



Total Factor Productivity of the United Kingdom Food Chain 2015 – provisional estimate

1. Key messages

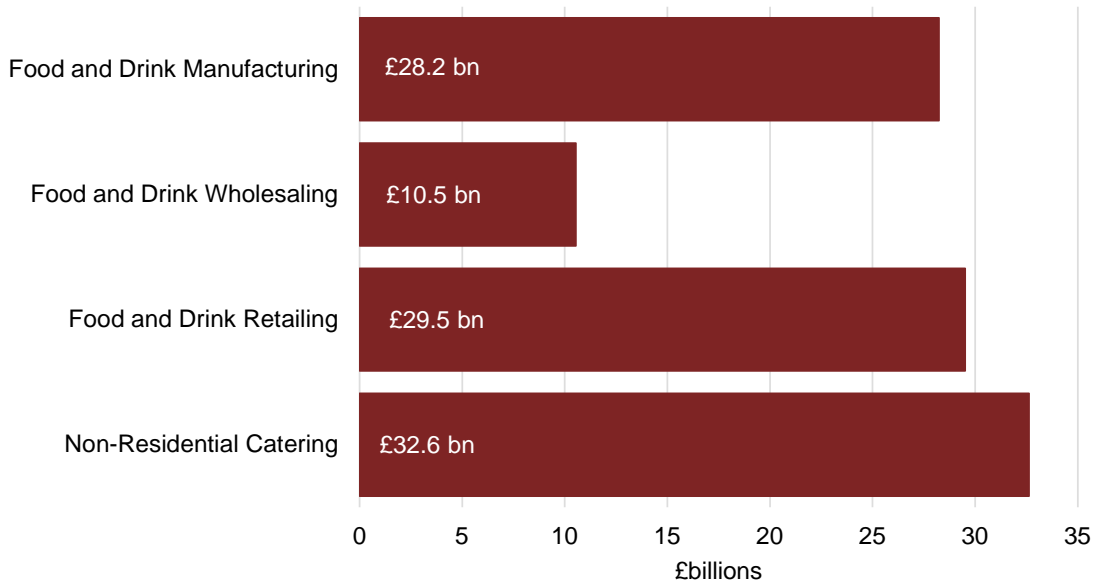
- Total factor productivity of the UK food chain beyond the farm-gate has increased by 0.5 per cent between 2014 and 2015. Productivity in the wider economy has increased in 2015 by 1.3 per cent.
- Benchmarking against a wider economy measure shows that the average annual growth in the food chain between 2006 and 2015 was 0.2 per cent compared to 0.3 per cent in the wider economy.
- Productivity in catering saw an increase in 2015 of 3.0 per cent, although over the last 10 years the average annual growth has decreased by 0.2 per cent.
- Labour productivity in food wholesaling saw a decrease in 2015 of 3.4 per cent, although over the last 10 years the average annual growth was 2.4 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 6 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.

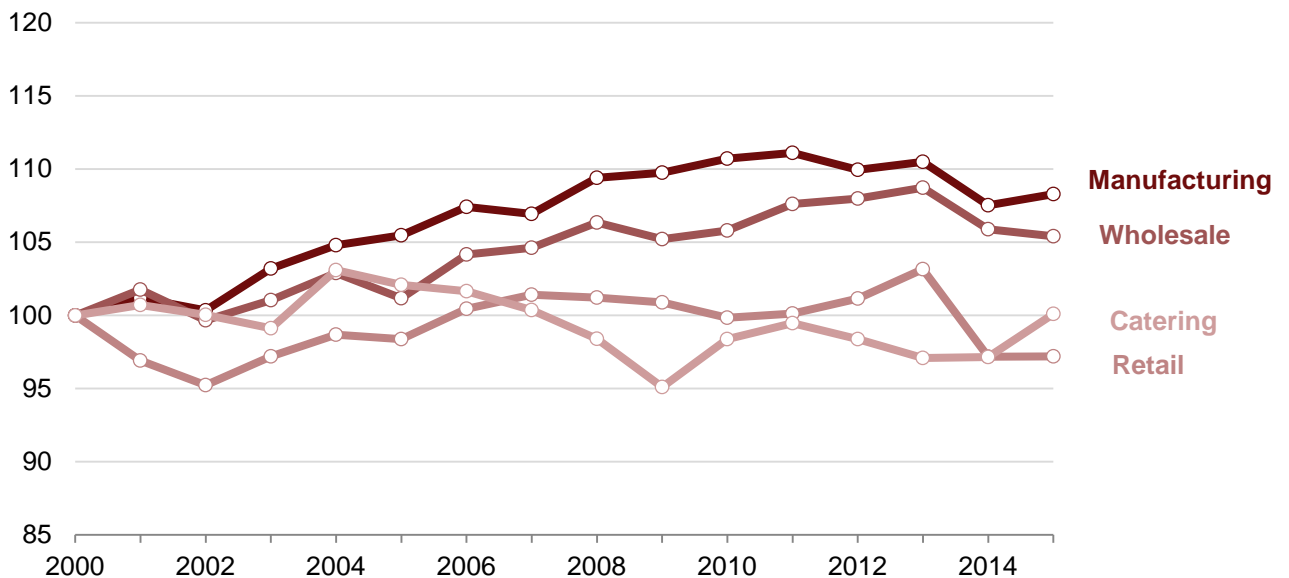
Gross value added of the UK food sector 2015



This estimate for 2015 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

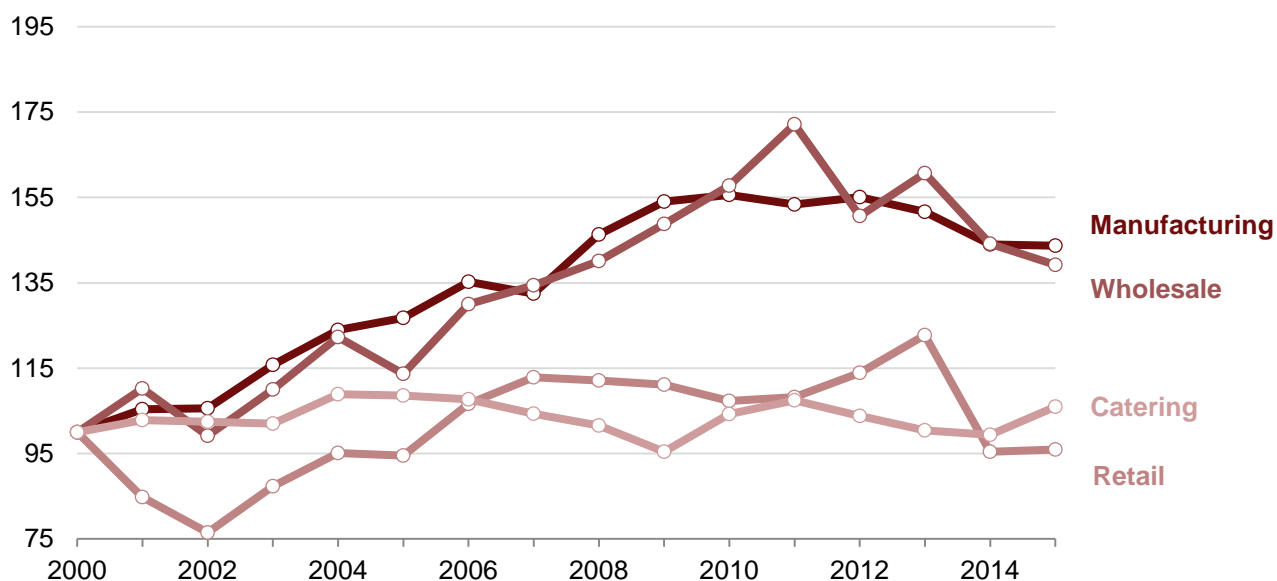
Total Factor Productivity trends within the UK food industry 2000 to 2015



- Food and drink wholesale** has had the largest drop in productivity (0.5 per cent) in the food chain since 2014 with labour volume decreasing by 2.47 per cent. Productivity fell due to the decrease in inputs being lower than the decrease in outputs. Food price inflation started to fall in 2014, and fell below general inflation, following an 8 year period when food prices were rising faster than general inflation.

- **Food manufacturing** productivity has increased by 0.7 per cent in 2015 and in the last 10 years has shown an average annual increase of 0.3 per cent. Since 2014, labour input has increased by 4.0 per cent. However, since 2005 there has been an average annual decrease of labour input of 1.1 per cent.
- **Food retail** productivity in 2015 was unchanged from 2014 due to the increase in inputs and outputs being the same.
- **Non-residential catering** in 2015 showed a 3.0 per cent increase 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.

Labour Productivity trends within the UK food industry 2000 to 2015

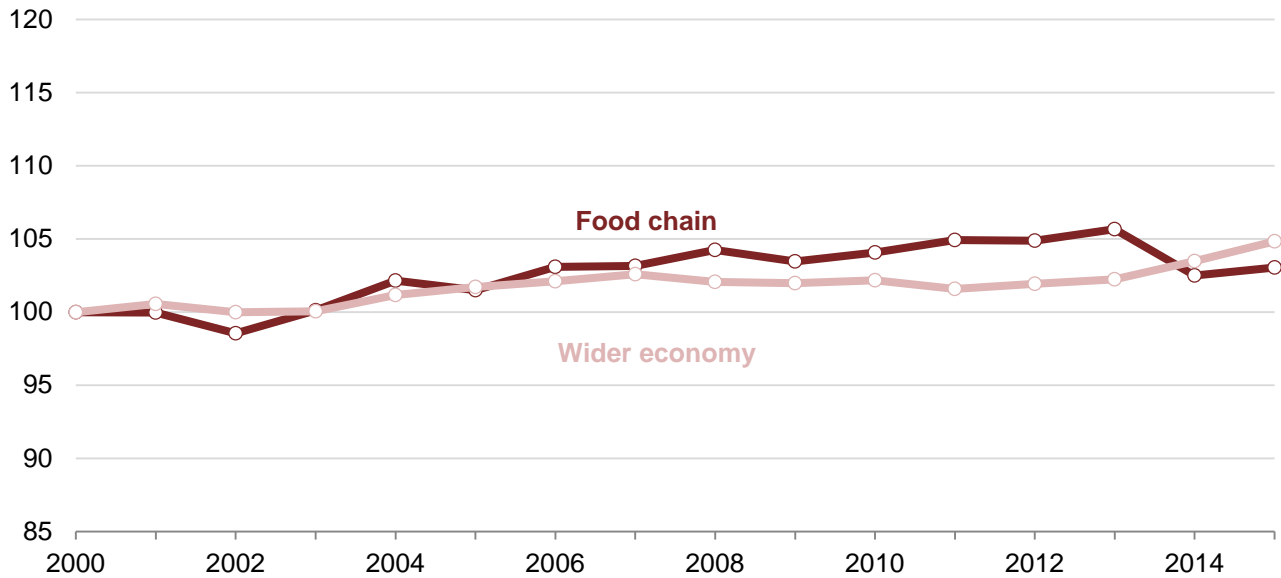


4. Benchmarking the UK food chain against the wider economy

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.

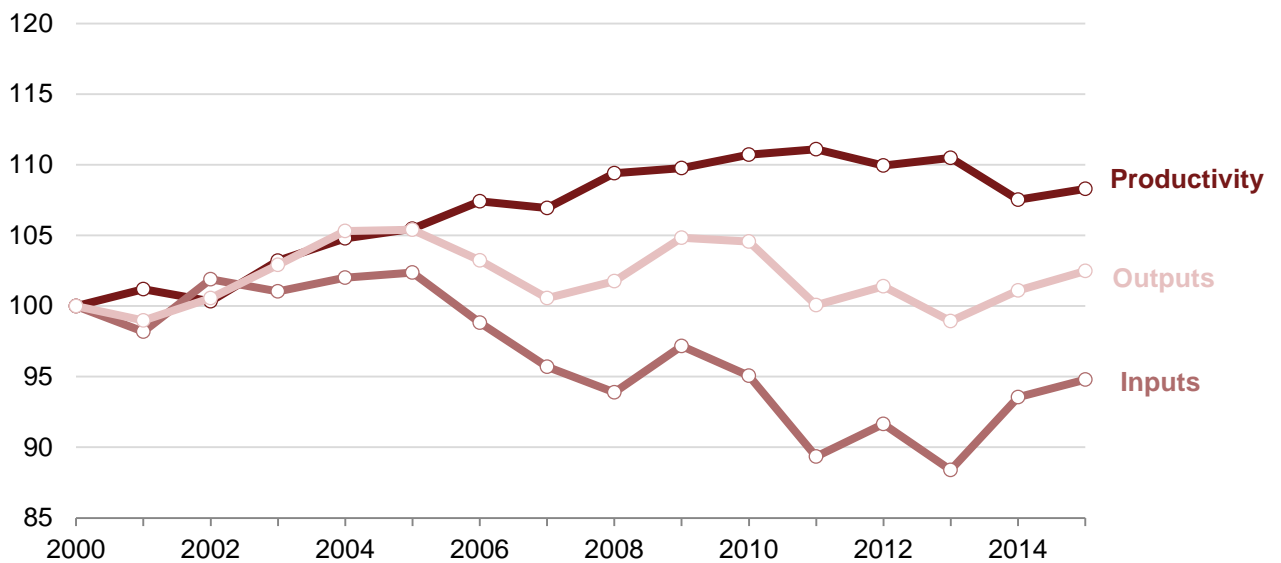
Between 2006 and 2015, the average annual growth rate of the food chain was 0.2 per cent whereas the wider economy's average annual growth rate was 0.3 per cent.

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



5. Sector Analysis

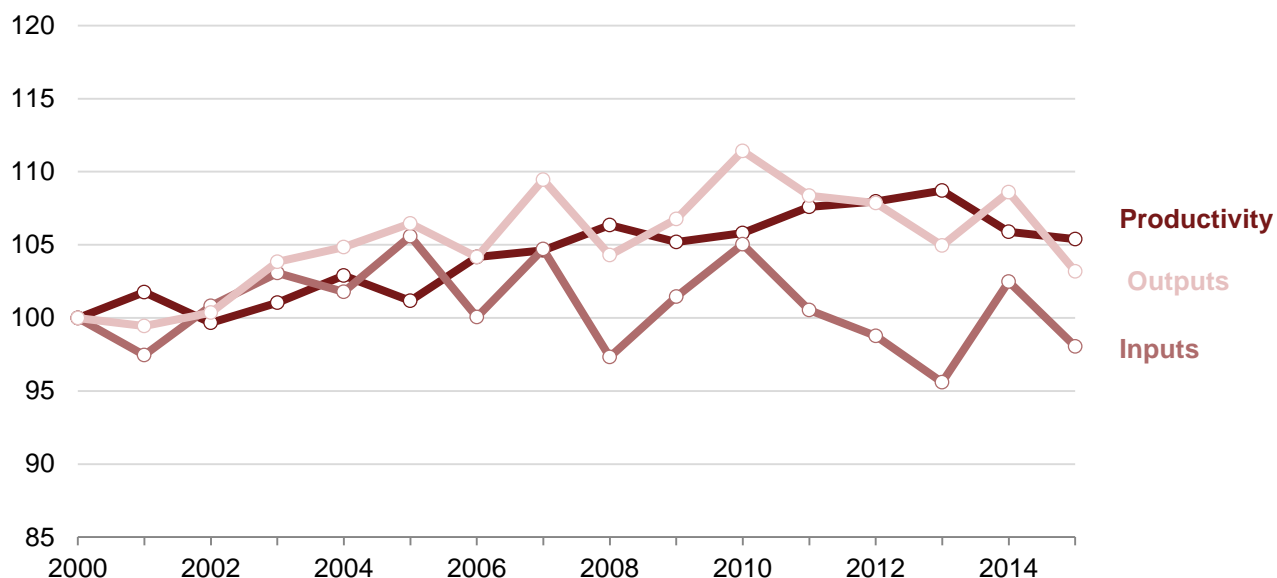
Manufacturing



- In 2015, total factor productivity in food and drink manufacturing increased by 0.7 per cent in 2015 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 2015.
- Productivity increased in 2015 due to the increase in the volume of outputs being higher than the increase in input volumes.

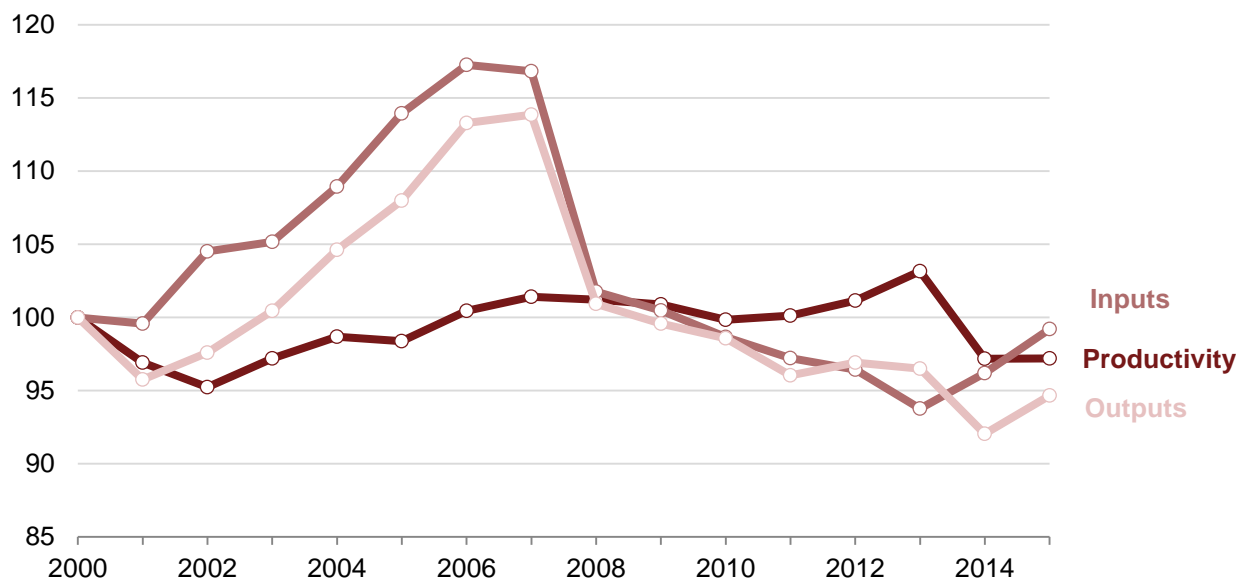
- Since 2014, labour input has increased by 4.0 per cent. However, since 2006 there has been an average annual decrease of labour input of 1.1 per cent.
- In 2015, food and drink manufacturing contributed 28 per cent to Gross Value Added of the food chain beyond the farm-gate.
- In 2015, labour productivity in food and drink manufacturing decreased by 0.2 per cent. However, in the last 10 years it has shown an average annual increase of 1.4 per cent.

Wholesaling



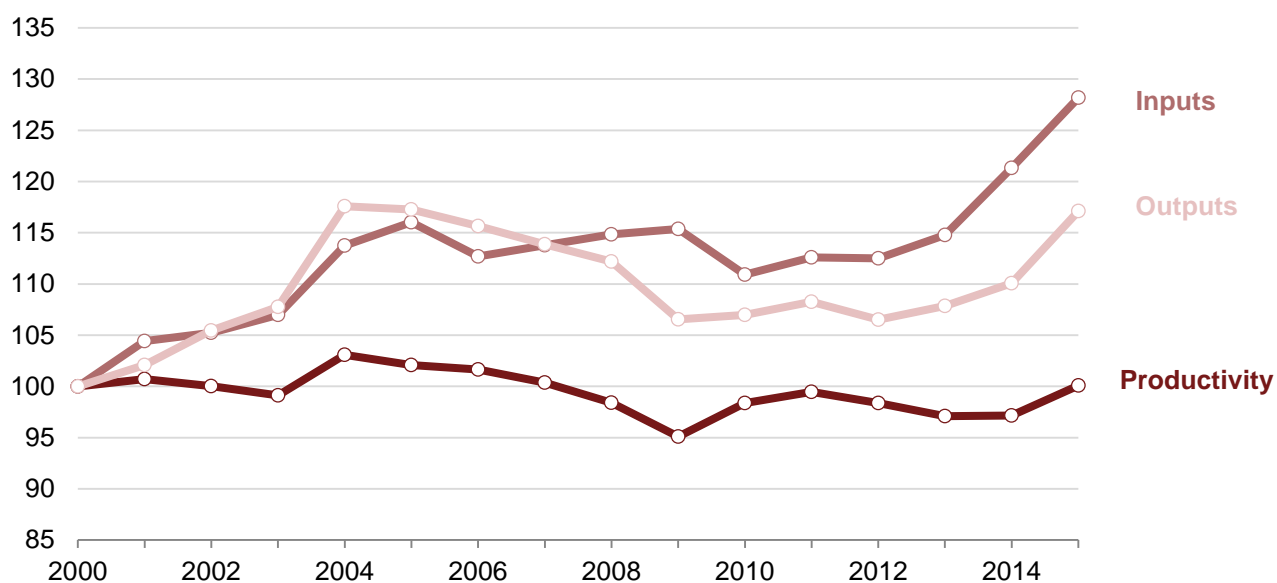
- Total factor productivity of food wholesaling decreased by 0.5 per cent since 2014, but in the last 10 years has shown an average annual increase of 0.4 per cent.
- Both inputs and outputs have decreased between 2014 and 2015, but outputs have gone down more resulting in the decrease in productivity.
- In 2015 labour volume decreased by 2.5 per cent. Labour decreased by 12.4 per cent between 2008 and 2009, but increased by 21.3 per cent between 2011 and 2012.
- In 2015 the wholesale sector contributed 10 per cent to Gross Value Added of the food chain beyond the farm-gate.
- In 2015, labour productivity in food and drink wholesaling decreased by 3.4 per cent, but in the last 10 years has shown an average annual increase of 2.4 per cent.

Retail



- Productivity of the food retail sector is unchanged since 2014 due to the increase in inputs and outputs being the same. However, in the last 10 years it has decreased by 0.1 per cent.
- Labour input has increased by 1.3 per cent since 2014 and is at its highest level since 2000.
- In 2015 food retailing contributed 29 per cent to Gross Value Added of the food chain beyond the farm-gate.
- In 2015, labour productivity in food and drink retailing increased by 0.5 per cent and in the last 10 years has shown an average annual increase of 0.6 per cent.

Non-Residential Catering (NRC)



- Non-residential catering (NRC) showed an increase in productivity of 3.0 per cent in 2015. The decrease in productivity in 2015 was due to the increase in outputs being nearly twice as high as the increase of inputs.

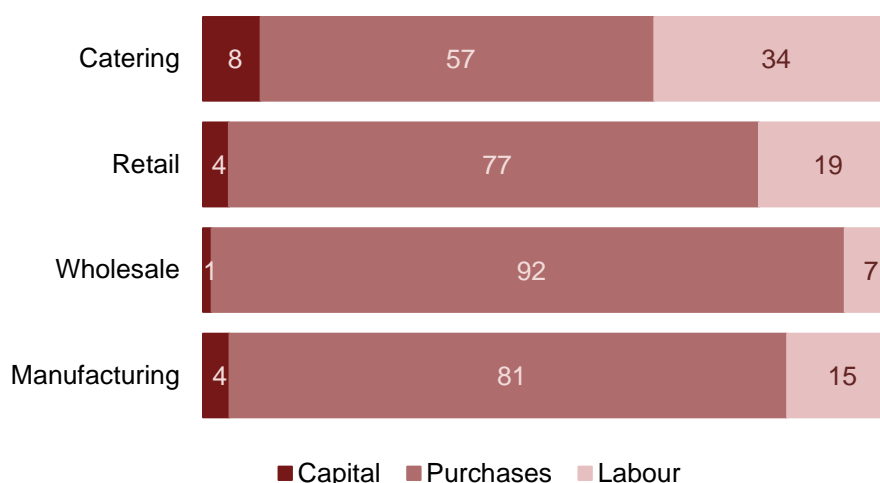
- Productivity of NRC was at its strongest prior to the recession, then dipped to its lowest level in 2009, but since the recession has seen an increase. This sector would have been affected strongly by the recession that started in 2008 and lasted through most of 2009. These challenging economic times 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 is at its highest level since 2000, having dipped between 2009 and 2012. There was an increase in labour in 2015 of 5.9 per cent.
- In 2015, NRC contributed 32 per cent to Gross Value Added of the food chain beyond the farm-gate.
- In 2015, labour productivity in NRC increased by 6.6 per cent, but in the last 10 years has shown an average annual decrease of 0.1 per cent.

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 2015 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 2016, The Annual Survey of Earnings and Hours published in November 2015, and the Producer Price Indices published in January 2017. The next TFP update will be in July 2017.