

# Economic Outlook

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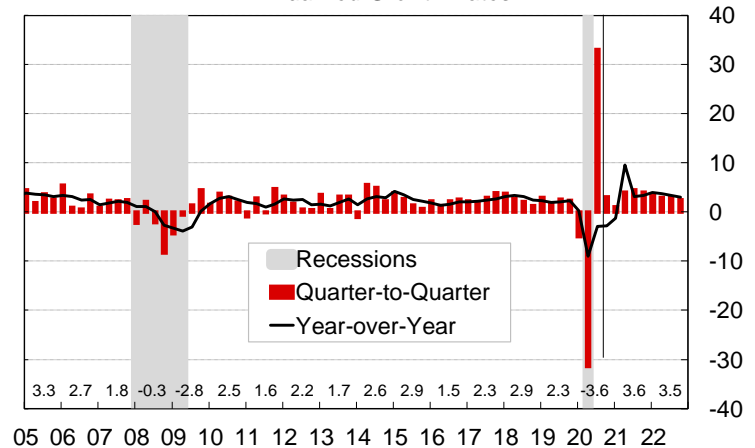
November 6, 2020

- The global economy suffered the deepest (but shortest) recession since the Great Depression in the first half of 2020, the result of the COVID-19 pandemic. All economies have been affected, and all major economies except China will suffer an annual decline in real Gross Domestic Product this year. Many economies rebounded quickly but partially during the summer, but the rate of recovery has slowed and is likely to slow further in response to a recent increase in new cases of COVID-19. The recovery will accelerate next year as a vaccine is made broadly available, but broad measures of economic activity aren't likely to exceed their pre-recession peaks until 2022.
- Real GDP in the United States rose at a record 33.1% annual rate in the third quarter after falling at a record 31.4% rate in the second quarter. Despite the record growth rate in the third quarter, GDP was down 3.5% from its pre-recession peak. I expect growth to slow sharply in the fourth quarter. For the year, I expect GDP to decline 3.6%, the worst annual decline since the demobilization from World War II in 1946. Industrial production in U.S. manufacturing fell 20.1% from February to April, the largest two-month decline since 1945. Production rose from April to August but slipped in September, leaving in down 6% year-over-year.
- Even though the virus that causes COVID-19 originated in China, the Chinese economy has suffered much less from the pandemic than have most other economies. Chinese real GDP, which was down 6.8% year-over-year in the first quarter, was up 4.9% year-over-year in the third quarter. Value Added of Industry, China's official measure of industrial production, was down 13.5% from prior-year levels in January/February combined but up 6.9% year-over-year in September. My preferred measure of growth in industrial production, the median growth rate of 100 industrial products, fell to -21.3% in January/February but had rebounded to 9.5% by September.
- Real GDP in the European Union, which no longer includes the United Kingdom, rose 12.1% (57.8% annual rate) in the third quarter after falling 11.4% (38.5% annual rate) in the second quarter. Despite the strong rebound, GDP was down 3.9% year-over-year in the third quarter. Industrial production in EU manufacturing fell 29% from February to April. Through August it had recouped almost 79% of its decline, leaving it down 6.3% year-over-year.
- Although Japan has suffered fewer cases of COVID-19 than most other countries, industrial production in Japanese manufacturing fell sharply in March, April, and May and has recovered less than in most other countries. Production was down 10.5% year-over-year in September.
- Industrial production in Indian manufacturing collapsed in March and April. It was down 66.6% year-over-year in April. Despite a strong rebound since then, it was down 8.6% year-over-year in August.
- Global Real Gross Domestic Product (based on market exchange rates, not purchasing power parity) is expected to shrink by 4.7% in 2020. Strong growth is expected in 2021 and 2022, but not strong enough to return GDP to its pre-COVID-19 trend. Global industrial production is expected to shrink by 5.5% in 2020. The decline in GDP is much larger than the decline during the 2008-2009 Great Recession, but the decline in industrial production is much smaller. This reflects the fact that the 2020 recession has had a big impact on the production and consumption of services, whereas previous recessions disproportionately affected the production and consumption of goods.
- While further economic stimulus could aid the recovery, the timing and speed of the recovery will depend more on medical breakthroughs, specifically the development of treatments and vaccines, than on economic policies.

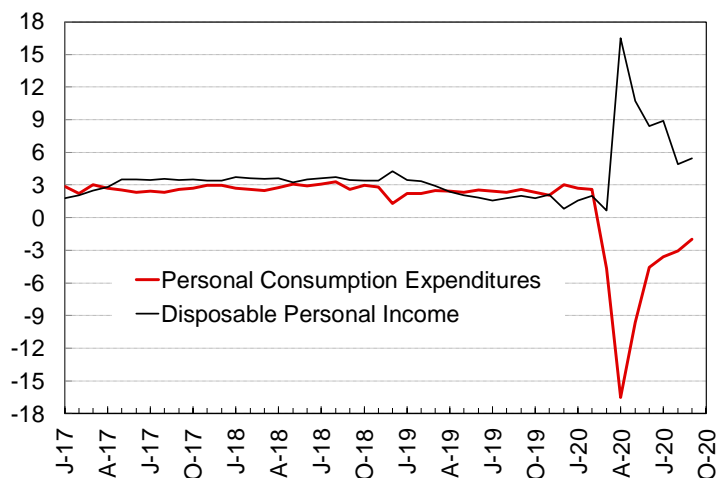
## US Macroeconomic Overview

- Real Gross Domestic Product in the United States rose at a record 33.1% annual rate in the third quarter after falling at a record 31.4% rate in the second quarter. Despite the record growth rate, GDP was down 3.5% from its pre-recession peak.
- Consumer spending on goods, investment in residential structures, and federal government spending exceeded their pre-recession peaks in the third quarter.
- I expect growth to show sharply in the fourth quarter, then to accelerate when a vaccine becomes widely available in 2021.
- Real personal consumption expenditures fell 18% from January to April. By September, they had recouped 85% of that decline but were still down 2% year-over-year. Spending on services was down 6.5% year-over-year in September, but spending on goods was **up** 8.3%
- Because of a fiscal-policy response that was unprecedented in both its size and its speed, disposable income has been higher during the recession and early recovery than it was before the recession. That has never happened in previous recessions.
- Light vehicles sales fell from a 16.8 million seasonally adjusted annual rate in February to an 8.7 million rate in April.
- Sales recovered to a 16.5 million rate in September but fell slightly in October.
- I expect annual sales to fall to 14.5 million in 2020, down from 16.9 million in 2019.
- Light vehicle production fell almost to zero as most assembly lines were shut down from March to May. Production has since recovered to pre-recession levels.

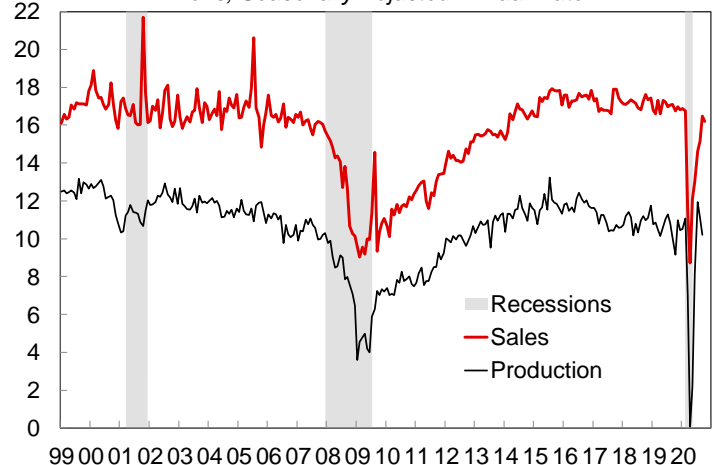
**US Real Gross Domestic Product**  
*Annualized Growth Rates*



**US Real Consumer Spending & Disposable Income**  
*Percent Change from Year Ago, Chained 2012 Dollars*



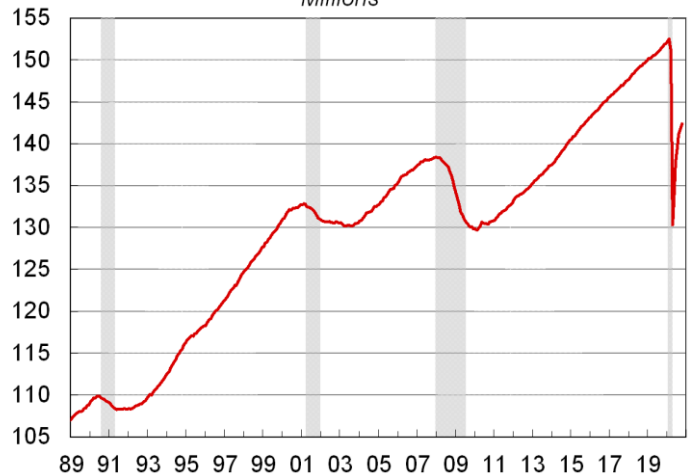
**US Light Vehicle Sales & Production**  
*Millions, Seasonally Adjusted Annual Rate*



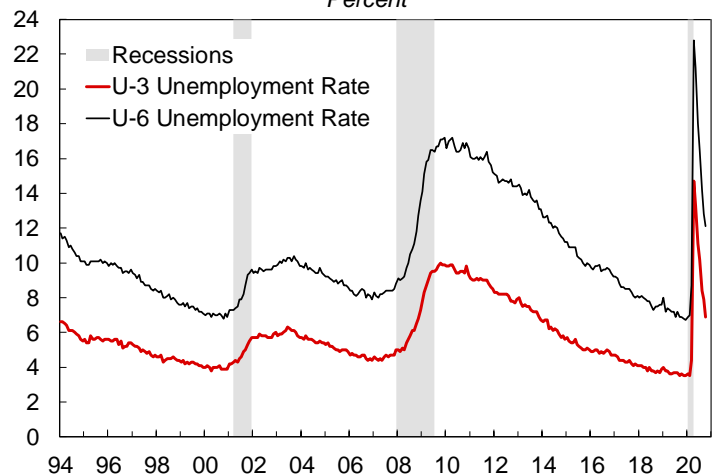
## US Labor Market

- Nonfarm payrolls shrank by 22.2 million jobs in March and April. Payrolls have since grown in each of the last six months, but employment remains 10 million below its February peak.
- Enhanced unemployment insurance benefits (\$600 through July, \$300 since) may be keeping some unemployed people from accepting job offers. Collecting UI benefits after receiving a job offer is normally considered fraud, but it's not clear that the law is being enforced.
- The civilian unemployment rate, which rose from a 51-year low of 3.5% in February to 14.7%, the highest since the Great Depression, in April, declined to 6.9% in October.
- Because people who haven't looked for a job in the last four weeks don't count as unemployed, the headline unemployment rate significantly understates the extent of unemployment in the U.S. labor market.
- Initial claims for unemployment insurance, the best weekly measure of U.S. economic activity, showed the economic impact of COVID-19 before other economic data.
- Claims rose from 211,000 in the week ending March 7, close to an all-time low, to more than 6.8 million in the week ending March 28. Before the pandemic, the record for weekly claims was 695,000 in 1982.
- Claims have declined from their late-March peak to below 800,000 per week, but that's still higher than the pre-2020 record high.

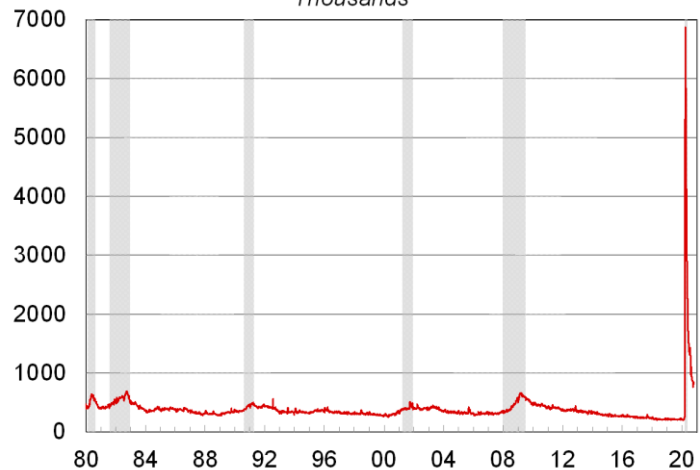
**US Nonfarm Payroll Employment**  
*Millions*



**US Civilian Unemployment Rate**  
*Percent*



**Initial Claims for Unemployment Insurance**  
*Thousands*

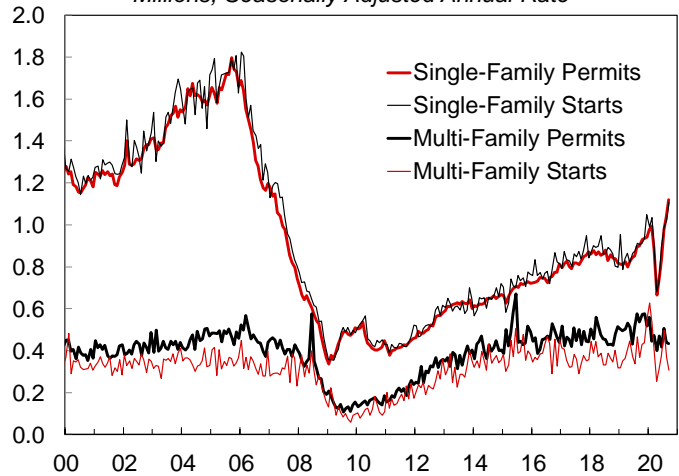


Source: U.S. Employment and Training Administration/FRED

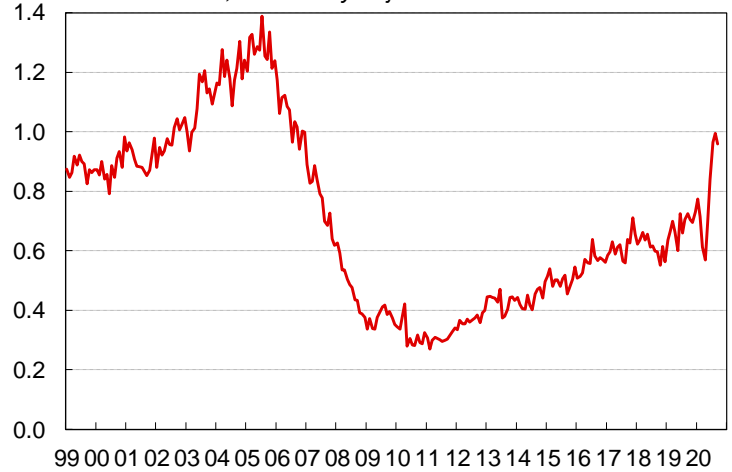
## US Housing & Business Investment

- The seasonally adjusted annual rate of building permits for single-family homes, the most important number in the monthly residential construction report, rose in September to its highest level since March 2007. (Permits are a better indicator of housing market activity than starts because they are less sensitive to weather.)
- Single-family starts and permits have surged, while multi-family housing activity has fallen, as people seek to leave cities for the suburbs and exurbs in response to the COVID-19 pandemic.
- New home sales rose in September to their highest level since 2006. They fell slightly in October but remain well above pre-pandemic levels.
- Existing-home sales (not shown) have also risen to their highest level since 2006, but probably can't rise much further because there are so few existing homes for sale. Pending sales declined in September.
- Inventories of existing single-family homes are less than three months of sales; house construction must remain strong to keep up with demand for single-family homes.
- Investment in business equipment rebounded strongly in the third quarter but remains well below its pre-recession peak. Companies that have gained business because of the pandemic have invested to expand their capacity.
- Investment in business structures, which include oil and gas wells, fell further in the third quarter, but the rate of decline slowed.
- Investment in intellectual property products, which includes software, was surprisingly weak for a second straight quarter.

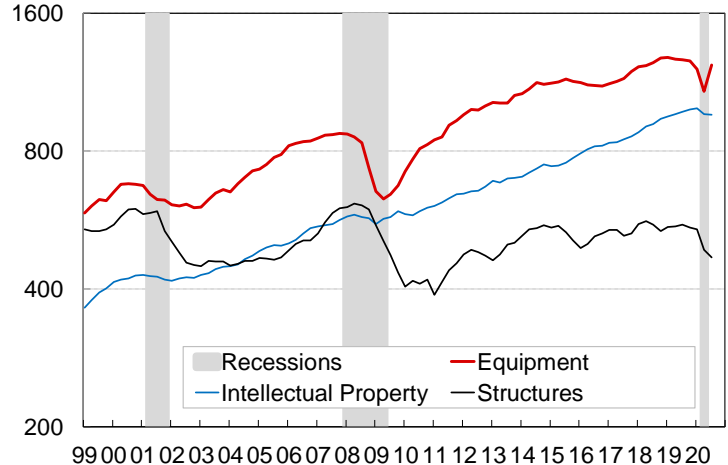
**US Housing Starts & Building Permits**  
*Millions, Seasonally Adjusted Annual Rate*



**US New Single-Family Home Sales**  
*Millions, Seasonally Adjusted Annual Rate*



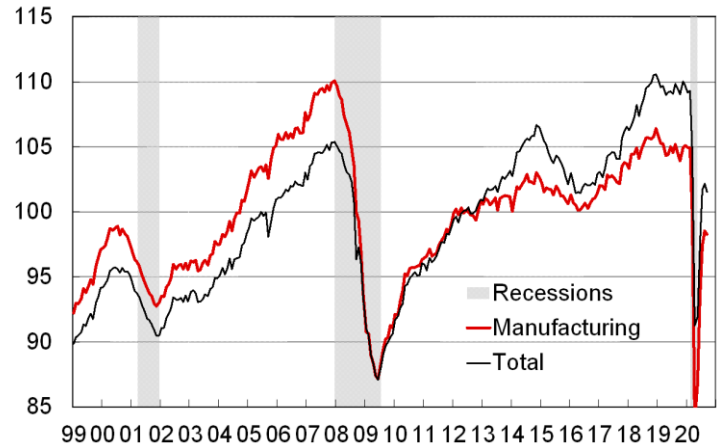
**US Nonresidential Fixed Investment**  
*Billion Chained 2012 Dollars*



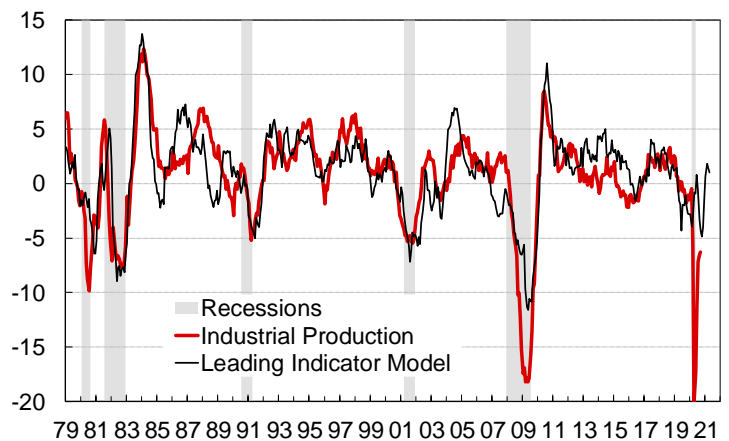
## Industrial Production & Leading Indicators

- Industrial production in U.S. manufacturing fell 20.1% from February to April, the largest two-month decline since 1945.
- Production rose from April to August but slipped in September, leaving in down 6% year-over-year. More than 100% of the September decline was due to declines in motor vehicles & parts and computers & electronic products, the two industries that had fully recovered from the recession.
- Total industrial production, which includes oil and gas production, fell even more than manufacturing and has recovered less.
- Industrial production for manufacturing (excluding computers, communication equipment, and semiconductors) was down 6.3% year-over-year in September. It had been down 20.1% in April.
- Because this recession was not caused by the economic factors summarized by leading indicators, year-over-year growth fell well below the level indicated by my leading indicator model.
- The model suggests that year-over-year growth is likely to turn positive during the first quarter of 2021.
- The Organization for Economic Cooperation and Development (OECD) publishes leading indicators for OECD members and six non-member developing countries. Their broadest leading indicator is highly correlated with year-over-year growth in global industrial production.
- The OECD “leading” indicator doesn’t lead by much, if at all, but because it doesn’t change direction often, it can confirm whether an apparent turning point in growth in industrial production is a true turning point or just statistical “noise”. The indicator plummeted from January to April and has rebounded strongly since then.

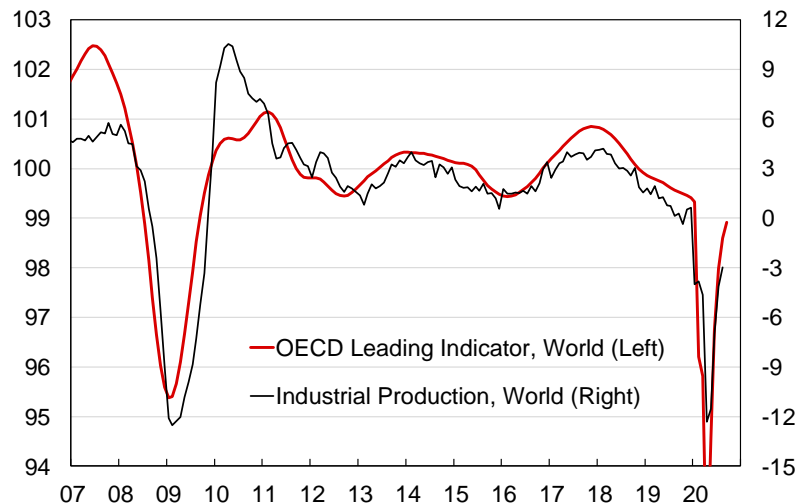
**US Industrial Production**  
*Indexes, 2012=100*



**US Industrial Production: Manufacturing ex high-tech**  
*Percent Change from Year Ago*



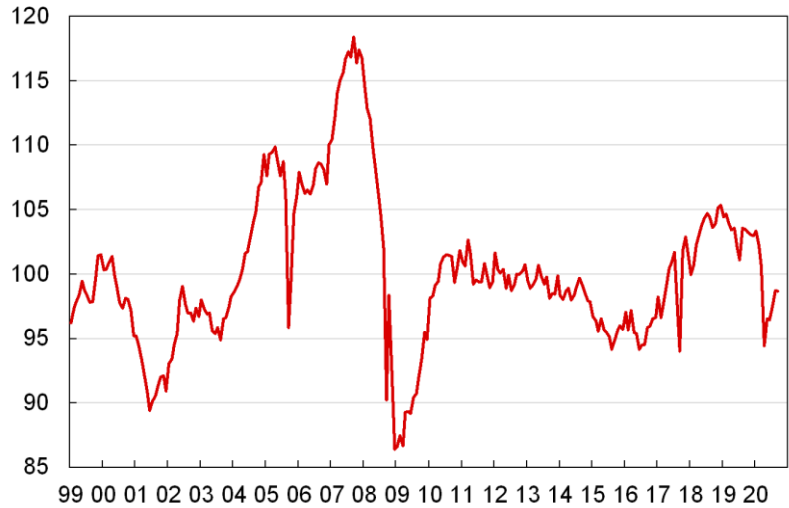
**OECD Leading Indicator & Global Industrial Production**  
*Trend = 100*      *Percent Change from Year Ago*



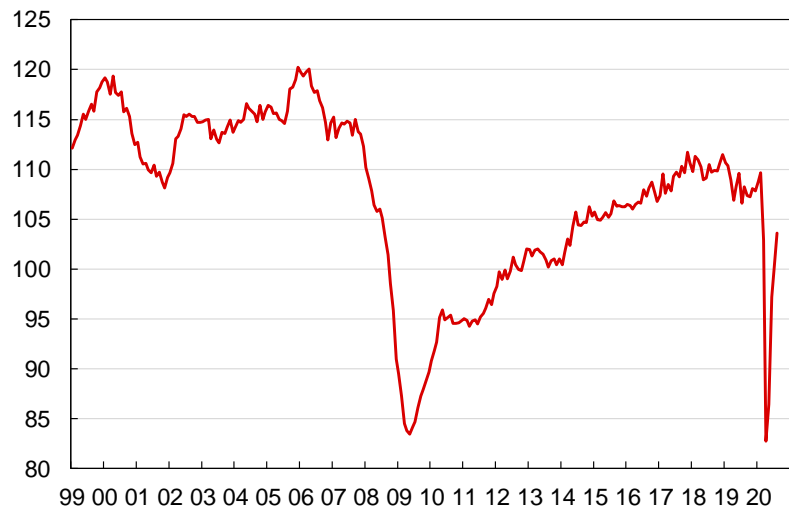
## US Industrial Production

- Industrial production of chemicals (excluding pharmaceuticals) fell 8.6% from January to April. This decline was much smaller than the decline associated with the Great Recession and smaller even than the decline associated with the mild 2001 recession. Given the cyclical nature of this industry, the decline was surprisingly small.
- The decline has been followed by a weak, partial recovery. Production was still down 4.6% year-over-year in September.
- U.S. industrial production of plastic and rubber products fell 24.5% from February to April. By September it had recouped 80% of this decline and was down just 2.8% year-over-year.
- Plastic and rubber production was hit hard by the near-total shutdown of motor vehicle production from mid-March to late May. Plastic and (especially) rubber production had already been trending down since 2017 in response to declining vehicle production.
- Even though natural gas liquids are the primary feedstock for the North American chemical industry, industrial chemical prices are more highly correlated with global oil prices than with natural gas prices because oil-based imports are the marginal source of supply.
- The Producer Price Index for industrial chemicals, which had already been trending downward since oil prices peaked in October 2018, fell sharply from January through May in response to the collapse in oil prices. Chemical prices have recovered slightly since then but remain near multi-year lows.

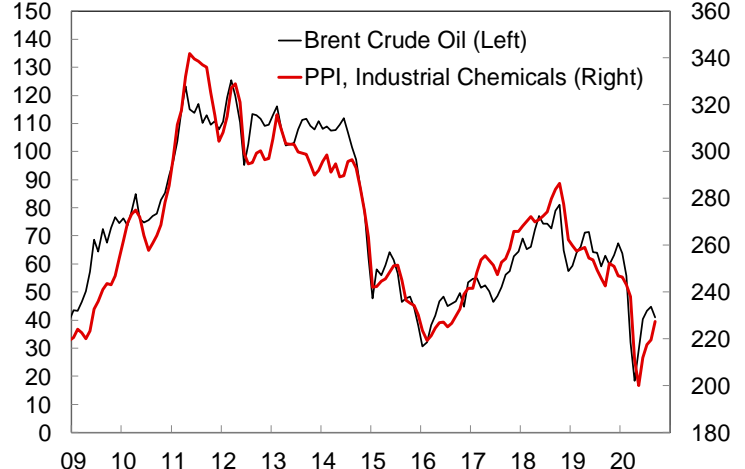
**US Industrial Production: Chemicals ex pharma**  
*Index, 2012=100*



**US Industrial Production: Plastic & Rubber Products**  
*Index, 2012=100*

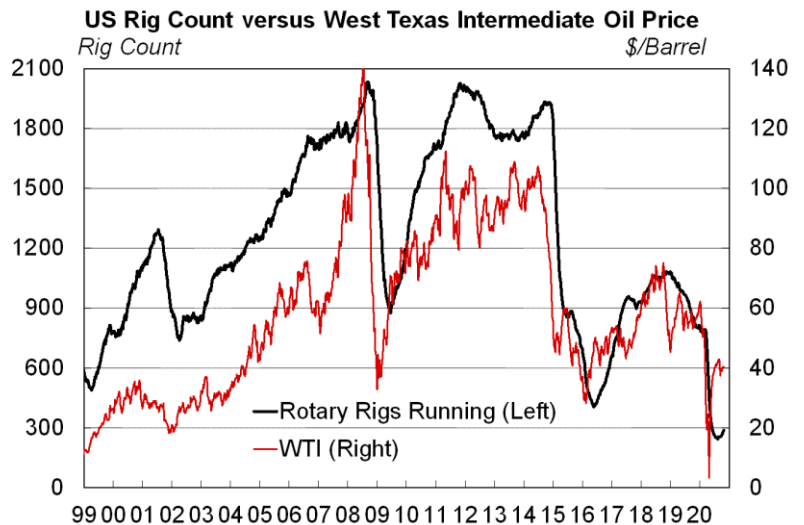
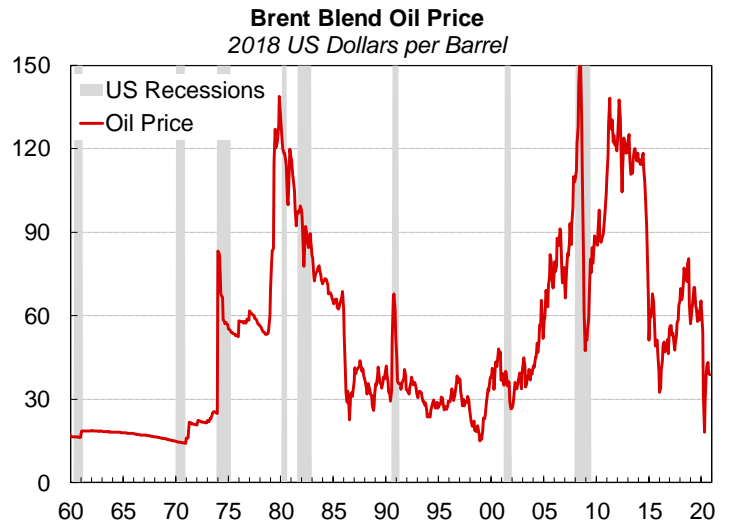
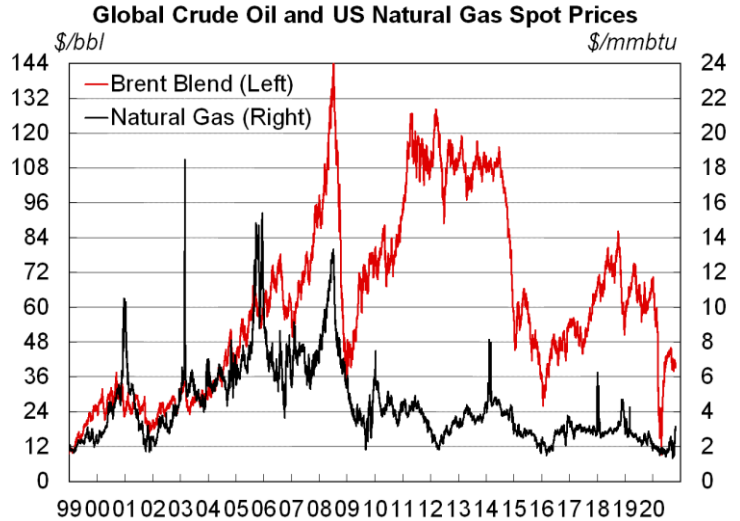


**Brent Oil Price vs Industrial Chemical Prices**  
*\$/Barrel (Left) Index, 1982 = 100 (Right)*



## Oil & Gas Prices

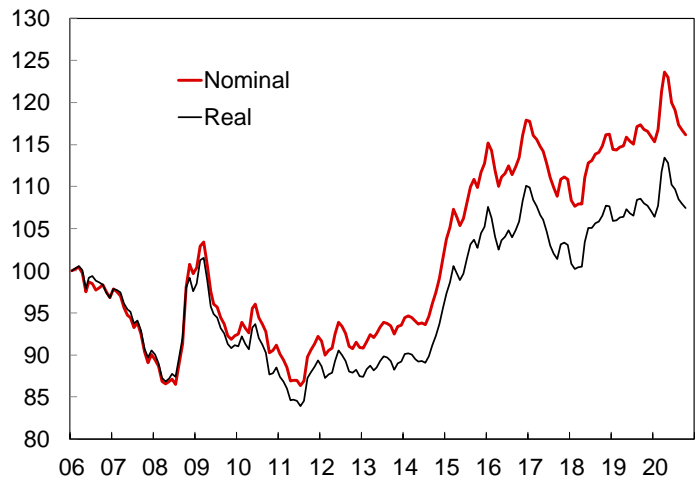
- The price of Brent Blend crude oil, which is tied to what U.S. consumers pay for petroleum products, fell in April to its lowest level since December 1998 as oil demand collapsed around the world because of the COVID-19 pandemic. Prices have partially recovered but remain well below pre-pandemic levels.
- Natural gas prices have risen above \$3 per million btu recently as fall weather has arrived and as drilling activity has declined in response to low oil prices.
- Low prices for natural gas and natural gas liquids, relative to oil prices, boosted the competitiveness of North American chemical producers, which use natural gas liquids as their primary feedstock, vis-à-vis foreign competitors, which rely on naphtha, a crude oil derivative. The sharp decline in oil prices has reduced this advantage.
- Real (inflation-adjusted) oil prices, which neared all-time lows in April, remain low.
- Historically, the U.S. economy has grown faster when oil prices were low than when oil prices were high. That relationship has been weakened, perhaps even eliminated, by growth in U.S. oil production since 2008.
- The price of West Texas Intermediate crude oil, which is tied to what U.S. oil producers are paid for their oil, turned negative on April 20. (Chart shows weekly data.) It has recovered to about \$40/barrel.
- Oil drilling plummeted in response to the price decline. It has turned up slightly in recent weeks in response to the recovery in prices.
- U.S. production of crude oil and natural gas liquids fell 17.9% from March's record high to May's cyclical low. It has recovered little. Natural gas production is also well below its record high, set last December.



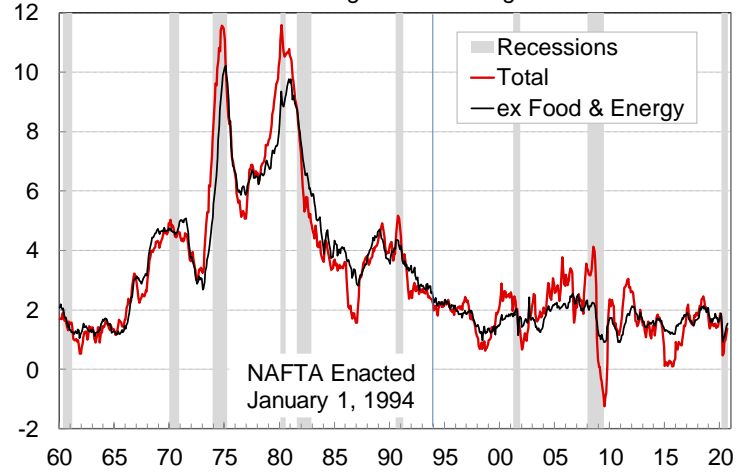
## Exchange Rates, Inflation, and Interest Rates

- The trade-weighted foreign exchange value of the U.S. dollar has declined since May. Despite this decline, which has gotten the attention of the financial press, the dollar remains close to all-time highs in nominal terms and near 17-year highs in real (inflation-adjusted) terms.
- A strong dollar helps keep inflation low, but it reduces the competitiveness of U.S.-produced goods and services, especially in agriculture, manufacturing, and mining.
- The U.S. Federal Reserve seeks to keep inflation, as measured by the year-over-year change in the Personal Consumption Expenditure Price Index averaged over a period of years, near 2%.
- The total PCE Price Index was up 1.4% year-over-year in September versus; it was up just 0.5% in April and May. The “core” (ex food and energy) index was up 1.5% in September; it was up just 0.9% in April.
- The Fed is unlikely to raise interest rates until inflation rises above 2% and remains there for some time.
- In response to early signs of the collapse in economic activity, the Federal Reserve cut its federal funds rate target by 1.25 percentage points, to a range of 0-0.25%.
- The closing yield on 10-year Treasury notes fell to a record low of 0.54% on March 9. It recently rose close to 0.9% but has fallen back below 0.8%.
- In addition to cutting interest rates, the Fed has greatly expanded its balance sheet by purchasing a variety of government and corporate bonds and other securities.

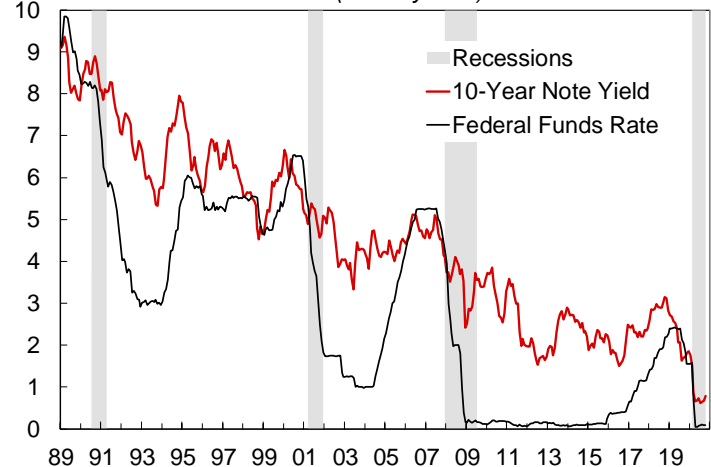
**Federal Reserve Broad Dollar Index**



**US Personal Consumption Expenditures Price Index**  
*Percent Change from Year Ago*



**US Interest Rates**  
*Percent (Monthly data)*

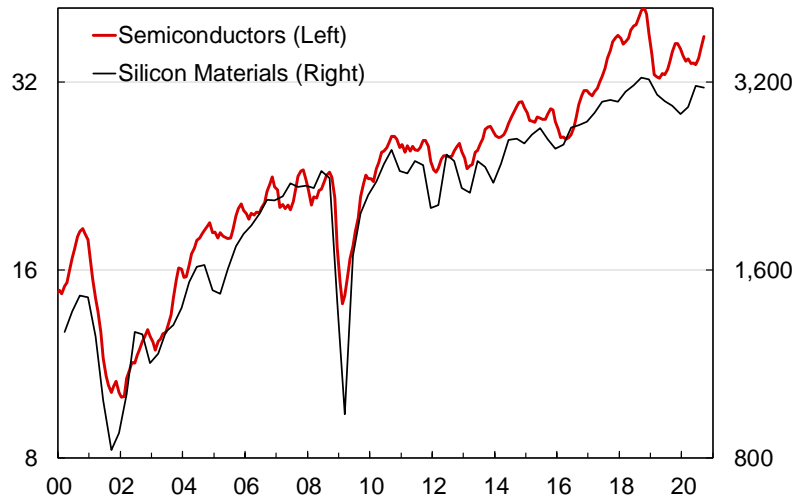




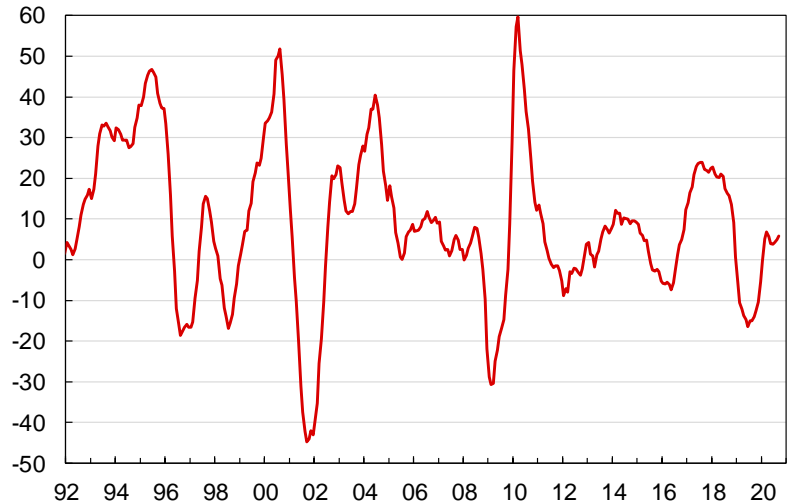
## Electronics & Communication

- Shipments of silicon materials are a good indicator of global demand for products going into the electronics industry. Shipments rose in the first half of 2020 despite the recession. Despite a small decline in the third quarter, shipments were up 6.9% year-over-year.
- The data (from SEMI®) are only reported quarterly back to 2000, but silicon wafer area (in square inches) has been strongly correlated with semiconductor shipments (in dollars), which are reported monthly back to 1976.
- Worldwide semiconductor shipments, reported by the Semiconductor Industry Association, rose in the third quarter but are still well below the record high set in 2018.
- Despite the recession, year-over-year growth in semiconductor shipments has been positive this year and was up to 5.8% in the third quarter.
- Electronics and communication fared better than other industries during the recession because of the needs of people working (and ordering) from home.
- Industrial production of wire and cable used in communication and energy applications fell by two-thirds from its 2000 peak to its 2009 trough. The recovery from 2009 to 2019, while significant in percentage terms, erased little of the 2001-2009 decline.
- Wire and cable production fell 17.6% from the 11-year high hit in June 2019 to its cyclical low in July 2020. It was down 15% year-over-year in September.
- Demand for wire and cable has almost certainly been hurt by the decline in nonresidential construction.

**Worldwide Semiconductor & Silicon Material Shipments**  
*Million\$, 3-Month Moving Average      Million Square Inches*



**Worldwide Semiconductor Shipments**  
*Percent Change from Year Ago, 3-Month Moving Average*

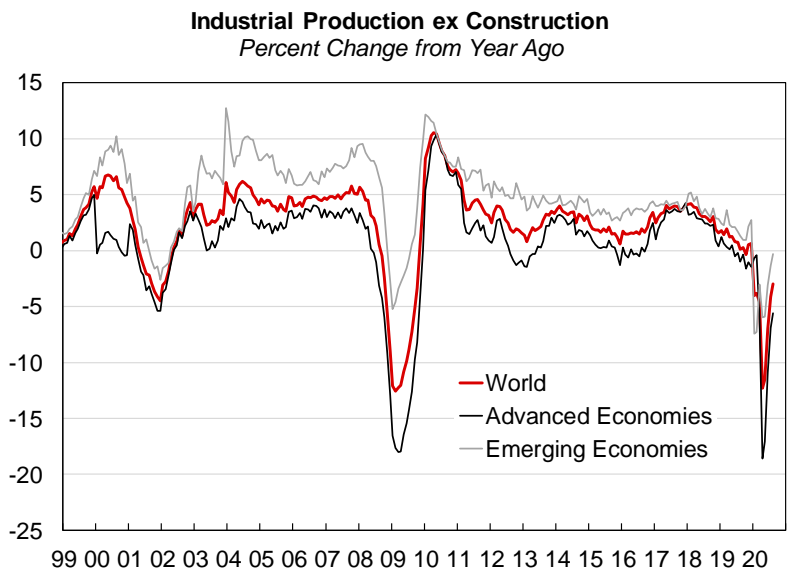
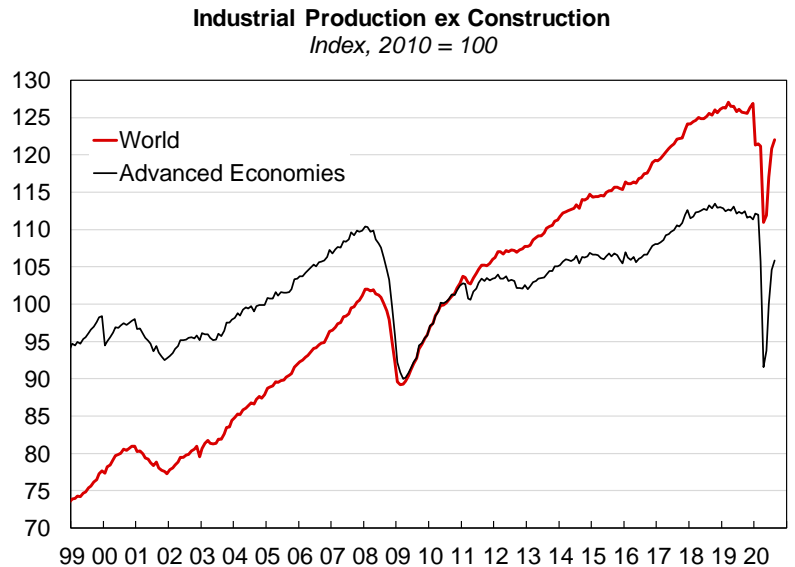
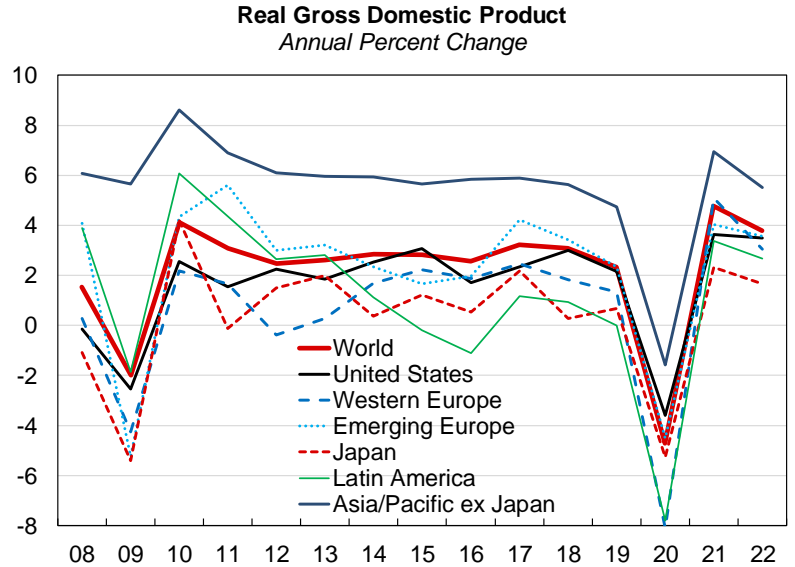


**US Industrial Production: Wire & Cable**  
*Index, 2012=100*



## Global Macroeconomic Overview

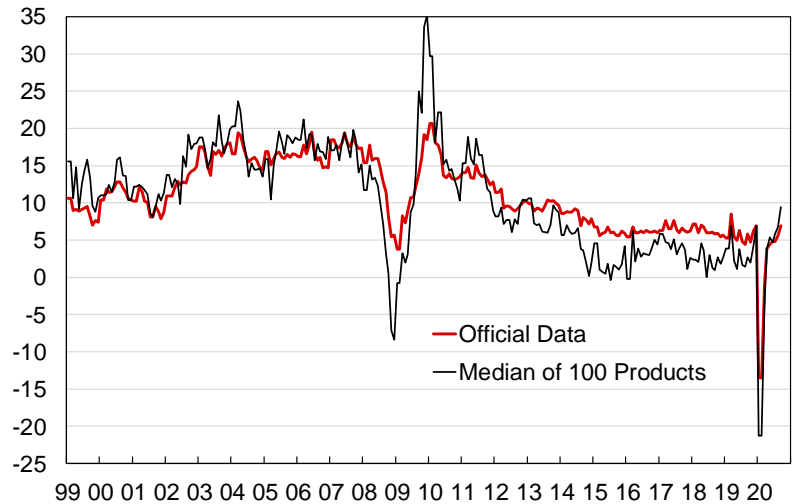
- Global real Gross Domestic Product (based on market exchange rates, not purchasing power parity) is expected to decline by 4.7% in 2020, after rising 2.3% in 2019. This year's decline would be by far the biggest since the Great Depression.
- Strong growth is expected in 2021 and 2022, but this would still leave the level of GDP below the pre-COVID-19 trend.
- The countries of East Asia have done a much better job dealing with the virus and minimizing its economic damage than have countries in the rest of the world.
- Global industrial production, as measured by the CPB Netherlands Bureau for Economic Policy Analysis, declined 12.6% from December 2019 to April 2020.
- The January/February decline was due almost entirely to a decline in industrial production in China; the March/April decline was due to declines in the rest of the world.
- Through August, global industrial production had recouped almost 70% of its December-to-April decline.
- Global industrial production was down 3% year-over-year in August. It had been down as much as 12.3% year-over-year in April. That was the largest year-over-year decline since February 2009, at the depths of the 2008-2009 recession.
- Industrial production in Emerging Economies has rebounded strongly, led by China; it was down just 0.3% year-over-year in August.
- Industrial production in Advanced Economies was still down 5.6% year-over-year in August.



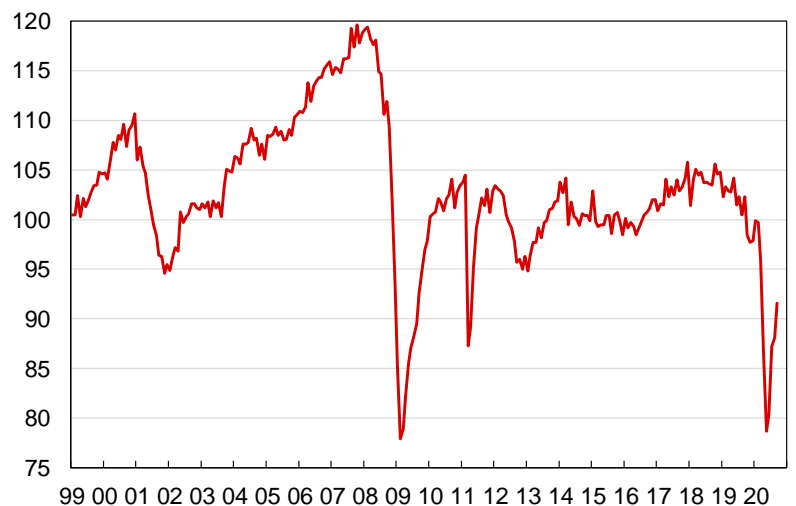
## Asia

- Economic activity in China has rebounded strongly after contracting sharply in January and February.
- Value Added of Industry, China's official measure of industrial production, was up 6.9% from prior-year levels in September; it was down 13.5% year-over-year in January/February combined.
- My preferred measure of growth in industrial production, the median year-over-year growth rate of 100 industrial products, rose to 9.5% in September, up from -21.3% in January/February.
- Although Japan has suffered fewer cases of COVID-19 than most other countries, industrial production in Japanese manufacturing fell sharply in March, April, and May and has recovered less than in most other countries.
- Production was still down 10.5% year-over-year in September.
- As a major exporter, Japan gets hit hard by economic weakness in the rest of the world.
- India has been hit very hard by the COVID-19 pandemic.
- Industrial production in manufacturing collapsed in March and April. It was down 66.6% year-over-year in April. Despite a strong rebound since then, it was down 8.6% year-over-year in August.
- The International Monetary Fund has lowered its forecast for 2020 GDP growth to -10.3%, down from 4.2% in 2019 and 8.3% in 2016. The IMF expects growth to rebound to 8.8% in 2021 and 8% in 2022.

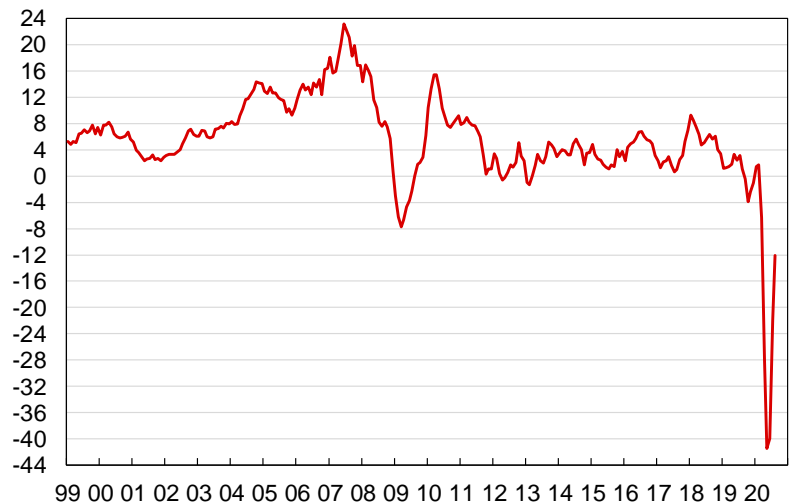
**Value Added of Industry (Industrial Production): China**  
Percent Change from Year Ago



**Industrial Production, Manufacturing: Japan**  
Index, 2015 = 100



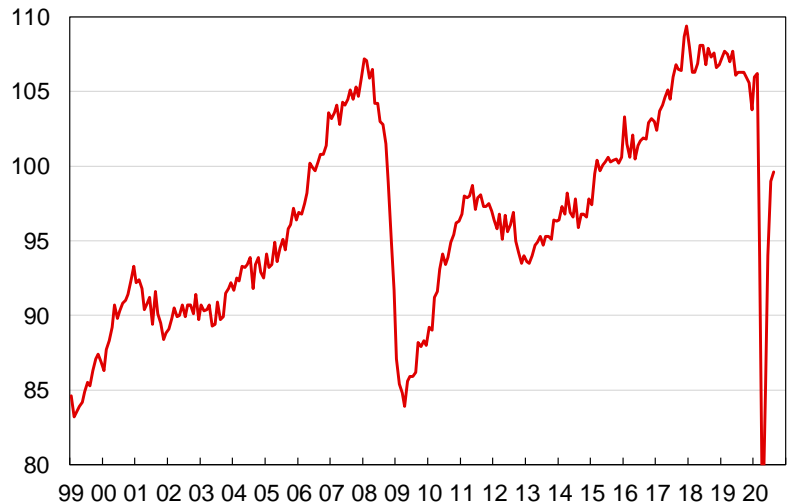
**Industrial Production, Manufacturing: India**  
Percent Change from Year Ago, Smoothed



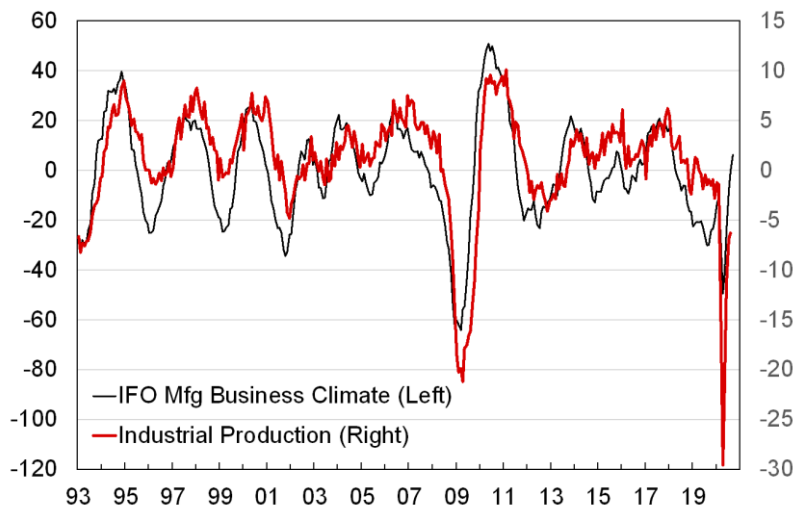
## Europe

- Real GDP in the European Union, which no longer includes the United Kingdom, rose 12.1% (57.8% annual rate) in the third quarter after falling 11.4% (38.5% annual rate) in the second quarter. Despite the strong rebound, GDP was down 3.9% year-over-year in the third quarter.
- Industrial production in EU manufacturing fell 29% from February to April. Through August it had recouped almost 79% of its decline, leaving it down 6.3% year-over-year.
- The 12-month change in the German IFO manufacturing business climate index has historically led year-over-year growth in European Union manufacturing production by three months and is reported in a timelier manner.
- The IFO index plummeted in March and April to its lowest level since March 2009. It has since gradually recovered into positive territory, as has its 12-month change. This suggests that manufacturing will continue to recover and that year-over-year growth in industrial production is likely to turn positive in early 2021.
- Industrial production in manufacturing in Poland fell 29.8% in March and April but by September had rebounded to a new record high and was up 4.7% year-over-year.
- Production fell 40.6% in Hungary and 35% in the Czech Republic in March and April. In August, production was down 5.7% year-over-year in the Czech Republic but was up 0.1% in Hungary.

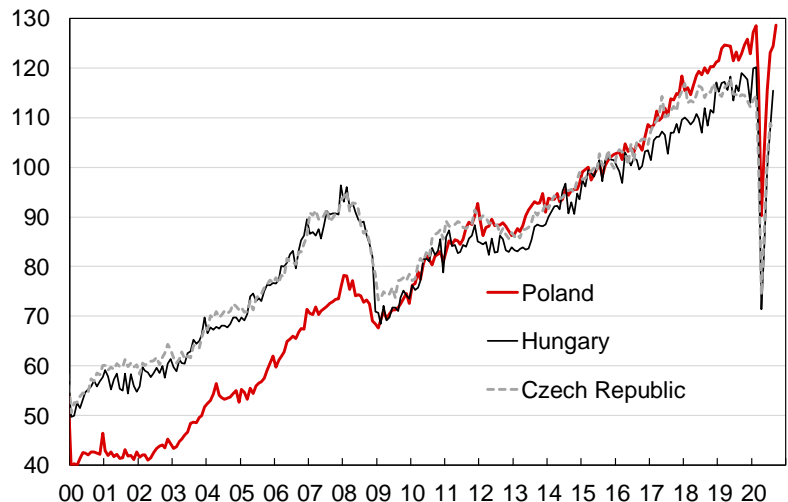
**Industrial Production, Manufacturing: European Union**  
Index, 2015 = 100



**Industrial Production, Manufacturing: European Union**  
Change/Percent Change from Year Ago



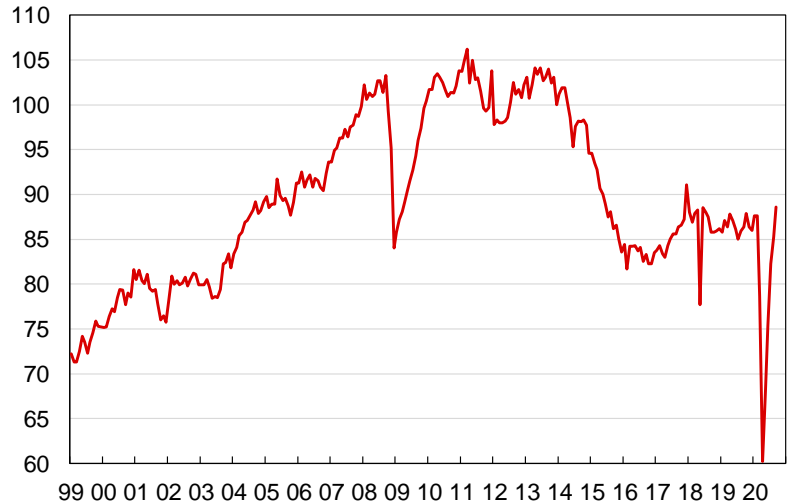
**Industrial Production, Manufacturing: Central Europe**  
Index, 2015 = 100



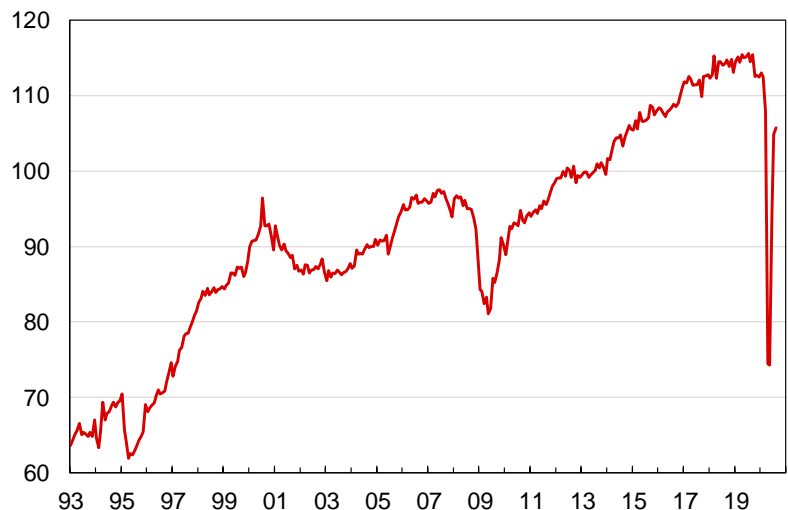
## Americas

- Brazil has been hit hard by COVID-19.
- Industrial production in Brazilian manufacturing fell 31.3% in March and April, leaving it down 30.1% year-over-year.
- Production has rebounded strongly from April's trough and was up 0.8% year-over-year in September. Despite the rebound, production remains more than 10% below the levels reached from 2010 to 2014.
- Industrial production in Mexican manufacturing fell more than 34% from January to May. It had recouped more than 80% of that decline through August but was still down 7.7% year-over-year.
- The Mexican economy was weakening even before COVID-19. Gross Domestic Product fell 1.6% in the first quarter and was down 2.4% year-over-year.
- Unlike most countries, Canada reports Gross Domestic Product monthly rather than quarterly and for various sectors of the economy.
- Real GDP in manufacturing, which is comparable to industrial production in other countries, fell 28.7% in March and April. By August, it had recouped 85% of its losses but was still down 5.5% year-over-year.

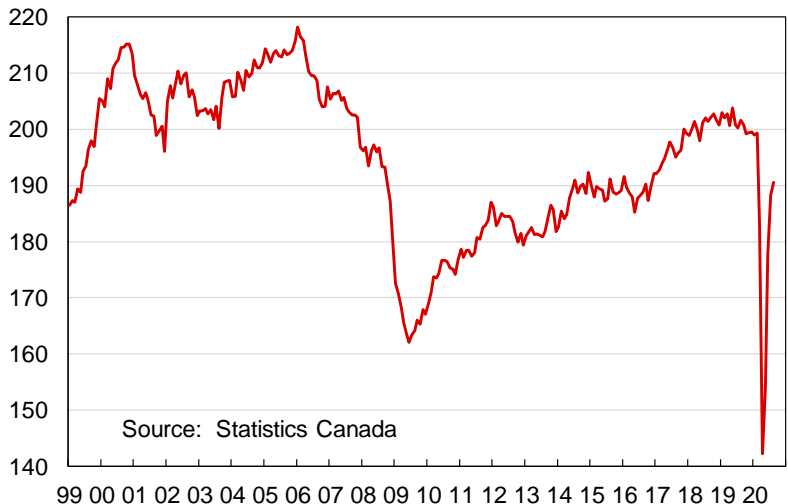
**Industrial Production, Manufacturing: Brazil**  
Index, 2012 = 100



**Industrial Production, Manufacturing: Mexico**  
Index, 2013 = 100



**Real GDP at Basic Prices, Manufacturing: Canada**  
Billion 2012 Chained Canadian Dollars



# Global GDP Growth

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
<b>World</b>	<b>3.2</b>	<b>3.1</b>	<b>2.3</b>	<b>-4.7</b>	<b>4.8</b>	<b>3.8</b>	<b>3.3</b>	<b>3.0</b>	<b>2.8</b>
<b>North America</b>	<b>2.4</b>	<b>2.9</b>	<b>2.1</b>	<b>-3.8</b>	<b>3.8</b>	<b>3.5</b>	<b>2.6</b>	<b>2.1</b>	<b>1.9</b>
United States	2.3	3.0	2.2	-3.6	3.6	3.5	2.6	2.1	1.9
Canada	3.2	2.0	1.7	-5.8	5.2	3.6	2.4	1.8	1.8
Mexico	2.1	2.2	-0.3	-9.0	3.5	2.3	2.2	2.1	2.1
<b>Western Europe</b>	<b>2.5</b>	<b>1.8</b>	<b>1.3</b>	<b>-8.1</b>	<b>5.1</b>	<b>3.1</b>	<b>2.1</b>	<b>1.7</b>	<b>1.5</b>
France	2.3	1.8	1.5	-9.8	6.0	2.9	2.3	1.9	1.7
Germany	2.6	1.3	0.6	-6.0	4.2	3.1	1.8	1.3	1.2
Italy	1.7	0.8	0.3	-10.6	5.2	2.6	1.7	0.9	0.9
Spain	2.9	2.4	2.0	-12.8	7.2	4.5	3.4	2.8	1.5
U.K.	1.9	1.3	1.5	-9.8	5.9	3.2	1.9	1.7	1.6
<b>C &amp; E Europe</b>	<b>4.2</b>	<b>3.4</b>	<b>2.3</b>	<b>-4.5</b>	<b>4.0</b>	<b>3.6</b>	<b>3.2</b>	<b>2.9</b>	<b>2.7</b>
<b>Middle East &amp; Africa</b>	<b>1.7</b>	<b>1.5</b>	<b>1.2</b>	<b>-5.3</b>	<b>3.0</b>	<b>3.5</b>	<b>3.3</b>	<b>3.1</b>	<b>3.2</b>
<b>Asia/Pacific</b>	<b>5.0</b>	<b>4.4</b>	<b>3.8</b>	<b>-2.4</b>	<b>6.0</b>	<b>4.7</b>	<b>4.6</b>	<b>4.5</b>	<b>4.3</b>
Japan	2.2	0.3	0.7	-5.3	2.3	1.7	1.2	1.0	0.6
ex Japan	5.9	5.6	4.7	-1.6	6.9	5.5	5.4	5.3	5.2
Australia	2.4	2.8	1.8	-4.2	3.0	2.8	2.6	2.6	2.5
China	6.9	6.8	6.1	1.9	8.2	5.8	5.7	5.6	5.5
India	7.0	6.1	4.2	-10.3	8.8	8.0	7.6	7.4	7.2
Indonesia	5.1	5.2	5.0	-1.5	6.1	5.3	5.2	5.1	5.1
Korea (South)	3.2	2.9	2.0	-1.9	2.9	3.1	2.9	2.6	2.4
Malaysia	5.8	4.8	4.3	-6.0	7.8	6.0	5.7	5.3	5.0
Philippines	6.9	6.3	6.0	-8.3	7.4	6.4	6.5	6.5	6.5
Singapore	4.3	3.4	0.7	-6.0	5.0	2.6	2.6	2.5	2.5
Taiwan	3.3	2.7	2.7	0.0	3.2	2.1	2.1	2.1	2.1
Thailand	4.1	4.2	2.4	-7.1	4.0	4.4	4.3	4.3	3.7
Vietnam	6.9	7.1	7.0	1.6	6.7	7.4	7.2	6.9	6.6
<b>Latin America</b>	<b>0.9</b>	<b>0.6</b>	<b>0.1</b>	<b>-7.5</b>	<b>3.3</b>	<b>2.8</b>	<b>2.7</b>	<b>2.6</b>	<b>2.6</b>
Argentina	2.8	-2.6	-2.1	-11.8	4.9	2.5	2.3	2.1	1.7
Brazil	1.3	1.3	1.1	-5.8	2.8	2.3	2.2	2.2	2.2

# Global Industrial Production Growth

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
<b>World</b>	<b>3.6</b>	<b>3.1</b>	<b>0.9</b>	<b>-5.5</b>	<b>6.1</b>	<b>4.1</b>	<b>3.0</b>	<b>2.4</b>	<b>2.4</b>
<b>Advanced economies</b>	<b>3.1</b>	<b>2.4</b>	<b>-0.3</b>	<b>-6.4</b>	<b>5.8</b>	<b>3.3</b>	<b>2.4</b>	<b>1.5</b>	<b>1.3</b>
United States	3.1	0.9	-1.5	-7.6	4.0	4.4	2.6	1.6	1.5
Japan	2.3	3.9	0.9	-7.0	6.0	2.0	2.0	1.0	1.0
Euro Area	2.6	1.0	-2.6	-10.5	9.0	3.0	2.0	1.5	1.2
Other advanced	3.8	2.0	-0.9	1.0	4.0	3.0	3.0	1.5	1.5
<b>Emerging economies</b>	<b>4.1</b>	<b>3.8</b>	<b>2.0</b>	<b>-4.5</b>	<b>6.6</b>	<b>4.9</b>	<b>3.7</b>	<b>3.5</b>	<b>3.5</b>
China	6.5	6.2	5.7	2.0	6.0	5.0	4.0	4.0	4.0
Emerging Asia ex China	4.3	4.5	0.5	-5.0	7.0	4.0	4.0	4.0	4.0
C & E Europe	4.3	3.4	2.2	-5.0	6.0	4.0	2.5	2.0	2.0
Latin America	-0.7	-2.2	-5.0	-11.0	7.0	4.0	3.0	2.5	2.5
Middle East & Africa	0.7	1.0	-2.9	-10.0	7.0	7.0	4.0	3.5	3.5

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