



World Manufacturing Production

Statistics for Quarter IV, 2016



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Statistics Division
www.unido.org/statistics

Report on world manufacturing production

Quarter IV, 2016

This report presents the observed growth rates and growth estimates of world manufacturing production for the fourth quarter of 2016. Figures are based on the index numbers of industrial production (IIP) collected by UNIDO Statistics from national data sources.

IIP measures the growth of the volume of industrial production in real terms, free from price fluctuations. Users are advised to take note that while annual industrial growth rates generally refer to changes in manufacturing value added (MVA), i.e. output net of intermediate consumption, the quarterly indices reflect the growth of gross output. Given the temporal nature of estimates, output growth provides the best approximation of value added growth, assuming that the input-output relationship is relatively stable during the observation period. Users can find further information on the methodology of index numbers and estimation procedure in earlier reports, which are available on the statistical pages of UNIDO's website.

UNIDO has been publishing quarterly reports on world manufacturing since 2011. The data compilation and presentation methods are regularly updated. Earlier reports included index figures for some countries, which were not seasonally adjusted or for which no information on seasonal adjustments was available. Since 2013, growth figures have been published based on seasonally adjusted index numbers. Seasonal adjustment is achieved using the TRAMO/SEATS method¹ in the Demetra+ software. The purpose of seasonal adjustment is to filter out any fluctuations or calendar effects within the time series shifts.

In 2013, UNIDO Statistics introduced new country groups, with economic territories being classified based on their stage of industrialization. This grouping is implemented in all of UNIDO's statistical publications. The grouping is particularly useful for presenting aggregated growth estimates by country group at different

¹TRAMO stands for Time series Regression with ARIMA noise, Missing values and Outliers, and SEATS for Signal Extraction in ARIMA Time Series. ARIMA is the abbreviation of Autoregressive Integrated Moving Average, a widely applied statistical method for time series analyses.

levels of industrialization. In the aftermath of the economic crisis, the pattern of growth, particularly in industrialized and developing countries, differed considerably. A comparative picture of growth trends in different parts of the world was provided to users. The full list of economies used in the country groupings is available in the International Yearbook of Industrial Statistics².

The present report implements Revision 4 of the International Standard for Industrial Classification of All Economic Activities (ISIC Rev 4)³ in the quarterly data. For countries that publish monthly/quarterly index numbers based on ISIC Rev 4, national data are used in their original form. For countries that still produce index numbers based on ISIC Rev 3, growth figures are estimated at the 2-digit level of Rev 4 using the corresponding tables. In both cases, data on index numbers are derived from national statistical sources. In case of missing data, UNIDO conducts imputations or projections, where appropriate. These estimates are generally replaced as soon as the officially reported values become available in national statistical publications. This report presents estimates for the fourth quarter of 2016 as well as revised estimates for the third quarter of 2016.

Growth rates are calculated from the national index numbers which are aggregated to the given country group or world region using weights based on the country's contribution to world manufacturing value added. The country grouping is based on economic territories rather than on political boundaries. This report presents growth figures for country groups by stage of industrial development and by geographic region.

²<http://www.unido.org/resources/publications/flagship-publications/international-yearbook-of-industrial-statistics.html>

³http://unstats.un.org/unsd/publication/seriesM/seriesm_4rev4e.pdf

1 World manufacturing growth

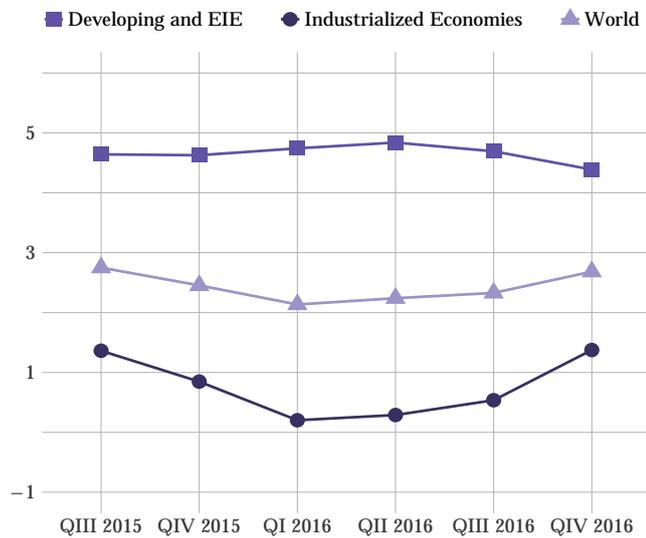
World manufacturing output growth improved slightly during the final quarter of 2016. Fourth quarter figures show that the improvement is primarily attributable to the continuing recovery process in industrialized economies. However, manufacturing output growth further slowed in developing and emerging industrial economies. Although the overall growth trend in world manufacturing was positive in the second half of 2016, geopolitical uncertainty remained high and potential changes in global trade arrangements may create new risks.

Against the backdrop of sluggish dynamics, world manufacturing output rose by 2.7 per cent in the fourth quarter of 2016 compared to the same period of the previous year, which is higher than the 2.3 per cent rise in the third quarter and represents the strongest performance since the beginning of the year. A slightly decelerated growth rate observed in developing and emerging industrial economies during the final quarter of 2016 was compensated by a more positive picture in industrialized countries as their growth performance improved.

However, the level of growth in developing economies has been consistently higher than in industrialized countries, as depicted in Figure 1.

Major industrialized economies with significant contributions to global manufacturing output, namely the United States, Japan, Germany, the Republic of Korea and United Kingdom, recorded an expansion compared to the same period of the previous year. In China, the world's largest manufacturer, comparably lower growth rates have now become more prevalent, thus pushing the average industrial growth of emerging industrial economies downward.

Figure 1: Growth of world manufacturing output in % compared to the same quarter of the previous year



The manufacturing output of industrialized economies increased to 1.4 per cent in the fourth quarter of 2016 from the 0.5 per cent recorded in the previous quarter. This increase is primarily attributable to the performance of East Asia, which experienced a significant reversal in growth in the second half of 2016, following several consecutive slumps that have lasted for nearly two years. The main force driving this nearly 2.9 per cent year-by-year upturn is Japan, East Asia's major manufacturer, whose export-fuelled growth was also supported by a weakened yen against the US dollar. Production in Europe witnessed a healthy growth momentum at the end of 2016, and had a positive impact on the manufacturing growth of industrialized countries as a whole. By contrast, the growth of North America's manufacturing output remained stagnant in the fourth quarter of 2016 and recorded a negligible gain of 0.2 per cent.

The manufacturing output of developing and emerging industrial economies rose by merely 4.4 per cent. This was the first time the growth of these economies was below 5.0 per cent since the beginning of 2015. Asian economies maintained a relatively higher growth rate at 5.5 per cent, but their growth performance hit a multi-year low in the final quarter of 2016. Other regions' production slightly decreased compared to the same period of 2015: by 1.0 per cent in Latin America and 0.5 per cent in Africa. As long as economic and political instability persists in industrialized countries, the threat of another slowdown remains looming over developing economies.

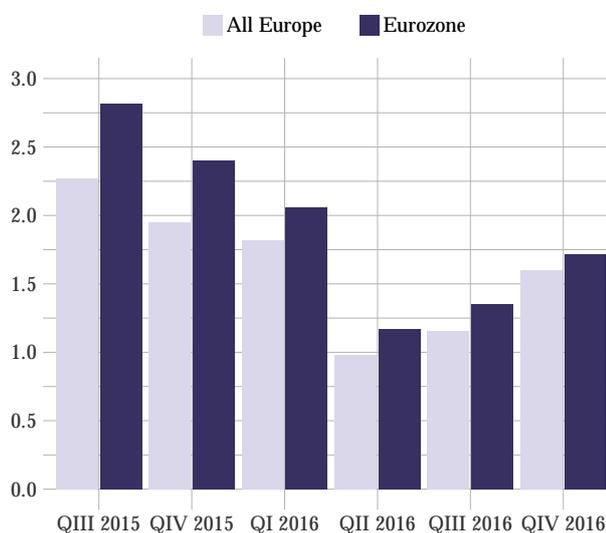
2 Findings by country group

2.1 Industrialized economies

The manufacturing output growth of industrialized economies improved in the last quarter of 2016 from 0.5 per cent in the third quarter to 1.4 per cent. This acceleration was characterized by an upward trend in East Asia and Europe. Manufacturing growth experienced a moderate, albeit noticeable slowdown in North America.

Among the industrialized country group, Europe's manufacturing output grew by 1.6 per cent in the final quarter of 2016, while the eurozone registered a growth rate of 1.7 per cent. The growth trends for these two groups converged and nearly merged at the end of 2016, displaying a fairly balanced resistance and response to adverse impacts. When comparing year-to-year developments among the leading eurozone economies, Italy registered a 2.8 per

Figure 2: Growth rates of manufacturing output in Europe, in % to the same period of the previous year



cent growth rate followed by Germany with a growth rate of 1.2 per cent, while a more moderate growth rate of 0.2 per cent was observed in France. The growth figures for the majority of eurozone countries were positive, with strong growth performance observed in Slovenia - the fastest growing manufacturer among all eurozone countries in 2016. Manufacturing output rose by 2.0 per cent and more in Lithuania, Finland, the Netherlands and Ireland, while Portugal's dropped by 0.6 per cent.

Beyond the eurozone, the manufacturing production in the United Kingdom recorded a positive growth rate in the final quarter of 2016 at 1.9 per cent, despite an expected slowdown in the aftermath of Brexit. Manufacturing output in the Russian Federation grew by a moderate rate of 1.0 per cent, continuing its shaky recovery after the country's economy was severely hit by the drop in oil prices. The pace of growth

remained slow in Czechia and Hungary due to the reduction in EU investment funds and even less positive results came from Switzerland, where manufacturing output dropped by 1.6 per cent compared to the same period of the previous year.

Overall manufacturing production in North America grew by 0.2 per cent compared to the fourth quarter of the previous year. The still strong dollar made American-made goods more expensive and less competitive compared to foreign-produced goods, which led to weak exports and subsequently to a negligible 0.2 per cent improvement in total manufacturing output in the United States on a year-to-year basis. Positive growth was reported in the production of motor vehicles, computers, electronic and optical products, but the majority of manufacturing industries reported a decline. In Canada, manufacturing growth in the fourth quarter of 2016 varied considerably by industry. While the production of pharmaceuticals and chemicals remained strong, production in fabricated metal products and in the automotive industry dropped. Aggregated growth of manufacturing output in Canada was 0.2 per cent in the fourth quarter of 2016.

The disruption of a long period of consecutive contraction in the industrialized East-Asian economies was confirmed by a positive result in the fourth quarter of 2016 - nearly 2.9 per cent improvement was observed compared to the fourth quarter of 2015. A major force stimulating this change was Japan, which recorded a positive growth rate of 2.7 per cent following a nearly two-year period of consecutive slumps, except for the last quarter, when the first signs of improvement arose. This upswing is primarily attributable to the boost in all three key sectors in Japan - the automotive industry, computers, electronic and optical products and machinery and equipment. Taking advantage of the weakening yen and a pickup in global trade, manufacturing production in the Republic of Korea witnessed a gain of 1.7 per cent. Malaysia's total manufacturing output recorded a 4.9 per cent rise in the fourth quarter of 2016 on a year-to-year basis, and very strong growth figures were also observed in Singapore.

Despite this overall improvement, global growth still looks fragile due to the uncertainty in Europe generated by Brexit and the upcoming U.S. secession from the Trans-Pacific Partnership. On the other hand, a new free-trade agreement between the EU and Canada looks promising for the manufacturing of a number of countries.

2.2 Developing and emerging industrial economies

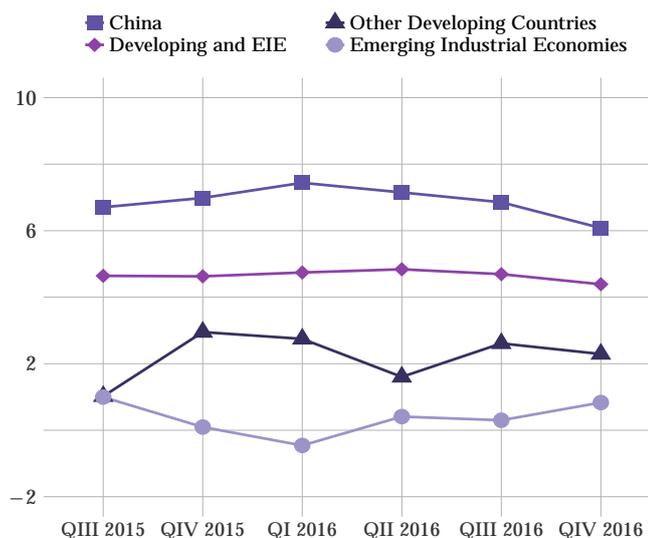
The overall growth of manufacturing output in developing and emerging industrial economies was affected by gloomy signals emanating from the major economies in this group. Although manufacturing activity in China continued to expand, its pace slowed compared to the previous quarter. In the final quarter of 2016, manufacturing production in China rose by 6.1 per cent over the same period of the previous year, reflecting a slowdown from the 6.9 per cent growth rate recorded in the previous quarter. This slightly steeper deceleration was mainly driven by negative growth in the production of basic metals, China’s strongest industry. Following an uninterrupted downward trajectory since late 2013, the trend in China now seems to point towards stabilization at a sustainable pace.

Latin American economies, which have recently faced a severe decline due to subdued global demand, low commodity prices and domestic political turbulence, have reduced their declining growth rate to 1.0 per cent. On a sequential basis, the fall in manufacturing activity in Brazil has softened throughout 2016, dropping only by 2.9 per cent in a year-to-year comparison in the final quarter of 2016. The

largest expansion was seen in the manufacturing of motor vehicles, closely followed by manufacturing of computer, electronic and optical products. Other larger Latin American manufacturers, namely Mexico and Colombia, recorded a positive growth of 2.0 per cent and 1.5 per cent, respectively, while Argentina, Chile and Peru experienced contractions.

Growth performance was much higher in Asian economies, where manufacturing output rose by 5.5 per cent in the fourth quarter of 2016, a decent result considering that the production growth rate of Asian developing economies has not dropped

Figure 3: Growth of manufacturing output of developing economies in % to the same quarter of the previous year



below 6.0 per cent since the global financial crisis. Viet Nam again confirmed its position as one of the fastest growing Asian economies with a 9.6 per cent gain, benefiting mostly from its attractiveness for foreign direct investment and export-oriented industries. Indonesia's manufacturing output expanded by 2.3 per cent in a year-by-year comparison, decelerating from much higher growth rates recorded in previous quarters, while India's manufacturing production output ended the year with a trivial, barely 0.5 per cent rise, the first positive growth figure registered in 2016. According to UNIDO estimates, positive developments were observed in other Asian economies: manufacturing output rose by 3.6 per cent in Saudi Arabia, almost 4.0 per cent in Pakistan and 1.3 per cent in Jordan. Bangladesh managed to maintain its robust growth in the fourth quarter of 2016, while manufacturing output in Mongolia contracted.

Estimates based on the limited available data indicate that manufacturing output in Africa decreased by 0.5 per cent in the final quarter of 2016. In terms of individual countries, a 0.6 per cent drop was registered in South Africa, the region's most industrialized economy. Egypt and Tunisia's manufacturing output also decreased compared to the same period of the previous year, while Morocco and Côte d'Ivoire registered a positive growth rate according to UNIDO estimates.

Among the other developing economies, the manufacturing output of East European countries achieved relatively higher growth rates. Manufacturing output rose by 4.1 per cent in Poland, 4.7 per cent in Romania, 4.3 per cent in Bulgaria and over 5.0 per cent in Serbia and Croatia. Manufacturing production in Turkey grew by 1.4 per cent, reversing the decline registered in the previous period.

3 Findings by industry group

Global manufacturing production maintained a positive growth in nearly all industries in the final quarter of 2016. High- and medium-high-technology manufacturing industries held top positions, when looking at the year-by-year developments - the manufacture of computers, electronics and optical products grew by 6.3 per cent, the manufacture of motor vehicles rose by 6.2 per cent and the production of pharmaceutical products by 4.0 per cent. However, the production of other transport equipment, another high-technology sector, contracted by 0.9 per cent compared to the same period of the previous year. The largest loss was recorded in the tobacco industry, with its global production declining by 5.8 per cent.

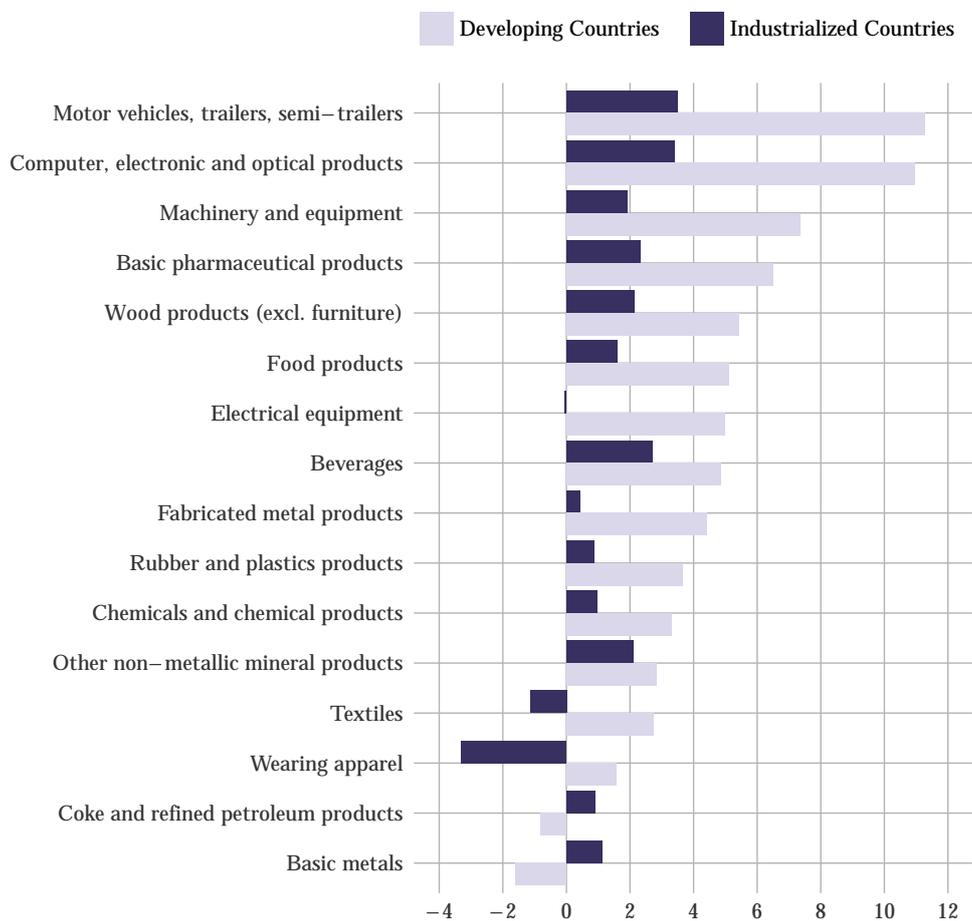
As regards durable and capital goods, the production of machinery and equipment experienced an exceptionally high growth rate at 3.7 per cent in the fourth quarter of 2016. The manufacture of non-metallic mineral products, which essentially supply construction materials, registered a growth figure of 2.5 per cent worldwide. The manufacture of fabricated metal products and furniture both rose at a moderate pace of 1.7 per cent. Worldwide manufacturing of basic metals has systematically lost strength over the last few years and reached a negative growth rate of 0.7 per cent in the fourth quarter of 2016, mostly due to a visibly decreased production of basic metals in China.

Global manufacturing output maintained relatively high growth rates in the production of basic consumer goods. The manufacture of food products rose by 3.1 per cent and beverages by 3.7 per cent, while the manufacture of wearing apparel increased by 0.5 per cent only. In low-technology manufacturing sectors, the global production of wood products rose by 3.3 per cent while the growth pace of manufacturing of paper products, textiles and leather products remained below 2.0 per cent.

The growth performance of developing and emerging industrial economies outperformed industrialized economies in nearly all manufacturing industries, including a number of high-technology industries, as illustrated in Figure 4. The fastest growing industry in both country groups was the automotive industry, reflecting strong growth of automobile production in China as well as in European countries.

The growth rates for selected industries are presented below.

Figure 4: Estimated growth rates by Industry
in % compared to previous year
Quarter IV, 2016



Additional statistics on the growth rates in the fourth quarter of 2016 are available in the Statistical Tables.

Statistical Tables

Table 1

Estimated growth rates of world manufacturing output

In % compared to the previous quarter and to the same period of the previous year

Quarter IV, 2016

	Share in world MVA (2010)	Compared to the previous quarter	Compared to the same period of the previous year
World	100.0	0.9	2.7
Industrialized Economies	63.4	0.9	1.4
North America	20.6	0.1	0.2
Europe	24.1	0.7	1.6
East Asia	15.4	2.2	2.9
Developing and EIE (by development group)	36.6	1.0	4.4
China	19.9	1.3	6.1
Emerging Industrial Economies	14.5	0.3	0.8
Other Developing Economies	1.9	0.8	2.3
Developing and EIE (by region)	36.6	1.0	4.4
Africa	1.2	-0.5	-0.5
Asia & Pacific	26.0	1.0	5.5
Latin America	6.6	-0.2	-1.0
Others	2.8	3.2	3.0

Source: UNIDO Statistics.

Notes: Not all subgroups are presented; seasonally adjusted data.

Table 2**Estimated growth rates of output by manufacturing industry**

In % compared to the same period of the previous year

Quarter IV, 2016

	Developing and Emerging Industrial Economies	Industrialized Economies	World
Food products	5.1	1.6	3.1
Beverages	4.9	2.7	3.7
Tobacco products	-6.4	-3.9	-5.8
Textiles	2.7	-1.1	1.7
Wearing apparel	1.6	-3.3	0.5
Leather and related products	2.8	-1.5	1.6
Wood products (excl. furniture)	5.4	2.1	3.3
Paper products	4.0	0.3	1.9
Printing	4.3	-2.3	-0.7
Coke and refined petroleum products	-0.8	0.9	0.1
Chemicals and chemical products	3.3	1.0	2.0
Basic pharmaceutical products	6.5	2.3	4.0
Rubber and plastics products	3.6	0.9	1.9
Other non-metallic mineral products	2.8	2.1	2.5
Basic metals	-1.6	1.1	-0.7
Fabricated metal products	4.4	0.4	1.7
Computer, electronic and optical products	10.9	3.4	6.3
Electrical equipment	5.0	-0.1	2.2
Machinery and equipment	7.3	1.9	3.7
Motor vehicles, trailers, semi-trailers	11.3	3.5	6.2
Other transport equipment	-2.5	-0.5	-0.9
Furniture	4.1	0.6	1.7
Other manufacturing	3.9	-1.2	0.3
Total Manufacturing	4.4	1.4	2.7

Source: UNIDO Statistics.

Notes: Seasonally adjusted data.

Table 3**Estimated growth rates of output by manufacturing industry**

In % compared to the previous quarter

Quarter IV, 2016

	Developing and Emerging Industrial Economies	Industrialized Economies	World
Food products	0.9	-0.3	0.2
Beverages	1.2	0.2	0.6
Tobacco products	-0.4	1.2	0.0
Textiles	0.5	-0.2	0.3
Wearing apparel	0.9	-1.0	0.5
Leather and related products	1.1	-2.2	0.2
Wood products (excl. furniture)	1.6	1.6	1.6
Paper products	0.8	1.0	0.9
Printing	3.0	-0.6	0.3
Coke and refined petroleum products	0.1	1.6	0.9
Chemicals and chemical products	0.2	0.9	0.6
Basic pharmaceutical products	1.1	1.6	1.4
Rubber and plastics products	1.2	0.8	1.0
Other non-metallic mineral products	0.2	1.8	0.9
Basic metals	-1.4	0.9	-0.6
Fabricated metal products	0.8	1.0	0.9
Computer, electronic and optical products	2.9	1.4	2.0
Electrical equipment	1.2	0.4	0.7
Machinery and equipment	2.0	1.0	1.3
Motor vehicles, trailers, semi-trailers	3.3	1.5	2.1
Other transport equipment	-2.7	-0.3	-0.9
Furniture	1.5	0.7	0.9
Other manufacturing	1.9	0.5	0.9
Total Manufacturing	1.0	0.9	0.9

Source: UNIDO Statistics.

Notes: Seasonally adjusted data.

Table 4**Estimated growth rates of world manufacturing output**

In % compared to the previous quarter and to the same period of the previous year

Quarter III, 2016 (revised)

	Share in world MVA (2010)	Compared to the previous quarter	Compared to the same period of the previous year
World	100.0	0.6	2.3
Industrialized Economies	63.4	0.4	0.5
North America	20.6	0.2	0.0
Europe	24.1	0.2	1.2
East Asia	15.4	1.1	0.6
Developing and EIE (by development group)	36.6	0.9	4.7
China	19.9	1.4	6.9
Emerging Industrial Economies	14.5	-0.4	0.3
Other Developing Economies	1.9	3.4	2.6
Developing and EIE (by region)	36.6	0.9	4.7
Africa	1.2	1.8	0.2
Asia & Pacific	26.0	1.2	6.2
Latin America	6.6	0.1	-1.9
Others	2.8	-1.6	1.5

Source: UNIDO Statistics.

Notes: Not all subgroups are presented; seasonally adjusted data.

Table 5**Estimated growth rates of output by manufacturing industry**

In % compared to the same period of the previous year

Quarter III, 2016 (revised)

	Developing and Emerging Industrial Economies	Industrialized Economies	World
Food products	5.8	1.5	3.3
Beverages	4.2	1.6	2.8
Tobacco products	-6.2	-7.2	-6.5
Textiles	3.7	-0.4	2.6
Wearing apparel	1.0	-2.4	0.2
Leather and related products	2.1	0.1	1.6
Wood products (excl. furniture)	4.7	2.2	3.1
Paper products	3.2	-0.7	0.9
Printing	0.9	-1.4	-0.8
Coke and refined petroleum products	-0.2	-0.6	-0.4
Chemicals and chemical products	4.9	0.3	2.4
Basic pharmaceutical products	6.9	0.0	2.6
Rubber and plastics products	2.9	0.7	1.5
Other non-metallic mineral products	3.6	1.0	2.4
Basic metals	1.6	-1.2	0.6
Fabricated metal products	5.8	-1.1	1.0
Computer, electronic and optical products	9.6	2.3	5.1
Electrical equipment	2.8	0.6	1.6
Machinery and equipment	4.7	-0.2	1.4
Motor vehicles, trailers, semi-trailers	11.9	2.5	5.7
Other transport equipment	1.6	-0.3	0.1
Furniture	3.1	0.7	1.5
Other manufacturing	1.7	-2.6	-1.3
Total Manufacturing	4.7	0.5	2.3

Source: UNIDO Statistics.

Notes: Seasonally adjusted data.