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ECONOMIC OUTLOOK

The economic outlook deteriorated over the last month and we have subsequently lowered our projections for economic growth in the regions we cover. In the United States, we expect economic growth to be a bit firmer in the second quarter than we had previously expected, but for the year, we have lowered our 2022 outlook by one-tenth of a percentage point. We have also cut our outlook for 2023 growth. Europe is plagued by fallout from the war in Ukraine and a building energy crisis being driven by Russian retaliation against European sanctions. We have cut two-tenths of a percentage point off growth in 2022 and cut growth projections for 2023 even more severely. And in China, we have cut eight-tenths of a percentage point from our 2022 forecast. While China continues to maintain a growth target of 5.5%, the ability to achieve this is looking increasingly difficult even if the economy were to have a solid rebound in the second half.

Our outlook is being influenced by growing uncertainty. In the United States, the Federal Reserve is moving aggressively to raise interest rates and contain inflationary pressures. There is uncertainty as to whether the Fed will able to lower inflation before the economy slows. Moreover, because it can take up to 6 months for changes in interest rate policy to be fully reflected in the economy and policy decisions are made with data that lags the underlying economy, there is uncertainty over the Federal Reserve's ability to avoid overshooting - continuing to raise rates even though the economy is slowing - and pushing the economy into recession.

A near-term recession in the United States is being bantered about as if it is a foregone conclusion. While this is not the case, and in some instances, the underlying economy remains robust, we seem to be doing a good job of talking ourselves into a recession. There is a real risk that all of this talk of recession will be self-fulfilling. Consumer sentiment for example collapsed in June, falling 14.4% in the last month. The index ended the month at 50, the lowest level on record. Some 79% of Americans expect poor business conditions in the

year ahead, the highest since 2009. Nearly half (47%) of consumers blame inflation for eroding living standards, a level last seen during the Great Recession and a sharp rise from May when 38% of consumers reported a similar view.

The probability of a recession in Europe in the second half of 2022 continues to rise. Europe is being hit by a number of factors including the continued fallout from war in Ukraine. rising prices for food and energy, and falling demand in the United States, its largest export market. The biggest uncertainty is how Europe will handle tight gas supply. Europe is heavily reliant on Russia for its energy supply, and Putin has responded to sanctions by slowing gas supplied to Europe. As much as 40% of Europe's energy needs are supplied by Russia and there is a growing concern of a complete cut-off of Russian gas. Higher gas prices will lead to possible dislocations in the economy and upward pressure on already high inflationary rates. Inflation in the eurozone hit an annual rate of 8.6% in June, the highest rate of price increase since the bloc was created in 1999.

In China, there is growing uncertainty as to how China will handle future COVID outbreaks. China appears to becoming more flexible in its zeroCOVID policy. It recently announced it would shorten the isolation period for positive COVID cases and also changed the frequency of test requirements according to the risk of inflection. But our outlook for China is based in part on the possibility of additional lockdown measures in the second half of the year. President Xi recently commented that China will "adopt more forceful measures to deliver the economic and social development goals for the whole year and minimize the impact of COVID-19," but what these measures might end up being remains uncertain.

Other risks remain acute. Inflationary pressures remain historically high in many parts of the world. While supply chains appear to be improving, pricing pressure remains stiff. This is hurting profitability for many businesses but also leading both businesses and consumers to hold off purchases in hopes that prices will normalize. Moreover, higher prices for things like gasoline are crowding out other purchases consumers and businesses might make. How these forces will evolve in the coming months adds to the long list of uncertainties around the globe that will continue to dominate the nearterm outlook.

4.2%

We lowered our 2022 growth expectations for China. We now expect the economy to grow by 4.2%, down from our previous 5% projection.

8.6%

Inflation in the eurozone hit an annual rate of 8.6% in June, the highest rate of price increase since the bloc was created in 1999.

3.25-3%

The Federal Reserve expects to raise the fed funds rate by another 175 basis points by the end of 2022.

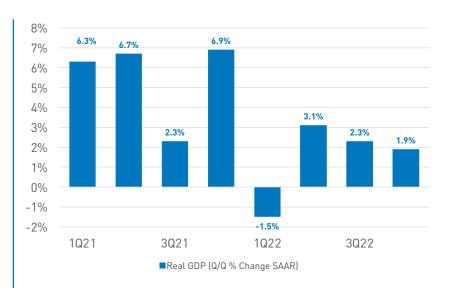
79.1%

Manufacturing capacity utilization in the United States fell to 79.1% in May from 79.2%, but this was the highest capacity utilization since 2007.

U.S. OUTLOOK

ECONOMIC GROWTH

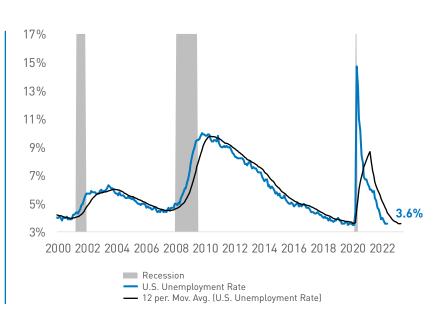
The U.S. economy contracted by 1.5% in the first quarter, a slight downward revision from the prior estimate of -1.4%. Consumer spending was revised higher, but downward revisions to inventories and home building offset these gains. During the quarter consumer spending rose 3.1%, business fixed investment rose 9.2%, and home building rose 0.4%. Collectively, these components make up "core" GDP, which rose a solid 3.9% during the quarter. Headline GDP declined because of a surge in imports, which lowered growth in the quarter by 3.2 percentage points. Inventory growth was also slower than the previous quarter, shaving off another 1.1 percentage points of growth. Our expectations for secondquarter growth are a bit firmer this month as some of these headwinds reverse. We now expect the economy to grow about 3% in Q2.



	2022 ECONOMIC GROWTH (GDP % Change)	2023 ECONOMIC GROWTH (GDP % Change)	2022 EXCHANGE RATE (v. USD)	2023 EXCHANGE RATE (v. USD)
UNITED STATES	2.5%	1.9%	N/A	N/A
CANADA	3.6%	2.6%	1.26	1.26
MEXICO	1.7%	2.3%	20.40	20.81
EURO AREA	2.5%	2.1%	1.09	1.15
CHINA	4.2%	5.1%	6.71	6.53

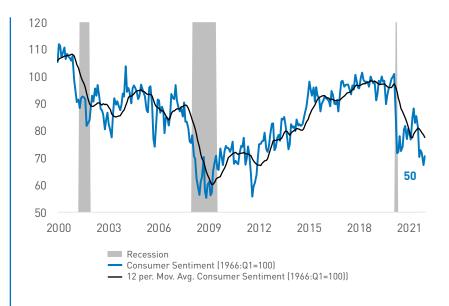
EMPLOYMENT

The U.S. economy added 390,000 new jobs in May. The largest increases during the month were in leisure & hospitality (+84,000), professional & business services (+75,000, including temps), and education & health services (+74,000). Manufacturers add another 18,000 and are just 17,000 jobs below pre-pandemic levels. The unemployment rate stayed steady at 3.6%. The total hours worked rose 0.3% in May and are up 4.2% in the last year. Average hourly earnings rose 0.3% in May and are up 5.2% in the last year. Although job growth is decelerating, the labor market remains strong (for now) and the job market remains very tight.



SENTIMENT

The index of consumer sentiment collapsed in June, falling 14.4% in the last month. The index ended the month at 50, the lowest level on record. Consumers are losing faith in the near-term outlook and feeling the pressure of inflation. Some 79% of Americans expect poor business conditions in the year ahead, the highest since 2009. Nearly half (47%) of consumers blame inflation for eroding living standards, a level last seen during the Great Recession and a sharp rise from May when 38% of consumers reported a similar view. Consumers expect year-ahead inflation of 5.3%. Expectations for long-run inflation declined somewhat to 3.1%, but consumers also expressed the greatest level of uncertainty about long-run inflation since 1991.



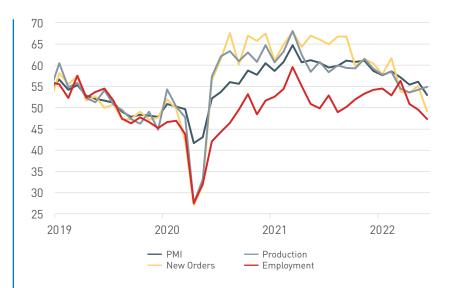
TRADE-WEIGHTED U.S. DOLLAR INDEX

The Trade-Weighted U.S. Dollar Index rose 0.1% in June and is up 7.5% over the last year. The dollar continues to gain ground against numerous currencies. The euro recently fell to a 20-year low against the dollar. The war in Ukraine and energy market turmoil is weakening underlying economic fundamentals in Europe. Germany reported its first monthly trade deficit since 1991. The dollar has strengthened against the Chinese yuan amid uncertainty over the zero-COVID policy which could result in lockdowns occurring. The U.S. has also aggressively moved interest rates higher which draws funds looking for a higher yield into dollars and dollar-denominated assets and out of other currencies.



MANUFACTURERS' SENTIMENT (PMI)

The U.S. manufacturing sector expanded for a 25th consecutive month but headwinds to growth do appear to be forming. The June Manufacturing PMI fell to 53%, the lowest level since June 2020 which was the first month of the recovery. Demand has weakened with the New Orders Index contracting for the first time since the recession. The decline in the New Orders Index, while very concerning, might not fully indicate a deterioration in demand, but it does likely highlight the multitude of challenges caused by supply chain disruptions and inflation. Businesses might be cutting new orders in part because of continued supply chain challenges. Moreover, consumers and businesses might delaying purchases because of high prices.



U.S. END MARKETS FOR ELECTRONICS

U.S. Industrial production rose 0.2% in May, lower than the 0.4% expected by economists. However, industrial production is 4.3% above pre-pandemic levels. Utilities output, though typically volatile from month-to-month, rose 1% in May. Mining increased 1.3% during the month as oil production increased in the face of higher prices. Baker Hughes reports the number of oil and gas rigs in operation in the US is approaching pre-pandemic level. Manufacturing output declined 0.1% in May as a result of a 0.1% decline in non-auto manufacturing.



AUTOMOTIVE PRODUCTS

Auto production rose 0.7% in the month. Production is up 11.6% over the last year. Non-auto manufacturing declined, but is still up 4.5% over the last 12 months.



TRANSIT EQUIPMENT

Transit equipment production rose 0.1% over the last month. The sector is up 9% over the last year and 15.7% from prepandemic levels.



INFORMATION PROCESSING & RELATED EQUIPMENT

Production in the information processing and related equipment sector increased by 1% during the month. The sector is up 2.8% over the last year.



INDUSTRIAL & OTHER EQUIPMENT

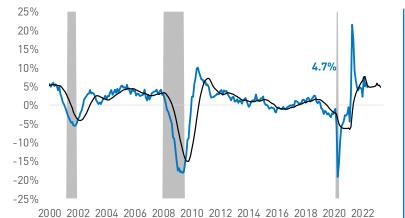
The industrial sector fell 0.1% during the last month. The sector is still up 9.1% over the last year and up 6.1% from the start of the pandemic.



DEFENSE & SPACE EQUIPMENT

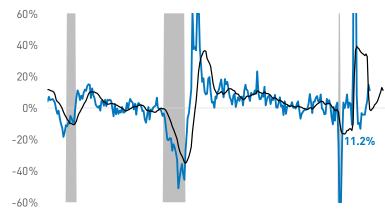
The defense and space equipment segment fell 0.6% last month. The sector is up 6.1% over the last year and 9.6% since the pandemic began. This is the largest increase among the sectors we track.

Manufacturing



Recession
Industrial Production: Manufacturing (Y/Y % Change)
12 per. Mov. Avg. (Industrial Production: Manufacturing (Y/Y % Change))

Automotive Products



2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022

Recession

Industrial Production: Automotive products (Y/Y % Change)
 12 per. Mov. Avg. (Industrial Production: Automotive Products (Y/Y % Change))

Business Transit Equipment (Y/Y % Change)

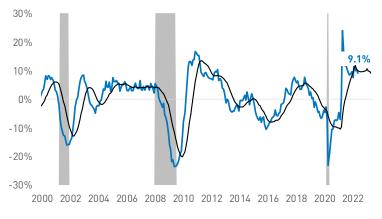


Recession

Industrial Production: Business Transit equipment (Y/Y % Change)

- 12 per. Mov. Avg. (Industrial Production: Business Transit equipment (Y/Y % Change))

Industrial & Other Equipment (Y/Y % Change)

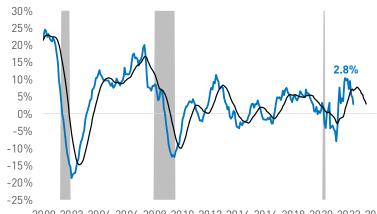


Recession

Industrial Production: Industrial and other equipment (Y/Y % Change)

12 per. Mov. Avg. (Industrial Production: Industrial and other equipment (Y/Y % Change))

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

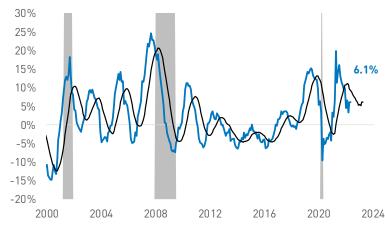


2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024

Recession

Industrial Production: Information processing and related equipment (Y/Y % Change)
 12 per. Mov. Avg. (Industrial Production: Information processing and related equipment (Y/Y % Change))

Defense & Space Equipment (Y/Y % Change)



Recession

Industrial Production: Defense and space equipment (Y/Y % Change)

— 12 per. Mov. Avg. (Industrial Production: Defense and space equipment (Y/Y % Change))

MANUFACTURING CAPACITY UTILIZATION

Overall capacity utilization increased in May, rising one-tenth of a percentage point from 78.9% to 79%. Manufacturing capacity utilization fell to 79.1% in May from 79.2%, but this was the highest capacity utilization since 2007. Computer and electronic production capacity utilization fell 0.1% (0.1 percentage points) to 73.8%. Electrical equipment, appliances and components utilization fell 1.9% to 82.3%. Utilization in the aerospace and miscellaneous transportation equipment sector fell 0.9% to 71.6%. This is 19.2% above pre-pandemic levels.

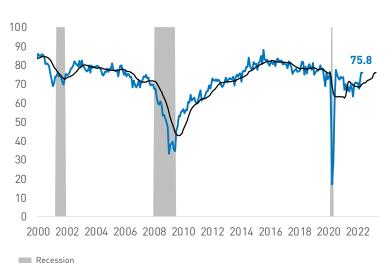
Computer & Electronic Product



Capacity Utilization: Durable Manufacturing: Computer and electronic product 12 per. Mov. Avg. (Capacity Utilization: Durable Manufacturing: Computer and

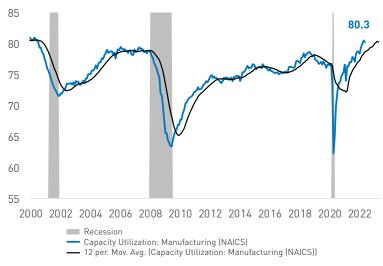
electronic product)

Motor Vehicles & Parts

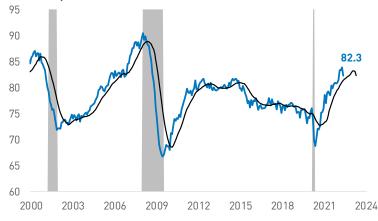


Capacity Utilization: Durable Manufacturing: Motor vehicles and parts
 12 per. Mov. Avg. (Capacity Utilization: Durable Manufacturing: Motor vehicles and parts)

Manufacturing (NAICS)



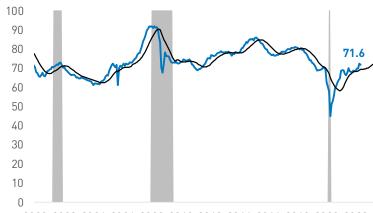
Electrical Equipment, Appliance, & Component



Recession

Capacity Utilization: Durable Manufacturing: Electrical equipment, appliance, and component 12 per. Mov. Avg. (Capacity Utilization: Durable Manufacturing: Electrical equipment, appliance, and component)

Aerospace & Miscellaneous Transportation Equipment



2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022

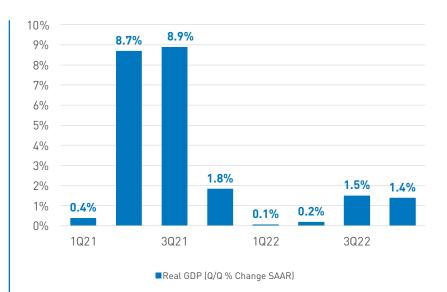
Recession

- Capacity Utilization: Durable Manufacturing: Aerospace and miscellaneous transportation equipment
- 12 per. Mov. Avg. (Capacity Utilization: Durable Manufacturing: Aerospace and miscellaneous transportation equipment)

EUROPEAN OUTLOOK

ECONOMIC GROWTH

European economic growth proved somewhat resilient in the first quarter of the year, despite the headwinds from the omicron Covid-19 variant and Russia's invasion of Ukraine. GDP in the euro area rose 0.3%, revised up from an initial 0.2%, compared to the previous quarter. Growth in the EU rose 0.4%. On a year-over-year basis, economic growth is up 5.1% and 5.2% respectively. Most euro area economies avoided a decline in economic output during the first quarter. Germany, Europe's largest economy, grew 0.2% and is up 3.8% over the last year. Germany avoided a technical recession after declining 0.3% in the fourth guarter of last year. A weaker euro and lower real interest rates should help the German economy, but supply bottlenecks and energy price hikes caused by the Ukraine conflict will work to mute economic growth in the coming quarter. France, Europe's second-largest economy saw flat growth in the first quarter. We have lowered our outlook by onetenth of a percentage point for both 2022 and 2023 economic growth.

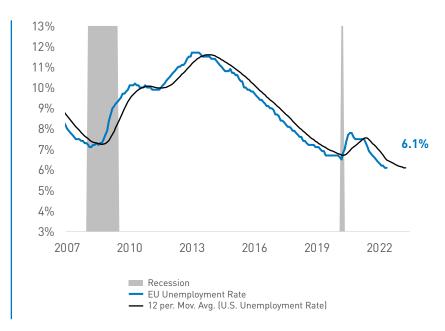


	Q/Q PERCENTAGE CHANGE			Y/Y PERCENTAGE CHANGE				
	2021Q2	2021Q3	2021Q4	2022Q1	2021Q2	2021Q3	2021Q4	2022Q1
EURO AREA	2.2%	2.2%	0.3%	0.3%	14.6%	4.1%	4.7%	5.1%
EU (27)	2.1%	2.2%	0.5%	0.4%	14.0%	4.2%	4.9%	5.2%
GERMANY	2.2%	1.7%	-0.3%	0.2%	10.4%	2.9%	1.8%	3.7%
FRANCE	1.5%	3.0%	0.8%	0.0%	19.1%	3.5%	5.5%	5.3%
ITALY	2.7%	2.5%	0.7%	-0.2%	17.7%	3.9%	6.2%	5.8%
SPAIN	1.1%	2.6%	2.2%	0.3%	17.8%	3.5%	5.5%	6.4%

	2022 ECONOMIC GROWTH (GDP % CHANGE)	2023 ECONOMIC GROWTH (GDP % CHANGE)
EURO AREA	2.5%	2.1%
GERMANY	1.9%	2.4%
FRANCE	2.7%	2.0%
NETHERLANDS	2.8%	1.8%

EMPLOYMENT

The euro area seasonally-adjusted unemployment rate fell to 6.6% in May, a decline of one-tenth of a percentage point from the prior month. The unemployment rate is down from 8.1% in May 2021. The EU unemployment rate was 6.1% in May 2022, unchanged from the prior month but down from 7.3% in May 2021. Employment increased by 0.5% in the euro area and by 0.4% in the EU in the first quarter of 2022, compared with the previous quarter. Employment is up 2.6% over the last year in the euro area and by 2.5% in the EU. Czechia reported the lowest unemployment rate in the EU at 2.5%, followed by Poland (2.7%), Germany (2.8%), Malta (3.1%), and the Netherlands (3.2%).



MANUFACTURERS' SENTIMENT (PMI)

Manufacturing output fell in Europe in June 2022 for the first time since the initial COVID lockdown in 2020. Business conditions for goods producers worsened during the month as business intakes and exports orders ebbed during the month. European manufacturers also reported a decline in backlogs as orders slowed and businesses were able to focus on fulfilling unfilled orders. This is the first decline in backlog in almost two years. Lead times lengthened to the least marked extend in 18 months, a sign that supply chain challenges are improving. Companies also reported the slowest rate of growth for purchasing activity, a sign companies are likely taking a more caution view.



E.U. END MARKETS FOR ELECTRONICS

Manufacturing output fell 0.3% in April, the second consecutive decline and the second decline since October 2021. Manufacturing output is down 0.9% over the last year and up 1.6% since the start of the pandemic.



The electronics industry, which includes categories such as components, loaded boards, computers, communications equipment and consumer electronics, saw output increase 10% in April. The sector is up 17.2% from prepandemic levels.



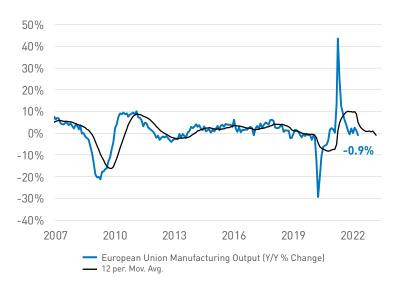
MOTOR VEHICLES

Motor vehicle manufacturing production rose 10% in April, after declining the prior month. Auto production in the European Union remains off 25.8% from a year ago and 34.3% from pre-pandemic levels.



The air and spacecraft manufacturing sector rose 1.4% in March. The segment is up 7.6% over the last year but off 18.6% over the last two years.

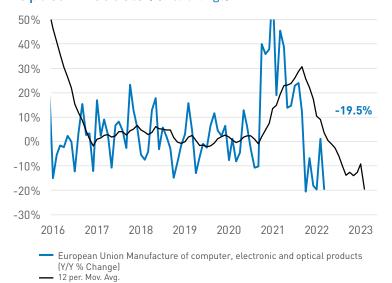
E.U. Manufacturing Output



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)

