Office for National Statistics

Statistical bulletin

Producer price inflation, UK: December 2020 including services, October to December 2020

Changes in the prices of goods bought and sold by UK manufacturers including input and output prices. Also includes quarterly estimates of changes in prices charged for services provided to UK-based customers for a range of industries.

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1 . Main points

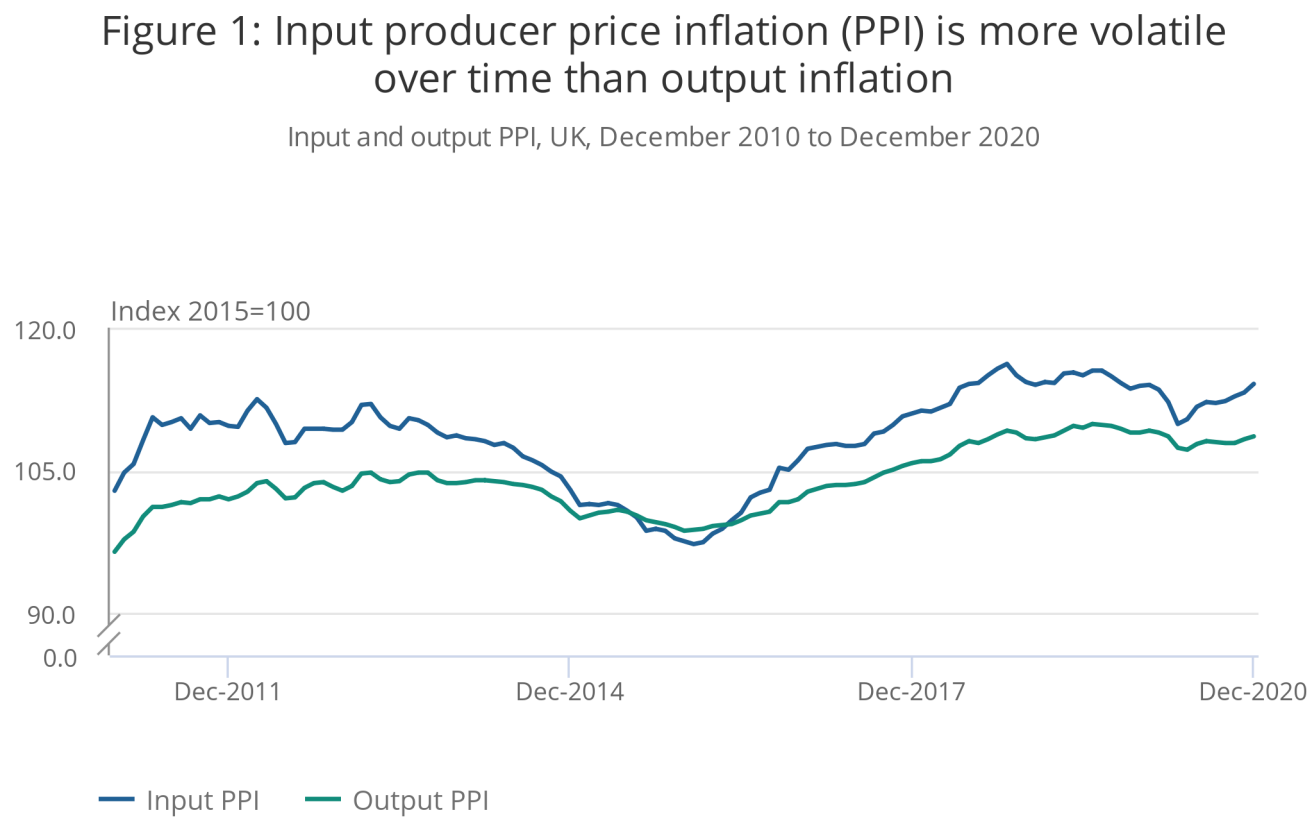
- The headline rate of output inflation for goods leaving the factory gate was negative 0.4% on the year to December 2020, up from negative growth of 0.6% in November 2020.
- The price for materials and fuels used in the manufacturing process showed positive growth of 0.2% on the year to December 2020, up from negative growth of 0.3% in November 2020.
- Petroleum products was the largest downward contributor to the annual rate of output inflation, while metals and non-metallic minerals provided the largest upward contribution to the annual rate of input inflation.
- The annual rate of growth for the Services Producer Price Index (SPPI) was 0.7% in Quarter 4 (Oct to Dec) 2020, up from 0.2% in Quarter 3 (July to Sept) 2020.
- This is the first publication of SPPI using an annual chain-linked methodology; more details on the impact of this can be found in Section 9: Measuring the data, SPPI, Impact of chain-linking.
- This is the third publication of producer price inflation using an annual chain-linked methodology; the headline indices are now published on a gross sector basis; more details on the impact of these improvements can be found in the article Impact of methodological improvements on PPI, which was released on 11 November 2020.
- The Office for National Statistics (ONS) has released a public statement on the coronavirus (COVID-19) and production of statistics; Section 10: Strengths and limitations describes the situation in relation to producer price inflation (PPI).

2 . Producer price inflation summary

Figure 1 shows input and output Producer Price Indices (PPIs) over the past 10 years. 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). Input producer price inflation is made up of roughly 78% domestic inputs and 22% imported inputs, which are sensitive to exchange rate movements.

Figure 1: Input producer price inflation (PPI) is more volatile over time than output inflation

Input and output PPI, UK, December 2010 to December 2020



Source: Office for National Statistics – Producer Price Index

Notes:

1. All data are now published using an annually chain-linked methodology. Headline indices are published on a gross sector basis.

3 . Producer price inflation – output analysis

The annual rate of inflation for goods leaving the factory gate (output prices) displayed negative growth of 0.4% in December 2020, up from negative 0.6% in November 2020 (Table 1). This is the 10th consecutive month that the rate has been negative, following 42 months of positive annual inflation between August 2016 and February 2020, excluding November 2019 when the rate was 0%. This is also the highest the annual rate of output inflation has been since March 2020.

On the month, the rate of output inflation was up 0.3% in December 2020, following the same movement in November 2020.

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

All manufactured products (GB7S)

	PPI Index (2015=100)	1-month rate	12-month rate	Change in the 12-month rate (percentage points)
2019 Dec	109.0	0.0	0.5	0.5
2020 Jan	109.2	0.2	0.9	0.4
Feb	109.0	-0.2	0.5	-0.4
Mar	108.6	-0.4	-0.2	-0.7
Apr	107.4	-1.1	-1.7	-1.5
May	107.2	-0.1	-2.2	-0.5
June	107.8	0.5	-1.6	0.6
July	108.1	0.3	-1.7	-0.1
Aug	108.0	-0.1	-1.7	0.0
Sept	107.9	-0.1	-1.7	0.0
Oct	107.9	0.1	-1.4	0.3
Nov	108.3	0.3	-0.6	0.8
Dec	108.6	0.3	-0.4	0.2

Source: Office for National Statistics - Producer price index

Notes

1. Series are not seasonally adjusted.
2. Rates many not correspond to index value changes because of rounding.
3. All data are now published using an annually chain-linked methodology. Headline indices are published on a gross sector basis.

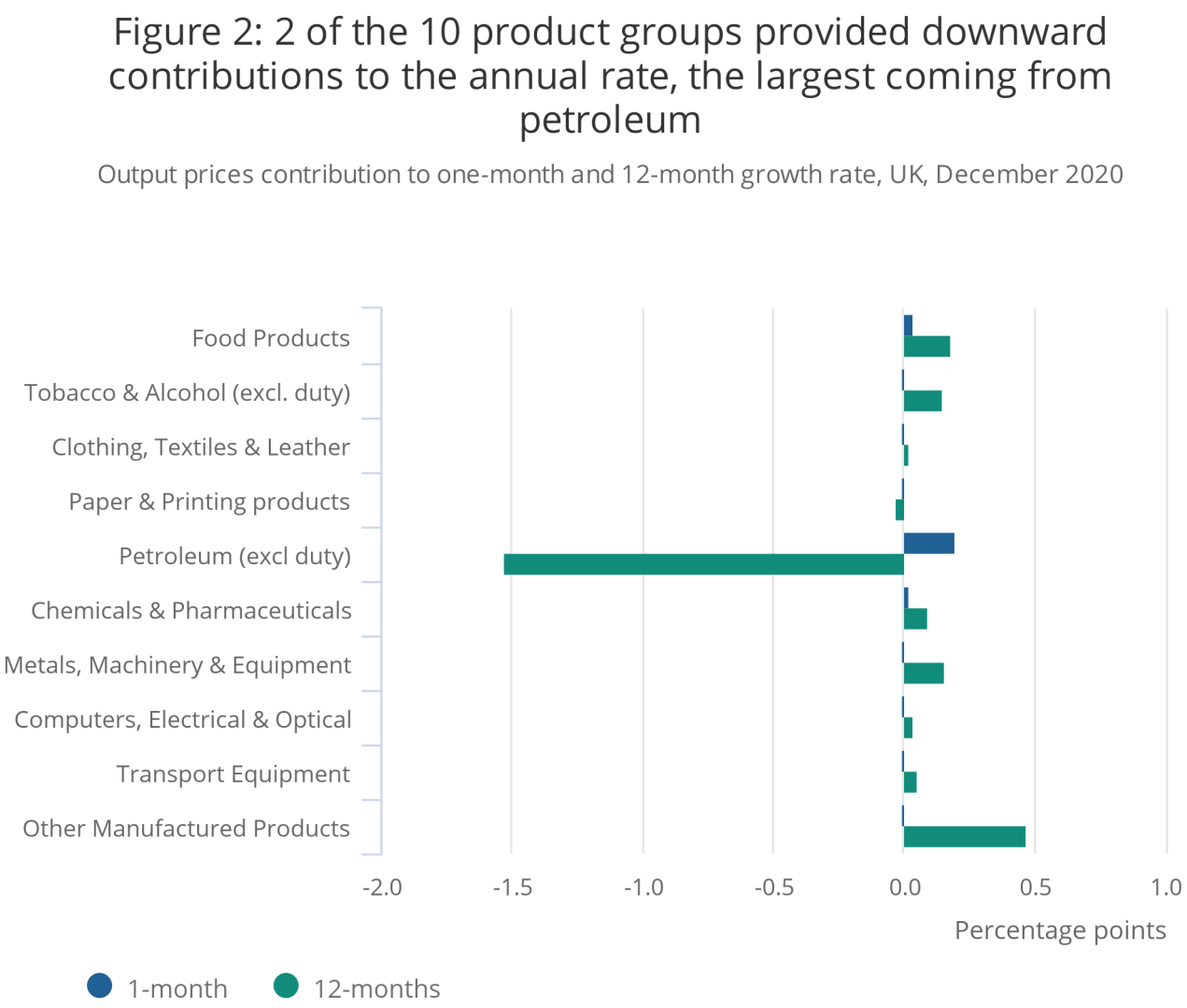
Figure 2 shows contributions by product group to the monthly and annual rate of output inflation, and Table 2 shows monthly and annual growth rates by product group.

Of the 10 product groups, two provided negative contributions to the output annual rate. Petroleum provided the largest downward contribution of 1.53 percentage points to the annual rate (Figure 2) and had negative annual price growth of 26.6% in December 2020 (Table 2). This is the 11th consecutive month that the annual rate for petroleum has been negative since February 2020. The negative rate in December 2020 was driven by refined petroleum products for the domestic market.

Paper and printing products provided the second downward contribution of 0.03 percentage points, and had negative annual price growth of 0.4% in December 2020. These downward contributions were offset by smaller upward contributions in eight product groups, most notably Other manufactured products, which provided a contribution of 0.47 percentage points and annual growth of 1.9% in December 2020.

Figure 2: 2 of the 10 product groups provided downward contributions to the annual rate, the largest coming from petroleum

Output prices contribution to one-month and 12-month growth rate, UK, December 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.

2. All data are now published using an annually chain-linked methodology. Headline indices are published on a gross sector basis.

Table 2: Output prices, growth rates
UK, December 2020

Product group	Percentage Change	
	1-month rate	12-month rate
Food products	0.2	0.7
Tobacco and alcohol (excl. duty)	-0.1	5.5
Clothing, textile and leather	0.1	1.4
Paper and printing	0.0	-0.4
Petroleum products (excl. duty)	4.9	-26.6
Chemical and pharmaceutical	0.4	1.7
Metal, machinery and equipment	0.0	1.2
Computer, electrical and optical	-0.1	1.4
Transport equipment	0.0	0.4
Other manufactured products	0.0	1.9
All manufacturing	0.3	-0.4

Source: Office for National Statistics - Producer price index

Notes

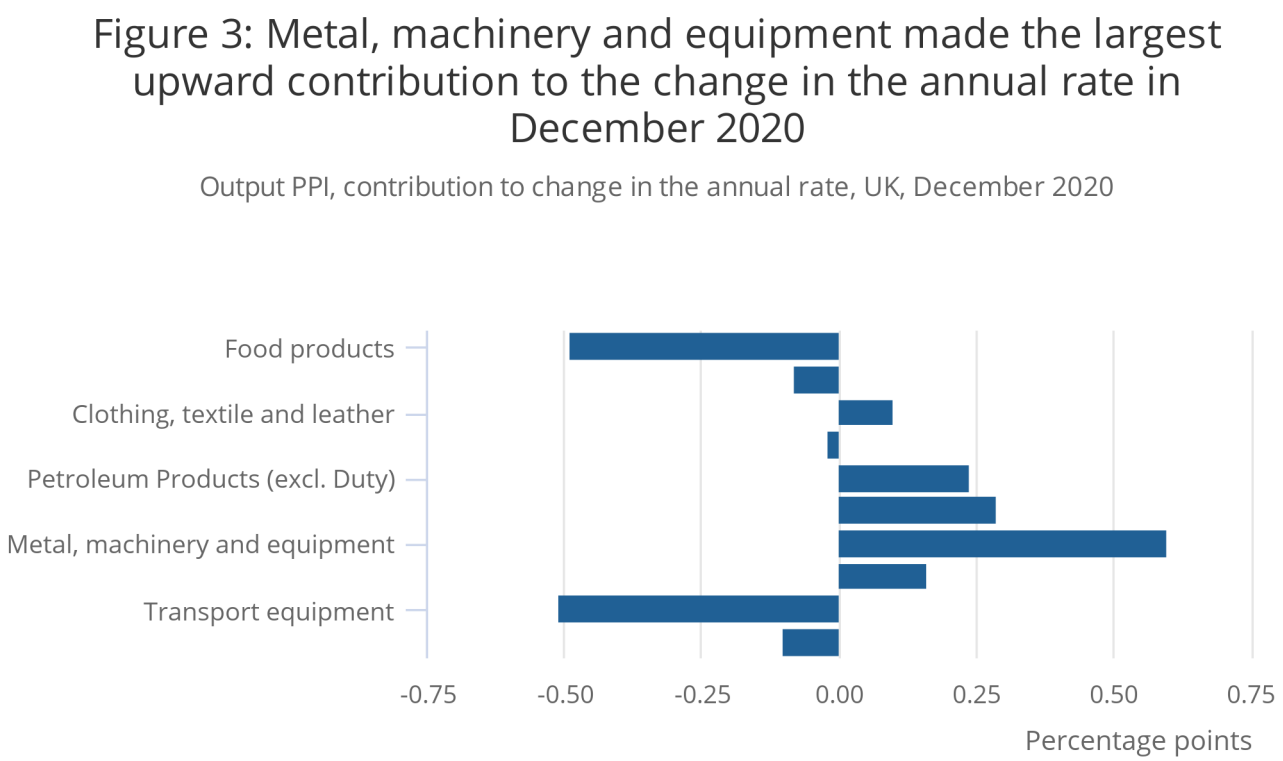
1. All data are now published using an annually chain linked methodology. Headline indices are published on a gross sector basis.

Figure 3 shows contributions to the change in the annual rate for factory gate prices (output prices) in December 2020. The annual rate of output inflation was negative 0.4% in December, up 0.2 percentage points from negative 0.6% in November 2020.

Of the 10 product groups, five displayed upward contributions to the change in the annual rate, with metal, machinery and equipment providing the largest upward contribution to the change in the rate at 0.60 percentage points. Transport equipment displayed the largest downward contribution to the change in the annual rate at negative 0.51 percentage points, with a similar downward movement from food products.

Figure 3: Metal, machinery and equipment made the largest upward contribution to the change in the annual rate in December 2020

Output PPI, contribution to change in the annual rate, UK, December 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.

2. All data are now published using an annually chain-linked methodology. Headline indices are published on a gross sector basis.

4 . Producer price inflation – input analysis

The annual rate of inflation for materials and fuels purchased by manufacturers (input prices) was 0.2% in December 2020, up from negative 0.3% in November 2020 (Table 3). This is the first time the rate has been positive since August 2019.

The monthly rate for materials and fuels purchased by manufacturers was 0.8% in December 2020, up from 0.4% in November 2020.

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

All materials and fuels purchased (GHIP)

	PPI Index (2015=100)	1-month rate	12-month rate	Change in the 12-month rate (percentage points)
2019 Dec	113.9	0.2	-0.3	0.9
2020 Jan	114.0	0.1	0.0	0.3
Feb	113.5	-0.4	-0.7	-0.7
Mar	112.2	-1.2	-1.8	-1.1
Apr	109.9	-2.0	-4.6	-2.8
May	110.4	0.5	-4.2	0.4
June	111.7	1.2	-2.9	1.3
July	112.2	0.5	-2.8	0.1
Aug	112.1	-0.2	-3.0	-0.2
Sept	112.3	0.2	-2.2	0.8
Oct	112.8	0.4	-1.2	1.0
Nov	113.2	0.4	-0.3	0.9
Dec	114.1	0.8	0.2	0.5

Source: Office for National Statistics - Producer price index

Notes

1. Series are not seasonally adjusted.
2. Rates many not correspond to index value changes because of rounding. 3. All data are now published using an annually chain-linked methodology. Headline indices are published on a gross sector basis.
3. All data are now published using an annually chain linked methodology. Headline indices are published on a gross sector basis.

The annual rate of inflation for imported materials and fuels was 0.9% in December 2020 (Table 4), which is up 1.4 percentage points from November 2020 when it was negative 0.5%. The monthly rate was 0.8% in December 2020, up 1.2 percentage points from November 2020 when it was negative 0.4%.

The sterling effective exchange rate index (ERI) displayed a negative growth of 0.3% on the month in December 2020. On the year, the ERI displayed negative growth of 3.1% in December 2020, which is down 1.5 percentage points from negative 1.6% in November 2020.

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

	Imported materials and fuels purchased (GD74)				Sterling effective exchange rate - month average (BK67)		
	PPI Index (2015=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
2019 Dec	114.7	-0.6	-1.2	-0.7	80.6	1.3	5.1
2020 Jan	115.2	0.4	0.3	1.5	80.3	-0.4	3.3
Feb	115.5	0.2	0.6	0.3	80.7	0.5	2.4
Mar	116.1	0.6	1.9	1.3	76.9	-4.7	-3.8
Apr	112.3	-3.3	-2.5	-4.4	78.2	1.7	-1.5
May	113.1	0.8	-2.3	0.2	77.3	-1.2	-1.8
June	113.7	0.5	-2.5	-0.2	77.0	-0.4	-0.1
July	114.5	0.8	-2.8	-0.3	77.0	0.0	1.3
Aug	114.2	-0.3	-4.4	-1.6	78.2	1.6	4.5
Sept	115.2	0.9	-2.4	2.0	77.3	-1.2	0.9
Oct	115.3	0.1	-1.0	1.4	77.5	0.3	-0.9
Nov	114.9	-0.4	-0.5	0.5	78.3	1.0	-1.6
Dec	115.8	0.8	0.9	1.4	78.1	-0.3	-3.1

Source: Office for National Statistics - Producer price index

Notes

1. Series are not seasonally adjusted.
2. Rates many not correspond to index value changes because of rounding.
3. The sterling effective exchange rate measures changes in the strength of sterling relative to a basket of other currencies.
4. The sterling effective exchange rate is only indicative of the rates applied to producer prices. This is because the sterling effective exchange rates is a trade weighted index that represents all UK trade, whereas producer prices reflect transactions in the manufacturing sector.
5. Total imports (GD74) represents roughly a fifth of overall materials and fuels (input prices) in terms of index weight.
6. All data are now published using an annually chain-linked methodology. Headline indices are published on a gross sector basis.

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.

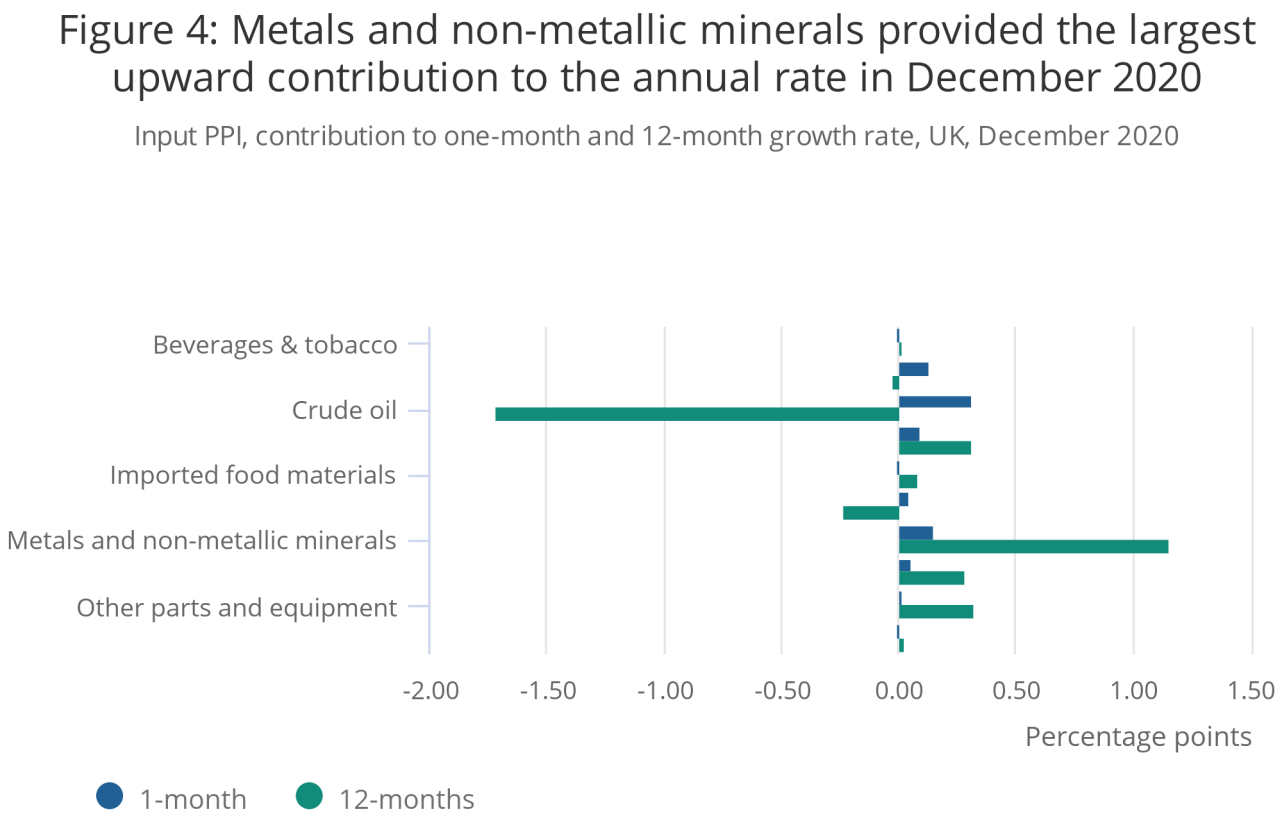
Of the 10 product groups, seven provided positive contributions to the input annual rate. The largest upward contribution to the annual rate came from metals and non-metallic minerals, which contributed 1.16 percentage points (Figure 4) and had positive annual price growth of 5.8%. This is the 11th consecutive month the rate has been positive since February 2020, being driven by imports of precious metals.

The largest downward contribution to the annual rate came from crude oil, which contributed 1.71 percentage points (Figure 4) and had negative annual price growth of 28.6% (Table 5). This is the 11th consecutive month of negative annual growth and is being driven by domestic inputs into the extraction of crude petroleum, natural gas and the mining of metal ores.

Recent price movements in crude oil are likely to reflect both demand and supply side factors during the ongoing coronavirus (COVID-19) pandemic. The continued negative growth in crude oil price was likely driven by reduced demand as COVID-19 cases increased in many countries, prompting further lockdowns and travel restrictions.

Figure 4: Metals and non-metallic minerals provided the largest upward contribution to the annual rate in December 2020

Input PPI, contribution to one-month and 12-month growth rate, UK, December 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.

2. All data are now published using an annually chain-linked methodology. Headline indices are published on a gross sector basis.

Table 5: Input prices, growth rates

Product group	Percentage change	
	1-month rate	12-month rate
Beverages & tobacco	-0.3	4.4
Fuel excluding Climate Change Levy	4.3	-0.7
Crude oil	7.7	-28.6
Home food materials	0.7	2.2
Imported food materials	-0.2	3.3
Other produced materials	0.5	-2.2
Metals & non-metallic minerals	0.7	5.8
Chemicals	0.4	1.7
Other parts and equipment	0.1	1.4
Other inputs	0.0	0.8
All manufacturing	0.8	0.2

Source: Office for National Statistics - Producer price index

Notes

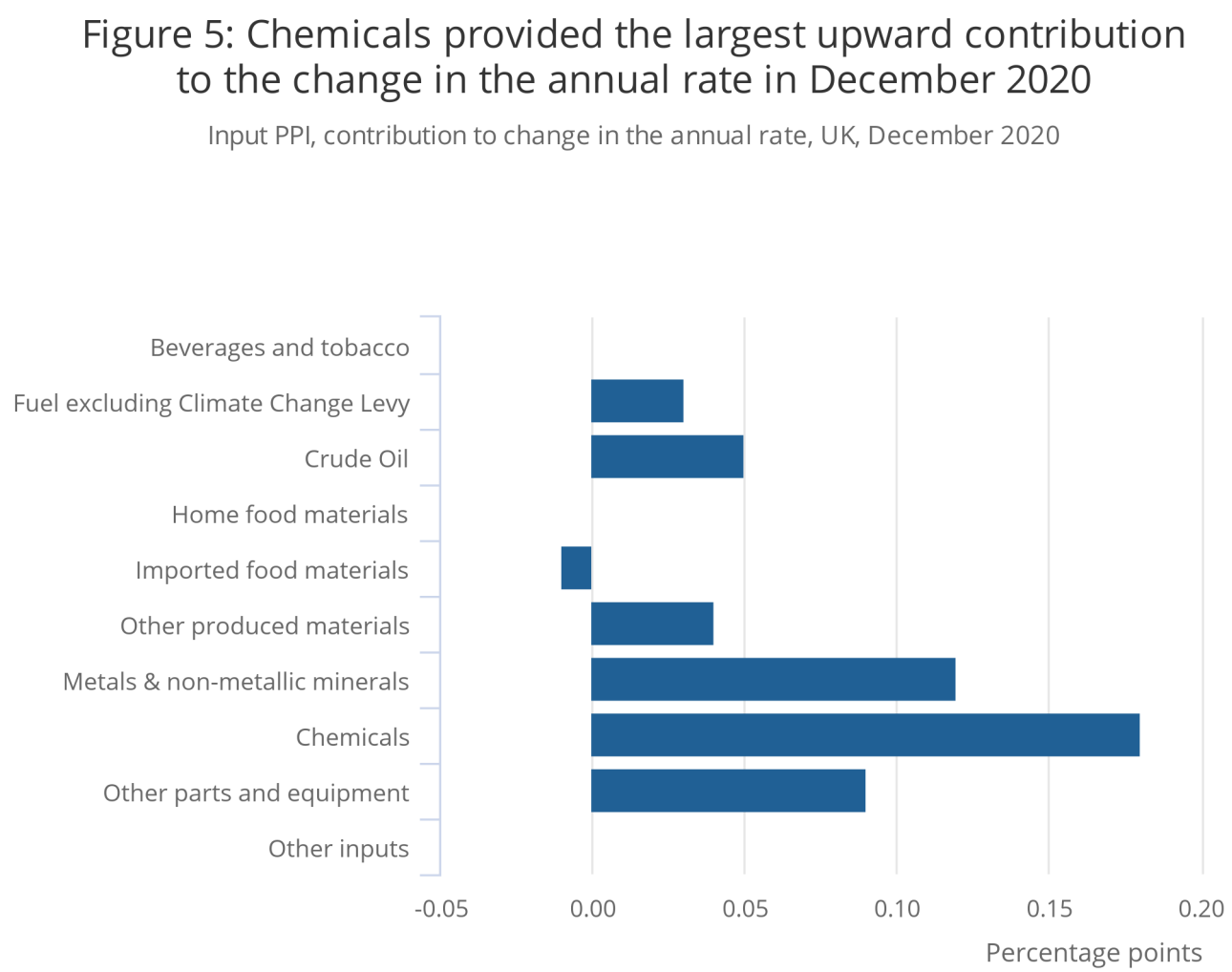
1. All data are now published using an annually chain-linked methodology. Headline indices are published on a gross sector basis.

Figure 5 shows contributions to the change in the annual rate of inflation for materials and fuels purchased by manufacturers (input prices) in December 2020. The annual rate increased by 0.5 percentage points from negative 0.3% last month to 0.2% this month.

Of the 10 product groups, six displayed upward contributions to the change in the annual rate, with chemicals providing the largest of these at 0.18 percentage points. Metals and non-metallic minerals made the second-largest upward contribution to the change in the rate at 0.12 percentage points. Imported food materials provided the only downward contribution at 0.01 percentage points.

Figure 5: Chemicals provided the largest upward contribution to the change in the annual rate in December 2020

Input PPI, contribution to change in the annual rate, UK, December 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.

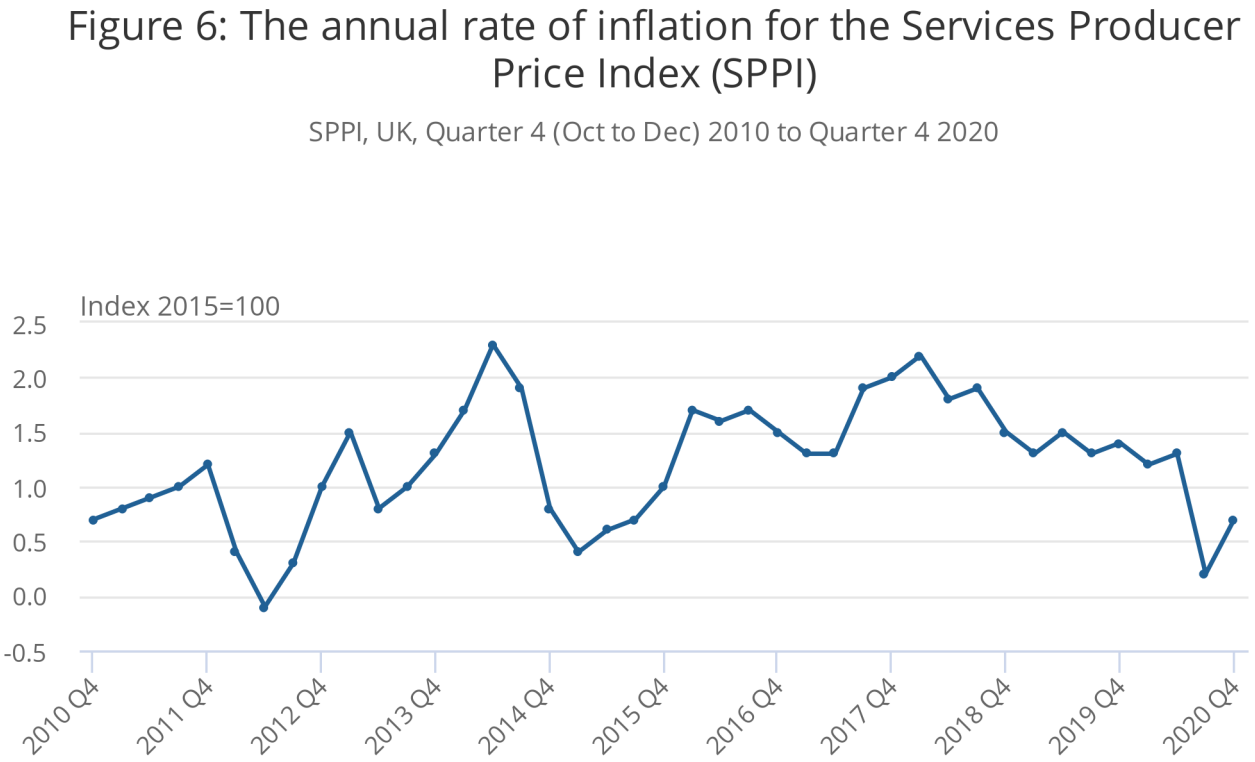
2. All data are now published using an annually chain-linked methodology. Headline indices are published on a gross sector basis.

5 . Services producer price inflation summary

This is the first publication of the Services Producer Price Index (SPPI) using an annual chain-linked methodology; the annual inflation rate for SPPI was 0.7% in Quarter 4 (Oct to Dec) 2020, up from 0.2% in Quarter 3 (July to Sept) 2020. Apart from in Quarter 2 (Apr to June) 2012 where the annual rate fell to negative 0.1%, the SPPI has reported positive annual growth for the period across the past 10 years (Figure 6).

Figure 6: The annual rate of inflation for the Services Producer Price Index (SPPI)

SPPI, UK, Quarter 4 (Oct to Dec) 2010 to Quarter 4 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).

6 . Services producer price inflation – output analysis

The Services Producer Price Index (SPPI) rose 0.7% on the year to Quarter 4 (Oct to Dec) 2020, up from 0.2% on the year to Quarter 3 (July to Sept) 2020, the annual rate of growth has been positive since Quarter 3 2012. The quarter-on-quarter growth of services sold by UK companies was 0.6% in Quarter 4 2020, up from negative 0.4% in Quarter 3 2020.

This is the highest the quarterly rate of growth has been since Quarter 3 2019.

Table 6: Services Producer Prices, Quarter 4 (Oct to Dec) 2020
UK

Percentage change

		SPPI Index (2015=100)	1-Quarter	12-months	Change in the 12-month rate (percentage points)
2019	Q4	107.2	0.2	1.4	0.1
2020	Q1	107.4	0.2	1.2	-0.2
	Q2	107.7	0.3	1.3	0.1
	Q3	107.2	-0.4	0.2	-1.1
	Q4	107.9	0.6	0.7	0.5

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 (Jul to Sep) and Q4 refers to Quarter 4 (Oct to Dec).

2. Series are not seasonally adjusted.

3. All data are now published using an annually chain-linked methodology.

Of the nine sections that are combined to form the Services Producer Price Index (SPPI), five showed annual price increases (Table 7), with other services showing the largest price increase on the year to Quarter 4 2020 at 5.9%; the index has shown positive growth since Quarter 1 (Jan to Mar) 2018.

Transportation and storage provided the largest upward contribution to the annual rate, contributing 0.54 percentage points (Figure 7). This was driven mainly by warehousing and support services for transportation whose prices rose 5.7% on the year.

Professional, scientific and technical provided the largest upward contribution to the quarterly rate, contributing 0.42 percentage points (Figure 7). This was driven mainly by legal and accounting services whose prices rose 2.0% on the year.

Table 7: Services Producer Price Inflation, one-quarter and 12-month percentage change to Quarter 4 (Oct to Dec) 2020
UK

Service group	Percentage change	
	1-quarter	12-months
Repair and maintenance of motor vehicles	1.0	2.3
Transportation and storage	0.6	2.8
Accommodation and food	-0.6	-1.7
Information and communication	0.1	-0.5
Real estate activities	-0.8	-2.9
Professional, scientific and technical activities	1.6	0.8
Administrative and support services	0.0	0.4
Education	0.0	-0.3
Other services	4.1	5.9
SPPI	0.6	0.7

Source: Office for National Statistics - Services Producer Price Index

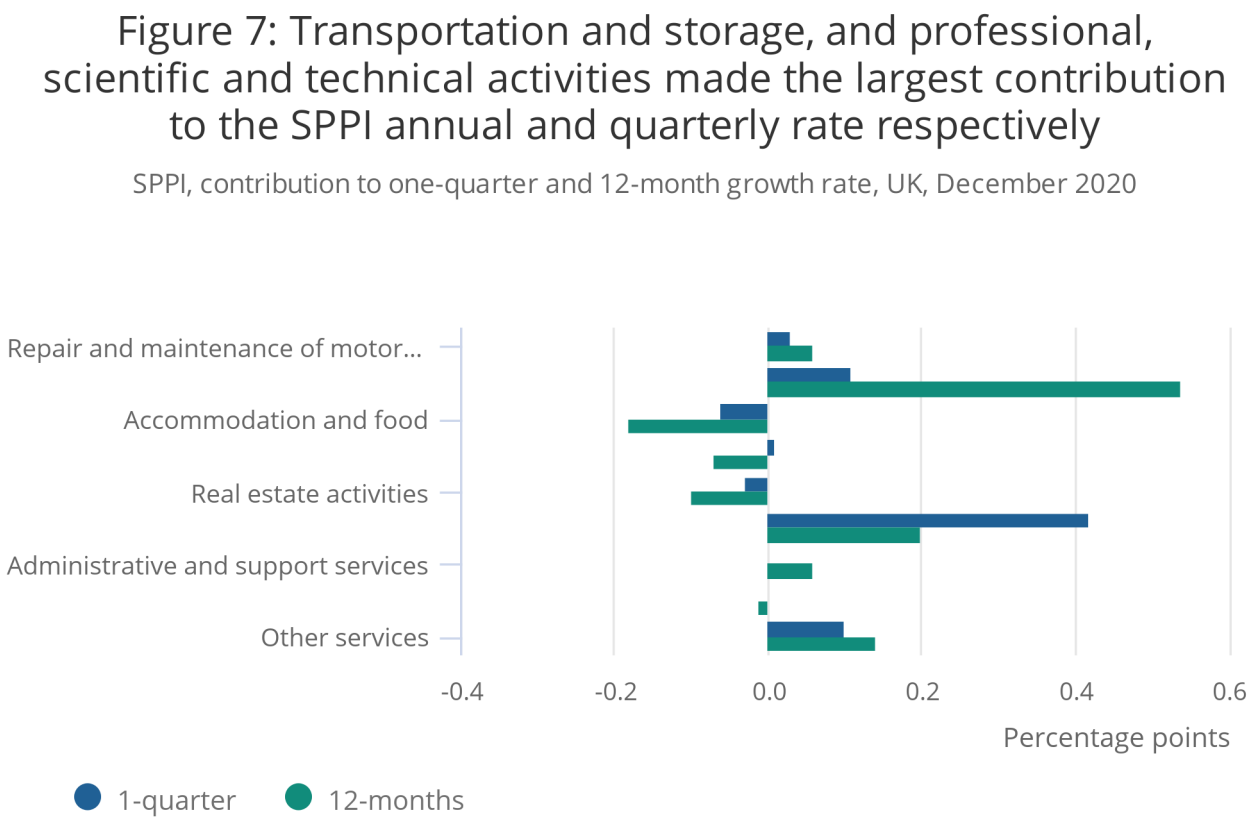
Notes

1. The section level SPPIs are an aggregate of individual level SPPIs (excluding industries in waste supply sewerage and management) published in the SPPI statistical bulletin. They do not provide full coverage of the service sector.

2. All data are now published using an annually chain-linked methodology.

Figure 7: Transportation and storage, and professional, scientific and technical activities made the largest contribution to the SPPI annual and quarterly rate respectively

SPPI, contribution to one-quarter and 12-month growth rate, UK, December 2020



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

Notes:

1. Contributions to the rate may not add up to the rate exactly because of rounding.
2. All data are now published using an annually chain-linked methodology.

7 . Producer price inflation data

Producer price inflation time series
Dataset | Released 20 January 2021
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 12-month rates
Dataset | Released 20 January 2021
Contributions to the 12-month rates of input and output producer price inflation by component and overall rates.

Producer price inflation
Dataset MM22 | Released 20 January 2021
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

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.

9 . Measuring the data

For more information regarding how the output was created please see the Producer Price Index (PPI) QMI and the Services Producer Price Indices (SPPI) QMI.

Input prices

Currently we do not have time series data pre-dating December 2008 for the headline input prices (gross sector input). To enable users' access to the back-data we will investigate a viable option to rectify this. When possible, we will pre-announce when the data will be available in order to give users as much notice as possible.

Producer Price Indices

Index numbers shown in the main text of this bulletin are on a gross sector basis. The gross sector output series measure the prices of products sold by UK manufacturers, irrespective of the classification of the customer who buys the product. Gross sector output indices are calculated at the very detailed, six-digit level.

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 Producer Price Indices (PPI) are calculated on a gross 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.

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

Each PPI and Services Producer Price Indices (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.

Standard errors for PPI will be produced in spring 2021, which will include standard errors for the periods between 2019 and 2021.

Services Producer Price Indices

The Services Producer Price Indices (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.

Standard errors for SPPI will be produced in spring 2021 which will include standard errors for the quarters between 2019 and 2021.

Impact of chain-linking on SPPI

Below are the methodological changes introduced to SPPI in January 2021:

- Adoption of annual chain-linking: The SPPI weights are updated annually using the Annual Survey of Goods and Services (ASGS), whereas previously weights were updated every five years as part of rebasing.

- The classification structure now follows the Classification of Products by Activity (CPA) 2.1, aligned with international best practice; previously the SPPI structure followed the Standard Industrial Classification (SIC) 2007.

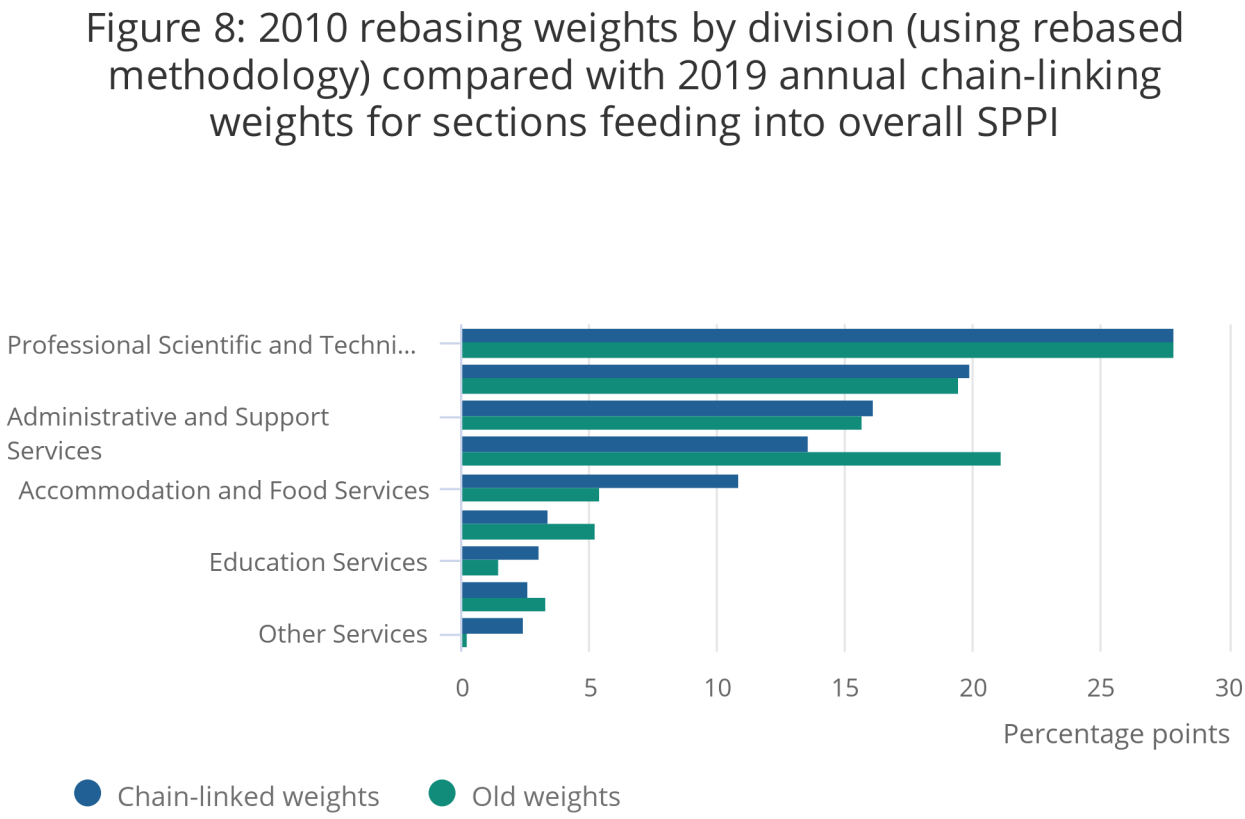
- From Quarter 4 (Oct to Dec) 2018, the weights are calculated on a business to all basis, rather than business to business.

Figure 8 shows the difference between the old SPPI headline weighting structure, and the new annually chain-linked weighting structure. The annually updated weights do not result in any large changes as a result of substantial changes in industry turnover, as this is uncommon, rather they ensure that long term gradual changes are regularly captured.

The largest differences at this level are with the reduction in the weight of information and communication services, as a result of the change in source data from the Office of Communications (OFCOM) to ASGS for division 61: telecommunications services. And the increase in the weight of accommodation and food services, which is as a result of the introduction of the business to all model, inflating the weight of division 56: food and beverage serving services.

Further details on the reasons for the shift in these weights can be found in the article Services producer price weight changes published in July 2020.

Figure 8: 2010 rebasing weights by division (using rebased methodology) compared with 2019 annual chain-linking weights for sections feeding into overall SPPI



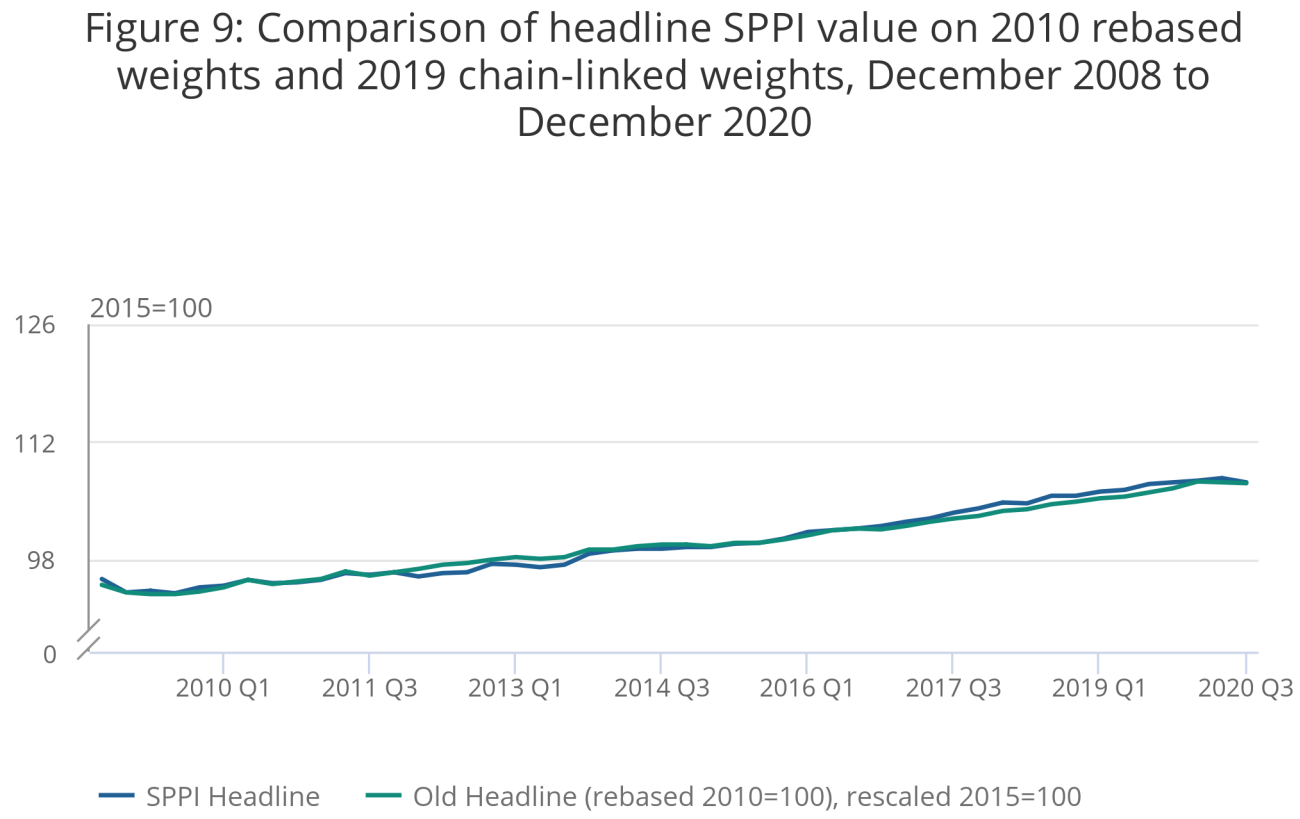
Source: Office for National Statistics

The introduction of an annually chain-linked methodology for SPPI improves the series to make it a more responsive and reflective economic indicator (Figure 9). The changes to methodology, both annual chain-linking and the change of coverage, contribute to the differences in the growth rates.

For example, from Quarter 1 (Jan to Mar) 2019 to Quarter 1 2020, the chain-linked headline rate grew by 1.2% on the year. However, the rebased rate was 1.9% over the same period. A contribution to this difference can be seen in the effect of the information and communication services index that is minimised in the new headline. It currently has a weight of 13.6%, whereas previously it was the second-largest contributor into the old headline with a weight of 21.1%.

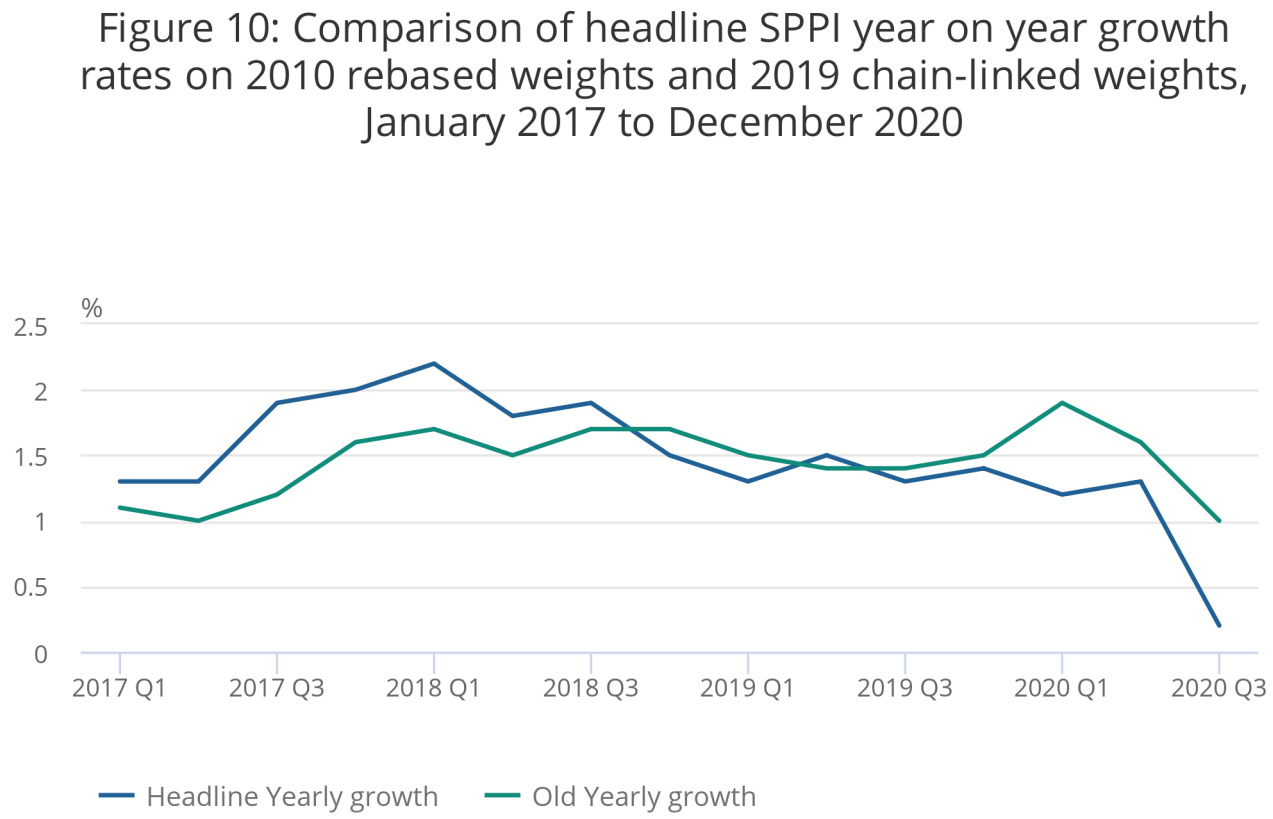
This index showed positive yearly growth in this period, the effect of which is less pronounced in the new headline rate (Figure 10). Further information on the methods can be found in the article Services producer price index methods changes.

Figure 9: Comparison of headline SPPI value on 2010 rebased weights and 2019 chain-linked weights, December 2008 to December 2020



Source: Office for National Statistics

Figure 10: Comparison of headline SPPI year on year growth rates on 2010 rebased weights and 2019 chain-linked weights, January 2017 to December 2020



Source: Office for National Statistics

Guidance

Other useful documentation for the Producer Price Index (PPI) and the Services Producer Price Index (SPPI) are:

- Producer price indices methods changes – comprehensive article outlining the move from net to gross, removal of duty and the sources used to compile the weights required for chain-linking.
- Chain-linking in business prices – the methodology and practical implementation of chain-linking.
- Producer price weight changes and Services producer price weight changes – articles explaining the impact of introducing chain-linking and the other new methods on weights used in the PPI and SPPI.
- 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) and SPPI user guidance and methodology article – provides an outline of the methods used to produce the PPI and the SPPI as well as information about recent developments.
- PPI standard errors article and SPPI standard errors article – more information about the reliability of the data.

End of EU exit transition period

As the transition period ends and the UK enters into a new Trade and Cooperation Agreement with the EU, the UK statistical system will continue to produce and publish our wide range of economic and social statistics and analysis. We are committed to continued alignment with the highest international statistical standards, enabling comparability both over time and internationally, and ensuring the general public, statistical users and decision makers have the data they need to be informed.

As the shape of the UK's future statistical relationship with the EU becomes clearer over the coming period, the ONS is making preparations to assume responsibilities that, as part of our membership of the EU and during the transition period, were delegated to the statistical office of the EU, Eurostat. This includes responsibilities relating to international comparability of economic statistics, deciding what international statistical guidance to apply in the UK context and to provide further scrutiny of our statistics and sector classification decisions.

In applying international statistical standards and best practice to UK economic statistics, we will draw on the technical advice of experts in the UK and internationally, and our work will be underpinned by the UK's well-established and robust framework for independent official statistics, set out in the Statistics and Registration Service Act 2007. Further information on our proposals will be made available early this year.

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 are 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 12 months.
- 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.

Coronavirus in December 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 December 2020, was via paper questionnaires that were sent to businesses on 19 November 2020, asking to return prices that were applicable on or around 1 December 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 PPI and the Services Producer Price Index (SPPI) was lower in comparison with pre-lockdown months. For PPI, the response for December 2020 was 73.5%, down from a pre-lockdown 87.4% in February 2020; for SPPI, the response for Quarter 4 (Oct to Dec) 2020 was 74.9%, down from a pre-lockdown 85.8% in Quarter 4 2019. We closely monitor response rates in each publication and use statistical methods to deal with non-response.

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.

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 and IPI show decreases between November and December, while the EPI shows an increase between November and December 2020, the highest the response rate has been since March 2020.

The low response rates in December 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
Percentage, December 2019 to December 2020

Weighted response

	PPI (domestic)	IPI	EPI
December 2019	86.6	84.9	80.0
January 2020	85.3	84.8	80.8
February 2020	87.4	86.8	80.3
March 2020	83.9	82.2	80.3
April 2020	73.2	69.8	68.9
May 2020	74.6	57.7	54.4
June 2020	71.3	62.8	66.8
July 2020	74.2	69.8	65.4
August 2020	73.7	70.5	67.0
September 2020	77.6	74.0	68.7
October 2020	77.2	72.4	65.1
November 2020	77.5	74.7	68.4
December 2020	73.5	71.9	76.6

Source: Office for National Statistics - Producer Price Index

Notes

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

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 0.4 percentage points in Quarter 4 (Oct to Dec) 2020 compared with Quarter 3 (July to Sept) 2020

Table 9: Overall effective response rates at time of first publishing
Percentage, Quarter 4 (Oct to Dec) 2019 to Quarter 4 2020

	Weighted Response SPPI
2019 Q4	85.8
2020 Q1	83.6
Q2	76.6
Q3	75.3
Q4	74.9

Source: Office for National Statistics

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 indicates 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 the treatment of missing producer prices because of the coronavirus pandemic (PDF, 52KB).

Links to 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: October 2020 (published 10 December 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.

The ONS has 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.

11 . Related links

Consumer prices inflation, UK
Bulletin | Released 20 January 2021
Price indices, percentage changes and weights for the different measures of consumer price inflation.

UK House Price Index
Bulletin | Released 20 January 2021
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: new orders and Construction Output Price Indices
Bulletin | Released 15 January 2021
A summary of the Construction Output Price Indices (OPIs) in the UK.

GDP monthly estimate, UK
Bulletin | Released 15 January 2021
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.