



**An  
Phríomh-Oifig  
Staidrimh**

Central  
Statistics  
Office

# **Standard Report on Methods and Quality for Retail Sales Index**

Standard Report  
on  
Methods and Quality  
for  
Retail Sales Index

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This documentation applies to the reporting period:

**Monthly**

**Updated 22/02/21**

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## **1 Overview**

The Retail Sales Index (RSI) is the official short-term indicator of changes in the level of consumer spending on retail goods. It measures the trend in the level of average weekly sales for each month, after allowances are made for calendar composition. The RSI is compiled and published every month by the Central Statistics Office (CSO).

Commencing with January 2018, the index is compiled with respect to a new base year (Base Year 2015 = 100) using updated base weights taken from the 2015 Annual Services Inquiry (ASI), replacing the former series (Base Year 2010 = 100).

## **2 General Information**

### **2.1 Statistical Category**

Primary statistical survey.

### **2.2 Area of Activity**

Retail Sales Section

Business Statistics Division

Business Statistics Directorate

### **2.3 Organisational Unit Responsible, Persons to Contact**

Business Statistics Directorate, Business Statistics Division, Business Statistics RAP (Results Analysis & Publications)

Contact:

Stephanie Kelleher, Telephone: +353 (21)4535123 Email; [stephanie.kelleher@csso.ie](mailto:stephanie.kelleher@csso.ie)

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### **2.4 Objectives and Purpose; History**

The first monthly RSI index figures were published in March 1963 and the RSI has been published continuously since then. The first figures published were value figures only and date back to January 1961. In March 1977 volume figures were first produced and at this time the first seasonally adjusted figures were also produced. Seasonally adjusted and unadjusted RSI value and volume indices for "Total Retail Sales" were produced with figure going back to January 1968.

The primary purpose of the RSI is to provide a short-term indication of changes in the value and volume (or quantity) of retail sales in Ireland. In doing so the RSI provides a leading monthly indicator on economic activity. It provides an accurate and objective measure of

retail trading and supplies a valuable guide to consumer spending behaviour in the Irish economy. More generally, in conjunction with several other monthly and quarterly economic indicators published by the CSO, the RSI offers a valuable tool for better understanding the general economic climate and performance in Ireland.

## **2.5 Periodicity**

This survey is carried out monthly and has been conducted continuously since 1962.

## **2.6 Client**

The RSI is a statutory inquiry, collected under the Statistics (Retail Sales) Order 2018 No. 432/2018. The survey is also conducted in compliance with Council Regulation (EC) No. 1165/98 and Commission Regulation No. 472/2008 concerning short-term statistics.

## **2.7 Users**

- Eurostat
- National Accounts, CSO
- Retail Groups
- Government Department and Agencies
- Economists
- Brokers
- Researchers and Academics
- The general public

## **2.8 Legal basis**

The RSI is a statutory inquiry, collected under the Statistics (Retail Sales) Order 2018 No. 432/2018. The survey is also conducted in compliance with Council Regulation (EC) No. 1165/98 and amended by Commission Regulation No. 1158/2005, Regulation no 1863/2006, 329/2009 and 596/2009.

# **3 Statistical Concepts, Methods**

## **3.1 Subject of the Statistics**

The RSI measures retail turnover for Ireland for a specific period. The index also provides information on year-on-year and month-on-month changes in turnover for the retail sector in Ireland.

The primary data collected from retail enterprises is their monthly turnover figure. Retailing is the resale (sale without transformation) of new and used goods mainly to the general public for personal or household consumption or utilisation, in shops, department stores, stalls, mail-order houses, door-to-door sales persons, hawkers, consumer cooperatives, auction houses etc. Most retailers take title to the goods they sell, but some act as agents for a principal and sell either on consignment or on a commission basis.

The RSI primarily includes the retail trade in shops; however the RSI also covers the retail trade and repair of motor vehicles and motorcycles as well as bar sales. Also, the RSI excludes sales by street stalls and markets, streetbased newspaper vendors and other retailing activities not conducted from permanent business premises. In addition, the following are excluded: second hand and repairs of personal, electrical and household goods unless included as turnover arising from a secondary activity but classified to the principal activity. The direct retail sales of non-distribution enterprises (e.g. manufacturing enterprises with no separate sales establishments) together with the incidental sales of wholesale businesses are also excluded.

### **3.2 Units of Observation/Collection Units/Units of Presentation**

The reporting unit is the enterprise, where an enterprise is defined as the smallest legally independent unit, allowing enterprises to provide a single overall retail sales figure each month. It also ensures that any new branches opened by respondents are automatically included in the index. All enterprises are eligible for selection i.e. no size cut-off is applied to the enterprise population.

Aggregated monthly retail sales figures are presented as indices with 2015 as the base year. The retail sales figures are presented for 22 separate categories. There are 13 Business Groups and 9 Combined Groups (see section 3.11 for more details). Each aggregated index is presented as:

- Unadjusted Value Index
- Unadjusted Volume Index
- Seasonally Adjusted Value Index
- Seasonally Adjusted Volume Index

Data is compiled and published at national level only i.e. NUTS 1 level<sup>1</sup>.

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<sup>1</sup>Nomenclature of Territorial Units

### 3.3 Data Sources

The primary data source is micro-data (i.e. turnover and internet sales) from individual enterprises. This survey is conducted by post and email. Prices data is provided by the Consumer Price Section of the CSO.

### 3.4 Reporting Unit/Respondents

The reporting unit is the enterprise, where an enterprise is defined as the smallest legally independent unit, allowing enterprises to provide a single overall retail sales figure each month. It also ensures that any new branches opened by respondents are automatically included in the index. All enterprises are eligible for selection i.e. no size cut-off is applied to the enterprise population.

### 3.5 Type of Survey/Process

The survey is a sample survey and is drawn from the Annual Services Inquiry. Data for the survey is primarily collected via postal questionnaires and E-Forms, however data is also collected via:

- E-mail
- Telephone

Follow up enquiries are dealt with via email and telephone.

### 3.6 Characteristics of the Sample/Process

#### 3.6.1 Population and Sampling Frame

The population of retail enterprises in Ireland is approximately 36,000. The RSI sample comprises of about 2,600 enterprises. This gives an average sampling fraction of over 7%, however this fraction can differ significantly from sector to sector and within size class. If coverage is viewed from a turnover perspective, the coverage is considerably higher, with an average sampling fraction of approximately 50%

#### 3.6.2 Sampling Design

There are four size classes within each NACE Rev.2 Classification. These size classes are defined according to annual turnover i.e. enterprises are categorised into four groups (or size classes) according to their turnover. The four size classes are:

Cellsize	Includes Turnover Above (€)	Includes Turnover To (€)
1	0	400,000
2	400,000	750,000
3	750,000	3,250,000
4	3,250,000	-

A stratified sample of enterprises is conducted with a higher proportion of Cell size 4 being included compared to Cell size 1. This sample design ensures a larger percentage of turnover being collected while reducing burden on smaller enterprises. Enterprises are stratified initially by their NACE Rev.2 Classification and then within each NACE Rev.2 sector by turnover.

Every five years the RSI sample is updated by taking a random sample from the Central Business Register of enterprises not already on the RSI register.

### **3.7 Survey Technique/Data Transfer**

Data for the survey is collected via postal questionnaires and E-Forms, however some data is collected via:

- E-mail
- Telephone

The received data is scanned into the purpose built Sybase system. This raw turnover data is then aggregated to produce unadjusted value indices. Using price data from the CSO's Consumer Price Index (CPI) and fixed product weights, monthly volume deflators are calculated separately for each RSI Index. The unadjusted value indices are converted into volume indices by using these monthly deflators.

### **3.8 Questionnaire (including explanations)**

Each month participants in the survey are requested to return their turnover figure (inclusive of VAT) for the reference month. Respondents are offered the option of responding:

1. In a 4-4-5 week pattern
- or
2. On a calendar month basis

The 4-4-5 week pattern means that each quarter has exactly 13 weeks, distributed so that the first 2 months have exactly 4 weeks each while the third month has exactly 5 weeks. Data returned on a calendar month basis will require adjustments to this standardised pattern. If a responding enterprise opts to return data in a 4-4-5 week pattern, their data may still require adjustments if their 4-4-5 week pattern (accounting period) does not match that of the CSO.

Retail Sales use the following 4-4-5 week patterns:

Quarter	4 week month	4 week month	5 week month
1	January	February	March
2	April	May	June
3	July	August	September
4	October	November	December

**RSI Form:**

<https://www.cso.ie/en/methods/surveyforms/retailsalesindex/>

**3.9 Participation in the Survey**

This is a statutory survey, so participation is compulsory.

**3.10 Characteristics of the Survey/Process and its Results**

The RSI is a monthly turnover index. This presents a comparability problem as months differ in length i.e. the number of days in each month. A further difficulty arises from what those days are i.e. how many Fridays, Saturdays etc. are in a particular month. This is critical for retail trade as a higher volume of trade is generally conducted on Fridays and Saturdays. Therefore, an extra Friday or Saturday in a month could significantly inflate the turnover generated in that month.

To overcome this difficulty, the RSI indices are compiled using standardised reporting periods (SRPs) of 4, 4 and 5 weeks, i.e. the first two months of every quarter comprises of 4 weeks while the third month has 5 weeks. With this SRP approach the number of days in every month is equalised. So not only does each month have a standardised number of weeks, turnover is “trading day<sup>2</sup>” adjusted so that effectively, each of those weeks are identical – every week begins with a Sunday and finishes on a Saturday.

For each period, enterprises have the option of reporting their turnover using either the standardised month or the actual calendar month. About 1.0% of respondents, particularly large enterprises, supply data corresponding to the 4-4-5 pattern. The remaining enterprises provide calendar month data. This calendar month is then adjusted to a standardised month using calendar correction factors.

These calendar correction factors are based directly on “trading day” micro data provided by enterprises on the RSI sample. Every 5 years, as part of the rebasing process, enterprises are asked to distribute the average weekly sales over the 7 days of the week. This data is then compiled to construct the “trading day” weights (see appendix 2). These fixed trading

weights are then used to calculate calendar correction factors for each month.

The 4-4-5 pattern adds up to a 364 day year and consequently requires a re-calibration every 5<sup>th</sup> or 6<sup>th</sup> year (depending on when a Leap year falls) to account for the missing week. Here the exact 52 week year is replaced by an exact 53 week year. This additional week is added to February, replacing the 4-4-5 pattern with a 4-5-5 pattern for the 1<sup>st</sup> quarter of the re-calibrated Leap year.

The RSI is calculated using a modified fixed weight Laspeyres index:

$$\left[ \frac{\sum W_{m-1} \left( \frac{T_m}{T_{m-1}} \right)}{\sum W_0} \right] \times 100$$

Where:

$W_0$  and  $W_{m-1}$  are the baseweights and updated weights (or values) respectively  
 $T_m$  and  $T_{m-1}$  are aggregated turnover values for the current and last period respectively.

In the case of the RSI, 12 distinct sets of “seasonal” base weights are used, one for each month of the year. The compilation of the index for the current month ( $m$ ) is based on the percentage change in average weekly sales (based on a matched sample) over the corresponding monthly period of the previous year ( $m-1$ ).

### Volume Indices (Constant Prices)

Retail sales volume indices exclude the effects of retail price changes. The unadjusted<sup>2</sup> volume indices are calculated by deflating each value indices using specially constructed deflators calculated for each individual index. The deflators used for the RSI are calculated based on a combination of current prices gathered for the Consumer Price Index (CPI) and deflator baseweights<sup>3</sup> constructed using product micro data gathered from enterprises as part of the rebasing process.

### Seasonal Adjustment

Retail sales are subject to a high degree of seasonality, particularly for individual businesses. To facilitate interpretation of underlying trends value and volume indices are adjusted to remove these seasonal fluctuations.

<sup>2</sup> These indices are trading day5 adjusted as a result of the 4-4-5 pattern of data recording.

<sup>3</sup> The baseweights are distributions of COICOP (Classification of individual consumption by product) classified products to the various indices which are based on NACE Rev.2 classifications.

Seasonal adjustment is conducted using the direct seasonal adjustment approach. Under this approach each individual series is independently adjusted, e.g. aggregate series are adjusted without reference to the component series. Each individual seasonally adjusted series is calculated based on unadjusted data spanning from January 2005 to the current period.

The adjustments are completed by applying the X-13-ARIMA model, developed by the U.S. Census of the Bureau to the unadjusted data. This methodology allows seasonal factors to be estimated whilst also taking into consideration factors that impact on the quality of the seasonal adjustment such as:

- Calendar effects, e.g. the timing of Easter.
- The phase shift effect, i.e. the fact the reporting period of the RSI does not coincide with the calendar month.
- Outliers, temporary changes and level shifts in the series.
- Seasonal breaks e.g. the introduction of the new number plate system in the Motor Trade sector which occurred in July 2013.

Note: The Motor Trade group comprises all retail motor trade activities, of which new car sales accounts for approximately 70% of turnover.

#### **COVID-19**

- Seasonally adjusting the Retail Sales Index will be challenging until the scale and shape of the impact of COVID-19 on the time series is better understood. Each month the outliers are reviewed and updated as required. Users should be aware that further observations, as data becomes available in the months ahead, and revisions to the seasonal adjustment models may result in revisions to the seasonal adjusted series.

### 3.11 Classifications used

The retail sector as defined for the purposes of the RSI is:

<b>Business Group Description</b>	<b>NACE Rev.2 Code</b>
Motor Trade (excluding wholesale)	45
Non-specialised stores with food, beverages or tobacco predominating	47.11
Department Stores	47.19
Food, Beverages and Tobacco in specialised stores	47.2
Fuel	47.3
Pharmaceuticals, Medical and Cosmetic Articles	47.73-5
Clothing, Footwear & Textiles	47.51, 47.71-2
Furniture & Lighting	47.59
Hardware, Paints & Glass	47.52
Electrical Goods	47.41-3, 47.54
Books, Newspapers & Stationery	47.61-2
Other Retail Sales	47.53, 47.63-5, 47.76-8, 47.91
Bars	56.3

The RSI coverage differs from the strict NACE Rev.2 retail trade classification (NACE 47) owing to the inclusion of the retail trade and repair of motor vehicles and motorcycles (NACE 45) and Bars (NACE 56.3). Also, the RSI excludes sales by street stalls and markets, street-based newspaper vendors and other retailing activities not conducted from permanent business premises. In addition, the following are excluded: second hand and repairs of personal, electrical and household goods unless included as turnover arising from a secondary activity but classified to the principal activity. The direct retail sales of non-distribution enterprises (e.g. manufacturing enterprises with no separate sales establishments) together with the incidental sales of wholesale businesses are also excluded.

## **Changes to Activity Classifications**

a) The Adoption of the NACE Rev.2 Classifications:

Retail Sales Index is now classified in accordance with the statistical classification of economic activities in European Communities, i.e. NACE Rev.2. The only significant change to compilation of the series is that enterprises that predominantly sell petrol and diesel now no longer appear in the motor trade division of retail sales, but appear in their own group, i.e. NACE 47.3 retail sale of automotive fuel in specialised stores. A combined motors & fuel group is now calculated which is comparable to the former Motor Trades business group published under the NACE Rev.1.2 classifications.

b) Department Stores are reported differently:

In the new series there is a change in the reporting of Department Stores. In the series (Base Year 2000 = 100) the value of retail sales in Department Stores were further broken down into Clothing & Footwear, Furniture, Soft Furnishings etc. and Other Goods and Services. Department Stores will now be reported once only and there will no longer be a further breakdown of their activity.

c) The Recording of Retail Sales for Major Multiple Supermarket Chains:

Also, in the series (Base Year 2000 =100) in the case of the major multiple supermarket chains, a more detailed breakdown of their turnover was obtained for the categories of Grocery, Clothing & Footwear and Hardware & Other Goods. The turnover for Clothing & Footwear and Hardware & Other Goods were then assigned to the appropriate specialised stores groups. From the base year 2005 = 100 only one turnover figure will be received from major multiple supermarket chains and these turnovers figures will be assigned to the NACE Rev.2 Classification 47.11, i.e. retail sale in non-specialised stores with food, beverages and tobacco predominating.

## **Combined Groups**

A Combined Group is a combination of Business Groups. There are 9 combined business groups compiled for the Retail Sales Index. The table below lists these groups and their constituent parts. A Business Group may form part of one or more Combined Groups.

<b>Combined Business Groups</b>	<b>Combinations used</b>
All Business	1-14
All Business excl. Motor Trades	2-14
All Business excl. Motor Trades & Bars	2-13
Motors & Fuel	1 & 5
All Business excl. Motor Trades, Fuel & Bars	2-4 & 6-13
Food	2 & 4
Non-Food (excl. Motor Trades, Fuel & Bars)	3 & 6-13
Household Equipment	8-10
Books, Newspapers, Stationery & Other Goods	11, 12 & 13

### **3.12 Regional Breakdown of Results**

Results are published at State level and are only broken down by the NACE Rev.2 business groups (mentioned above) or by combined groups derived from the individual business groups.

## **4 Production of the Statistics, Data Processing, Quality Assurance**

### **4.1 Data Capture**

Data is scanned and loaded into Data Management System (DMS) a capture and processing system. Data is also entered manually when required.

### **4.2 Coding**

Not applicable.

### **4.3 Data Editing**

Data is edited and cleaned within the DMS system. Edit checks are conducted initially at the data entry stage. Atypical data is usually queried directly with the respondents at this stage.

Through the DMS system automated edit checks are generated. The primary edit rule applied is a query range edit of 0.8 to 1.4 (where the value for the current month is compared to the value for the same month in the previous year). Any observation outside this range is examined and queried if necessary.

A period of 2-3 weeks out of a 4-week survey process is spent dealing with micro-editing. The editing process begins as soon as the data is entered onto the IT system (at t+1 weeks). Respondents are sometimes contacted regarding unusual results.

Explanatory notes are entered onto the system for legitimate turnover figures outside the edit range. Any corrections to data are only applied at micro-level. Edits are re-run after correction.

### **4.4 Imputation (for Non-Response or Incomplete Data Sets)**

The Retail Sales Index adopts a matched sample approach and therefore there is generally no need to conduct imputation. Occasionally, however, some ad-hoc imputation is carried out for some significant firms. In these cases each firm is looked at individually and an extension of nearest neighbour and last observation carried forward techniques are used to impute the missing values.

### **4.5 Grossing and Weighting**

#### **Trading Day Weights**

The daily trading weight is an estimate of the proportion of weekly sales that occur on a given day. Within each Business Group, Trading Day Weights sum to 1 for the week. These weights are based on results from a special survey where retailers are asked to estimate the percentage of turnover attributed to each day of the week for an average week. These Trading Day Weights or factors are unique to each Business Group.

Baseweights for each cell are derived from ASI (2015). These baseweights are updated on a monthly basis by applying a cell relative calculated using a year on year matched sample approach.

### **Baseweights**

The current base for the Retail Sales Index is the year 2015. The weights that correspond to the base period are referred to as base weights. The base weights for the current series are derived from the Annual Services Inquiry (ASI) 2015. By convention, base year weights are expressed as 100 i.e. Base Year = 100.

### **Monthly Base Weights**

The Retail Sales Index is calculated using a seasonal basket of weights i.e. a different set of monthly weights are used for each month, or in other words, for each Business Group there are 12 different base weights, one for each month of the year. These monthly weights reflect the changing relative importance of different Business Groups throughout the year. For example, consumers typically spend more on Clothing & Footwear in September because of the return to school. More new cars are purchased in January and July than any other month with the introduction of new registration plates. In order for such seasonal peculiarities to be accurately reflected in the “All Businesses” index, a different base weight is required for each month of the base year.

The base weights are derived from the Annual Services Inquiry (ASI) turnover data where the wholesale element of sales in retail outlets and the associated VAT is removed from the total turnover figure. However, the ASI can only provide annual turnover data for each Business Group. The monthly pattern of retail sales needed to convert annual ASI turnover data into a set of monthly turnover figures is derived from micro data collected for the RSI in 2015.

### **Average Weekly Turnover**

The Retail Sales Index is calculated on a 4-4-5 week basis, i.e. each quarter has exactly 13 weeks, distributed so that the first 2 months have exactly 4 weeks while the third month has exactly 5 weeks. The monthly turnover calculated by applying sales patterns from the Retail Sales Index is converted into Average Weekly Turnover by dividing the monthly turnover figure by the appropriate number of weeks. The average weekly turnover for each Business Group is used as the Base Year Weight for the respective Business Group.

#### 4.6 Computation of Outputs, Estimation Methods Used

Outputs are calculated using a matched sample approach. The business categories are based mainly on the Statistical Classification of Economic Activities in the European Community (NACE Rev.2). The index system is structured on the retailing enterprises covered in the 2015 Annual Services Inquiry classified by 13 retail business categories and 4 cell sizes based on turnover value.

The value indices are calculated by updating the aggregate 2015 retail turnover (including VAT) of these enterprises in these 52 cells using the monthly retail sales data provided by the enterprise respondent panel from 2015 onwards.

The compilation of the index for a current month is based on the percentage change in average weekly sales in these cells over the corresponding monthly period of the previous year. The monthly volume indices are calculated by deflating the seasonally unadjusted value indices by specially constructed retail price indices derived from the Consumer Price Index (CPI).

In the case of the RSI, 12 distinct monthly base weights are calculated from the Annual Services Inquiry (2015), for each cell in every business group. The compilation of the index for the current month ( $m$ ) is based on the percentage change in average weekly sales (based on a matched sample) over the corresponding monthly period of the previous year ( $m-1$ ).

The RSI sample is broken down into 13 NACE Rev.2 sub-categories (Business Groups) and further broken by 4 cell sizes. Initially, for each cell, a matched sample based on returns for the current month is established. The ratio ( $R_c$ ) of total cell turnover for the current month ( $T_{cm}$ ) over total cell turnover for the same month of the previous year ( $T_{c(m-1)}$ ) is then calculated.

$$R_c = \frac{T_{cm}}{T_{c(m-1)}}$$

$R_c$  is then applied to the cell weight from the previous ( $W_{c(m-1)}$ ) to calculate an updated cell weight ( $W_{cm}$ ).

$$W_{cm} = R_c \cdot W_{c(m-1)}$$

An updated Business Group weight ( $W_{bm}$ ) is then calculated for the current month by summing the four updated cell weights.

$$W_{bm} = \sum_{c=1}^4 W_{cm}$$

$W_{bm}$  is then converted into an index by dividing by the average 2015 monthly baseweight for the business group ( $W_{bmo}$ ) and multiplying by 100.

$$Index_{bm} = \left( \frac{W_{bm}}{W_{bm_o}} \right) \cdot 100$$

To calculate an updated “RSI” weight the individual Business Group weights are summed.

$$W_{RSI_m} = \sum_{b=1}^{13} W_{bm}$$

$W_{RSI_m}$  is then converted into an index by dividing by the average 2015 monthly baseweight for the retail sales ( $W_{RSI_o}$ ) and multiplying by 100.

$$Index_{RSI_o} = \left( \frac{W_{RSI_m}}{W_{RSI_o}} \right) \cdot 100$$

A copy of the Retail Sales Index is available on our website ([www.cso.ie](http://www.cso.ie)).

#### **4.7 Other Quality Assurance Techniques Used**

Macro editing is conducted using

- VAT information from the Revenue Commissioners
- Motor Trade information from the Society of Irish Motor Industry (SIMI)
- Vehicle Licensing from the Transport Section of the CSO
- Other Retail Sector surveys are also referenced
- Credit Card data made available to the CSO during the pandemic and has been used to verify data
- The RSI deflators and prices are also compared to the CPI data and other price sources

### **5 Quality**

#### **5.1 Relevance**

The Retail Sales Index is a key short-term indicator used both Nationally and by the EU. It provides information required by National Accounts in the compilation of the quarterly Gross Domestic Product (GDP).

#### **5.2 Accuracy and Reliability**

##### **5.2.1. Sampling Effect & Representivity**

###### **Population and Sampling Frame**

The population of retail enterprises in Ireland is approximately 36,000. The RSI sample comprises about 2,600 enterprises. This gives an average sampling fraction of over 7%, however this fraction can differ significantly from sector to sector and within size class. If coverage is viewed from a turnover perspective, the coverage is considerably higher, with an average sampling fraction of approximately 50%.

Information on standard errors are not calculated as part of the RSI aggregation process.

##### **5.2.2. Non-Sampling Effects**

Bias may be introduced as a result of the matched sample approach. It is difficult to completely represent the population due to the ongoing births and deaths of enterprises within the sector. This may result in the consistent under-estimation of growth during sustained periods of growth.

###### **5.2.2.1 Quality of Data Sources used (other than survey register)**

Monthly product price data from the CSO's Consumer Prices section (CPI) is supplied to the Retail Sales section in order to calculate RSI deflators. The data supplied is thoroughly cleaned and edited.

### **5.2.2.2 Register Coverage**

The Retail Sales registry is updated annually with relevant enterprises in the retail sector. Commencements of businesses, changes of business activity and cessations of businesses are updated at this time. Ad-hoc changes are also made to the register when relevant information becomes available from individual enterprises or from other sources. The Retail Sales registry is a subset of the Central Business Register (CBR). The CBR is updated on an on-going basis using administrative and survey data.

### **5.2.2.3 Non-response (Unit and Item)**

The response rates for the provisional survey are typically in the order of 36% covering about 90% of the value of the turnover surveyed. The corresponding figures for the final month are 44% covering about 95% of the value of the turnover.

The retail sales index adopts a matched sample approach and therefore there is generally no need to conduct imputation. Occasionally, however, some ad-hoc imputation is carried out for some significant firms. In these cases each firm is looked at individually and an extension of nearest neighbour and last observation carried forward techniques to impute the missing values.

Non-response bias is not measured in the survey.

### **5.2.2.4 Measurement Errors**

Measurement Error is not regarded as a major concern for this survey. The following should be noted:

1. Questionnaire – the questionnaire is clear with the period requested clearly defined. The design of the questionnaire is monitored and changes made if necessary. Occasionally enterprises may provide turnover inconsistent with the period covered. These errors are usually highlighted at the data-cleaning stage.
2. Data collection method – the collection method is by E-Forms and post. Data editing (see Section 5.2.2.5) is implemented at the processing stage to minimise any measurement errors due to incorrect form completion by respondents.
3. Interviewer- this technique not used by the survey.

Respondent – survey data can contain sensitive and confidential information due to the fact that it is a short-term survey and may be requested prior to annual accounts being completed. The survey publishes aggregated indices at 4 digit NACE Rev.2 (may publish at 3 or 4 digit NACE Rev.2, or may aggregate more than one two digit NACE group – due to confidentiality).

#### **5.2.2.5 Processing Errors**

1. Data capture errors are likely to be low risk as survey forms keyed and edited immediately.
2. No manual coding is done.
3. Data editing- edits are run which test the returns against a range of values, e.g.;
  - Turnover is unusually high
  - Large change in turnover since previous month/year (range varies between +40% and - 20% depending on the size of company)
  - Large change in number outlets since previous month
4. Contact is made with company to confirm returned figures if required. Data is manually changed if require

#### **5.2.2.6 Model-related Effects**

See 5.2.2.3.

### **5.3 Timeliness and Punctuality**

#### **5.3.1 Provisional Results**

Retail Sales Provisional Index is published 7 weeks after the end of the survey period.

#### **5.3.2 Final Results**

Retail Sales Final Index is published 11 weeks after end of the survey period.

### **5.4 Coherence**

Consistency checks are done on an ad-hoc basis with the Annual Service Inquiry. Differences being verified which leads to improved data quality.

In certain instances comparisons with other data sources such as the Revenue Commissioners and Industry data are conducted. These are investigated where necessary leading to better quality data. In general the same trends are evident in the various data sources.

### **5.5 Comparability**

In general, the reporting of Retail Sales is similar throughout Europe but underlying methodologies may differ. Many countries will not include Motor Trade and Bar sales in their retail figures. Therefore, to compare Ireland's Retail Sales figures with those of other countries in Europe, the retail sales figure as reported in the 'All Businesses excluding Motor Trades and Bars' is widely used.

## **5.6 Accessibility and Clarity**

### **5.6.1 Assistance to Users, Special Analyses**

The monthly Retail Sales release and background notes are available on the CSO website at 11am on day of release.

Specific tailored data is provided each month to certain users to suit their requirements.

Methodology and historical data are available on the CSO website.

Methodology:

<https://www.cso.ie/en/methods/services/retailsalesindex/methodologicaldocuments/>

Historical Data

<https://www.cso.ie/en/statistics/services/archive/>

Click on relevant year for required data.

### **5.6.2 Revisions**

Each month the provisional data from the previous month is revised on the receipt of late returns or amendments of existing returns. The current month's data is always provisional and only becomes final when the following month is published. The size of the revision varies from month to month but would typically be in the order of +/- 2% for 'All Businesses' indices.

As turnover indices are seasonally adjusted, the complete series are revised monthly due to updated seasonal factors. Any other revisions are flagged in the Release. Updating methodologies are not usually announced in advance but are announced simultaneously with implementation. A significant change (e.g. the rebasing of indices) will be notified well in advance of publication.

### **5.6.3 Publications**

#### **5.6.3.1 Releases, Regular Publications**

The Retail Sales release (current Provisional and previous Final) is published each month.

#### **5.6.3.2 Statistical Reports**

Annual value and volume indices are included for all relevant categories in the statistical yearbook.

<https://www.cso.ie/en/releasesandpublications/ep/p-syi/statisticalyearbookofireland2020/>

#### **5.6.3.3 Internet**

Each month the latest Retail Sales release is published on the CSO website. The PxStat facility on the CSO website is also updated each month to reflect the latest available data. Historical data is also available via the PxStat on the CSO website.

<https://data.cso.ie/table/RSM05/>

[http://www.cso.ie/px/pxeirestat/Database/eirestat/Retail%20Sales%20Monthly%20Series/Retail%20Sales%20Monthly%20Series\\_statbank.asp?SP=Retail%20Sales%20-%20Monthly%20Series&Planguage=0](http://www.cso.ie/px/pxeirestat/Database/eirestat/Retail%20Sales%20Monthly%20Series/Retail%20Sales%20Monthly%20Series_statbank.asp?SP=Retail%20Sales%20-%20Monthly%20Series&Planguage=0)

#### **5.6.4 Confidentiality**

The retail turnover data provided by the respondent enterprises are treated as strictly confidential in accordance with Part V of the Statistics Act, 1993 and cannot be accessed under the terms of the Freedom of Information Act, 1997. Data is not disclosed by the CSO to any other Government Department or outside body.

#### **6 Additional documentation and publications**

The Retail Sales Methodology is available on the CSO website and contains all the relevant weights and product breakdowns that are relevant to the current base year. Eurostat publish seasonally adjusted retail trade figures for Ireland on a monthly basis. The figures reported by Eurostat are the “All Businesses Excluding Motors and Bars” reported in the RSI release.

Statistics on CSO Website:

<https://www.cso.ie/en/methods/services/retailsalesindex/methodologicaldocuments/>

[http://www.cso.ie/px/pxeirestat/Database/eirestat/Retail%20Sales%20Monthly%20Series/Retail%20Sales%20Monthly%20Series\\_statbank.asp?SP=Retail%20Sales%20-%20Monthly%20Series&Planguage=0](http://www.cso.ie/px/pxeirestat/Database/eirestat/Retail%20Sales%20Monthly%20Series/Retail%20Sales%20Monthly%20Series_statbank.asp?SP=Retail%20Sales%20-%20Monthly%20Series&Planguage=0)

Statistical Yearbook of Ireland:

<https://www.cso.ie/en/releasesandpublications/ep/p-syi/statisticalyearbookofireland2020/>

EU level data and methodology is available via the Eurostat website:

<http://ec.europa.eu/eurostat/euroindicators/>

The entry for this statistic under StatCentral (the portal to Ireland’s official statistics) is at <http://www.statcentral.ie/viewStat.asp?id=13>