

Statistical bulletin

# Producer price inflation, UK: December 2022 including services, October to December 2022

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).



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## Notice

### 25 January 2023

This Office for National Statistics (ONS) publication of Producer Price Indices (PPI) data was delayed by a week to ensure that quality assurance was completed on the corrections to data from January 2021 to October 2022. Details of this are included in Section 2. This publication covers the first release of both November and December 2022 PPI data.

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# 1 . Main points

- Producer Price Index (PPI) weights for 2021 and 2022 have been corrected, which has resulted in a small number of revisions within the previously published data back to January 2021; there has been no change applied to SPPI weights, see Section 2 for more information.
- Producer input prices rose by 16.5% in the year to December 2022, down from 18.0% in the year to November 2022, and down from 20.2% in the year to October 2022.
- Producer output (factory gate) prices rose by 14.7% in the year to December 2022, down from 16.2% in the year to November 2022 and down from 17.5% in the year to October 2022.
- Inputs of other parts and equipment, and petroleum products provided the largest downward contributions to the change in the annual rates of input and output inflation, respectively.
- On a monthly basis, input prices decreased by 1.1% and output prices decreased by 0.8% in December 2022.
- Services producer prices rose by 5.2% in the year to Quarter 4 (Oct to Dec) 2022, down from a record high of 6.2% in the year to Quarter 3 (July to Sept) 2022.

## 2 . Correction to producer price inflation (PPI) weights

As a result of the quality assurance preparing the PPI weights data for 2023, an error was identified in the 2022 weights whereby the price index for diesel fuel had not been correctly weighted within PPI for the whole of 2022. A [Producer Price Index correction notice](#) was published after the October release detailing the revisions made to PPI data for January to October 2022.

A further review was conducted of the data mapping systems used to align all data sources to the PPI. This identified additional, smaller errors in the PPI weights for both 2021 and 2022. As a result, the PPI was [suspended](#) to allow for a full investigation and quality assurance of the production process to take place. This quality assurance has now been completed and data source checks have been extended to ensure that all data is aligned correctly and fully audited at the time of use in calculating PPI weights. These additional steps to the production process will ensure that these errors are not repeated in other areas.

The errors identified in aligning the data sources to PPI for the purpose of calculating index weights affected five product groups within input and output PPI. These are listed below:

- products of agriculture
- printing and reproduction services
- fabricated metal products
- repair and installation services of machinery and equipment
- other transport equipment

The change in weights resulting from these corrections has been minor and this is reflected in the scale of revisions to headline input and output PPI indices (Table 1). The scale of revisions is greater within input PPI because one affected category - products of agriculture - is not included in the output PPI. While revisions affected weights back to January 2021, the revisions to annual growth rates are less than 0.1 percentage point in many periods.

Table 1: Revisions to the annual percentage change  
Input and output producer price inflation (PPI), January 2021 to December 2022

		Input PPI (GHIP)			Output PPI (GB7S)		
		Uncorrected rate	Revised rate	Difference	Uncorrected rate	Revised rate	Difference
<b>2021</b>	<b>Jan</b>	1.9	1.9	-	0.2	0.2	-
	<b>Feb</b>	3.2	3.2	-	1.1	1.1	-
	<b>Mar</b>	6.1	6.3	0.2	1.9	1.9	-
	<b>Apr</b>	9.6	9.7	0.1	3.5	3.5	-
	<b>May</b>	10.3	10.2	-0.1	4.3	4.3	-
	<b>June</b>	9.7	9.6	-0.1	4.6	4.6	-
	<b>July</b>	10.5	10.5	-	5.4	5.4	-
	<b>Aug</b>	11.3	11.3	-	6.2	6.2	-
	<b>Sept</b>	12.2	12.3	0.1	7.0	7.0	-
	<b>Oct</b>	13.8	13.9	0.1	8.7	8.7	-
	<b>Nov</b>	15.1	15.4	0.3	9.3	9.3	-
	<b>Dec</b>	13.7	14.0	0.3	9.4	9.4	-
<b>2022</b>	<b>Jan</b>	14.4	14.7	0.3	10.3	10.3	-
	<b>Feb</b>	15.3	15.6	0.3	10.8	10.7	-0.1
	<b>Mar</b>	19.3	19.4	0.1	13.7	13.7	-
	<b>Apr</b>	21.3	21.5	0.2	16.6	16.7	0.1
	<b>May</b>	22.7	23.0	0.3	17.8	17.8	-
	<b>June</b>	24.3	24.6	0.3	19.5	19.5	-
	<b>July</b>	22.8	22.9	0.1	19.8	19.9	0.1
	<b>Aug</b>	21.4	21.6	0.2	19.0	19.1	0.1
	<b>Sept</b>	21.3	21.5	0.2	18.2	18.3	0.1
	<b>Oct</b>	20.1	20.2	0.1	17.4	17.5	0.1

Source: Office for National Statistics – Producer Price Index

#### Notes

1. Revisions that are smaller than +/- 0.05 percentage points and therefore do not affect published annual rates, are represented with a '-'.
2. The "uncorrected rate" reflects what the annual rate would have been if the weights had not been corrected. This may differ from previously published annual rates since it includes the latest available survey price data.

The impact of revisions on the headline indices is small as the total number of published indices that have been revised is also relatively small. The extent of these revisions are summarised in Table 2.

Table 2: Number of published and revised indices  
Input producer price inflation (PPI), output PPI, Export Price Index (EPI) and Import Price Index (IPI)

	<b>Total number of published indices</b>	<b>Number of indices revised in 2021</b>	<b>Number of indices revised in 2022</b>
<b>Input PPI</b>	265	44	72
<b>Output PPI</b>	350	1	22
<b>EPI</b>	738	30	49
<b>IPI</b>	694	14	19

Source: Office for National Statistics – Producer Price Index

Revisions to the monthly and annual growth rates of the headline series are also covered in more detail in the revisions triangle datasets:

- [PPI revision triangle: total input one month \(GHIP\)](#)
- [PPI revision triangle: total input 12 months \(GHIP\)](#)
- [PPI revision triangle: total output one month \(GB7S\)](#)
- [PPI revision triangle: total output 12 months \(GB7S\)](#)

This publication was delayed by a week to complete the quality assurance described above. As of next month, it is expected that PPI will resume its normal publication cycle.

### 3 . Producer price inflation (PPI) annual growth rates

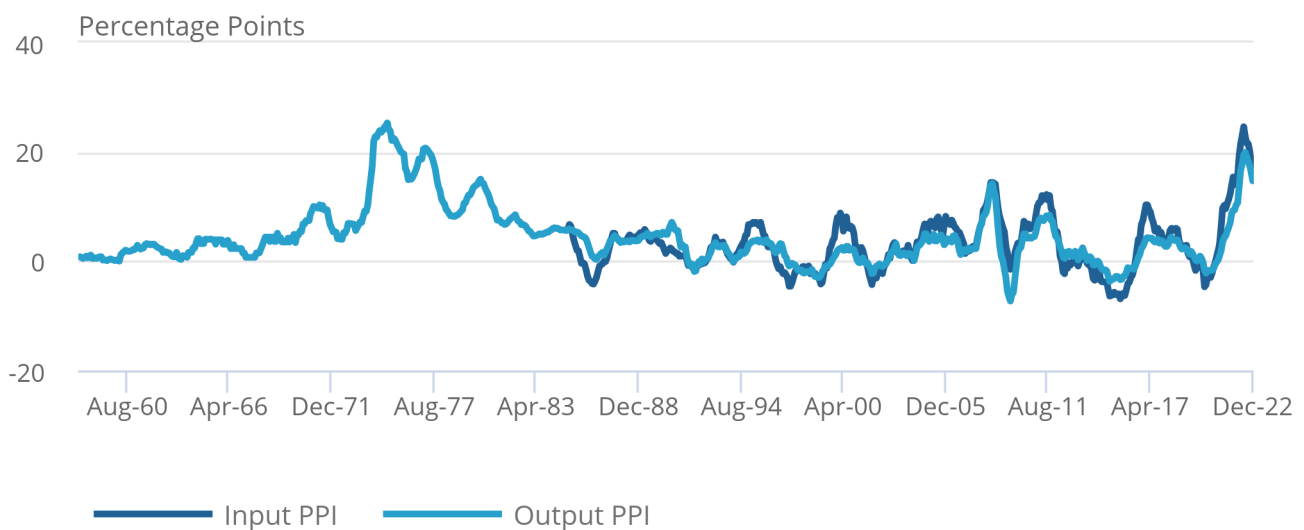
The annual rate of input PPI has now been positive for 25 consecutive months. However, it has slowed for the sixth consecutive month and is down 8.1 percentage points from the record high of 24.6% in June 2022. The annual rate of output PPI has now been positive for 24 consecutive months, but has slowed for the fifth consecutive month.

**Figure 1: Annual growth rates of input and output producer prices continue to slow but remain high**

Input and output producer price inflation annual growth rates, UK, January 1958 to December 2022

Figure 1: Annual growth rates of input and output producer prices continue to slow but remain high

Input and output producer price inflation annual growth rates, UK, January 1958 to December 2022



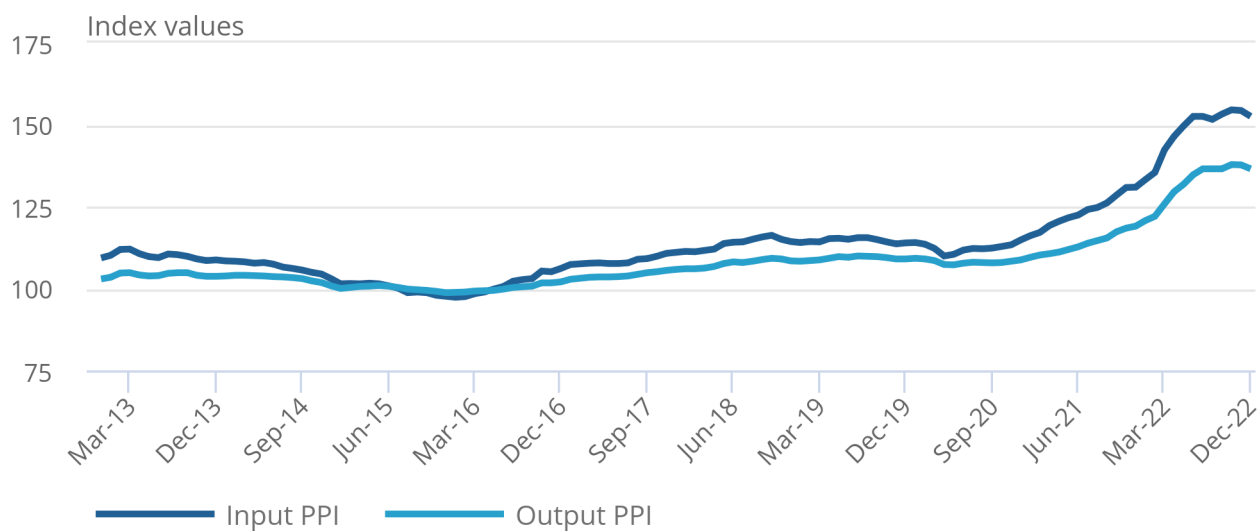
Source: Office for National Statistics – Producer Price Index

## Figure 2: Input and output PPI both fell in December 2022

Input and output producer price inflation index values, UK, December 2012 to December 2022

### Figure 2: Input and output PPI both fell in December 2022

Input and output producer price inflation index values, UK, December 2012 to December 2022



Source: Office for National Statistics – Producer Price Index

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## 4 . Producer price inflation (PPI) input prices

Producer input prices fell by 1.1% between November and December 2022; this is down 0.9 percentage points from a decrease of 0.2% between October and November 2022 (Table 3). The monthly rate reached a record high of 5.1% in March 2022.

Table 3: Input prices, index values, growth rates and percentage point change to the annual rate  
UK, January 2021 to December 2022

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

	<b>PPI Index (2015=100)</b>	<b>Monthly rate</b>	<b>Annual rate</b>	<b>Change in the annual rate (percentage points)</b>
<b>2021 Jan</b>	116.1	1.1	1.9	1.1
<b>Feb</b>	117.1	0.9	3.2	1.3
<b>Mar</b>	119.2	1.8	6.3	3.1
<b>Apr</b>	120.5	1.1	9.7	3.4
<b>May</b>	121.6	0.9	10.2	0.5
<b>June</b>	122.4	0.7	9.6	-0.6
<b>July</b>	124.1	1.4	10.5	0.9
<b>Aug</b>	124.7	0.5	11.3	0.8
<b>Sept</b>	126.1	1.1	12.3	1.0
<b>Oct</b>	128.5	1.9	13.9	1.6
<b>Nov</b>	130.8	1.8	15.4	1.5
<b>Dec</b>	130.9	0.1	14.0	-1.4
<b>2022 Jan</b>	133.2	1.7	14.7	0.7
<b>Feb</b>	135.4	1.7	15.6	0.9
<b>Mar</b>	142.3	5.1	19.4	3.8
<b>Apr</b>	146.4	2.9	21.5	2.1
<b>May</b>	149.6	2.2	23.0	1.5
<b>June</b>	152.5	1.9	24.6	1.6
<b>July</b>	152.5	0.0	22.9	-1.7
<b>Aug</b>	151.6	-0.6	21.6	-1.3
<b>Sept</b>	153.2	1.0	21.5	-0.1
<b>Oct</b>	154.5	0.9	20.2	-1.3
<b>Nov</b>	154.3	-0.2	18.0	-2.2
<b>Dec</b>	152.5	-1.1	16.5	-1.5

Source: Office for National Statistics – Producer Price Index

**Notes**

1. Rates may not correspond to index value changes because of rounding.

The largest upward contribution to the annual input inflation rate came from metals and non-metallic mineral products, which contributed 3.24 percentage points (Figure 3). This product group had an annual price increase of 14.4% in December 2022 (Table 4), which is down from 15.5% in November 2022. This product group also had the largest upward contribution to the annual input inflation rate in November 2022, also at 3.24 percentage points (Figure 4).

The second largest contributor to the annual rate in December 2022 came from chemicals, which contributed 2.84 percentage points (Figure 3) and had an annual price increase of 16.0% in December 2022, down from 18.3% in November 2022.

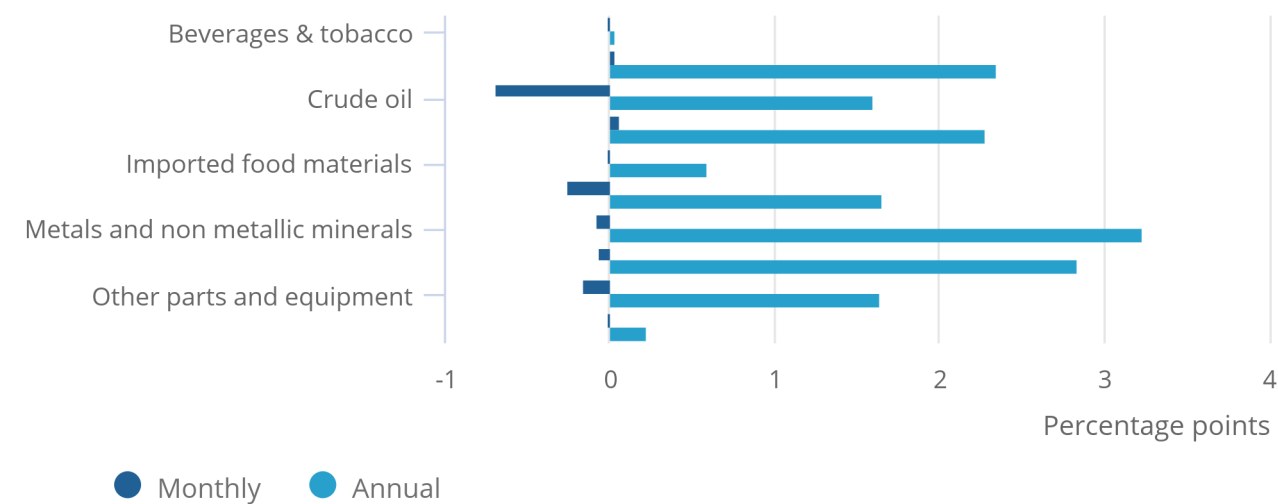
As indicated in [our Classification review of the Energy Price Guarantee and Energy Bill Relief Scheme \(EBRS\) statement](#), the data relating to the inputs of fuel will reflect the impact of EBRS.

**Figure 3: Metals and non-metallic minerals provided the largest upward contribution to the annual rate of input PPI in December 2022**

Input PPI, contribution to monthly and annual growth rate, UK, December 2022

Figure 3: Metals and non-metallic minerals provided the largest upward contribution to the annual rate of input PPI in December 2022

Input PPI, contribution to monthly and annual growth rate, UK, December 2022



Source: Office for National Statistics – Producer Price Index

Notes:

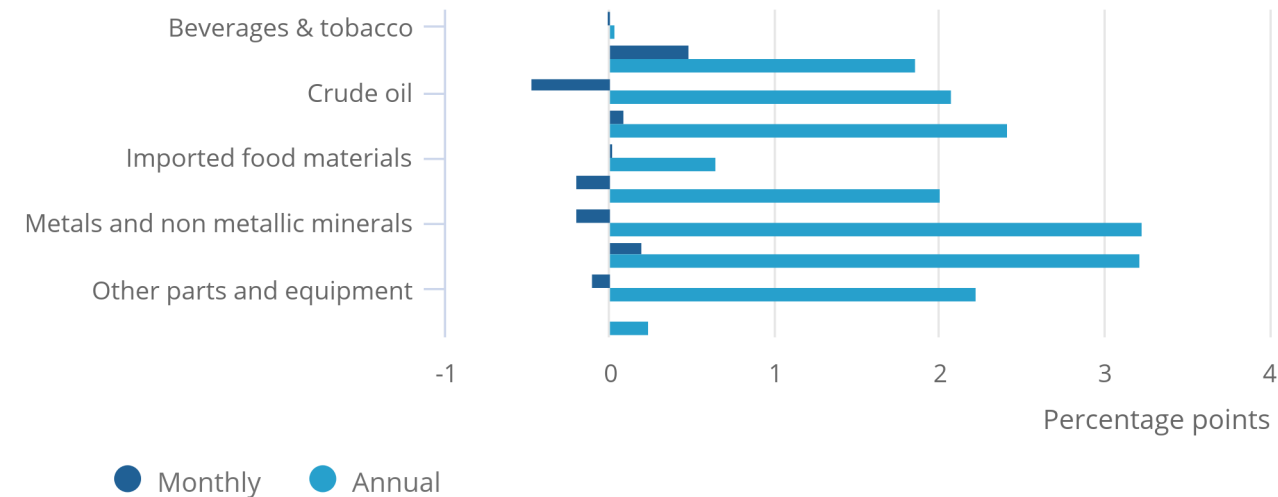
- 1. Contributions to the rate may not add up to the rate exactly because of rounding.

**Figure 4: Metals and non-metallic minerals provided the largest upward contribution to the annual rate of input PPI in November 2022**

Input producer price inflation, contribution to monthly and annual growth rate, UK, November 2022

Figure 4: Metals and non-metallic minerals provided the largest upward contribution to the annual rate of input PPI in November 2022

Input producer price inflation, contribution to monthly and annual growth rate, UK, November 2022



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.

Table 4: Input producer prices, growth rates  
UK, October, November and December 2022

Product group	Percentage change					
	October 2022		November 2022		December 2022	
	Monthly rate	Annual rate	Monthly rate	Annual rate	Monthly rate	Annual rate
<b>Beverages &amp; tobacco</b>	0.3	9.5	1.1	10.1	-0.1	10.4
<b>Fuel excluding Climate Change Levy</b>	1.9	54.2	11.2	48.4	0.8	69.6
<b>Crude oil</b>	2.7	44.1	-6.3	34.3	-10.0	27.7
<b>Home food materials</b>	1.5	20.7	0.7	19.2	0.5	17.2
<b>Imported food materials</b>	1.7	31.6	0.7	28.7	-0.5	26.2
<b>Other produced materials</b>	1.1	22.5	-1.7	18.7	-2.3	15.4
<b>Metals &amp; non-metallic minerals</b>	0.6	18.2	-0.9	15.5	-0.3	14.4
<b>Chemicals</b>	0.1	19.0	1.2	18.3	-0.4	16.0
<b>Other parts and equipment</b>	0.3	10.1	-0.5	9.1	-0.8	7.8
<b>Other inputs</b>	0.5	8.9	0.3	8.8	-0.3	8.4
<b>All manufacturing</b>	0.9	20.2	-0.2	18.0	-1.1	16.5

Source: Office for National Statistics – Producer Price Index

Imported input prices fell by 2.6% on the month to December 2022, down from a fall of 2.3% in November 2022. The annual rate increased by 16.5% in December 2022, but this is down from 20.3% in November. It is also down 8.3 percentage points from its peak of 24.8% in October 2022 (Table 5).

Table 5: Imported materials and fuels purchased and sterling effective exchange rate, index values, growth rates and percentage point change to the annual rate  
UK, January 2021 to December 2022

Imported materials and fuels purchased (GD74)					Sterling effective exchange rate - month average (BK67)			
		PPI Index (2015=100)	Monthly rate	Annual rate	Change in the annual rate (percentage points)	Sterling Index (Jan 2005=100)	Monthly rate	Annual rate
2021	Jan	116.2	0.3	0.8	-0.1	79.1	1.3	-1.5
	Feb	115.6	-0.6	0.1	-0.7	80.6	1.9	0.0
	Mar	116.9	1.1	0.7	0.6	81.7	1.4	6.4
	Apr	118.2	1.2	5.3	4.6	81.4	-0.4	4.2
	May	118.1	-0.1	4.4	-0.9	82.0	0.7	6.2
	June	118.5	0.3	4.2	-0.2	82.0	0.0	6.6
	July	119.6	0.9	4.3	0.1	81.8	-0.2	6.2
	Aug	119.0	-0.5	4.2	-0.1	82.0	0.2	4.9
	Sept	120.4	1.2	4.6	0.4	81.5	-0.6	5.6
	Oct	121.2	0.7	5.3	0.7	82.0	0.6	5.9
	Nov	122.8	1.3	7.2	1.9	81.5	-0.6	4.1
	Dec	123.5	0.6	6.6	-0.6	81.4	-0.1	4.2
2022	Jan	124.1	0.4	6.7	0.1	82.7	1.6	4.6
	Feb	127.3	2.6	10.2	3.5	82.6	-0.1	2.5
	Mar	133.8	5.1	14.5	4.3	81.8	-1.0	0.1
	Apr	136.7	2.1	15.6	1.1	81.3	-0.6	-0.1
	May	140.3	2.7	18.8	3.2	79.9	-1.7	-2.6
	June	143.7	2.4	21.3	2.5	79.3	-0.8	-3.3
	July	143.2	-0.3	19.7	-1.6	79.0	-0.4	-3.4
	Aug	144.0	0.6	21.0	1.3	79.2	0.3	-3.4
	Sept	149.9	4.1	24.5	3.5	76.4	-3.5	-6.3
	Oct	151.2	0.9	24.8	0.3	77.1	0.9	-6
	Nov	147.7	-2.3	20.3	-4.5	78.1	1.3	-4.2
	Dec	143.8	-2.6	16.5	-3.8	79.1	1.3	-2.8

Source: Office for National Statistics – Producer Price Index

#### Notes

1. Rates may not correspond to index value changes because of rounding.
2. Total imports (GD74) represents roughly one-fifth of overall materials and fuels (input prices) in terms of index weight.

In the year to December 2022, the annual rate of input inflation was 16.5%; this is down 1.5 percentage points from 18.0% in November 2022.

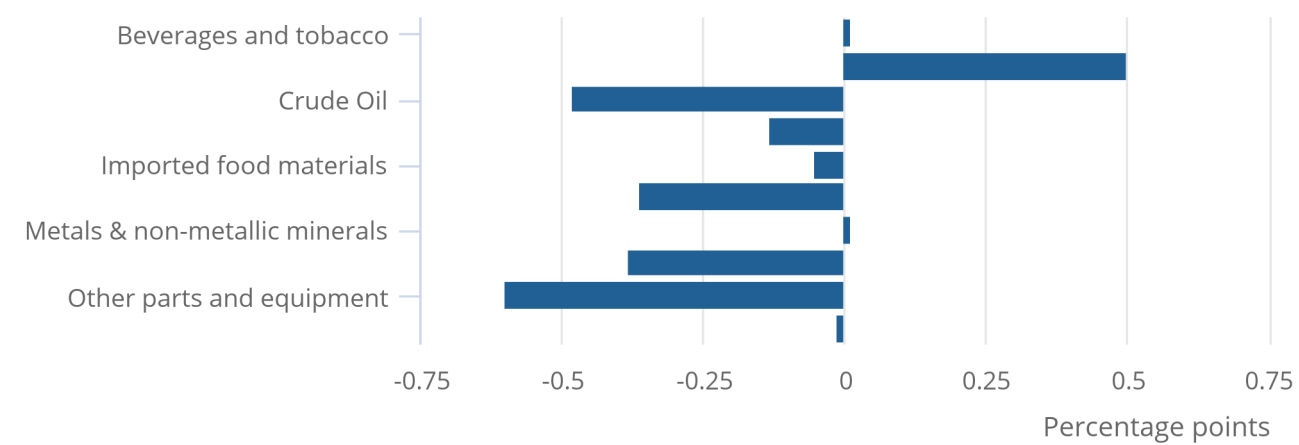
Of the ten product groups, seven showed downward contributions to the change in the annual rate, with other parts and equipment providing the largest, at 0.60 percentage points (Figure 5). Other parts and equipment saw a monthly decrease of 0.8% in price between November and December 2022, compared with an increase of 0.5% in the same period last year.

**Figure 5: Other parts and equipment provided the largest downward contribution to the change in the annual rate of input PPI**

Input producer price inflation, contribution to change in the annual rate, UK, December 2022

Figure 5: Other parts and equipment provided the largest downward contribution to the change in the annual rate of input PPI

Input producer price inflation, contribution to change in the annual rate, UK, December 2022



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.

## 5 . Producer price inflation (PPI) output prices

Producer output (factory gate) prices decreased by 0.8% between November and December 2022, which is down from a 0.1% decrease between October and November 2022 (Table 6). This is the lowest the monthly rate has been since April 2020.



Table 6: Output prices, index values, growth rates and percentage point change to the annual rate  
UK, January 2021 to December 2022

**All manufactured products (GB7S)**

	<b>PPI Index (2015=100)</b>	<b>Monthly rate</b>	<b>Annual rate</b>	<b>Change in the annual rate (percentage points)</b>
<b>2021 Jan</b>	109.5	0.7	0.2	0.4
<b>Feb</b>	110.2	0.7	1.0	0.8
<b>Mar</b>	110.6	0.4	1.9	0.9
<b>Apr</b>	111.1	0.4	3.5	1.6
<b>May</b>	111.9	0.7	4.3	0.8
<b>June</b>	112.7	0.8	4.6	0.3
<b>July</b>	113.8	1.0	5.4	0.8
<b>Aug</b>	114.6	0.7	6.2	0.8
<b>Sept</b>	115.4	0.7	7.0	0.8
<b>Oct</b>	117.3	1.6	8.7	1.7
<b>Nov</b>	118.4	1.0	9.3	0.6
<b>Dec</b>	119.0	0.4	9.4	0.1
<b>2022 Jan</b>	120.7	1.5	10.3	0.9
<b>Feb</b>	122.0	1.0	10.7	0.4
<b>Mar</b>	125.8	3.1	13.7	3.0
<b>Apr</b>	129.5	3.0	16.7	3.0
<b>May</b>	131.8	1.7	17.8	1.1
<b>June</b>	134.7	2.2	19.5	1.7
<b>July</b>	136.5	1.3	19.9	0.4
<b>Aug</b>	136.5	0.0	19.1	-0.8
<b>Sept</b>	136.5	0.0	18.3	-0.8
<b>Oct</b>	137.8	0.9	17.5	-0.8
<b>Nov</b>	137.7	-0.1	16.2	-1.3
<b>Dec</b>	136.5	-0.8	14.7	-1.5

Source: Office for National Statistics – Producer Price Index

Notes

1. Rates may not correspond to index value changes because of rounding.

Food products provided the largest upward contribution to the output annual rate in December 2022, at 4.11 percentage points (Figure 6). This was mainly driven by preserved meat and meat products for domestic market. Food products had an annual price increase of 17.1% in December 2022 (Table 7), which is up from 16.9% in November 2022.

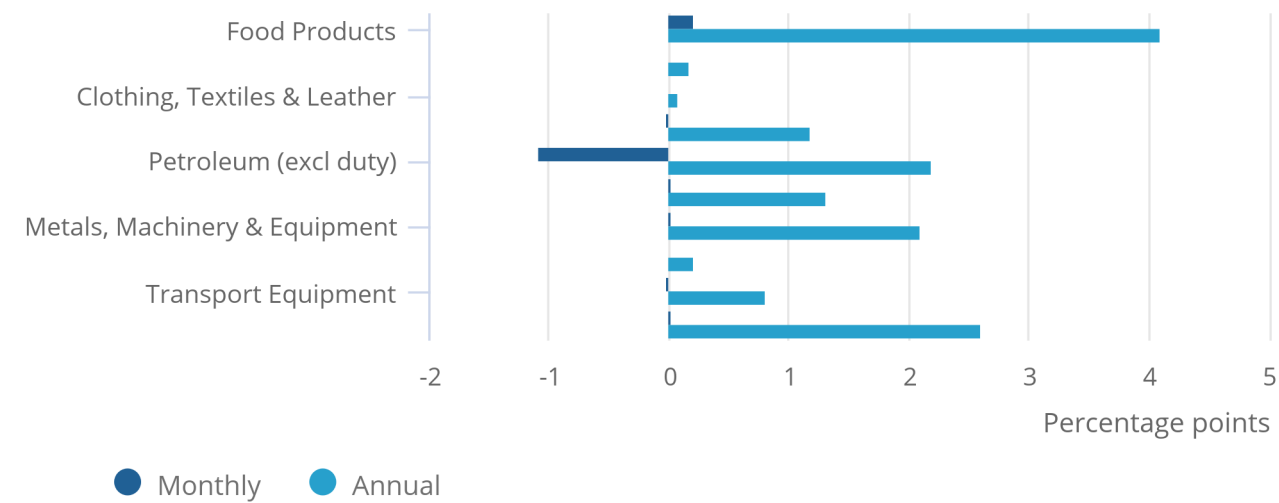
In November 2022, food products provided the second-largest upward contribution to the output annual rate, at 4.04 percentage points (Figure 7). The largest upward contribution to the output annual rate in November 2022 came from petroleum products, at 5.26 percentage points.

**Figure 6: Food products provided the largest upward contribution to the annual rate of output PPI in December 2022**

Output producer price inflation, contribution to monthly and annual growth rate, UK, September 2022

Figure 6: Food products provided the largest upward contribution to the annual rate of output PPI in December 2022

Output producer price inflation, contribution to monthly and annual growth rate, UK, September 2022



Source: Office for National Statistics – Producer Price Index

Notes:

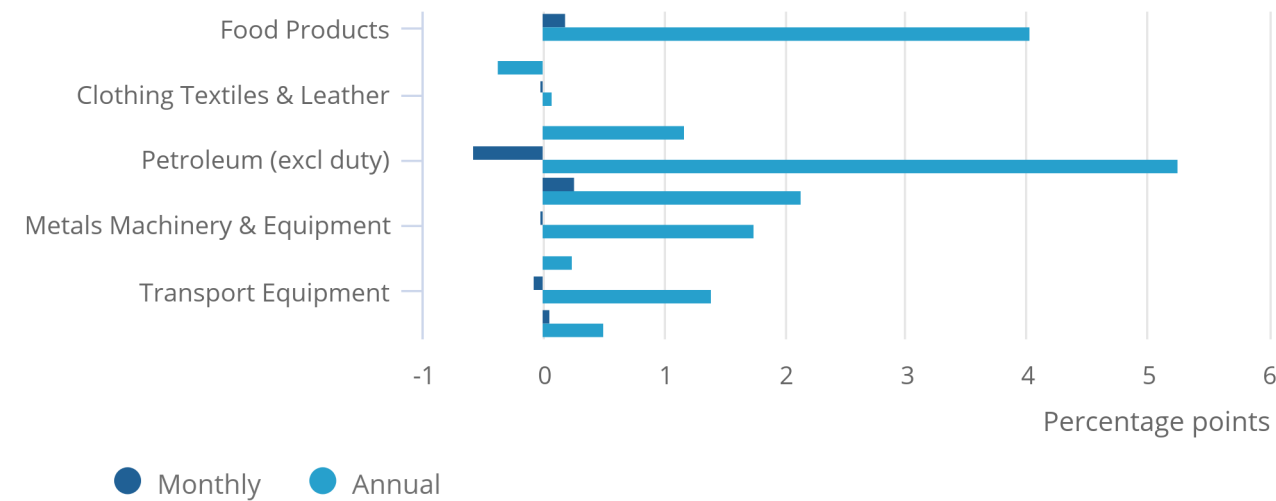
- Contributions to the rate may not add up to the rate exactly because of rounding.

**Figure 7: Petroleum products provided the largest upward contribution to the annual rate of output PPI in November 2022**

Output producer price inflation, contribution to monthly and annual growth rate, UK, November 2022

Figure 7: Petroleum products provided the largest upward contribution to the annual rate of output PPI in November 2022

Output producer price inflation, contribution to monthly and annual growth rate, UK, November 2022



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.

Table 7: Output producer prices, growth rates  
UK, October, November and December 2022

Product group	Percentage Change					
	October 2022		November 2022		December 2022	
	Monthly rate	Annual rate	Monthly rate	Annual rate	Monthly rate	Annual rate
<b>Food products</b>	1.0	16.8	0.7	16.9	0.8	17.1
<b>Tobacco and alcohol (excl. duty)</b>	0.0	6.9	0.6	7.9	0.0	8.5
<b>Clothing, textile and leather</b>	0.5	8.3	-0.5	7.4	0.7	7.1
<b>Paper and printing</b>	1.3	21.9	0.2	20.9	-0.1	19.9
<b>Petroleum products (excl. duty)</b>	2.8	63.9	-5.9	46.4	-11.9	31.1
<b>Chemical and pharmaceutical</b>	0.3	20.5	4.6	23.9	0.3	22.4
<b>Metal, machinery and equipment</b>	0.2	16.1	-0.1	15.2	0.2	14.2
<b>Computer, electrical and optical</b>	0.4	7.6	0.1	7.3	0.0	6.9
<b>Transport equipment</b>	0.8	7.2	-0.5	6.3	-0.2	6.0
<b>Other manufactured products</b>	0.9	12.5	0.2	11.7	0.1	11.4
<b>All manufacturing</b>	0.9	17.5	-0.1	16.2	-0.8	14.7

Source: Office for National Statistics – Producer Price Index

The annual rate of output inflation decreased by 1.5 percentage points from 16.2% in November 2022 to 14.7% in December 2022.

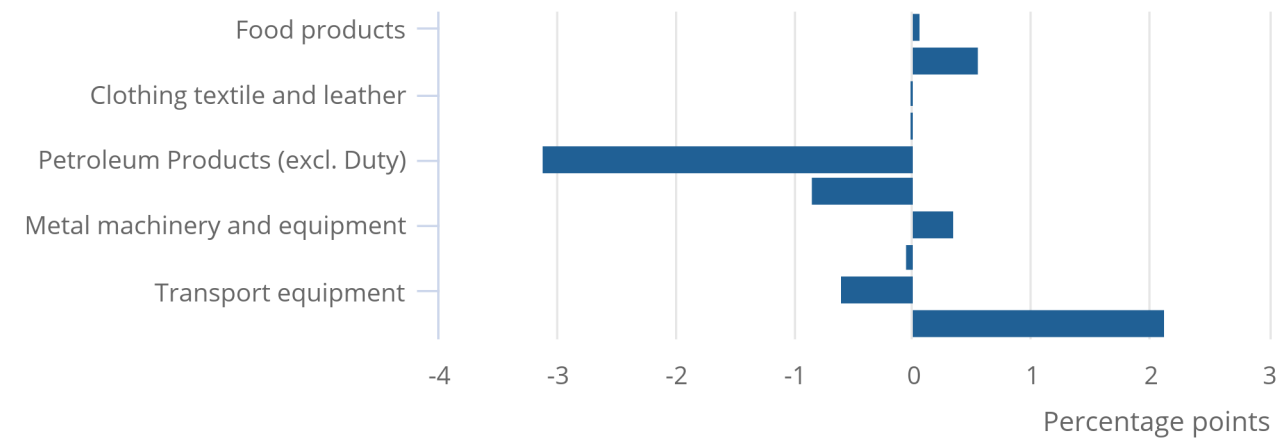
Of the ten product groups, four show downward contributions to the change in the annual rate. Petroleum products provided the largest downward contribution to the change in the annual output rate, at 3.12 percentage points (Figure 8). Petroleum products saw a monthly decrease of 11.9% in price between November and December 2022, compared with a smaller decrease of 1.6% in the same period last year.

**Figure 8: A monthly fall in petroleum prices has resulted in it providing the largest downward contribution to the change in the annual output rate**

Output producer price inflation, contribution to change in the annual rate, UK, December 2022

Figure 8: A monthly fall in petroleum prices has resulted in it providing the largest downward contribution to the change in the annual output rate

Output producer price inflation, contribution to change in the annual rate, UK, December 2022



Source: Office for National Statistics – Producer Price Index

## 6 . Services producer price inflation (SPPI)

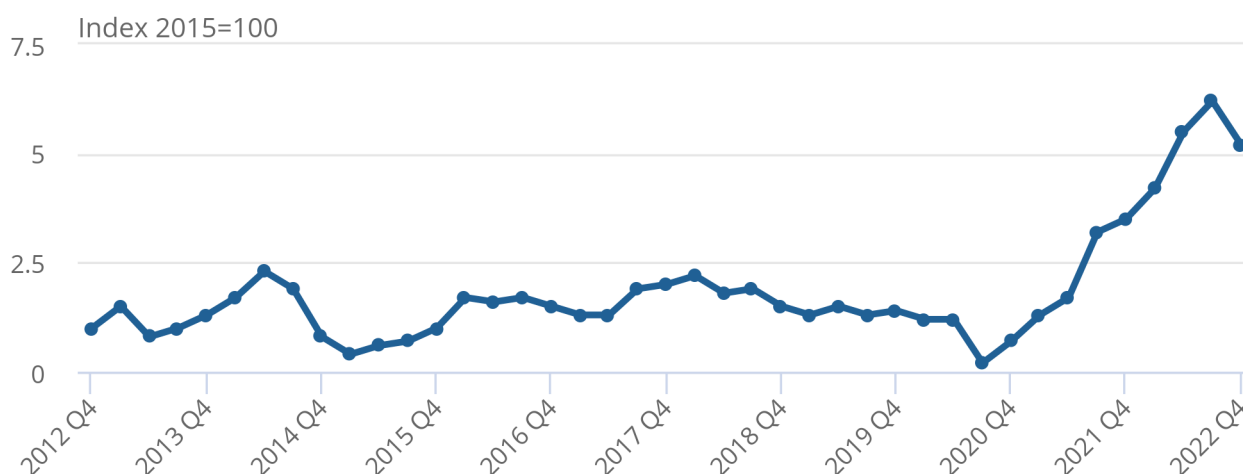
The annual rate of inflation for services sold by UK companies, the Services Producer Price Index (SPPI), was 5.2% in Quarter 4 (Oct to Dec) 2022 - down from a record high of 6.2% in Quarter 3 (July to Sept) 2022 (Figure 9). Seven of the nine product groups saw a slowing in their annual rate this quarter. This is somewhat of a base effect, as explained in our [Beware base effects article](#), since sharp increases were seen in almost all service sectors in the same quarter last year.

**Figure 9: The annual rate of inflation for the services producer price inflation (SPPI) has slowed in Quarter 4 2022 following a record high in Quarter 3 2022**

SPPI, UK, Quarter 4 2012 to Quarter 4 2022

Figure 9: The annual rate of inflation for the services producer price inflation (SPPI) has slowed in Quarter 4 2022 following a record high in Quarter 3 2022

SPPI, UK, Quarter 4 2012 to Quarter 4 2022



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).

The quarter-on-quarter growth of services producer prices was 0.1% in Quarter 4 2022, down from 1.7% in Quarter 3 2022 (Table 8). The quarterly rate has slowed for the second consecutive quarter; this is the lowest the rate has been since Quarter 3 2020.

Table 8: Services producer prices  
UK, Quarter 4 (Oct to Dec) 2022

**Percentage change**

	<b>SPPI Index (2015=100)</b>	<b>Quarterly</b>	<b>Annual</b>	<b>Change in the Annual rate (percentage points)</b>
<b>2021 Q4</b>	111.7	1.0	3.5	0.3
<b>2022 Q1</b>	113.3	1.5	4.2	0.7
<b>Q2</b>	115.5	1.9	5.5	1.3
<b>Q3</b>	117.4	1.7	6.2	0.7
<b>Q4</b>	117.5	0.1	5.2	-1.0

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).

The largest contribution to annual services producer prices in Quarter 4 2022 (Figure 10) came from transportation and storage services. Unusual demand for coach hire due to rail strikes caused an increase in other passenger land transport services. But the overall contribution shrank on the quarter as other transportation support services saw a significant slowing in the annual rate as a result of ship-broker services reflecting the impact of lower freight rates.

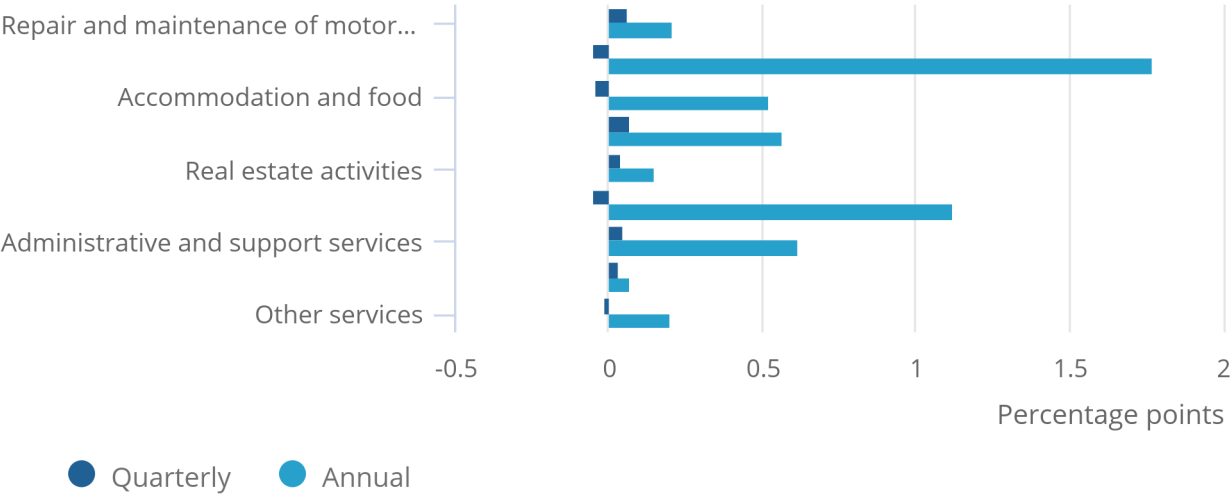
The second largest annual contribution came from professional, scientific and technical services, which also saw a slowing in the annual rate. This was caused predominantly by management consultancy services. However, this fall in the annual rate was affected by the mix of work undertaken, with a higher proportion of lower value projects being completed in the quarter.

**Figure 10: Transportation and storage services made the largest upward contribution to the SPPI annual rate**

Services Producer Price Index, contribution to quarterly and annual growth rates, UK, Quarter 4 (Oct to Dec) 2022

**Figure 10: Transportation and storage services made the largest upward contribution to the SPPI annual rate**

Services Producer Price Index, contribution to quarterly and annual growth rates, UK, Quarter 4 (Oct to Dec) 2022



Source: Office for National Statistics – Services Producer Price Index

Notes:

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



Table 9: Services producer price inflation (SPPI), one-quarter and annual percentage change  
Quarter 4 (October to December) 2022

## UK

Service group	Percentage change	
	Quarterly	Annual
Repair and maintenance of motor vehicles	2.5	8.3
Transportation and storage	-0.3	9.8
Accommodation and food	-0.3	4.5
Information and communication	0.5	3.4
Real estate activities	0.9	3.4
Professional, scientific and technical activities	-0.2	4.1
Administrative and support services	0.3	3.8
Education	2.3	4.5
Other services	-0.7	10.0
<b>SPPI</b>	0.1	5.2

Source: Office for National Statistics – Services Producer Price Index

## Notes

1. The section-level Services Producer Price Indexes (SPPIs) are an aggregate of individual industry-level SPPIs (excluding industries in sewerage and waste management) published in the Services producer price inflation statistical bulletin. They do not provide full coverage of the service sector.

## 7 . Producer price inflation data

### [Producer price inflation time series](#)

Dataset | Released 25 January 2023

A comprehensive selection of data on input and output indices. Contains producer price indices of materials and fuels purchased and output of manufacturing industry by broad sector.

### [Output and input producer price inflation: contributions to the annual rates](#)

Dataset | Released 25 January 2023

Contributions to the annual rates of input and output producer price inflation by component and overall rates.

### [Producer price inflation](#)

Dataset MM22 | Released 25 January 2023

UK price movement data at all manufacturing, aggregated industry and product group level. Data supplied from individual manufacturers, importers and exporters. Monthly, quarterly and annual data.

## 8 . Glossary

## **Weight**

This is the importance of the price of interest relative to other prices collected. With annual chain-linking, this is updated every year using business turnover data.

## **Index value**

Price level in a specific basket of goods.

## **Annual growth rate**

The annual inflation rate.

## **Link factor**

A smoothing factor applied to create a continuous series following a weights change.

## **Contribution**

A measure of influence that the index has on the overall growth rate. This depends on both the magnitude of the weight and the inflation rate. A positive contribution is an index that is driving a change in the annual growth rate value. Where the contribution is positive but the growth is negative, this indicates that the index is reducing the annual growth rate (for example, the growth rate would be higher if this index had a lower weight).

## **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).

## **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.

## **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.

## **Services producer price inflation**

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

# **9 . Measuring the data**

Producer price inflation (PPI) uses contributions to identify how indices influence the overall inflation rate. This section gives additional information on the calculation and how to interpret it.

## **Example scenarios**

The following gives examples of how weight and inflation rate changes most commonly affect the contribution. In PPI, the weights usually have greater influence on the contribution as these tend to show greater change than the annual inflation rate:

- decrease in weight and in inflation rate - contribution is negative
- decrease in weight, increase in inflation rate - contribution is usually negative
- no change in weight or inflation rate - no change
- no change in weight, increase in inflation rate - no change
- increase in weight, decrease in inflation rate - contribution is usually positive
- increase in weight, no change in inflation rate - contribution is positive
- increase in weight, increase in inflation rate - contribution is positive

Contributions are calculated using the following formula:

$$\frac{(weight \times index\ value \times link\ factor)_{for\ current\ year} - (weight \times index\ value \times link\ factor)_{for\ previous\ year}}{chain\ linked\ value\ for\ the\ overall\ index}$$

Quality and methodology information (QMI) on strengths, limitations, appropriate uses, and how the data were created is available in [our Producer Price Indices QMI report](#) and [our Services Producer Price Indices QMI report](#).

Other useful documentation for the PPI and the Services Producer Price Indices Report (SPPI) are our:

- [Producer price indices methods changes article](#)
- [Chain-linking in business prices article](#)
- [Producer price weight changes article](#)
- [Services producer price weight changes article](#)
- [Guidance on using indices in indexation clauses \(PDF, 197KB\)](#)
- [PPI methods and guidance \(PDF, 1.14MB\)](#)
- [SPPI user guidance and methodology article](#)
- [PPI standard errors article](#)
- [SPPI standard errors article](#)

## **Sterling effective exchange rate**

The sterling effective exchange rate measures changes in the strength of sterling relative to baskets of other currencies. 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.

## **Economic statistics governance after EU exit**

More information regarding the new governance following the UK's exit from the EU is available in [our previous release](#).

# **10 . Strengths and limitations**

## Strengths

These data:

- provide users with valuable insight into the changes in the prices of goods and services bought and sold by UK manufacturers
- are comprehensive, covering many products at a much greater level of detail than other surveys
- are internationally comparable with any country using the classification by product activity (CPA) or the central product classification (CPC) systems - [the classification structure is available to review on the Eurostat website](#)
- are created using a rotational sampling method to enable many new products and new respondents to be included
- are chain-linked annually to improve results in deflation by reducing substitution bias

## Limitations

The limitations are that:

- 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
- though the data can be revised for 12 months, PPI weights for 2021 and 2022 have been corrected for this release, which has resulted in a small number of revisions within the previously published data back to January 2021
- the data for the latest two months of the Producer Price Index (PPI) and two quarters of the Services Producer Price Index (SPPI) are provisional

## Response rates in December 2022

The response rate for the domestic PPI and Export Price Index (EPI) show an increase between November and December 2022, whereas the response rate for the Import Price Index (IPI) shows a decrease between November and December 2022 (Table 10).

The response rate for SPPI shows an increase between Quarter 3 (July to Sept) 2022 and Quarter 4 (Oct to Dec) 2022 (Table 11).

Table 10: Producer price inflation (PPI), Import Price Index (IPI) and Export Price Index (EPI) overall effective response rates at time of first publishing  
Percentage, UK, December 2021 to December 2022

### Weighted response

	PPI (domestic)	IPI	EPI
<b>December 2021</b>	68.6	70.0	63.6
<b>January 2022</b>	65.5	64.1	64.6
<b>February 2022</b>	70.5	70.3	69.2
<b>March 2022</b>	71.3	75.4	73.8
<b>April 2022</b>	71.4	68.2	74.2
<b>May 2022</b>	71.7	76.1	74.1
<b>June 2022</b>	74.0	78.0	69.5
<b>July 2022</b>	67.7	73.0	73.3
<b>August 2022</b>	71.6	71.6	72.0
<b>September 2022</b>	71.9	74.8	78.2
<b>October 2022</b>	73.3	61.3	71.6
<b>November 2022</b>	78.0	73.3	71.7
<b>December 2022</b>	78.2	72.9	73.7

Source: Office for National Statistics – Producer Price Index

### Notes

1. Effective response rates exclude items permanently not available for collection.

Table 11: Services Producer Price Index (SPPI) overall effective response rates at time of first publishing  
Percentage, Quarter 4 (Oct to Dec) 2021 to Quarter 4 (Oct to Dec) 2022

	<b>Weighted Response SPPI</b>
<b>2021 Q4</b>	71.3
<b>2022 Q1</b>	75.1
<b>Q2</b>	78.0
<b>Q3</b>	78.6
<b>Q4</b>	80.0

Source: Office for National Statistics – Services Producer Price Index

#### Notes

1. Effective response rates exclude items permanently not available for collection.

## 11 . Related links

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

Bulletin | Released monthly

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

### [UK House Price Index](#)

Bulletin | Released monthly

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 in Great Britain: September 2022, new orders and Construction Output Price Indices, July to September 2022](#)

Bulletin | Released 11 November 2022

Short-term measures of output by construction industry in September 2022, contracts awarded for new construction work in Great Britain and a summary of the Construction Output Price Indices (OPIs) in the UK for Quarter 3 (Jul to Sept) 2022.

### [GDP monthly estimate, UK](#)

Bulletin | Released monthly

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.

### [Coronavirus and the effects on UK prices](#)

Article | Released 6 May 2020

Plans for data collection, compilation and publication of our various prices statistics following movement restrictions as a result of the coronavirus (COVID-19) pandemic.

### [Coronavirus and the impact on output in the UK economy: August 2021](#)

Article | Released 13 November 2021

Analysis of growth for the production, services and construction industries in the UK economy between February 2020 and August 2021, highlighting the impact of the coronavirus (COVID-19) pandemic.

## 12 . Cite this statistical bulletin

Office for National Statistics (ONS), released 25 January 2023, ONS website, statistical bulletin, [Producer price inflation, UK: December 2022 including services, October to December 2022](#)