

Statistical bulletin

Retail sales, Great Britain: September 2015

A first estimate of retail sales in volume and value terms, seasonally and non-seasonally adjusted.



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1 . Main points

- Year-on-year estimates in the quantity bought in the retail industry continued to show growth for the 29th consecutive month in September 2015, increasing by 6.5% compared with September 2014
- The underlying pattern in the data, as suggested by the 3 month on 3 month movement in the quantity bought, showed growth for the 22nd consecutive month, increasing by 0.9%
- Compared with August 2015, the quantity bought in the retail industry is estimated to have increased by 1.9%
- Average store prices (including petrol stations) fell by 3.6% in September 2015 compared with September 2014, the 15th consecutive month of year-on-year price falls
- The amount spent in the retail industry increased by 2.7% in September 2015 compared with September 2014 and by 1.4% compared with August 2015
- The value of online sales increased by 15.2% in September 2015 compared with September 2014 and increased by 4.5% compared with August 2015
- Revisions to this release were primarily caused by re-referencing the indices to 2012 = 100 to align with the National Accounts estimates (only affecting volume data) and the annual seasonal adjustment review. There were also revisions where late data was incorporated. More information on revisions can be found in the background notes

2 . About this release

This bulletin presents estimates of the quantity bought (volume) and amount spent (value) in the retail industry for the period 30 August 2015 to 3 October 2015, thus the August Bank Holiday is included within this release. Unless otherwise stated, the estimates in this release are seasonally adjusted.

The estimates in this release are based on a monthly survey of 5,000 retailers, including all large retailers employing 100 people or more and those with annual turnover of greater than £60 million who employ 10 to 99 people. It is estimated that this survey covers approximately 95% of all known retail turnover in Great Britain.

The quality of the estimate of retail sales

Retail sales estimates are produced from the monthly business survey – Retail Sales Inquiry (RSI). The timeliness of these retail sales estimates, which are published just 3 weeks after the end of each month, makes them an important early economic indicator. The industry as a whole is used as an indicator of how the wider economy is performing and the strength of consumer spending. Results are revised for the previous 13 published periods. More information about the data content for this release can be found in the background notes.

Revisions are an inevitable consequence of the trade-off between timeliness and accuracy. The response rate in September 2015 was 62.4% of questionnaires, accounting for 90.3% of registered turnover in the retail industry. Therefore, the estimate is subject to revisions as more data become available.

All estimates, by definition, are subject to statistical uncertainty and for the retail sales index we publish the standard error associated with the non-seasonally adjusted estimates of year-on-year and month-on-month growth in the quantity bought as a measure of accuracy. More information on these standard errors can be found in the background notes and in the quality tables of this release.

We are continually working on methodological changes to improve the accuracy of the retail sales estimates; progress on these can be found on the [continuous improvement page](#).

The reference tables offer different ways to access the data, they include:

- non-seasonally adjusted and seasonally adjusted volume and value indexes by industry
- year-on-year and month-on-month growth rates by industry

3 . Main figures

Table 1: All retailing, September 2015 (seasonally adjusted percentage change)

Great Britain					
	Most recent month on a year earlier	Most recent 3 months on a year earlier	Most recent month on previous month	Most recent 3 months on previous 3 months	
Value (amount spent)	2.7	1.6	1.4		0.2
Volume (quantity bought)	6.5	5.0	1.9		0.9
Value excluding automotive fuel	3.5	2.4	1.4		0.4
Volume excluding automotive fuel	5.9	4.7	1.7		0.9

At a glance

In September 2015:

the quantity bought in the retail industry (volume):

- increased by 6.5% compared with September 2014
- increased by 1.9% compared with August 2015

the amount spent (value):

- increased by 2.7% compared with September 2014
- increased by 1.4% compared with August 2015

Non-seasonally adjusted data show that the prices of goods sold in the retail industry (as measured by the implied price deflator) decreased by 3.6%.

More information on how the implied price deflator and other estimates in this release are calculated can be found in section 3 of the background notes.

Amount spent in the retail industry

In the 5 week reporting period during September 2015, the amount spent in the retail industry was £35.1 billion (non-seasonally adjusted).

This compares with:

- £27.5 billion in the 4 week reporting period for August 2015
- £34.2 billion in the 5 week reporting period for September 2014

This equates to an average weekly spend of:

- £7.0 billion in September 2015, compared with
- £6.9 billion in August 2015
- £6.8 billion in September 2014

You should note that the August Bank Holiday in 2015 is included in this standard trading period but was not included in the September 2014 figures.

4 . Sector summary

Main points

In September 2015:

- all store types showed increases in the quantity bought compared with September 2014
- all store types except other stores and textile, clothing and footwear stores showed increases in the amount spent year-on-year
- all store types saw falls in average store price compared with September 2014

Table 2: Sector summary, September 2015

Great Britain

	Percentage change over 12 months			Average weekly sales (£ billion)
	Quantity bought (volume)	Amount spent (value)	Average store price	
Predominantly food stores ¹	3.2	1.1	-2.1	2.9
Predominantly non-food stores ²	6.5	4.1	-2.1	2.9
Non-specialised stores ³	6.9	4.6	-2.2	0.6
Textile, clothing and footwear stores	7.4	6.4	-1.1	0.9
Household goods stores	11.5	8.6	-2.6	0.6
Other stores	2.3	-1.2	-2.7	0.9
Non-store retailing	17.4	13.7	-3.0	0.5
Fuel stores	11.6	-4.5	-14.3	0.7
Total	6.5	2.7	-3.6	7.0

Source: Office for National Statistics

Notes:

1. Supermarkets, specialist food stores and sales of alcoholic drinks and tobacco
2. Non-specialised stores, textiles, clothing and footwear, household goods and other stores
3. Department stores

5 . Internet sales in detail

Seasonally adjusted internet sales data are published in the RSI Internet tables and include:

- a seasonally adjusted value index
- year-on-year and month-on-month growth rates

Internet sales are estimates of how much was spent online through retailers across all store types in Great Britain. The reference year is 2012=100.

Main points:

- average weekly spending online in September 2015 was £847.4 million; this was an increase of 15.2% compared with September 2014
- the amount spent online accounted for 12.8% of all retail spending, excluding automotive fuel, compared with 11.5% in September 2014

Table 3 shows the year-on-year growth rates for total Internet sales by sector and the proportion of sales made online in each retail sector.

Table 3: Summary of internet statistics for September 2015

Great Britain

Category	Year-on-year growth	Proportion of total sales made online
All retailing	15.2	12.8
All food	13.2	4.3
All non-food	12.4	9.6
Department stores	17.7	11.1
Textile, clothing and footwear stores	10.9	12.8
Household goods stores	23.8	6.8
Other stores	3.5	7.2
Non-store retailing	18.0	72.3

Source: Office for National Statistics

6 . Focus on the effect of prices on all retailing, food and non-food stores

In recent periods, the average store price, as measured by the implied price deflator, for all retailing has fallen year-on-year and in September 2015 fell by 3.6% compared with September 2014, the joint largest fall with February 2015 since records began in January 1997 and the 15th consecutive year-on-year fall in average prices. This fall in average store prices was largely a consequence of falling fuel prices, however, all major store types saw store prices fall in September 2015.

As average store prices have fallen, the quantity bought in the retail sector has increased significantly. In September 2015, the year-on-year increase of 6.5% was the largest increase since November 2014 when it increased by 6.7% and now means that year-on-year the quantity bought has increased for the 29th consecutive month. Compared with May 2013, when this run of consecutive growth began, the quantity bought in the retail sector has increased by 10.3%.

The amount spent in the retail sector has also increased, however, due to the fall in average store prices in more recent months it has not increased at the same rate as the quantity bought as shown in Figure 1.

Figure 1: All retailing seasonally adjusted volumes, values and non-seasonally adjusted store price inflation

Great Britain, January 2006 to September 2015

Figure 1: All retailing seasonally adjusted volumes, values and non-seasonally adjusted store price inflation

Great Britain, January 2006 to September 2015



Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

The performance of different store types varies, as shown in Figure 2 the quantity bought in food stores has been more consistent. In September 2015, the quantity bought in food stores increased by 3.2%, but this large year-on-year growth has not had the same impact as in all retailing. Compared with May 2013, the quantity bought in food stores has increased by 3.8% in September 2015, meaning that food stores has seen approximately one-third of the growth experience by all retailing.

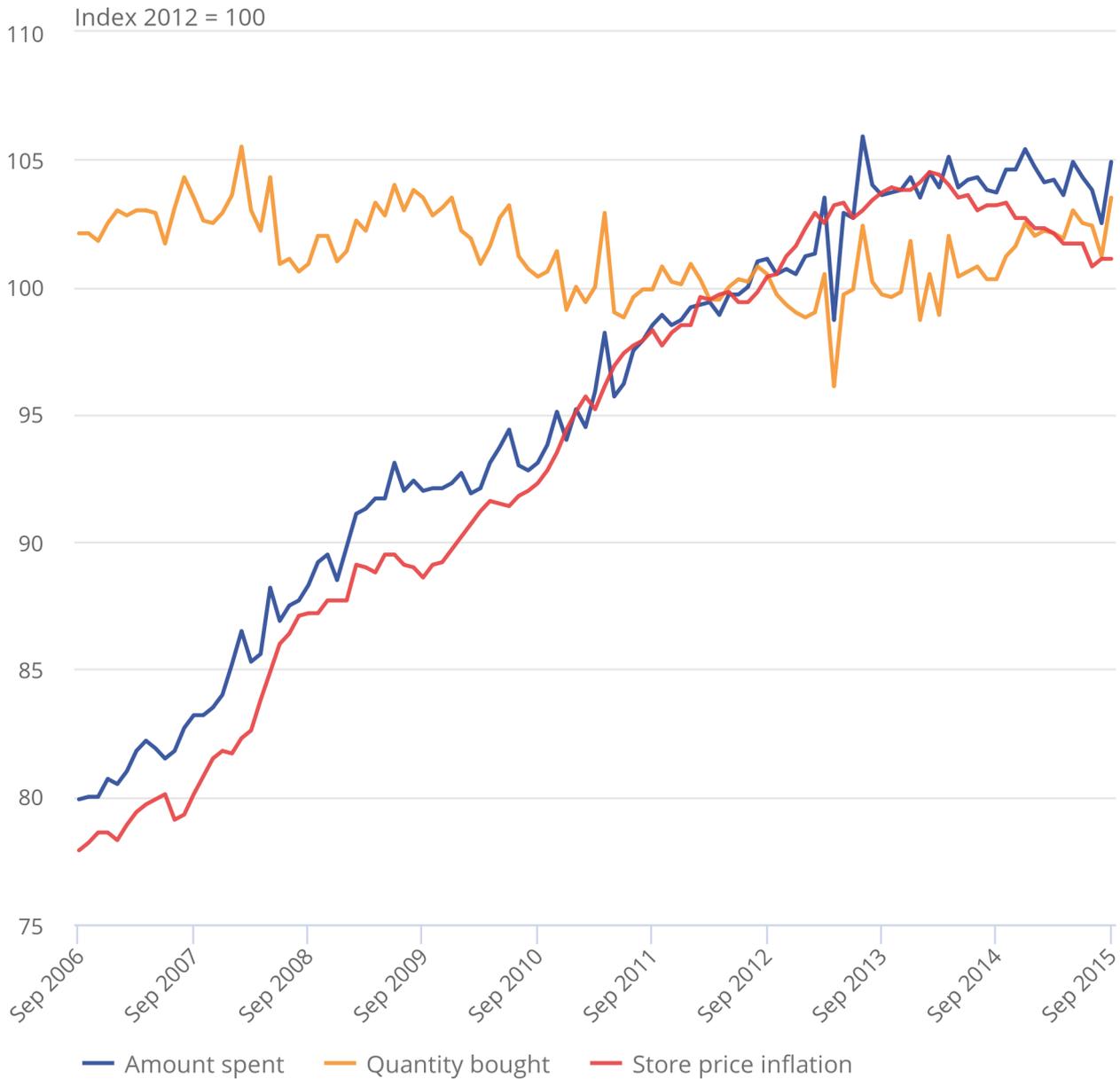
Feedback from food stores suggests that some of the growth seen this period can be attributed to promotions centred around the Rugby World Cup.

Figure 2: Food stores seasonally adjusted volumes, values and non-seasonally adjusted store price inflation

Great Britain, January 2006 to September 2015

Figure 2: Food stores seasonally adjusted volumes, values and non-seasonally adjusted store price inflation

Great Britain, January 2006 to September 2015



Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

The performance in non-food stores as shown in Figure 3 is similar to that of all retailing. In September 2015, the quantity bought increased by 6.5%, the 30th consecutive month of growth, and compared with May 2013, the quantity bought in non-food stores increased by 13.5%. Thus, much of the growth seen in the quantity bought in all retailing came from growth in the quantity bought in non-food stores.

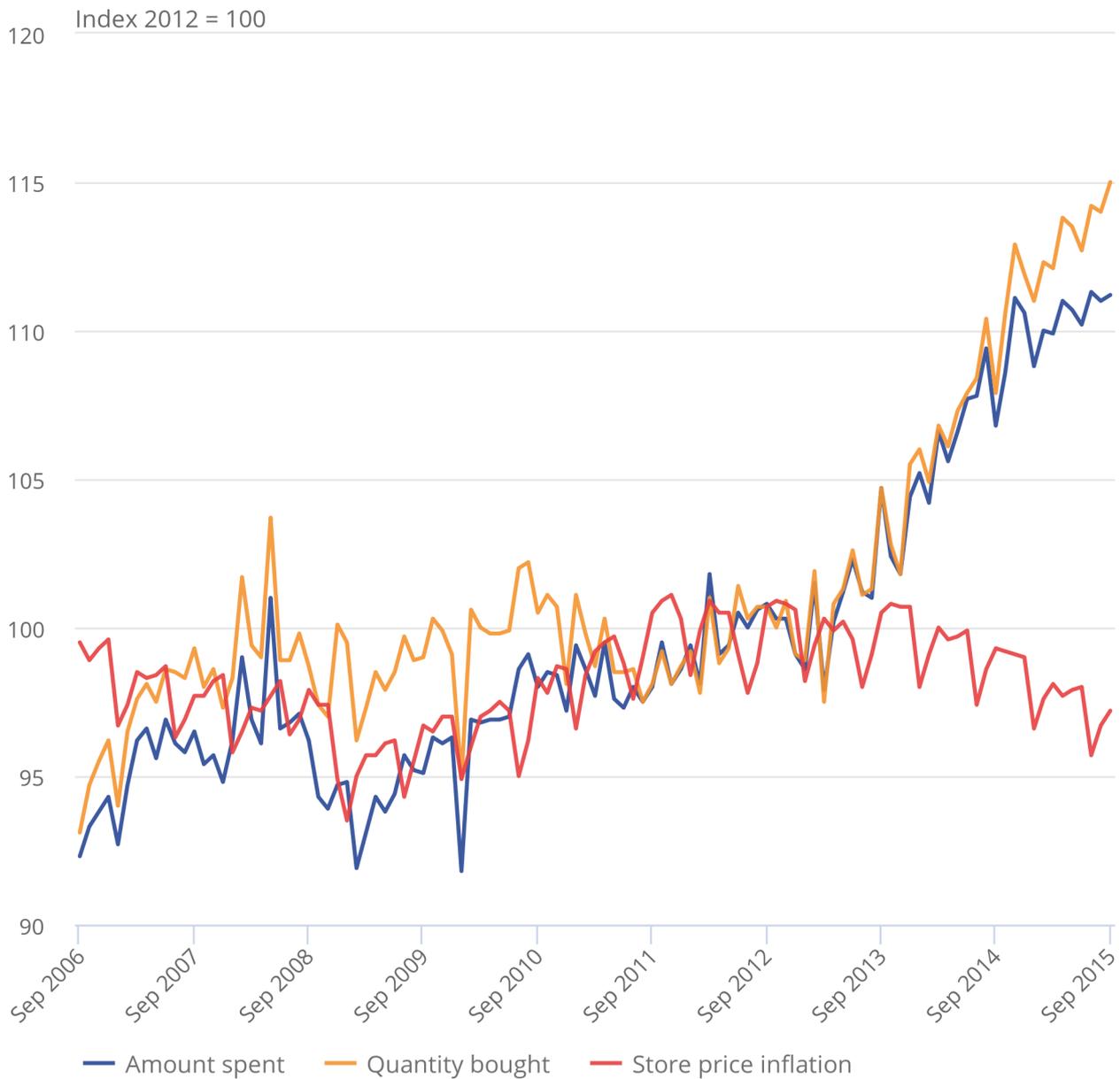
Average store prices in non-food stores are more seasonal than for all retailers or food stores, reflecting sales periods that will be seen in clothing, department and furniture stores for example.

Figure 3: Non-food stores seasonally adjusted volumes, values and non-seasonally adjusted store price inflation

Great Britain, January 2006 to September 2015

Figure 3: Non-food stores seasonally adjusted volumes, values and non-seasonally adjusted store price inflation

Great Britain, January 2006 to September 2015



Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

Spending at non-food stores could be viewed as discretionary, whereas spending in food stores could be viewed as essential. Thus, the more consistent picture in the quantity bought in food stores suggest consumers continue to purchase a similar amount of goods in these stores.

The latest [quarterly national accounts \(QNA\)](#) data suggest that real household disposable income increased by 5.2% in Quarter 2 (Apr to June) 2015 when compared with Quarter 2 (Apr to June) 2013, it appears that the extra money available to consumers may have been spent in non-food stores. Furthermore, if store prices continue to fall this will increase the money available to consumers.

7 . Contributions to growth

The retail industry is divided into 4 retail sectors:

- predominantly food stores (for example, supermarkets, specialist food stores and sales of alcoholic drinks and tobacco)
- predominantly non-food stores (for example, non-specialised stores, such as department stores, textiles, clothing and footwear, household goods and other stores)
- non-store retailing (for example, mail order, catalogues and market stalls)
- stores selling automotive fuel (petrol stations)

In September 2015, for every pound spent in the retail industry:

- 41 pence was spent in food stores
- 42 pence in non-food stores
- 7 pence in non-store retailing
- 10 pence in stores selling automotive fuel

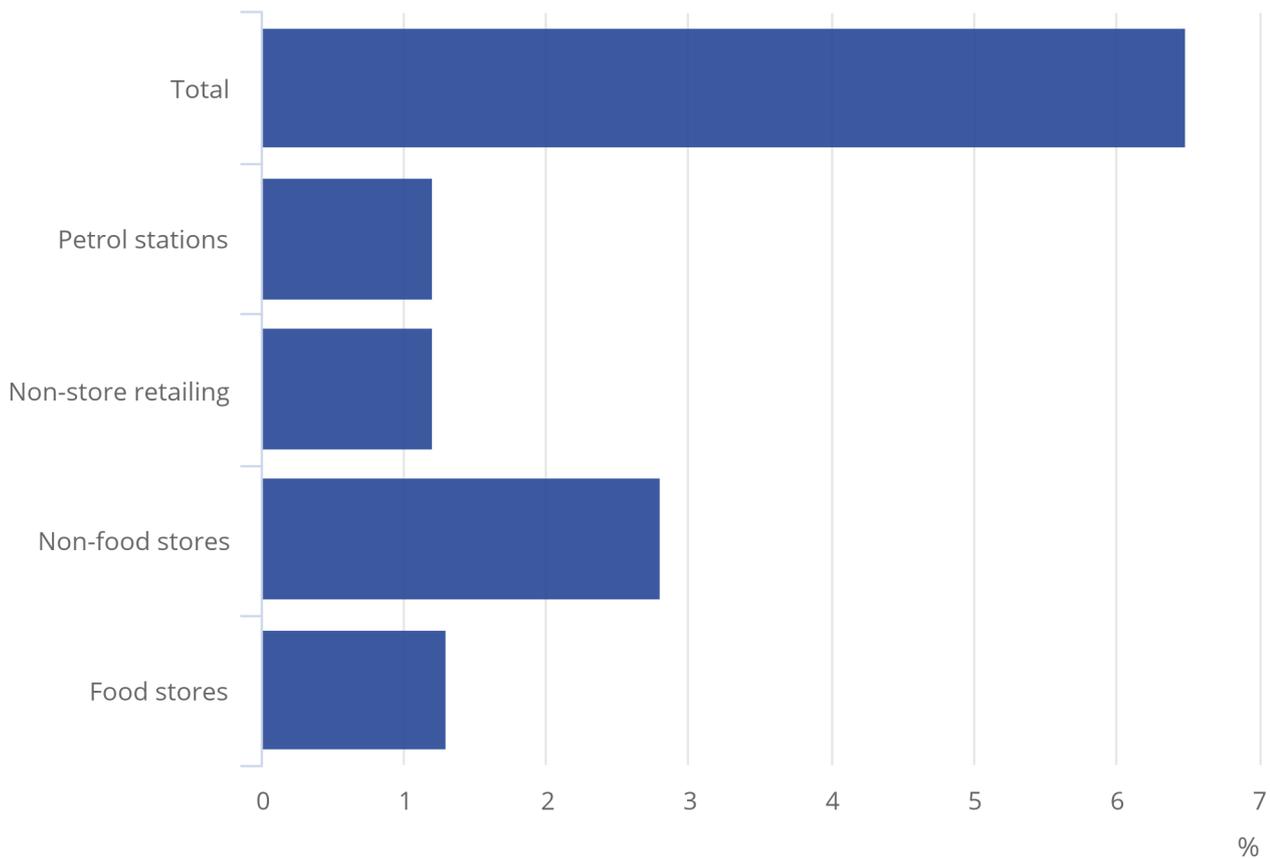
Using these as weights, along with the year-on-year growth rates, we can calculate how each sector contributed to the total year-on-year growth in the quantity bought.

Figures 4 and 5 show the contribution of each sector to the quantity bought (volume) and amount spent (value) in the retail industry between September 2015 and September 2014.

Figure 4: Contributions to year-on-year volume growth from the 4 main retail sectors (September 2015 compared with September 2014)

Great Britain

Figure 4: Contributions to year-on-year volume growth from the 4 main retail sectors (September 2015 compared with September 2014)



Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

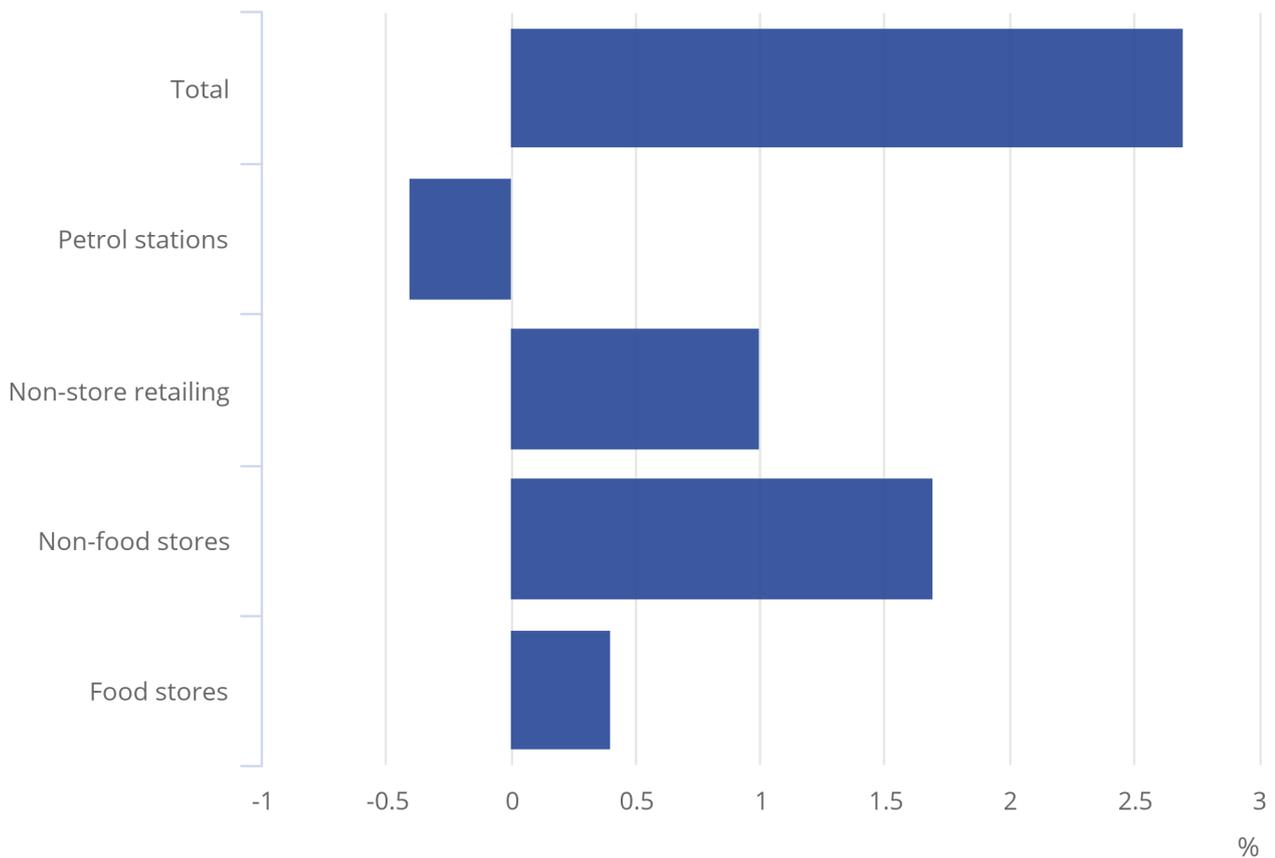
Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

In September 2015, all 4 main retail sectors saw an increase in the quantity bought (volume). The largest contribution came from the non-food stores sector.

Figure 5: Contributions to year-on-year value growth from the 4 main retail sectors (September 2015 compared with September 2014)

Great Britain

Figure 5: Contributions to year-on-year value growth from the 4 main retail sectors (September 2015 compared with September 2014)
Great Britain



Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

In September 2015, 3 out of the 4 main sectors (non-store retailing, non-food stores and food stores) contributed to the increase in amount spent (value). The largest contribution came from the non-food stores sector.

8 . Distribution analysis

Table 4 shows how sales varied among different-sized retailers. It shows the distribution of reported change in sales values of businesses (from the RSI sample), ranked by size of business (based on number of employees). Businesses with 0 to 9 employees saw the largest growth in the amount spent in September 2015 compared with September 2014 (21.1%). Businesses with 100 and over employees showed growth of 2.5%.

Table 4: Change in reported retail sales values between September 2015 and September 2014

Great Britain

		%
Number of employees	Weights	Growth since September 2014
100 and over	77.3	2.5
40 to 99	2.5	10.9
10 to 39	6.5	12.0
0 to 9	13.7	21.1

Source: Office for National Statistics

Notes:

1. The table contains information only from businesses that reported in September 2014 and September 2015; it shows reported actual changes in their sales

More information on the performance of the retail industry by store type and size can be found in the Business Analysis reference table.

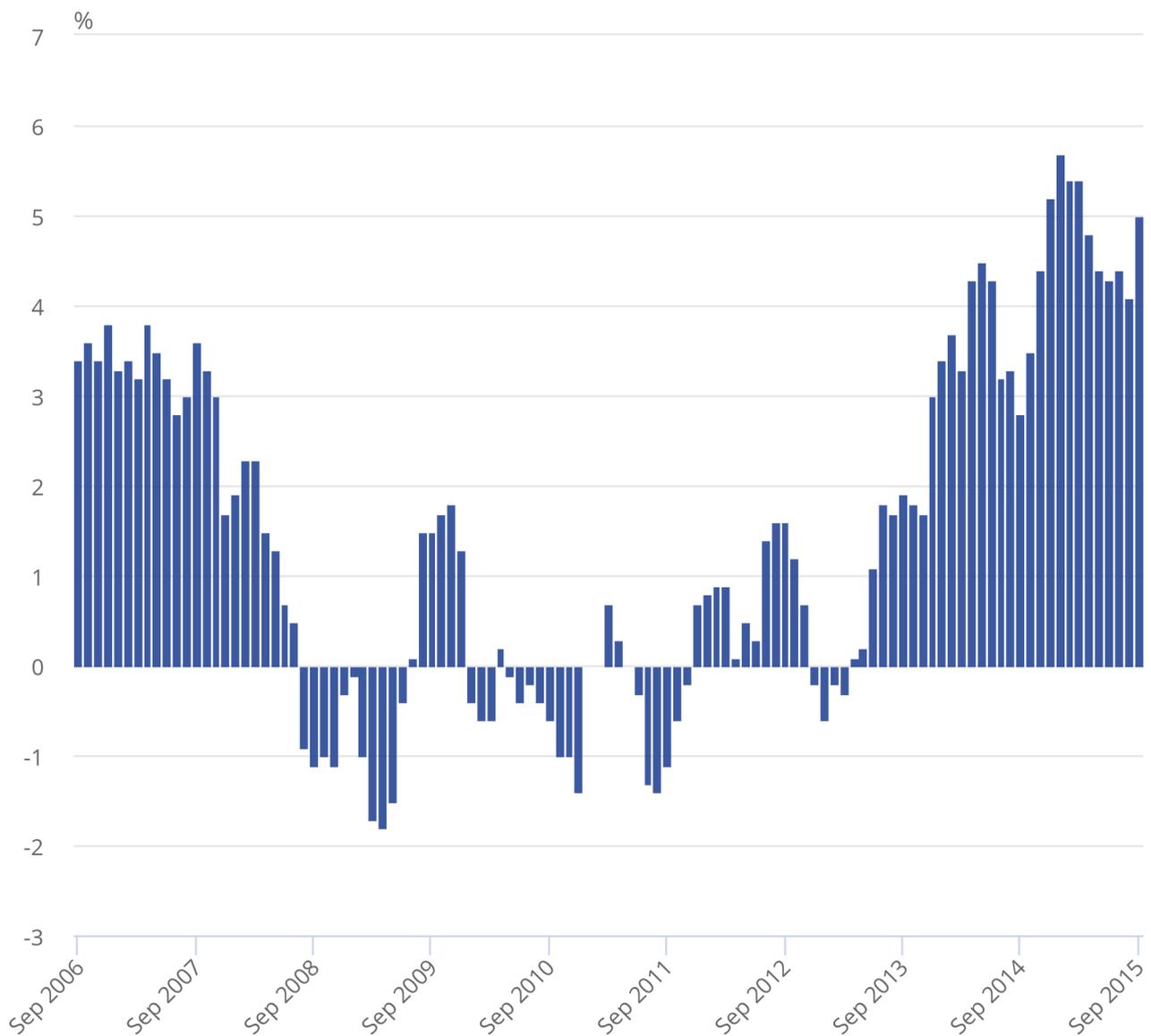
9 . Economic context

Figure 6: 3 month on 3 month a year earlier growth in the volume of retail sales, 3 months to September 2006 – three months to September 2015

Great Britain

Figure 6: 3 month on 3 month a year earlier growth in the volume of retail sales, 3 months to September 2006 – three months to September 2015

Great Britain



Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

Figure 6 compares a rolling 3 month period with the same period in the previous year, and highlights that retail sales started to grow strongly from mid 2013. Since January 2015, the rate of growth has experienced a general downward trend, but rose more strongly in September 2015.

Three distinct periods emerge from Figure 6. Between September 2006 and July 2008 retail sales volumes were experiencing continuous growth, although to a different degree, with the volume of sales increasing by 2.6% over the period as a whole. Growth in inflation (Consumer Prices Index) was lower than average weekly earnings over most of this period; this resulted in rising real earnings, an indicator of the purchasing power of consumers.

However, between August 2008 and May 2013, the volume of retail sales fluctuated between periods of contraction and expansion, and as a result broadly the same volume of sales were recorded toward the beginning and end of the period. This weakness may be partly explained by the economic climate over this period. Growth in average weekly earnings was lower than inflation over most of the period, which implies that earnings fell in real terms. However, the value of retail sales continued to grow, increasing by 12.9% over the period, reflecting rising prices between these dates.

The third period shown in Figure 6 started in June 2013, when growth in volume terms began to increase notably, despite average weekly earnings growing at a slower rate than CPI until September 2014. In 2013 prices in retail outlets began to fall and this accelerated throughout 2014 and 2015 and coincided with increased growth in the volume of retail sales over this period. In addition, this upturn in spending has been accompanied by a decline in the savings ratio, from an average of 9.0% over the period 2008 to 2012, to an average of 5.6% over the period 2013 to 2014.

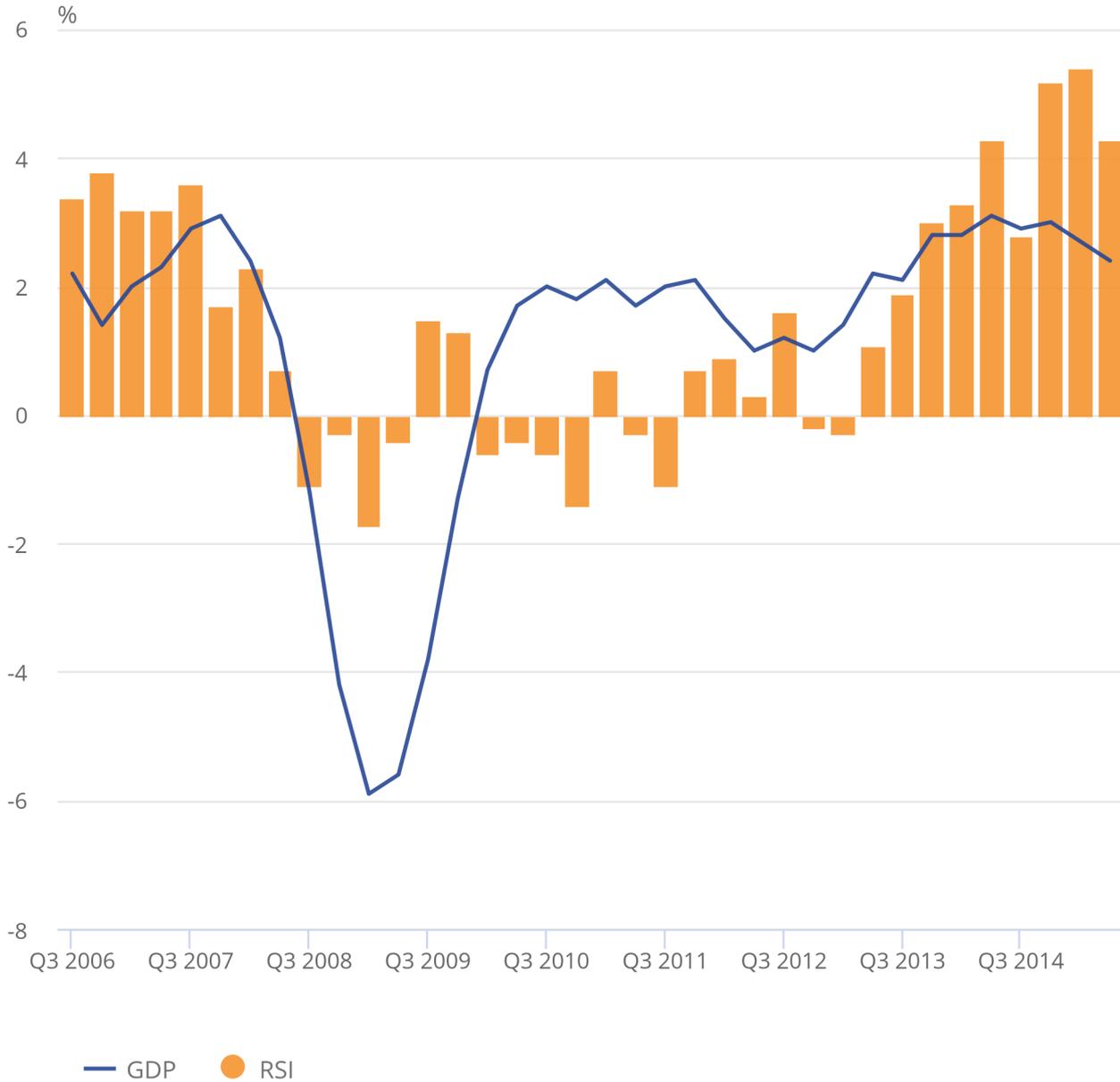
Figure 7 plots the volume measures of the retail sales index (RSI) and the gross domestic product at market price (GDP), on a quarter on same quarter a year ago basis. Retail sales account for 5.7% of GDP and have a procyclical growth path, which means that during an economy's expansion retail sales are generally growing, but they contract during less favourable economic conditions. This trend can be seen in Figure 7 with retail sales growing, although to a varying degree, between Quarter 3 (July to Sept) 2006 and Quarter 1 (Jan to Mar) 2008, when the economy was also growing. However, during the economy's downturn (Quarter 1 (Jan to Mar) 2008 and Quarter 2 (Apr to June) 2009) the volume of retail sales declined. Between Quarter 1 (Jan to Mar) 2010 and Quarter 1 (Jan to Mar) 2013 the retail sales index experienced fluctuating growth, which coincided with a period of broadly stable growth in GDP albeit at a slower rate when compared to Quarter 1 (Jan to Mar) 2008. Since Quarter 2 (Apr to June) 2013 both GDP and RSI grew at a stronger rate, although there was a slight easing in growth in Quarter 2 (Apr to June) 2015.

Figure 7: Chained volume measure RSI and GDP change on same quarter a year ago, Quarter 3 (July to Sept) 2006 to Quarter 2 (Apr to June) 2015

Great Britain

Figure 7: Chained volume measure RSI and GDP change on same quarter a year ago, Quarter 3 (July to Sept) 2006 to Quarter 2 (Apr to June) 2015

Great Britain



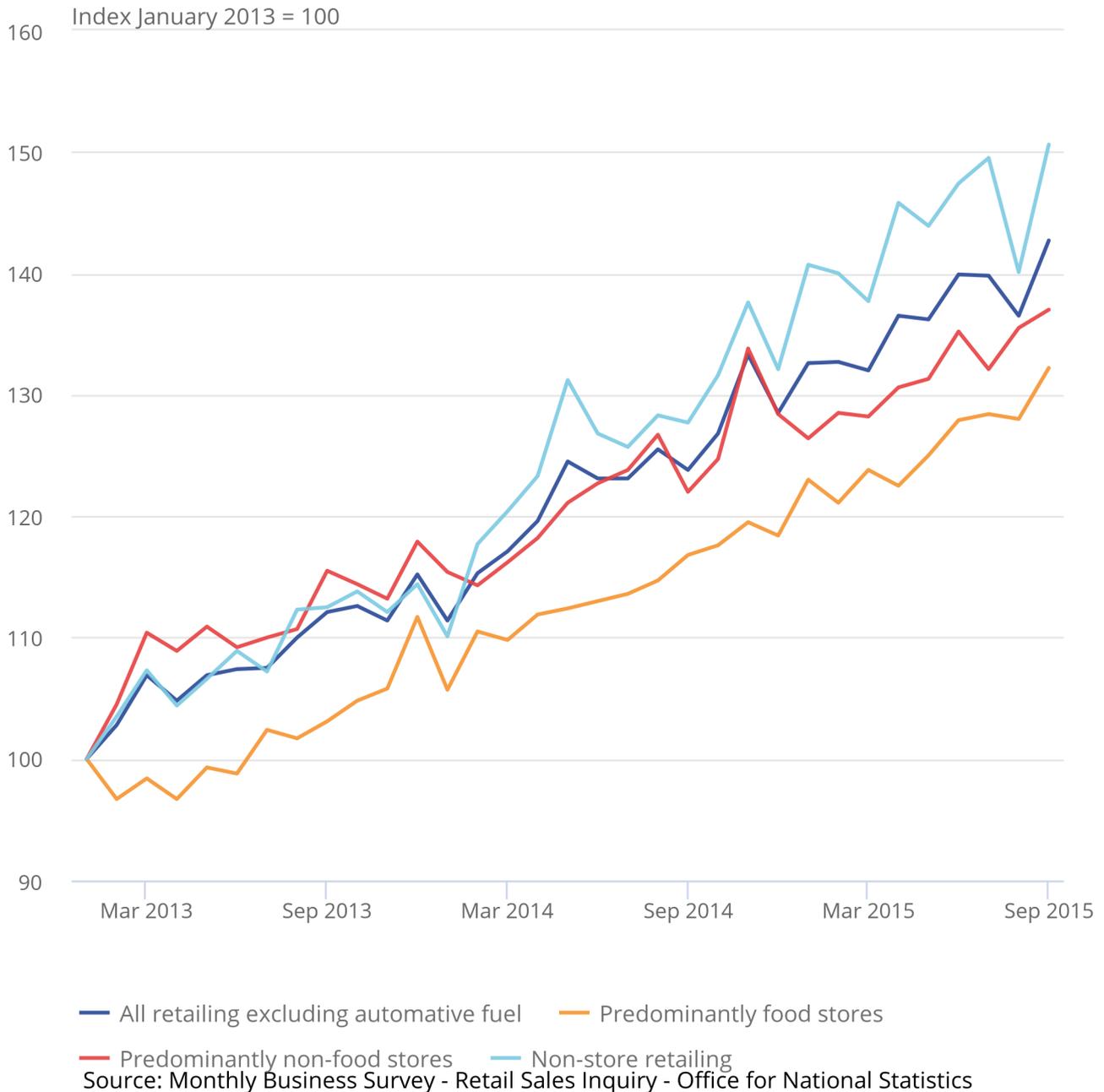
Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

Figure 8: Value of the 3 main components of internet sales and all retailing excluding automotive fuel, January 2013 to September 2015

Great Britain

Figure 8: Value of the 3 main components of internet sales and all retailing excluding automotive fuel, January 2013 to September 2015
Great Britain



Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

In last month's [release](#) the prices and volumes of the four main components of RSI were examined. In this month's release we look at the value of internet retail sales, broken down into its main components as shown in Figure 8. Internet sales are included in the non-store retailing category of RSI, which accounts for 7.0% of all retailing. Internet sales can be broken into predominantly food stores, predominantly non-food stores and non-store retailing which account for 15.1%, 36.4% and 48.5% of all retailing respectively. Figure 8 shows that the value of all retailing excluding automotive fuel and the 3 categories of internet sales has been growing since January 2013, although to a different degree. In 2013 the value of non-store retailing was growing at a similar pace to all retailing excluding automotive fuels and at a slower rate than predominantly non-food stores. However, these trends were reversed in 2014 with non-store retailing becoming the fastest growing component of sales. Between January 2013 and September 2015 non-store retailing increased in value by 50.6%, compared with 42.7% for all retailing excluding automotive fuel. Over the same period predominantly non-food stores and predominantly food stores also saw an increase in their value but to a smaller extent at 37.0% and 32.2%, respectively.

10 . International data

The only international estimate of retail sales available for September 2015 was published by the US Census Bureau on 14 October 2015. In its advanced [retail sales estimates for September 2015](#), the amount spent in the US retail industry, including motor vehicles and parts and food services, increased by 0.1% from the previous month and increased by 2.4% compared with September 2014. Total sales for the 3 months to September 2015 were up 2.3% from the same period a year ago.

The latest estimates of the volume of retail trade across the European Union, from [Eurostat](#) for August 2015, show the seasonally adjusted volume of retail trade remained stable in both the euro area (EA19) and EU28 when compared with July 2015. Compared with August 2014, the retail sales index increased by 2.3% in the EA19 and by 2.6% in the EU28. Note that an accurate comparison cannot be made as Eurostat data are calculated on a 2010 = 100 basis, while data for Great Britain are calculated on a 2012 = 100 basis.

11. Background notes

1. Future improvements

We are considering removing the calendar effects table from the Methods section in the background notes. Can users provide feedback to retail.sales.enquiries@ons.gov.uk if this would cause any issues.

2. What's new

Estimates in this release have incorporated the re-basing and re-referencing of the indices to 2012 = 100 to align with the National Accounts outputs.

Estimates in this release have also incorporated the results of the 2015 annual seasonal adjustment review.

3. Understanding the data

1. [Quick Guide to the Retail Sales Index \(117.1 Kb Pdf\)](#)

2. Interpreting the data

- The Retail Sales Index (RSI) is derived from a monthly survey of 5,000 businesses in Great Britain. The sample represents the whole retail sector and includes the 900 largest retailers and a representative panel of smaller businesses. Collectively all of these businesses cover approximately 90% of the retail industry in terms of turnover.
- The RSI covers sales only from businesses classified as retailers according to the [Standard Industrial Classification 2007 \(SIC 2007\)](#), consistent with the international [NACE Rev 2](#) classification of industries. The retail industry is division 47 of the SIC 2007 and retailing is defined as the sale of goods to the general public for household consumption. Consequently, the RSI includes all internet businesses whose primary function is retailing and also covers internet sales by other British retailers, such as online sales by supermarkets, department stores and catalogue companies. The

RSI does not cover household spending on services bought from the retail industry as it is designed to only cover goods. Respondents are asked to separate out the non-goods elements of their sales, for example, income from cafes. Consequently, online sales of services by retailers, such as car insurance, are also excluded.

The monthly survey collects 2 figures from each sampled business: the total turnover for retail sales for the standard trading period, and a separate figure for internet sales. The total turnover will include internet sales. The separation of the internet sales figure allows an estimate relating to internet sales to be calculated.

4. Definitions and explanations

- The **value** or current price series records the growth of the value of sales “through the till” before any adjustment for the effects of price changes.
- The **volume** or constant price series are created by removing the effect of price changes from the value series. The Consumer Prices Index (CPI) is the main source of the information required on price changes. In brief, a deflator for each type of store (5-digit SIC) is derived by weighting together the CPI components for the appropriate commodities, the weights being based on the pattern of sales in the base year. These deflators are then applied to the value data to produce volume series.
- The **implied deflator** or **strong text**the estimated price of goods is derived by dividing the non-seasonally adjusted value and volume data to leave a price relative. In general, this implied price deflator should be quite close to the retail component of the CPI. More information on the implied price deflator can be found in the [Quick Guide to Retail Sales \(195 Kb Pdf\)](#)

5. Use of the data

The value and volume measures of retail sales estimates are widely used in private and public sector organisations, both domestically and internationally. For example, private sector institutions such as investment banks, the retail industry itself and retail groups use the data to inform decisions on the current economic performance of the retail industry. These organisations are most interested in a long-term view of the retail sector, taken from the year-on-year growth rates. Public sector institutions use the data to help inform decision and policy making. They tend to be most interested in a snapshot view of the retail industry, which is taken from the month-on-month growth rates.

In a recent survey users found the Retail Sales Index statistics important to their work. It was found crucial for financial modelling of sectors and recognised as a timely indicator for the economy. It has been used as a comparative tool with BRC and other market sources to boost context. Practically, it has been utilised as a comparative tool for business performance and the ability to access internet retail sales has been particularly beneficial to some. On a non-industry level, the RSI was perceived as important for informing political opinions or simply for curiosity by individuals who were not necessarily utilising it as a reference for work purposes.

The Retail Sales Index feeds into estimates of GDP in 2 ways. Firstly, it feeds into the services industries when GDP is measured from the output approach. Secondly, it is a data source used to measure household final consumption expenditure, which feeds into GDP estimates when measured from the expenditure approach.

The data feed into the [first \(or preliminary\) estimate of GDP](#), the [second estimate of GDP](#) and the third estimate, published in the [Quarterly national accounts](#).

6. Methods

Information on [retail sales methodology](#) is available on our website

1. Composition of the data

Retail sales estimates are based on financial data collected through the monthly Retail Sales Inquiry. Response rates at the time of publication are included for the current month, and the 3 months prior. The response rates for those historical periods are updated to reflect the current level of response, incorporating data from late returns. There are 2 response rates included with 1 percentage for the amount of turnover returned, and the other percentage for the amount of questionnaire forms. Historical response rates are available in the quality information reference table.

Table 5: Overall response rates (%)

Great Britain

Year Period	%	
	Turnover	Questionnaire
2015 September	90.3	62.4
August	98.0	74.8
July	98.7	77.2
June	99.2	77.2

Source: Office for National Statistics

2. Seasonal adjustment

Seasonally adjusted estimates are derived by estimating and removing calendar effects (for example, Easter moving between March and May) and seasonal effects (for example, increased spending in January as a result of Christmas) from the non-seasonally adjusted (NSA) estimates. Seasonal adjustment is performed each month and reviewed each year, using the standard, widely used software, X-13-ARIMA-SEATS. Before adjusting for seasonality, prior adjustments are made for calendar effects (where statistically significant), such as returns that do not comply with the standard trading period (there is more information in the Methods, Calendar effects section), bank holidays, Easter and the day of the week on which Christmas occurs.

The data collected from the retail sales survey estimate the amount of money taken through the tills of retailers; these are non-seasonally adjusted data. These data consist of 3 components:

- **trend** which describes long-term or underlying movements within the data
- **seasonal** which describes regular variation around the trend, that is, peaks and troughs within the time series (the most obvious is the peak in January and the fall in February)

- **irregular** or “noise”, for example, deeper falls within the non-seasonally adjusted series due to bad weather impacting on retail sales

To ease interpretation of the underlying movements in the data, the seasonal adjustment process estimates and removes the seasonal component. It leaves a seasonally adjusted time series made up of the trend and irregular components.

In the non-seasonally adjusted RSI we see large rises in January each year and a fall in the following February, but these are not evident in the seasonally adjusted index. This peak in January is larger than the subsequent fall, but the trend and irregular components in both months are likely to be similar. This means that the movements in the unadjusted series are almost completely a result of the seasonal pattern.

3. Calendar effects

The calculation of the RSI has an adjustment to compensate for calendar effects that come from the differences in reporting periods. The reporting period for September 2015 was 30 August 2015 to 03 October 2015, compared with 31 August 2014 to 04 October 2014 in the previous year. Table 6 shows the differences between the calendar and seasonally adjusted estimates.

Table 6: Retail sales, calendar effects, September 2015

Great Britain		
	Year-on-year percentage change	
	Value	Volume
Calendar adjusted	2.9	6.1
Seasonally adjusted	2.7	6.5

Source: Office for National Statistics

7. Quality

1. Basic quality information

- The standard reporting periods can change over time due to the movement of the calendar. Every 5 or 6 years the standard reporting periods are brought back into line by adding an extra week. For example, January is typically a 4 week standard period but January 1986, 1991, 1996, 2002, 2008 and 2014 were all 5 week standard periods. The non-seasonally adjusted estimates will still contain calendar effects. If the non-seasonally adjusted estimates are used for analysis, this can lead to a distortion depending on the timing of the standard reporting period in relation to the calendar, previous reporting periods and how trading activity changes over time.
- The non-seasonally adjusted series contain elements relating to the impact of the standard reporting period, moving seasonality and trading day activity. When making comparisons, you users should focus on the seasonally adjusted estimates as these have the systematic calendar-related component removed. Due to the volatility of the monthly data, growth rates should be calculated using an average of the latest 3 months of the seasonally adjusted estimates.
- When interpreting the data, the relative weighted contributions of the sectors in the all retailing series should be considered. Based on SIC 2007 data, total retail sales consists of: predominantly food stores 40.9%, predominantly non-food stores 42.0%, non-store retailing 7.0% and automotive fuel 10.1%.

2. Standard error

- Standard errors determine the spread of possible movements and are a means of assessing the accuracy of the non-seasonally adjusted month-on-month and year-on-year estimates of all retail sales volumes. The lower the standard error, the more confident we can be that the estimate is close to the true value for the retail population.

- The standard error of year-on-year movement for “All Retailing” is 0.9%. It has remained at 0.9% since June 2014. It was lower at 0.8% in May 2014. Before this period, the year-on-year movements mostly remained at 0.9% with the only other fluctuations occurring in September 2013 and September 2013, where there was a standard error of 1.0%.
- Table 7 shows the year-on-year movement for the non-seasonally adjusted chained volume measure alongside the standard error, across the published sector breakdowns for September 2014 and September 2015. The differences between September 2014 and September 2015 highlight that the standard error has increased the most in “Non-store retailing” and “Household goods stores”. The greatest decreases are for “Textiles, clothing and footwear stores”.

- More information on standard errors can be found in the “Retail Sales Quality Tables” reference tables, which are part of this release.

Table 7: Year-on-year estimates and standard errors (chained volume measure, non-seasonally adjusted) September 2014 and September 2015

Great Britain					
Sector	September 2014			September 2015	
	12-month movement September 2014 (percentage change)	Standard error of 12-month movement, median (percentage points)	12-month movement September 2015 (percentage change)	Standard error of 12-month movement, median (percentage points)	
All retailing	2.2	0.9	4.6	0.9	
Predominantly food stores	0.6	0.6	2.7	0.6	
Predominantly non-food stores	3.2	1.1	5.8	1.1	
Non-specialised stores	6.9	1.6	4.7	1.7	
Textile, clothing and footwear stores	-2.1	1.4	4.6	1.2	
Household goods stores	6.3	1.5	10.7	1.7	
Other stores	4.1	2.7	4.3	2.7	
Non-store retailing	12.4	4.5	6.1	5.2	
Automotive fuel	-1.3	3.9	6.2	4.0	

Source: Office for National Statistics

3. Summary quality report

The RSI Quality and Methodology Information paper (245.6 Kb Pdf) details the intended uses of the statistics in this bulletin, their general quality and the methods used to produce them.

4. Revisions triangles

Revisions to data provide one indication of the reliability of main indicators. Table 9 shows summary information on the size and direction of the revisions made to the volume data covering a 5 year period. Note that changes in definition and classification mean that the revisions analysis is not conceptually the same over time.

Table 8: Revision triangles summary, September 2015

Great Britain		
Growth in latest period (%)	Revisions between first publication and estimates 12 months later (percentage points)	
	Average over the last 5 years (mean revision)	Average over the last 5 years without regard to sign (average absolute revision)
0.9	-0.20	0.29

Latest 3 months
compared with previous 3
months

Latest month compared
with previous month

1.9

-0.13

0.35

Source: Office for National Statistics

The data section of this bulletin provides these estimates and the calculations behind the averages in the table.

8. Relevant links

A [subset of the retail sales dataset](#) will be published on our Data Explorer page. Please note the link will not work until the data are published.

[Disclosure control policy](#)

[Comparability of RSI Sales and External Indicators](#)

[RSI Workplan](#)

[RSI Quality and Methodology Information paper](#)

[Revisions to the Retail Sales Index](#)

[Has 2014 been a good year for retailers?](#)

[Overview of internet retail sales in 2014](#)

[BRC Sales Monitor August 2015](#)

[International Measures of Retail Sales](#)

[National Accounts Workplan](#)

[Why is the retail sales revisions policy different from the National Accounts revisions policy?](#)

[14 ways ONS statistics help you understand the economy - A closer look at the circular flow of income](#)

[Impact of quarterly employment question on the monthly survey response](#)

[Investigating the effect of quarterly collection of employee jobs data on the estimated standard error of change for total turnover on the Monthly Business Survey](#)

[Government Statistical Service \(GSS\) uncertainty guidance](#)

9. Publication policy

Details of the policy governing the release of new data are available from our [Media Relations Office](#). Also available is a list of the organisations given [pre-publication access](#) to the contents of this bulletin.

Accessing data

The complete run of data in the tables of this statistical bulletin is available to view and download in electronic format using our Time Series Data service. Users can download the complete bulletin in a choice of zipped formats, or view and download their own sections of individual series.

Alternatively, for low-cost tailored data call 0845 601 3034 or email info@ons.gsi.gov.uk

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10. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gsi.gov.uk