

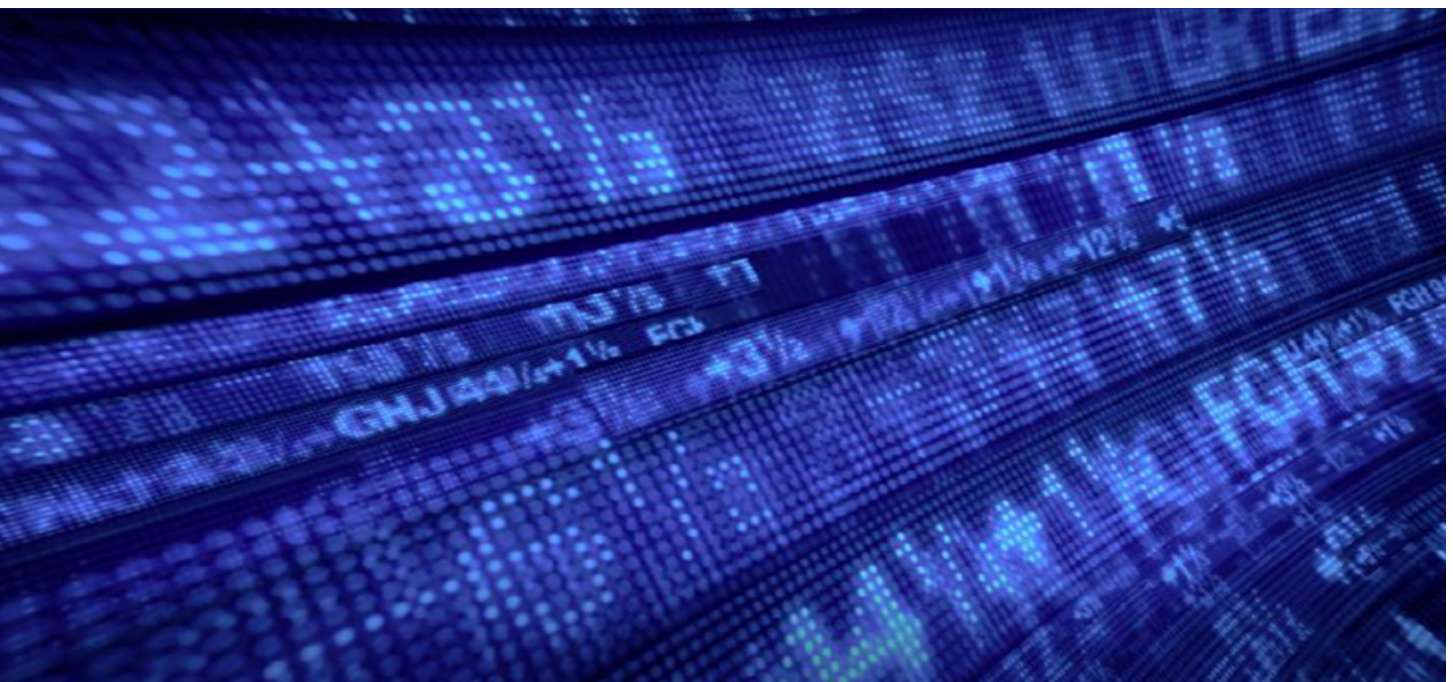


UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

World Manufacturing Production

Statistics for Quarter II 2020

Global manufacturing has collapsed,
but China's manufacturing is showing
early signs of recovery



World manufacturing growth in Quarter II 2020

World manufacturing production registered an overall economic slowdown in 2019, which has been further exacerbated by the economic crisis due to COVID-19. The economic activity came to a halt in the majority of countries from March 2020 onwards to contain the spread of the virus. Economic declines were therefore expected for the second quarter of the year. China is one of the few countries that locked down earlier than other countries and is showing signs of early economic recovery.

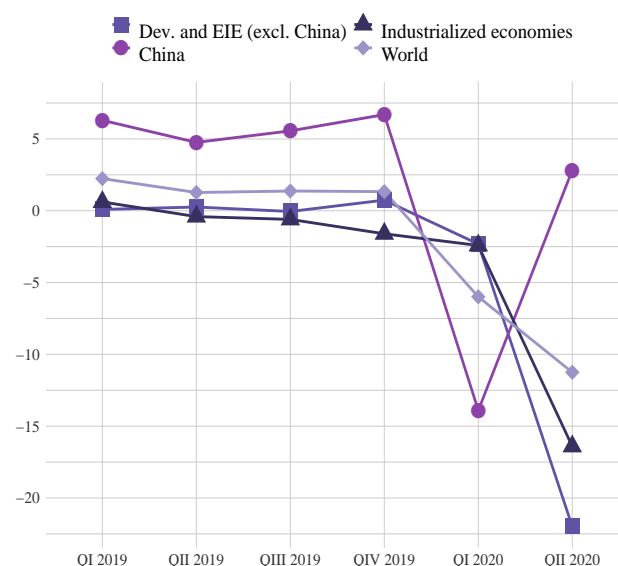
In the second quarter of 2020, global manufacturing output declined noticeably, namely by 11.2 per cent in a year-over-year comparison due to COVID-19 containment measures, following a drop by 6.0 per cent in the previous quarter.

Industrialized economies reported a reduction of production by 16.4 per cent for the second quarter of 2020, after a contraction of 2.4 per cent in the first quarter of the year.

COVID-19 hit China, the world's largest manufacturer, hard in the first quarter of 2020, but the country's manufacturing sector has bounced back. According to seasonally adjusted index numbers, China's manufacturing output in the second quarter of 2020 increased by 2.8 per cent in a year-over-year comparison, follow-

ing an unprecedented decline of 13.9 per cent in the previous quarter.

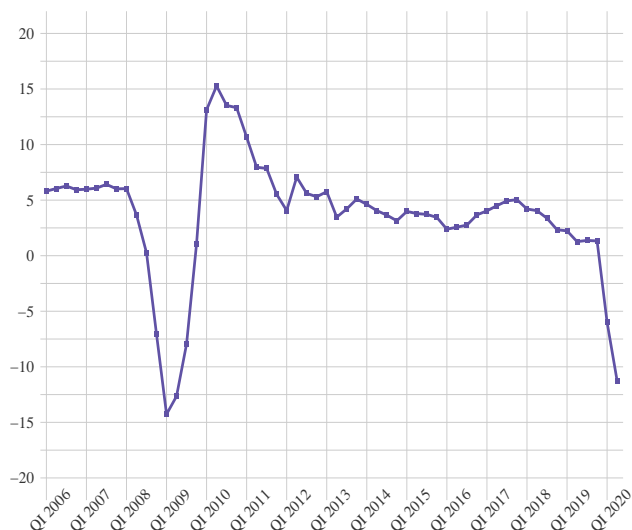
Figure 1: Growth of world manufacturing output, percentage change compared to the same quarter of the previous year



Manufacturing production of developing and emerging industrial economies¹ (excluding China) recorded a decline in output of 22.0 per cent and 2.3 per cent for the second and first quarters of 2020, respectively.

¹Referenced in the following as "Dev. and EIE".

Figure 2: Growth of world manufacturing output in percentage change compared to the same quarter of the previous year



The current economic downturn is the first of such magnitude since the financial crisis of 2008/2009 (Figure 2). Considerable reductions in production were recorded for four consecutive

quarters after the financial crisis, but exceptionally high increases in production were reported in subsequent quarters. It remains to be seen whether the current economic crisis will follow a similar growth pattern.

The current figures reflect the global shock caused by the COVID-19 pandemic. The challenges and uncertainties that dominated previous quarters, such as higher trade barriers and regulations as well as the Brexit, have clearly moved to the background. COVID-19 has forced governments around the world to intervene in the economy. The full impact of the containment measures remains uncertain, with analysts already speaking about the possibility of a second economic slump.² Moreover, a redistribution of global manufacturing production towards industrialized economies might accelerate, as they seek to reduce dependence on imports following years of outsourcing production activities abroad.

²OECD: Economic Outlook (June 2020), <http://www.oecd.org/economic-outlook/june-2020/>

Findings by country group

Industrialized economies

In the second quarter of 2020, significant losses of 16.4 per cent were reported for industrialized countries, which are almost entirely attributable to the containment strategies implemented around the globe. The smaller contractions already registered in the preceding quarters were mostly caused by prevailing trade and tariff uncertainties in commodity trading between the United States, China and the European Union (EU). Detailed figures presented in this report provide further insights into different industrialized regions.

North America's manufacturing output fell by 16.5 per cent in the second quarter of 2020 in a year-over-year comparison. Output had already decreased by 2.2 per cent in the previous quarter, mainly due to existing trade and tariff conflicts, especially between the United States and China. This development is primarily linked to manufacturing activity in the United States, which dropped by 15.8 per cent in the second quarter and by 2.0 per cent in the first quarter of 2020.

The manufacturing output of East Asia's industrialized economies reduced by 12.9 per cent in the second quarter of 2020, while it had remained almost constant in the previous quar-

ter. Japan's output, the region's largest manufacturer, dropped by 20.3 per cent in the same period, after a decrease of 4.2 per cent in the previous quarter. Only Taiwan, Province of China, recorded an increase in the second quarter of 2020, growing by 5.3 per cent, due to the positive performance of the computer and electronics sector (+21.7 per cent).

Figure 3: Growth rates of manufacturing output of industrialized regions percentage change compared to the same period of the previous year

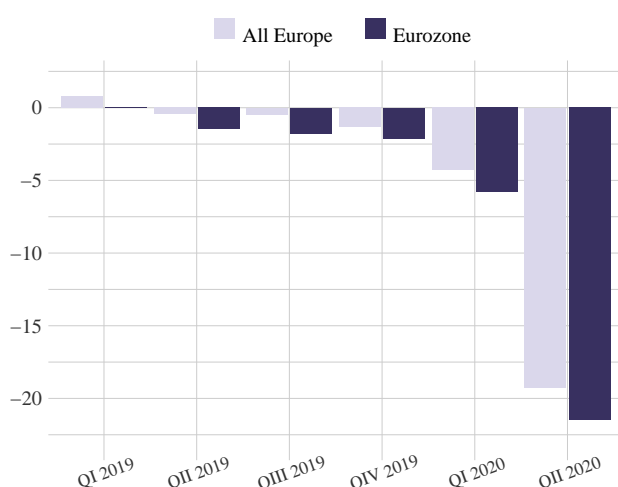


The manufacturing production of European industrialized economies fell by 19.3 per

cent in the second quarter of 2020. The downward trend experienced in previous quarters is being further reinforced by the current economic crisis. This negative trend has affected export-oriented countries in particular, and is mainly attributable to ongoing trade frictions with the United States as well as the uncertainty fuelled by the Brexit negotiations.

Disaggregated data for industrialized economies in Europe show comparatively lower manufacturing output growth in eurozone countries in previous quarters.

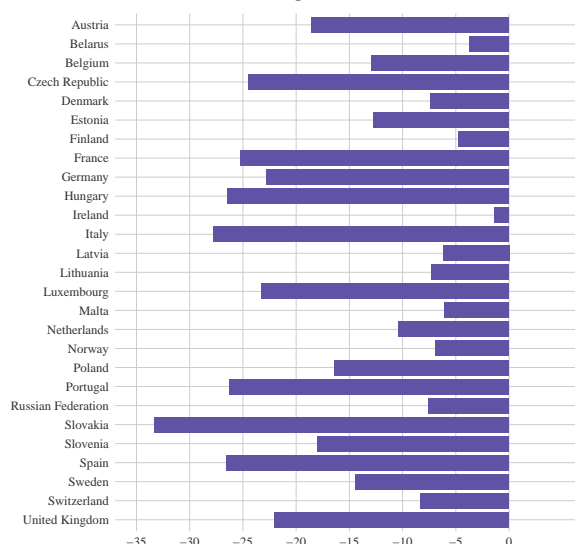
Figure 4: Growth rates of manufacturing output in Europe, percentage change compared to the same period of the previous year



Detailed data for the second quarter of 2020 indicate a significant decline of manufacturing output in almost all eurozone economies, triggered predominantly by COVID-19 contain-

ment measures (Figure 5). The economically most influential countries were among the worst affected: Italy's manufacturing output suffered a decrease of 27.8 per cent, Spain's fell by 26.5 per cent, France's by 25.2 per cent and Germany's by 22.8 per cent.

Figure 5: Growth rates of European industrialized countries, percentage change compared to previous year, quarter II 2020



Focussing on non-EU industrialized economies, output in the United Kingdom fell sharply by 22.0 per cent in the current quarter; the uncertainties following the Brexit on 31 January 2020 has clearly been pushed into the background. Switzerland registered a significant drop in output by 8.3 per cent in the second quarter of 2020 in a year-over-year comparison.

Developing and emerging industrial economies

In accordance with UNIDO Statistics' country grouping, China is presented separately from other country groups due to its size and the specific characteristics of its economy. Sustained high growth rates over the past several years have been rapidly transforming China into an industrialized economy.

China

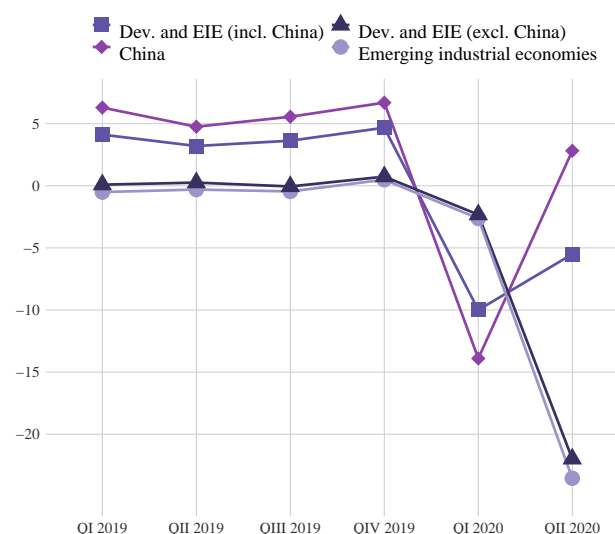
In the first quarter of 2020, China's manufacturing output was hit hard by the outbreak of COVID-19, with a drop in output by 13.9 per cent. The latest seasonally adjusted figures are already pointing to a rapid recovery, with an increase in manufacturing output of 2.8 per cent in the second quarter of the year. The majority of Chinese industries have already experienced growth in the second quarter of 2020, with only a few exceptions, such as wearing apparel (-7.4 per cent), furniture (-7.9 per cent) or leather products (-11.1 per cent). Computer electronics (11.2 per cent), electrical equipment (6.8 per cent) and machinery (6.3 per cent) recorded high output growth in the second quarter of 2020. It remains to be seen, however, whether China's export-oriented economy will maintain this high production level given the subdued demand around the world.

Developing and emerging industrial economies (excl. China)

The manufacturing output of developing

and emerging industrial economies decreased by 22.0 per cent in the second quarter of 2020, following a reduction by 2.3 per cent in the previous quarter. This country group's growth performance was already sluggish at the end of 2019 after a steady decline in growth throughout 2018.

Figure 6: Growth of manufacturing output of developing economies percentage change compared to the same quarter of the previous year



Asia and the Pacific reported a drop in manufacturing output of 23.7 per cent compared to the same quarter of the previous year. The lower growth rates recorded at the end of 2018 already marked a downward trend following higher year-over-year growth rates in previous quarters. A

closer look at specific countries in this region reveals output reductions with varying intensity in all observed countries. Manufacturing output fell in Viet Nam by 5.4 per cent, by 10.1 per cent in Mongolia, by 18.8 per cent in Thailand, by 26.6 per cent in Pakistan, by 40.2 per cent in the Philippines and by 41.6 per cent in India.

In the second quarter of 2020, Latin America's manufacturing output decreased by 24.2 per cent on a year-over-year basis, following sluggish economic development since the beginning of 2018. The region's two largest manufacturers, Mexico and Brazil, also witnessed notable reductions in manufacturing output by 29.8 per cent and 22.1 per cent, respectively. Argentina experienced a further deepening of its ongoing manufacturing contraction, with a 22.6 per cent drop in output in the current quarter. Ecuador was among the very few countries that registered an increase in manufacturing output (1.4 per cent). It is still uncertain how severely and for how long the continent will feel the impacts of the pandemic, considering that health data indicate that Latin America is one of the hardest hit regions in the world.

Compared to the second quarter of 2019,

growth estimates based on limited data availability for African countries indicate a decrease of manufacturing output by 12.4 per cent, following years of fluctuating growth rates. While Senegal's and Nigeria's manufacturing output dropped by 3.3 per cent and 7.8 per cent, respectively, the decrease over the same period was 26.9 per cent in Rwanda and 32.9 per cent in South Africa.

The manufacturing output of other developing economies reduced by 17.8 per cent compared to the second quarter of 2019. Turkey, the largest manufacturer in this group, registered an output loss of 17.6 per cent in the second quarter of 2020, negating the upward trend of the last two quarters following a year of drastic output reductions. All other countries in the group reported negative growth rates in manufacturing production, but to varying degrees. For instance, Greece (-7.2 per cent) or Ukraine (-7.8 per cent) experienced moderate decreases in output, whereas North Macedonia (-29.3 per cent) or Romania (-29.7 per cent) were among those most affected by the ongoing health and economic crisis.

Findings by industry group

The growth rates of industries grouped by technological intensity already indicated a declining trend since the beginning of 2018. Figure 7 illustrates this reduction in growth over the last quarters. The three groupings according to technological intensity experienced decreases in output of at least 5 per cent in the first quarter of 2020, which dropped further by more than 10 per cent in the current quarter. An overall decline of such magnitude was last observed during the financial crisis in 2008/2009.

The growth rate of manufacturing output of medium-technology industries has deteriorated since the beginning of 2019, resulting in a negative year-over-year growth rate of 12.4 per cent in the second quarter of 2020. This can mostly be attributed to the slump in production of non-metallic mineral products (-8.2 per cent), basic metals (-10.4 per cent) as well as rubber products (-14.6 per cent).

The output of medium high- and high-technology industries dropped by 10.4 per cent in the second quarter of 2020. Other decisive factors for the gradual decline since 2018—aside from COVID-19—have been growing uncertainties related to rising trade restrictions, with a significant influence on consumer decisions and demand. Consequently, the manufacturing of machinery or motor vehicles has seen large re-

ductions in output over the last quarters. The production of motor vehicles experienced the highest drop in output (-37.3 per cent) of all industries. On the other hand, the output of computers, electronics and optical products as well as pharmaceuticals increased by 2.9 per cent and 1.8 per cent, respectively.

Figure 7: Growth of manufacturing industries by technological intensity, percentage change compared to the same quarter of the previous year

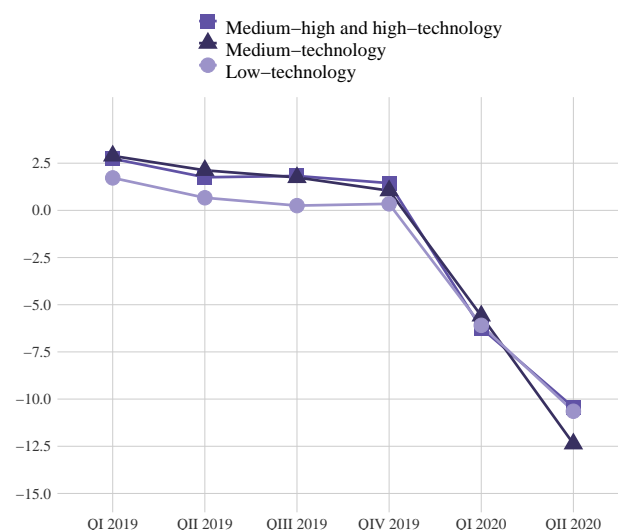


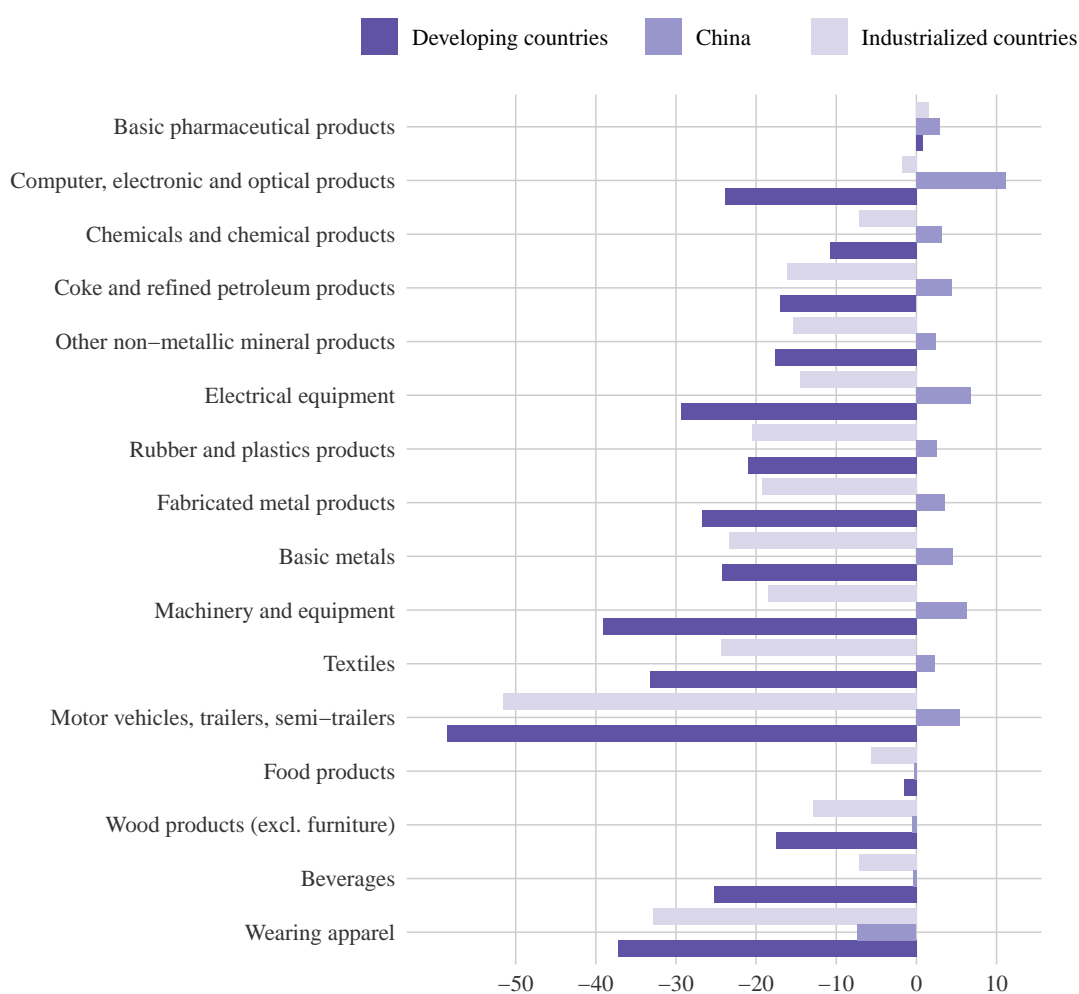
Figure 8 presents detailed growth rates of various industries by country group. Given the ongoing COVID-19 crisis, the production of essential goods and supplies, such as food or pharmaceutical products, was less affected than

other industries. In the second quarter of 2020, the production of basic pharmaceuticals registered moderate growth in all country groups. By contrast, the production of capital and durable goods, such as machinery or motor vehicles, usually dwindles during a crisis due to shrinking demand. Similarly, textiles or wearing apparel

experienced considerable year-over-year output reductions in almost all country groups in the current quarter.

Additional data on the growth rates in the second quarter of 2020 are available in the Statistical Tables.

Figure 8: Estimated growth rates by industry in percentage change compared to previous year, quarter II 2020

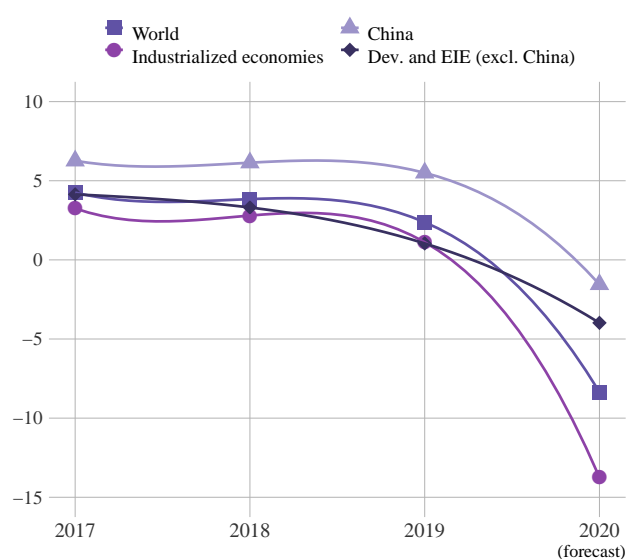


Manufacturing value added growth prospects in 2020

The global outbreak of COVID-19 is expected to cause a notable decrease in manufacturing production in 2020. UNIDO world manufacturing production forecasts indicate a drop of 8.4 per cent in 2020, primarily due to national containment strategies such as economic and social lockdowns. These measures have had a severe impact on both demand and supply. Consumer demand has declined significantly due to uncertainties triggered by travel bans, remote working, job losses, etc., while the production of certain goods was halted worldwide for several months. The previous year had already pointed to a slowdown in manufacturing growth, mainly because of the ongoing trade and tariff tensions between the two largest manufacturers in the world, China and the United States, which further aggravated the current situation.

Due to the current crisis, world manufacturing value added (MVA) has plummeted. Annual production growth in the United States is likely to drop by 15.0 per cent in 2020 compared to an increase of 2.1 per cent in 2019. China's manufacturing sector is expected to reduce its production by 1.6 per cent this year, whereas in the previous year, China registered an increase of 5.5 per cent.

Figure 9: Annual MVA growth rates by country groups, constant 2015 US\$



The manufacturing production of European industrialized countries is also expected to fall by 14.3 per cent in 2020. In 2019, production only grew by 0.7 per cent, mainly because of the trade and tariff frictions between the United States and Europe and the uncertainties unleashed by the negotiations over Brexit. The growth pattern in East Asia is similar to that of European industrialized countries and is projected to drop by 11.2 per cent in 2020. Overall manufacturing production of industrialized economies for 2020 is expected to decrease by 13.7 per cent.

Developing and emerging industrial economies (excl. China) will likely experience a loss in manufacturing production of 4.0 per cent in 2020, compared to a subdued growth of 1.0 per cent in 2019. Negative growth in Latin America was already observed during the previous year, which will only be exacerbated in 2020, with an

estimated decline of manufacturing production by 9.7 per cent. Asian countries, which until recently were heralded as fast growing economies, can expect their manufacturing production to decrease by a mere 0.5 per cent. Forecasts for least developed countries point to an increase of output by 1.2 per cent in 2020.

Statistical Tables

Table 1

Estimated growth rates of world manufacturing output

Percentage change compared to the previous quarter and same period of the previous year

Quarter II 2020

	Share in world MVA (2015)	Compared to previous quarter	Compared to same period of the previous year
World	100.0	-5.6	-11.2
Industrialized economies	56.2	-14.6	-16.4
North America	19.3	-15.3	-16.5
Europe	22.3	-16.1	-19.3
East Asia	13.3	-12.2	-12.9
China	27.6	20.0	2.8
Dev. and EIE excl. China	16.2	-20.3	-22.0
Emerging industrial economies	14.5	-21.8	-23.5
Other developing economies	1.4	-6.3	-8.2
Africa	1.7	-10.1	-12.4
Asia & Pacific	7.6	-22.1	-23.7
Latin America	5.0	-21.4	-24.2
Others	2.0	-19.3	-17.8

Source: UNIDO Statistics.

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

Table 2

Estimated growth rates of output by manufacturing industry

Percentage change compared to the same period of the previous year

Quarter II 2020

	Developing and emerging industrial economies excl. China	China	Industrialized economies	World
Food products	-1.5	-0.3	-5.7	-3.5
Beverages	-25.3	-0.5	-7.2	-10.7
Tobacco products	-19.8	1.2	-11.1	-10.8
Textiles	-33.2	2.3	-24.3	-12.2
Wearing apparel	-37.2	-7.4	-32.8	-20.7
Leather and related products	-30.9	-11.1	-44.5	-22.2
Wood products (excl. furniture)	-17.5	-0.5	-12.9	-9.6
Paper products	-8.6	1.9	-6.1	-4.9
Printing	-30.4	0.9	-22.3	-17.8
Coke and refined petroleum products	-17.0	4.5	-16.1	-12.4
Chemicals and chemical products	-10.7	3.2	-7.1	-4.4
Basic pharmaceutical products	0.8	3.0	1.6	1.8
Rubber and plastics products	-21.0	2.5	-20.5	-14.6
Other non-metallic mineral products	-17.7	2.4	-15.4	-8.2
Basic metals	-24.3	4.6	-23.4	-10.4
Fabricated metal products	-26.7	3.5	-19.2	-14.9
Computer, electronic and optical products	-23.9	11.2	-1.8	2.9
Electrical equipment	-29.4	6.8	-14.5	-5.1
Machinery and equipment	-39.2	6.3	-18.5	-11.3
Motor vehicles, trailers, semi-trailers	-58.6	5.5	-51.5	-37.3
Other transport equipment	-47.1	2.1	-26.1	-22.2
Furniture	-27.7	-7.9	-24.7	-20.6
Other manufacturing	-32.9	-12.3	-18.4	-18.0
Total Manufacturing	-22.0	2.8	-16.4	-11.2

Source: UNIDO Statistics.

Note: Seasonally adjusted data.

Table 3

Estimated growth rates of output by manufacturing industry

Percentage change compared to the previous quarter

Quarter II 2020

	Developing and emerging industrial economies excl. China	China	Industrialized economies	World
Food products	-2.1	11.6	-6.7	-1.7
Beverages	-23.1	22.3	-8.7	-7.3
Tobacco products	-15.8	-0.9	-6.7	-8.1
Textiles	-33.2	27.0	-19.7	-0.5
Wearing apparel	-32.8	17.8	-22.2	-6.1
Leather and related products	-24.3	15.3	-33.8	-4.6
Wood products (excl. furniture)	-16.2	20.9	-12.2	-4.1
Paper products	-8.8	17.0	-7.2	-3.1
Printing	-27.1	20.5	-18.9	-11.8
Coke and refined petroleum products	-14.2	12.4	-15.0	-9.8
Chemicals and chemical products	-10.8	12.6	-6.4	-1.4
Basic pharmaceutical products	-0.9	8.1	-0.8	1.2
Rubber and plastics products	-17.7	25.7	-18.4	-8.4
Other non-metallic mineral products	-18.3	20.6	-15.1	-1.9
Basic metals	-23.9	9.5	-20.0	-6.9
Fabricated metal products	-23.3	28.7	-16.2	-8.3
Computer, electronic and optical products	-19.4	18.9	-6.8	3.2
Electrical equipment	-27.3	30.6	-12.1	6.1
Machinery and equipment	-35.0	32.6	-14.1	-1.0
Motor vehicles, trailers, semi-trailers	-52.6	37.1	-45.6	-26.6
Other transport equipment	-42.9	20.4	-20.9	-15.1
Furniture	-24.8	20.6	-21.5	-12.6
Other manufacturing	-28.6	8.3	-15.7	-11.1
Total Manufacturing	-20.3	20.0	-14.6	-5.6

Source: UNIDO Statistics.

Note: Seasonally adjusted data.

Table 4

Estimated growth rates of world manufacturing output

Percentage change compared to the previous quarter and same period of the previous year

Quarter I 2020 (revised)

	Share in world MVA (2015)	Compared to previous quarter	Compared to same period of the previous year
World	100.0	-6.9	-6.0
Industrialized economies	56.2	-1.3	-2.4
North America	19.3	-1.5	-2.2
Europe	22.3	-2.5	-4.3
East Asia	13.3	0.8	0.0
China	27.6	-18.1	-13.9
Dev. and EIE excl. China	16.2	-2.3	-2.3
Emerging industrial economies	14.5	-2.4	-2.6
Other developing economies	1.4	-1.8	-1.7
Africa	1.7	-1.8	-1.5
Asia & Pacific	7.6	-2.6	-3.0
Latin America	5.0	-2.9	-3.2
Others	2.0	0.2	1.6

Source: UNIDO Statistics.

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

Table 5

Estimated growth rates of output by manufacturing industry

Percentage change compared to the same period of the previous year

Quarter I 2020 (revised)

	Developing and emerging industrial economies excl. China	China	Industrialized economies	World
Food products	1.2	-11.3	1.1	-1.9
Beverages	-2.7	-17.1	1.2	-3.6
Tobacco products	-8.2	3.4	-6.8	-4.7
Textiles	0.0	-21.3	-6.9	-13.1
Wearing apparel	-7.3	-22.5	-14.3	-16.5
Leather and related products	-8.7	-23.1	-15.2	-18.4
Wood products (excl. furniture)	-2.0	-18.7	-1.3	-6.5
Paper products	0.4	-12.6	-0.4	-2.8
Printing	-4.6	-20.8	-5.0	-8.6
Coke and refined petroleum products	-2.7	-7.3	-1.6	-3.1
Chemicals and chemical products	0.4	-8.0	-1.7	-3.4
Basic pharmaceutical products	0.8	-3.9	4.0	1.7
Rubber and plastics products	-5.1	-18.7	-3.5	-7.6
Other non-metallic mineral products	-0.4	-14.3	-1.5	-6.7
Basic metals	0.3	-2.0	-5.0	-2.8
Fabricated metal products	-4.4	-19.9	-4.7	-8.0
Computer, electronic and optical products	-4.5	-4.7	8.2	2.0
Electrical equipment	-3.5	-17.2	-2.6	-9.9
Machinery and equipment	-6.4	-19.9	-6.4	-11.1
Motor vehicles, trailers, semi-trailers	-13.2	-24.1	-11.5	-15.2
Other transport equipment	-8.1	-16.5	-6.8	-8.9
Furniture	-3.3	-23.8	-3.6	-9.0
Other manufacturing	-7.9	-21.1	-2.6	-8.3
Total Manufacturing	-2.3	-13.9	-2.4	-6.0

Source: UNIDO Statistics.

Note: Seasonally adjusted data.

Table 6

Estimates of annual MVA growth, selected country groups

Percentage change compared to the previous year, at constant 2015 US\$

	Growth rates 2019, revised	Growth rates 2020, forecasts
World	2.4	-8.4
Industrialized economies	1.1	-13.7
North America	1.9	-15.3
Europe	0.7	-14.3
East Asia	0.8	-11.2
China	5.5	-1.6
Dev. and EIE excl. China (by development group)	1.0	-4.0
Emerging industrial economies	1.4	-4.4
Least developed countries	8.1	1.2
Other developing economies	-5.0	-3.1
Dev. and EIE excl. China (by region)	1.0	-4.0
Africa	2.6	-2.2
Asia & Pacific	3.7	-0.5
Latin America	-4.3	-9.7

Source: UNIDO Statistics.

Methodological note

This report presents observed growth rates and growth estimates of world manufacturing production for the second quarter of 2020, as well as revised estimates for the first quarter of 2020. The figures are based on 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 should take note that while annual industrial growth rates generally refer to changes in MVA (i.e. output net of intermediate consumption), quarterly IIPs reflect the growth of gross output.³ Given the temporal nature of estimates, output growth provides the best approximation of value added growth, assuming that the input-output relationship remains relatively stable during the observation period.

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.⁴ Since 2017, seasonal adjustments are made using the TRAMO/SEATS⁵ method in the JDemetra+ software. The purpose of seasonal adjustment is to filter out any 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. The estimates based on in-time modelling of major economic uncertainties or other unusual events, in particular, such as the global pandemic of 2020, require frequent reviews based on the most recent available information.

This report refers to country groups in terms of economic territories rather than po-

³For a description of the variable Manufacturing Value Added (MVA), see <https://stat.unido.org/content/learning-center/what-is-manufacturing-value-added%253f>

⁴<https://stat.unido.org/content/learning-center/seasonal-adjustment>

⁵TRAMO 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 analysis.

litical boundaries. Economies are classified according to their stage of industrialization. This grouping is particularly useful for presenting growth estimates by country aggregates at different levels of industrialization. A comparative picture of growth trends in different parts of the world is provided to users based on these country groups. The full list of economies in the country groupings is available in the International Yearbook of Industrial Statistics.⁶

The present report implements revision 4 of the International Standard for Industrial Classification of All Economic Activities (ISIC Rev.4).⁷ 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 or projections, where appropriate. These estimates are replaced as soon as the officially

reported values become available in national statistical publications.

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 manufacturing value added. With the first quarter of 2020, the respective base year has been adjusted to 2015 in accordance with other UNIDO publications. This report presents growth figures for country groups by stage of industrial development and by geographic region.

Users can find further information on the methodology of index numbers, estimation procedures or a compilation of country groups' indices in a methodological document⁸ that is available on the statistical pages of UNIDO's website, together with the indices themselves published in UNIDO's Quarterly IIP database⁹, available on the UNIDO Statistics Data Portal. Since 2020, UNIDO also publishes monthly data on world manufacturing production with regular updates.¹⁰

⁶<https://www.unido.org/resources/publications/flagship-publications/international-yearbook-industrial-statistics>

⁷https://unstats.un.org/unsd/publication/seriesM/seriesm_4rev4e.pdf

⁸<https://stat.unido.org/content/publications/world-manufacturing-production%253a-methodology-of-the-quarterly-report>

⁹<https://stat.unido.org/database/Quarterly%20IIP>

¹⁰<https://stat.unido.org/database/Monthly%20IIP>