

Slowed recovery on the global chemical markets

Overall economy

The global economy continued its recovery in the third quarter. Growth was mainly driven by the service sector. Overall, however, the pace of expansion slowed noticeably. Supply bottlenecks for inputs, problems in global logistics and, most recently, rising energy prices slowed industrial production on all continents. Global gross domestic product (GDP) increased by only a weak 0.3 percent compared to the previous quarter. However, this exceeded both the previous year and the pre-crisis level (Q4 2019).

Industry

The recovery in industry was slowed almost everywhere by problems in the supply chains and rising energy prices and even energy shortages. Compared with the previous quarter, global production had to be scaled back significantly despite continued good demand and full order books. However, the previous year's level was still significantly exceeded.

Chemistry

Developments in the chemical and pharmaceutical industries were divided. The pharmaceutical industry continued to grow unabated due to continuing strong demand. By contrast, the chemical industry suffered some setbacks. Demand continued to develop positively. However, problems in the supply chains and high energy prices had a negative impact on the chemical industry – as they did on the industry as a whole – and slowed down development.

Outlook

Most recently, the prospects for a stronger recovery of the global economy have dimmed considerably. The Corona pandemic has become more present again with the onset of the colder season. Restrictions are already being successively extended in many European countries to curb new infections. In addition, there is the new Omikron variant with still unclear effects on transmission and protection by the known vaccines. As a result of the countermeasures and declining consumer confidence, the burdens on the service industries are likely to increase again. Industry problems related to supply and transportation bottlenecks remain. High energy prices are increasing costs for businesses and reducing consumers' purchasing power. Inflation is increasing in many countries. Some central banks have already raised key interest rates. An improvement in the situation cannot be expected until summer next year. But then the economy should be able to pick up speed again.

December 2021

- Global economy: Recovery at a much more moderate pace
- Industrial production: Supply chains and energy prices slow down development
- Chemicals/Pharmaceuticals: Demand situation remains good - production problems act as brake
- Outlook: Risks increase

Chemical and Pharma production

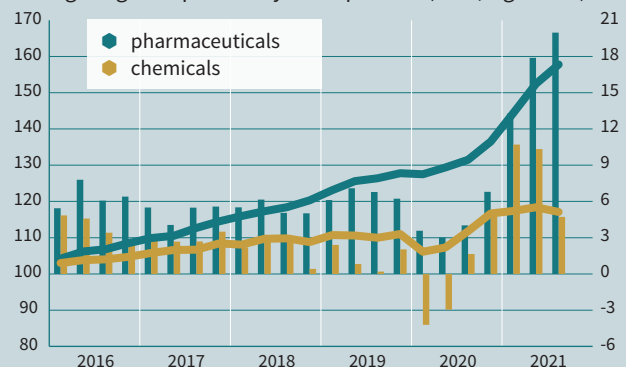
By regions, seasonally adjusted change against previous year and previous quarter in percent

	2019	2020	3. quarter 2021	
			yoy	qoq
World	+ 2.9	+ 1.1	+ 9.2	+ 0.3
Europe				
EU	+ 3.8	+ 1.4	+ 14.9	+ 4.6
Germany	- 7.3	- 0.1	+ 8.0	+ 0.6
Russia	+ 7.1	+ 9.9	+ 6.3	+ 2.1
Americas				
USA	- 3.2	- 2.5	+ 7.6	+ 0.2
Brazil	- 2.1	+ 0.6	- 2.4	- 2.7
Asia				
Japan	- 0.7	- 9.5	+ 5.4	- 1.5
South Korea	- 0.7	- 1.0	+ 6.4	- 0.4
India	+ 1.5	- 3.4	+ 0.7	- 0.1
China	+ 5.6	+ 3.2	+ 9.8	- 0.7

Sources: Chemdata International, VCI

Strong development in pharmaceuticals – slowdown in chemicals

Production, seasonally adjusted, Index 2015 = 100 (left axis), changes against previous year in percent (bars, right axis)



Sources: Chemdata International, VCI

Global economy: muted recovery

The global economy continued its recovery in the third quarter. Growth was mainly driven by the service sector. Overall, however, the pace of expansion slowed noticeably. Supply bottlenecks for inputs, problems in global logistics and, most recently, rising energy prices slowed industrial production on all continents. Global gross domestic product (GDP) increased by only a weak 0.3 percent compared to the previous quarter. However, this exceeded both the previous year and the pre-crisis level (Q4 2019).

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EU: slight acceleration – moderate outlook

The European economy gained slightly in momentum compared with the previous quarter. Private consumption was the main factor behind this positive development. Industry suffered from disruptions to global supply chains and in some cases curtailed production. Overall economic development was positive in all European countries. France led the way with growth of 3.0 percent compared to the previous quarter. It was followed by Portugal (+2.9 percent), Greece (+2.7 percent) and Italy (+2.6 percent), all of which recorded significantly above-average growth. Spain, Belgium,

the Netherlands and Sweden posted average rates. Germany, Poland and Ireland grew at below-average rates. The pre-crisis level was only just missed in the EU as a whole. However, there are signs of a significant economic slowdown in the coming months. Rising infection rates have already led to new restrictions. Added to this are supply chain problems and high inflation rates. The reconstruction fund, on the other hand, should have a stimulating effect. From summer 2022, the economy should then be able to pick up speed again as infection figures and energy prices fall and supply problems ease slightly.

In **Germany**, the economy grew by 1.7 percent in the third quarter. Unlike in the spring, when almost all sectors posted strong gains, only private consumption contributed to growth in the fall. Government consumption, investment and also trade were down. Compared with Q4 2019, the quarter before the start of the Corona crisis, economic output was still 1.1 percent lower despite the recovery.

The outlook is also subdued, at least for the winter months. Due to its high industrial orientation, Germany is suffering particularly from supply bottlenecks. Added to this are rising energy prices, which are impacting both industry and households. An explosion in the number of infections and the uncertainties surrounding the Omikron virus variant are placing an additional burden on the recovery. This is because this may lead to further restrictions in the service sector and declining consumer confidence.

In the **United Kingdom**, the economy continued to recover and grew by 1.3 percent compared with the previous quarter. The economy was held back by the temporary shortage of gasoline and diesel at many service stations. The pre-crisis level was still missed by 2.1 percent. Despite shortages and the omicron variant, the upward process should continue next year.

The **Russian** economy was unable to continue its upward trend in the third quarter. The economy stagnated. However, the pre-crisis level had already been reached in spring 2021 and the economy is now returning to its low growth path due

Gross domestic product

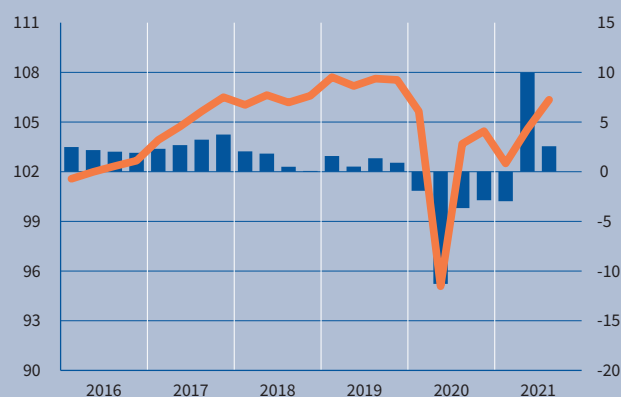
By regions, change against previous year and previous quarter in percent

	2019	2020	3. quarter 2021	
			yoy	qoq
World	+2.2	-3.8	+3.9	+0.3
Europe				
EU	+1.8	-6.1	+4.1	+2.1
Germany	+1.1	-4.9	+2.6	+1.7
Russia	+2.0	-3.0	+4.3	-0.1
Americas				
USA	+2.3	-3.4	+4.9	+0.5
Brazil	+1.2	-4.2	+4.0	-0.1
Asia				
Japan	-0.2	-4.5	+1.1	-0.9
South Korea	+2.2	-0.9	+4.0	+0.3
India	+4.8	-7.0	+8.1	+8.2
China	+5.9	+2.2	+4.9	+0.2

Sources: Feri, VCI

Germany: Consumption drives economic growth

Gross Domestic Product Germany, seasonally adjusted, Index 2015 = 100 change against previous year in percent



Sources: Feri, VCI

to structural problems. Geopolitical tensions and the threat of sanctions are further clouding the outlook.

USA: weak growth – prospects good

In the **USA**, growth in the third quarter was only moderate, rising by 0.5 percent compared with the previous quarter. This was due to a negative fiscal effect and rising prices. The one-off payments made under the economic stimulus program in the spring had boosted private consumption. This effect disappeared in the fall. Strong demand coupled with bottlenecks led to sharp price increases for some products, which now weighed on private consumption. Business investment also lost momentum and negative impetus came from foreign trade.

However, the outlook for the future is good. Omikron is unlikely to change this. Already in the delta variant, there was no reaction in the form of tighter restrictions. Some areas, especially services, still have a lot of catch-up potential. Employment growth has recently been moderately positive, which should support private consumption. The government's investment program should also provide positive impetus.

Brazil's economy remained in a growth slump in the third quarter. Private consumption was only subdued. Increasing uncertainties, higher prices and the slowdown in demand for services due to the pandemic had a negative impact on consumer confidence.

The growth outlook continues to be weighed down by the Corona pandemic. The framework conditions for investment remain difficult. Excessive bureaucracy, the complex tax system and poor infrastructure are slowing development. The political polarization caused by President Bolsonaro is also problematic. Overall, the pace of recovery in the Latin American countries is muted. In addition to the continuing difficult infection situation, the countries are also struggling with more restrictive monetary and fiscal policies and high inflation rates. .

Asia: heterogeneous growth – moderate outlook

Growth in **China** was extremely low in the third quarter, with a quarter-on-quarter increase of just 0.2 percent. The energy shortage slowed down industrial companies. The real estate market was burdened by highly indebted corporations. Government interventions at Internet groups and in other industries worsened the mood of the economy. Restrictive measures on local infectious disease outbreaks slowed consumption.

Moderate growth is on the horizon for China in 2022. The energy shortage will not be overcome quickly. And limiting debt and achieving climate targets are also likely to tend to have a dampening effect on economic growth. At the same time, the government will probably try to prevent the economy from weakening too much by stimulating growth. In **India**, the economy recovered in the third quarter from the sharp declines of the previous quarter due to the massive increase in corona infections. However, shortcomings in infrastructure, education and public administration are likely to continue to hold back medium-term growth.

In **Japan**, growth in the third quarter was lower than expected. Growth continued to be held back by weak demand from private households as a result of the corona crisis. This was compounded by low exports. Increasing import progress, high catch-up potential and fiscal policy stimulus should support the economic recovery in 2022.

South Korea continued on its growth path.

National economic indicators:

GDP, industrial and chemical production, changes against previous year in percent, forecasts for 2021/2022

	GDP			Manufacturing			Chemicals (excl. Pharma)		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
World	-3.8	5.0	3.6	-2.8	8.6	2.3	-0.1	6.4	1.6
Europe									
EU	-6.1	5.1	4.0	-8.2	8.5	3.5	-1.9	5.0	2.5
Germany	-4.9	2.7	4.1	-10.4	3.5	4.0	-1.3	4.5	1.5
Russia	-3.0	4.4	3.5	1.3	3.5	1.0	7.2	5.5	2.0
Americas									
US	-3.4	5.6	4.0	-6.6	6.0	3.0	-3.5	2.0	3.5
Brazil	-4.2	4.8	1.3	-4.9	4.5	-0.5	0.0	3.0	-0.5
Asia									
Japan	-4.5	1.4	2.1	-10.6	5.5	-1.0	-12.5	4.0	2.5
South Korea	-0.9	3.8	2.6	-0.2	6.5	1.5	-2.9	7.5	2.0
India	-7.0	7.2	6.9	-12.7	14.0	5.0	-5.4	8.0	1.5
China	2.2	7.8	4.8	1.6	10.5	2.0	2.9	8.0	1.5

Sources: Feri, Chemdata International, VCI

Industrial production

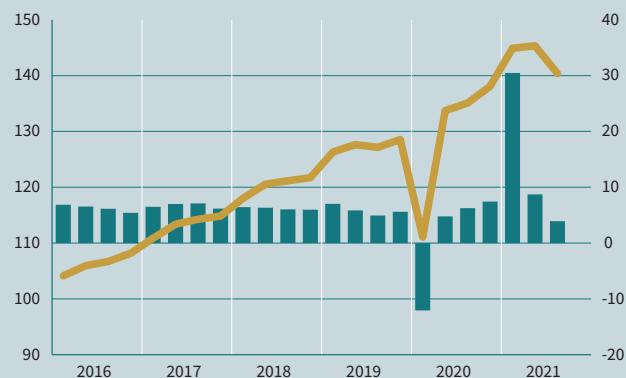
By regions, seasonally adjusted, change against previous year and previous quarter in percent

	2019	2020	3. quarter 2021	
			yoy	qoq
World	+ 2.2	- 2.8	+ 5.1	- 1.5
Europe				
EU	- 0.7	- 8.2	+ 6.3	- 0.2
Germany	- 4.1	- 10.4	+ 2.7	- 2.4
Russia	+ 3.5	+ 1.3	+ 3.3	+ 0.1
Americas				
USA	- 2.0	- 6.6	+ 5.9	+ 1.2
Brazil	+ 0.1	- 4.9	- 1.4	- 1.9
Asia				
Japan	- 2.7	- 10.6	+ 5.9	- 3.8
South Korea	+ 0.4	- 0.2	+ 5.0	- 0.3
India	+ 0.6	- 12.7	+ 6.9	+ 4.4
China	+ 5.8	+ 1.6	+ 3.9	- 3.4

Clear signs of a slowdown: The supply bottlenecks became increasingly noticeable. In the fall, rising energy prices added to the burden. In China, energy was so scarce at times that power outages and company closures occurred. Compared with the previous quarter, global production had to be cut back despite continued good demand and full order books. However, with the exception of Brazil, the previous year's output was significantly exceeded in all major countries.

China curbs industrial production

Industrial production in China, seasonally adjusted, Index 2015= 100, change against previous year in percent



Industry in China: China's industry was unable to match the momentum of the previous year. Energy shortages in particular led to a significant reduction in industrial production in the third quarter. Power outages forced companies to temporarily shut down plants. In addition, government intervention caused uncertainty among companies - not only in technology groups but also in heavy industry. For example, steel production was cut back in the run-up to the Olympic Games to improve the air quality.

Customer industries worldwide

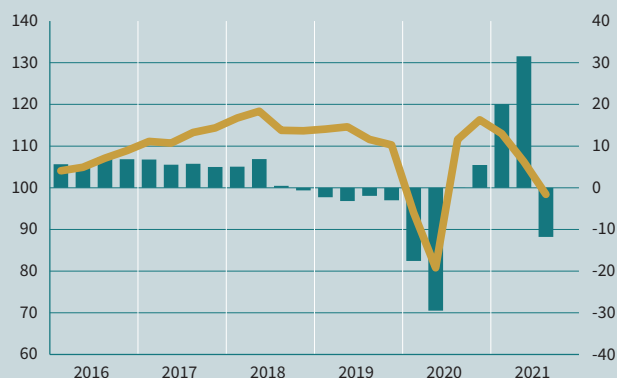
Industrial production by industries, seasonally adjusted, change against previous year and quarter in %

	2019	2020	3. quarter 2021	
			yoy	qoq
manufacturing industry	+ 2.2	- 2.8	+ 5.1	- 1.5
basic metals	+ 5.7	+ 0.2	+ 0.9	- 4.9
fabricated metals	+ 0.9	- 5.0	+ 8.6	- 2.4
chemicals	+ 1.4	- 0.1	+ 4.7	- 1.1
pharmaceuticals	+ 6.6	+ 4.4	+ 20.0	+ 3.5
plastics processors	+ 0.6	- 3.7	+ 2.1	- 2.8
automotive industry	- 2.6	- 10.6	- 11.8	- 7.4
mechanical engineering	+ 0.2	- 4.4	+ 10.5	- 0.7
electrical appliances	+ 5.3	+ 1.8	+ 8.7	- 1.7
electrical equipment	+ 4.4	+ 4.7	+ 13.1	- 0.3
food and beverages	+ 2.1	- 1.3	+ 2.9	- 0.8
textile industry	+ 0.2	- 4.7	- 0.2	- 2.5
furniture industry	- 0.5	- 5.7	+ 1.6	- 3.1
paper industry	+ 0.1	- 2.7	+ 4.1	- 1.0
printing industry	- 1.8	- 10.1	+ 3.6	- 1.7
glass/ceramic industry	+ 4.9	- 1.8	+ 4.3	- 3.5

Cutbacks in all customer sectors: All industrial sectors are now affected by supply bottlenecks. The decline was again particularly severe in the automotive industry. The problems in procuring semi-conductors are continuing, leading not only to curbs on automotive production worldwide but also to problems in the electrical industry. Plastics processors also continued to be affected by a lack of starting materials and had to cut back production. Steel production declined in particular as a result of the curtailment of production in China - an air pollution control measure in the run-up to the Olympic Games. The textile and furniture industries still suffered from local lockdowns and curtailed production worldwide. Despite the supply chain issues, almost all sectors significantly exceeded their prior-year levels and were thus also above their pre-crisis levels at global level.

Lack of chips slows down global automotive industry

Industrial production, seasonally adjusted, Index 2015= 100 change against previous year in percent



Automotive industry still slowed down: The automotive industry was still massively slowed down by the semiconductor crisis in the third quarter of the year. Control chips are now in short supply in the automotive industry, because the change in demand in the Corona pandemic has meant that chip manufacturers are primarily supplying producers of smartphones, computers or game consoles. It recently took up to 22 weeks from an order to delivery of semiconductor chips. Production in the important car markets of Europe and China again had to be cut back significantly. However, there were signs of a small recovery in some areas during the quarter. In the USA, production even increased slightly again. However, a quick permanent solution for semiconductors is not yet in sight. New plants are starting up, but production will not begin until 2024. Overall, the industry is undergoing a transformation process. In addition to cyclical influences, the trade conflicts between the USA, Europe and China and structural factors - such as stricter CO2 fleet standards, the development of alternative drive technologies and changing consumer habits - are also weighing on the industry.

EU: Customer industries

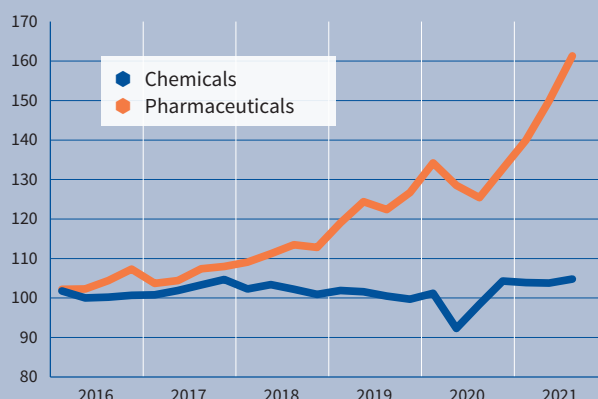
production, seasonally adjusted, changes in percent

	2019	2020	3. quarter 2021	
			yoy	qoq
manufacturing industry	-0.7	-8.2	+6.3	-0.2
basic metals	-4.4	-12.1	+9.5	-2.8
fabricated metals	-1.9	-10.4	+8.8	-0.6
chemicals	-1.2	-1.9	+6.5	+1.0
pharmaceuticals	+10.3	+5.7	+28.6	+7.6
plastics processors	-1.1	-7.4	+4.1	-2.5
automotive industry	-6.4	-21.3	-18.0	-10.1
mechanical engineering	-0.9	-12.2	+12.8	+2.0
electrical appliances	-2.3	-5.5	+10.5	-2.5
electrical equipment	-1.1	-0.1	+22.7	-2.9
food and beverages	+1.2	-3.0	+4.0	+0.4
textile industry	-3.6	-10.9	+4.4	+0.8
furniture industry	-0.5	-7.4	-0.4	-0.5
paper industry	-1.5	-3.9	+7.7	+0.7
printing industry	-3.1	-13.6	+3.5	+1.2
glass/ceramic industry	-0.1	-5.0	+6.6	+0.2
construction	+2.4	-4.6	+1.2	-1.9

Recovery process stopped: In Europe, too, the recovery process was slowed by the bottlenecks. In particular, intermediate goods producers and the automotive and electrical industries were negatively affected. By contrast, the easing of restrictions in the textile and food industries provided more momentum. Some chemical-intensive sectors, such as the glass, printing and paper industries, also recorded growth. This also strengthened demand and production in the European chemical sector.

EU: Dynamic pharma – moderate chemistry

chemical and pharmaceutical production, seasonally adjusted, Index 2015 = 100, change against previous year in percent



EU chemical and pharmaceutical industry: The sector came through the crisis better than many other industrial sectors. The pharmaceutical industry experienced strong demand in some areas - particularly for medical products related to the fight against the pandemic and for vaccines. There were also divisions in the chemical industry that experienced a special boom, so that the slumps were much less severe than in other sectors. In 2021, the pharmaceutical industry continued its positive development. By contrast, the chemicals sector was unable to expand production significantly compared with the end of 2020. Bottlenecks in precursors and materials and, most recently, high energy prices held back development. However, the previous year's level was significantly exceeded in the third quarter of 2021.

USA: Customer industries

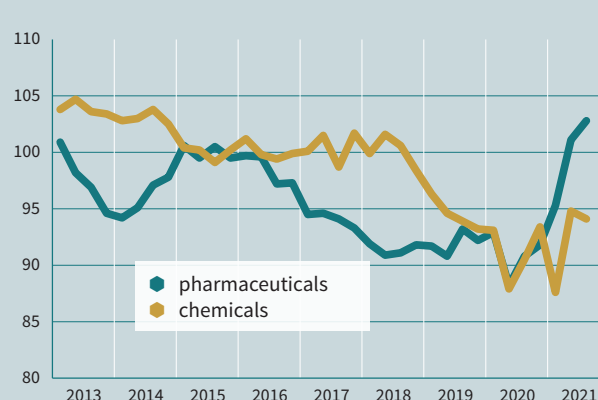
production, seasonally adjusted, changes in percent

	2019	2020	3. quarter 2021	
			yoy	qoq
manufacturing industry	-2.0	-6.6	+5.9	+1.2
basic metals	-3.8	-12.0	+15.4	+1.9
fabricated metals	-2.6	-9.1	+7.1	+1.1
chemicals	-5.6	-3.5	+4.0	-0.7
pharmaceuticals	+0.6	-1.1	+13.3	+1.7
plastics processors	-3.0	-8.4	+5.3	+2.2
automotive industry	-3.0	-15.7	-12.3	+2.0
mechanical engineering	-2.8	-7.2	+8.5	+2.2
electrical appliances	-0.9	-5.9	+8.1	+2.2
electrical equipment	+14.5	+11.2	+7.7	-3.1
food and beverages	-0.8	-1.3	+0.9	-0.6
textile industry	-1.5	-9.9	+8.5	+0.6
furniture industry	-6.0	-1.8	+0.4	+2.0
paper industry	-2.1	-6.0	+5.6	+0.2
printing industry	-4.6	-13.9	+1.0	-0.2
glass/ceramic industry	-2.3	-5.3	+3.3	-0.1
construction	+1.9	+4.0	+4.5	-0.5

US industry with plus: Industry in the USA performed better than in many other countries. Despite supply bottlenecks, production was expanded or at least held constant in many sectors. Only electrical equipment recorded a more significant decline compared with the previous quarter - albeit at a very high level. As a result, US industry as a whole returned to its pre-crisis level for the first time.

USA: Ups and downs in chemistry

chemical and pharmaceutical production, seasonally adjusted, Index 2015 = 100, change against previous year in percent



US chemical and pharmaceutical industry: Developments in the industry were very heterogeneous. The pharmaceutical industry continued its positive development. Stable demand for medical products led to a steady increase in volumes. In the chemicals sector, on the other hand, the trend was much more unsettled. Although the slump caused by the winter storms in February 2021 was followed by a recovery of a similar magnitude in the second quarter, the chemical industry was able to continue its positive development. Hurricane Ida at the beginning of the hurricane season led to renewed production declines in the summer months followed by a recovery.

Further data on the business situation of the chemical industry worldwide is available on a monthly basis in the World Chemistry Report: http://bit.ly/World_CR

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