



مركز الإحصاء
STATISTICS CENTRE

INDUSTRIAL PRODUCTION INDEX (IPI)

Manufacturing

2015

Fourth Quarter

(Base Year 2012)

(Preliminary)

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Introduction

In the light of the rapid economic and social development in the Emirate of Abu Dhabi, production indices and indicators are considered key tools that express changes in the volumes of industrial and commercial production and services. These indices are also considered important economic indicators that provide accurate data to decision makers, economists, researchers, policy makers and other users of official statistics.

The remarkable economic development witnessed by Abu Dhabi Emirate has called for the construction of a statistical index that reflects the growth of the economic production sectors. Therefore, Statistics Centre – Abu Dhabi constructed the industrial production and price indices for the Emirate of Abu Dhabi.

The Industrial Production Index (IPI), which is calculated on a quarterly basis, covers the manufacturing sector. The IPI design is based on the main list of products of the industrial manufacturing activities in the International Standard Industrial Classification-revision 4 (ISIC4) which covers all manufacturing economic activities.

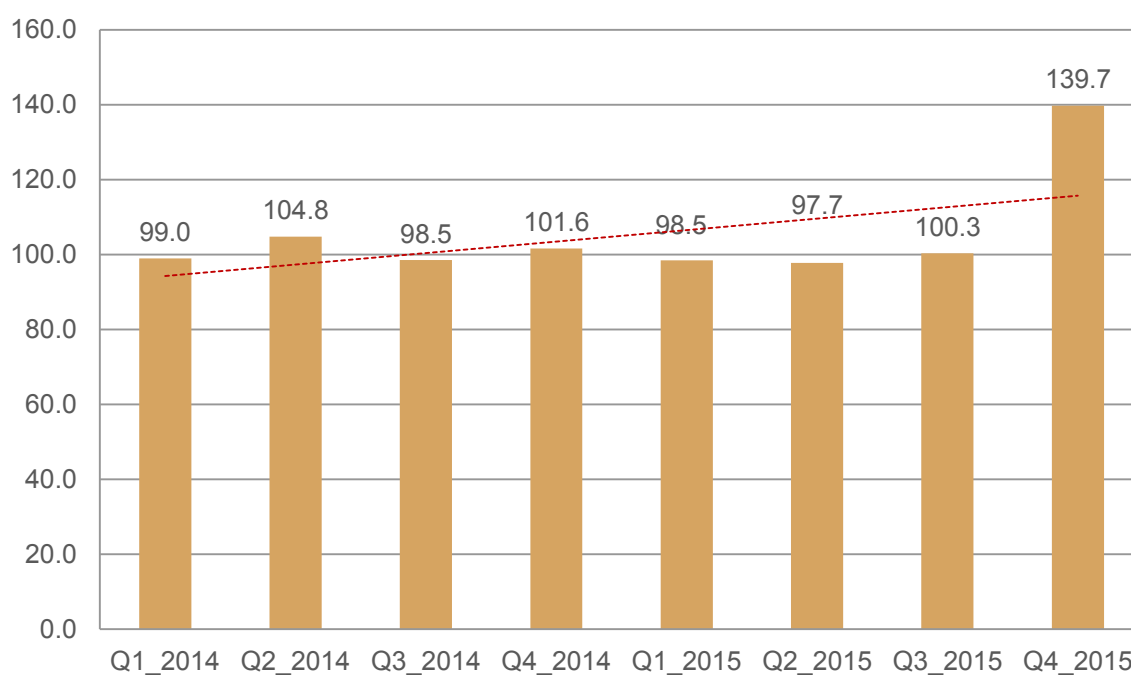
During the next phase development of the IPI, separate indices will be compiled for producers in extractive industries and in the electricity and water sectors.

Key Points

This publication presents the Industrial Production Index results for the manufacturing activity in the fourth quarter of 2015 (base year 2012) .The key findings are as follows:

- The IPI increased by 37.6% in the fourth quarter of 2015 compared with the same quarter in 2014, rising to 139.7 % in the fourth quarter of 2015 from 101.6 % in the fourth quarter of 2014.
- The IPI increased by 39.3% rising to 139.7 % in the fourth quarter of 2015 compared with 100.3 % in the third quarter of 2015.
- In 2015, the IPI increased by 8.0% compared with 2014, rising to 109.1% compared with 101.0% in 2014.

Figure 1: Quarterly Industrial Production Index (IPI) for 2014, 2015 (2012=100)



Source: Statistics Centre-Abu Dhabi

Industrial Production Index for the fourth quarter of 2015 compared with the fourth quarter of 2014

The Industrial Production Index increased by 37.6% in the fourth quarter of 2015 compared with the same quarter in 2014. The increase resulted from changes (increases and decreases) in the rates of the economic activities indices.

The key economic activity contributing to this increase was 'Manufacture of machinery and equipment n.e.c.' that rose by 688.3% , as a result of an increase in the demand for some products in the fourth quarter of 2015 that stopped in the previous quarters. This increased demand contributed 8.3% of the total increase in the industrial producer quantities. In addition, the industrial production index of the 'Manufacture of leather and related products' activity increased by 134.1%, contributing 0.1% of the total increase.

The 'Manufacture of coke and refined petroleum products' activity contributed 93.4% of the total increases of the Industrial Production Index, due to higher production rates of 109.2%, while the quantities of the 'Manufacture of beverages' activity increased by 40.5%, contributing 0.6%, to the overall increase. The quantities of the 'Manufacture of other non-metallic mineral products' activity also increased by 34.0% with a contribution of 8.4%.

During the fourth quarter of 2015 compared with the fourth quarter of 2014 eleven-activities recorded a decrease in the Industrial Production index, including the 'Repair and installation of machinery and equipment' activity for which quantities decreased by 79.8%.contributing by 11.0% to the change in the IPI.

The quantities of the 'Manufacture of rubber and plastics products' activity decreased by 55.8%, contributing by 2.2% to the change in the IPI, while the 'Manufacture of paper and paper products' activity decreased by 51.6%, contributing by 1.0%.

In addition the 'Manufacture of pharmaceuticals, medicinal chemical and botanical products' activity decreased by 48.4%, contributing by 0.9%, and 'Manufacture of computer, electronic and optical products' decreased by 39.1%, contributing by 0.2%, while 'Manufacture of basic metals' decreased by 17.0%, contributing by 3.0%. The 'Other manufacturing' and 'Manufacture of furniture' activities decreased by 3.9% and 2.0% respectively.

Table 1: Relative change in the Industrial Production Index in the fourth quarter of 2015 compared with the fourth quarter of 2014 (2012=100)

| Economic Activity | Relative Importance | IPI Q4 2014 | IPI Q4 2015 | Relative change Q4 2015 /Q4 2014 |
|---|---------------------|-------------|-------------|----------------------------------|
| Manufacturing Industry | 10,000.0 | 101.6 | 139.7 | 37.6 |
| Manufacture of food products | 287.4 | 98.6 | 102.2 | 3.6 |
| Manufacture of beverages | 84.9 | 68.5 | 96.2 | 40.5 |
| Manufacture of textiles | 33.9 | 104.3 | 124.2 | 19.1 |
| Manufacture of wearing apparel | 118.4 | 88.4 | 104.3 | 17.9 |
| Manufacture of leather and related products | 5.3 | 42.3 | 99.1 | 134.1 |
| Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials | 65.8 | 91.4 | 106.1 | 16.1 |
| Manufacture of paper and paper products | 37.7 | 199.7 | 96.6 | -51.6 |
| Printing and reproduction of recorded media | 33.1 | 99.1 | 104.0 | 5.0 |
| Manufacture of coke and refined petroleum products | 3653.8 | 89.3 | 186.8 | 109.2 |
| Manufacture of chemicals and chemical products | 1690.4 | 120.6 | 132.6 | 9.9 |
| Manufacture of pharmaceuticals, medicinal chemical and botanical products | 23.0 | 321.3 | 165.9 | -48.4 |
| Manufacture of rubber and plastics products | 126.3 | 118.0 | 52.2 | -55.8 |
| Manufacture of other non-metallic mineral products | 1104.4 | 85.2 | 114.2 | 34.0 |
| Manufacture of basic metals | 626.5 | 108.7 | 90.2 | -17.0 |
| Manufacture of fabricated metal products, except machinery and equipment | 960.1 | 105.7 | 110.5 | 4.5 |
| Manufacture of computer, electronic and optical products | 11.7 | 161.0 | 98.1 | -39.1 |
| Manufacture of electrical equipment | 410.9 | 125.2 | 124.2 | -0.8 |
| Manufacture of machinery and equipment n.e.c. | 59.0 | 78.4 | 618.5 | 688.3 |
| Manufacture of motor vehicles, trailers and semi-trailers | 12.1 | 157.6 | 156.1 | -1.0 |
| Manufacture of other transport equipment | 164.5 | 72.8 | 72.6 | -0.4 |
| Manufacture of furniture | 75.0 | 114.8 | 112.6 | -2.0 |
| Other manufacturing | 7.5 | 165.7 | 159.3 | -3.9 |
| Repair and installation of machinery and equipment | 408.0 | 128.9 | 26.1 | -79.8 |

Source: Statistics Centre-Abu Dhabi

Table 2: Contribution to change in the Industrial Production Index by activity, fourth quarter of 2015 compared with the fourth quarter of 2014 (2012=100)

| Activity | Contribution % |
|---|----------------|
| Food products | 0.3 |
| Beverages | 0.6 |
| Textiles | 0.2 |
| Wearing apparel | 0.5 |
| Leather and related products | 0.1 |
| Wood & products of wood and cork | 0.3 |
| Paper and paper products | -1.0 |
| Printing and reproduction of recorded media | 0.0 |
| Coke and refined petroleum products | 93.4 |
| Chemicals and chemical products | 5.3 |
| Pharmaceuticals, medicinal chemical products | -0.9 |
| Rubber and plastics products | -2.2 |
| Other non-metallic mineral products | 8.4 |
| Basic metals | -3.0 |
| Fabricated metal products | 1.2 |
| Computer, electronic and optical products | -0.2 |
| Electrical equipment | -0.1 |
| Machinery and equipment n.e.c. | 8.3 |
| Motor vehicles, trailers and semi-trailers | 0.0 |
| Other transport equipment | 0.0 |
| Furniture | 0.0 |
| Other manufacturing | 0.0 |
| Repair and installation, machinery, equipment | -11.0 |

Source: Statistics Centre-Abu Dhabi

Industrial Production Index for the fourth quarter of 2015 compared with the third quarter of 2015

The Industrial Production Index increased by 39.3% in the fourth quarter of 2015 compared with the third quarter of 2015. The production quantities of 'Manufacture of motor vehicles, trailers and semi-trailers' activity increased by 185.0%, and 'Manufacture of coke and refined petroleum products' increased by 99.9%, while the 'Manufacture of machinery and equipment n.e.c.' activity increased by 58.6%, and the 'Manufacture of other transport equipment' activity increased by 48.4%. In addition, the quantities of the 'Printing and reproduction of recorded media' activity increased by 28.6%, the 'Manufacture of other non-metallic mineral products' activity by 24.2%, while the 'Manufacture of furniture' activity increased by 23.4%.

Eight activities showed a decline in the production index in the fourth quarter of 2015 compared with the third quarter in 2015 including the 'Manufacture of leather and related products' activity which decreased by 53.0%. The 'Manufacture of rubber and plastics products' activity decreased by 51.3%. The 'Manufacture of pharmaceuticals, medicinal chemical and botanical products' activity decreased by 40.1%. The 'Other manufacturing' activity decreased by 36.2%, while the quantities of the 'Manufacture of beverages' and 'Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials' activities decreased by 29.0% and 9.6% respectively. The index of 'Manufacture of wearing apparel' activity decreased by 9.4%.

Table 3 shows the Industrial Production Index for the third and fourth quarters of 2015. The table also shows the relative importance (weights) and the relative change in the price index in the fourth quarter of 2015 compared with the third quarter of 2015 by economic activity.

Table 3: Industrial Production Index & relative change in the fourth quarter of 2015 compared with the third quarter of 2015 by economic activity (2012=100)

| Economic Activity | Relative Importance | IPI Q3 2015 | IPI Q4 2015 | Relative change Q4 2015 /Q3 2015 |
|---|---------------------|-------------|-------------|----------------------------------|
| Manufacturing Industry | 10,000.0 | 100.3 | 139.7 | 39.3 |
| Manufacture of food products | 287.4 | 91.5 | 102.2 | 11.6 |
| Manufacture of beverages | 84.9 | 135.6 | 96.2 | -29.0 |
| Manufacture of textiles | 33.9 | 111.7 | 124.2 | 11.2 |
| Manufacture of wearing apparel | 118.4 | 115.0 | 104.3 | -9.4 |
| Manufacture of leather and related products | 5.3 | 211.0 | 99.1 | -53.0 |
| Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials | 65.8 | 117.3 | 106.1 | -9.6 |
| Manufacture of paper and paper products | 37.7 | 86.2 | 96.6 | 12.0 |
| Printing and reproduction of recorded media | 33.1 | 80.9 | 104.0 | 28.6 |
| Manufacture of coke and refined petroleum products | 3653.8 | 93.5 | 186.8 | 99.9 |
| Manufacture of chemicals and chemical products | 1690.4 | 128.3 | 132.6 | 3.3 |
| Manufacture of pharmaceuticals, medicinal chemical and botanical products | 23.0 | 277.0 | 165.9 | -40.1 |
| Manufacture of rubber and plastics products | 126.3 | 107.1 | 52.2 | -51.3 |
| Manufacture of other non-metallic mineral products | 1104.4 | 91.9 | 114.2 | 24.2 |
| Manufacture of basic metals | 626.5 | 84.7 | 90.2 | 6.5 |
| Manufacture of fabricated metal products, except machinery and equipment | 960.1 | 100.2 | 110.5 | 10.3 |
| Manufacture of computer, electronic and optical products | 11.7 | 97.3 | 98.1 | 0.8 |
| Manufacture of electrical equipment | 410.9 | 125.9 | 124.2 | -1.3 |
| Manufacture of machinery and equipment n.e.c. | 59.0 | 389.9 | 618.5 | 58.6 |
| Manufacture of motor vehicles, trailers and semi-trailers | 12.1 | 54.8 | 156.1 | 185.0 |
| Manufacture of other transport equipment | 164.5 | 48.9 | 72.6 | 48.4 |
| Manufacture of furniture | 75.0 | 91.3 | 112.6 | 23.4 |
| Other manufacturing | 7.5 | 249.9 | 159.3 | -36.2 |
| Repair and installation of machinery and equipment | 408.0 | 25.9 | 26.1 | 0.6 |

Source: Statistics Centre-Abu Dhabi

Industrial production index for 2015 compared with 2014

The Industrial production index increased by 8.0% in 2015 compared with 2014, as a result of increases in 11 activities in the IPI. The key economic activity contributing to this rise was 'Manufacture of machinery and equipment n.e.c.', which increased by 106.3% while contributing 11.0% of the total increase in the Industrial production index. In addition, the Industrial production index of the 'Manufacture of leather and related products' activity increased by 41.3%.

The 'Manufacture of coke and refined petroleum products' activity increased by 24.2%, contributing 103.8%. The quantity of the 'Manufacture of fabricated metal products, except machinery and equipment' activity increased by 16.4%.

Twelve activities recorded decreases in their production volumes in 2015 compared with 2014. The 'Repair and installation of machinery and equipment' activity decreased by 69.5%, contributing 33.7% to the overall change. The 'Manufacture of pharmaceuticals, medicinal chemical and botanical products' activity decreased by 49.8% contributing 5.9%. In addition, the quantity of the 'Manufacture of paper and paper products' activity decreased by 45.9% contributing 3.6%. In addition, the Industrial production index of the 'Manufacture of computer, electronic and optical products' and 'Manufacture of other transport equipment' activities decreased by 40.8% and 31.5% respectively. The quantity of the 'Manufacture of rubber and plastics products' and 'Manufacture of wearing apparel' activities decreased by 20.9% and 18.7% respectively.

Table 4: Relative change in the IPI for 2015 compared with 2014 (2012 = 100)

| Economic Activity | Weights | IPI_2014 | IPI_2015 | Relative change 2015 / 2014 |
|--|----------|----------|----------|-----------------------------|
| Manufacturing Industry | 10,000.0 | 101.0 | 109.1 | 8.0 |
| Manufacture of food products | 287.4 | 105.2 | 105.1 | -0.1 |
| Manufacture of beverages | 84.9 | 86.4 | 98.7 | 14.3 |
| Manufacture of textiles | 33.9 | 107.2 | 120.6 | 12.5 |
| Manufacture of wearing apparel | 118.4 | 118.0 | 95.9 | -18.7 |
| Manufacture of leather and related products | 5.3 | 207.0 | 292.5 | 41.3 |
| Manufacture of wood and of products of wood and cork | 65.8 | 96.1 | 102.6 | 6.8 |
| Manufacture of paper and paper products | 37.7 | 167.3 | 90.6 | -45.9 |
| Printing and reproduction of recorded media | 33.1 | 94.3 | 93.8 | -0.5 |
| Manufacture of coke and refined petroleum products | 3,653.8 | 95.1 | 118.1 | 24.2 |
| Manufacture of chemicals and chemical products | 1,690.4 | 114.3 | 122.3 | 7.0 |
| Manufacture of pharmaceuticals, medicinal chemical products | 23.0 | 418.1 | 210.1 | -49.8 |
| Manufacture of rubber and plastics products | 126.3 | 110.9 | 87.7 | -20.9 |
| Manufacture of other non-metallic mineral products | 1,104.4 | 88.6 | 100.7 | 13.7 |
| Manufacture of basic metals | 626.5 | 107.6 | 89.2 | -17.2 |
| Manufacture of fabricated metal products, except machinery and equipment | 960.1 | 89.5 | 104.2 | 16.4 |
| Manufacture of computer, electronic and optical products | 11.7 | 183.5 | 108.6 | -40.8 |
| Manufacture of electrical equipment | 410.9 | 115.3 | 120.9 | 4.8 |
| Manufacture of machinery and equipment n.e.c | 59.0 | 141.6 | 292.1 | 106.3 |
| Manufacture of motor vehicles, trailers and semi-trailers | 12.1 | 126.6 | 113.4 | -10.5 |
| Manufacture of other transport equipment | 164.5 | 84.6 | 57.9 | -31.5 |
| Manufacture of furniture | 75.0 | 109.1 | 107.3 | -1.6 |
| Other manufacturing | 7.5 | 184.5 | 193.9 | 5.1 |
| Repair and installation of machinery and equipment | 408.0 | 96.3 | 29.3 | -69.5 |

Source: Statistics Centre-Abu Dhabi

Industrial Production Index Methodology

Definition

The Industrial Production Index (IPI) is an economic and statistical indicator that measures the change in the quantities of industrial production (manufacturing industries) in two periods, the base period and the comparison period.

IPI importance

- The IPI reflects the trends of the industrial production quantities in the Emirate of Abu Dhabi, which help decision makers, planners and researchers to make sound decisions that support the industry sector to grow and developed over time.
- The IPI measures the change in the quantities of industrial production and is used by the government to process and create economic plans and strategies.
- The IPI is used as a main deflator for economic indicators over time. It is used to deflate economic data, such as the Gross Domestic Product (GDP).
- The IPI is used as a tool that monitors abrupt rises in sale and purchase contracts, especially futures contracts in which a future date for payment is set. It is often recommended to list the items with higher production quantities for further study, and to identify their impact on input quantities.
- The IPI is used by international economic organizations such as the International Monetary Fund as a tool for comparison and evaluation purposes.

IPI representation and coverage level

The Industrial Production Index (IPI) covers all manufacturing activities in the Emirate of Abu Dhabi; representing all twenty three manufacturing activities based on the International Standard Industrial Classification, revision 4 (ISIC4/2-digit). At the current time, SCAD is developing the IPI to include the 'Mining and quarrying' activities and 'Water and electricity'.

Data Collection

Quantities are collected on a monthly basis from the sampled establishments through field visits or e-mail; these 65 establishments are carefully selected to represent the manufacturing industry. SCAD field enumerators, who have been appropriately prepared and trained for this purpose, explain the items of the questionnaire and the required data to ensure the collection of accurate data. Field enumerators are also provided with questionnaires that are specially designed for this purpose.

Data source

The quantities of 284 products are collected from 65 establishments at the 2-digit level. The sample distribution covers 52 establishments in the Abu Dhabi region and 13 establishments in the Al Ain region.

IPI periodicity

The IPI is designed on a quarterly basis; while quantities are collected on a monthly basis. The IPI sample is fixed; all establishments included in the sample are visited by enumerators to collect the quantities of the establishment's key products.

Auditing

The Auditing phase aims to validate all data to ensure consistency. It also includes comparing the prices against the quantities and the quantities of the month with the previous month to avoid input errors, collection errors and incorrect specification of products.

IPI calculation

The IPI is calculated using the 'Laspeyres Equation':

$$IPI_L = \sum \frac{q_{1i}}{q_{0i}} \times W_{0i}$$

The quarterly average quantities of the product is calculated using the arithmetic mean of the product quantities during the three months. Then, the quantities level is calculated for the product in each establishment and the higher levels aggregated using the product weights within the same economic activity.

Base year

The year 2012 was adopted as a base year for the industrial production index, while 2009 was adopted as a base year for the weights used in the IPI, when the latest economic data was provided from field surveys. Accordingly, the base year for the IPI weights is 2009 and 2012 for the IPI quantities.

Weights and relative importance

The weights used in the IPI calculation depend on the available data of the economic establishment census, which was conducted in 2010. The census has provided a frame for the economic establishments in Abu Dhabi Emirate. This frame was used to design and select the 2009 Economic Survey's sample. The IPI sample was drawn as a partial sample of the 2009 Economic Surveys sample to represent the index for the industrial producers' quantities. The data provided on production and revenues in the partial sample was used to calculate weights at the two-digit economic activity level. Weights were also calculated at establishment level. Weights at item level were calculated through the proportional distribution of the establishment's weight by its key products.

Relative importance of manufacturing activities in 2012

| Activity name | Weight |
|---|----------|
| Manufacturing Industry | 10,000.0 |
| Manufacture of food products | 287.4 |
| Manufacture of beverages | 84.9 |
| Manufacture of textiles | 33.9 |
| Manufacture of wearing apparel | 118.4 |
| Manufacture of leather and related products | 5.3 |
| Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials | 65.8 |
| Manufacture of paper and paper products | 37.7 |
| Printing and reproduction of recorded media | 33.1 |
| Manufacture of coke and refined petroleum products | 3653.8 |
| Manufacture of chemicals and chemical products | 1690.4 |
| Manufacture of pharmaceuticals, medicinal chemical and botanical products | 23.0 |
| Manufacture of rubber and plastics products | 126.3 |
| Manufacture of other non-metallic mineral products | 1104.4 |
| Manufacture of basic metals | 626.5 |
| Manufacture of fabricated metal products, except machinery and equipment | 960.1 |
| Manufacture of computer, electronic and optical products | 11.7 |
| Manufacture of electrical equipment | 410.9 |
| Manufacture of machinery and equipment n.e.c. | 59.0 |
| Manufacture of motor vehicles, trailers and semi-trailers | 12.1 |
| Manufacture of other transport equipment | 164.5 |
| Manufacture of furniture | 75.0 |
| Other manufacturing | 7.5 |
| Repair and installation of machinery and equipment | 408.0 |

Source: Statistics Centre-Abu Dhabi

Publishing

SCAD publishes the IPI quarterly report by the third month after each reference quarter and it is made accessible to everyone on the SCAD website.

Next release

The IPI for the first quarter of 2016 will be released in Jun 2016. For more information about price indices and other official statistics, please visit the website of the Statistics Centre Abu Dhabi: www.scad.ae.

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