

# Northern Ireland Quarterly Retail Sales Index Background Quality Report

Theme: Economy

## Introduction

This report provides users with an assessment of the quality of the experimental quarterly [Northern Ireland Retail Sales Index \(RSI\)](#). It does this by reporting against the nine quality dimensions and principles of the [European Statistical System \(ESS\) quality framework](#).

In doing so, this meets obligation to comply with the Code of Practice for Statistics, particularly Practice Q3.1 of the Assured Quality Principle (Q3) which belongs to the Quality Pillar; this practice states that “Statistics should be produced to a level of quality that meets users’ needs. The strengths and limitations of the statistics and data should be considered in relation to different uses, and clearly explained alongside the statistics”.

The [Economic and Labour Market Statistics \(ELMS\)](#) branch within the [Northern Ireland Statistics and Research Agency \(NISRA\)](#) collects information on behalf of the Department for the Economy. The retail sales sector is a subset of the [Index of Services \(IOS\)](#) and relates to SIC 47 (Retail trade, except of motor vehicles and motorcycles). Data for IOS is collected from the combined Quarterly Business Survey (QBS) which gathers employee, turnover, exports and construction data. The QBS is collected on a statutory basis under the [Statistics of Trade & Employment \(Northern Ireland\) Order 1988](#) which creates a legal obligation on businesses/organisations to return questionnaire information.

The IOS publication is produced quarterly (in mid March, June, September and December each year) and was designated as a National Statistic in August 2011 following a full assessment. The experimental Northern Ireland Quarterly Retail Sales Index for Northern Ireland was first published on Wednesday 16 March 2022.

All ELMS publications are available to download free of charge from the ELMS section of the NISRA website. The RSI bulletin and tables from the current publication, which includes all the data from the start of the series in 2014, are available in Excel and Open Document format to download from the RSI section of the NISRA website.

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# 1 Relevance

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*Relevance is the degree to which the statistical product meets user needs for both coverage and content.*

The RSI is intended to provide a general measure of quarterly changes in the output of the private retail businesses. This is defined as those private sector businesses in SIC 47 (Retail trade, except of motor vehicles and motorcycles) which is within sector G of the [Standard Industrial Classification 2007 \(SIC07\)](#). The report provides GB figures produced by ONS for comparative purposes. The experimental Northern Ireland Quarterly Retail Sales Index for Northern Ireland was first published on Wednesday 16 March 2022 and data back to Quarter 1 2014 are available.

The retail sales sector is a subset of the Index of Services (IOS) for which data is collected from the combined Quarterly Business Survey (QBS) by the Economic and Labour Market Statistics (ELMS) branch within the Northern Ireland Statistics and Research Agency (NISRA). The QBS is collected on a statutory basis under the [Statistics of Trade & Employment \(Northern Ireland\) Order 1988](#) which creates a legal obligation on businesses/organisations to return questionnaire information.

The RSI is an important short-term measure of change in the output of the retail sector of the economy. The report is of interest to government policymakers, Members of the Legislative Assembly, the business community, economic commentators, academics and members of the general public with an interest in the NI economy. In line with the [Guide to Experimental Statistics produced by ONS](#), the Northern Ireland RSI has been produced as an Experimental Statistic, as it is still in the testing phase and continues to be reviewed and developed.

## 2 Accuracy and Reliability

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*Accuracy and reliability is the proximity between an estimated result and the (unknown) true value.*

The Retail Sales Index is a volume index which measures turnover (deflated to a constant price). The [methodology](#) is summarised in the background notes of the quarterly statistics bulletin. The accuracy of the results is affected by a range of issues. Some of these are related to the fact that the estimates are based on a sample, rather than a census of all businesses, and that not all businesses respond to the survey. Some relate to other processes involved in calculating the results.

**Coverage errors** - coverage error is minimised for RSI as the sampling frame used is the [Inter Departmental Business Register \(IDBR\)](#), a dynamic register which is constantly updated using data provided by businesses to HMRC, Companies House and various survey sources, such as the Business Register and Employment Survey and the Annual Business Inquiry. The sample was refreshed for Q1 2014 and was drawn on a SIC07 basis.

**Non-response errors** - not all businesses respond to the survey. The characteristics of these businesses may be different from those that do respond. However, as the size and industrial classification of the non-responding businesses are known we are able to account for that in the grossing methodology and this has a limited impact on the overall Index. Strategies for minimising non-response to the QBS include issuing email and paper reminders; telephone response chasing which is prioritised to target strata where coverage has not reached a specified target response rate; and capturing data returns over the telephone. In RSI imputation is used to estimate non-response for census businesses with comparisons of the imputed values initially used with late returns confirming the robustness of the imputation process used.

**Sampling error** - an estimate drawn from a sample is subject to sampling error, which is dependent on the sample size and the inherent variability of the population characteristic being measured. In 2014 the RSI sample size was boosted to approximately 360 businesses, balancing both the need for reliable estimates with the resources available to manage the survey. It comprises a census of all businesses in the private services sector with 100 or more employees in addition to high turnover/low employment companies. The remaining selected businesses are then allocated to industry strata on the basis of a Neyman allocation to maximise the precision of the sampled element of the survey. Neyman allocation is a sample allocation method that may be used with stratified samples. The purpose is to maximise survey precision (here, of total turnover) given a fixed sample size.

**Processing errors** - information recorded on a paper questionnaire may be inaccurately converted to a format which can be interpreted by a computer. QBS paper questionnaires are scanned into the computer system by a third party, Equiniti ICS, and under the terms of the contract scanning errors must be below 2%, so errors of this type are minimal. Where errors are made they are often identified and corrected (where appropriate) during the validation process. Additionally, over eighty percent of businesses now complete the QBS via eform, with the figures entered on the eform being uploaded straight to the system.

**Measurement errors** - on the electronic QBS questionnaire automatic rules are put in place to highlight errors to the respondent, for example providing the exact amount in £s rather than in £,000s. and the questionnaire cannot be submitted until these errors have been rectified. Various validation checks are also carried out by the QBS team to identify results that are extremely implausible but not impossible. This will take the form of validation against previous returns to identify any unusual increases and decreases. Contributors whose quarterly returns show an increase or decrease above a certain threshold are contacted and asked to confirm the value and to clarify the difference to ensure that the questionnaire return is correct. Where a company has also provided data to the Northern Ireland Annual Business Inquiry (ABI), the information from the RSI can be compared to the ABI. When a return does not make it through the “validation gate” and no explanation is forthcoming, for census businesses these return values will be imputed until an explanation or correction is provided. Measurement errors have a negligible impact on the Index.

**Changes in the seasonal pattern of the data** - RSI is seasonally adjusted. This aids interpretation by removing annually recurring fluctuations, for example due to holidays or other regular seasonal patterns. The RSI time series are reviewed regularly using X-13 ARIMA SEATS for evidence of seasonality. Those series where seasonality is detected, or where the seasonal pattern has changed, are adjusted using X-13 ARIMA SEATS in order to obtain a clear picture of the general trend.

**Provision of revised data** - revisions to data can occur for a number of reasons: late returned questionnaires, incorrect estimates, revised back data, changes in coverage as a result of changes to the Standard Industrial Classification and changes to seasonal adjustment factors. An RSI revisions policy is available. One dimension of measuring accuracy is reliability, which can be measured using evidence from the analyses of revisions to assess the closeness of initial estimates to subsequently estimated values. Revisions Triangles for RSI are to be published from Q1 2022. These triangles presented a summary of the differences between the first estimates of growth published and those published 3 years later for the same reference period. A statistical test is applied to the average revisions to growth to find out if it is statistically significantly different from zero.

### 3 Timeliness and Punctuality

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*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 planned and actual dates of publication.*

The Economic and Labour Market Statistics (ELMS) [Publication Schedule](#) is available on the NISRA website and provides twelve months advance notice of releases.

Retail Sales Index (RSI) results are published in March, June, September and December, some 2.5 months after the end of the survey's reference period. It is scheduled to be published on the same day as the Index of Services and Index of Production bulletins.

Every effort is made to meet the announced publication date. In the unlikely event of a change to the pre-announced release schedule, public attention is drawn to the change and the reasons for the change explained fully, as set out in the Code of Practice for Official Statistics.

## 4 Accessibility and Clarity

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*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 quarterly RSI Statistical Bulletin is the main tool for disseminating the headline retail output results. Additional information is published alongside the bulletin, including a suite of headline tables in Excel and Open Document Format for Office Applications (ODS). The publication contains a 'Background Notes' section which provides information on the scope of the survey, details of the data collection process, validation process and methodology. All RSI Bulletins and, accompanying tables, meet the accessibility regulations required for Public Sector bodies.

The quarterly RSI Statistical Bulletin and a combined briefing paper is sent directly by email to an agreed mailing list on the morning of publication. All published information is available free of charge via the NISRA website or in hard copy on request and is also available on the GOV.UK Statistics Release Calendar. Where available, disaggregated data is available free from websites such as NINIS.

As well as publishing detailed outputs, further bespoke analysis and information requests are undertaken, where possible, on request and there is currently no charge for this service. The requested information can be provided in a range of formats, most commonly Excel, with the accompanying metadata.

## 5 Coherence and Comparability

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

The [Northern Ireland Retail Sales Index \(RSI\)](#), [Index of Services \(IOS\)](#) and [Index of Production \(IOP\)](#) all measure similar phenomena, the output of businesses/organisations in Northern Ireland, and might be expected to behave in a similar fashion. Since they measure different sectors of the NI economy, however, the indices may not necessarily follow the same trend.

The data used to calculate the RSI are sourced from the Quarterly Business Survey (QBS). There is no directly comparable sources but when the [Northern Ireland Annual Business Inquiry \(ABI\)](#) data are available checks can be undertaken to ensure consistency between the four quarterly returns and the data returns from the ABI.

Every effort is made to ensure that the series is comparable over time, and a comparable time series is available back to Q1 2014. Where possible changes to the methodology are applied to the whole series to ensure that this comparability is maintained. The Northern Ireland methodology is essentially comparable with the [ONS GB](#) methodology. The data used are deflated turnover from monthly and/or quarterly surveys, with some industries measured by deflated production, direct volume measures or employment numbers. Component indices are aggregated by annual chain linking. The Northern Ireland Index covers private sector businesses only, while the ONS GB Index includes public sector services.



## 6 Trade-offs between Output Quality Components

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

As the RSI is a short-term indicator, users want the figures to be available as soon as possible after the period to which they refer. The main limiting factor is the availability of quarterly turnover data from businesses. Estimates are published as soon as validation and quality assurance is completed. As a result revisions are an inevitable consequence of the trade-off between timeliness and accuracy. User requests for more detailed breakdowns of the data are balanced with the need to maintain confidentiality of responses.

# 7 Assessment of User Needs and Perceptions

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

The first consultation regarding the publication of the RSI was held with expert users on 2 February 2022 via a webinar due to the effect of Covid-19 restrictions. A presentation outlining the RSI methodology was given, along with provisional results to date. The views of the expert users was sought in regard to any perceived weakness in the new experimental series and how the series could be improved.

There is a wide range of users of RSI data both within and outside of government:

- The Department for the Economy (DfE) – in policy formulation and in response to external information requests. RSI data also feed into the DfE [Economic Commentary](#), which provides an overview of the condition of the NI economy.
- The Department of Finance (DoF) – in the calculation of the [Northern Ireland Composite Economic Index](#) (NICEI) which is an indication of the performance of the NI economy.
- Private consultancy firms
- Universities and academics
- Members of the general public
- Media reporters – various articles are published by the media following publication.

## 8 Performance, Cost and Respondent Burden

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*The effectiveness, efficiency and economy of the statistical output.*

The estimated cost to businesses in Northern Ireland in 2019/20 of completing the Quarterly Business Survey (which includes Index of Services, Index of Production, Quarterly Employment Survey and the Quarterly Construction Enquiry) was £141,063. As the RSI sample is a subset of the overall IOS sample there is no additional cost to businesses to produce the RSI publication. Efforts have been made in recent years to reduce the burden on businesses such as rotating businesses out of the sample, data sharing with the annual Business Register and Employment Survey responses, accepting telephone responses, and most significantly introducing and promoting an e-form option. The burden to businesses due to statutory Government Statistical Surveys is also monitored by the Statistics Advisory Committee (SAC). Under the Statistics of Trade and Employment (NI) Order 9 1988, a Northern Ireland Department is required to consult this committee before carrying out a statutory survey of businesses.

## 9 Confidentiality, Transparency and Security

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*The procedures and policy used to ensure sound confidentiality, security and transparent practices.*

All data is handled, stored and accessed in a manner which complies with Government and Departmental standards regarding security and confidentiality, and fully meets the requirements of the Data Protection Act. During the publication process all hard copies of interim results are locked away or shredded. Data is held on a network that is accredited to the appropriate security level of the data and access is controlled by a system of strict business need access control. Individual business returns are not released with disclosure rules applied to outputs to ensure individual businesses cannot be identified in published outputs.

Data is collected under the [Statistics of Trade and Employment \(Northern Ireland\) Order 1988](#) which requires the Department to ensure the confidentiality of the data. Staff are trained and reminded of the protocols for ensuring the data remain confidential. This covers physical security, IT security and data disclosure issues per the [NISRA ELMS' confidentiality policy](#).