



Total Factor Productivity of the United Kingdom Food Chain 2013 – provisional estimate

1. Key messages

- Total factor productivity of the UK food chain beyond the farmgate is unchanged between 2012 and 2013. It has been rising gradually since 2002.
- Benchmarking against a wider economy measure shows that the average annual growth in the food chain between 2003 and 2013 was 0.4 per cent compared to 0.2 per cent in the wider economy.
- Productivity in both food manufacture and food wholesale have risen overall since 2000 whilst productivity of food retail is at a similar level to 2000 and productivity in catering has fallen slightly since 2000.
- Comparing 2013 with 2012, the manufacturing and wholesale sectors of the food industry saw year on year increases in productivity, while the non-residential catering sector saw a year on year decrease.

2. Overview

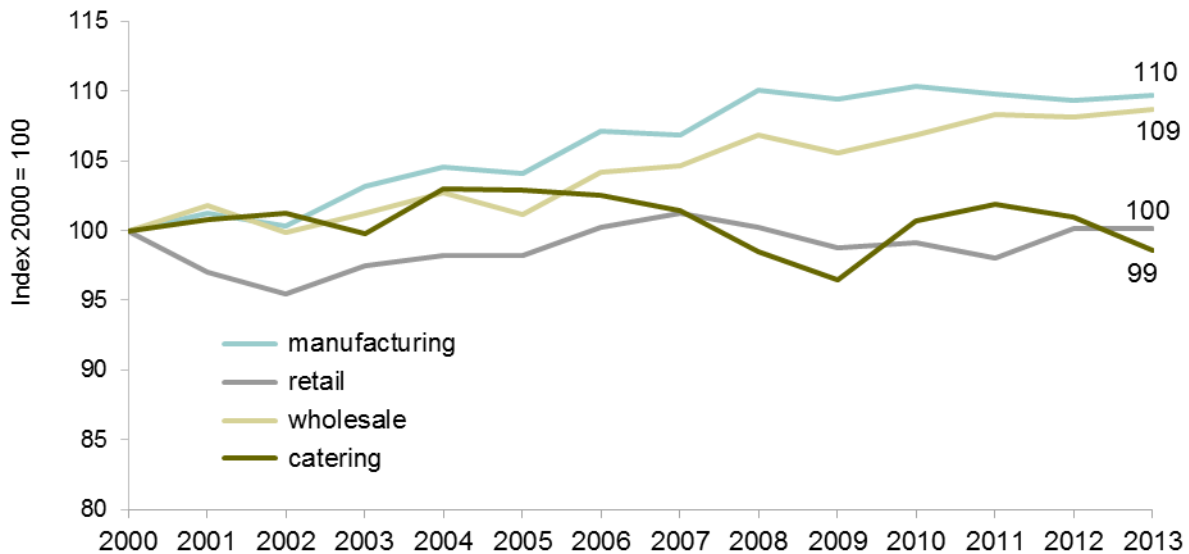
The total factor productivity (TFP) of the United Kingdom food chain is an indicator of the efficiency and competitiveness of the food industry within the United Kingdom. An increase in TFP indicates the industry is improving its competitiveness.

The food sector plays a significant part in our economy, accounting for about 7 per cent of national Gross Value Added. Four sectors make up the food chain: retail, manufacture, wholesale and non-residential catering. Both alcoholic and non-alcoholic drinks are included in food. Total factor productivity is a measure of the efficiency with which inputs are converted into outputs. For example, TFP increases if the volume of outputs increases while the volume of inputs stays the same. Similarly, TFP increases if the volume of inputs decreases while the volume of outputs stays the same. Although there is a practical limit on how much food people want to buy the volume of output can increase due to increases in quality of products and by increases in exports.

The estimate for 2013 is provisional because some of the underlying data used are provisional estimates. See the notes section for more details. The background data and charts in this release can be downloaded [here](#).

3. Sector headlines

Total Factor Productivity trends within the UK food industry 2000 to 2013



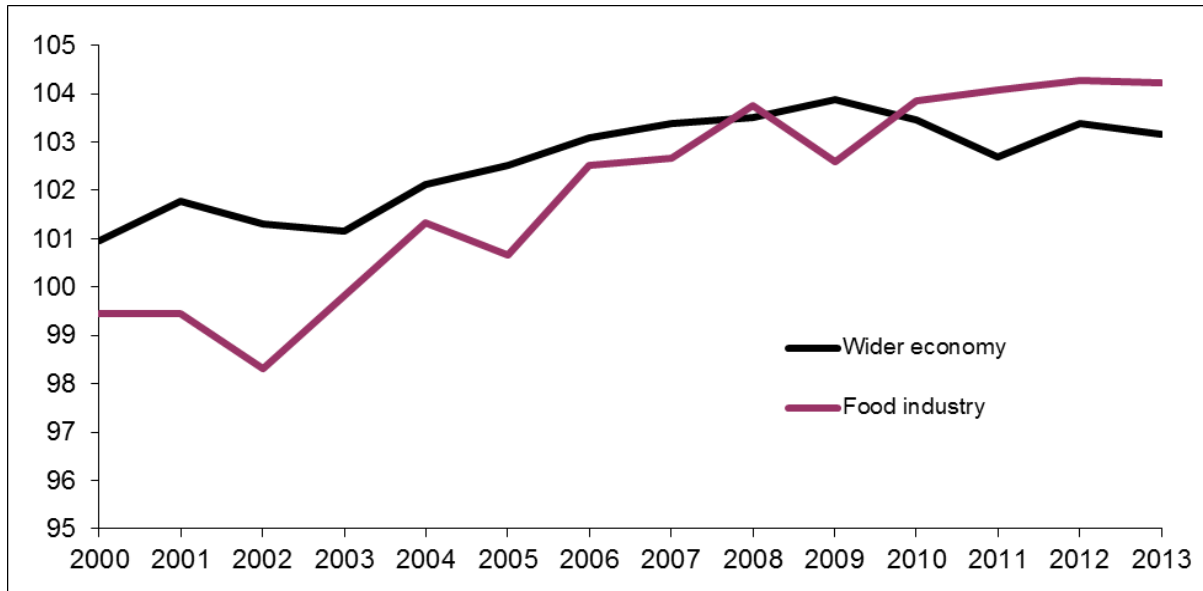
- **Food and drink wholesale** has had the largest gains in productivity (0.5 per cent) in the food chain since 2012 with labour volume dropping by 4 per cent. The increase in productivity in 2013 was due to decreases in input volumes being larger than the falls in the output volumes.
- **Food manufacturing** productivity has risen gradually since 2000 with an increase of 0.4 per cent since 2012, and an increase of 10 per cent since 2000.
- **Food retail** productivity in 2013 was 1.0 per cent higher than 2012. Productivity rose due to a decrease in purchases (2.8 per cent). Food prices were on average 3.8 per cent higher in 2012 than in 2011.
- **Non-residential catering** in 2013 showed a 2.4 per cent decrease in productivity. Productivity peaked in 2004 and declined to its lowest point in 2009. After year on year increases seen in 2010 and 2011, a 5.8 per cent increase in labour contributed to the fall in productivity for 2013. Catering output is more related to the state of the economy than other sectors of the food chain, which affects productivity. Labour inputs are also a higher proportion of total inputs, so increases in labour can also affect productivity.

4. Benchmarking the UK food chain against the wider economy

An estimate of total factor productivity in the wider economy is calculated for comparison purposes from the same data sources as the food chain using the same method. This measure does not cover the full economy but rather non-public sector industries that are covered by the Annual Business Inquiry/Annual Business Survey. Financial services are the largest sector not included in the measure.

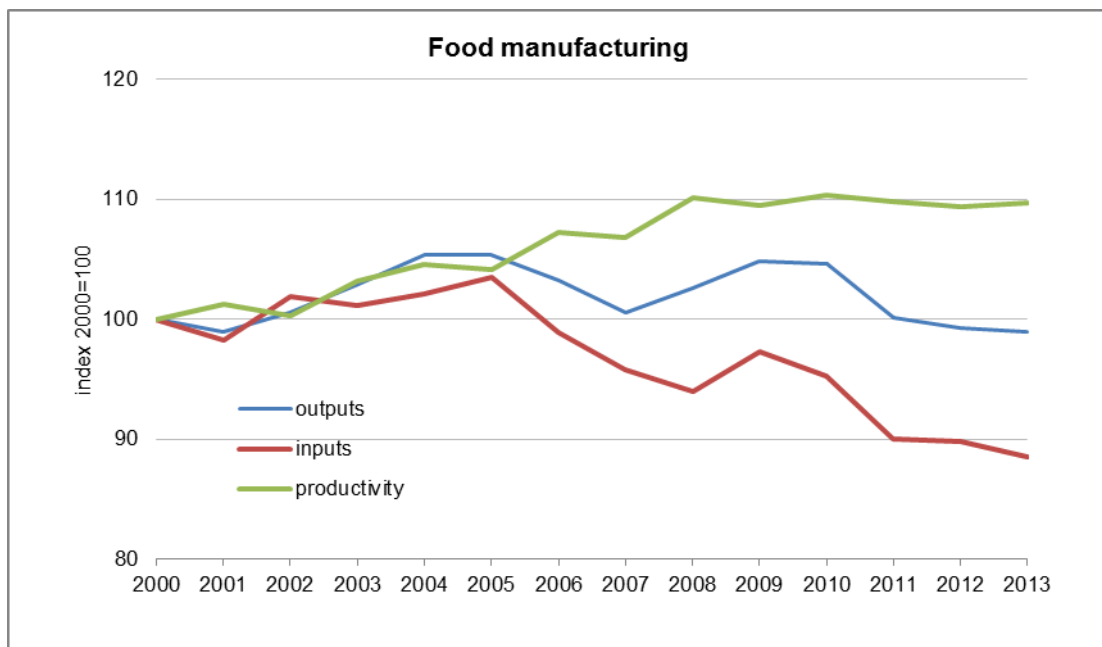
Between 2003 and 2013, the average annual growth rate of the food chain was 0.4 per cent whereas the wider economy's average annual growth rate was 0.2 per cent. Since 2010 the food chain has been outperforming the wider economy in competitiveness.

Total factor productivity of the UK food sector compared with the wider economy for the UK



5. Sector Analysis

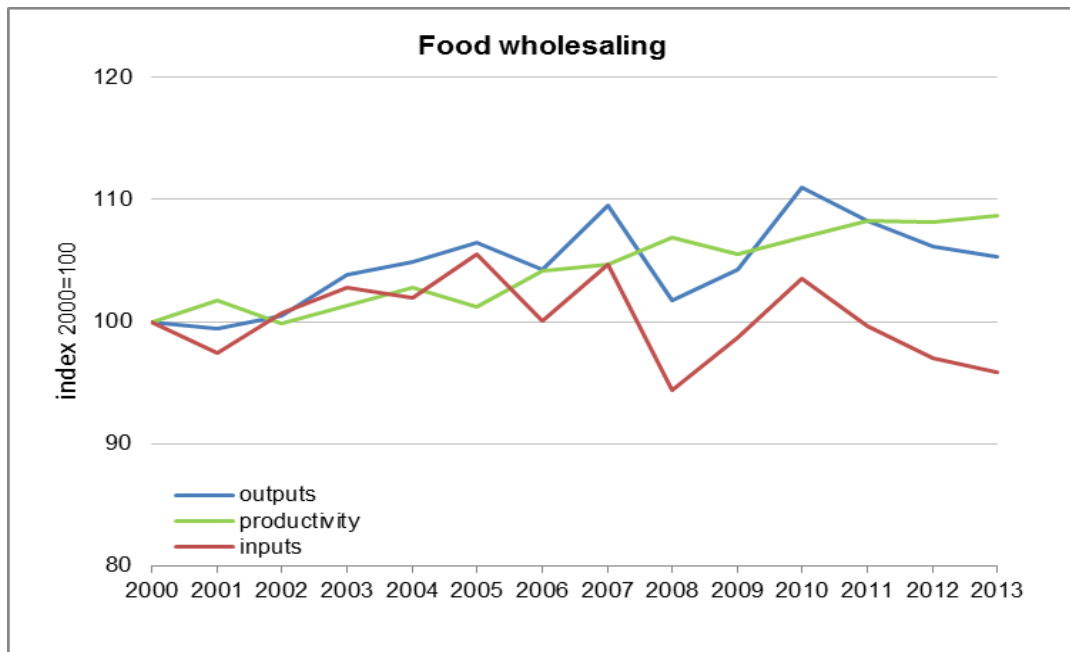
Manufacturing



- In 2013, total factor productivity in food and drink manufacturing increased by 0.4 per cent and has shown an average annual increase of 0.7 per cent since 2000.
- Productivity rose in 2013 due to decreases in the volume of inputs being larger than the fall in output volumes.

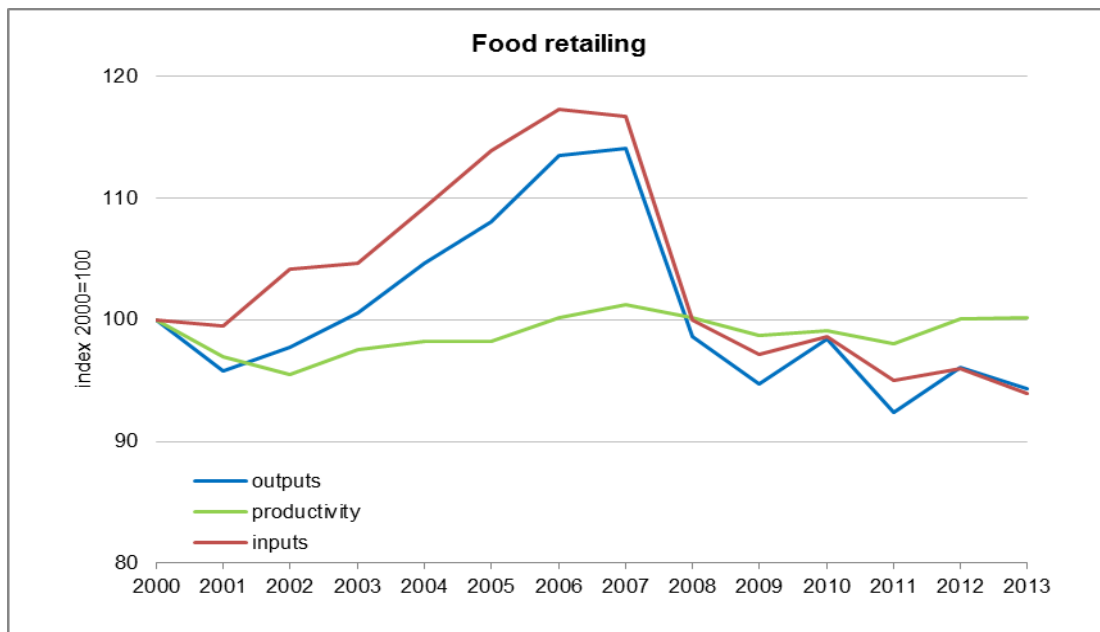
- Labour has increased since 2012 and was 5 per cent higher in 2013. Labour input is now 23 per cent lower than 2000.
- Output in food and drink manufacturing was 1 per cent lower in 2013 than 2000 and productivity was 10 per cent higher. Productivity growth has continued steadily since 2000 while output growth was strong up to 2005 but dropped sharply in 2006 and 2007. Output grew strongly in 2008 and 2009 but fell to its lowest level in 2013.
- In 2013, food and drink manufacturing contributed 29 per cent to Gross Value Added of the food chain beyond the farmgate.

Wholesaling



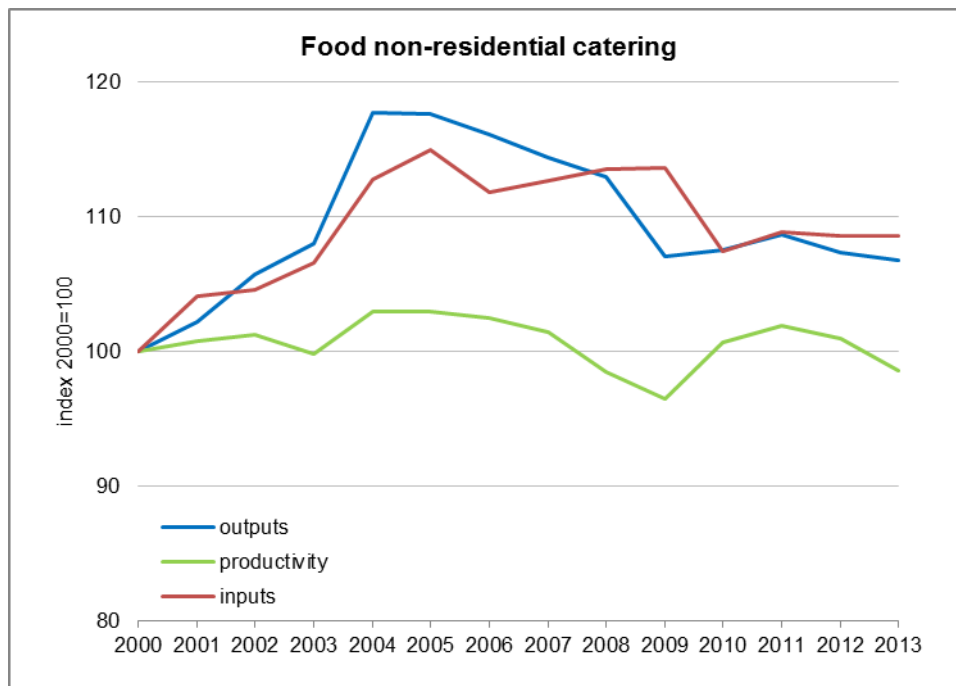
- Total factor productivity of food wholesaling increased by 0.5 per cent in 2013. It has been on an upward trend since 2000 with an average annual increase of 0.6 per cent. Output was 5.3 per cent higher in 2013 than 2000 with productivity for food wholesaling 8.7 per cent higher.
- In 2013 the wholesale sector contributed 11 per cent to Gross Value Added of the food chain beyond the farmgate.

Retail



- Productivity of the food retail sector peaked in 2007, however in 2013 it is largely unchanged from its level in 2000.
- Productivity in 2013 was largely unchanged, up 0.1 per cent from 2012. This was due to a 1.9 per cent increase in labour, but a 2.8 per cent fall in the volume of purchases. Food prices were on average 3.8 per cent higher in 2013 than in 2012.
- Labour input decreased from 2000 until 2010. However, since then there has been an increased in labour input resulting in labour being largely unchanged in 2013 from 2000.
- In 2011 output of food retailing was at its lowest point from 2000 onwards. From 2002 to 2007, output grew by 16.7 per cent probably due to people buying higher quality products. Since 2008, output contracted as consumers responded to higher food prices by trading down and buying less.
- Productivity growth in food retailing stopped in 2008 coinciding with higher food prices and lower output. Note that improvements in shopping environment and convenience are not included as outputs in the productivity calculation, which treats output as food sales.
- In 2013 food retailing contributed 31 per cent to Gross Value Added of the food chain beyond the farmgate.

Non-Residential Catering (NRC)



- Non-residential catering (NRC) showed a fall in productivity of 2.4 per cent in 2013. The decrease in productivity in 2013 was due to an increase in labour of 5.8 per cent.
- Productivity of NRC was at its strongest prior to the recession, then dipped to its lowest level in 2009. Since the recession there has been some increase, although in 2013 productivity was 1.5 per cent lower than in 2000. This sector would have been affected strongly by the recession that started in 2008 and lasted through most of 2009. These challenging economic times will make it difficult for companies to make proportionate savings across all inputs, especially with labour being a relatively high component. Consumers find it easier to cut on this form of spending on food. During periods of economic downturn it is likely that consumers will make savings through eating out less and switching to home cooking.
- Labour in NRC peaked in 2008 and is currently 6.4 per cent below that peak. Output was 6.8 per cent higher in 2013 than 2000. Output grew 18 per cent between 2000 and 2004 with strong consumer demand. From 2005 to 2009, output shrank and productivity fell to its lowest point since 2000. In 2013 output was back at its 2009 level.
- In 2013, non-residential catering contributed 29 per cent to Gross Value Added of the food chain beyond the farmgate.

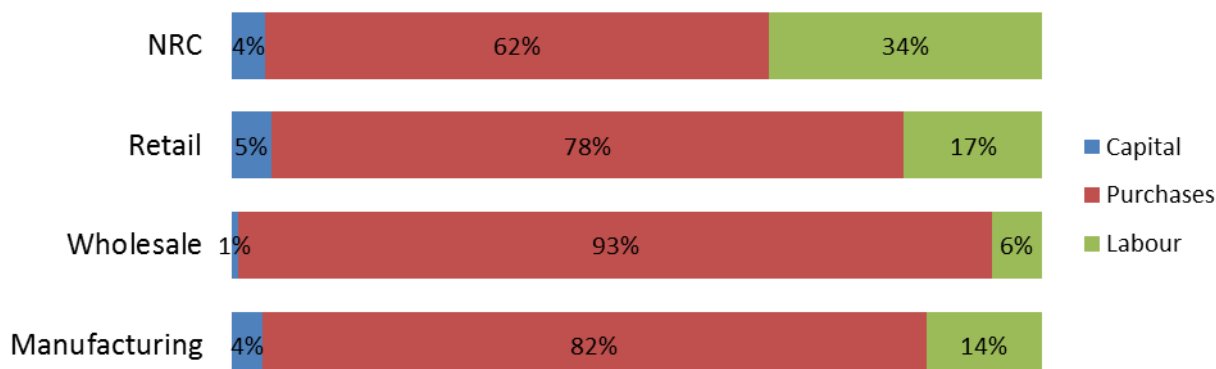
6. Background notes

TFP calculation

The method incorporates the inputs and outputs that are associated with monetary transactions but does not incorporate external effects on society and the environment. TFP differs from productivity by factoring in labour and capital consumption. This calculation covers labour, capital and purchases while output is the volume of sales. TFP is measured only in the form of changes as the change in the 'volume of outputs' divided by the change in 'the volume of

inputs'. The series is annually rebased and chain linked. Inputs are measured in the form of labour, capital and purchases. Purchases (mainly food but also energy, water and other consumables) dominate the inputs in all sectors.

Contribution of inputs



A more detailed methodology note to accompany the release sets out methods, assumptions, data sources and revisions, and is available [here](#).

Reliability of 2013 Estimates

We do not calculate standard errors for the estimates because of the range of data sources being combined. Instead as an indication of reliability, we carry out a sensitivity analysis to show how dependent the TFP growth estimates are upon small shifts in the levels of the inputs and the outputs. The productivity estimate is more sensitive to changes in the volumes of purchases and outputs and less sensitive to labour and capital. For more information click [here](#).

7. Uses and potential uses of this data

Defra use TFP in the food chain beyond agriculture as a measure of how well the UK food industry beyond agriculture is improving its productivity and thereby on course to be competitive in the future.

Improving the productivity and competitiveness of food and farming businesses, while improving the environment is a priority for Defra. Domestically a more competitive, profitable and resilient farming and food industry is needed. As the UK economy recovers, this sector, like all others, needs to maximise its potential for sustainable growth, maintain and increase its chance of securing European and global trading opportunities, and meet society's needs. We also need a basic level of resilience against changing environmental conditions, price fluctuations, financial uncertainty and food availability.

The Food and Drink Federation use this data to communicate to its members (by tracking the industry's progress and promoting the sector) and they make this information available on their website.

Food and drink businesses can also use this data to track progress of the industry in general but this measure is not comparable with competitiveness measures applied to individual businesses and cannot be used to benchmark their own performances.

This measure is not directly comparable with the general calculation used by the Office for National Statistics to measure whole economy productivity. To enable a comparison with the wider economy we calculate TFP growth in the wider economy using this calculation, i.e. data from the annual business survey. It is limited to coverage of the economy by the Annual Business Survey. The Annual Business Survey is the main structural business survey conducted by the Office for National Statistics. Prior to 2009 it was known as the Annual Business Inquiry - part 2. It collects financial information for about two-thirds of the UK economy, covering agriculture (part); hunting; forestry and fishing; production; construction; motor trades; wholesale; retail; catering and allied trades; property; service trades. The financial variables covered include turnover, purchases, employment costs, capital expenditure and stocks. Further details on the survey are at:

<http://www.ons.gov.uk/ons/guide-method/method-quality/specific/business-and-energy/annual-business-survey/quality-and-methods/index.html>

8. Notes

- 1) The original research this statistics release is based on was published in May 2006 and is available here: [UK Food Chain Productivity Incorporating External Impacts](#).
- 2) Total factor productivity of agriculture is published in Agriculture in the UK, Chapter 5. Data up to 2013 is available in Chart 5.1.
- 3) The UK food sector is defined in terms of the standard industrial classification (SIC 2007) as food manufacturing, food wholesaling, food retailing and non-residential catering:

Food Manufacturing:	10 & 11
Food Wholesaling:	46.17 & 46.3 less 46.35
Food Retailing:	47.11 & 47.2 less 47.26 & 47.81
Non-residential Catering:	56
- 4) These estimates are produced twice yearly. Most of the data is sourced from the Annual Business Survey (ABS), which is produced by the Office for National Statistics (ONS). The ONS release the ABS provisional estimates normally around November and the revised estimates are released around June.
- 5) Data in this release comes from the Annual Business Survey published in November 2014, The Annual Survey of Earnings and Hours published in November 2014, and the Producer Price Indices published in January 2015. The next update will be in July 2015.