BUILD ELECTRONICS BETTER

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SHAWN DUBRAVAC, PHD
CHIEF ECONOMIST
shawndubravac@ipc.org

ECONOMIC OUTLOOK

This month we revise our 2023 full-year forecast and offer the first glimpse at our forecasts for 2024. In this report we also officially welcome Croatia into the euro area and update our data series to the new euro area.

Both the U.S. and Europe reported better economic growth during Q4 than had been expected, but both economies are slowing. In the last month we have marginally raised our forecasts for economic growth for both the U.S. and Europe but our expectations remain muted. We expect the U.S. economy to grow 0.5% in 2023 (up from 0.3% last month) and we expect Europe will decline 0.1% in 2023, up from last month's forecast of a 0.3% decline . The loosening of strict COVID restrictions in China will also add growth there and we now expect China's economy to expand 4.7% in 2023. Looking beyond this year, we expect the U.S. to grow 1.2% in 2024, Europe to grow 1.4%, and China to expand by 5.2%.

A recession is looming in both the U.S. and throughout Europe, but the timing is still uncertain. It is possible the U.S. economy is already in recession. Industrial production declined in December for the third consecutive month. On the other hand, U.S. job growth remains strong. Recessions in the U.S. almost always coincide with job loss. Most expect the recession to start in the first half of 2023 and to be both shallow and short. Unemployment in the U.S. is expected to average 4.4% in 2023 and 4.8% in 2024. If these estimates hold, this recession will have the lowest peak unemployment rate of any modern recession. Every recession has seen peak unemployment of at least 5.5%.

The timing of a possible recession in Europe is likely similar to that of the U.S. The euro area reported meager growth in the fourth quarter of 2022, but in the face of an expected decline. While Germany, the largest economy in the region, did experience a contraction during the quarter, France and Spain both reported growth. The economic contraction in Europe will likely be a bit more severe this year than in the U.S., but it too should be primarily felt in the first half of the year.

IPC's book-to-bill reports for December encapsulate the overarching forces that defined 2022 as well as what we might expect for the year ahead. EMS shipments edged up in the final weeks of 2022 and closed the year up 4.5%. Orders, down 3.7% for the year, receded somewhat in December. Weaker demand for the year compressed orders, but supply chain improvements enabled companies to deliver. On net, the book-to-bill remains robust as we head into 2023. The PCB industry showed similar dynamics, orders were down 4.1% while shipments were up 11.4%. The balance between orders and shipments in the PCB market is less robust than the EMS sector but orders have been picking up over the last two months. Uneven order flow is likely to influence PCB results in 2023.

Slower demand and improving supply chain dynamics is also bringing some relief in terms of lower costs. The Freightos Baltic Daily Index for China-North America West is around $1,330 per forty-foot equivalent unit. The index is down 93% from its all-time high in September 2021 and back to where it was in 2019. Demand has slowed, congestion has eased, and capacity is available. Contracts negotiated last year are beginning to expire and shippers are pushing carriers for major rate reductions.

Costs are declining elsewhere. In the U.S., the Employment Cost Index, a measure of worker compensation, rose 1% in the final quarter of 2022. This is an annualized rate of 4% compared to the 5.8% annual rate in the first three months of the year. Other measures of compensation, such as average hourly earnings, have also seen a marked deceleration. It is increasingly looking like the surge in worker compensation in the last year was a one-time bump and not part of a longer-term upward wage spiral. The slower compensation growth rate is occurring at the same time unemployment remains low and millions of job openings appear to be available. The slower growth in wage inflation will also give the Federal Reserve space to temper rate hikes and move less aggressively this year than they did last year.

5.6%

New orders for durable goods rose 5.6% in December, but orders excluding transportation fell 0.1%

6.0%

In January inflation rose to 6% in France, one of the few countries that has not yet reached peak inflation.

49.2

China's factory activity shrank more slowly in January, the 6th consecutive monthly contraction. The Caixin/S&P Global manufacturing purchasing managers' index for China nudged up to 49.2.

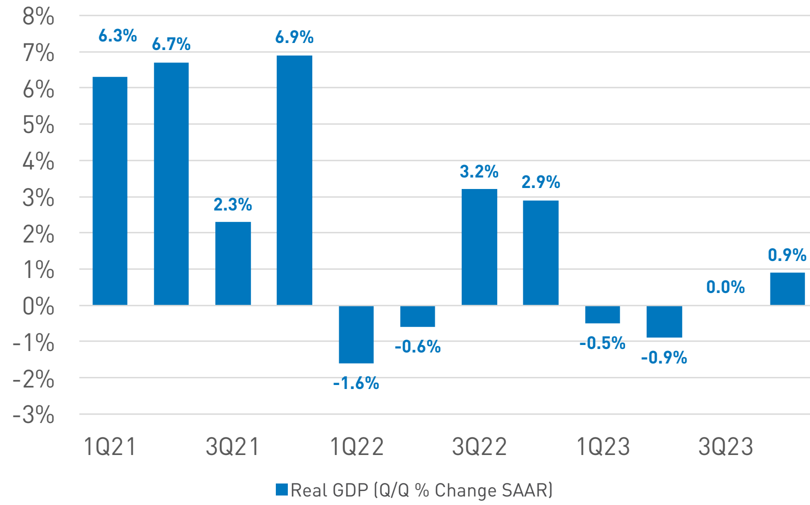
2.9%

The IMF raised its forecast for global growth in 2023 to 2.9% due to resilient demand in the United States and Europe, an easing of energy costs and the reopening of China's economy.

U.S. OUTLOOK

ECONOMIC GROWTH

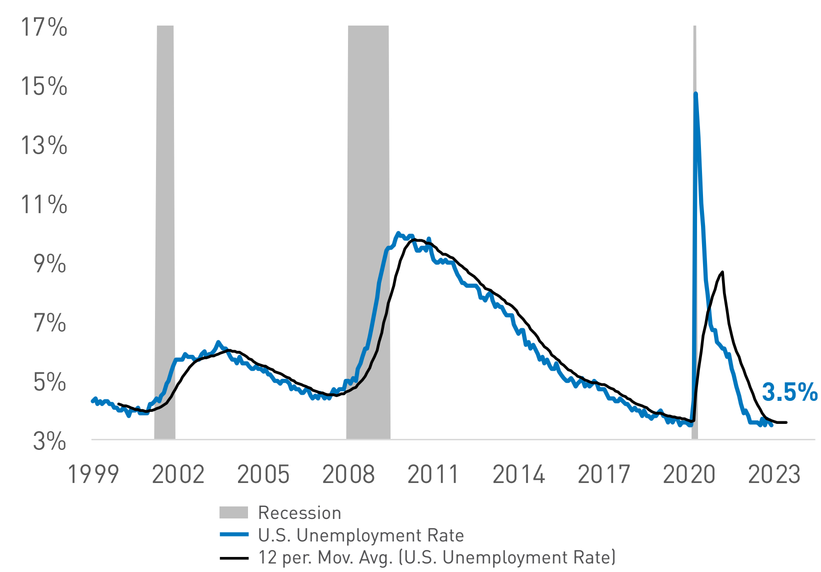
Real U.S. GDP grew 2.9% in the fourth quarter, a bit better than the consensus expectation of 2.6% growth. Inventory investment rose sharply, adding 1.5 percentage points of growth after two quarters of substantial drag to the headline number. The sharp rise suggests sluggish demand hindered sales and led to higher than expected inventory accumulation. Net exports added 0.6 percentage points, but the gain was a result of weak imports that exceeded a decline in exports. Domestic demand, which excludes inventory investment and trade rose a moderate 0.8%. Consumer spending was firm, up 2.1%. Spending on services (+2.6%) continues to outpace spending on goods (+1.1%). Housing remains in recession, declining a sharp 26.7% in Q4.



	2023 ECONOMIC GROWTH (GDP % Change)	2024 ECONOMIC GROWTH (GDP % Change)	2023 EXCHANGE RATE (v. USD)	2024 EXCHANGE RATE (v. USD)
UNITED STATES	0.5%	1.2%	N/A	N/A
CANADA	0.4%	1.6%	1.32	1.27
MEXICO	0.9%	1.9%	20.39	20.85
EURO AREA	-0.1%	1.4%	1.07	1.11
CHINA	4.7%	5.2%	6.92	6.61

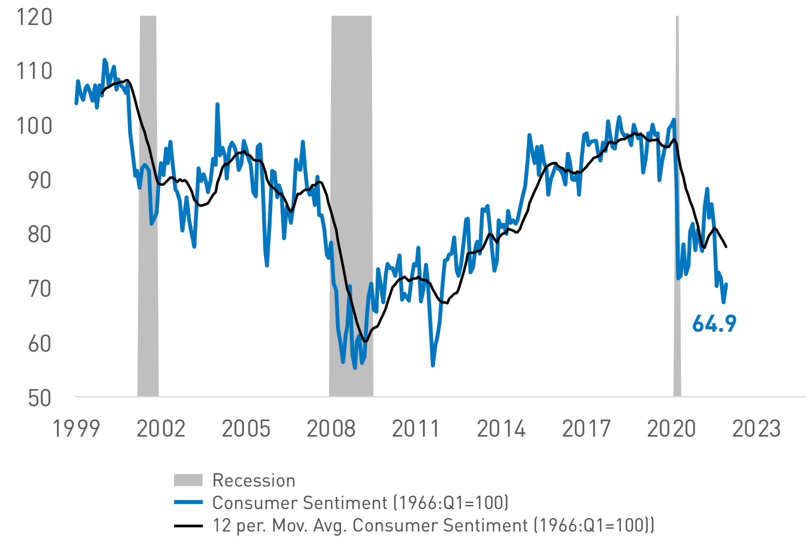
EMPLOYMENT

The U.S. economy added 223,000 new jobs in December, showing that companies are still hiring at a strong clip despite headlines focused on large layoffs. The level of job growth is a step down from the average monthly pace of 270,000 new jobs in the prior four months. The construction industry added 28,000 jobs despite a very weak housing sector. This is the highest monthly gain since May and employment in the sector rose 3.1% in 2022. The healthcare industry added 74,000 jobs and leisure industries continue to rehire workers lost to the pandemic, adding 68,000 new jobs. The manufacturing sector added 8,000 jobs in December. The unemployment rate fell one-tenth of a percentage point to 3.5%. Overall, the economy added 4.5 million jobs in 2022.



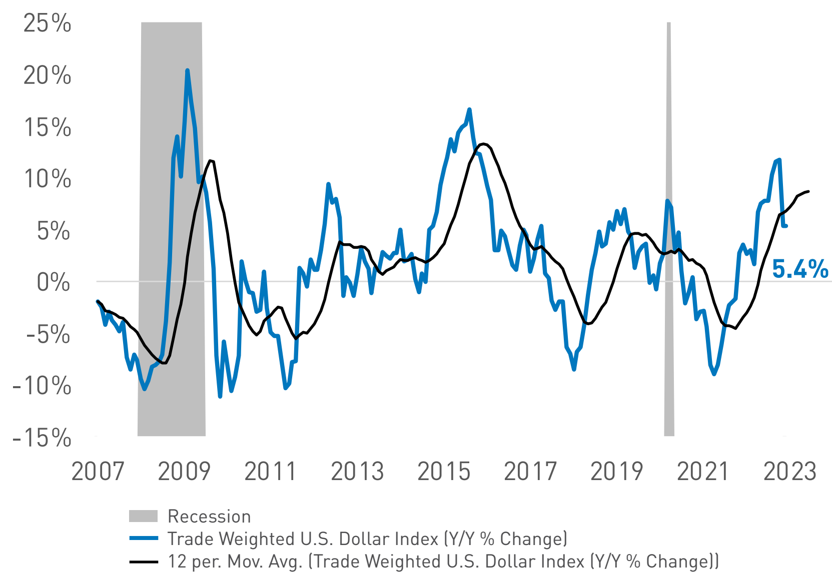
SENTIMENT

The Index of Consumer Sentiment rose to 64.9 in January, up 8.7% from December, but still down 3.4% over the last year. This is the highest level since April 2022. The current conditions index shot up 15% in the last month as a result of improving assessments of personal finances as well as buying conditions for durables. Rising incomes and easing pricing pressures are likely motivating this perspective and both could support strong sentiment in the months to come. At the same time, about two-thirds of consumers expect an economic downturn this year. The debt ceiling debate continues in Washington and previous debates in 2011 and 2013 led to steep declines in consumer sentiment.



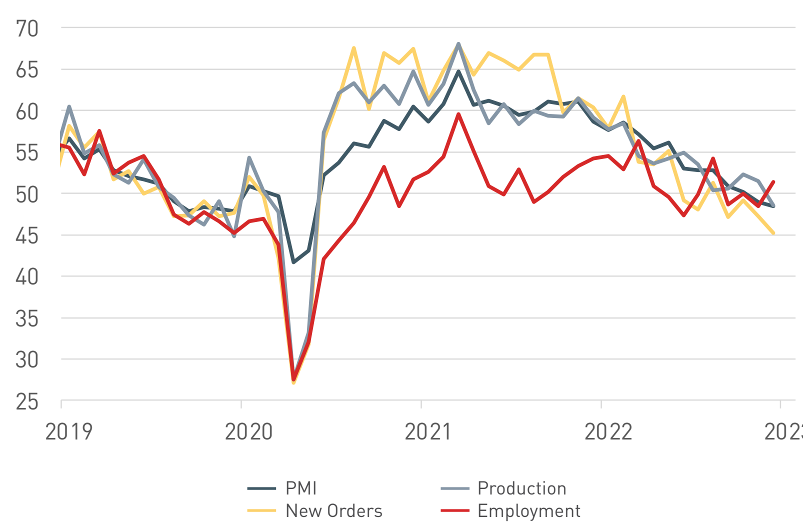
TRADE-WEIGHTED U.S. DOLLAR INDEX

The Trade-Weighted U.S. Dollar Index fell about 2% in the last month. The index is up about 5.4% from year-ago levels, but downward pressure on the dollar is likely to continue in 2023. The Fed is getting closer to the end of its rate-hiking cycle and inflation is likely to drop strongly in the first half of the year. Fed funds futures are pricing the Fed's benchmark rate will peak at 4.9% in June, up from about 4.3% now. Last year a strong interest rate differential was a tailwind for the dollar but the opposite is likely to be the case in 2023. Moreover, better economic growth prospects outside the U.S. will likely add support to other currencies like the Euro.



MANUFACTURERS' SENTIMENT (PMI)

U.S. manufacturing sentiment contracted for a second consecutive month, falling from 49 to 48.4 in December. A number of other indexes also showed contraction. The New Orders Index fell 2 percentage points to 45.2, the fourth consecutive month of decline. The Production Index fell 3 percentage points to 48.5, dropping into contractionary territory. Despite the reported contraction, the manufacturing sector is seeing improved supply chain dynamics. The Supplier Deliveries Index fell to 45.1, indicating faster deliveries. Roughly 66% of manufacturers report customers' inventories are about right. The Prices Index fell to 39.4, the lowest reading since April 2020.



U.S. END MARKETS FOR ELECTRONICS

U.S. industrial production fell 0.7% in December, a third consecutive month of decline. This was the largest monthly decline in over a year. Output is down an annualized 5.2% in the final quarter of the year. Mining output dropped 0.9% during the month. Manufacturing fell 1.3% during the month, and was down 1.9% including downward revisions to prior months.

AUTOMOTIVE PRODUCTS

Auto production fell 1%, while non-auto manufacturing fell 1.4%. Auto production is up 5.1% in the past year, while non-auto manufacturing is down 0.9%.

TRANSIT EQUIPMENT

Transit equipment production fell 2.5% during the month. The sector is up 5% over the last year.

INFORMATION PROCESSING & RELATED EQUIPMENT

Production in the information processing and related equipment sector fell 0.8% during the month. The sector is now down 0.9% over the last year.

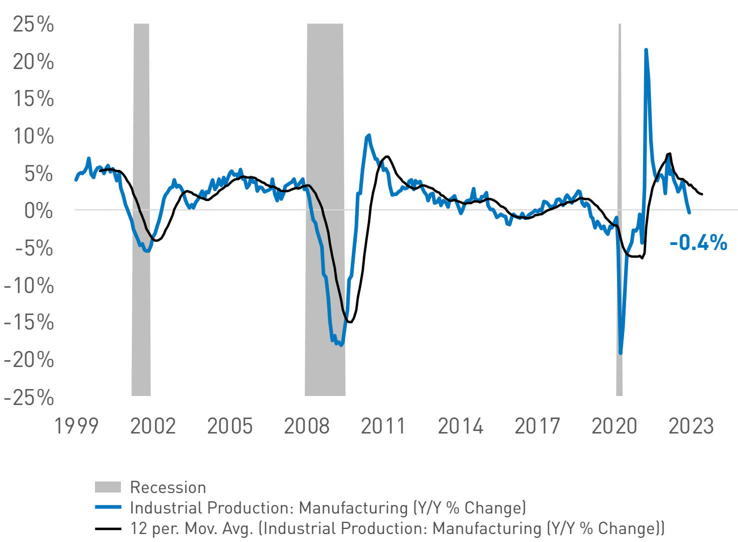
INDUSTRIAL & OTHER EQUIPMENT

The industrial sector fell 2.2% during the last month. The sector is still up 2.9% over the last year.

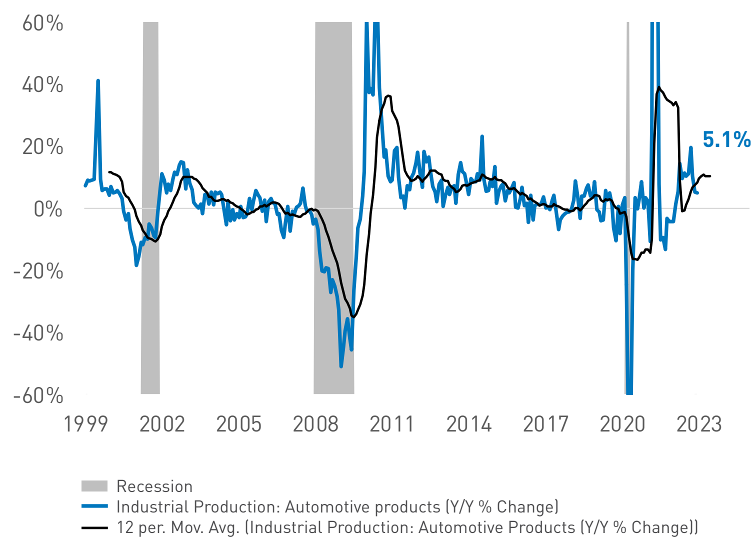
DEFENSE & SPACE EQUIPMENT

The defense and space equipment segment rose 1% to another new all-time high. The sector is up 8.6% over the last year and 16.7% since the pandemic began.

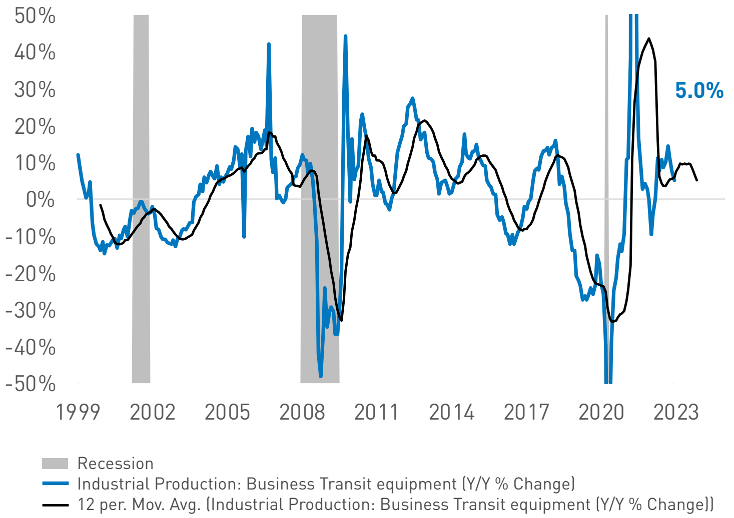
Manufacturing



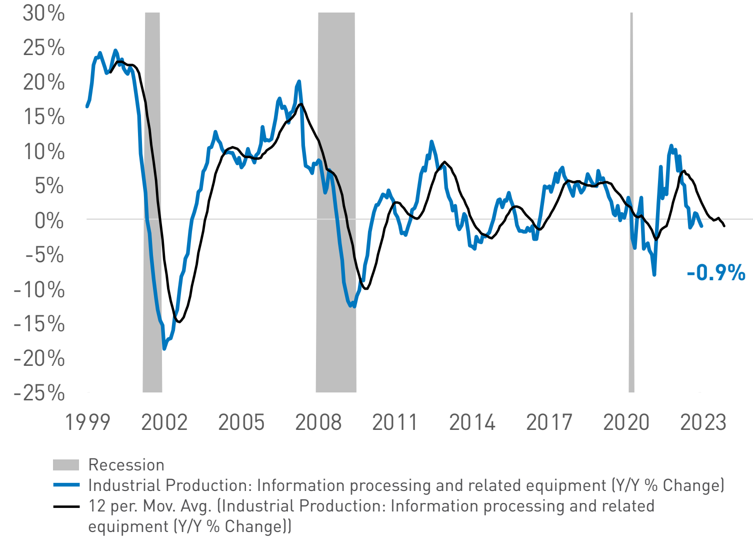
Automotive Products



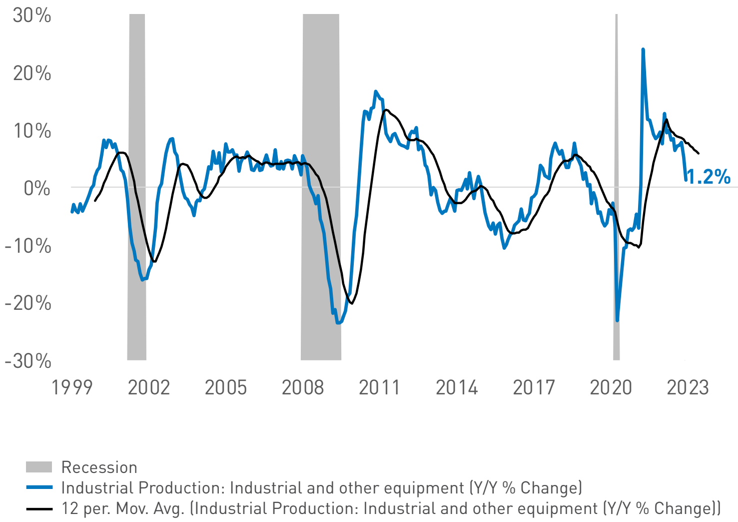
Business Transit Equipment (Y/Y % Change)



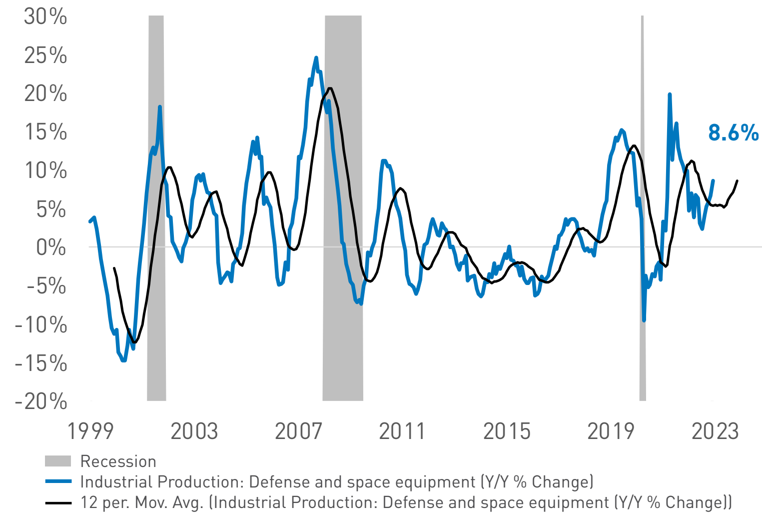
Information Processing & Related Equipment (Y/Y % Change)



Industrial & Other Equipment (Y/Y % Change)



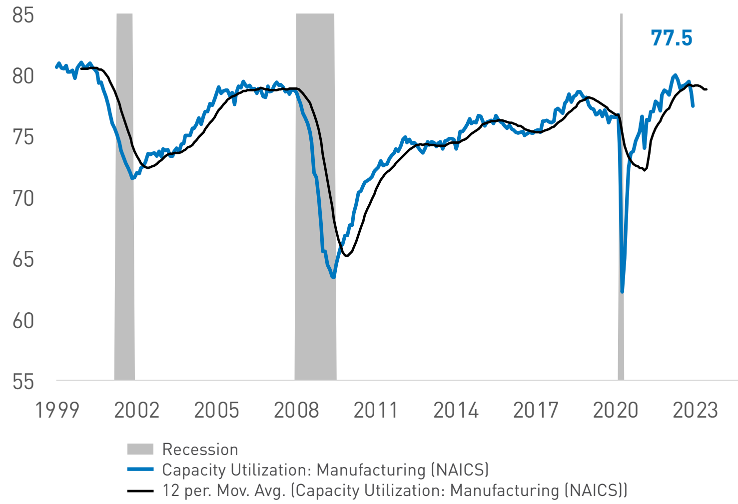
Defense & Space Equipment (Y/Y % Change)



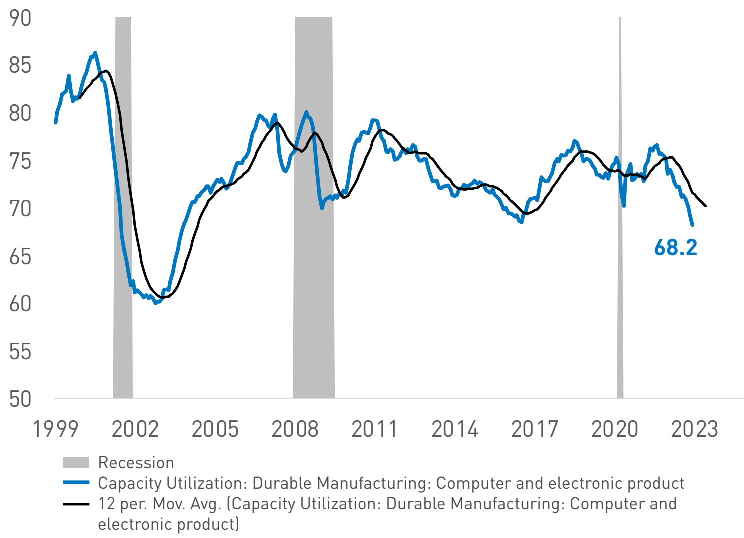
MANUFACTURING CAPACITY UTILIZATION

Overall capacity utilization fell from 79.4% to 78.8% in December. Manufacturing capacity fell from 78% to 77.5%. Computer and electronic production capacity utilization fell to 68.2. Electrical equipment, appliances and components utilization fell 1.3 percentage points to 80%. Utilization in the auto sector fell 1.1% to 73.3%. Capacity utilization in the aerospace and miscellaneous transportation equipment sector inched up again this month to 75.7%.

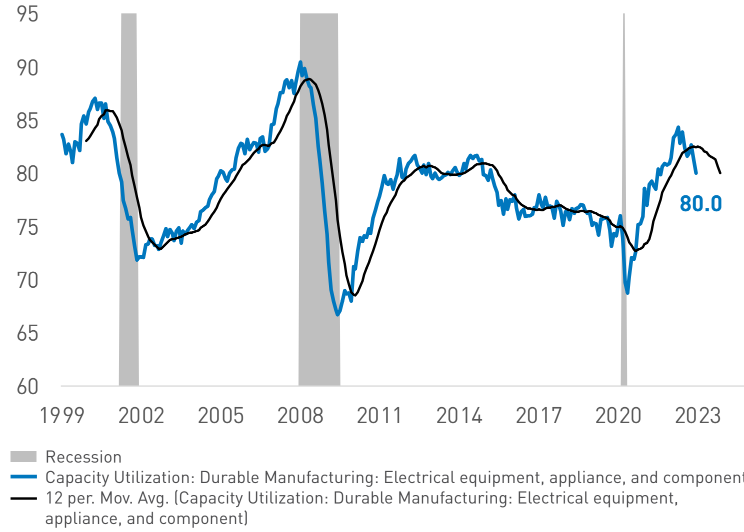
Manufacturing (NAICS)



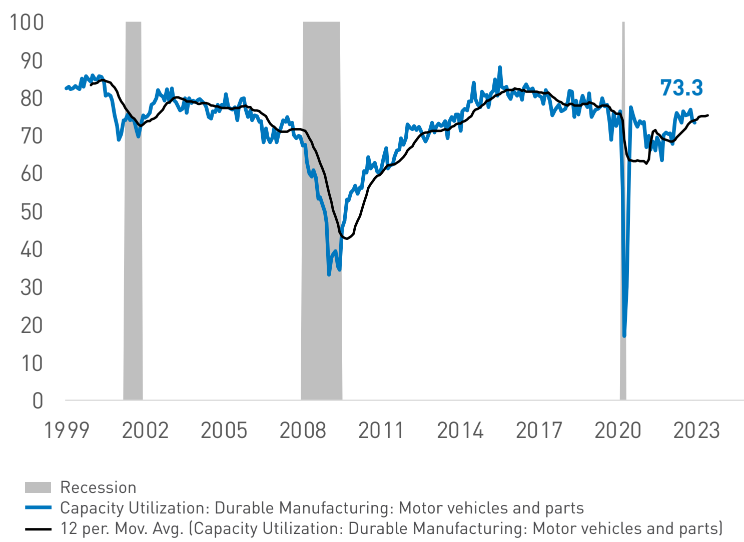
Computer & Electronic Product



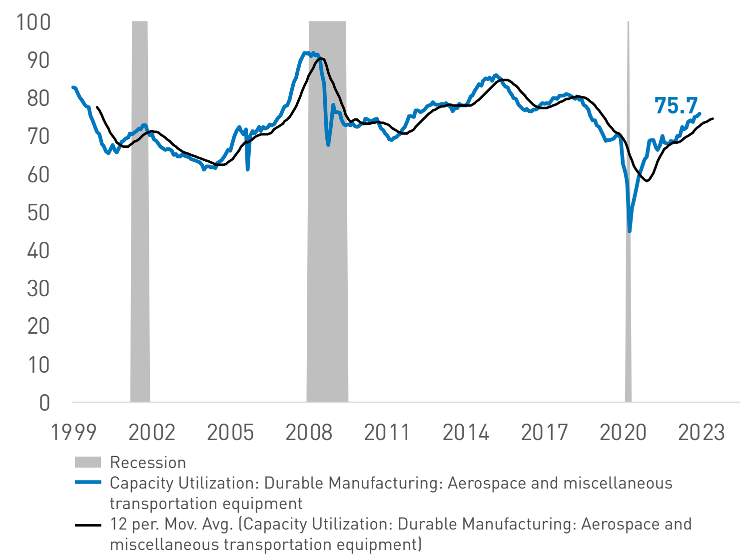
Electrical Equipment, Appliance, & Component



Motor Vehicles & Parts



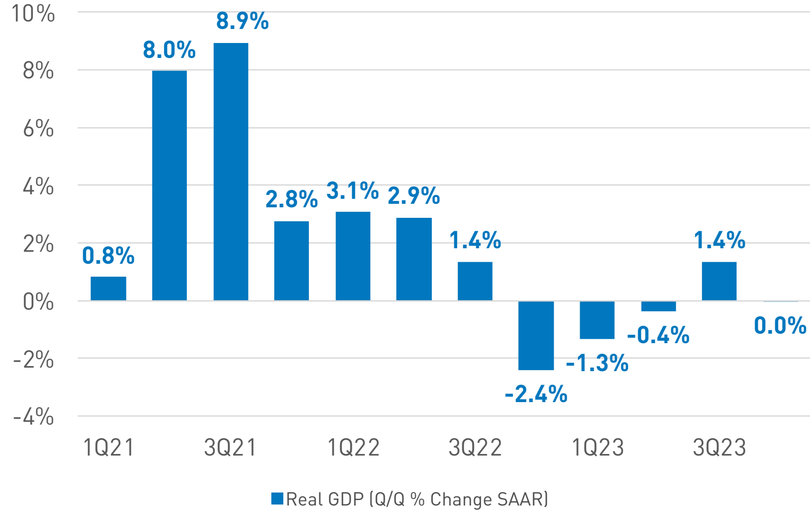
Aerospace & Miscellaneous Transportation Equipment



EUROPEAN OUTLOOK

ECONOMIC GROWTH

Economic growth in the euro area surprised to the upside in Q4, eking out 0.1% growth in the face of an expected contraction. The EU's economy remained flat in Q4. Year-over-year, the euro area is up 1.9% while the EU is up 1.8%. Germany's economy contracted during the quarter, falling 0.2%, but France rose 0.1% and Spain rose 0.2%. Germany has likely entered a short and shallow recession that will end in the first half of 2023. During Q4, Ireland's economy rose a strong 3.5%. The second highest growth rate during the quarter was recorded by Latvia (+0.3%) which was followed by Spain and Portugal (both +0.2%). Energy prices moderated in the latter part of 2022 which likely provided some relief for the eurozone.

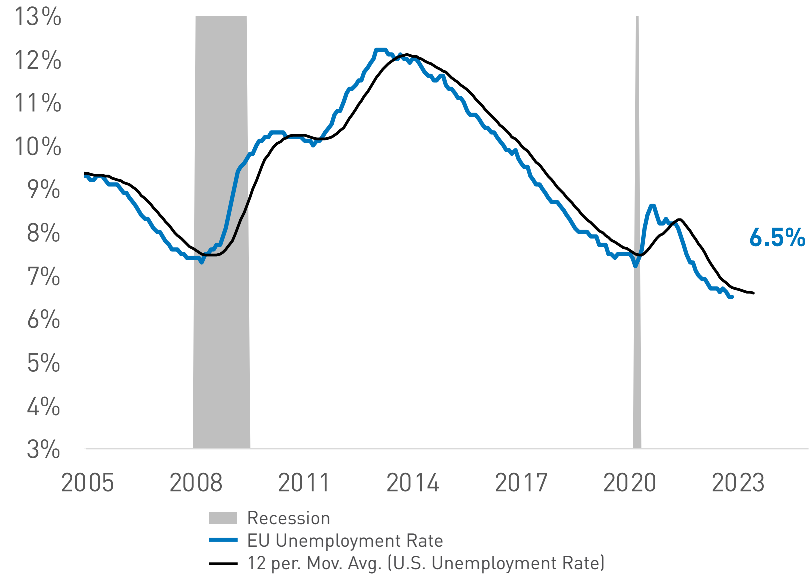


	Q/Q PERCENTAGE CHANGE				Y/Y PERCENTAGE CHANGE			
	2022Q1	2022Q2	2022Q3	2022Q4	2022Q1	2022Q2	2022Q3	2022Q3
EURO AREA	0.6%	0.9%	0.3%	0.1%	5.5%	4.4%	2.4%	1.9%
EU (27)	0.8%	0.7%	0.3%	0.0%	5.6%	4.4%	2.5%	1.8%
GERMANY	0.8%	0.1%	0.5%	-0.2%	3.5%	1.7%	1.4%	1.1%
FRANCE	-0.2%	0.5%	0.2%	0.1%	4.8%	4.2%	1.0%	0.5%
ITALY	0.1%	1.1%	0.5%	-0.1%	6.4%	5.0%	2.7%	-0.4%
SPAIN	0.0%	2.2%	0.2%	0.2%	6.9%	7.8%	4.8%	2.7%

	2023 ECONOMIC GROWTH (GDP % CHANGE)	2024 ECONOMIC GROWTH (GDP % CHANGE)
EURO AREA	-0.1%	1.4%
GERMANY	-0.5%	1.6%
FRANCE	0.1%	1.3%
NETHERLANDS	0.3%	1.6%

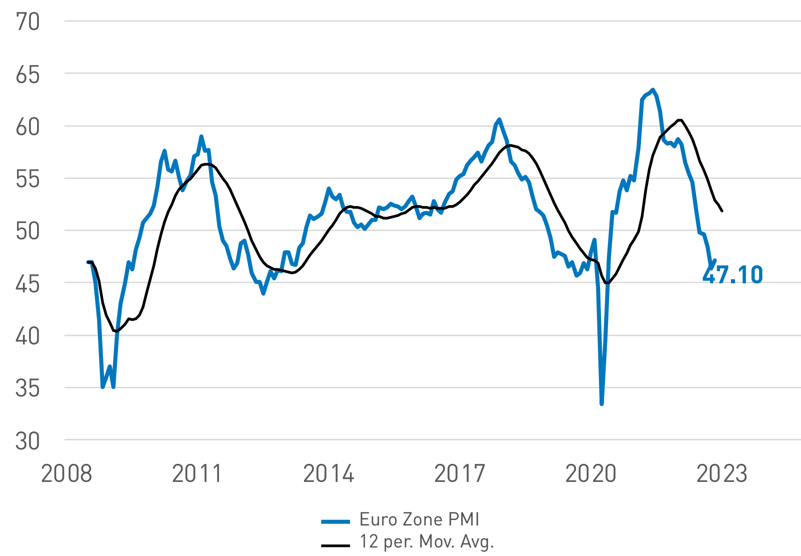
EMPLOYMENT

The unemployment rate for the euro area remained flat in November at 6.5% for the second consecutive month. The euro area seasonally-adjusted unemployment rate was down from 6.6% in September 2022 and from 7.1% in November 2021 The EU unemployment rate also held steady at 6.0% in November 2022, down from 6.1% in September 2022 and down from 6.5% in November 2021. Czechia saw its unemployment rate increase 0.5 percentage points but it remains low at 2.7% and is the lowest unemployment rate in Europe. Spain reported the highest unemployment rate at 12.4%. Germany's unemployment rate remained unchanged at 3% while France and Italy both reported a decline of 0.1 percentage points in November.



MANUFACTURERS' SENTIMENT (PMI)

The S&P Global Eurozone Manufacturing PMI moved higher in November, increasing from 46.4 to 47.1, but remains in contractionary territory for the fifth consecutive month. All countries reported contractionary levels, suggesting sentiment remains subdued. The eurozone's goods-producing sector is still declining, although the rates of decline in output and new orders appear less severe than October's aggressive levels. Inflationary pressures are also easing due to weaker demand and less strain on suppliers. The level of new orders fell again, as the euro area and the broader global economy continues to deteriorate. Firms remain pessimistic about the outlook. Manufacturing output levels fell in November for a sixth straight month. Firms are cutting production levels as orders continue to moderate. Companies are showing some hesitation to place orders given the economic uncertainty, sufficient stock levels and high selling prices.



E.U. END MARKETS FOR ELECTRONICS

Manufacturing output rose in November after a one month decline in October. Output rose 1.3% (month-on-month) and is up 3.4% over the last year.

COMPUTER, ELECTRONIC, & OPTICAL PRODUCTS

The electronics industry, which includes categories such as components, loaded boards, computers, communications equipment, and consumer electronics, rose 2% (month-on-month) in November. The sector is up 17.6% over the last year.

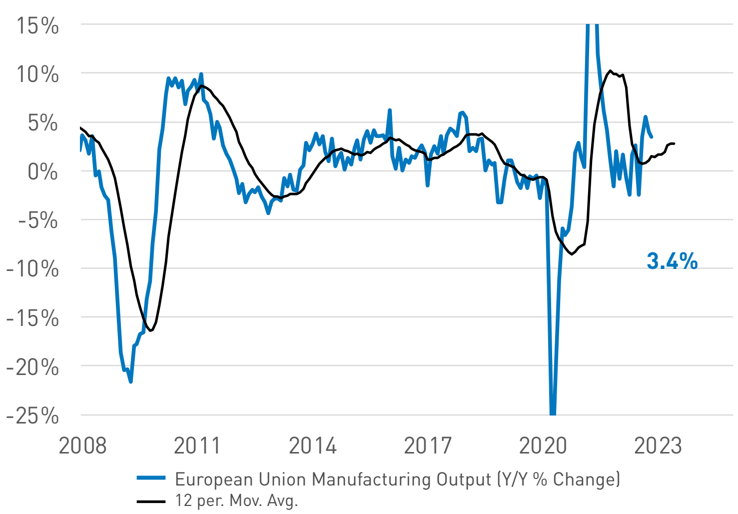
MOTOR VEHICLES

Motor vehicle manufacturing output rose 5.9% (month-on-month) in November. The sector is up 16.4% over the last year.

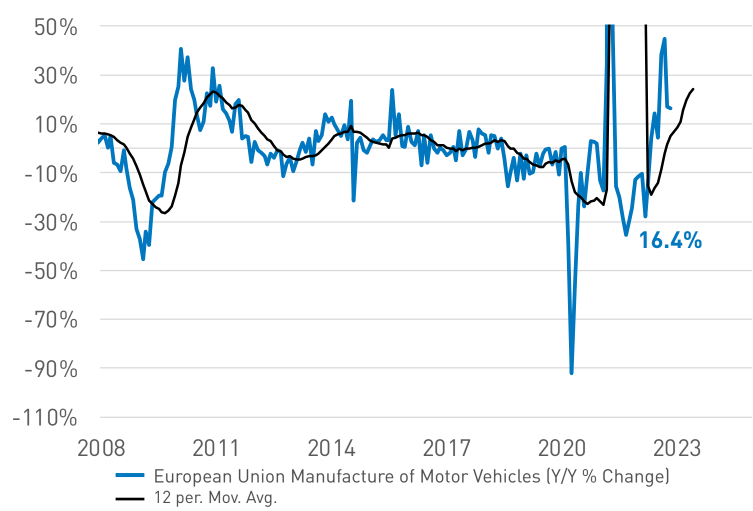
AIR & SPACECRAFT & RELATED MACHINERY

The air and spacecraft manufacturing sector rose 1.2% in November. The segment is up 11.3% over the last year.

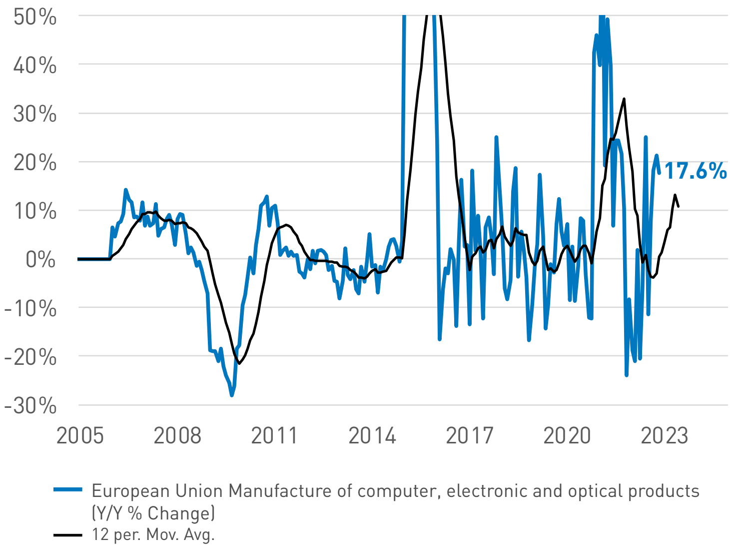
E.U. Manufacturing Output



E.U. Manufacture of Motor Vehicles



E.U. Manufacture of Computer, Electronic & Optical Products (Y/Y % Change)



E.U. Manufacture of Air & Spacecraft & Related Machinery (Y/Y % Change)