply and use tables are based on estimates from the 2004 Purchases Inquiry. The main source for the total value of purchases is from the well-established Annual Business Survey (ABS). As the breakdown of products purchased in the production process and running of UK businesses is required to be updated more frequently given shifts in the economy, the Annual Purchases Survey (APS) was re-instated from the 2015 reference period to provide this comprehensive picture. The APS estimates will be constrained to the ABS industry totals, as set out in the [initial requirements](#), however, the APS will help us to adhere to international best practice outlined in the [European System of Accounts 2010: ESA 2010](#) and [Balance of Payments Manual: BPM6](#).

The APS covers a large element of the economy with some exceptions such as public administration and certain elements of financial industries. To note, there are additional sources included within the full SUTs, such as public-sector data and financial corporations, together with balancing adjustments.

A considerable amount of validation has taken place to ensure the estimates are at the required quality for this detailed data source. A set of core editing and validation rules were implemented to minimise errors and improve data quality. Atypical results were reviewed and amended as appropriate. These core checks included:

- invalid reporting periods, question numbers and non-responses
- sum of the products matched to totals
- non-rounded figures
- validation involved comparing the total intermediate consumption figure from the APS against a derived equivalent figure from the ABS
- comparison with results and data from 2016 to ensure consistency and accuracy

An overall response rate of 80.4% was achieved for the 2015 APS. When broken down by geography, the response was:

- England – 81.7%
- Scotland – 75.7%
- Northern Ireland – 74.7%
- Wales – 80.4%

An [article](#) detailing 2015 results at a detailed product and industry level together with analysis on these estimates was released in July 2018. In addition, this article includes detail on the next steps, providing detail around plans for the release of the 2016 and 2017 estimates, the use of the updated APS data for 2015 in the supply and use framework for Blue Book 2019, and the work being carried out to review and further develop the APS questionnaire.

### **3 . Next steps**

As we move towards Blue Book 2019 we will publish a series of articles which will provide detail of the changes that will be implemented. Communications will also be delivered at seminars and working groups. A provisional timetable for the publication of these articles is included in the Blue Book 2019 scope article.