

Statistical bulletin

UK index of production: August 2017

Measures the volume of production at base year prices for the manufacturing, mining and quarrying, energy supply, and water and waste management industries. These are seasonally adjusted figures on the index of output of the production industries.



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1 . Main points

- In the three months to August 2017, the Index of Production was estimated to have increased by 0.9%; all four main sectors increased with the largest contribution from manufacturing.
- The largest contribution to the rise in manufacturing in the three months to August 2017 came from other manufacturing and repair, which rose by 3.8%; this sub-sector includes a wide range of high-value milestone-based contracts for repair and maintenance, such as for aircraft, ships and boats.
- In August 2017, total production was estimated to have increased by 0.2% compared with July 2017, due mainly to a rise of 0.4% in manufacturing.
- Total production output for August 2017 compared with August 2016 increased by 1.6%, with manufacturing providing the largest upward contribution, increasing by 2.8%; mining and quarrying partially offset this rise, decreasing by 6.0%.
- The earliest period open for revision in this release was January 1997; revisions to Index of Production data up to Quarter 2 (Apr to June) 2017 are consistent with [Quarterly National Accounts: April to June 2017](#), published on 29 September 2017 and data used for Blue Book 2017, due for release on 31 October 2017.

2 . Things you need to know about this release

In this release, periods back to January 1997 were open for revision, as this dataset contains the annual updates that are also included in the [Quarterly National Accounts: April to June 2017](#), published on 29 September 2017 and data used for Blue Book 2017, due for release on 31 October 2017. This is in line with the standard [National Accounts Revisions Policy](#). As is common for the first Index of Production (IoP) publication following the annual updates, there can be larger revisions than in an ordinary publication (see Table IOP5R, which shows the revisions to IoP estimates against the previously published).

Revisions can be made for a variety of reasons; the most common include:

- the annual update of the weights used to construct the chained volume measures of output
- the annual update of seasonal adjustment models
- the published indices being re-referenced from 2013 equals 100 to 2015 equals 100
- methodological improvements
- updated source data

The Index of Production is an important economic indicator and one of the short-term measures of economic activity in the UK. It is used in the compilation of gross domestic product (GDP); the production industries' weight accounts for 14.0% of the [output approach to the measurement of GDP](#).

The IoP measures the UK output in the mining and quarrying; manufacturing; energy supply; and water supply and waste management industries. The IoP estimates are mainly based on the Monthly Business Survey (MBS) of approximately 6,000 businesses. For the mining and quarrying, and energy supply sectors, and two manufacturing industries namely coke and refined petroleum, and basic iron and steel, we receive volume data from the [Department for Business, Energy and Industrial Strategy \(BEIS\)](#) and the [International Steel Statistics Bureau \(ISSB\)](#) respectively. Unless otherwise stated, all estimates included in this release are based on seasonally adjusted data. The current price non-seasonally adjusted estimates of industries collected by the MBS can be found in today's (10 October 2017) publication of [TOPSI: Turnover in production and services industries](#).

As part of the Short-term Economic Indicators theme day, TOPSI produces the [proportion of turnover from exports](#) by industry and [level of turnover and exports \(£ millions\)](#). However, this is not always comparable with UK trade statistics, for a number of reasons. These include, but are not limited to:

- different data sources – IoP and TOPSI are based on a survey of businesses; UK Trade in Goods uses administrative data collected by HM Revenue and Customs (HMRC)
- different concepts being measured – IoP reports the value of exports as a proportion of the industry's turnover; the UK trade in goods data report the change in ownership between the UK and other countries
- time lag – there can be time lags between the sale of a product reported in IoP and the movements of that product reported by UK trade

Further information on UK trade and how data on it are compiled can be found in the “Things you need to know about this release” section of the [UK trade release](#).

Care should be taken when using the month-on-month growth rates as data can often be volatile; longer-term growth rates and examination of the time series allow for better interpretation of the statistics.

Summary information can be found in the [Quality and Methodology Information report](#).

3 . Index of Production (IoP) main figures and the longer-term trend

Figures 1 and 2 show that both the Index of Production (IoP) and Index of Manufacturing (IoM) followed a broadly upward trend following the economic downturn. Growth was more pronounced from the beginning of 2010, as the economy recovered, before a downturn during 2012. Since then, both production and manufacturing output have risen but remain below their level reached in the pre-downturn gross domestic product (GDP) peak in Quarter 1 (Jan to Mar) 2008, by 6.9% and 3.0% respectively in the three months to August 2017.

Figure 1: Index of Production in UK

Seasonally adjusted, August 2007 to August 2017

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Seasonally adjusted, August 2007 to August 2017



Source: Primarily Monthly Business Survey (Production and Services) - Office for National Statistics

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Notes:

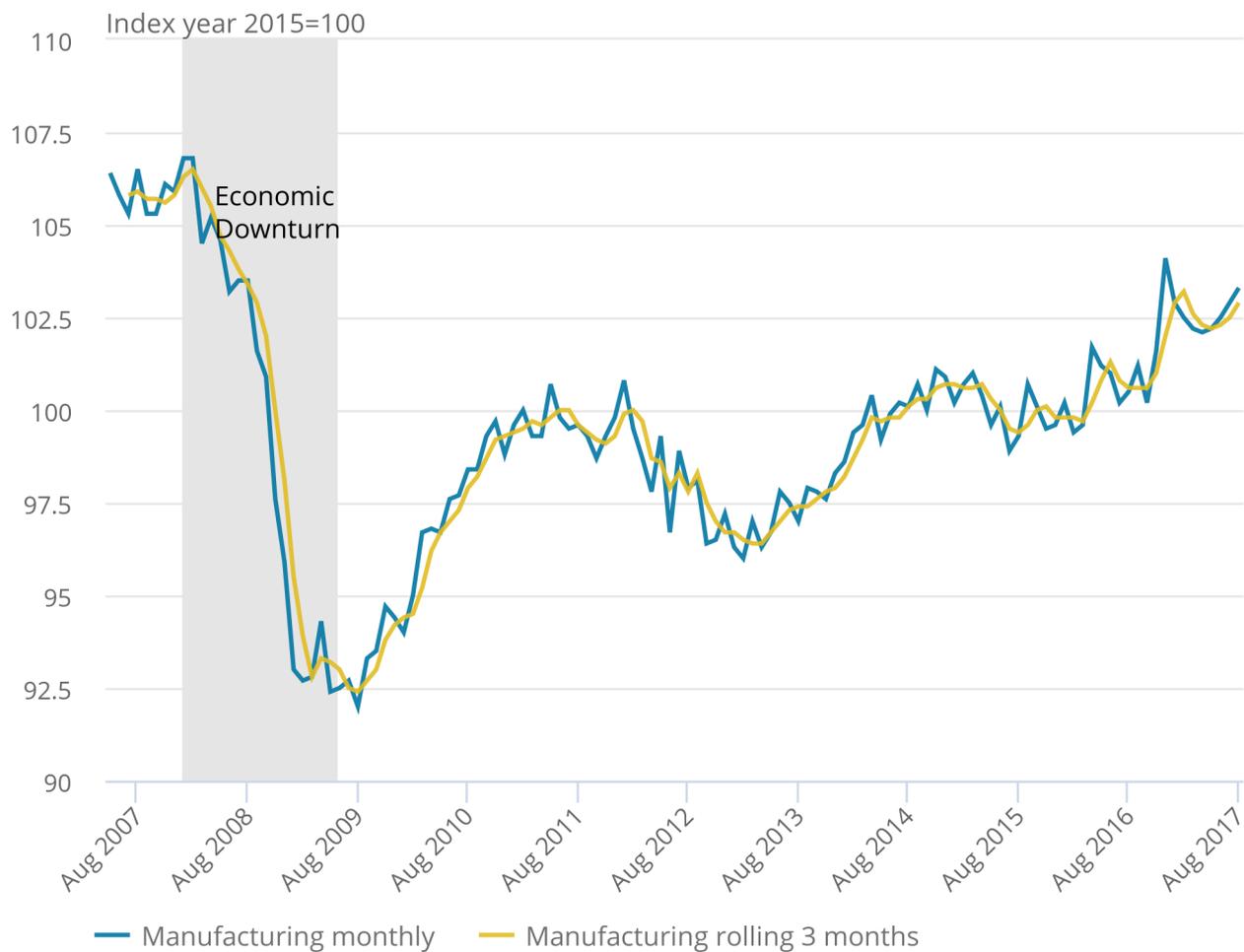
1. Quarter 1 (January to March) 2008 to Quarter 2 (April to June) 2009 – UK economic downturn.

Figure 2: Index of Manufacturing in UK

Seasonally adjusted, August 2007 to August 2017

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Seasonally adjusted, August 2007 to August 2017



Source: Primarily Monthly Business Survey (Production and Services) - Office for National Statistics

Source: Primarily Monthly Business Survey (Production and Services) - Office for National Statistics

Notes:

1. Quarter 1 (January to March) 2008 to Quarter 2 (April to June) 2009 – UK economic downturn.

Table 1 shows the growth rates and contributions for the IoP and main sectors for August 2017. The monthly estimate of total production rose by 0.2%. There were rises in three of the four main sectors, with manufacturing providing the largest upward contribution, increasing by 0.4%, while energy supply, and water supply and waste management also rose by 0.4%. Mining and quarrying partially offset these rises, falling by 2.0%.

The three months-on-previous three months estimate of total production rose by 0.9% in August 2017, with rises in all four of the main sectors. Manufacturing provided the largest upward contribution, increasing by 0.7%.

Table 1: Index of Production headline growth rates and contributions, August 2017, UK

Description	% of production ¹	Month on previous month growth (%)	Contribution to production (% points)	Most recent 3 months on previous 3 months growth (%)	Contribution to production (% points)
IoP	100.0	0.2	0.18	0.9	0.86
Mining and quarrying	8.7	-2.0	-0.17	2.2	0.18
Manufacturing	72.0	0.4	0.26	0.7	0.48
Electricity, gas, steam and air conditioning	12.0	0.4	0.05	1.6	0.18
Water supply, sewerage and waste management	7.2	0.4	0.03	0.3	0.02

Source: Office for National Statistics

Notes:

1. "% of production" column does not add up to 100 due to rounding.

4 . What is contributing to the three months-on-previous three months increase?

In the three months on previous three months to August 2017, total production was estimated to have increased by 0.9% (Table 2), with rises in all four main sectors, and follows an increase of 0.4% in the three months to July 2017. These increases follow on from falls earlier in 2017, including a 1.1% decrease in the three months to May 2017.

Manufacturing provided the largest upward contribution to total production, rising by 0.7%, with 8 of the 13 sub-sectors rising. Within this sector, other manufacturing and repair provided the largest contribution, rising by 3.8%, due mainly to an increase of 13.1% in repair and maintenance of aircraft and spacecraft. Increased non-seasonally adjusted domestic sales of 25.3% and export sales of 42.7% were reported for June 2017 in the Monthly Business Survey, published in our latest [Turnover in production and services industries](#).

Mining and quarrying increased by 2.2%, due mainly to strength in the oil and gas extraction sub-sector during June 2017, which rose by 5.0% due to an absence of maintenance (see our [June 2017 Index of Production bulletin](#) for further information).

Table 2: Growths and contributions to production, 3 months-on-previous 3 months, August 2017, UK

Sector	Summary description	3 months on previous 3 months growth (percentage)	Contribution to production (percentage points)
IoP	Index of Production	0.9	0.86
Sector B	Total Mining and Quarrying	2.2	0.18
5	Coal and Lignite	-5.7	0.00
6	Crude petroleum and Natural gas	2.8	0.18
789	Other mining and quarrying	0.1	0.00
Sector C	Total Manufacturing	0.7	0.48
CA	Food, beverages and tobacco	-0.7	-0.08
CB	Textiles and leather products	1.6	0.04
CC	Wood, paper and printing	-0.1	-0.01
CD	Coke and petroleum	-2.8	-0.04
CE	Chemical products	0.7	0.04
CF	Pharmaceutical products	2.2	0.11
CG	Rubber and plastic products	-1.3	-0.07
CH	Metal products	0.4	0.03
CI	Computer, electronic and optical	4.6	0.15
CJ	Electrical equipment	3.9	0.08
CK	Machinery and equipment	-1.4	-0.06
CL	Transport equipment	0.2	0.02
CM	Other manufacturing and repair	3.8	0.27
Sector D	Total Electricity and Gas	1.6	0.18
35.1	Electric power generation, transmission and distribution	2.2	0.18
35.2-3	Manufacture of gas; distribution of gaseous fuels through mains; steam and aircon supply	0.1	0.00
Sector E	Total Water	0.3	0.02
36	Water collection, treatment and supply	-0.1	0.00
37	Sewerage	-1.3	-0.03
38	Waste collection, treatment and disposal activities; materials recovery	1.8	0.05
39	Remediation activities and other waste management services	1.5	0.00

Source: Office for National Statistics

5 . What is contributing to the month-on-month increase?

The monthly estimate of total production increased by 0.2% in August 2017 (Table 3) and there were rises in three of the four main sectors.

Manufacturing provided the largest upward contribution, increasing by 0.4%, with 8 of the 13 sub-sectors rising. This is the fourth consecutive monthly rise in this sector and follows growth of 0.4% in July 2017.

Basic metals provided the largest upward contribution to the growth in manufacturing, rising by 2.7%, following a fall of 3.2% in July 2017. Within this sub-sector, fabricated metal products other than weapons rose by 2.2%.

The fall of 2.0% in mining and quarrying was due mainly to oil and gas extraction, which fell by 2.1%. This was largely due to maintenance during August 2017.

Table 3: Growths and contributions to production, month-on-previous month, August 2017, UK

Sector	Summary description	Month on previous month growth (percentage)	Contribution to production (percentage points)
IoP	Index of Production	0.2	0.18
Sector B	Total Mining and Quarrying	-2.0	-0.17
5	Coal and Lignite	2.9	0.00
6	Crude petroleum and Natural gas	-2.1	-0.14
789	Other mining and quarrying	-1.3	-0.02
Sector C	Total Manufacturing	0.4	0.26
CA	Food, beverages and tobacco	-0.3	-0.03
CB	Textiles and leather products	-4.7	-0.13
CC	Wood, paper and printing	2.3	0.11
CD	Coke and petroleum	3.8	0.04
CE	Chemical products	1.0	0.05
CF	Pharmaceutical products	3.2	0.16
CG	Rubber and plastic products	0.0	0.00
CH	Metal products	2.7	0.22
CI	Computer, electronic and optical	3.7	0.12
CJ	Electrical equipment	-4.8	-0.10
CK	Machinery and equipment	0.1	0.00
CL	Transport equipment	-2.6	-0.29
CM	Other manufacturing and repair	1.5	0.11
Sector D	Total Electricity and Gas	0.4	0.05
35.1	Electric power generation, transmission and distribution	0.4	0.03
35.2-3	Manufacture of gas; distribution of gaseous fuels through mains; steam and aircon supply	0.5	0.02
Sector E	Total Water	0.4	0.03
36	Water collection, treatment and supply	-1.3	-0.03
37	Sewerage	0.7	0.02
38	Waste collection, treatment and disposal activities; materials recovery	1.4	0.04
39	Remediation activities and other waste management services	0.4	0.00

Source: Office for National Statistics

6 . What is contributing to the month-on-same-month a year ago increase?

Total production increased by 1.6% in August 2017 compared with August 2016; two of the four main sectors provided upwards contributions (Table 4).

The largest upward contribution came from manufacturing, which increased by 2.8%. There was broad-based strength throughout the sector, with 11 of the 13 sub-sectors increasing. The largest upward contribution came from other manufacturing and repair, which rose by 7.0%. Within this sub-sector, the rest of repair and installation rose by 21.2%. As reported by this industry in the Monthly Business Survey, published in [Turnover in production and services industries](#), there were increased non-seasonally adjusted domestic sales of 30.6% compared with August 2016.

Mining and quarrying partially offset the overall increase in production output, decreasing by 6.0%. Oil and gas extraction provided the largest downwards contribution, which fell by 7.8%, largely due to maintenance activities in August 2017.

Table 4: Growths and contributions to production, month-on-same month a year ago, August 2017, UK

Sector	Summary description	Month on same month a year ago growth (percentage)	Contribution to production (percentage points)
IoP	Index of Production	1.6	1.59
Sector B	Total Mining and Quarrying	-6.0	-0.54
5	Coal and Lignite	-31.5	0.00
6	Crude petroleum and Natural gas	-7.8	-0.56
789	Other mining and quarrying	1.0	0.02
Sector C	Total Manufacturing	2.8	1.98
CA	Food, beverages and tobacco	0.4	0.05
CB	Textiles and leather products	7.0	0.18
CC	Wood, paper and printing	3.9	0.19
CD	Coke and petroleum	-0.7	-0.01
CE	Chemical products	3.6	0.17
CF	Pharmaceutical products	1.4	0.07
CG	Rubber and plastic products	-2.0	-0.12
CH	Metal products	0.2	0.02
CI	Computer, electronic and optical	5.8	0.19
CJ	Electrical equipment	7.7	0.15
CK	Machinery and equipment	4.4	0.20
CL	Transport equipment	3.8	0.40
CM	Other manufacturing and repair	7.0	0.48
Sector D	Total Electricity and Gas	-0.4	-0.05
35.1	Electric power generation, transmission and distribution	0.1	0.01
35.2-3	Manufacture of gas; distribution of gaseous fuels through mains; steam and aircon supply	-1.5	-0.06
Sector E	Total Water	2.7	0.20
36	Water collection, treatment and supply	0.2	0.00
37	Sewerage	4.0	0.09
38	Waste collection, treatment and disposal activities; materials recovery	3.6	0.11
39	Remediation activities and other waste management services	-3.0	0.00

Source: Office for National Statistics

7 . Impact of the Blue Book 2017 changes on the Index of Production

Blue Book 2017 constitutes our annual update of the national accounts. The Blue Book is the UK's national compendium of national accounts data and incorporates a number of improvements to methods and sources into the UK's National Accounts. These improvements ensure that our national accounts continue to provide a reliable framework for analysing the UK economy and comparing it with other countries. The changes were summarised in an article published on 29 September 2017 discussing the [Impact of method changes to the national accounts and sector accounts: Quarter 1 1997 to Quarter 2 2017](#).

The Blue Book 2017 revisions, which begin in January 1997, have affected the Index of Production (IoP) and its components. The main sources of the revision are the annual update of weights and seasonal adjustment models, re-referencing of the published indices, methodological improvements and updated source data. As is common for the first IoP publication following the annual updates, there are larger revisions than in an ordinary publication.

This is the first release of IoP in which the reference year and last base year have been moved from 2013 to 2015; this was detailed in [Impact of methodological changes to chain-linking on gross domestic product](#).

The annual update of weights in Blue Book 2017 has decreased the Index of Production weight within total gross value added (GVA) and the output measure of gross domestic product (GDP) from 146.5 parts per thousand to 139.5 parts per thousand and the annual change in weights has impacted the components of IoP (Table 5).

Table 5: Changes in the weights of the main components of IoP between base year 2013 = 100 and 2015 = 100, UK

Index of Production component		2013 = 100	2015 = 100
Total	Index of Production component	1000	1000
Sector B Total Mining and Quarrying			
5	Coal and Lignite	0.9	0.3
6	Crude petroleum and Natural gas	96.2	65.1
789	Other mining and quarrying	23.4	21.6
Sector C Total Manufacturing			
CA	Food, beverages and tobacco	114.2	114.5
CB	Textiles and leather products	25.4	26.8
CC	Wood, paper and printing	51.0	50.3
CD	Coke and petroleum	9.2	13.0
CE	Chemical products	39.8	49.5
CF	Pharmaceutical products	58.7	51.1
CG	Rubber and plastic products	55.0	58.5
CH	Metal products	83.1	87.6
CI	Computer, electronic and optical products	36.2	33.0
CJ	Electrical equipment	20.9	21.7
CK	Machinery and equipment nec.	50.6	44.0
CL	Transport equipment	92.0	102.9
CM	Other manufacturing and repair	64.4	67.4
Sector D Total Electricity and Gas			
35.1	Electricity generation and distribution	73.9	85.9
35.2-3	Manufacture of gas and distribution	30.6	34.4
Sector E Total Water and Waste			
36	Water collection, treatment and supply	22.0	21.1
37	Sewerage	20.6	21.2
38	Waste collection, treatment and disposal	31.5	29.1
39	Remediation activities	0.7	0.7

Source: Office for National Statistics

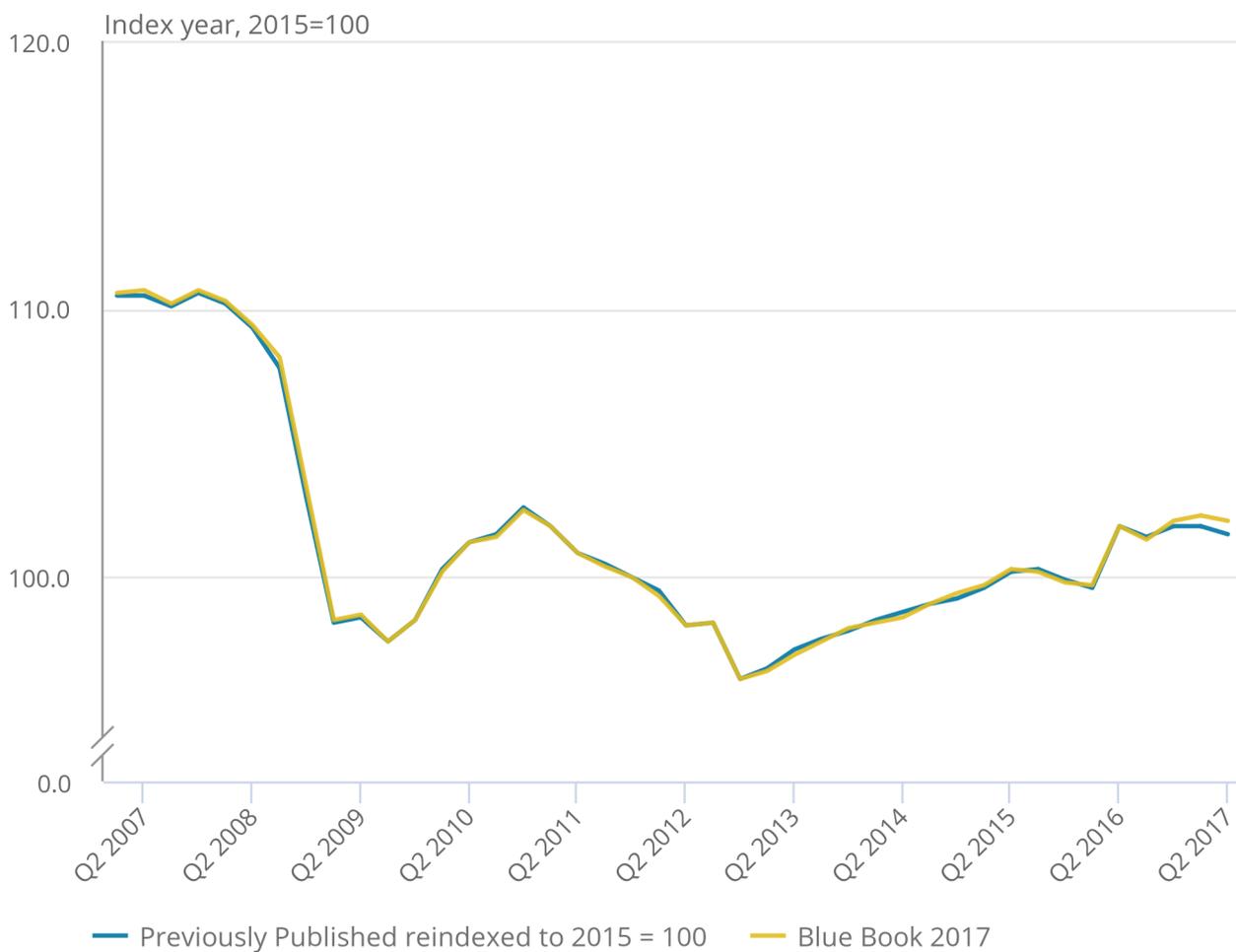
Notes:

1. Breakdowns may not sum to totals due to rounding.

The impact of the Blue Book 2017 revisions to the IoP affect the level of output over time. However, the profile and performance of production remained broadly unchanged from previously published when both indices are referenced to 2015 equals 100 (Figure 3). The larger divergences show from Quarter 1 (Jan to Mar) 2017 mainly as a result of incorporating updated source data and the introduction of an improvement to the methodology for non-response in the Monthly Business Survey, which underpins the Index of Production release, as detailed in [Improving the methodology for survey non-response](#).

Figure 3: Index of Production, Quarter 1 (Jan to Mar) 2007 to Quarter 2 (Apr to June) 2017, UK

Figure 3: Index of Production, Quarter 1 (Jan to Mar) 2007 to Quarter 2 (Apr to June) 2017, UK



Source: Primarily Monthly Business Survey (Production and Services) - Office for National Statistics

Source: Primarily Monthly Business Survey (Production and Services) - Office for National Statistics

8 . Links to related statistics

The corresponding price indices used to deflate the Index of Production (IoP) are published in the monthly publication of [UK producer price inflation](#). Product sales by manufacturers are published on an annual basis in [UK manufacturers' sales by product \(PRODCOM\)](#) statistical bulletins; estimates are in current prices, unlike the chained volume measures published in the IoP release.

The data published by the Department of Business, Energy and Industrial Strategy (BEIS) in [Energy Trends](#) are used to measure the mining and quarrying, electricity and gas, and the manufacture of coke and refined petroleum products sectors within this release.

The IoP follows the [Eurostat short-term statistics \(STS\)](#) regulation for measuring output in production. The latest release of [industrial production](#) and [output in manufacturing](#) are available from Eurostat and are updated monthly. It should be noted that an accurate comparison cannot be made between our publication and the Eurostat publication without re-indexing the data to the same base year, as Eurostat data are calculated on a 2010 equals 100 basis, while UK data are calculated on a 2015 equals 100 basis.

Outside the EU, the US Census Bureau releases [Manufacturing and Trade Inventories and Sales](#) reports. Accurate comparisons cannot be made between our publication and the US Census Bureau release, as the UK data are calculated at chained volume indices, which take into account price changes, while the US publication is not adjusted for price changes.

9 . What's new?

In this release we are open for revisions from 1997 and these revisions are consistent with the [Quarterly national accounts: April to June 2017](#) and the UK National Accounts Blue Book 2017, due to be published on 31 October 2017. For further information on the impacts, please see section 7 of the article [Impact of the Blue Book 2017 changes on the Index of Production](#). The reference year for indices has moved from 2013 equals 100 to 2015 equals 100 and the weights have moved on to the base year of 2015.

On 29 September 2017, we published [Monthly Business Survey: improving the method for survey non-response](#) detailing the impact this new methodology has had on the Index of Production published main sectors.

On 15 September 2017, we published an article on the [Impact of sterling depreciation on prices and turnover in the UK manufacturing sector: 2017](#).

We published the [Short-term indicators economic commentary](#) alongside this release, presenting new information on economic conditions in August 2017, with data available for output in production, construction and the trade balance.

The latest [Value Added Tax \(VAT\) turnover](#) article was published on 1 June 2017, which outlined our plans to use VAT turnover in the compilation of Quarterly National Accounts July to September 2017 and the Index of Services October 2017 bulletins, which are both due for publication on 22 December 2017. In November 2017 a further article will be published, which will review the methodological improvements and provide further detail on implementation plans.

10 . Upcoming changes

We will begin using Value Added Tax (VAT) data, alongside the Monthly Business Survey data, in the production of gross domestic product (GDP) statistics from December 2017. This change means that the Monthly Business Survey will no longer be the sole turnover data source. We are therefore planning to stop the publication of Turnover in Production and Services Industries (TOPSI), which is based on the Monthly Business Survey, in its current form. The final release will be on 10 November 2017. Instead, additional information drawn from our new data sources will be provided in the relevant Index of Production or Index of Services release from December 2017.

11 . Quality and methodology

The majority of data used to compile the manufacturing sector, and thus the Index of Production (IoP), are collected via the Monthly Business Survey (MBS). The MBS samples around 6,000 businesses every month. The data collected are turnover excluding Value Added Tax (VAT) and exports for some applicable industries. These data are then deflated using [Producer Price Indices \(PPI\)](#). Within the manufacturing sector we also receive direct volume data from the Department for Business, Energy and Industrial Strategy (BEIS) for fuel industries and the [International Steel Statistics Bureau](#) for steel industries.

The mining and quarrying sector is comprised mainly of data from BEIS, including volume of oil and gas extraction and coal extraction. The data used to produce the energy sector are also from BEIS and include energy and gas supply output. A comprehensive list of the IoP source data can be found in the [Gross domestic product \(GDP\(O\)\) source catalogue](#).

Within the suite of datasets published monthly alongside this release, you will find:

- [Output of the Production Industries](#) (IOP5) publication tables
- [Revisions to Output of the Production Industries](#) (IOP5R)
- [Monthly Business Survey response rates](#) for production industries for this publication
- [Revision triangle](#) – monitors the size of monthly and three-monthly revisions
- [Index of Production weights 2015 equals 100](#)
- [Index of Production and Sectors to four decimal places](#)

The [TOPSI: production and services turnover](#) is published alongside this release, providing current price estimates for industries collected by the MBS.

The [Index of Production Quality and Methodology Information report](#) contains important information on:

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

