

Information paper

Quality and Methodology Information

General details

Title of output:	Retail Sales Index
Abbreviated title:	RSI
Designation:	National Statistics
Geographic coverage:	Great Britain
Date of last SQR or QMI*:	October 2012
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Executive summary

The [Retail Sales Index \(RSI\)](#)¹ measures the value and volume of retail sales in Great Britain on a monthly basis. The RSI is a key economic indicator and one of the earliest short-term measures of economic activity. It is used to estimate consumer spending on retail goods and the output of the retail sector, both of which are used in the compilation of the National Accounts.

The main output measures include value and volume estimates, in both seasonally adjusted and non-seasonally adjusted forms. The value estimates reflect the total turnover collected by businesses over a standard period, while the volume estimates are calculated by adjusting the value estimates for the impact of price changes, a process known as deflation. The value and volume estimates are widely used in private and public sector institutions, particularly by the [Bank of England](#)² and [Her Majesty's Treasury](#)³, to assist in informing decision and policy making.

Retail estimates are disseminated via the [ONS Website](#)⁴ in a statistical bulletin and reference tables. As well as the data described above, further information on estimated prices and the value of retail sales by commodity are published along with sales values and volumes in £'000 form. Internet retail sales statistics are also published in value, seasonally adjusted and non-seasonally adjusted forms.

This document 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; and
- Sources for further information or advice.

* Quality and Methodology Information' (QMI) replaced 'Summary Quality Reports' (SQR) from 04/11

Output quality

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

ONS has developed [Guidelines for Measuring Statistical Quality](#)⁵; these are based upon the five European Statistical System (ESS) quality dimensions. This document addresses these quality dimensions and other important quality characteristics, which are:

- Relevance;
- Timeliness and punctuality;
- Coherence and comparability;
- Accuracy;
- Output quality trade-offs;
- Assessment of user needs and perceptions; and
- Accessibility and clarity.

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

About the output

Relevance

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

To meet our user needs, the Retail Sales branch is part of the Short-Term Output Indicators Stakeholder Group (STOISG). Key stakeholders and the Office for National Statistics (ONS) meet every three months to discuss published data, planned and ongoing developments and statistical communication.

STOISG terms of reference, forthcoming meetings and published minutes are available from the [ONS's website](#)⁶.

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 monthly Retail Sales Index is released in a timely manner, 18 or 19 days after the reference period, and is a key early economic indicator. Data are collected for standard trading periods that follow a four week, four week, five week cycle. For the reference period 2nd of March to the 5th of April 2014, the RSI was released on the 25th April 2014. The exception to this is for the release of February data, which are 25 working days after the reference period as price data which are used for deflation are released later than usual to allow for the basket of goods to be updated.

For more details on related releases, the [UK National Statistics Publication Hub](#)⁷ is available online and provides 12 months' advance notice of release dates. If there are any changes to the pre-announced 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](#)⁸.

How the output is created

The following provides a summary for how the RSI and Retail Internet Sales are calculated. A more detailed explanation can be found in the published guides [A quick guide to the Retail Sales Index](#)⁹ and [A quick guide to Internet sales](#)¹⁰.

The RSI output provides an estimate of the value and volume of retail sales in Great Britain on a monthly basis. This incorporates the Retail Internet Sales data but these are published alongside to provide more detailed information for this sector.

The population of interest is all businesses whose principal activity is retailing and are therefore classified to retail under UK Standard Industrial Classification 2007 (SIC 2007) and are resident within Great Britain. There are an estimated 200,000 retailers listed within the target population or sampling frame which is taken from the [Inter-Departmental Business Register \(IDBR\)](#)¹¹.

Both the value and volume of retail sales are estimated from a sample of 5,000 retailers, which cover approximately 95% of retail turnover captured as registered turnover on the IDBR. The sample includes approximately 900 large retailers, where large is defined as businesses with an employment of 100 or more or retailers with a registered annual turnover of greater than £60 million and between 10-99 employment. Large retailers are continuously sampled whereas small retailers are rotated in and out of the sample.

Data are collected from the sample using the Monthly Business Survey - Retail Sales Index (MBS - RSI) questionnaire which asks for total retail sales turnover and internet retail sales turnover. Respondents are asked to return data via a Telephone Data Entry system. Each quarter a sub-sample of small retailers and all large retailers are asked to provide information on employment and this data is used as part of [Labour Market Statistics](#)¹². The average monthly response rate for this survey has been 64%, which accounts for approximately 90% of all retail turnover.

There is a small sub-sample of the RSI which forms the panel for the Monthly Commodity Inquiry. The panel consists of 31 large retailers that are asked to provide the same data as the main retail sales sample and also total turnover for five commodities: food, alcohol and tobacco, clothing and footwear, household goods and other. A further subset of this panel is also asked to provide turnover for the sale of automotive fuel.

Returned data are passed through a series of validation checks which includes an automatic selective editing procedure. Selective editing assigns a score to each questionnaire which is calculated by comparing the returned data to previous returns and the impact of this difference on key estimates. Returns that score higher than a pre-set threshold fail selective editing and are passed to the editing and validation team for manual checking.

In turn, data are analysed at a macro level to determine the contributing factors to the movement in the value index and its published categories. Together, this micro and macro approach to editing identifies outliers and anomalies within the returned data.

From the returned and imputed data a population total is estimated using ratio estimation. This gives the value of retail sales in pounds (thousands) (£'000s) and retail internet sales in pounds (millions) (£'000,000s) for average weekly sales and for the month. These data are published via the ONS website where the retail sales value estimates are produced in index form using the reference year of 2010.

For those respondents who do not return their data in time for publication of the retail sales aggregates, the total turnover and total internet sales are imputed using a [ratio imputation method](#)¹³ known as a ratio of means.

From this value index, the chained volume index is calculated by adjusting for price movements using a process called deflation. Value and chain volume indices are seasonally adjusted using [X-12-ARIMA](#)¹⁴.

Before publication all data are tested for disclosure and, where there is a risk of disclosure of individual businesses, steps are taken to minimise this risk for example by aggregating similar industry sectors.

Validation and quality assurance

Accuracy

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

A report on RSI standard errors titled [Updated Accuracy Measures for the Retail Sales Index](#)¹⁵ was published in October 2013. The report shows that the median year-on-year standard error is estimated at 0.9% and the month-on-month standard error is estimated at 0.5%.

The RSI is first published using a 64% response rate, this equates with approximately 90% of sampled turnover. The sample of 5,000 from a population of nearly 200,000 may seem small but together these 5,000 retailers cover approximately 95% of all retailing turnover captured on the IDBR.

Non-sampling error may be introduced to the RSI as a result of coverage error, measurement error, processing error and non-response error. Steps are taken to minimise the impact of these errors for example, all MBS - RSI respondents that do not return data by the stated deadline are response chased in order to reduce the non-response rate. Non-response error is minimised through the use of imputation as described in the quick guide to the RSI.

One form of measurement error arises from respondents reporting turnover in pounds (thousands) (£'000s), when actual pounds are required. Where this is the case, the figure is corrected and respondents are informed as to which figures they need to provide.

Processing errors can be introduced where data are inputted manually by data analysts in £'000s rather than actual pounds. Training is provided to minimise this processing error.

Coverage error is introduced where businesses are not classified to retail or are not registered for VAT or PAYE and are therefore not listed on the IDBR.

Revisions and sampling variations are a consequence of the trade-off between timeliness and accuracy. All estimates are subject to statistical error which refers to the uncertainty inherent in any process or calculation that uses sampling, estimation or modelling. Estimates for the most recent month are provisional and subject to revision because of:

- late responses to the Monthly Business Survey - Retail Sales Index;
- revisions to seasonal adjustment factors which are re-estimated every month and reviewed annually;
- changes from the annual seasonal adjustment review; and
- annual updating of the business register that forms the basis for the sample for the RSI (usually occurring in January).

A report on [Revisions to Retail Sales Index](#)¹⁶ and the [RSI revisions policy](#)¹⁷ are published on the ONS website.

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, geographic level.)

Other statistics on retail sales are available. ONS also produces retail sales statistics as part of the [Annual Business Survey \(ABS\)](#)¹⁸. There are differences between the RSI and ABS retail figures for the following reasons:

- the ABS collects and produces statistics on the United Kingdom whereas RSI covers Great Britain, resulting in differences in total sales values;
- reporting periods can vary, the ABS allows respondents to provide information on either a calendar year or financial calendar year. In comparison the RSI asks respondents to provide information based on a 4 - 4 - 5 week reporting period or calendar monthly;
- for the food sector, the ABS includes automotive fuel sales by supermarkets, for the RSI these are extracted and used for the calculation of the automotive fuel series; and
- for chemists the ABS includes National Health Service receipts, these are excluded from the RSI.

Non-official statistics on retail sales are available from the British Retail Consortium (BRC) which produce the Retail Sales Monitor in collaboration with KPMG; and also from the Confederation of British Industry which produce retail trade statistics as part of their Distributive Trade Survey. More information on the differences between these two indicators and the RSI can be found in the article [Retail Sales Index \(RSI\) and Other Surveys](#)¹⁹.

Comparable time series are available going back to 1988 for the following headline aggregates and their sub-sector series:

- All retailing excluding automotive fuel;
- Predominantly food stores;
- Predominantly non-food stores; and
- Non-store retailing.

For the following aggregates, comparable time series are available going back to 1996:

- All retailing including automotive fuel; and
- Automotive fuel.

Concepts and definitions

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

The industries included in the MBS - Retail Sales Index are as defined by the SIC 2007, the detailed structure of this classification and categories used by RSI can be found in [A quick Guide to Retail Sales Index](#)⁹.

Retail sales is compliant with the Eurostat short-term business statistics [regulation](#)²⁰.

Other information

Output quality trade-offs

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

The main quality trade off in producing the RSI occurs between timeliness and response rate. By publishing 18 days after the month's end, the RSI typically has a 64% response rate. One month later this response rate will have risen to approximately 75%. The difference in coverage is smaller, with results published on approximately 90% sampled turnover which rises to approximately 98% sampled turnover a month later.

Assessment of user needs and perceptions

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

[The Retail Sales Work Plan 2014](#)²¹ highlights the methodological work plan for retail sales and internet retail sales statistics. The plan includes a list of all regular updates that take place on an annual basis and, as well as describing the change, provides the user with an assessment of the impact on the time series data. Users are encouraged to provide comments on the work plan.

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.)

ONS's 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. The ONS website also offers users the option to download the narrative in PDF format. In some instances other software may be used, or may be available on request. Available formats for content published on the ONS website but not produced by the ONS, or referenced on the ONS website but stored elsewhere, may vary. For further information please refer to the contact details at the beginning of this document.

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

- [Terms and conditions \(for data on the website\)](#)²²;
- [Copyright and reuse of published data](#)²³;
- [Pre-release access \(including conditions of access\)](#)²⁴; and
- [Accessibility](#)²⁵.

In addition to this Quality and Methodology Information, Basic Quality Information relevant to each release is available in the background notes of the relevant [Statistical Bulletin](#)²⁶.

References

Title of reference	Website location
1. List of all RSI releases	www.ons.gov.uk/ons/rel/rsi/retail-sales/index.html
2. Bank of England	www.bankofengland.co.uk/Pages/home.aspx
3. Her Majesty's Treasury	www.gov.uk/government/organisations/hm-treasury
4. ONS Website	www.ons.gov.uk/ons/index.html

5. Guidelines for Measuring Statistical Quality	www.ons.gov.uk/ons/guide-method/method-quality/quality/guidelines-for-measuring-statistical-quality/index.html
6. Short-Term Output Indicators Stakeholder Group	www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/national-accounts/presentations-and-meeting-papers/short-term-output-indicators-stakeholder-group/index.html
7. UK National Statistics publication Hub	www.statistics.gov.uk/hub/index.html
8. Code of Practice for Official Statistics	www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html
9. A quick guide to the Retail Sales Index	www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/retail-sales/quick-guide-to-the-retail-sales-index.pdf
10. A quick guide to the Internet sales	www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/retail-sales/a-quick-guide-to-internet-sales.pdf
11. Inter-Departmental Business Register	www.ons.gov.uk/ons/about-ons/products-and-services/idbr/index.html
12. Labour Market Statistics	www.ons.gov.uk/ons/rel/lms/labour-market-statistics/may-2014/index.html
13. Change of Imputation Method used for the Turnover Question in Monthly Business Surveys	www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/retail-sales/change-to-imputation-method.pdf
14. X -12 - Arima	www.ons.gov.uk/ons/guide-method/method-quality/general-methodology/time-series-analysis/guide-to-seasonal-adjustment.pdf
15. Updated Accuracy Measures for the Retail Sales	www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/retail-sales/updated-accuracy-measures-for-the-retail-sales-index.pdf
16. Revisions to the Retail Sales Index	www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/retail-sales/revisions-to-the-retail-sales-index-2014.pdf
17. RSI Revisions Policy	www.ons.gov.uk/ons/guide-method/revisions/revisions-policies-by-theme/economy/retail-sales-index-revisions-policy.pdf
18. Annual Business Survey	www.ons.gov.uk/ons/about-ons/get-involved/taking-part-in-a-survey/information-for-businesses/a-to-z-of-business-surveys/annual-business-survey/index.html
19. Retail Sales Index (RSI) and Other Surveys	www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/retail-sales/comparability-of-rsi-sales-and-external-indicators-2012-13.pdf
20. Eurostat short-term business regulation	epp.eurostat.ec.europa.eu/portal/page/portal/short-term-business-statistics/introduction/sts-in-brief
21. The Retail Sales Work Plan 2014	www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/retail-sales/rsi-work-plan-2014.pdf
22. Terms and conditions	www.ons.gov.uk/ons/site-information/information/terms-and-conditions/index.html
23. Copyright	www.ons.gov.uk/ons/site-information/information/creative-commons-license/index.html
24. Pre-release access	www.ons.gov.uk/ons/guide-method/the-national-statistics-standard/code-of-practice/pre-release-access/index.html

25. Accessibility	www.ons.gov.uk/ons/site-information/information/accessibility/index.html
26. Statistical Bulletin	www.ons.gov.uk/ons/rel/rsi/retail-sales/may-2014/index.html