



Total Factor Productivity of the United Kingdom Food Chain 2014 – provisional estimate

1. Key messages

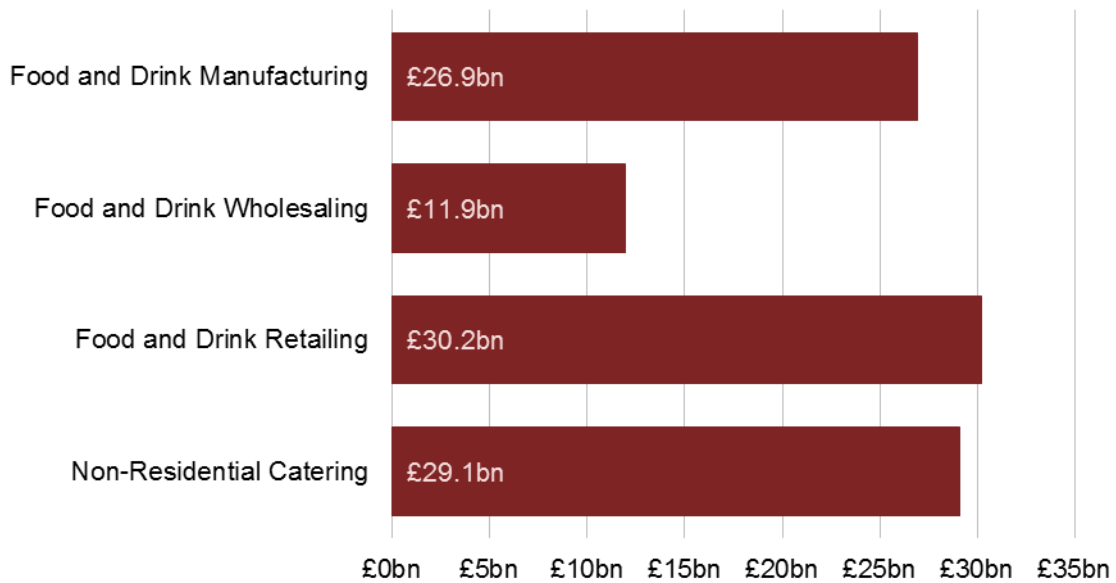
- Total factor productivity of the UK food chain beyond the farmgate has decreased by 2.4 per cent between 2013 and 2014. Productivity in the wider economy has increased in 2014 by 1.7 per cent.
- Benchmarking against a wider economy measure shows that the average annual growth in the food chain between 2005 and 2014 was 0.1 per cent compared to 0.2 per cent in the wider economy.
- Productivity in retail saw a decrease in 2014 of 3.1 per cent, although over the last 10 years the average annual growth was unchanged.
- Productivity in food manufacturing saw a decrease in 2014 of 2.4 per cent, although over the last 10 years the average annual growth was 0.3 per cent.

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 efficiency. If TFP in the UK food chain increases faster than other countries, this indicates that the industry is improving 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.

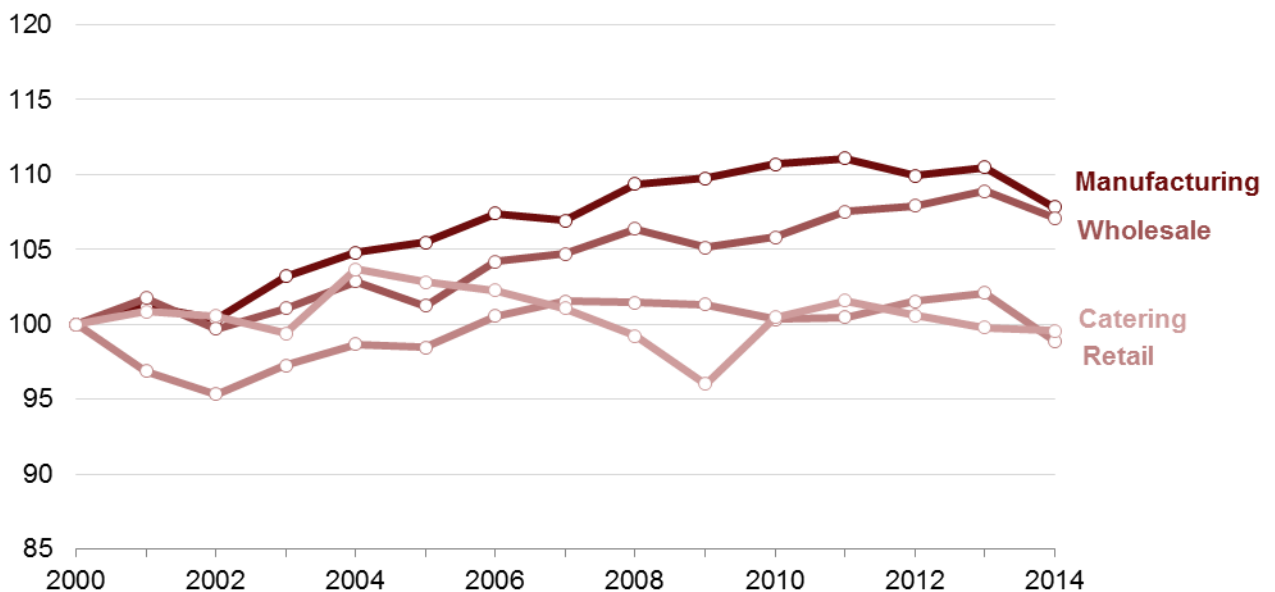
Gross value added of the UK agri-food sector 2014



This estimate for 2014 is provisional as 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 2014

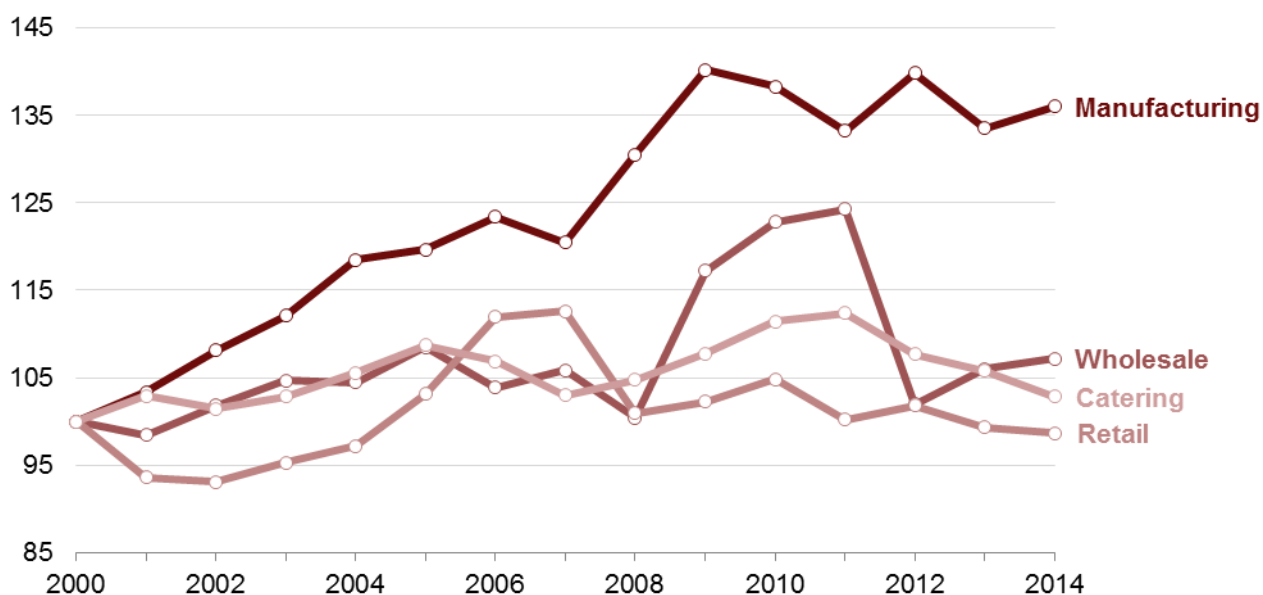


- Food and drink retail** has had the largest drop in productivity (3.1 per cent) in the food chain since 2013 with labour volume increasing by 2.3 per cent. Productivity fell due to the increase in inputs being higher than the increase in outputs. Food price inflation started to fall in 2014, and fell below general inflation, following a 5 year period when food prices were rising faster than general inflation.

- **Food manufacturing** productivity has decreased by 2.4 per cent in 2014 and in the last 10 years has shown an average annual increase of 0.3 per cent. Since 2013, labour input has increased by 1 per cent. However, since 2005 there has been an average annual decrease of labour input of 2 per cent.
- **Food wholesaling** productivity in 2014 was 1.6 per cent lower than in 2013. The decrease in productivity in 2014 was due to increases in input volumes being larger than the increase in the output volumes.
- **Non-residential catering** in 2014 showed a 0.2 per cent decrease in productivity. Productivity peaked in 2004 and fell to its lowest level in 2009. 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.

The fall in productivity, particularly in manufacturing, is notable – especially as gross value added for the sectors in current prices generally increased over the period. The downward turn in productivity in most cases is due to the fact that whilst both input prices and output prices were falling during this period, generally the latter fell further. Input purchases (raw materials, energy etc) have the biggest weight in the productivity calculation, and consequent effect on the index (see Background notes below). The data sources used to produce the productivity estimate are provisional estimates for 2014, and the final estimates may subsequently change.

Labour Productivity trends within the UK food industry 2000 to 2014

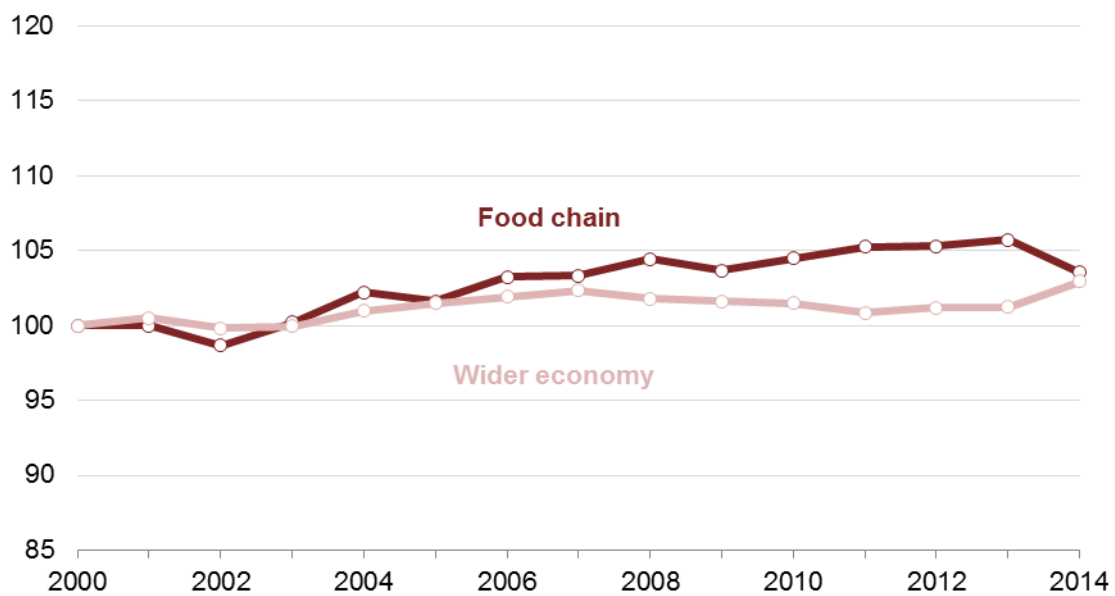


4. Benchmarking the UK food chain against the wider economy

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.

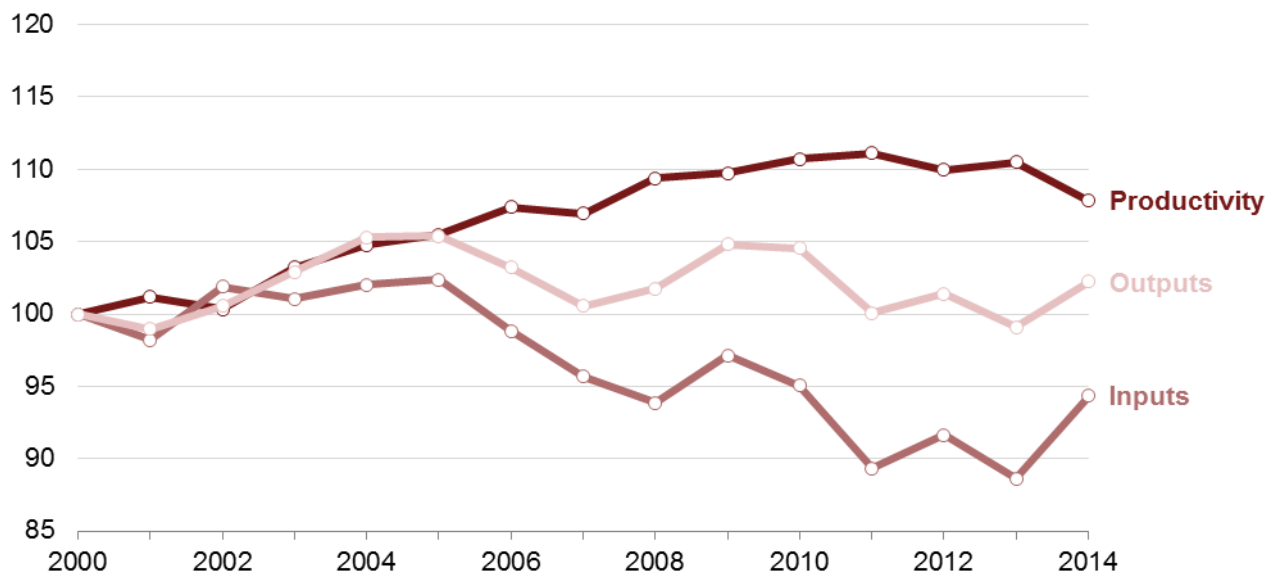
Between 2005 and 2014, the average annual growth rate of the food chain was 0.1 per cent whereas the wider economy's average annual growth rate was 0.2 per cent.

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



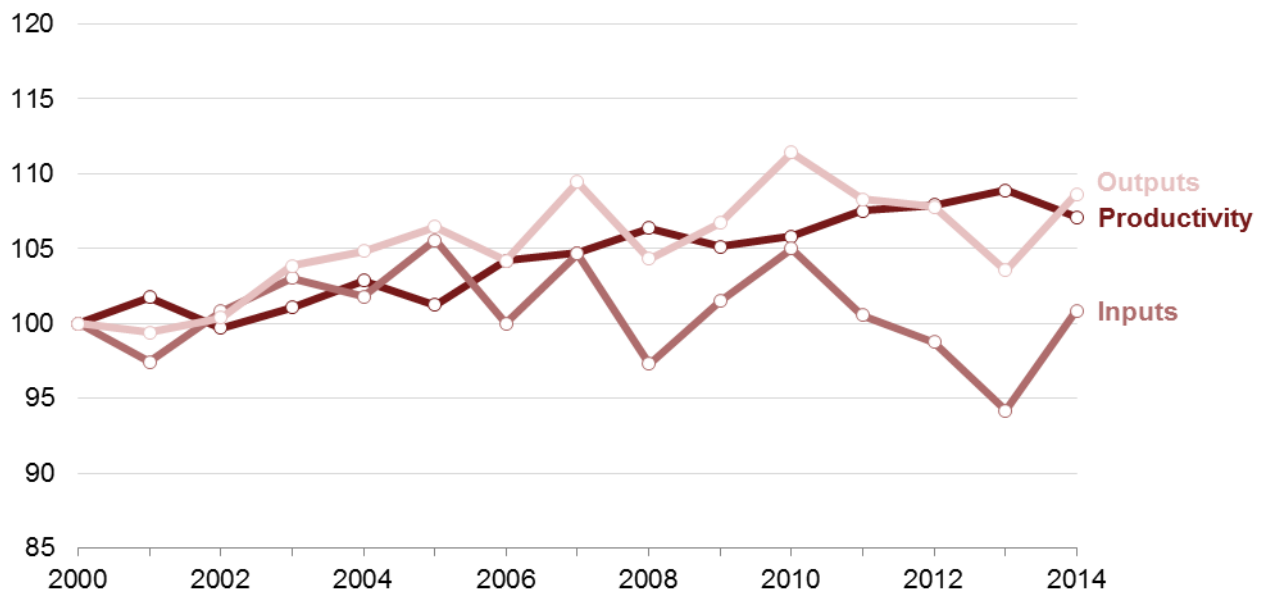
5. Sector Analysis

Manufacturing



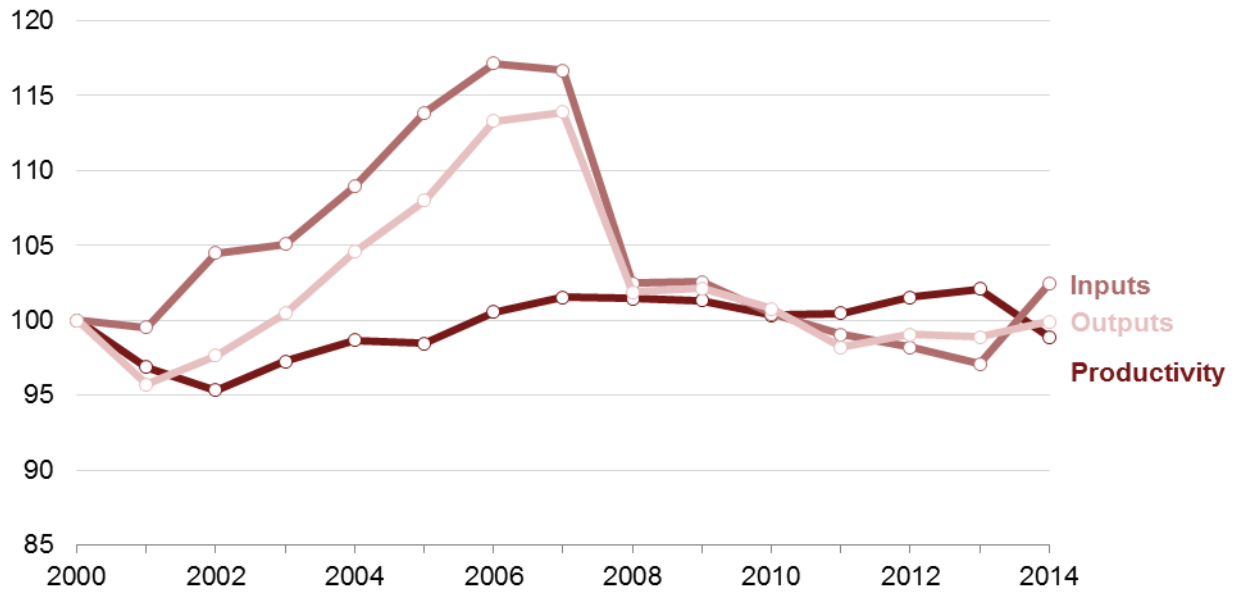
- In 2014, total factor productivity in food and drink manufacturing decreased by 2.4 per cent and in the last 10 years has shown an average annual increase of 0.3 per cent. While output growth was strong up to 2005, it dropped sharply in 2006 and 2007. Output grew strongly in 2008 and 2009 but fell to its lowest level in 2013 since 2001. Output grew strongly in 2014, to its highest level since 2010.
- Productivity fell in 2014 due to increases in the volume of inputs being larger than the increase in output volumes.
- Since 2013 labour input has increased by 1 per cent. However, since 2005 there has been an average annual decrease of labour input of 2 per cent.
- In 2014, food and drink manufacturing contributed 27 per cent to Gross Value Added of the food chain beyond the farmgate.
- In 2014, labour productivity in food and drink manufacturing increased by 1.9 per cent and in the last 10 years has shown an average annual increase of 1.5 per cent.

Wholesaling



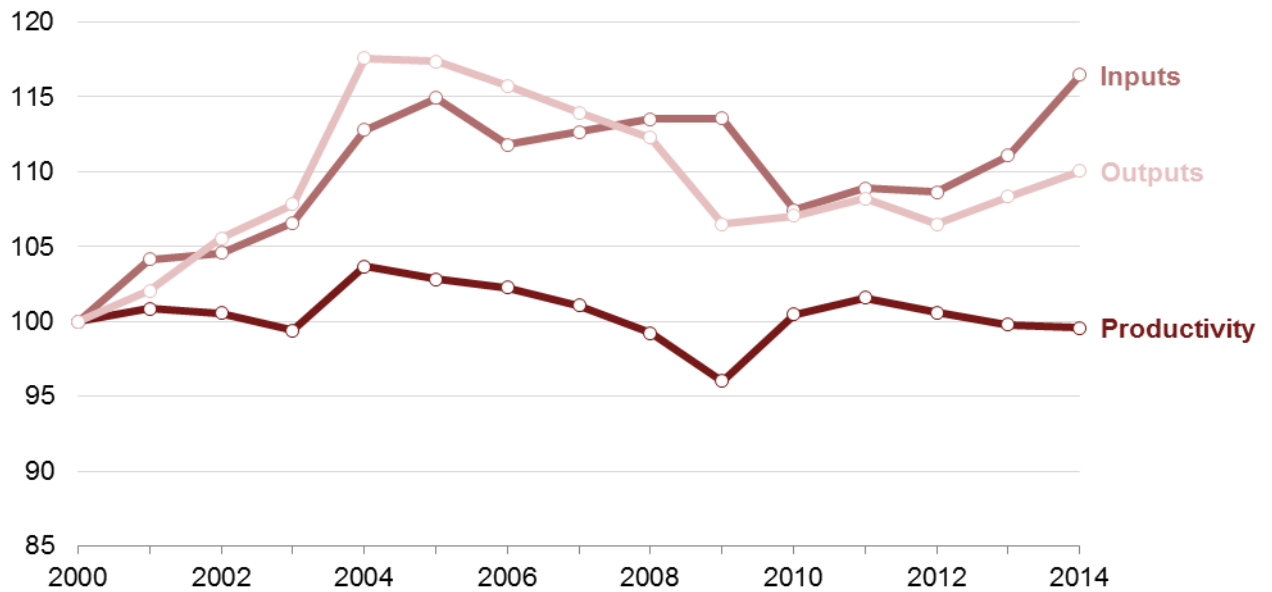
- Total factor productivity of food wholesaling decreased by 1.6 per cent in 2014 and in the last 10 years has shown an average annual increase of 0.4 per cent.
- Both inputs and outputs have increased between 2013 and 2014, but inputs have gone up more resulting in the decrease in productivity.
- Labour decreased by 8 per cent between 2012 and 2013, but increased by 4 per cent between 2013 and 2014.
- In 2014 the wholesale sector contributed 12 per cent to Gross Value Added of the food chain beyond the farmgate.
- In 2014, labour productivity in food and drink wholesaling increased by 1.1 per cent and in the last 10 years has shown an average annual increase of 0.6 per cent.

Retail



- Productivity of the food retail sector decreased by 3.1 per cent in 2014 and in the last 10 years has remained unchanged.
- Labour input has increased by 1.7 per cent since 2013 and is at its highest level since 2009.
- 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 2014 food retailing contributed 31 per cent to Gross Value Added of the food chain beyond the farmgate.
- In 2014, labour productivity in food and drink retailing decreased by 0.7 per cent and in the last 10 years has shown an average annual decrease of 0.7 per cent. And is at its lowest level since 2004.

Non-Residential Catering (NRC)



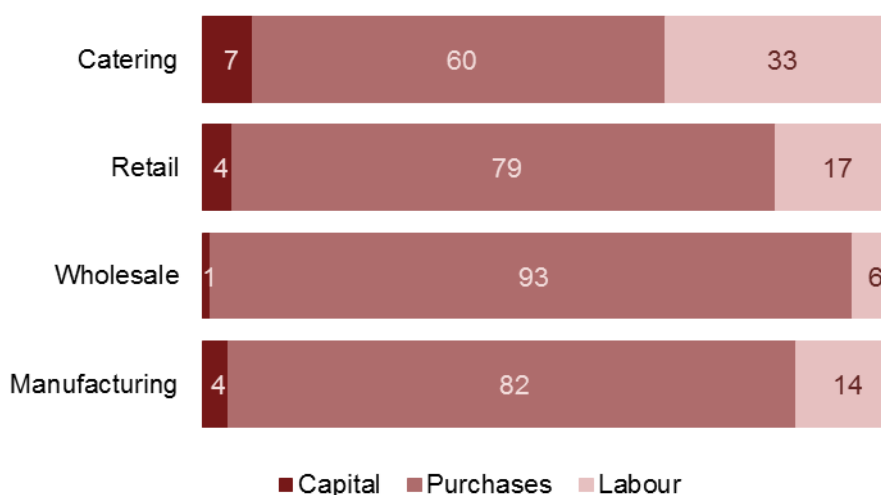
- Non-residential catering (NRC) showed a fall in productivity of 0.2 per cent in 2014. The decrease in productivity in 2014 was due to the increase in inputs being higher than the increase of outputs.
- Productivity of NRC was at its strongest prior to the recession, then dipped to its lowest level in 2009, but since the recession has seen an increase. 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 2004 and, having dipped between 2009 and 2012, is now back above its 2009 level. There was an increase in labour in 2014 of 4.5 per cent.
- In 2014, non-residential catering contributed 30 per cent to Gross Value Added of the food chain beyond the farmgate.
- In 2014, labour productivity in non-residential catering decreased by 2.8 per cent and in the last 10 years has shown an average annual decrease of 0.9 per cent. And is at its lowest level since 2005.

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 labour productivity by factoring in 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](#).

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 2014 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 & 47.81 less 47.26 |
| 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 2015, The Annual Survey of Earnings and Hours published in November 2015, and the Producer Price Indices published in June 2015. The next TFP update will be in July 2016.