

Statistical bulletin

# Producer price inflation, UK: September 2020 including services, July to September 2020

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). Also including quarterly estimates monitoring the changes in prices charged for services provided to UK-based customers for a range of industries.



Contact:  
Emelia D'Silva-Parker  
business.prices@ons.gov.uk  
+44 (0)1633 456907

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# 1 . Main points

- The headline rate of output inflation for goods leaving the factory gate was negative 0.9% on the year to September 2020, unchanged from June 2020.
- The price for materials and fuels used in the manufacturing process showed negative growth of 3.7% on the year to September 2020, up from negative growth of 5.6% in August 2020.
- Petroleum products was the largest downward contributor to the annual rate of output inflation; the largest downward contribution to the annual rate of input inflation was from crude oil.
- The annual rate of growth for the Services Producer Price Index (SPPI) was 1.0% in Quarter 3 (July to Sept) 2020, down from 1.6% in Quarter 2 (Apr to June) 2020.
- The on-quarter rate of growth for the Services Producer Price Index (SPPI) was negative 0.1% in Quarter 3 (July to Sept) 2020, no change from Quarter 2 (Apr to June) 2020.

We will be implementing important methodological improvements to the PPI and SPPI in November 2020, moving from fixed-base weights to annual chain-linking. We will also be changing the headline definition from a net to a gross sector basis in November 2020. Further details are in [Section 8: Things you need to know about this release](#).

## 2 . Producer price inflation summary

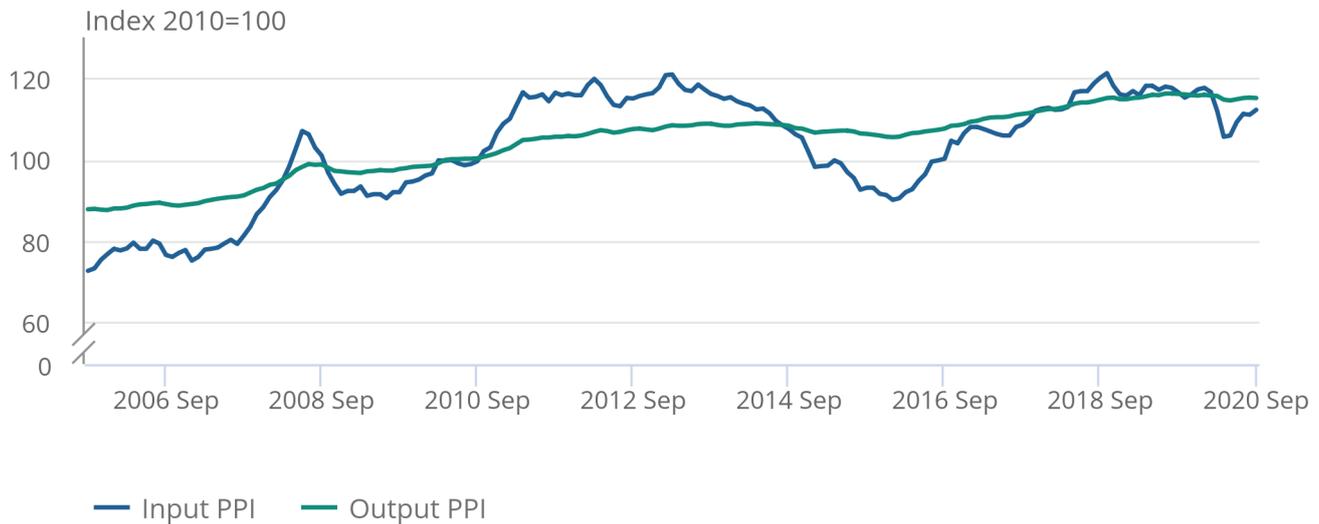
Figure 1 shows input and output Producer Price Indices (PPIs) over the past 15 years. Net input producer price inflation is driven mostly by commodity prices, which tend to be more volatile over time compared with prices for finished goods (output producer price inflation). Net input producer price inflation is also sensitive to exchange rate movements, as roughly two-thirds of net inputs into the UK manufacturing sector are imported.

## Figure 1: Net input producer price inflation (PPI) is more volatile over time than net output inflation

Input and output PPI, UK, September 2005 to September 2020

### Figure 1: Net input producer price inflation (PPI) is more volatile over time than net output inflation

Input and output PPI, UK, September 2005 to September 2020



Source: Office for National Statistics – Producer Price Index

## 3 . Producer price inflation – output analysis

### The annual output inflation rate shows negative growth for the sixth consecutive month

The annual rate of inflation for goods leaving the factory gate (output prices) remains at negative 0.9%, unchanged from June 2020 (Table 1). This is the sixth consecutive month that the rate has been negative, following 45 consecutive months of positive annual inflation between July 2016 and March 2020.

On the month, the rate of output inflation was negative 0.1% in September, a decrease of 0.2 percentage points from August 2020. This is the first time the rate has been negative since May 2020.

Table 1: Output prices, index values, growth rates and percentage point change to the 12-month rate, UK, September 2019 to September 2020

**All manufactured products (JVZ7)**

	<b>PPI Index (2010=100)</b>	<b>1-month rate</b>	<b>12-month rate</b>	<b>Change in the 12-month rate (percentage points)</b>
<b>2019 Sept</b>	116.1	-0.1	1.2	-0.5
<b>Oct</b>	116.0	-0.1	0.8	-0.4
<b>Nov</b>	115.8	-0.2	0.5	-0.3
<b>Dec</b>	115.7	-0.1	0.8	0.3
<b>2020 Jan</b>	115.9	0.2	1.0	0.2
<b>Feb</b>	115.7	-0.2	0.5	-0.5
<b>Mar</b>	115.6	-0.1	0.3	-0.2
<b>Apr</b>	114.7	-0.8	-0.7	-1.0
<b>May</b>	114.5	-0.2	-1.2	-0.5
<b>June</b>	114.8	0.3	-0.9	0.3
<b>July</b>	115.1	0.3	-0.9	0.0
<b>Aug</b>	115.2	0.1	-0.9	0.0
<b>Sept</b>	115.1	-0.1	-0.9	0.0

Source: Office for National Statistics - Producer Price Index

Notes

1. Series are not seasonally adjusted.

Figure 2 shows contributions by product group to the monthly and annual rate of output inflation, and Table 2 shows monthly and annual growth rates by product group.

Of the 10 product groups, three provided negative contributions to the output annual rate.

Petroleum provided the largest downward contribution of 1.58 percentage points to the annual rate (Figure 2) and had negative annual price growth of 19.7% on the year to September 2020 (Table 2). This is the eighth consecutive month that the annual rate for petroleum has been negative since February 2020. The negative rate in September 2020 was driven by diesel and gas oil, which is down 18.3% on the year, down from a negative 14.7% in August 2020.

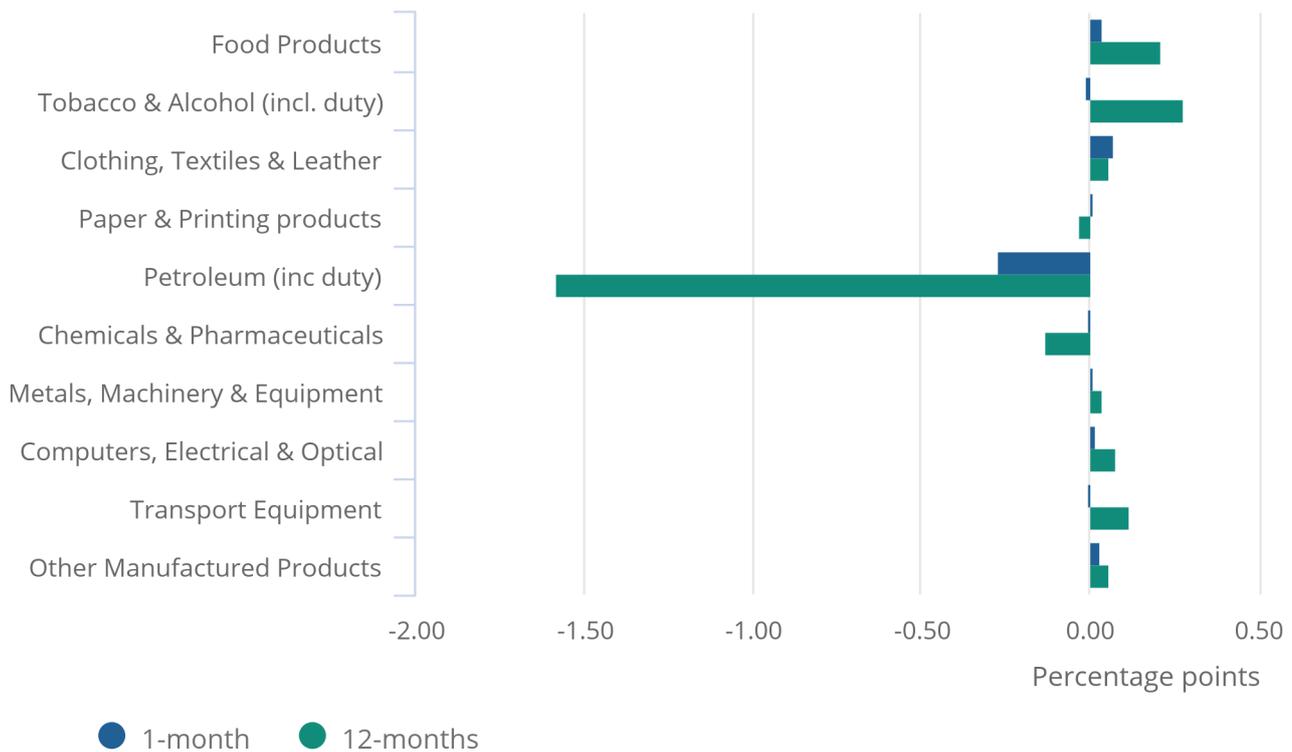
Of the seven product groups that provided a positive contribution to the annual rate, tobacco and alcohol provided the largest, at 0.28 percentage points. The annual rate for tobacco and alcohol rose by 2.8% on the year to September 2020.

**Figure 2: Three of the ten product groups provided downward contributions to the annual rate, the largest coming from petroleum**

Output prices contribution to 1-month and 12-month growth rate, UK, September 2020

Figure 2: Three of the ten product groups provided downward contributions to the annual rate, the largest coming from petroleum

Output prices contribution to 1-month and 12-month growth rate, UK, September 2020



Source: Office for National Statistics – Producer Price Index

Notes:

- Contributions to the rate may not add up to the rate exactly because of rounding.

Table 2: Net output prices, growth rates, UK, September 2020

Product group	Percentage Change	
	1-month rate	12-month rate
Food products	0.1	1.3
Tobacco and alcohol (incl. duty)	0.0	2.8
Clothing, textile and leather	0.3	0.5
Paper and printing	0.2	-0.8
Petroleum products (incl. duty)	-2.5	-19.7
Chemical and pharmaceutical	0.0	-1.7
Metal, machinery and equipment	0.1	0.5
Computer, electrical and optical	0.1	0.7
Transport equipment	0.0	0.9
Other manufactured products	0.1	0.4
<b>All manufacturing</b>	<b>-0.1</b>	<b>-0.9</b>

Source: Office for National Statistics - Producer Price Index

Figure 3 shows contributions to the change in the annual rate for factory gate prices (output prices).

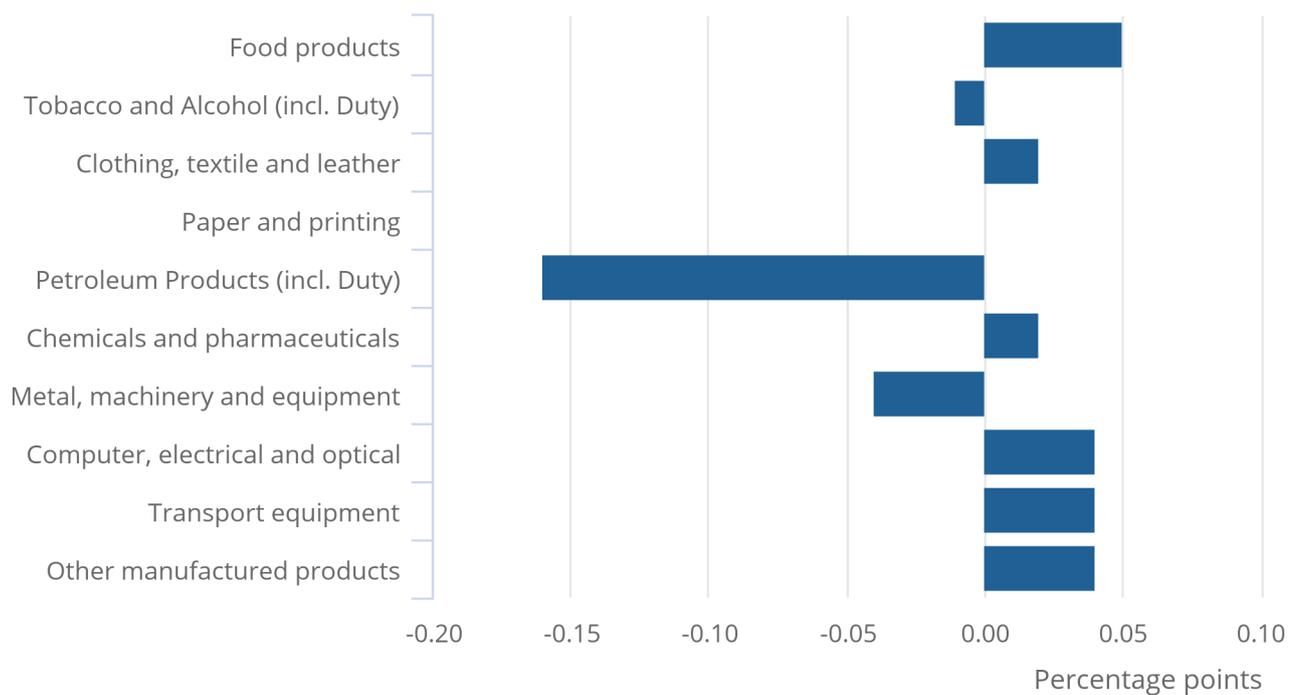
The annual rate for output prices has remained unchanged at negative 0.9% since June 2020. In September, Petroleum products showed the largest downward contribution to the change in the rate at negative 0.16 percentage points. This was offset by upward contributions from 6 of the 10 product groups, with food products providing the largest, at 0.05 percentage points (Figure 3).

### Figure 3: Food products made the largest upward contribution to the change in the annual rate of output inflation

Output PPI, contribution to change in the annual rate, UK, September 2020

### Figure 3: Food products made the largest upward contribution to the change in the annual rate of output inflation

Output PPI, contribution to change in the annual rate, UK, September 2020



Source: Office for National Statistics – Producer Price Index

Notes:

1. Contributions to the rate may not add up to the rate exactly because of rounding.

## 4 . Producer price inflation – input analysis

The annual rate of input inflation continues to display negative growth for the eighth consecutive month.

The annual rate of inflation for materials and fuels purchased by manufacturers (input prices) rose to negative 3.7% in September 2020, from negative 5.6% in August 2020 (Table 3).

The monthly rate for materials and fuels purchased by manufacturers was 1.1% in September 2020, up from negative 0.2% in August 2020. The monthly rate has been positive since May 2020, with the exception of a small decrease in August.

Table 3: Input prices, index values, growth rates and percentage point change to the 12-month rate, UK, September 2019 to September 2020

**All materials and fuels purchased (K646)**

	<b>PPI Index (2010=100)</b>	<b>1-month rate</b>	<b>12-month rate</b>	<b>Change in the 12-month rate (percentage points)</b>
<b>2019 Sept</b>	116.5	-0.9	-3.0	-2.1
<b>Oct</b>	115.2	-1.1	-5.0	-2.0
<b>Nov</b>	116.0	0.7	-1.8	3.2
<b>Dec</b>	117.2	1.0	1.0	2.8
<b>2020 Jan</b>	117.6	0.3	1.6	0.6
<b>Feb</b>	116.6	-0.9	-0.2	-1.8
<b>Mar</b>	111.9	-4.0	-3.4	-3.2
<b>Apr</b>	105.6	-5.6	-10.6	-7.2
<b>May</b>	105.9	0.3	-10.3	0.3
<b>June</b>	109.2	3.1	-6.7	3.6
<b>July</b>	111.2	1.8	-5.7	1.0
<b>Aug</b>	111.0	-0.2	-5.6	0.1
<b>Sept</b>	112.2	1.1	-3.7	1.9

Source: Office for National Statistics - Producer Price Index

Notes

1. Series are not seasonally adjusted.

The annual rate of inflation for imported materials and fuels was negative 4.1% in September 2020 (Table 4), which is up 1.9 percentage points from August 2020 when it was negative 6.0%. The monthly rate was 1.3% in September 2020, up 0.9 percentage points from 0.4% in August 2020. Imported materials and fuels represent roughly two-thirds of overall materials and fuels (input prices) in terms of index weight.

The sterling effective exchange rate index (ERI) displayed a negative growth of 1.2% on the month in September 2020. On the year, the ERI showed growth of 0.9% in September 2020, which is down 3.6 percentage points from 4.5% in August 2020.

All else being equal, a fall in the value of sterling would be expected to increase the cost of imports.

Table 4: Imported materials and fuels purchased and the sterling effective exchange rate, index values, growth rates and percentage point change to the 12-month rate, UK, September 2019 to September 2020

	Imported materials and fuels purchased (K64F)				Sterling effective exchange rate - month average (BK67)		
	PPI Index (2010=100)	1-month rate	12-month rate	Change in the 12-month rate (percentage points)	Sterling Index (Jan 2005=100)	1-month rate	12-month rate
<b>2019</b>							
<b>Sept</b>	115.0	-0.8	-0.9	-1.0	76.6	2.4	-1.9
<b>Oct</b>	112.8	-1.9	-3.7	-2.8	78.2	2.1	-0.5
<b>Nov</b>	112.1	-0.6	-2.2	1.5	79.6	1.8	1.8
<b>Dec</b>	112.3	0.2	-0.1	2.1	80.6	1.3	5.1
<b>2020</b>							
<b>Jan</b>	113.1	0.7	1.5	1.6	80.3	-0.4	3.3
<b>Feb</b>	113.1	0.0	0.9	-0.6	80.7	0.5	2.4
<b>Mar</b>	109.6	-3.1	-2.2	-3.1	76.9	-4.7	-3.8
<b>Apr</b>	102.7	-6.3	-9.8	-7.6	78.2	1.7	-1.5
<b>May</b>	103.6	0.9	-9.5	0.3	77.3	-1.2	-1.8
<b>June</b>	106.3	2.6	-6.8	2.7	77.0	-0.4	-0.1
<b>July</b>	108.5	2.1	-5.9	0.9	77.0	0.0	1.3
<b>Aug</b>	108.9	0.4	-6.0	-0.1	78.2	1.6	4.5
<b>Sept</b>	110.3	1.3	-4.1	1.9	77.3	-1.2	0.9

Source: Office for National Statistics - Producer Price Index

#### Notes

1. Series are not seasonally adjusted.
2. The sterling effective exchange rate measures changes in the strength of sterling relative to a basket of other currencies.
3. The sterling effective exchange rate is only indicative of the rates applied to producer prices. This is because the sterling effective exchange rate is a trade weighted index that represents all UK trade, whereas producer prices reflect transactions in the manufacturing sector.

Figure 4 shows contributions by product group to the monthly and annual rate of input inflation, and Table 5 shows monthly and annual growth rates by product group.

Of the nine product groups, four provided negative contributions to the input annual rate.

The largest downward contribution to the annual rate came from crude oil, which contributed 5.91 percentage points (Figure 4) and negative annual price growth of 34.1% (Table 5); the annual rate has slowed following four consecutive months where the rate had picked up, whilst remaining negative.

Recent price movements in crude oil are likely to reflect both demand and supply side factors during the ongoing coronavirus (COVID-19) pandemic. The fall in crude oil prices in September 2020 is attributed to the change in demand due to extended lockdowns in some countries alongside travel restrictions being placed.

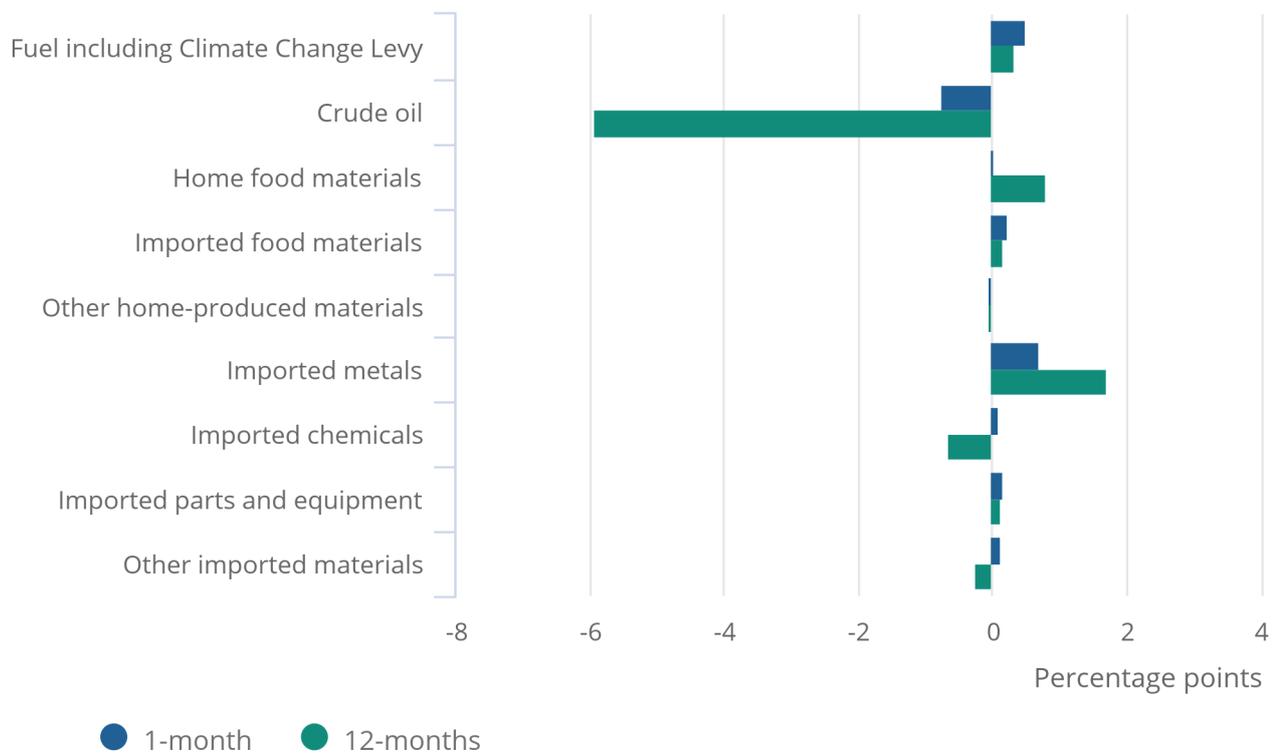
The largest upward contribution to the annual rate came from imported metals, with a contribution of 1.72 percentage points and price growth of 18.6%.

**Figure 4: Crude oil provided the largest downward contribution to the annual rate in September 2020**

Input PPI, contribution to 1-month and 12-month growth rate, UK, September 2020

Figure 4: Crude oil provided the largest downward contribution to the annual rate in September 2020

Input PPI, contribution to 1-month and 12-month growth rate, UK, September 2020



Source: Office for National Statistics – Producer Price Index

Notes:

- Contributions to the rate may not add up to the rate exactly because of rounding.

Table 5: Net input prices, growth rates, UK, September 2020

Product group	Percentage change	
	1-month rate	12-month rate
<b>Fuel including Climate Change Levy</b>	4.3	2.9
<b>Crude oil</b>	-5.8	-34.1
<b>Home food materials</b>	0.2	6.0
<b>Imported food materials</b>	3.1	2.3
<b>Other home-produced materials</b>	-0.8	-1.4
<b>Imported metals</b>	6.6	18.6
<b>Imported chemicals</b>	0.6	-4.7
<b>Imported parts and equipment</b>	1.0	0.6
<b>Other imported materials</b>	1.3	-2.7
<b>All manufacturing</b>	1.1	-3.7

Source: Office for National Statistics - Producer Price Index

Figure 5 shows contributions to the change in the annual rate of inflation for materials and fuels purchased by manufacturers (net input prices), which increased by 1.9 percentage points from negative 5.6% in August to negative 3.7% in September 2020.

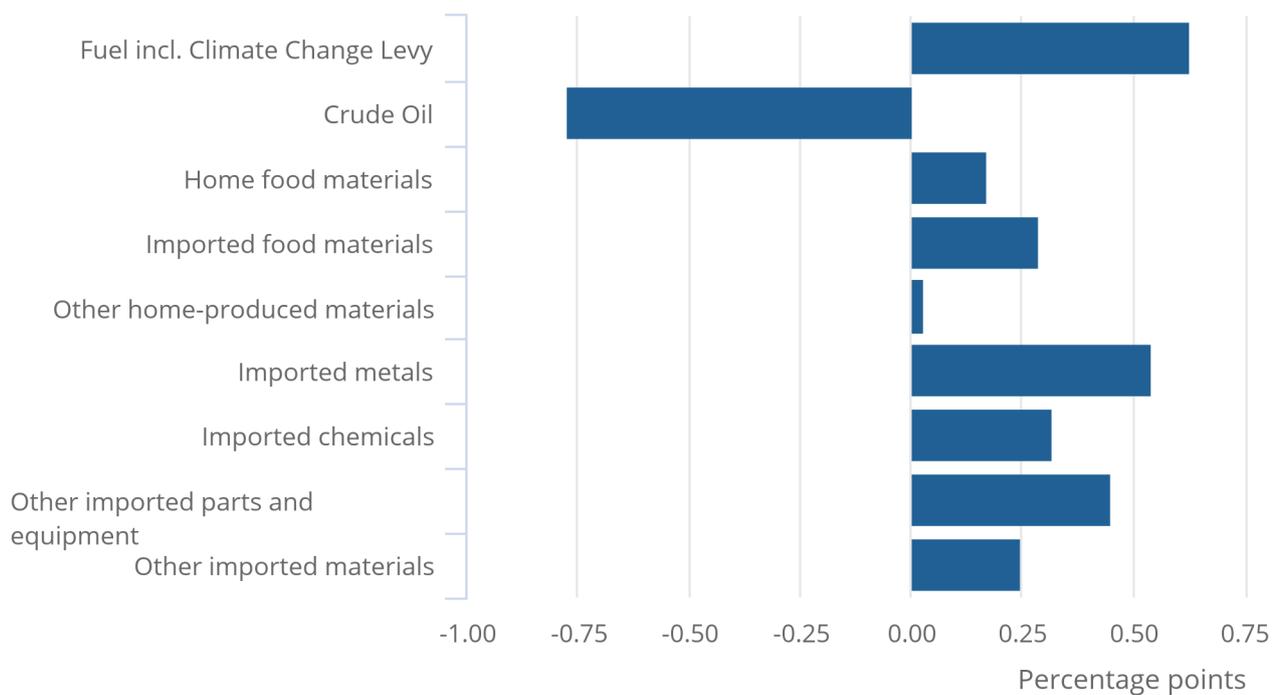
Of the nine product groups, eight displayed upward contributions to the change in the rate, with fuel providing the largest upward contribution to the change in the rate at 0.63 percentage points. Crude oil provided the only offsetting downward contribution to the change in rate at 0.77 percentage points, with annual growth for crude oil falling from negative 29.8% in August 2020 to negative 34.1% in September 2020.

**Figure 5: Crude oil provided the largest downward contribution to the change in the annual rate in September 2020**

Input PPI, contribution to change in the annual rate, UK, September 2020

**Figure 5: Crude oil provided the largest downward contribution to the change in the annual rate in September 2020**

Input PPI, contribution to change in the annual rate, UK, September 2020



Source: Office for National Statistics – Producer Price Index

Notes:

- Contributions to the rate may not add up to the rate exactly because of rounding.

## 5 . Gross and net producer price indices

Producer Price Indices (PPIs) are measured on two different bases: gross and net of inter-sector sales. Gross sector PPIs include products sold by one business to another business classified to the same industry sector. Net sector PPIs exclude (net out) products sold by a business to another business classified to the same industry sector. We currently headline with net sector PPIs, which include duty. We will move our headline to a gross sector basis excluding duty after November 2020, in line with international best practice. The PPI indices on a net sector basis will no longer be available.

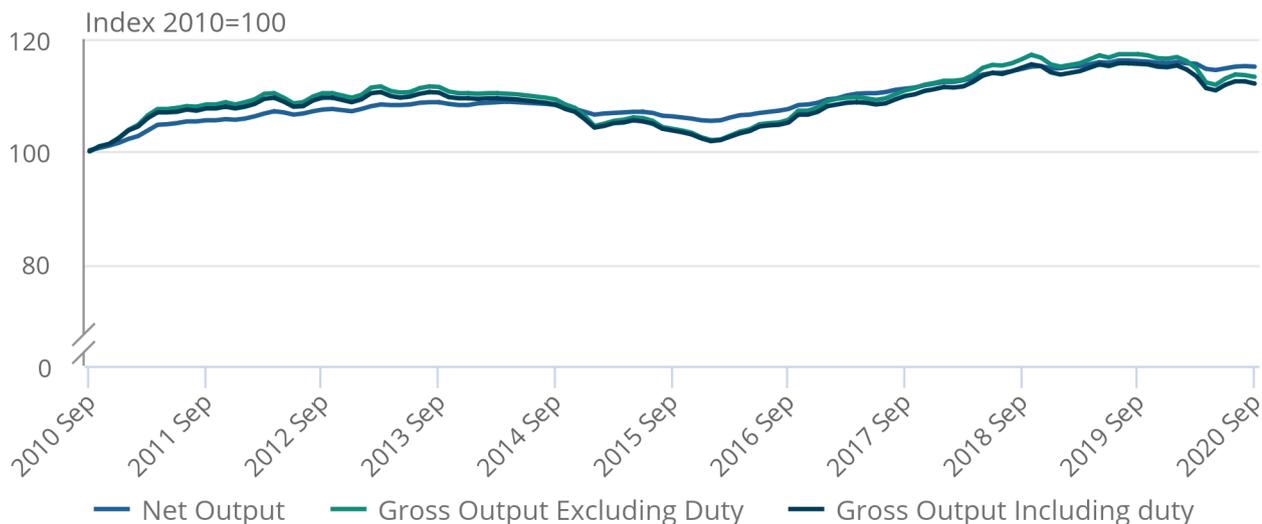
Figure 6 shows net and gross output PPIs over the past 10 years. In September 2020, the net output PPI was 115.1 while the gross output excluding duty PPI was 113.3.

### Figure 6: Gross and net sector output indices display similar trends over time

Net output versus gross output indices, UK, September 2020

## Figure 6: Gross and net sector output indices display similar trends over time

Net output versus gross output indices, UK, September 2020



Source: Office for National Statistics – Producer Price Index

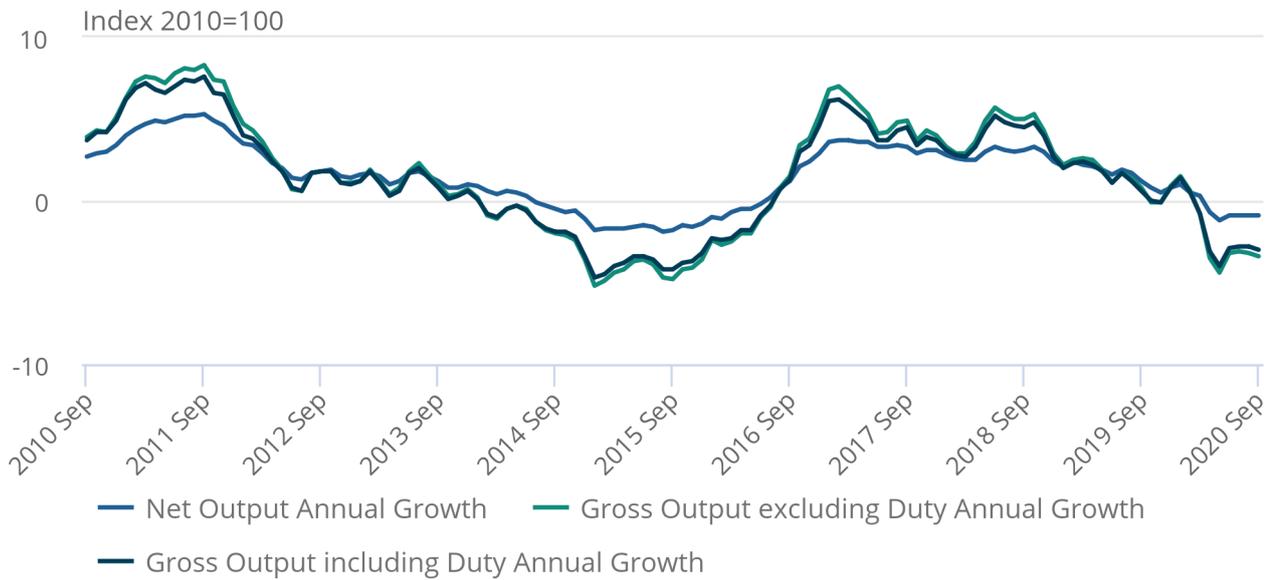
Gross and net sector output PPIs display similar trends over time, although the gross indices show higher volatility, particularly at times of high inflation, either positive or negative (Figure 7). For the net output PPI, the annual growth fell to negative 0.9% in September 2020, no change from negative 0.9% in August 2020. For the gross output excluding duty PPI, the annual growth in September 2020 was negative 3.4%, down from negative 3.2% in August 2020.

## Figure 7: Gross output shows greater volatility over time

Net output versus gross output annual growth, UK, September 2020

### Figure 7: Gross output shows greater volatility over time

Net output versus gross output annual growth, UK, September 2020



Source: Office for National Statistics – Producer Price Index

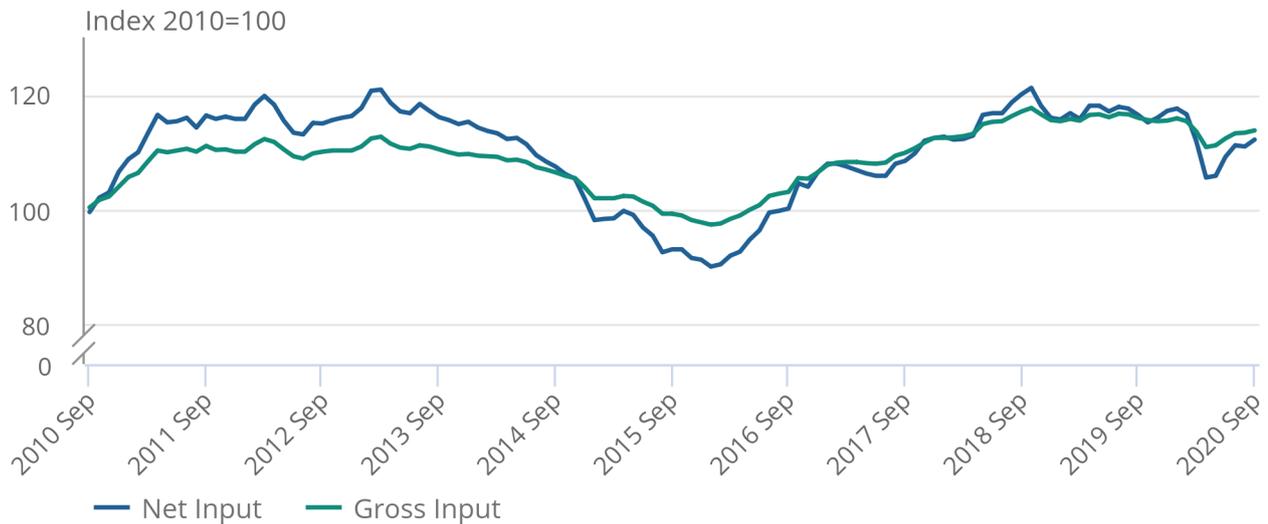
Figure 8 shows the net and gross input PPIs over the past 10 years. The trends of the PPIs are similar, although the net input PPI appears more volatile than the gross input PPI. In September 2020, the net input PPI was 112.2 while the gross input PPI was 113.8.

## Figure 8: Net input shows greater volatility but displays similar trends to gross input

Net input versus gross input indices, UK, September 2020

### Figure 8: Net input shows greater volatility but displays similar trends to gross input

Net input versus gross input indices, UK, September 2020



Source: Office for National Statistics – Producer Price Index

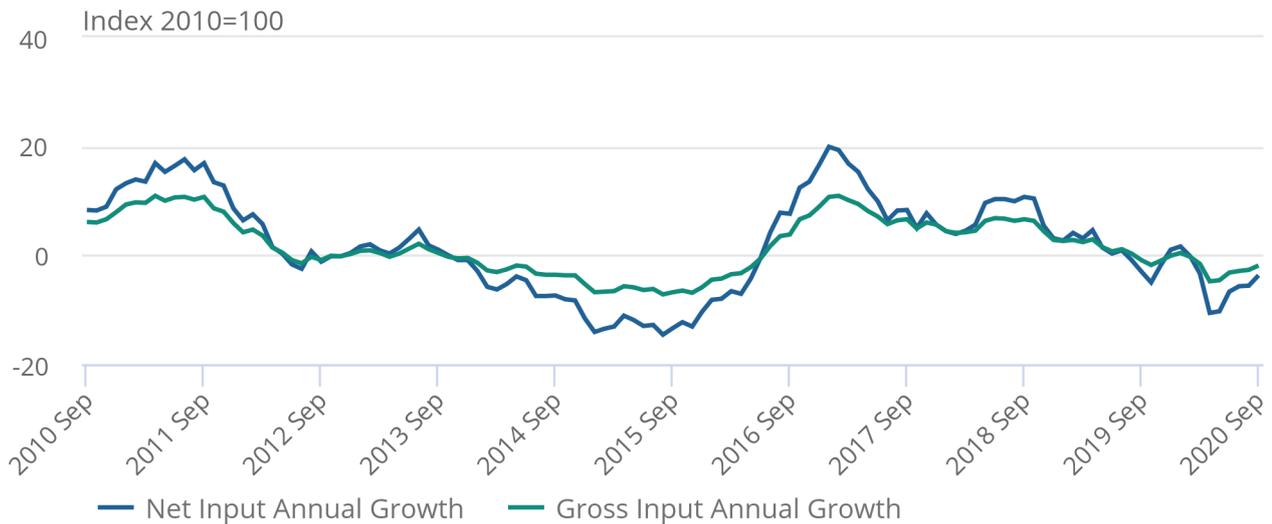
Figure 9 also shows that the annual growth rates for the net input PPI are more volatile than for the gross input PPI. For the net input PPI, the annual growth was negative 3.7% in September 2020, down from negative 5.6% in August 2020. For the gross input PPI, the annual growth in September 2020 was negative 1.9%, down from negative 2.7% in August 2020.

## Figure 9: Net input growth displays more volatility than gross input growth

Net input versus gross input annual growth, UK, September 2020

### Figure 9: Net input growth displays more volatility than gross input growth

Net input versus gross input annual growth, UK, September 2020



Source: Office for National Statistics – Producer Price Index

## 6 . Services producer price inflation summary

The annual inflation rate was 1.0% in Quarter 3 (July to Sept) 2020, down from 1.6% in Quarter 2 (Apr to June) 2020. This is the second consecutive quarter the annual rate has slowed, following two years of relatively strong growth. The Services Producer Price Index (SPPI) has reported positive annual growth for the period across the past 10 years (Figure 6). SPPI annual growth slowed to 0.3% in Quarter 3 2015 from 1.5% in Quarter 3 2014, before returning to more typical growth.

**Figure 10: The annual rate of inflation for the Services producer price index (SPPI) has remained positive for over ten years**

SPPI, UK, Quarter 3 (July to Sept) 2010 to Quarter 3 2020

Figure 10: The annual rate of inflation for the Services producer price index (SPPI) has remained positive for over ten years

SPPI, UK, Quarter 3 (July to Sept) 2010 to Quarter 3 2020



Source: Office for National Statistics – Services Producer Price Index quarterly survey

Notes:

1. Q1 refers to Quarter 1 (January to March), Q2 refers to Quarter 2 (April to June), Q3 refers to Quarter 3 (July to September) and Q4 refers to Quarter 4 (October to December).

## 7 . Services producer price inflation – output analysis

### The annual rate of inflation slows for second consecutive quarter

The Services Producer Price Index (SPPI) slowed to 1.0% on the year to Quarter 3 (July to Sept) 2020, down from 1.6% on the year to Quarter 2 (Apr to June) 2020, the lowest the rate has been since Quarter 2 2017. The quarter on quarter growth of services sold by UK companies was negative 0.1% in Quarter 3 2020, no change from Quarter 2 2020.

The annual rate has remained positive since Quarter 1 (Jan to Mar) 2010, whilst this is the second consecutive quarter the quarterly rate has been negative, following 13 consecutive quarters of positive growth.

Table 6: Services Producer Prices, UK, Quarter 3 (July to Sept) 2020

**Percentage change**

	<b>SPPI Index (2010=100)</b>	<b>Percentage change</b>		<b>Change in the 12-month rate (percentage points)</b>
		<b>1-Quarter</b>	<b>12-months</b>	
<b>2019 Q2</b>	110.8	0.2	1.4	-0.1
<b>Q3</b>	111.4	0.5	1.4	0.0
<b>Q4</b>	111.9	0.4	1.5	0.1
<b>2020 Q1</b>	112.7	0.7	1.9	0.4
<b>Q2</b>	112.6	-0.1	1.6	-0.3
<b>Q3</b>	112.5	-0.1	1.0	-0.6

Source: Office for National Statistics - Services Producer Price Index

## Notes

1. Q1 refers to Quarter 1 (Jan to Mar), Q2 refers to Quarter 2 (Apr to June), Q3 refers to Quarter 3 (July to Sept) and Q4 refers to Quarter 4 (Oct to Dec).
2. Series are not seasonally adjusted.

Of the ten sections (as defined by the Standard Industrial Classification 2007: SIC 2007) that are combined to form the Services Producer Price Index (SPPI) six showed annual price increases (Table 7), with information and communication showing the largest price increase on the year to Quarter 3 2020 at 2.5%; the index has shown positive growth since Quarter 1 2016.

Information and communication provided the largest upward contribution to the annual rate, contributing 0.49 percentage points (Figure 11). This was driven mainly by computer programming, consultancy and related activities whose prices rose 1.9% on the year.

Professional, scientific and technical provided the largest downward contribution to the quarterly rate, contributing negative 0.06 percentage points (Figure 11). This was driven mainly by management consultancy whose prices were a negative 3.8% on the quarter.

Table 7: Services Producer Price Inflation, 1-quarter and 12-month percentage change to Quarter 3 (July to Sept) 2020

Service group	Percentage change	
	1-quarter	12-months
<b>Water supply, sewerage and waste management</b>	0.7	-1.8
<b>Repair and maintenance of motor vehicles</b>	-1.1	1.3
<b>Transportation and storage</b>	-0.2	2.0
<b>Accommodation and food</b>	-0.1	-4.1
<b>Information and communication</b>	-0.1	2.5
<b>Real estate activities</b>	-0.6	-1.4
<b>Professional, scientific and technical activities</b>	-0.3	0.6
<b>Administrative and support services</b>	0.6	1.5
<b>Education</b>	-1.8	-2.2
<b>Other services</b>	-0.1	2.2
<b>SPPI</b>	-0.1	1.0

Source: Office for National Statistics - Services Producer Price Index

#### Notes

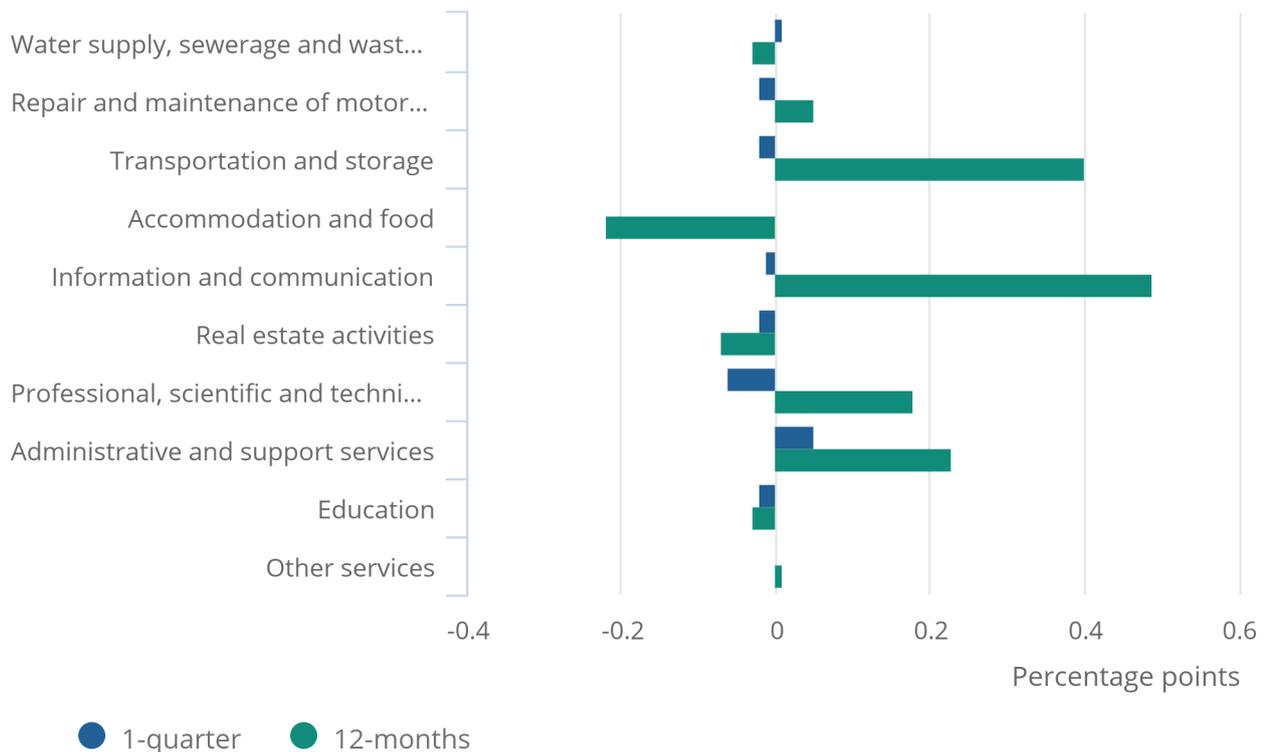
1. The section level SPPIs are an aggregate of individual industry level SPPIs (excluding Financial Intermediation) published in the SPPI Statistical Bulletin. They do not provide full coverage of the service sector.

**Figure 11: Information and communication, and professional, scientific and technical activities made the largest contribution to the SPPI annual and quarterly rate respectively**

SPPI, contribution to 1-quarter and 12-month growth rate, UK, September 2020

Figure 11: Information and communication, and professional, scientific and technical activities made the largest contribution to the SPPI annual and quarterly rate respectively

SPPI, contribution to 1-quarter and 12-month growth rate, UK, September 2020



Source: Office for National Statistics – Services Producer Price Index quarterly survey

Notes:

- Contributions to the rate may not add up to the rate exactly because of rounding.

## 8 . Things you need to know about this release

## Coronavirus in September 2020

On 23 March 2020, the UK and devolved governments announced official guidance on restrictions on movement for the UK as a result of the coronavirus (COVID-19) pandemic. Data collection for the Producer Price Index (PPI) surveys, including the surveys measuring domestic, import and export prices for September 2020, was by paper questionnaires that were sent to businesses on 20 August 2020, asking to return prices that were applicable on or around 1 September 2020. Data collection for the Services Producer Price Index (SPPI) survey for Quarter 3 (July to Sept) 2020, was by paper questionnaires that were sent to businesses on 14 July 2020, asking to return prices that were applicable for July 2020.

Although there has been a gradual reopening of workplaces and premises since May 2020 as a result of the lifting of the government restrictions, the response for the current period for the Producer Price Index (PPI) and the Services Producer Price Index (SPPI) was lower in comparison with pre-lockdown months. For PPI, the response for September 2020 was 77.6%, down from a pre-lockdown 87.4% in February 2020; for SPPI, the response for Quarter 3 (July to Sept) 2020 was 75.3%, down from a pre-lockdown 85.8% in Quarter 4 (Oct to Dec) 2019. We closely monitor response rates in each publication and use statistical methods to deal with non-response. For further information, please see [Section 11: Measuring the data](#).

We have worked closely with our business respondents and data suppliers, and we have used additional data sources to quality assure the estimates in this publication. These include qualitative information sourced from manufacturing industry respondents to the [Business Impact of Coronavirus \(COVID-19\) Survey \(BICS\)](#) and anecdotal evidence from responders to both the BICS and/or PPI surveys.

## Annual chain linking

We will be implementing important methodological improvements to the PPI and SPPI in November 2020. Articles published on 20 July 2020 have [detailed changes in methodology](#), and the move to an [annual chain-linked business prices structure](#).

Further articles explain moving from fixed-base weights to annual chain-linking, which will improve the accuracy of these statistics; [Producer price weight changes](#) and [Services producer price weight changes](#).

## Moving from net to gross

As we introduce annual chain-linking, we will be implementing [changes to the level of detail](#) of the data we publish and [classification changes](#) alongside changes to our producer price inflation headline figure from net to gross in line with international best practice. The net sector indices will cease to be included in our published data.

To support users with the transition to the new headline definition, Subsection gross and net sector indices includes a comparison between the existing measures of output and input producer price inflation on a net and gross basis.

The move to gross sector inputs will also see a shift in composition of the headline input rate. Where currently around 67% of the net sector input is made up of imports, the gross sector input series is composed of 76% domestic inputs and 24% imported inputs. This is because intra-industry transactions are included within the gross sector input series, while excluded within net sector series.

## Classification change

The November 2020 PPI bulletin will be published for the first time using Classification of Products by Activity 2.1 (CPA 2.1) framework. The PPI data are currently aggregated using a CPA 2008 classification system, CPA 2.1 is the most up-to-date international product classification system, reflecting product change over time.

The methodological changes being introduced next month will be summarised within an article on the Impact of the methodological improvements to Producer Price Inflation, which is scheduled to be released on 11 of November 2020. This article will highlight the impact of classification changes, chainlinking as well as the move from net to gross sector indices.

## **9 . Glossary**

### **Producer Price Inflation**

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).

### **Output Prices**

The factory gate price (output price) is the amount received by UK producers 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.

### **Input Prices**

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 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.

### **Services Producer Price Inflation**

Quarterly estimates monitoring the changes in prices charged for services provided to UK-based customers for a range of industries.

## **10 . Strengths and limitations**

### **Strengths**

- These data provide users with valuable insight into the changes in the process of goods and services bought and sold by UK manufacturers.
- Our data is very comprehensive, covering many products at a much greater level of detail than other surveys.

### **Limitations**

- Some products are produced by only a small number of manufacturers, meaning that there may not be enough manufacturers for a detailed and robust analysis and the sector may be volatile, requiring some estimation.
- The data can be revised for a five-month period for Producer Price Indices (PPI), and five-quarter period for Services Producer Price Indices (SPPI), due to the timeframe suppliers provide price data; the revision window is being extended to cover 12 months when we published chainlinked PPI series in November 2020.
- The data for the latest two months of PPI and two quarters of SPPI is provisional.

For more information regarding the strengths and limitations of the data and how the output was created please see the [Producer Price Index \(PPI\) Quality and Methodology Information report](#) and the [Services Producer Price Indices \(SPPI\) Quality and Methodology information report](#).

Other useful documentation for the PPI and the SPPI are:

- [Guidance on using indices in indexation clauses \(PDF, 197KB\)](#) – covers producer prices, services producer prices and consumer prices
- [PPI methods and guidance \(PDF, 1.18MB\)](#) – provides an outline of the methods used to produce the PPI as well as information about recent PPI developments
- [SPPI user guidance and methodology article](#) – coverage of the services sector at Standard Industrial Classification (SIC) class, division and section level
- [PPI standard errors article](#) and [SPPI standard errors article](#) – more information about the reliability of the data

## 11 . Measuring the data

### Further information on the Producer price indices

The use of core input inflation removes the more volatile indices of food, tobacco, beverages and petrol from our statistics.

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

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

All figures presented for PPI are calculated on a net sector basis unless otherwise stated and all index numbers exclude Value Added Tax (VAT). The Soft Drinks Industry Levy, introduced in April 2018, is also excluded. Excise Duty (on cigarettes, manufactured tobacco, alcoholic liquor and petroleum products) is included, except where labelled otherwise.

Each PPI and SPPI has two unique identifiers: a 10-digit index number, which relates to the Standard Industrial Classification 2007: SIC 2007 code appropriate to the index, and a four-character alpha-numeric code (series ID), which can be used to find series when using the time series dataset for PPI and SPPI.

## Further information on the Services producer price indices

The SPPI provides a measure of inflation for the UK services sector. It is constructed from a statutory quarterly survey, which measures changes in the price of services provided to UK-based customers for a range of industries. Individual SPPIs are available, which provide information on price change for a selection of services industries. These individual price indices are also aggregated together to create a services industry SPPI with limited coverage (it does not provide full coverage of the "services sector").

The services sector is estimated to account for around 80% of the UK economy based on its weight in gross domestic product (GDP). We do not produce an index for every industry in the services sector and so the SPPI is a partial, best estimate of the overall inflation to UK businesses in the services sector. The SPPIs presented in this statistical bulletin are estimated to represent 59% of the total services sector at industry level.

## Coronavirus

As highlighted in Section 8: Things you need to know about this release, the coronavirus (COVID-19) pandemic has impacted on response rates in this release and is likely to be a factor in reduced response for future releases.

Table 8 shows the response rates to the domestic (PPI), export (Export Price Index (EPI)) and import (Import Price Index (IPI)) price surveys at time of publishing for each reference period. Response rates for the PPI, EPI and IPI show improvements in September 2020 compared with August 2020.

The low response rates in September 2020 are unlikely to have had a substantial impact on the headline PPI figures. However, the smaller sample sizes are likely to have increased volatility for some of the lower-level indices, particularly among IPIs and EPIs. Revisions are also likely to be larger than usual over the next few months.

Table 8: Overall effective response rates at time of first publishing

### Weighted response

	PPI (domestic)	IPI	EPI
<b>September 2019</b>	84.5	83.0	78.8
<b>October 2019</b>	85.5	82.0	81.4
<b>November 2019</b>	85.6	84.1	80.2
<b>December 2019</b>	86.6	84.9	80.0
<b>January 2020</b>	85.3	84.8	80.8
<b>February 2020</b>	87.4	86.8	80.3
<b>March 2020</b>	83.9	82.2	80.3
<b>April 2020</b>	73.2	69.8	68.9
<b>May 2020</b>	74.6	57.7	54.4
<b>June 2020</b>	71.3	62.8	66.8
<b>July 2020</b>	74.2	69.8	65.4
<b>August 2020</b>	73.7	70.5	67.0
<b>September 2020</b>	77.6	74.0	68.7

Source: Office for National Statistics - Producer Price Index

Table 9 shows the response rates to the SPPI survey at time of publishing for each reference period. The response rates for the SPPI shows there was a fall of around 1.3 percentage points in Quarter 3 (July to Sept) 2020 compared with Quarter 2 (Apr to June) 2020.

Table 9: Overall effective response rates at time of first publishing

### Weighted Response SPPI

<b>2019 Q3</b>	84.8
<b>Q4</b>	85.8
<b>2020 Q1</b>	83.6
<b>Q2</b>	76.6
<b>Q3</b>	75.3

Source: Office for National Statistics - Services Producer Price Index

#### Notes

1. Q1 refers to Quarter 1 (Jan to Mar), Q2 refers to Quarter 2 (Apr to June), Q3 refers to Quarter 3 (July to Sept) and Q4 refers to Quarter 4 (Oct to Dec).

Producer prices are normally imputed for non-response by using ratio imputation. The ratio imputation method calculates the growth within an index based on prices that have been returned and then applies it to the last known value for the missing price. This method ensures that if prices for a group of products increase (decrease) from one month to the next, the imputed values for non-respondents in that product group will also increase (decrease) when compared with the last known value.

In a small number of cases, prices may be manually imputed by directly using the latest available price from the latest available period. This method is applied when the nature of the product or previous information from respondents indicate that a price change is unlikely (that is, long-term contracts and fixed listing prices).

These are simple but effective methods, used as a [standard internationally \(PDF, 5.87MB\)](#) and recommended by international organisations specifically for [treatment of missing producer prices because of the coronavirus pandemic \(PDF, 52KB\)](#).

## Additional ONS sources of coronavirus information

Various articles have been published that help describe the Office for National Statistics (ONS) response to how the coronavirus might be seen in our estimates:

- [Coronavirus and the effects on UK prices](#) (published 6 May 2020)
- [Coronavirus and the impact on output in the UK economy, UK: July 2020](#) (published 11 September 2020)
- [Meeting the challenge of measuring the economy through the COVID-19 pandemic](#) (published 6 May 2020)
- [Coronavirus and the effects on UK GDP](#) (published 6 May 2020)
- [Real-time turning point indicators: a UK focus](#) (published 27 April 2020)
- [Communicating gross domestic product](#) (published 27 April 2020)

Our latest data and analysis on [the impact of the coronavirus on the UK economy and population](#) are also available.

We have released a [public statement](#) on the coronavirus and the production of statistics, and any specific queries on this can be directed to the [Media Relations Office](#).

## After EU withdrawal

As the UK leaves the EU, it is important that our statistics continue to be of high quality and are internationally comparable. During the transition period, those UK statistics that align with EU practice and rules will continue to do so in the same way as before 31 January 2020.

After the transition period, we will continue to produce our inflation statistics in line with the UK Statistics Authority's [Code of Practice for Statistics](#) and in accordance with internationally agreed statistical guidance and standards.

## 12 . Related links

### [Consumer prices inflation, UK](#)

Statistical bulletin | Released monthly

Price indices, percentage changes and weights for the different measures of consumer price inflation.

### [UK House Price Index: July 2020](#)

Statistical bulletin | Released 7 October 2020

Monthly house price inflation in the UK, calculated using data from HM Land Registry, Registers of Scotland, and Land and Property Services Northern Ireland.

### [Construction Output Price Indices \(OPIs\), UK: January to March 2020](#)

Statistical bulletin | Released 20 May 2020

A summary of the Construction output Price indices (OPI's) in the UK for Quarter 1 (January to March) 2020.

### [GDP monthly estimate, UK: July 2020](#)

Statistical bulletin | Released 11 September 2020

Gross domestic product (GDP) measures the value of goods and services produced in the UK. It estimates the size of and growth in the economy.