

Statistical bulletin

UK producer price inflation: Dec 2016

Changes in the prices of goods bought and sold by UK manufacturers including price indices of materials and fuels purchased (input prices) and factory gate prices (output prices).



Contact:
James Wells
ppi@ons.gsi.gov.uk

Release date:
17 January 2017

Next release:
14 February 2017

Table of contents

1. [Main points](#)
2. [Things you need to know about this release](#)
3. [Producer price inflation summary](#)
4. [Input prices are currently just below 2008 pre-downturn levels, while prices for goods leaving the factory gate are 9.7% higher than they were before the downturn](#)
5. [Changes to the value of sterling and crude oil prices have had a large influence on producer price inflation](#)
6. [The last 5 years has seen overall input price deflation for producers, which is in contrast to the previous decade](#)
7. [Links to related statistics](#)
8. [Quality and methodology](#)

1 . Main points

- The annual rate of producer price inflation continued to grow in December 2016, although mainly as a result of falling prices a year ago, as growth was relatively flat on the month.
- Factory gate prices (output prices) rose 2.7% on the year to December 2016 and 0.1% on the month, which was the sixth consecutive period of annual growth and the eleventh of monthly growth.
- Prices for materials and fuels paid by UK manufacturers for processing (input prices) rose 15.8% on the year to December 2016 and 1.8% on the month.
- Prices of imported materials and fuels was the largest driver of input price growth, which is largely a result of sterling depreciation and a recovery in global crude oil prices.

2 . Things you need to know about this release

The factory gate price (output price) is the amount received by UK manufacturers for the goods that they sell to the domestic market. It includes the margin that businesses make on goods, in addition to costs such as labour, raw materials and energy, as well as interest on loans, site or building maintenance, or rent.

The input price measures the price of materials and fuels bought by UK manufacturers for processing. It includes materials and fuels that are both imported or sourced within the domestic market. It is also not limited to materials used in the final product, but includes what is required by businesses in their normal day-to-day running, such as fuels.

Index numbers shown in the main text of this bulletin are on a net sector basis. The index for any sector relates only to transactions between that sector and other sectors; sales and purchases within sectors are excluded.

Indices relate to average prices for a month. The full effect of a price change occurring part way through any month will only be reflected in the following month's index.

All index numbers exclude VAT. Excise duty (on cigarettes, manufactured tobacco, alcoholic liquor and petroleum products) is included, except where labelled otherwise.

Each Producer Prices Index (PPI) has 2 unique identifiers: a 10-digit index number, which relates to the [Standard Industrial Classification](#) code appropriate to the index and a 4-character alpha-numeric code, which can be used to find series when using the [time series dataset](#) for PPI.

Every 5 years, producer price indices are rebased and their weights updated to reflect changes in the industry.

Figures for the latest 2 months are provisional and the latest 5 months are subject to revisions in light of (a) late and revised respondent data and (b) for the seasonally adjusted series, revisions to seasonal adjustment factors are re-estimated every month. A routine seasonal adjustment review is normally conducted in the autumn each year.

Full definitions of the terms used within this analysis can be found in the Quality and methodology section within this bulletin.

3 . Producer price inflation summary

Table 1: Input prices, UK, December 2001 to December 2016

	Percentage change			
	All materials and fuels purchased		Imported materials and fuels purchased	
	1 month	12 months	1 month	12 month
2016 Jul	3.2	4.2	4.0	6.0
Aug	0.3	7.8	0.3	9.2
Sep	0.2	7.4	0.0	8.7
Oct	4.4	12.1	4.6	13.8
Nov	-0.6	13.3	-1.4	14.6
Dec	1.8	15.8	1.3	16.9

Source: Office for National Statistics

Notes:

1. Both series are not seasonally adjusted

Input producer prices grew 15.8% on the year to December 2016 and 1.8% between November and December 2016. This is the sixth consecutive period of annual growth.

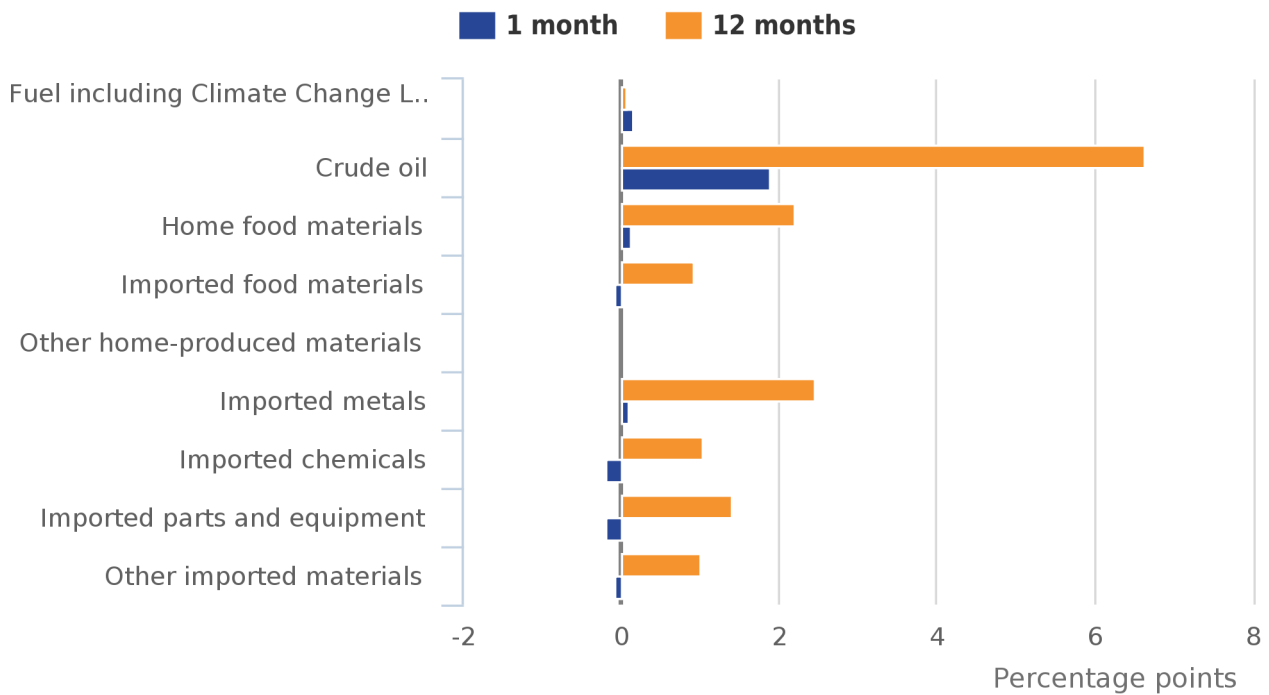
Prices of imported materials and fuels rose 16.9% on the year to December 2016, which is largely the result of a 14.5% sterling depreciation and a 52.1% annual growth rate for imported inputs of crude oil. Imported materials and fuels is the main driver of input PPI inflation as its weight accounts for around 68% of the input price index.

Table 2 Input prices: 12 months change to December 2016, UK

Product group	Percentage change
Fuel including Climate Change Levy	0.4
Crude oil	56.7
Home food materials	15.6
Imported food materials	11.7
Other home-produced materials	0.3
Imported metals	36.2
Imported chemicals	7.1
Imported parts and equipment	7.2
Other imported materials	10.8
All manufacturing	15.8

Source: Office for National Statistics

Figure 1: Input PPI, contribution to 1 month and 12 month growth rate, UK, December 2016



Source: Office for National Statistics

Figure 1 shows the contributions by sector to the annual and monthly inflation rate. Most sectors showed only modest contributions to the monthly rate, with crude oil providing the largest contribution of 1.90 percentage points to the monthly rate and 6.64 percentage points to the annual rate. Crude oil prices have increased by 56.7% on the year to December 2016 and 13.8% on the month.

Imported metals and home food materials prices were the second and third largest contributors to the annual rate, with annual growth rates of 36.2% and 15.6% respectively.

The annual rate of inflation for imported metals has now seen 6 months of consecutive growth following 17 months of falling prices. The annual growth rate of 36.2% is also the largest since comparable records began in 1996.

The main contributor to the rise in home food materials was crop and animal production which has increased mainly on the back of a rise in the price of wheat. Home food materials was the third largest contributor to input PPI growth to both the annual and monthly rates.

Table 3: Output prices, UK, December 2001 to December 2016

	Percentage change	
	All manufactured products	
	1 month	12 months
2016 Jul	0.2	0.2
Aug	0.2	0.8
Sep	0.3	1.2
Oct	0.7	2.1
Nov	0.1	2.4
Dec	0.1	2.7

Source: Office for National Statistics

Notes:

1. Series is not seasonally adjusted

Factory gate prices continued to grow on the year to December 2016, although growth on the month has slowed in the past 2 months.

The annual rate of inflation for factory gate prices was 2.7% in December 2016, which is the sixth consecutive rise after 2 years of falls and the largest increase since March 2012.

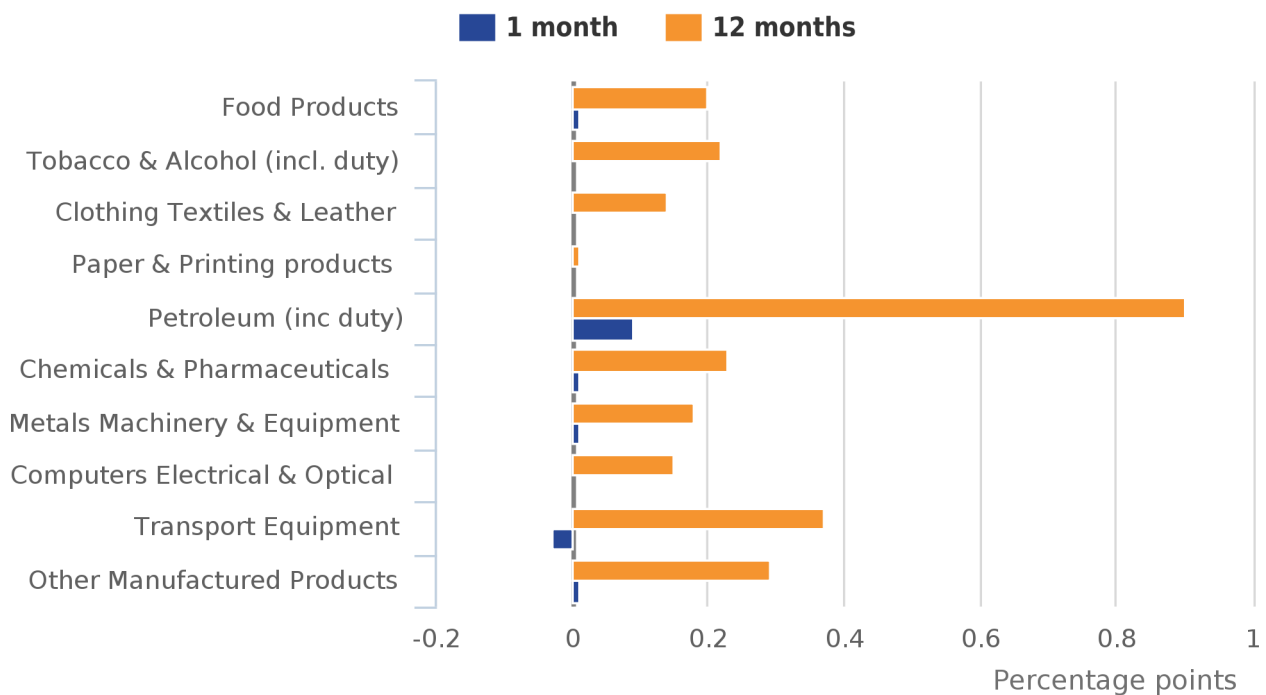
Month-on-month prices were also up, but by a modest 0.1%. This compares with a peak of 0.7% in October 2016, which was the highest month-on-month growth across 2016. Monthly inflation has now been growing since February 2016, which is the longest continuous period of growth since 2011.

Table 4 Output prices: 12 months change to December 2016, UK

Product group	Percentage change
Food products	1.4
Tobacco and alcohol (incl. duty)	2.4
Clothing, textile and leather	1.2
Paper and printing	0.4
Petroleum products (incl. duty)	14.3
Chemical and pharmaceutical	3.3
Metal, machinery and equipment	2.5
Computer, electrical and optical	1.4
Transport equipment	3.1
Other manufactured products	2.0
All manufacturing	2.7

Source: Office for National Statistics

Figure 2: Output PPI, contribution to 1 month and 12 month growth rate, UK, December 2016



Source: Office for National Statistics

Petroleum products had an annual growth rate of 14.3% and showed an upward contribution of 0.90 percentage points to the PPI output annual rate (Figure 2), which was driven by diesel and gas oil which increased 16.2%. This was the largest annual rise to prices of petroleum products since November 2011 and the fourth consecutive increase after 3 years of falling prices.

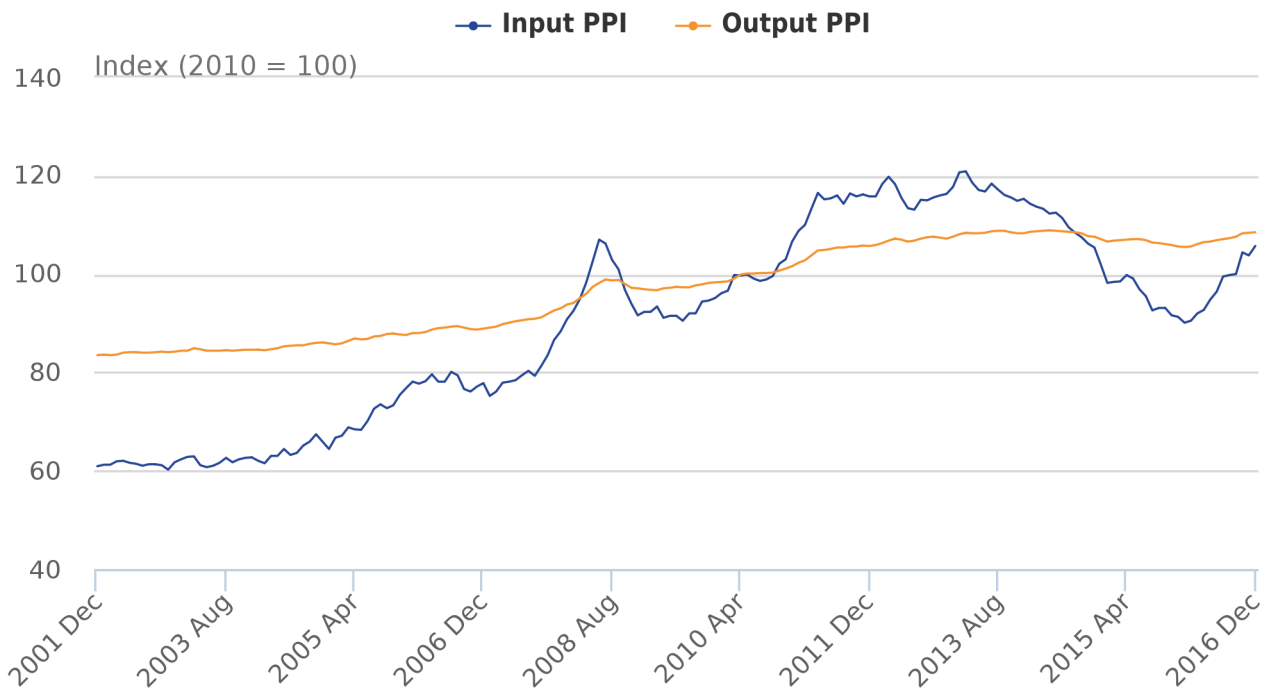
All sectors showed upward contributions to the annual rate with transport equipment being the second largest with an annual growth rate of 3.1%, driven by a 2.9% increase in the prices of motor vehicles, trailers and semi-trailers. In comparison the month on month contribution rate fell by 0.03 percentage points.

4 . Input prices are currently just below 2008 pre-downturn levels, while prices for goods leaving the factory gate are 9.7% higher than they were before the downturn

As this is the first PPI statistical bulletin in the new ONS style we thought it would be interesting to look at PPI over a longer time period and summarise some of the main points relating to producer prices.

Figure 3 looks at input and output PPI and shows that input PPI has experienced larger peaks and troughs over the past 15 years compared to output PPI. The largest contributor to growth from 2004 to 2008 for input PPI came from rising crude oil prices, driven by rising global demand on the back of economic growth in Asia. From early 2004 to the pre-downturn peak in June 2008 input PPI grew more than 70%, while output prices rose 17%.

Figure 3: Input PPI and output PPI, UK, December 2001 to December 2016



Source: Office for National Statistics

Looking at the most recent input PPI figure for December 2016 (Figure 3), it can be seen that despite strong growth since February 2016, the latest figure of 105.7 is just below the pre-downturn peak level of 107.0 in June 2008 and 14.4% below the overall peak in March 2013 when the index reached 120.9. The latest output PPI figure of 108.5 however, is 9.7% higher than its pre-downturn peak of 98.9 in July 2008. Overall input costs for the UK's production sector are therefore currently on par with levels seen in 2008, while the overall price that the sector charges for goods leaving the factory gate is 9.7% higher than it was in 2008. Figure 5 shows how the relationship between input costs and output prices over the most recent 5 years (2011 to 2016) contrasts with the previous 10 years (2001 to 2010).

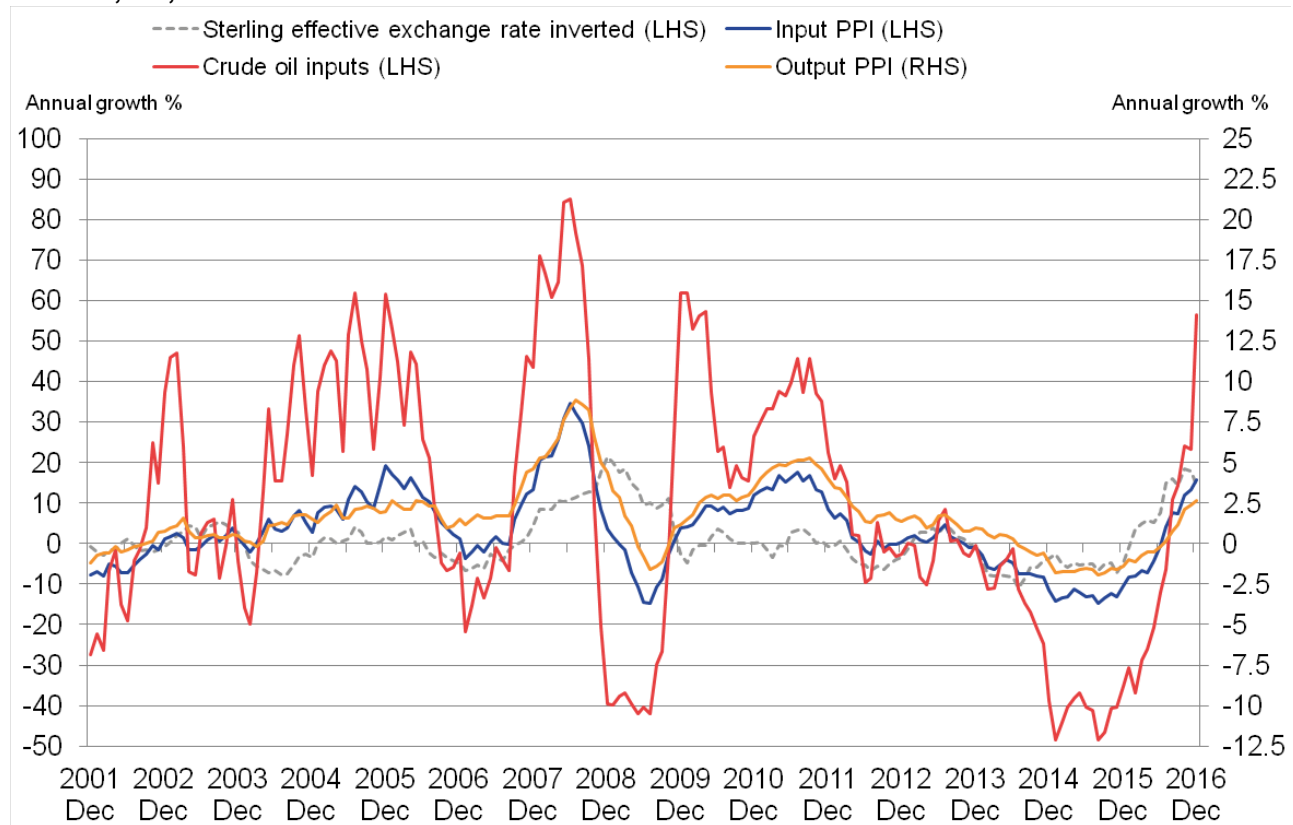
5 . Changes to the value of sterling and crude oil prices have had a large influence on producer price inflation

Figure 4 shows that producers raise and lower output prices (right hand scale) broadly in line with changes to the cost of inputs (left hand scale) that are used in the processing of manufactured products; albeit PPI input prices change to a greater magnitude compared with output prices.

It can also be seen that the sterling effective exchange rate has had a strong influence on the value of input PPI over the past 15 years, which along with other factors dictates how producers set output prices. The combined weight of imported materials and fuels in input PPI is around 68%, of which imported materials is 54.5% and imported crude oil and natural gas 13.6%. All else equal, a depreciation of sterling increases the price of UK imports when transacted in a foreign currency, which in turn has a corresponding impact on the prices paid by producers for imported inputs.

Figure 4 also shows that growth of input prices for crude oil products (left hand scale) have been particularly volatile, with the series swinging from a peak of more than 80% annual growth prior to the 2008 downturn, to periods approaching a nearly 50% decrease across 2014 and 2015. Crude oil has an overall weight of 20% in input PPI, of which 13.6% is from imports and the remaining 6.4% from domestic inputs. Crude oil has therefore also had a large influence on input prices.

Figure 4: Annual growth for input PPI, output PPI, crude oil input PPI and sterling effective exchange rate inverted, UK, December 2001 to December 2016



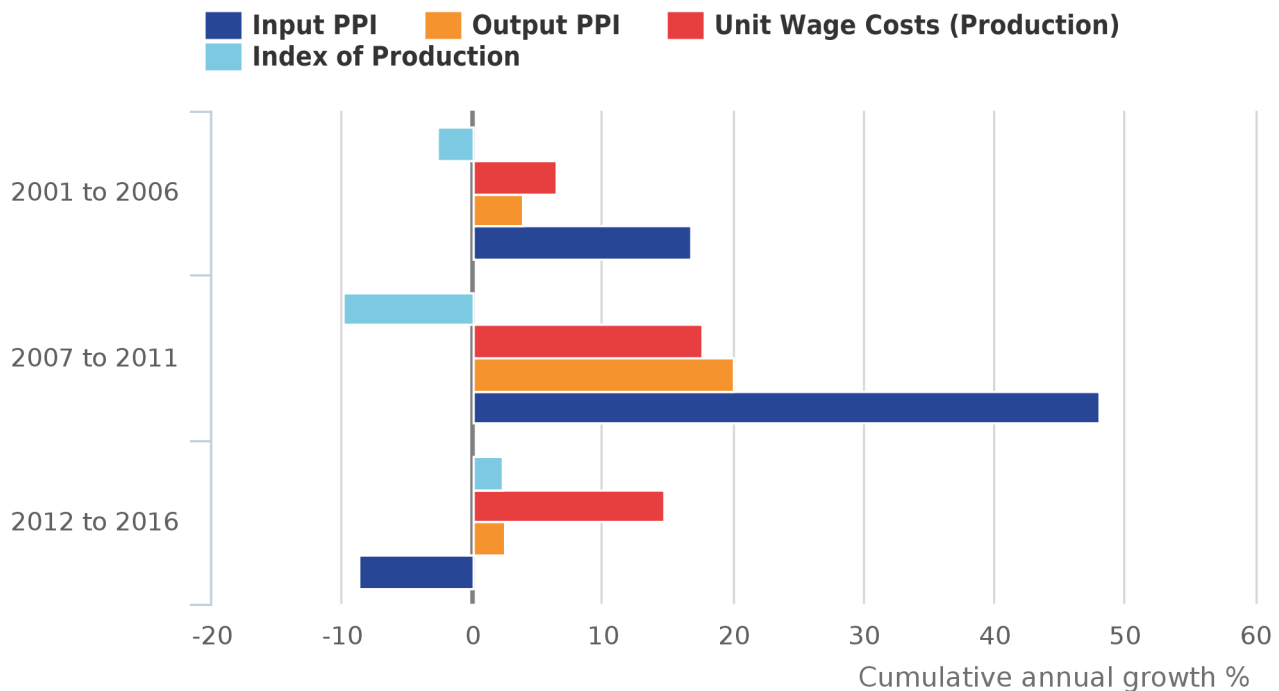
6 . The last 5 years has seen overall input price deflation for producers, which is in contrast to the previous decade

Figure 5 shows that cumulative growth in input producer prices between 2001 to 2006 and 2007 to 2011 was greater than the cumulative growth in output producer prices over equivalent 5 year periods. This alongside continued growth in unit wage costs for producers implies a possible narrowing of producers' margins during these two periods. The period between 2007 and 2011 also reflects the economic downturn when there was a 10% fall in output from the production sector over this period.

In contrast, the most recent 5-year period from January 2012 to December 2016 has shown overall deflation in input producer prices, although there have been rises in producer input prices during 2016 compared with the previous year. This deflation partly reflects cheaper world oil prices particularly in 2014 and 2015 seen in Figure 4.

Between 2012 and 2016, unit wage costs have continued to grow relatively strongly, alongside a slight recovery of production output over 2012 levels.

Figure 5: Cumulative annual percentage growth in output PPI, input PPI, index of production and unit wage costs for production, 2001 to 2006, 2007 to 2011 and 2012 to 2016



Source: Office for National Statistics

Notes:

1. IOP data covers January 2001 to November 2016.
2. Unit wage costs (production) covers Quarter 1 2001 to Quarter 3 2016

7 . Links to related statistics

In addition to the data included within this statistical bulletin, the following detailed datasets are available:

[PPI Aerospace and Electronic Indices](#)

[PPI MM22 Producer Price Indices](#)

Higher, lower and equal movements for each Producer Price Index are shown in the [PPI records](#).

A summary of the revisions to PPI data are available in the PPI revision triangles:

[PPI Revision triangle for total output \(12 months\)](#)

[PPI Revision triangle for total output \(1 month\)](#)

[PPI Revision triangle for total input \(12 months\)](#)

[PPI Revision triangle for total input \(1 month\)](#)

Other important measures of inflation and prices include the [Consumer Prices Index \(CPI\)](#) and the [Services Producer Price Index \(SPPI\)](#).

8 . Quality and methodology

The [PPI Quality and Methodology Information document](#) contains important information on:

- the strengths and limitations of the data and how it compares with related data
- users and uses of the data
- how the output was created
- the quality of the output including the accuracy of the data

If you would like more information about the reliability of the data, a [PPI standard errors article](#) was published with the [November 2015 release](#). The article presented the calculated standard errors of the Producer Price Index (PPI) during the period December 2014 to November 2015, for both month-on-month and 12-month growth.

[Guidance on using indices in indexation clauses](#) has been published on our website. It covers producer prices, services producer prices and consumer prices.

An up-to-date manual for the PPI, including the import and export index, is now available. [PPI methods and guidance](#) provides an outline of the methods used to produce the PPI as well as information about recent PPI developments.

Gross sector basis figures, which include intra-industry sales and purchases, are shown in [PPI dataset Tables 4 and 6](#).

The detailed input indices of prices of materials and fuels purchased by industry ([PPI dataset Table 6](#)) do not include the Climate Change Levy (CCL). This is because each industry can, in practice, pay its own rate for the various forms of energy, depending on the various negotiated discounts and exemptions that apply.

