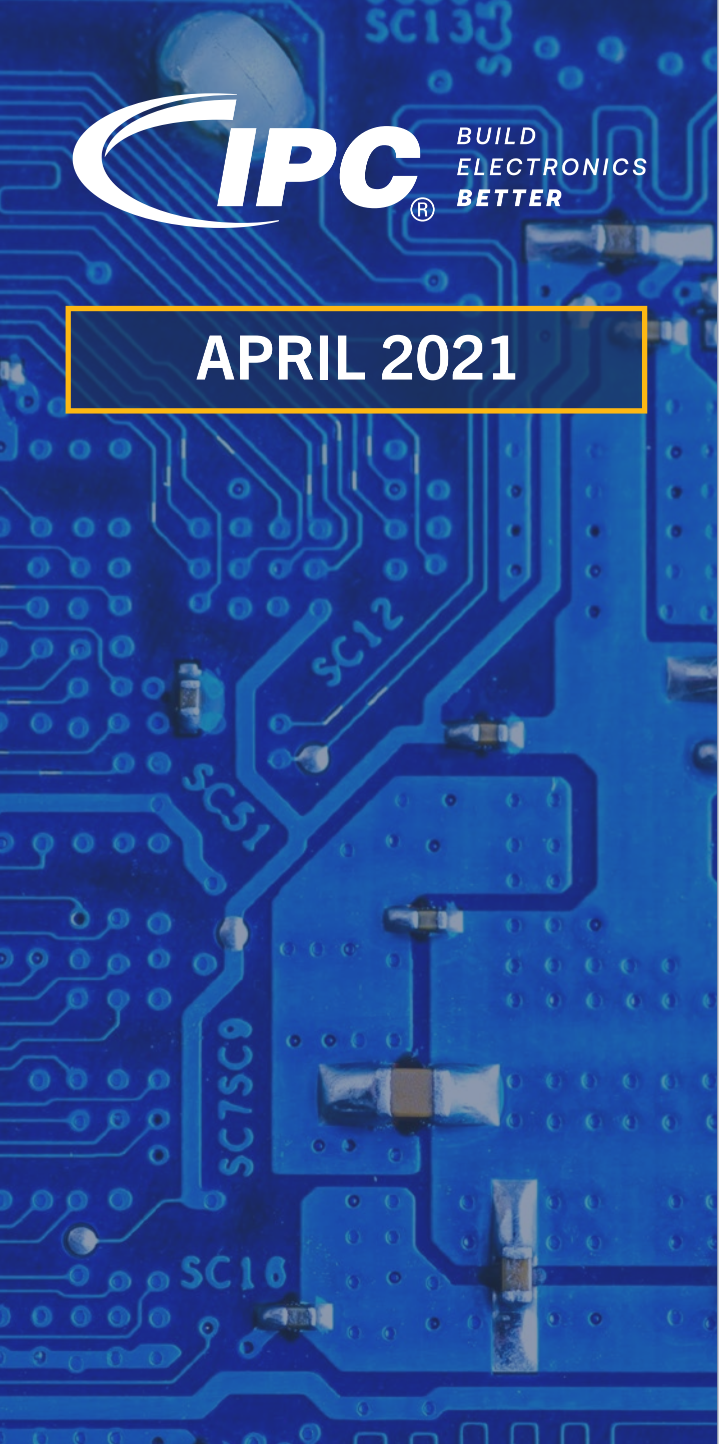

BUILD ELECTRONICS BETTER

APRIL 2021

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ECONOMIC OUTLOOK

The global economic recovery is picking up speed, but there remain risks.

The global economy should grow roughly 5 percent in 2021, driven by growth in the United States and China. The world's two largest economies are seeing accelerated growth. The United States should see first quarter growth eclipse 6 percent (seasonally adjusted annual rate), led by additional fiscal stimulus and the broad lifting of COVID-related restrictions. Monetary policy remains accommodative, which should help to further growth. Finally, consumer and business confidence is roaring back, as vaccination rates increase and consumers appear anxious to spend. The United States is set to grow 6.3 percent during the year.

China's economy grew 18.3 percent in the first quarter, compared to a year ago. This is the strongest year-over-year growth in the country's history. But the growth rate is partially fueled by the weak start to 2020. Recall that China was impacted by COVID-19 early in the year and shut down following Chinese New Year. China's economy grew just 0.6 percent in the first quarter on a quarter-over-quarter basis, down from 3.2 percent in the fourth quarter and below the 1.4 percent consensus estimate. Outside of the first quarter of 2020, 1Q21 was the slowest quarter-on-quarter growth in the past decade. China has set a growth target of "above 6 percent," but we expect the economy to grow roughly 8.4 percent in 2021. This will require finesse. Momentum appears stable, but the economy is already above pre-pandemic levels and policy support is waning. We'll likely see some quantitative tightening into the second quarter as credit growth slows. Retail sales, a key measure of domestic economy health, look strong through February. Industrial production was up 14.1 percent in March, compared to a year earlier. And industrial profits were strong as the global demand for raw materials continues to increase. China will be looking to manage both growth and financial risk, while needing to respond in real-time to external factors.

One of the biggest external factors is how COVID outbreaks will impact other countries. This is especially true with India, which at this moment is experiencing a tremendous spike in COVID cases. India is set to grow 10 percent this year and play a major role in global growth. While additional COVID-related restrictions could curtail growth, any restrictions are likely to be limited and focused. A two-month lockdown in 2020 pushed the economy into recession, and Modi's government has made it clear that lockdown measures will be a last resort to contain the spread of COVID-19. Similar to other countries, the service sector is likely to be most severely impacted. Mobility figures are showing less travel and that unemployment is on the rise.The economy could shrink in the current quarter, as economic activity takes a hit. While much of this activity should return mid-year, a prolonged slowdown will hinder growth for the year.

Growth in Europe has been held back as additional lockdown measures were implemented following COVID case spikes there. Europe has also seen less fiscal stimulus than some of its trading partners, and that will translate into lower growth at least in the near-term. Vaccination rates are starting to pick up in Europe as they get their vaccination plans in order. This will help growth throughout much of Europe and especially countries like Spain and Italy that are highly dependent on tourism. The manufacturing sector in Europe, like in most of the world, continues to strengthen.

There are a few other things we are watching closely.

The supply chain was disrupted from day one of the pandemic and continues to work through these disruptions. As we've noted in the past, the COVID recession was unique in many ways. Typically during a recession, spending on durable goods declines as consumers and businesses extend the useful life of assets and delay replacing them. But during this recession, as consumers quarantined in their homes and service businesses cut back both hours and available services, spending on durable goods benefited.

Over the last year, supply chains have had to manage logistic disruptions. As international travel waned, air freight capacity declined and prices rose rapidly. At same time, demand for intermodal freight has remained high. Ports have been congested and border crossings have been delayed. Here, too, prices have remained elevated.

There are shortages throughout the supply chain for a myriad of inputs, from raw materials and chemicals to intermediate goods like semiconductors and to some finished goods. For example, both the PCB and EMS book-to-bill ratios for North America are historically high, suggesting tightness remains in the electronics supply chain. Inventories remain tight throughout the entirety of the supply chain. Transportation and logistic constraints continue to hold back supplier delivery rates. Manufacturing backorders appear to be as high as they've been in nearly 20 years.

Excessive tightness throughout supply chains, coupled with a massive increase in money supply over the last year has led to price increases across a number of industries.

There are a number of factors that are contributing to higher inflation rates and a mix of cross currents that will dictate how inflation progresses through the remainder of the year. Spending on durable goods was up during the recession, while spending on services was down. Initially this led to higher prices for durable goods. As the economy opens and COVID-related restrictions are lifted, spending on services will benefit, and some of this increase is likely to come at the cost of spending on durable goods. That should mean we'll see prices for services increase, while demand for durable goods should slow and in turn price pressures wane. But until pressure on supply chains lifts, expect to face higher prices.

4.2%

The producer price index for final demand jumped 1 percent in March and is up 4.2 percent over the last year.

29%

Nearly one-third of the US population has been fully vaccinated. Only 3.1 percent of the worldwide population has been vaccinated.

7.5%

Business investment in the United States grew roughly 7.5 percent in the first quarter.

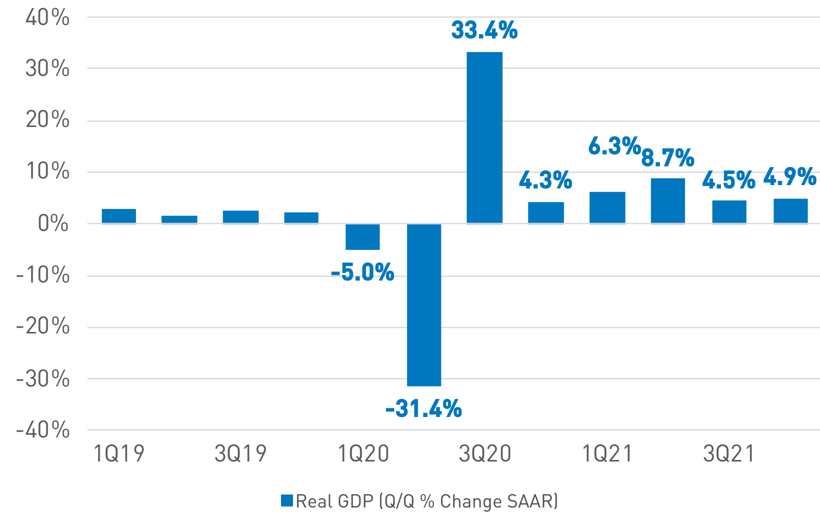
18.3%

China's GDP grew 18.3 percent in the first quarter.

U.S. OUTLOOK

ECONOMIC GROWTH

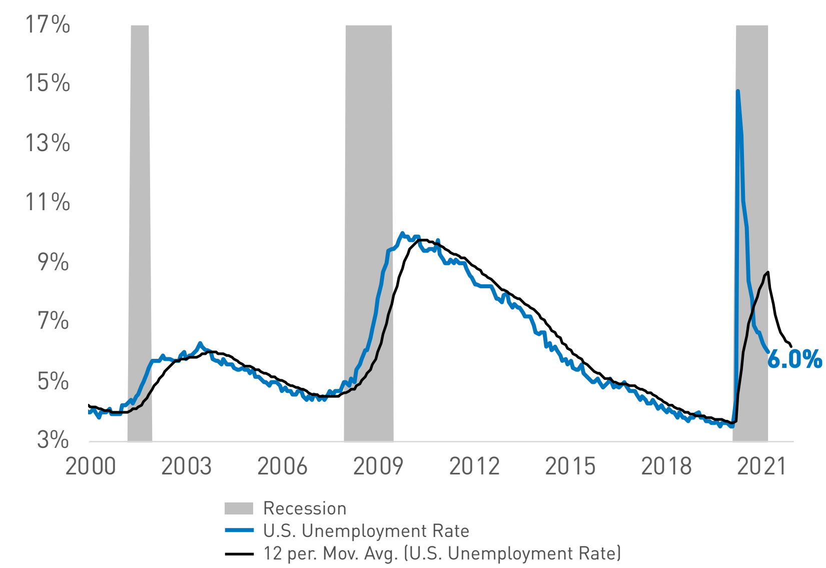
Our expectations for economic growth continue to improve. First quarter GDP should come in around 6.6 percent when we get the first estimate at the end of the month. The year started much stronger than we anticipated just a few months ago. Remember, at the start of the year, our forecast for first quarter growth was 2.3 percent. Expectations for the year are also stronger this month. GDP is now expected to grow 6.3 percent in 2021. There are three primary factors driving expectations for stronger growth: (1) $1.9 trillion in additional fiscal stimulus and the chance for more to come, (2) accommodative monetary policy and (3) an economy that is waking up as COVID-related restrictions are being lifted. Stronger growth in the United States will also help drive stronger growth throughout North America, and as a result our forecasts for Canada and Mexico have also improved for 2021, though some of this growth is being pulled forward from 2022.



	2021 ECONOMIC GROWTH (GDP % Change)	2022 ECONOMIC GROWTH (GDP % Change)	2021 EXCHANGE RATE (v. USD)	2022 EXCHANGE RATE (v. USD)
UNITED STATES	6.3%	4.3%	N/A	N/A
CANADA	5.4%	3.6%	1.27	1.26
MEXICO	4.6%	3.0%	20.50	20.73
EURO AREA	4.2%	4.0%	1.19	1.22
CHINA	8.4%	5.5%	6.48	6.48

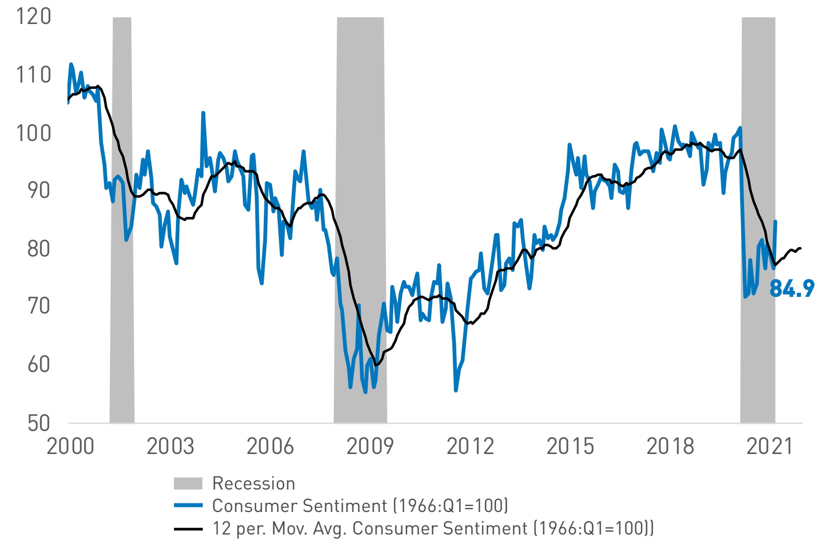
EMPLOYMENT

Employment gains last month were even stronger than expected. Nonfarm payroll increased by 916,000 jobs during the month. And estimated job gains for January and February were revised higher by 156,000 jobs. Some of the job gains were the result of a bounce back from severe weather in February. For example, construction added 110,000 new jobs. Many of the new jobs were a result of the economy continuing to open. Leisure and hospitality added 280,000 jobs. Government added 136,000 jobs, most of which were in education services likely driven by physical classrooms opening up. Manufacturing added 53,000 jobs. We expect strong job gains in the month ahead, as we work to close the gap created by the pandemic. We've retraced 62 percent of the jobs lost in the spring. The unemployment rate dropped to 6 percent in March. Total hours worked increased 1.9 percent in March, after falling in February, mostly due to severe weather. Larger payrolls and longer average workweeks suggest March was a good month for production.



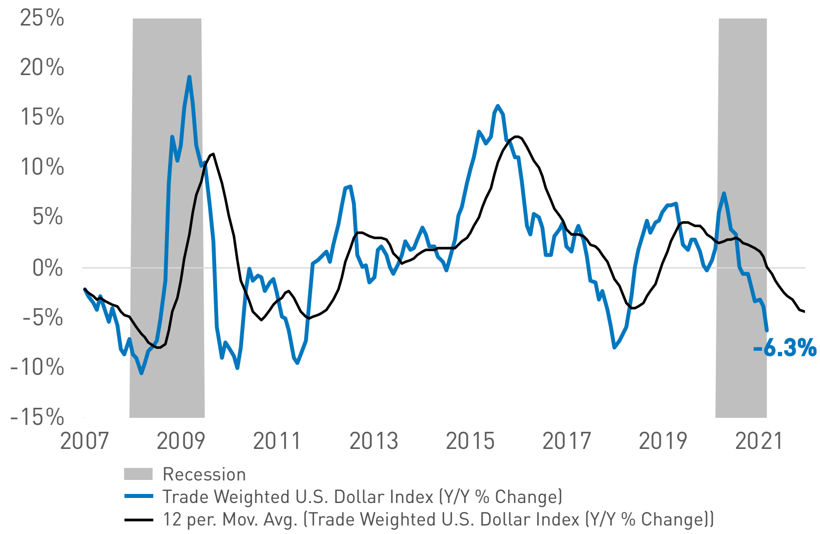
SENTIMENT

Consumer sentiment improved significantly in March, jumping from 76.8 to 84.9. This is the strongest reading in a year. Moreover, consumer sentiment has continued to trend higher through the first weeks of April. Typically, the early months of an economic recovery see improving expectations for future gains, followed by strengthening views of current economic conditions. This recovery is breaking that trend with strong gains in current economic conditions, driven by large stimulus payments. Half of consumers are expecting declines in unemployment — the highest levels ever recorded.



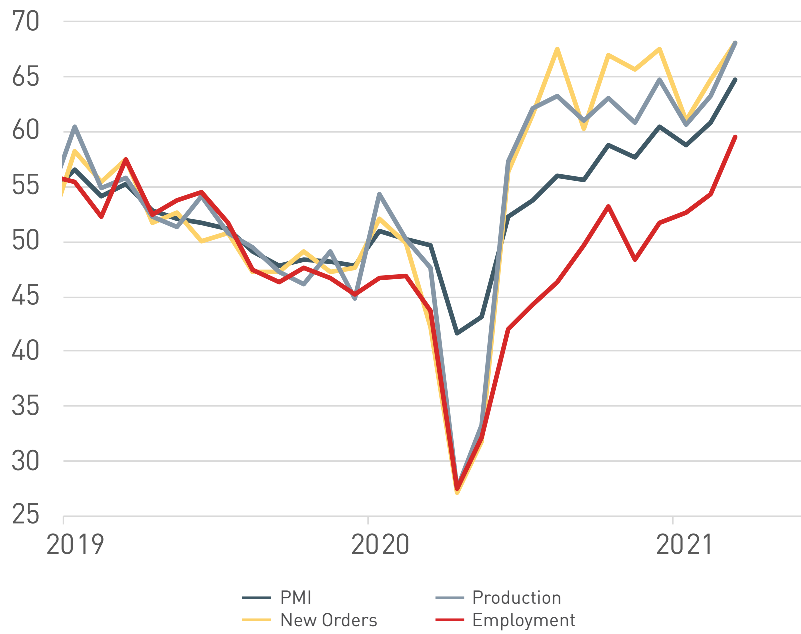
TRADE-WEIGHTED U.S. DOLLAR INDEX

The dollar strengthened again over the last month. The trade-weighted dollar index increased 1.2 percent in March, the second consecutive monthly increase since April 2020. The value of the dollar is down 6.3 percent over the last year. Rising yields in the United States have helped buoy the dollar in recent months, following strong depreciation in the final six months of 2020. This is especially true given low rates, and even negative rates, elsewhere in the world. Moreover, the $1.9 trillion stimulus package, and potentially more fiscal spending to come, has improved the economic outlook for the year ahead. Rates will likely trend higher from here, and as long as a positive interest rate differential continues to exist between the United States and other countries, the dollar will regain some footing.



MANUFACTURERS' SENTIMENT (PMI)

The manufacturing sector expanded strongly in March. The March Manufacturing PMI increased 3.9 percentage points to 64.7 percent. This is the highest reading since December 1983. The New Orders Index also increased during the month, rising 3.2 percentage points to 68 percent — the highest reading since January 2004. March was a good month for production, following unexpected severe weather in February throughout much of the country. The industry expanded employment and inventories as well. Supply chains continue to be constrained. Delivery performance of suppliers to manufacturers slowed in March. The Supplier Deliveries Indexed was the highest it has been since April 1974, which was at the end of the oil crisis.



U.S. END MARKETS FOR ELECTRONICS

Industrial production bounced back in March, rising 1.4 percent, after severe weather hindered production in February. Nearly every major category was up during the month. Look for the upward trend in industrial production to continue as the economy further reopens and production ramps to satisfy demand. Manufacturing increased 2.7 percent during the month, but that is still down 2 percent from February 2020 and down 1.1 percent from January 2021, before the late winter storms.

AUTOMOTIVE PRODUCTS

Auto production increased 3 percent in March and is up 32.3 percent over the last year. But these numbers are inflated by the strong decline at the onset of the pandemic. Auto production is essentially flat over the last two years, down 0.3 percent.

TRANSIT EQUIPMENT

Transit equipment production increased 1.7 percent during the month. The sector is up 27.9 percent from last year but down 25.5 percent compared to two years ago.

INFORMATION PROCESSING & RELATED EQUIPMENT

Production in the information processing and related equipment sector increased 2.3 percent during the month. The sector is up 0.2 percent over the last year and 5.1 percent compared to March 2019.

INDUSTRIAL & OTHER EQUIPMENT

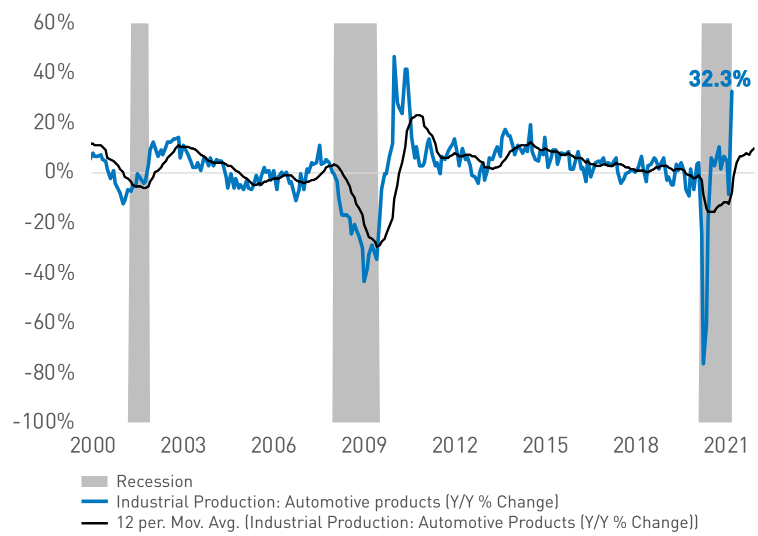
The industrial segment rose 3.3 percent last month. The sector is up 1.9 percent over the last year but is down 3.7 percent compared to March 2019.

DEFENSE & SPACE EQUIPMENT

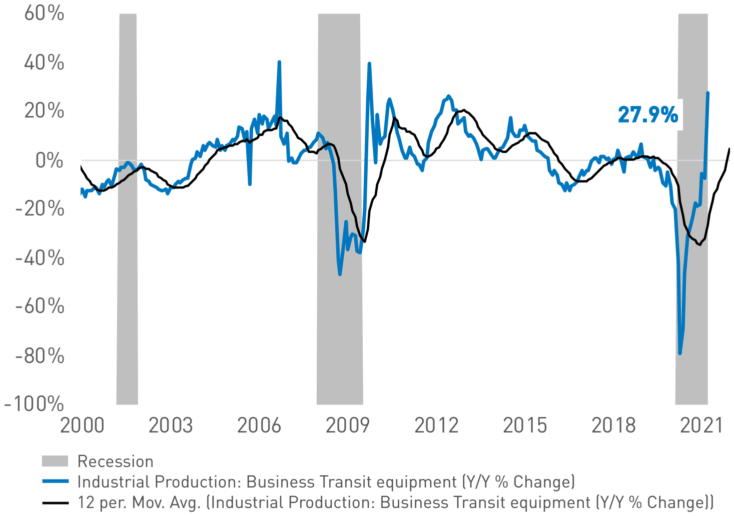
The defense and space equipment segment increased 4.4 percent in March. The sector is up 6.4 percent over the last year and 8.8 percent over the last two years.

Manufacturing

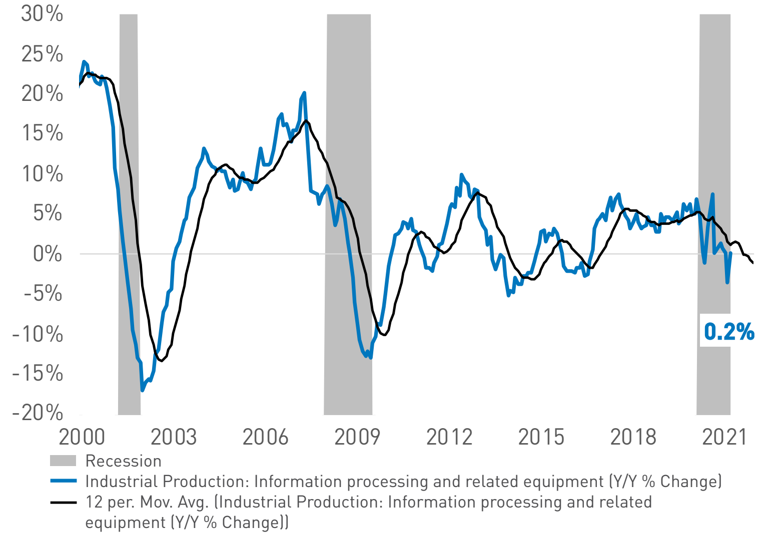
Automotive Products



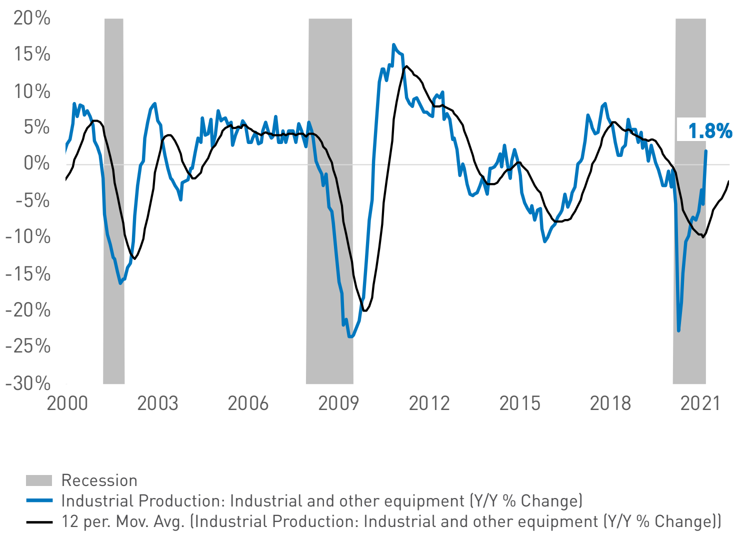
Business Transit Equipment (Y/Y % Change)



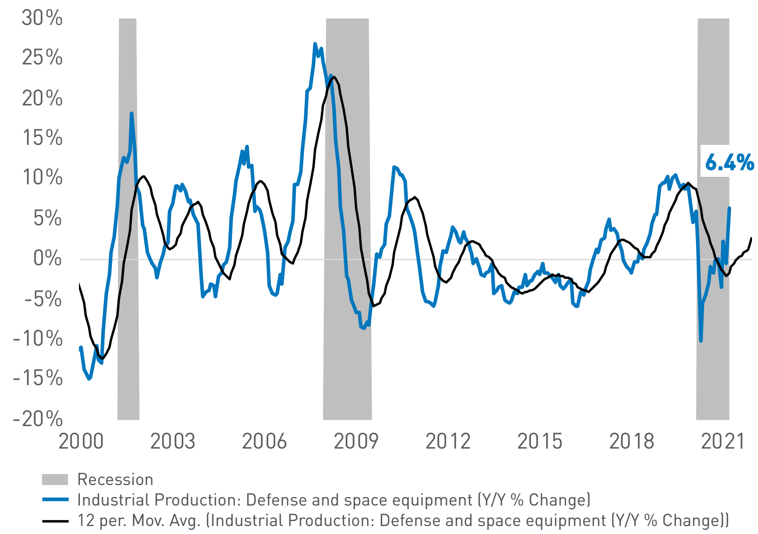
Information Processing & Related Equipment (Y/Y % Change)



Industrial & Other Equipment (Y/Y % Change)



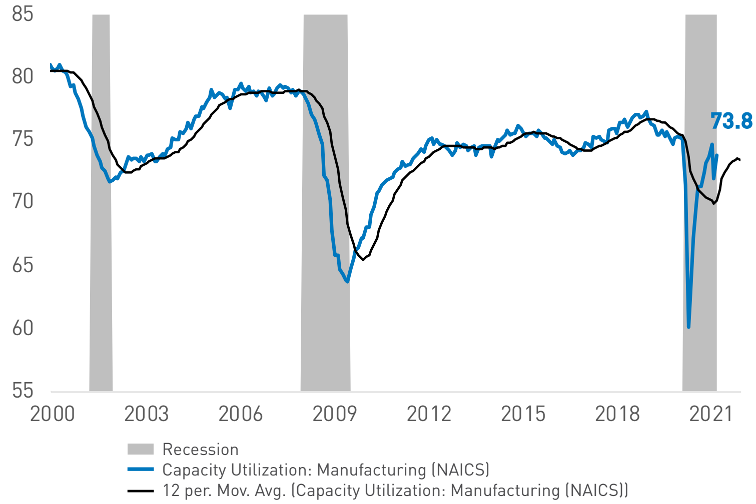
Defense & Space Equipment (Y/Y % Change)



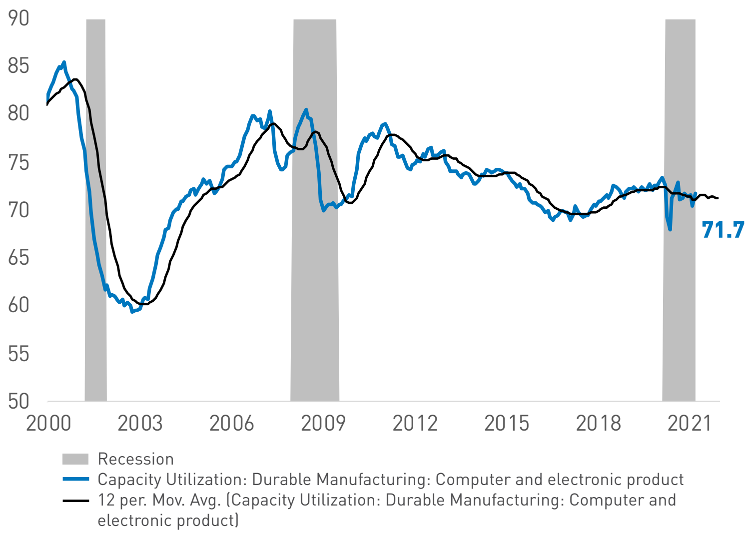
MANUFACTURING CAPACITY UTILIZATION

Recovery in the industrial and manufacturing sectors expanded in March and capacity utilization increased across the board. Overall, capacity utilization increased to 74.4 percent during the month. Manufacturing capacity utilization increased to 73.8 percent during the month. Computer and electronic production capacity utilization increased from 70.6 to 71.7. Capacity utilization in electrical equipment, appliances and components increased to 73.4 from 71.8. Utilization in the motor vehicles and parts sector rose to 71.8 but remains below January levels of 77.6. Finally, the aerospace and miscellaneous transportation equipment sector saw utilization rates improve 2.95 percentage points to 71.9.

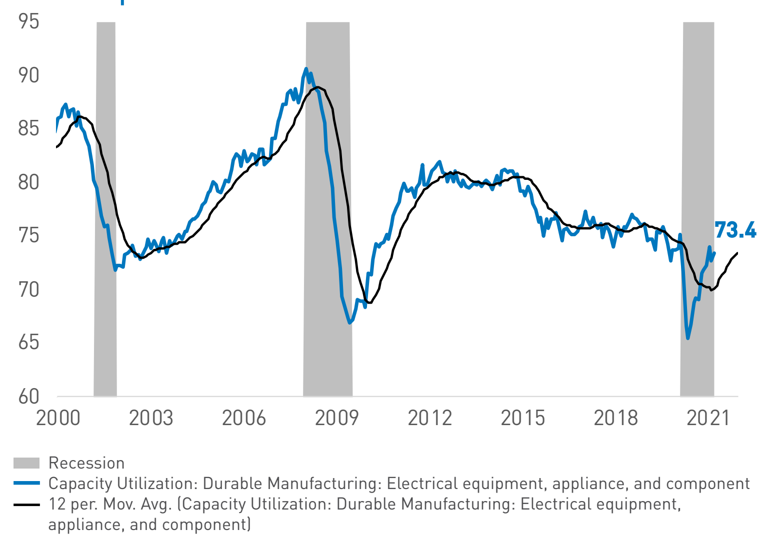
Manufacturing (NAICS)



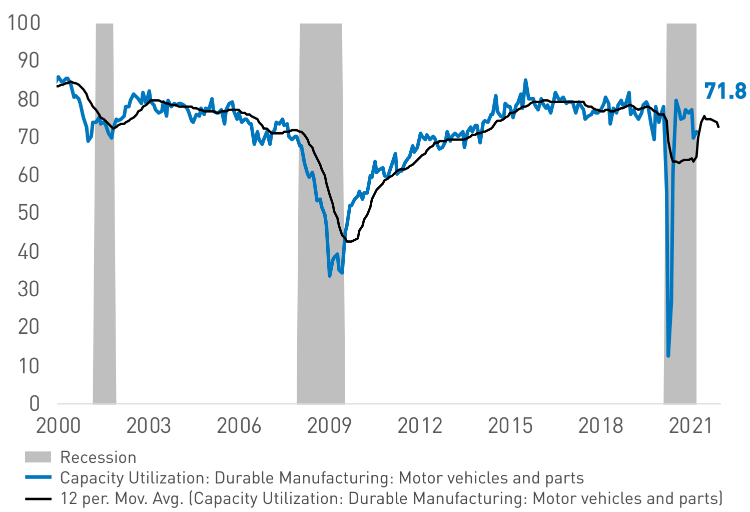
Computer & Electronic Product



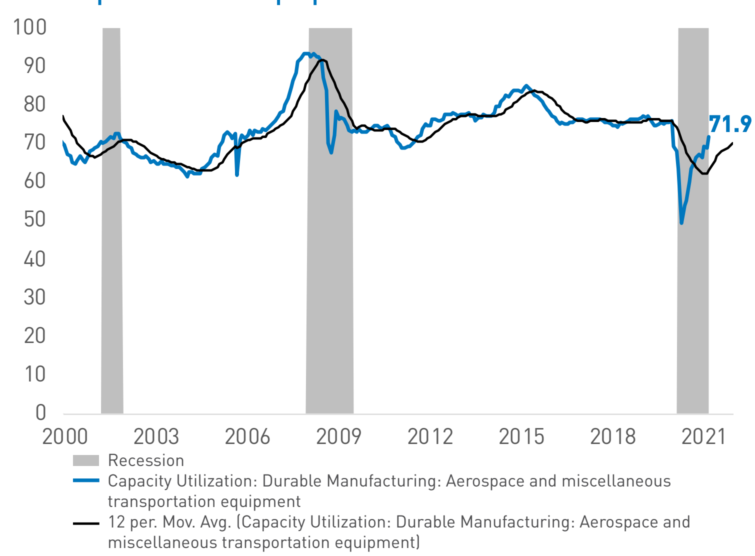
Electrical Equipment, Appliance, & Component



Motor Vehicles & Parts



Aerospace & Miscellaneous Transportation Equipment

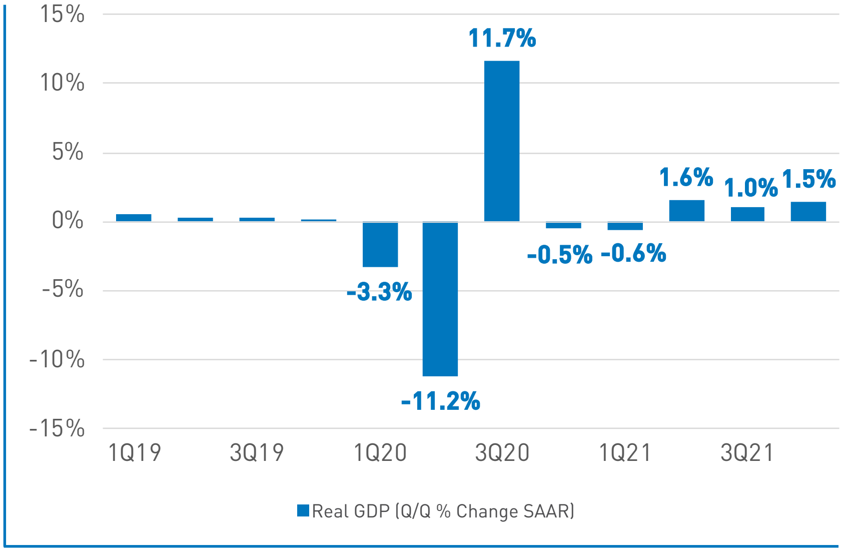


EUROPEAN OUTLOOK

ECONOMIC GROWTH

Economic growth for the fourth quarter was unrevised. GDP for the European Union fell 0.5 percent during the quarter and 0.7 percent for the Euro area compared to the third quarter. For the year, GDP in the euro area fell 6.6 percent and GDP fell 6.2 percent for the European Union.

The preliminary flash estimate for GDP growth of the first quarter of 2021 will be released at the end of April and updated in mid-May. We expect to see the economy shrink by roughly 0.6 percent. Currently, we expect to see Germany decline 1.5 percent, Italy by 0.8 percent and Spain by 0.8 percent, and France will be flat over the prior quarter. We've trimmed our outlook for growth for all of 2021 by two-tenths of a percentage point.



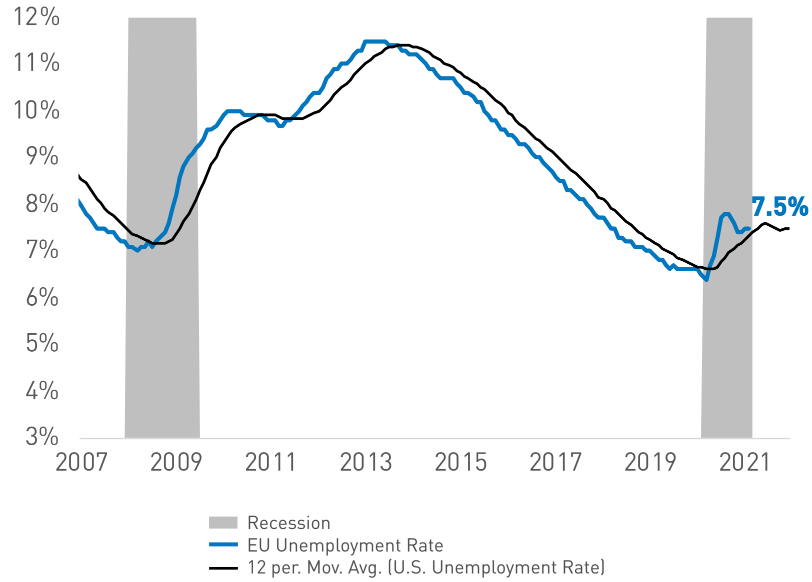
Europe is expected to recover more slowly than other developed nations, due to a delayed vaccination rollout, additional COVID outbreaks that drove COVID-related restrictions and pushed several countries back into lockdown and smaller fiscal stimulus than other regions.

	Q/Q PERCENTAGE CHANGE				Y/Y PERCENTAGE CHANGE			
	2020Q1	2020Q2	2020Q3	2020Q4	2020Q1	2020Q2	2020Q3	2020Q4
EURO AREA	-3.8%	-11.6%	12.5%	-0.7%	-3.3%	-14.6%	-4.1%	-4.9%
EU (27)	-3.3%	-11.2%	11.7%	-0.5%	-2.7%	-13.8%	-4.0%	-4.6%
GERMANY	-2.0%	-9.7%	8.5%	0.3%	-2.2%	-11.3%	-4.0%	-3.6%
FRANCE	-5.9%	-13.5%	18.5%	-1.4%	-5.6%	-18.6%	-3.7%	-4.9%
ITALY	-5.5%	-13.0%	15.9%	-1.9%	-5.8%	-18.2%	-5.2%	-6.6%
SPAIN	-5.3%	-17.8%	17.1%	0.0%	-4.3%	-21.6%	-8.6%	-8.9%

	2021 ECONOMIC GROWTH (GDP % CHANGE)	2022 ECONOMIC GROWTH (GDP % CHANGE)
EURO AREA	4.2%	4.0%
GERMANY	3.3%	4.0%
FRANCE	5.3%	4.0%

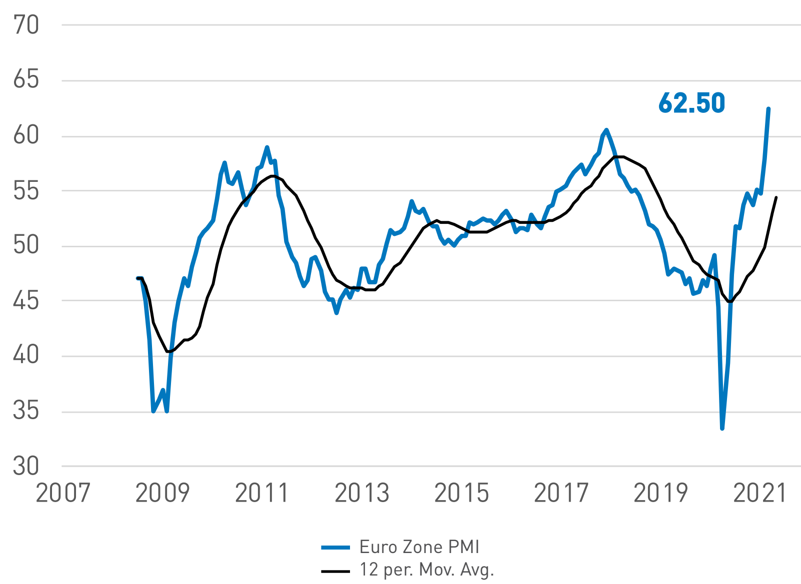
EMPLOYMENT

The unemployment rate was revised higher for January but remained unchanged from this revised figure in February. This was a small uptick in January, consistent with fresh COVID restrictions. In the European Union, unemployment remained at 7.5 percent, up from 6.6 percent in January 2020. In the euro area, unemployment was 8.3 percent, up from 7.4 percent in January 2020. The planned conclusion of some short-time work programs clouds the outlook for the labor market. But overall, the labor market appears to be improving, jobs were up in Q4 and labor market slack was down.



MANUFACTURERS' SENTIMENT (PMI)

The Eurozone manufacturing sector continues to expand. The Eurozone's manufacturing PMI increased from 57.9 in February to 62.5 in March. The month saw a record increase in output, new orders and purchasing activity. These are the strongest levels recorded in nearly 24 years of data collection. Demand remains strong and consumer and business confidence is improving, all of which will help sustain a strong manufacturing environment. Germany and the Netherlands continue to lead the European manufacturing sector. Similar to other parts of the world, supply chains in Europe are strained. Lead times are lengthening, some inputs are in short supply and logistics remain choked.



E.U. END MARKETS FOR ELECTRONICS

Manufacturing output declined marginally in February, falling 0.9 percent from January. Output remains down 1.2 percent from a year ago.

COMPUTER, ELECTRONIC & OPTICAL PRODUCTS

The electronics industry, which includes categories such as components, loaded boards, computers, communications equipment and consumer electronics, increased in February, rising 4.3 percent from January. The sector is now up 43.5 percent from last year and 43.5 percent over the last two years.

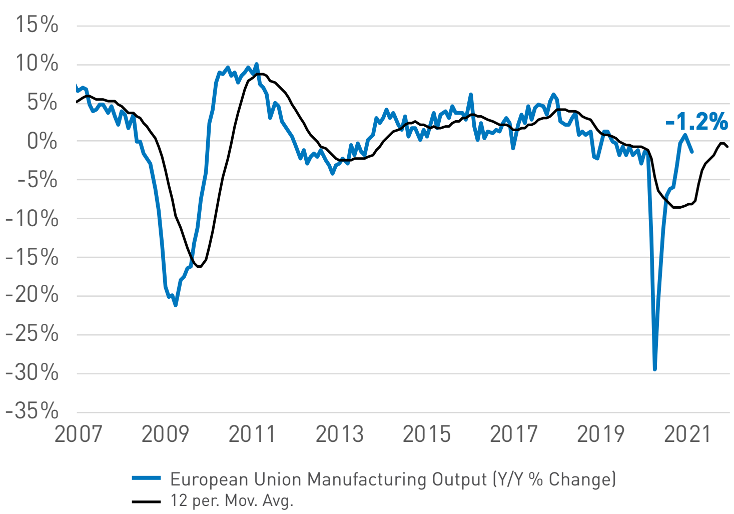
MOTOR VEHICLES

The motor vehicle manufacturing production index declined 5.9 percent in February, after falling 7 percent in January. Auto production in the European Union is off 20.3 percent from a year ago and 25.6 percent from two years ago.

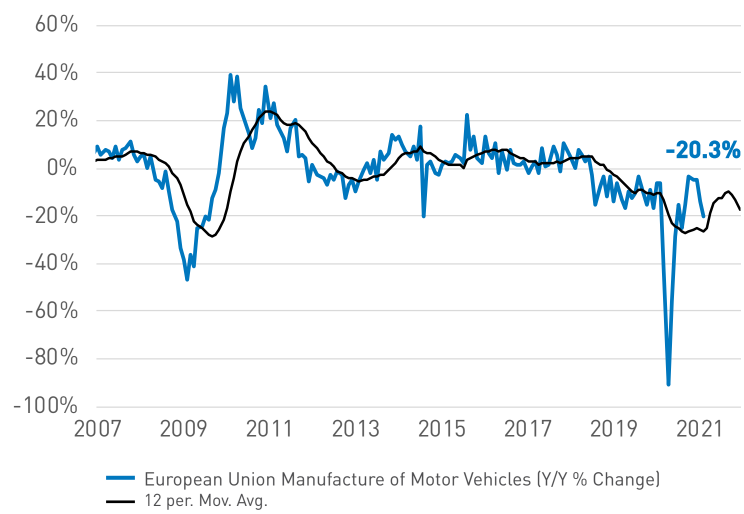
AIR & SPACECRAFT & RELATED MACHINERY

The air and spacecraft manufacturing sector continues to struggle. The industry fell 7.4 percent in February and is now down 27.4 percent over the last year and 28.1 percent over the last two years.

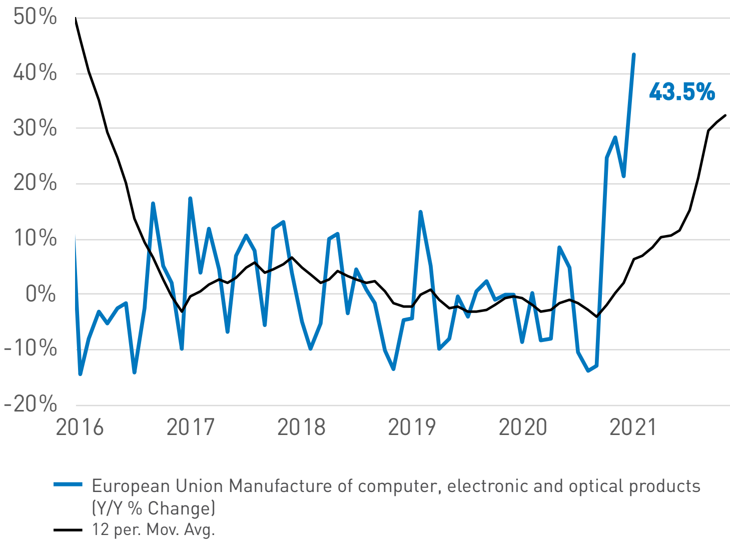
E.U. Manufacturing Output



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)