

Information paper

Summary Quality Report for International Trade in Services

1 Introduction

This report is part of a rolling programme of quality reports being introduced by the Office for National Statistics (ONS). The full programme of work being carried out on [Statistical Quality](#)¹ is available on the ONS website. Summary Quality Reports are overview notes which pull together key qualitative information on the various dimensions of quality as well as providing a summary of methods used to compile the output.

This report relates to the International Trade in Services (ITIS) Survey. The ITIS survey is an annual survey designed to measure the value of transactions of UK businesses by country of origin, and destination in respect of ITIS data. The ITIS Survey includes a quarterly sample that is fed into the annual results and used as a forecast for annual ITIS. The ITIS survey is also supplemented by the Annual Business Inquiry (ABI). Care is taken during the sampling and estimation process to avoid double counting between these separate surveys.

ITIS data are collected by both industry and product on a geographical basis by collecting data for the countries to which services are exported, and from which they are imported. This data are primarily used in the compilation of the services account for the UK's [Balance of Payments \(BoP\)](#)².

2 Summary of Quality

2.1 Relevance

The degree to which the statistical product meets user needs for both coverage and content.

The results of the Annual and Quarterly ITIS Survey, represent a key element of the [BoP](#)² account, and of Gross Domestic Product (GDP). The results are published in detail in the [ITIS Publication](#)³. The results from the ITIS survey make up approximately 45 per cent exports and 25 per cent imports in the Trade in Services (TIS) Account for 2008.

What It Measures	The value of transactions between UK residents, and residents in other countries in respect of ITIS activities.
Frequency	Annual
Sample Size	The Annual sample is made up of approximately 20,000 businesses, 7,000 of which are production, and 13,000 non-production. The additional Quarterly sample is made up of approximately 700 businesses, and is a subset of the largest businesses.
Period Available	ITIS data are available in the current format from 1995 onwards.
Sample Frame	The Inter-Departmental Business Register (IDBR) a comprehensive list of UK businesses, and a key source of data for analyses of business activity, and a reference list which comprises of companies who are involved in international trade.
Sample Design	This is made up of a random sample of approximately 9,500 businesses from the IDBR (stratified by Standard Industrial Classification (SIC) 2003

	and employment, containing fully and partially enumerated cells), a completely enumerated reference list of approximately 6,000 of the largest ITIS businesses and 5,000 new ABI respondents (included in selection from 2007). Note: Enumerated means that all of the universe within the defined cell is selected. Partially enumerated means that only a sample from the defined cell has been selected.
Weighting	Each sampled business is used to represent a number of similar businesses and is weighted to reflect the number of businesses within its stratum as recorded on the IDBR.
Estimation	ITIS uses expansion estimation (also known as number raised estimation).
Imputation	Within each cell, units with returned data are used to impute for non-responders within that cell. If there is no returned data within the cell, then imputation cannot be carried out.
Outliers	The method of outlier detection and treatment is based on the principle of Winsorisation, a method that reduces the influence of outliers on estimates, using a system based on current and previous corresponding returns.
Coverage	The whole economy, less Travel and Transport, Banking and Other Financial Institutions, Higher Education, Film and Television, Charities and most activities in the Legal Professions.

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As a condition of membership to the [International Monetary Fund](#)⁴ the UK are obliged to provide detailed TIS information. [Eurostat](#)⁵ the [Statistical Office of the European Community](#) also requires a detailed geographical breakdown of TIS products to allow construction of European Union (EU) aggregates. The geographical data also allows the analysis of bilateral asymmetries between member states to take place. As such, businesses taking part in the ITIS Survey are required to respond under the [Statistics of Trade Act 1947](#)⁶.

The data are also used by Current Price Input-Output (CP I-O) through tables of industrial and non-industrial service breakdown. They use the weighted flows of the Industry and Product matrix data from ITIS for the analyses of industrial and non industrial services supplied by the Annual Business Survey.

Government and business users also use the data for economic assessment. The Department of Business, Innovation and Skills (BIS) state that the ITIS Survey is the only source of services and product detail and is essential for regional exports analyses. BIS also use the ITIS Survey data to monitor the competitiveness of UK businesses and to gain a better understanding of the level of service exports.

In addition, the Scottish Government also makes significant use of the survey results to supplement Scotland's Global Connections Survey, whilst the Department of Culture Media and Sport use the ITIS data in one of their main outputs "The Creative Industries Statistical Bulletin".

Users are consulted and their needs taken into account and met. Micro-data access agreements have enabled ONS to further meet the analyses needs of users, although agreeing access to sensitive data can sometimes be time consuming.

Respondents are selected by Industry and can be identified by industry, product, or geographically. Employment is identified through structured employment bands, which again can be used to further stratify for results purposes.

The publication for 2008 will be based on Standard Industrial Classification ([SIC](#))⁷. All further outputs will be based on [SIC](#)⁷.

2.2 Accuracy

The closeness between an estimated result and the (unknown) true value.

The most difficult methodological problem in terms of accuracy is that the population is large and the sample size of the ITIS survey remains relatively modest. The quality of the estimates must therefore be judged accordingly, also taking into account imputation for some categories where data are incomplete.

Sampling Error

This occurs because the survey is based on a sample of businesses, selected from the IDBR, rather than being a census, whereby the entire universe would be surveyed. Due to timing, cost and resource issues, this would not be possible so a suitably designed sample of businesses is used.

Because the results from ITIS are not generally based on complete enumeration, the published figures are subject to sampling error. It is possible to obtain an indication of the degree of sampling error through the calculation of standard errors. These are produced for key variables using standard formulae and are available in the Background Notes of the [ITIS Publication](#)³.

Non Sampling Error

There are other possible sources of errors in the published results. These non-sampling errors cannot be reliably quantified but can be more important than the errors due to sampling. Response rates provide an indication of the accuracy of our final estimate. For the ITIS Survey the final response rate target is 85 per cent. Other possible sources of non-sampling error take into account deficiencies and inaccuracies in the register and mis-reporting by respondents.

Questionnaires are despatched to businesses in January. Three written reminders are subsequently sent to non-responding groups followed by telephone reminders to groups to minimise non-response and thereby any non-response bias. There is also the possibility of using the legal powers of the Statistics of Trade Act 1947 to force response, though ONS prefers to work together with businesses to produce the necessary information.

Returned information is run through a series of checks to identify any errors. These include tests to ensure that all questions are completed, that the responses to the individual questions are consistent within the questionnaire as a whole and that the return is consistent with historical data from the business.

The ITIS revisions, response rates and estimated standard errors are available in the Basic Quality Information in the [ITIS Publication](#)³ and further information can be found within the [National Statistics Website](#)⁸.

2.3 Timeliness and Punctuality

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

An [ITIS Publication](#)³ is published in March, 15 months after the reference period. The reference period is 1st January 2008 to 31st December 2008.

For more details on International Trade in Services Survey releases, the [UK National Statistics Publication Hub](#)⁹ is available online and provides twelve months advanced notice of release dates. In the unlikely event of a change to the pre-announced release schedule, public attention should be drawn to the change and the reasons for the change should be explained fully at the same time, as set out in the [Code of Practice for Official Statistics](#)¹⁰.

The ITIS Survey consistently meets publication deadlines, with a 100 per cent record of timely releases.

2.4 Accessibility and Clarity

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

The annual survey data are published in [International Trade in Services](#)³ publication which is freely available from the ONS website (text and table versions). Backdated publications are also available.

Each publication includes Background Quality Information (BQI) in the Background Notes section to enable users to further understand the complexities of the ITIS survey.

Further queries can be addressed to the ITIS public enquiry team by email to richard.tonkin@ons.gov.uk or telephoning 0163 3456082.

2.5 Comparability

The degree to which data can be compared over time and domain.

The ITIS Survey is designed in accordance with Eurostat regulations (European Commission (No.12461/03)) to ensure comparability across EU member states. The survey has also been reviewed by Methodology Directorate (MD) within ONS.

Various changes have occurred in the coverage of the survey:

- Prior to 1996 there were only two products; royalties and other services.
- From 1996 onwards the survey increased to 39 products with an increase to the survey size. Each product has its own identifiable code.
- In 2001, two additional product codes were introduced for Insurance Broking and Management Charges. Insurance Brokers was taken over from another survey, whilst Management Charges was a subset of code 19 "other".
- In 2001, following a recommendation from the 1998 Triennial review, the Annual ITIS survey sample size was expanded from 10,000 to 20,000 businesses.
- 2002 saw the introduction of three further codes, all subsets of code 19 "other". These were Procurement, Publishing Services and Recruitment and Training.
- In 2005, as a result of a questionnaire review, ITIS codes were reviewed and a new total of 51 codes were the result, including the collection of "Commodity Traders".
- In 2007, the ITIS random sample was reduced from 13,500 businesses to 9,500 businesses in order to accommodate the introduction of 5,000 businesses from ABI.

2.6 Coherence

The degree to which data that are derived from different sources or methods, but which refer to the same phenomenon, are similar.

There is no other source of ITIS data in the areas covered by the ITIS Survey. As a result, the ITIS data are an invaluable source for the requirements of customers from these key economic indicators. ABI however does have a filter question regarding the collection of ITIS data. It collects total TIS but is not broken down by product or geographically. This source is under discussion for future development.

The quarterly survey is a subset of the largest businesses. Its 700 survey respondents are used to forecast the annual data. The data also feed into ITIS annual results, with quarterly and annual data being merged for annual results.

The ITIS Survey is just one component of the TIS estimates within the UK [BoP](#)².

UK statistics use survey methods to compile [BoP](#)². Previously, most European countries used a system based upon banking transactions. However, many are now moving towards a survey based system as the banking system did not enable its users to identify specific products.

3 Summary of Methods Used to Compile the Output

Coverage

The ITIS Survey consists of quarterly and annual components. The Quarterly survey is addressed to a reference list of the largest businesses, and is used as an indicator to forecast total annual ITIS. The Annual survey selects the remainder of the reference list and also includes a sample and (as a result of the changes introduced in 2007), the businesses selected from the ABI Survey. The survey currently selects for the whole economy based on a sample of businesses derived from [SIC](#)⁶ within the IDBR. Although ITIS covers the majority of International Trade in Services, there are a number of notable exceptions. These are travel and transport, banking and other financial Institutions, higher education, film and television, charities and most activities within the legal profession. Data collected by the Film and Television (FTV) Survey is only incorporated into table B7 of the ITIS publication.

Data relating to the export/import of goods are excluded as they are already collected in the estimates for [Trade in Goods](#)¹¹. Merchanting, earnings from arranging the sale of goods between two countries outside the UK and where the goods never physically enter the UK, are included along with earnings from commodity trading. As with merchanting, the service element is collected as the profit and loss.

Sample design

The Annual survey consists of approximately 20,000 businesses, of which 7,000 are production (producing an output of tangible goods) and 13,000 non-production (service sector). The more consistent element is made of “Known Traders” - those respondents known to trade in services internationally.

The ABI questionnaire also provides us with potential respondents via a filter question. A large component of ITIS however comes from businesses sampled from the IDBR. These are a mix of “High Propensity” industries (those known to have a higher likelihood of carrying out international trade), and “Mop Ups” (randomly selected from IDBR). Since 2007, ABI also provides 5,000 business that form part of the ITIS selection.

The ITIS sample does not cover businesses with fewer than ten employees, as they are deemed to have a lesser probability of trading overseas. This also reduces any compliance burdens on smaller businesses.

Estimation

Expansion estimation is used to produce population estimates from sampled data. Estimates are produced separately for each industry by employment stratum and aggregated to produce high level estimates. All sampled strata are weighted – for fully enumerated strata, weighting does not apply.

Imputation

Those non-respondents with previous returns are imputed using returned data from previous corresponding periods; this is called common software imputation. Non-responders with no previous returns are imputed using returns within the same cell. This is called trimmed mean imputation and is described within the table under 2.1.

Outliers

The method of outlier detection and treatment is based on the principle of Winsorisation. The aim is to identify the sample observations which have the biggest effect on an estimate and reduce the effect they have. Outlying values are identified and modified prior to estimation using one-sided Winsorisation. This detects unusually large returned values and reduces their value in order that they have less of an impact on final estimates.

Statistical Disclosure

Statistical disclosure control methodology is applied to ITIS Survey data. This ensures that information attributable to an individual or individual organisation is not identifiable in any published outputs. The [Code of Practice for Official Statistics](#)⁹ and specifically the Principle on Confidentiality set out practices for how we protect data from being disclosed. The Principle includes the statement that ONS outputs should “ensure that official statistics do not reveal the identity of an individual or

organisation, or any private information relating to them, taking into account other relevant sources of information". More information can be found in [National Statistician's Guidance: Confidentiality of Official Statistics](#)¹² and also on the [Statistical Disclosure Control Methodology](#)¹³ page of the ONS website.

4 References

	Title of Reference	Website Location
1	Statistical Quality	http://www.ons.gov.uk/about-statistics/methodology-and-quality/quality/index.html
2	UK Balance of Payments	http://www.statistics.gov.uk/statbase/product.asp?vlnk=1140
3	International Trade in Services Annual Publication	http://www.statistics.gov.uk/statbase/product.asp?vlnk=14407 Press office 0845 601 3034
4	International Monetary Fund	http://www.imf.org
5	The Statistical Office of the European Communities (Eurostat)	http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home
6	Statistics for Trade Act 1947	http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1947/cukpga_19470039_en_1
7	Standard Industrial Classification	http://www.statistics.gov.uk/statbase/product.asp?vlnk=14012
8	National Statistics Website	http://www.statistics.gov.uk
9	UK National Statistics Publication Hub	http://www.statistics.gov.uk/hub/release-calendar/index.html
10	Code of Practice for Official Statistics	http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html
11	Trade in Goods	www.statistics.gov.uk/statbase/product.asp?vlnk=731
12	National Statistician's Guidance: Confidentiality of Official Statistics	http://www.statisticsauthority.gov.uk/national-statistician/guidance/index.html
13	Statistical Disclosure Control Methodology	http://www.statistics.gov.uk/about/data/methodology/general_methodology/sdc.asp

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