Quarterly Report, Q4 2023

World Manufacturing Production

Signs of accelerated dynamism
World Manufacturing Production
Highlights Q4 2023

Global and regional manufacturing

Global index of manufacturing production

Year-on-year growth rate of global manufacturing production

1.5% year-over-year growth rate of global production, pointing to an accelerated dynamism.

Year-over-year growth rate of manufacturing production by region

Manufacturing of industrializing economies (2.6%) experienced the lowest growth since 2020, but still exceeded the performance of industrial economies (1.4%).

Sectoral trends

Global index of manufacturing production by technology level

Manufacturing industries with best/worst global performance

Higher-tech industries continue reporting notable inter-annual growth:
Medium-high and high tech: 3.9%
Other manufacturing industries: 0.1%

Ongoing high production increases of motor vehicles and other transport equipment, while many low-tech sectors struggle with reduced output.
Global and regional manufacturing growth

Global manufacturing output registered a moderate increase of 1.5 per cent during the last quarter of 2023 compared to the same period of 2022 (Figure 1.1). Compared to the previous quarter, the manufacturing sector grew by 1.0 per cent, which could indicate that global manufacturing production is entering a more dynamic phase, after the stagnant growth registered since the second half of 2022.

Retrospectively, several challenges strongly influenced the manufacturing sector during 2023. These challenges included a high rate of global inflation that led to subdued demand, persistent supply chain disruptions and the ramifications of regional conflicts. Additionally, an insufficient supply of highly qualified workforce in certain industries and increasingly frequent natural disasters, whose effects are already affecting production today, will require a coordinated and sustainable response from global leaders.
During the fourth quarter of 2023, the manufacturing sector in most regions continued to face production losses. The region of Asia and Oceania, which achieved the best regional performance with a manufacturing expansion of 3.4 per cent, remained the only exception. In contrast, output in Africa and Northern America shrank by 0.7 per cent and 0.5 per cent, respectively, compared to the previous year. Europe as well as Latin America and the Caribbean suffered contractions greater than one per cent (Figure 1.2).

Manufacturing in Asia and Oceania recorded the highest growth rate of all regions not only in inter-annual (year-over-year) terms, but also in a quarterly comparison (see Annex Table A.1). China, the region's main engine given its dynamism and high share in regional output, reported a growth rate of 4.9 per cent compared to the same quarter of 2022. When comparing to the previous quarter, China's manufacturing sector increased by 1.9 per cent. The manufacturing performance of other countries with a significant contribution to this region's output diverged. On one hand, the output of India, Indonesia and the Republic of Korea expanded by more than 4.0 per cent in annual comparison. On the other hand, Japan (-0.3 per cent), Taiwan Province of China (-2.4 per cent) and Thailand (-4.7 per cent) suffered significant production cuts.
In the fourth quarter of 2023, European manufacturing production decreased annually by 1.3 per cent, while it grew moderately by 1.2 per cent compared to the previous quarter. The countries of this region followed different growth paths. For example, Germany (-3.8 per cent), Italy (-2.4 per cent) and Switzerland (-2.1 per cent) were facing strong inter-annual production cuts, while output in Denmark (10.0 per cent), Greece (5.6 per cent) and the United Kingdom (1.6 per cent) experienced growth of varying magnitude.

Manufacturing output in Latin America and the Caribbean dropped again in the fourth quarter of 2023, with a growth rate of -1.5 per cent. Among the biggest Latin American economies, production in Argentina and Mexico declined by 5.8 per cent and 0.8 per cent, respectively. Brazil’s output, on the other hand, stagnated in annual comparison. Northern America reported an output reduction by 0.5 per cent in the current quarter, corresponding to the performance of the United States of America, while Canada’s output remained almost flat (-0.1 per cent).

Limited data on Africa revealed another quarter of shrinking manufacturing output (-0.7 per cent) during the fourth quarter of 2023. The growth patterns of the different countries diverge to a significant degree: Nigeria (1.5 per cent) and South Africa (1.7 per cent), for example, remained in positive territory, while Senegal (-5.5 per cent) and Tunisia (-0.6 per cent) recorded output reductions.

Figure 1.3 | Year-over-year growth rate of manufacturing output by region
Findings by country groups

2.1 Industrial economies

After a subdued production growth of 0.4 per cent in the previous quarter, the pace of the manufacturing sector of industrial economies accelerated again in the fourth quarter of 2023, with an expansion of 1.4 per cent (Figure 2.1). Using the previous quarter as a reference point, the group also grew moderately by 1.0 per cent, following several quarters with stalled production.

In detail, the economies of this group continued to show diverse growth patterns. Belarus, Costa Rica, the Russian Federation and Sri Lanka increased their production by more than 7 per cent. Furthermore, a positive growth was recorded in Australia, the Philippines and Türkiye. On the other hand, manufacturing output in Colombia, Israel, the Netherlands and Viet Nam declined by at least 5 per cent.

![Figure 2.1 | Index of manufacturing production of industrial economies](image-url)
Disaggregated data show declining manufacturing activity in high-income industrial economies for each quarter of 2023, leading to a year-over-year decrease of 0.9 per cent for the most recent quarter, as shown in 2.1. At the same time, the group of middle-income industrial economies (including China) reached an output increase of 3.7 per cent (Figure 2.2). The manufacturing production of this group follows closely the trajectory of China, due to this country’s large share in the output of this group.

Other middle-income industrial economies reported subdued manufacturing growth of 0.3 per cent, although with a significant inter-country variability. A few countries grew at a dynamic pace, such as Costa Rica and Sri Lanka, both registering an increase of 7.5 per cent, while others contracted at a significant rate (Bulgaria -8.4 per cent, Jordan -3.7 per cent, Peru -8.2 per cent and Thailand -4.7 per cent).

Figure 2.2 | Year-over-year growth of manufacturing output in middle-income industrial regions
2.2 Other industrializing economies

This group accounts for a lower share of global manufacturing production. Although heterogeneous, the countries in this group would benefit considerably from a stronger industrial sector and a shift to industries with higher productivity and technological intensity.

Overall, this group registered a year-over-year output increase of 2.6 per cent in the fourth quarter of 2023, which is significantly above the growth achieved by the group of industrial economies. This is mostly attributable to a loss of dynamism in industrial economies across most geographical regions.

A closer look at specific subgroups (Figure 2.3) reveals more detailed insights. Output in high-income industrializing economies achieved growth of 2.1 per cent in annual comparison, overcoming a deceleration registered since the beginning of 2023. While its production in average grew by around 10 per cent in 2022, this value dropped to 5 per cent in 2023. Production in middle-income industrializing economies grew by 2.7 per cent, while output in low-income economies increased by a remarkable 7.0 per cent, after several quarters of stalled or even decreasing output.

![Index of manufacturing production of other industrializing economies](image-url)
2.3 Emerging industrial economies

Emerging industrial economies are a special group of low- and middle-income economies whose manufacturing sector has demonstrated significant dynamism in recent years. In addition to several industrial economies, the group also includes industrializing economies that, although still at earlier stages of industrial development, have shown strong manufacturing growth.

The manufacturing output of this group has indeed shown a comparatively positive performance, being significantly ahead of the world average as well as the average of industrial economies. In the fourth quarter of this year, it expanded by 4.6 per cent, following a growth of 4.2 per cent in the previous quarter, as depicted in Figure 2.4.

On a country analysis, the manufacturing sectors of China, India and Indonesia reported annual increases beyond 4 per cent, while Malaysia (-0.2 per cent) and Rwanda (-1.6 per cent) reported decreases of a moderate level. On the contrary, Viet Nam’s manufacturing sector (-7.4 per cent) suffered another loss, which could indicate a normalization after the exceptionally high growth recorded in 2022, averaging almost 20 per cent.
Findings by industry groups

The latest global trends in industrial sectors grouped by technological intensity are shown in Figure 3.1. The data reveal that higher-technology industries swiftly recovered from the pandemic-driven disruptions of the past years and remained robust and even thrived amidst many challenges.

On average, industries classified as medium-high and high technology (MHT) continued outperforming other manufacturing sectors and grew at an impressive annual rate of 3.9 per cent in the fourth quarter of 2023. Other manufacturing industries remained almost flat, with a marginal increase of only 0.1 per cent.

The performance of higher technology industries benefited from the ongoing strong production in the automotive (9.0 per cent) and transport (6.7 per cent) sectors as well as in the manufacturing of computers and electronics (6.6 per cent). These sectors reported the best performance among MHT sectors on an annual basis (Figure 3.2). Conversely, production of pharmaceuticals dropped by 2.0 per cent, following a volatile trajectory observed since the beginning of 2022. Furthermore, machinery dropped by 2.5 per cent in the current quarter, a decline of similar magnitude than the outcome in the previous quarter.

Figure 3.1 | Global index of manufacturing production, industries by technology level

Manufacturing of pharmaceuticals is confronted with a volatile trajectory since 2022
The automotive sector has recorded high annual growth rates for six consecutive quarters. Nevertheless, in the fourth quarter of 2023, production decreased by 0.3 per cent compared to the previous quarter, which could be a sign of a slowdown in this sector. Analyzing country-level production data, major car producers continued reporting output increases, but with varying magnitude. The transition toward electric engines and other emerging technologies, together with the gradual reduction of emission levels, are considerable global challenges; how these changes are overcome will determine the near-future trends in this sector.

The performance of industries differed across country groups (Figure 3.3). Overall, industrial economies recorded large increases in higher-technology sectors, with few exceptions, but suffered production losses in many lower-technology industries.
Other industrializing economies, on the other hand, showed a two-digit expansion of the pharmaceutical production, with Denmark contributing significantly to this result. In addition, industrializing economies have further boosted the manufacture of motor vehicles and other transport equipment as well as electrical equipment.

Figure 3.3 | Performance of manufacturing industries by technological intensity and country groups, year-over-year growth rates, Q4 2023
Note: Industries are ordered according to world growth rate (see Figure 3.2)
A Main indicators

The table below presents a summary of the main indicators for the current quarter. Additional data tables with further details on recent trends by regions, country groups and industrial sectors can be downloaded here. The complete dataset of quarterly indices of industrial production can be accessed in UNIDO’s Quarterly IIP database.

Table A.1 | Main indicators of manufacturing output by regions and industrial groups, Q4 2023

<table>
<thead>
<tr>
<th>Development groups</th>
<th>Share in world MVA (2015, percentage)</th>
<th>Index (2015=100)</th>
<th>Growth compared to previous quarter (percentage)</th>
<th>Growth compared to same period of previous year (percentage)</th>
</tr>
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<tbody>
<tr>
<td>World</td>
<td>100.0</td>
<td>124.1</td>
<td>1.0</td>
<td>1.5</td>
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<tr>
<td>Industrial economies</td>
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<td>123.9</td>
<td>1.0</td>
<td>1.4</td>
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<tr>
<td>Industrializing economies</td>
<td>6.9</td>
<td>126.9</td>
<td>0.3</td>
<td>2.6</td>
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<tr>
<td>Regions</td>
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<td></td>
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<tr>
<td>Africa</td>
<td>1.9</td>
<td>108.2</td>
<td>-0.1</td>
<td>-0.7</td>
</tr>
<tr>
<td>Asia &amp; Oceania</td>
<td>50.8</td>
<td>141.1</td>
<td>1.5</td>
<td>3.4</td>
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<td>Europe</td>
<td>22.7</td>
<td>112.7</td>
<td>1.2</td>
<td>-1.3</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>5.4</td>
<td>105.3</td>
<td>-0.4</td>
<td>-1.5</td>
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<tr>
<td>Northern America</td>
<td>19.3</td>
<td>99.7</td>
<td>-0.5</td>
<td>-0.5</td>
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<tr>
<td>Industrial economies</td>
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<td></td>
<td></td>
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<tr>
<td>High-income industrial</td>
<td>53.4</td>
<td>105.4</td>
<td>0.8</td>
<td>-0.9</td>
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<tr>
<td>Middle-income industrial (excl. China)</td>
<td>12.7</td>
<td>118.1</td>
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<td>0.3</td>
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<tr>
<td>China</td>
<td>27.0</td>
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<tr>
<td>Industrializing economies</td>
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</tr>
<tr>
<td>High-income industrializing</td>
<td>1.9</td>
<td>118.0</td>
<td>2.6</td>
<td>2.1</td>
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<tr>
<td>Middle-income industrializing</td>
<td>5.0</td>
<td>130.2</td>
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<tr>
<td>Low-income</td>
<td>0.1</td>
<td>126.7</td>
<td>0.1</td>
<td>7.0</td>
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B Data sources and methodological notes

This report presents observed growth rates and estimates of world manufacturing production for the fourth quarter of 2023, as well as revised estimates for the third quarter of 2023. The figures are based on indices of industrial production (IIP) collected by UNIDO Statistics from national data sources. Currently, quarterly IIPs are available for 117 countries, corresponding to 97.2 per cent of global manufacturing value added (MVA). As shown in Figure B.1, major data gaps are still present, mostly in Africa and some subregions of Asia and Oceania.

IIP measures the growth of the volume of industrial production in real terms, independently from price fluctuations. Users should take note that while annual industrial growth rates from national accounts generally refer to changes in MVA, i.e. output net of intermediate consumption, quarterly IIPs 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 remains stable during the observation period.

UNIDO has published quarterly reports on world manufacturing since 2011. The data compilation and presentation methods are regularly updated. Since 2013, growth figures have been published based on seasonally adjusted index numbers. Since 2017, seasonal adjustments have been made using the TRAMO/SEATS method in the JDemetra+ software. The purpose of seasonal adjustments is to filter out periodic fluctuations or calendar effects within time series. The individual parameters of the seasonal adjustment procedure for each time series are subject to regular revisions, normally at the beginning of each new reference year. Major economic uncertainties or other unusual events, such as the global pandemic of 2020, require frequent reviews of the underlying models based on the most recent available information.

The present report implements revision 4 of the International Standard for Industrial Classification of All Economic Activities (ISIC Rev.4). For countries that publish monthly/quarterly indices 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 two-digit level of Rev.4 using correspondence tables. In both cases, data on index numbers are derived from national statistical sources. In case of missing data, UNIDO conducts imputations.
These estimates are replaced as soon as the officially reported values become available in national statistical publications.

This report refers to country groups in terms of economic territories rather than political boundaries. Economies are classified according to a combination of their stage of industrialization (industrial or industrializing) and income level (high income, middle income and low income). This classification is particularly useful for presenting growth estimates by country aggregates at different levels of structural transformation. In addition, the report includes information on the group of emerging industrial economies, which includes the most dynamic economies within both industrial and industrializing economies. Finally, regional groups based on the M49 classification are also presented. A comparative picture of growth trends in different parts of the world is provided based on these country groups. The full list of economies in the country groupings is available in the International Yearbook of Industrial Statistics 2023.

Growth rates are calculated from the national index numbers aggregated to the given country group or geographical region using weights based on the countries’ contribution to world MVA. Since the first quarter of 2020, the base year has been adjusted to 2015 in accordance with other UNIDO publications.

Users can find further information on the methodology of index numbers, estimation procedures and a compilation of country groups’ indices in a methodological document that is available on the statistical pages of UNIDO’s website. The indices themselves are published in UNIDO’s Quarterly IIP database, available on the UNIDO Statistics Data Portal. Since 2020, UNIDO also publishes monthly data on world manufacturing production with regular updates.