BUILD ELECTRONICS BETTER

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ECONOMIC OUTLOOK

The themes I offered last month continue to play out. Global demand remains strong, but the economic environment is softening. We are starting to see some early signs that demand is slowing. While there are still many reasons to remain optimistic, growth moving forward will be more difficult to achieve.

This month we raised our growth outlook for Europe and lowered it somewhat for the United States and China. Overall, we are less encouraged by the current global environment and have marked down our overall forecast. The majority of our downward revision is a result of weakening conditions in the United States.

The pandemic remains the largest risk factor right now. Surging new COVID-19 cases are limiting the potential for growth. In the United States, we saw hiring slow over the last month, and we've had a steep drop in consumer sentiment. While spending has held up well thus far, especially for durable goods, the emotional response to risks like the pandemic and rising inflation could stymie spending. Incoming data suggests the United States might be on the downward slope of infections, but it will take some time to regain lost momentum.

While supply chain disruptions have made it difficult to do business, they are also limiting growth. For example, Kelley Blue Book recently reported that nearly half of car shoppers are exiting the market and delaying their purchase for the next several months due to the impacts of the global microchip shortage on the automotive industry.

On the manufacturing front, order flow remains solid, but these orders are coming at a high cost. Transportation bottlenecks continue to hinder the delivery of key inputs. Lead times have lengthened tremendously and shortages abound. As a result of strong demand and supply disruptions, prices are up significantly throughout the supply chain. I spoke with a manufacturer recently who told me their cost for intermodal freight has increased from $3,000 a container to $25,000 a container. When the goods inside are only valued at $50,000, it's hard to imagine you can raise prices sufficiently to offset higher costs.

Earlier this month, IPC released a new report examining the current state of the global electronics supply chain. This research will be updated monthly in order to gauge the current pulse of the industry. The current report summarizes the current conditions well. Let me offer a few of the key findings from this month's report:

The electronics supply chain continues to perform well despite challenging circumstances. Manufacturers are reporting rising orders and improving capacity utilization. There is reason to be optimistic. However, dislocations throughout the supply chain continue to hamper the current environment. Backlogs are rising, and firms expect them to continue rising in the months ahead. Inventories are extremely tight. Only 10% of firms report inventories from suppliers are rising, and firms expect these inventories to remain constrained in the coming months. Manufacturers report supply chain shortages are likely to remain acute. Less than one-tenth anticipate resolution by the end of 2021, with three-fifths believing it won't be resolved until the second half of 2022 or beyond, and no differences by region or industry segment.

The labor market also remains tight. Four-fifths of manufacturers indicate it is difficult to find qualified workers, with approximately half of those experiencing extreme difficulty. Some 68% of firms report labor costs are rising, and only 19% say the ease of recruiting and finding skilled talent is improving. The outlook over the next six months is expected to see little change. Some 65% of firms expect labor costs to rise, and only 23% expect the ease of recruiting and finding skilled talent to improve.

Supply shortages are extending lead times and raising prices. Nine in 10 manufacturers say lead times are currently up, with one-third reporting they are up more than eight weeks. Some 90% of the electronics supply chain report the semiconductor shortage together with other supply issues have resulted in increased price paid to suppliers.

Rising costs are hurting profitability. Some 90% of firms report rising material costs, and the outlook for material costs is little improved. Labor costs are rising for 68% of firms, and 65% of firms expect labor costs to continue rising in the coming months. As a result of higher costs and disrupted production, profit margins are shrinking.

Backlogs remain high, so it will take some time before all of these constraints are resolved. Moreover, inventory levels are historically low and companies will want to replenish their inventory even in the face of weaker demand. Both of these facts buoy my expectations for demand and for the electronics manufacturing sector. Moreover, because lead times are excessively long right now, it should give manufacturers additional time to respond to weakening demand in order to avoid large inventory overhangs.

90%

The electronics supply chain is reporting higher costs, with 90% of firms reporting rising material costs. The outlook for material costs is little improved.

5.9%

The outlook for economic growth in the United States deteriorated somewhat. GDP is now expected to grow 5.9% in 2021.

8+ WEEKS

Nine in 10 manufacturers say lead times are currently up, with one-third reporting they are up more than eight weeks.

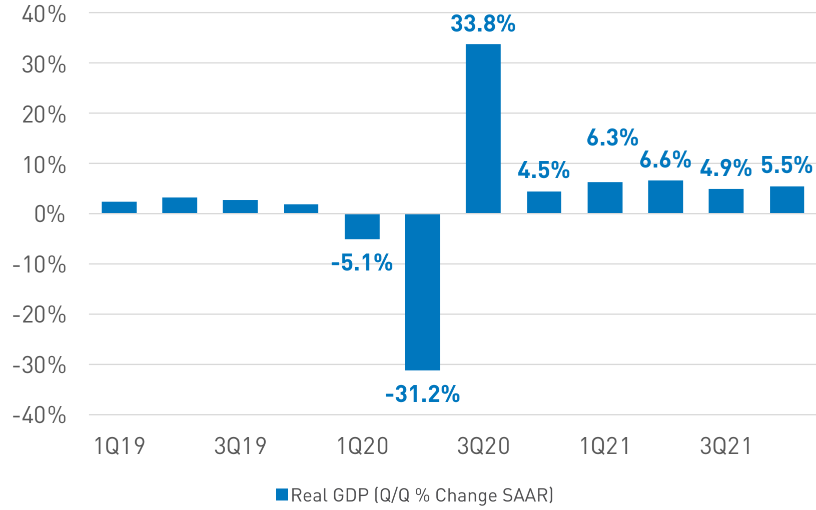
15.4%

The European electronics industry, which includes categories such as components, loaded boards, computers, communications equipment and consumer electronics, rose 2.8% during July and is up 15.4% over the last year.

U.S. OUTLOOK

ECONOMIC GROWTH

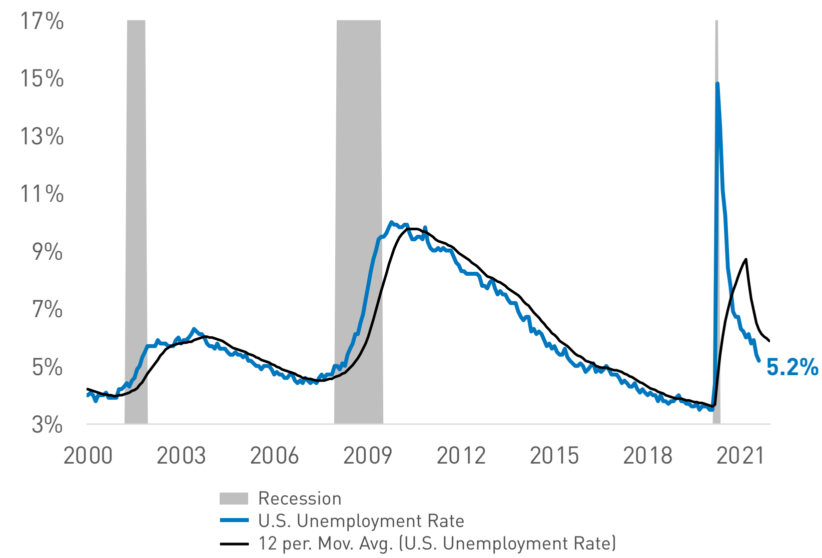
Second quarter GDP was revised up one-tenth of a percentage point to 6.6% on a seasonally adjusted annualized basis. The largest positive contributions to GDP during the quarter were consumer spending and business investment. Consumer spending rose at an 11.9% annual rate during the quarter, and business investment in intellectual property was up 14.6% annualized. A decline in inventories was the biggest drag on growth during the quarter. Inventories fell as businesses continued to struggle with supply chain disruptions in the face of strong demand. The decline in inventories has been pronounced and will need to be replenished at some point, suggesting there is the prospect for growth in the pipeline.



	2021 ECONOMIC GROWTH (GDP % Change)	2022 ECONOMIC GROWTH (GDP % Change)	2021 EXCHANGE RATE (v. USD)	2022 EXCHANGE RATE (v. USD)
UNITED STATES	5.9%	4.3%	N/A	N/A
CANADA	5.7%	4.1%	1.26	1.26
MEXICO	5.9%	3.0%	20.28	20.63
EURO AREA	4.8%	4.2%	1.19	1.22
CHINA	8.4%	5.7%	6.48	6.45

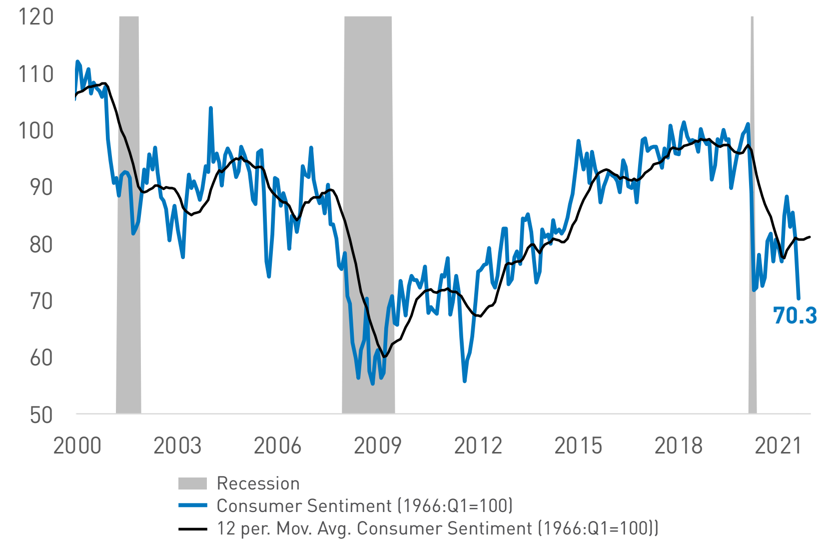
EMPLOYMENT

The US labor market recovery slowed in August — the result of rising COVID cases. Nonfarm payrolls increased 235,000 in the month, well below the consensus expectation of 733,000. Restaurants and bars saw jobs decline by 42,000, although it had increased by 290,000 in the prior month. At the same time, transportation and warehousing rose 53,000 and manufacturing rose 37,000 as companies worked to remedy supply chain issues and increase production even in the face of massive shortages. Civilian employment, an alternative measure of jobs that includes small businesses, increased 509,000 during the month. The unemployment rate dropped from 5.4% in July to 5.2% in August — the lowest level since the start of the pandemic. Average hourly earnings rose 0.6% in August and are up 7.8% from pre-pandemic levels. Total hours worked increased 0.2% in August and are up 5.1%. The economy is still 5.3 million jobs below pre-pandemic levels, but those working are earning more.



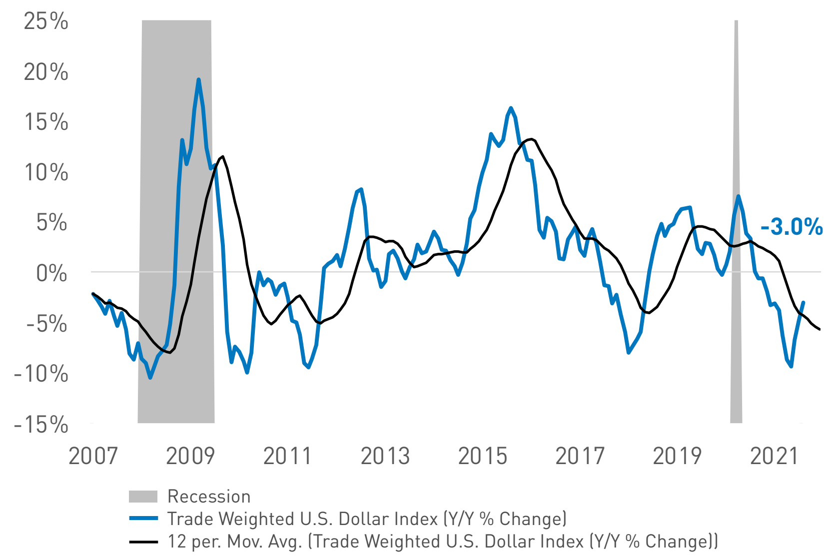
SENTIMENT

Consumer sentiment in the United States fell precipitously in August. The Consumer Sentiment Index declined over 13%, falling 10.9 points to 70.3. Consumers reported the least favorable economic prospects in more than a decade. Consumers are feeling several pressures that are clouding their optimism, including rising inflation, small wage gains and slower declines in unemployment. The decline also likely conveys an emotional response from consumers who might have previously thought the pandemic would soon be behind them and things would return to normal. One in five households in August cited the negative impact of inflation on their budgets, up from one in 20 to begin 2021, highlighting the impact that rising prices are having on consumer sentiment.



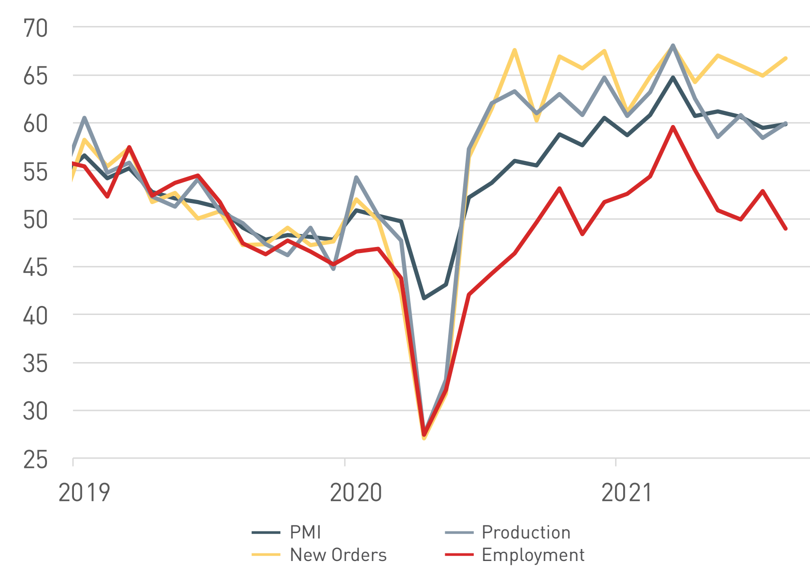
TRADE-WEIGHTED U.S. DOLLAR INDEX

The dollar moved marginally higher in August — the third consecutive monthly increase. This is likely the result of deteriorating global sentiment as the pandemic outlook worsened and economic activity slowed. As pandemic-related uncertainties recede, the dollar is likely to slip lower. The Federal Reserve's plan to tighten monetary policy and taper bond purchases could help offset some less favorable factors for the dollar including the wide trade deficit and rising rates of inflation. Conversely, if the perception of global risk intensifies, the dollar could continue its rally into the coming months.



MANUFACTURERS' SENTIMENT (PMI)

The manufacturing sector expanded again in August — the 15th consecutive month of growth. But it wasn't without challenges. The August Manufacturing PMI increased 0.4 percentage points to 59.5%, driven in part by strong order flow. The New Orders Index increased 1.8 percentage points to 66.7%. At the same time, manufacturers are seeing record-long lead times, shortages and significantly higher material costs. Customers' inventories are hovering at very low levels, and backlogs remain high. The ISM Employment Index contracted during the month, highlighting the difficulty to hire and retain workers.



U.S. END MARKETS FOR ELECTRONICS

Industrial production increased in August, rising 0.4%. Overall production is up 5.9% over the last year but down 1.1% over the last two years. Manufacturing production increased 0.1% during the month and is 1.5% above pre-pandemic levels. The Federal Reserve estimates industrial production would have risen 0.7% without Hurricane Ida-related shutdowns and delays.

AUTOMOTIVE PRODUCTS

Auto production declined 0.1% as shortages continue to hamper production levels. Output is 2.5% below pre-pandemic levels, and 4.3% over the last year, despite strong demand.

TRANSIT EQUIPMENT

Transit equipment production rose 1% over the last month. The sector is up 8.1% over the last year but down 21.5% from two years ago.

INFORMATION PROCESSING & RELATED EQUIPMENT

Production in the information processing and related equipment sector increased 1.2% in the month. The sector is up 6.9% over the last year and 17.4% from two years ago.

INDUSTRIAL & OTHER EQUIPMENT

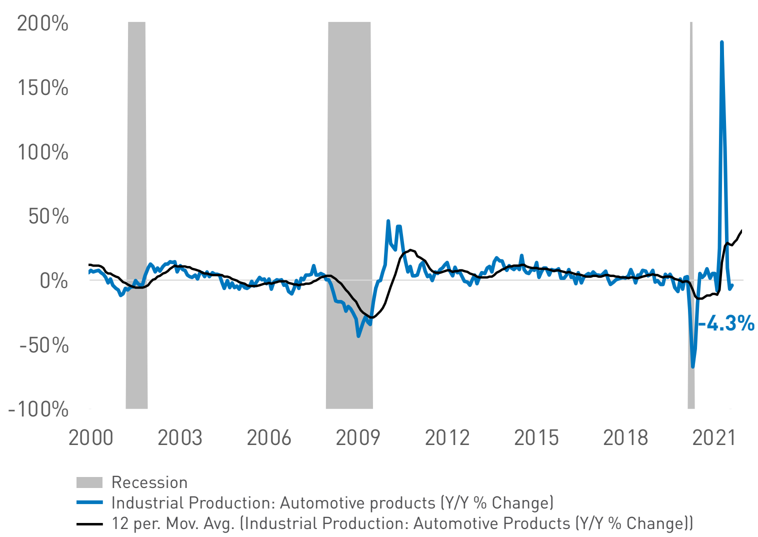
The industrial segment was flat last month. The sector is up 10.2% over the last year and now up 1.3% from the start of the pandemic.

DEFENSE & SPACE EQUIPMENT

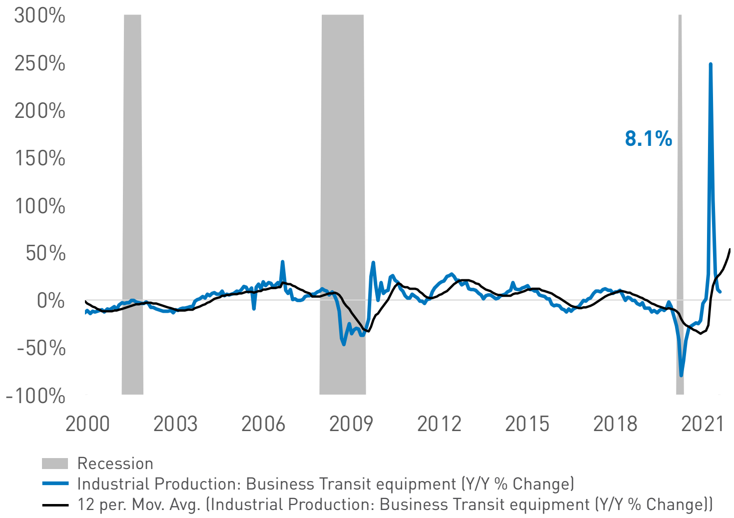
The defense and space equipment segment was flat last month. The sector is up 14.9% over the last year and up a strong 17% over the last two years.

Manufacturing

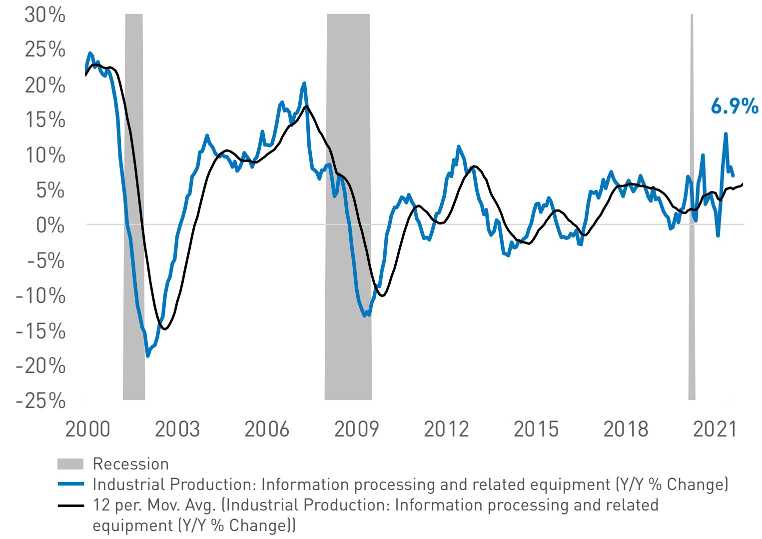
Automotive Products



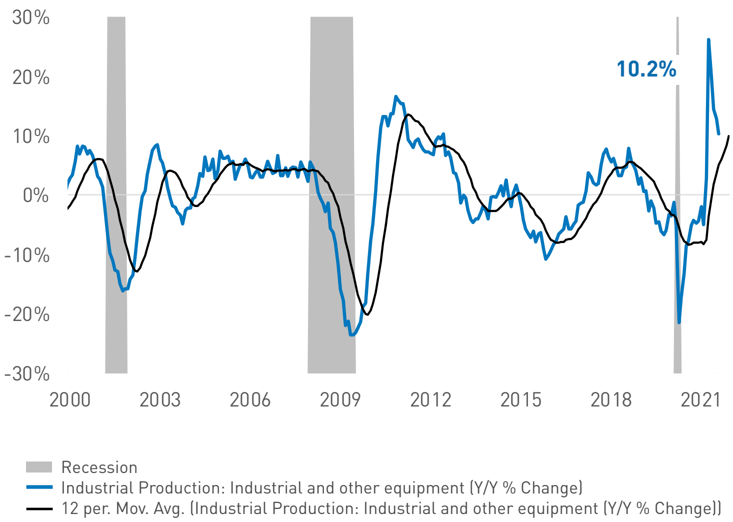
Business Transit Equipment (Y/Y % Change)



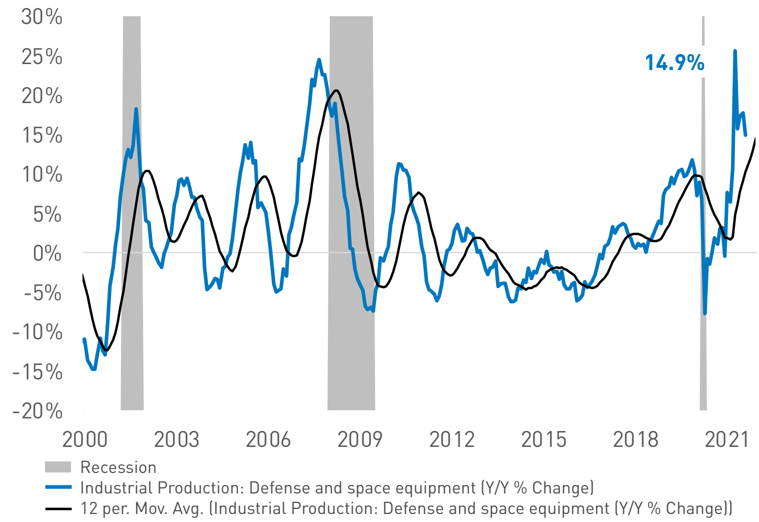
Information Processing & Related Equipment (Y/Y % Change)



Industrial & Other Equipment (Y/Y % Change)



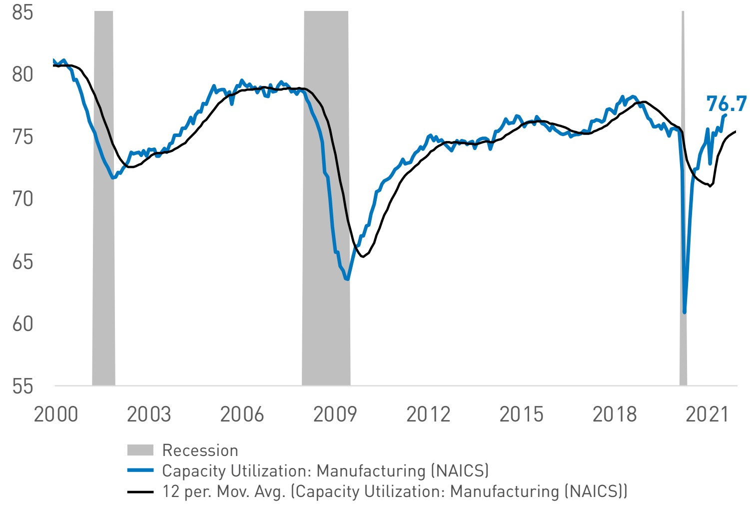
Defense & Space Equipment (Y/Y % Change)



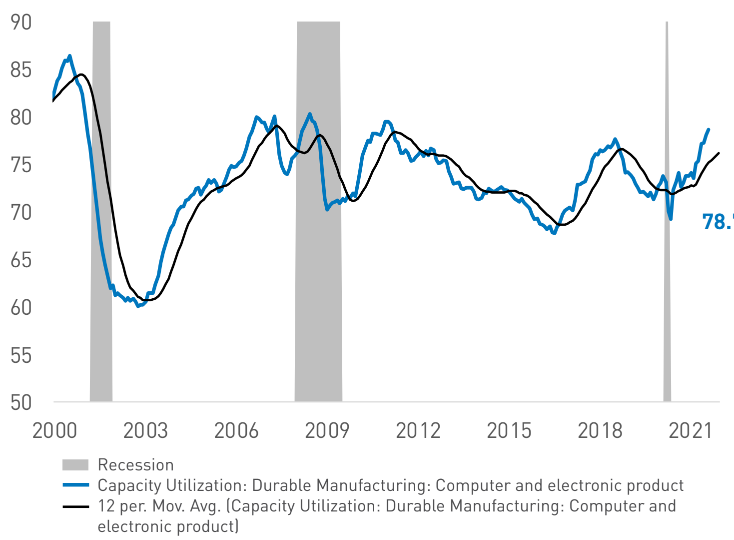
MANUFACTURING CAPACITY UTILIZATION

The industrial and manufacturing sectors continue to recover. Overall capacity utilization was up 0.2 percentage points to 76.4%, despite shutdowns related to Hurricane Ida, shortages and other supply chain disruptions that are hindering production levels. Manufacturing capacity utilization rose 0.1 percentage points to 76.7%, and computer and electronic production capacity utilization moved to 78.7%. Electrical equipment, appliances and components utilization fell during the month, dropping 0.83 percentage points to 79.9%. Utilization for the motor vehicles and parts sector was relatively flat, a positive result given how supply shortages have significantly restricted auto production. Finally, utilization in the aerospace and miscellaneous transportation equipment sector increased one-tenth of a percentage point to 72.8%.

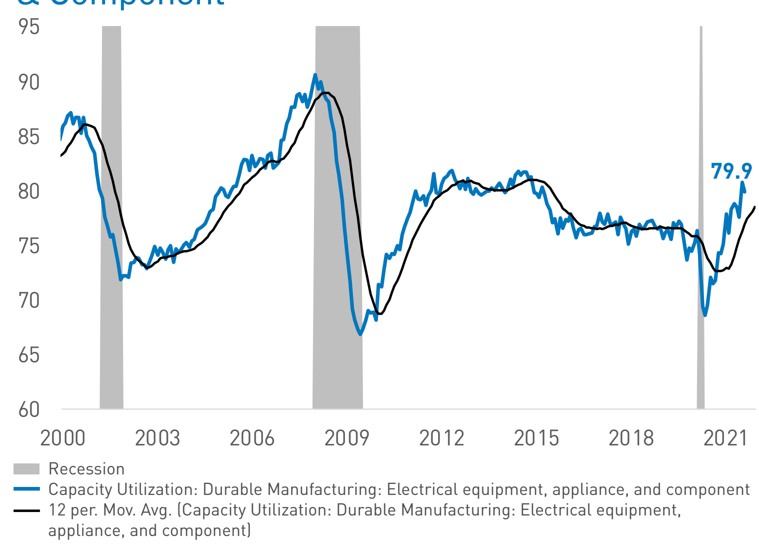
Manufacturing (NAICS)



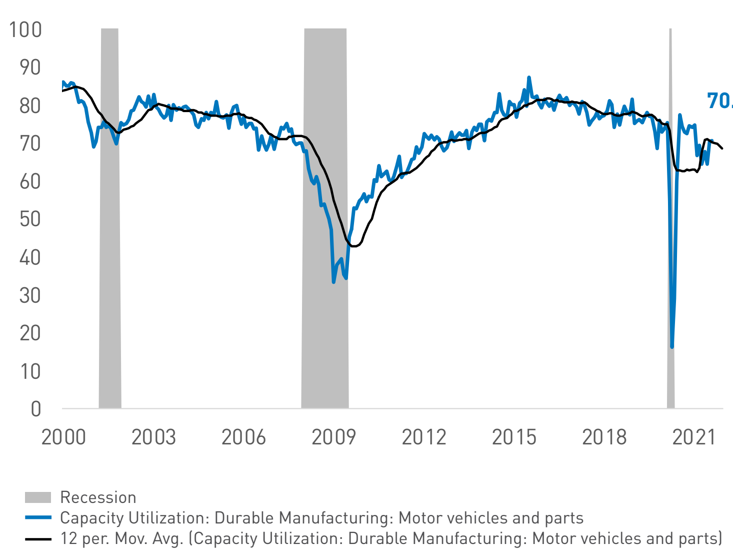
Computer & Electronic Product



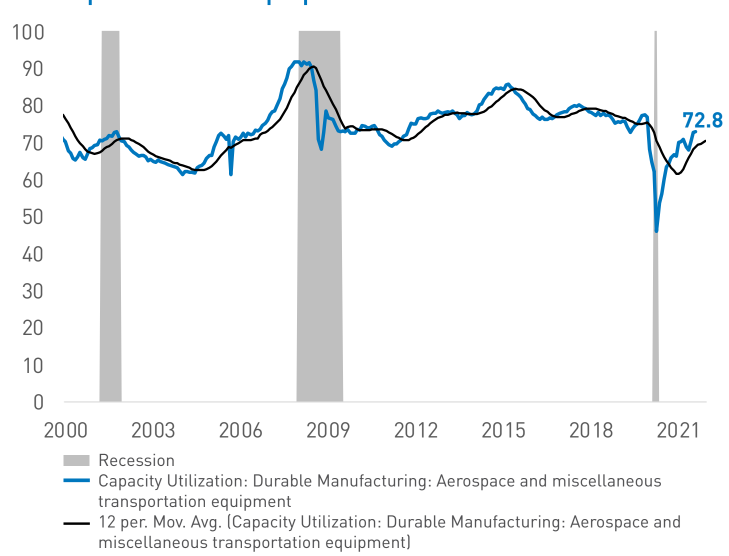
Electrical Equipment, Appliance, & Component



Motor Vehicles & Parts



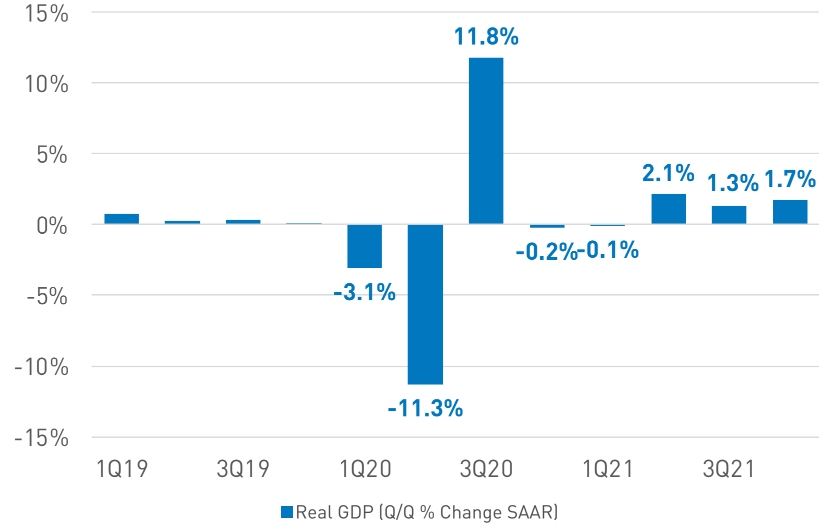
Aerospace & Miscellaneous Transportation Equipment



EUROPEAN OUTLOOK

ECONOMIC GROWTH

GDP in the euro area was revised higher over the last month. GDP is now estimated to have risen 2.2% during the quarter (2.1% in the European Union). On an annualized basis, GDP rose 9.2% in the euro area and 8.8% in the European Union, outpacing 6.6% GDP growth in the United States over the same period. The reemergence of COVID had stymied Europe's recovery early in the year, but Europe is quickly getting growth back on track. Recall that in the first quarter of 2021, GDP had declined by 0.3% in the euro area and 0.1% in the European Union. During the quarter, Ireland (6.3%), Portugal (4.9%) and Latvia (4.4%) experienced the fastest growth of any Member State. Only Malta (-0.5%) and Croatia (-0.2%) reported negative growth.

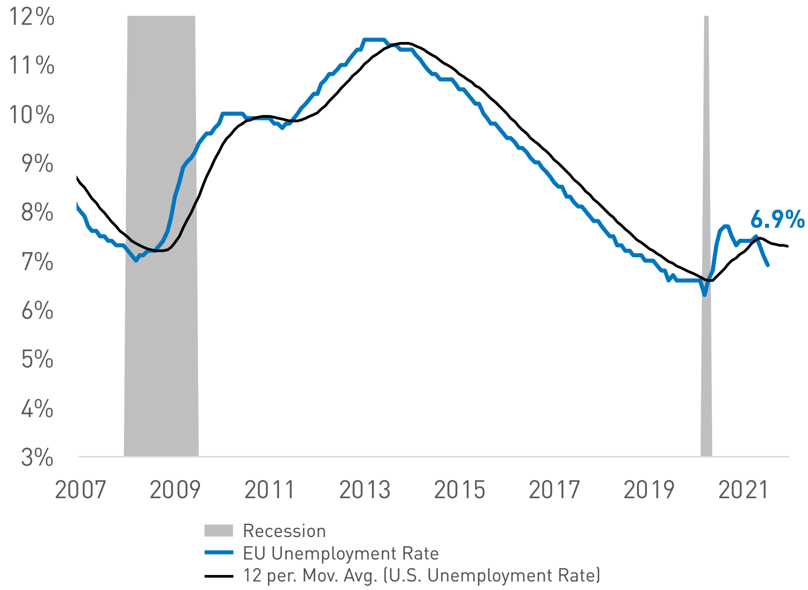


	Q/Q PERCENTAGE CHANGE				Y/Y PERCENTAGE CHANGE			
	2020Q3	2020Q4	2021Q1	2021Q2	2020Q3	2020Q4	2021Q1	2021Q2
EURO AREA	12.6%	-0.4%	-0.3%	2.2%	-4.0%	-4.4%	-1.2%	14.3%
EU (27)	11.8%	-0.2%	-0.1%	2.1%	-3.9%	-4.1%	-1.2%	13.8%
GERMANY	9.0%	0.7%	-2.0%	1.6%	-3.7%	-2.9%	-3.1%	9.4%
FRANCE	18.6%	-1.1%	0.0%	1.1%	-3.6%	-4.3%	1.5%	18.7%
ITALY	16.0%	-1.8%	0.2%	2.7%	-5.2%	-6.5%	-0.7%	17.3%
SPAIN	17.1%	0.0%	-0.4%	2.8%	-8.6%	-8.9%	-4.2%	19.8%

	2021 ECONOMIC GROWTH (GDP % CHANGE)	2022 ECONOMIC GROWTH (GDP % CHANGE)
EURO AREA	4.8%	4.2%
GERMANY	3.1%	4.5%
FRANCE	6.0%	4.1%
NETHERLANDS	3.4%	3.3%

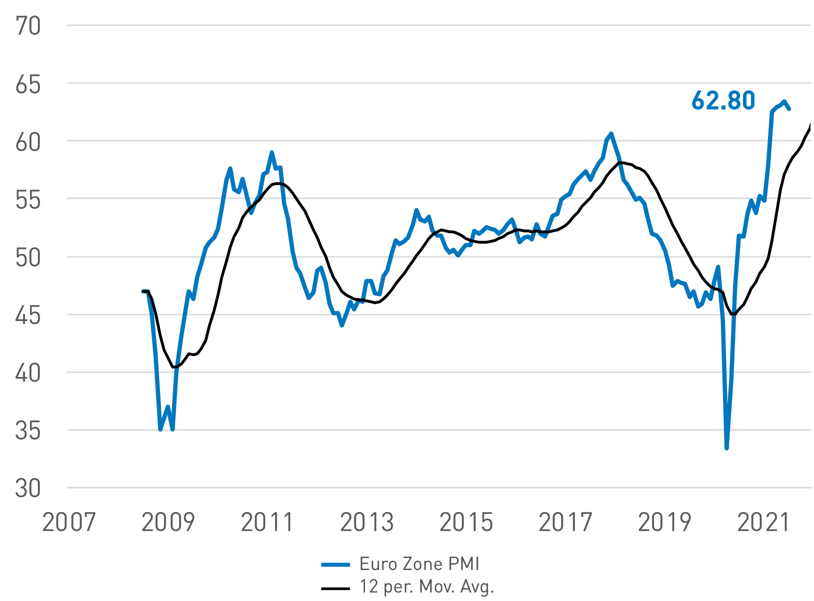
EMPLOYMENT

Employment continues to pick up in Europe, in line with the reopening of the economy and relaxation of COVID-19 restrictions. The euro area unemployment rate in July fell two-tenths of a percentage point to 7.6%. In the European Union, unemployment dipped to 6.9% during the month. The number of those employed increased 0.7% in both the euro area and the European Union in the second quarter of 2021. Recall that employment decreased by 0.2% in both the euro area and the European Union in the first quarter of the year. Hours worked also increased. Hours worked rose 2.7% in the euro area and 2.4% in the European Union in the second quarter of 2021. Compared to the second quarter of 2020, during the onset of the pandemic, hours worked rose 17% in the euro area and 14.7% in the European Union.



MANUFACTURERS' SENTIMENT (PMI)

Similar to last month, manufacturing sentiment remains high in Europe, despite a small loss in momentum over the last month. The Eurozone Manufacturing PMI slipped to 61.4, down from the record high in June of 63.4. The Netherlands once again reported the strongest manufacturing conditions, though Germany, France, Austria and Ireland all reported expansionary environments. Greece reported its highest reading since April 2000, and Italy and Spain both reported improving conditions. The manufacturing sector in Europe is also being hindered by supply chain challenges. Work-in-hand increased at a historic rate — a clear sign of capacity constraints. Inventories remain low, supplier delivery times have lengthened considerably and material costs are up significantly. However, August data did show the first slowdown in cost inflation since prices started rising a year ago.



E.U. END MARKETS FOR ELECTRONICS

Manufacturing output improved strongly in July, rising 1.5%. Manufacturing output is up 8.8% over the last year. Importantly, output is now up on a two-year basis, increasing 1% over July 2019.

COMPUTER, ELECTRONIC & OPTICAL PRODUCTS

The electronics industry, which includes categories such as components, loaded boards, computers, communications equipment and consumer electronics, also increased strongly in July, rising 2.8% during the month. The sector is up 15.4% over the last year and 20.7% over the last two years.

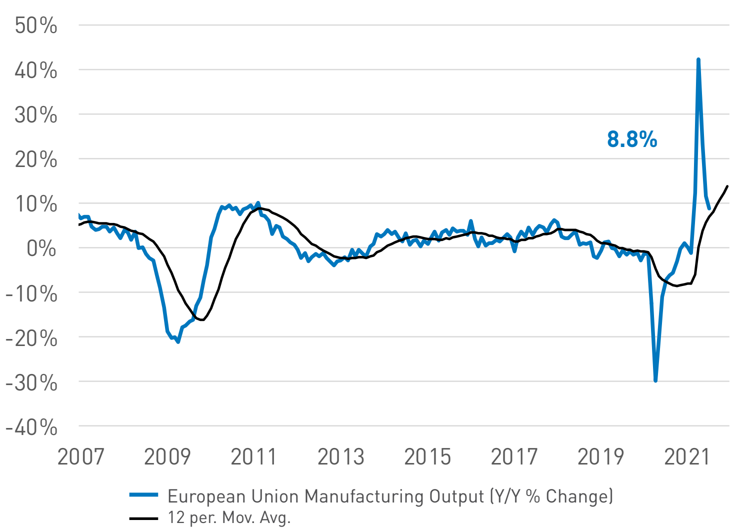
MOTOR VEHICLES

The motor vehicle manufacturing production index decreased another 1.1% in July. Auto production continues to be hampered by supply shortages. Auto production in the European Union remains off 32% from two years ago.

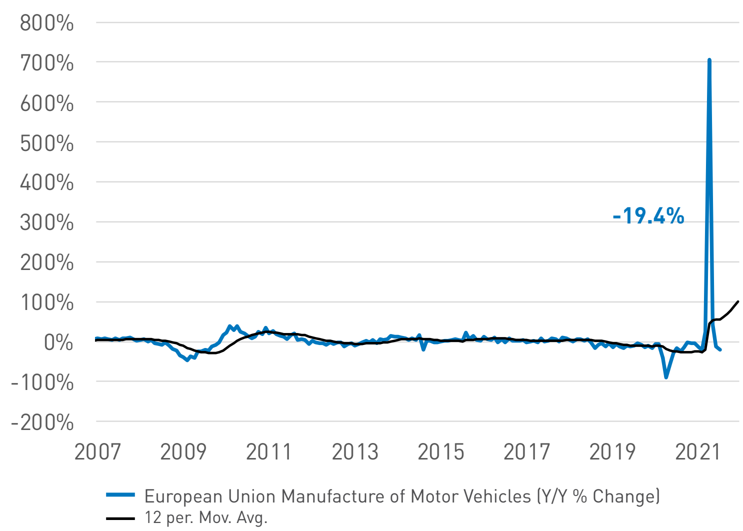
AIR & SPACECRAFT & RELATED MACHINERY

The air and spacecraft manufacturing sector had another strong month, rising 3.6% in July. The segment is now up 3.9% over the last year but down 24.7% over the last two years.

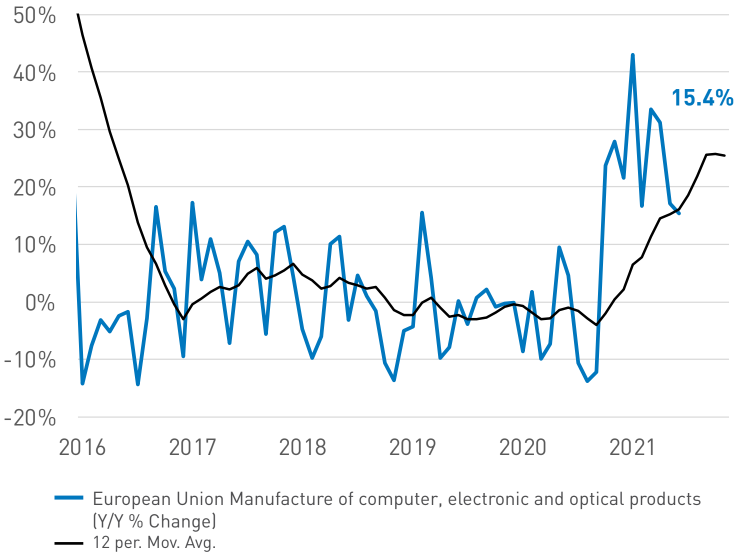
E.U. Manufacturing Output



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)