Industrial Supply Association MARCH 2022

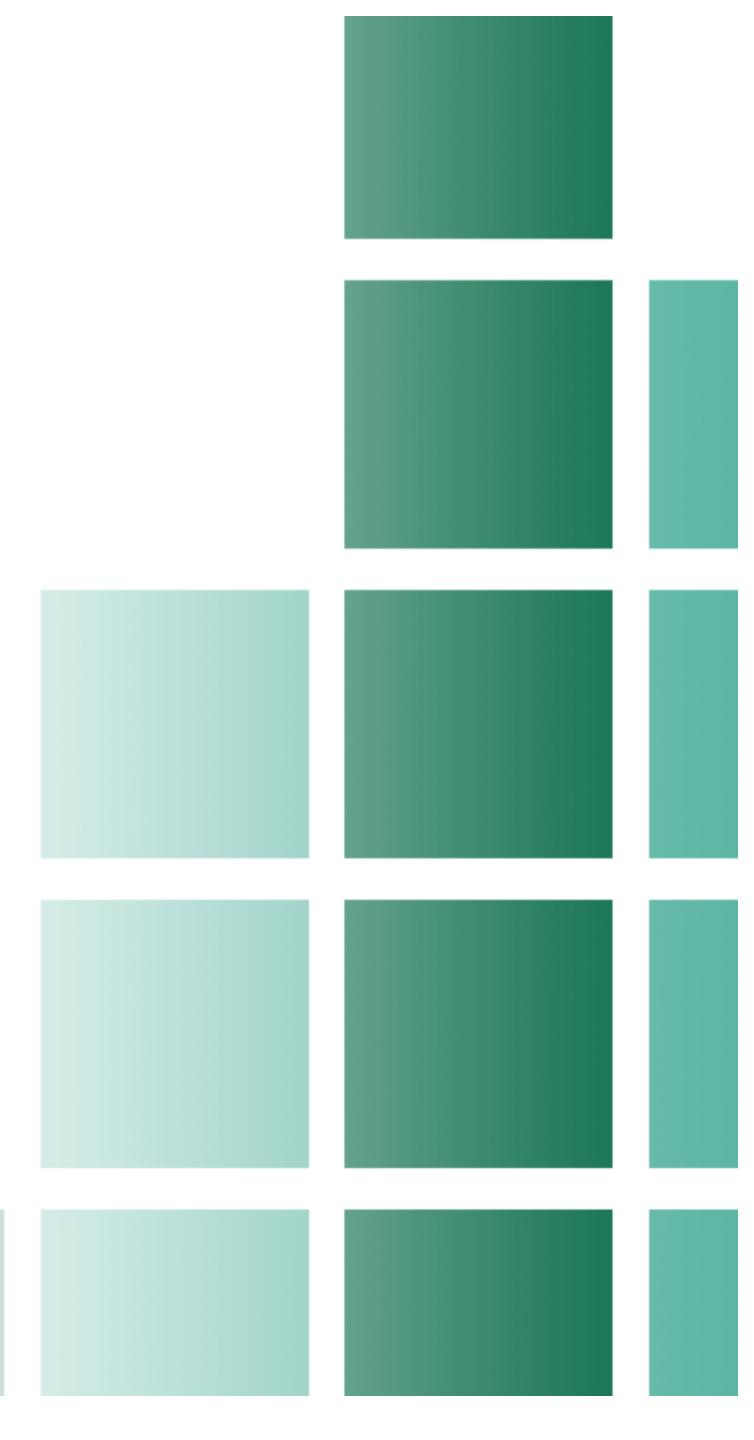






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Economic Overview

Please note: At ITR Economics, we confine our analysis to the economic impact of events. That does not mean we assign primacy to the economics, and it does not diminish our personal anguish over the pain, suffering, and loss of life resulting from Russia's invasion of Ukraine.

Economic fundamentals that predate the war in Ukraine are pushing the global economy onto the back side of the business cycle. US Real Gross Domestic Product (GDP) is already in a slowing growth trend, and industrial production, retail sales, and business-to-business capex spending are on the cusp of slowing growth. Forward-looking indicators unanimously signal cyclical decline in the quarters ahead, and our business cycle theory points to a 2023 cyclical low for markets that move in tandem with the US macroeconomy. Notable exceptions to this timing are construction markets. US Single-Unit Housing Starts typically lead the macroeconomy and will likely reach a cyclical low this year, while nonresidential construction lags the macroeconomy and is expected to reach a low during 2024.

These expectations all predate the recent volatility and uncertainty caused by the war in Ukraine. The length and breadth of the conflict, as well as the types of weapons used, will determine the impact to the economy. The unknowns are significant, but the knowns at this point do not warrant a change to our macroeconomic expectations.

Before we discuss further, take solace that the US economy is very sizable: it takes significant and sustained pressure to knock it off course, and history tells us that economic fundamentals prevail in the long run. However, the economy is more sensitive to additional downside pressures when it is in a cyclical declining

trend. While Ukraine and Russia are minor destinations for US exports, the conflict and related sanctions have already had economic effects in the US. This is partly due to the interconnectivity of the global economy, and it is especially evident in commodity markets.

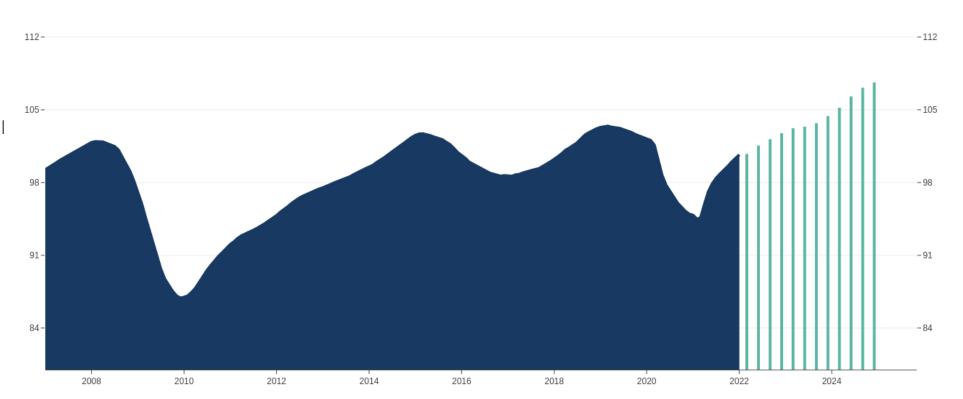
One of the early and well-published impacts to the US consumer has been higher prices at the pump. Demand for gas is relatively inelastic, so elevated gas prices will cut into consumers' budgets at a time when inflation, at multi-decade highs, is already reducing their purchasing power. This is important because the consumer is the backbone of the economy. We are paying close attention to the balance of negative and positive indications for the US consumer. While these recent hits to purchasing power are concerning, the consumer has built up savings and has a low debt-to-income ratio.

US businesses will be likely be impacted by the Ukraine conflict through higher commodity prices and exacerbated supply chain disruptions. Heightened uncertainty could reduce willingness to invest in new machinery or systems, hindering capex spending. The impact will not be distributed evenly. The automotive industry is likely more sensitive to supply chain disruptions. Companies with significant exposure to European customers could be impacted more severely, as Europe is experiencing exaggerated effects, especially with regard to energy prices. The defense sector could benefit if the US becomes more involved or an arms race ensues. The US oil and gas sector is already benefiting from the recent spike in prices, and political pressure to increase production could result in more drilling.

We still expect a "soft landing" for the US economy, culminating in flat, but not declining, GDP. Some individual markets are forecast to decline this cycle, but we expect the decline will be mild relative to historical norms. As we gain clarity surrounding the length and breadth of the Ukraine conflict, we will continue to assess the long-run economic impact. Our social media posts and blogs will include timely updates on our perspective. We encourage you to follow along.

Our advice is to stay calm at the helm. Lead with confidence, knowing that after the volatility resolves, economic fundamentals will drive the economy – and our forecasts are based on those economic fundamentals. Try to see past the headlines and keep an eye on the future. Investing in efficiency gains, labor-saving technology, and your competitive advantages while interest rates are still low will be a winning strategy.

US Industrial Production IndexAnnual Average (12MMA)





Terminology and Methodology

Data Trends: Moving Averages and Totals

Quarterly Average (Three-Month Moving Average, or 3MMA)

The average of the latest three months of data, updated every month. In the example, \$57.79 is the quarterly average for the three months ending in March 2021 (i.e., the average for January, February, and March 2021).

Example: Monthly US Crude Oil Spot Prices averaged \$57.79 in the first quarter of 2021, a 26.3% increase from the first quarter of 2020.

Quarterly Total (Three-Month Moving Total, or 3MMT)

The total of the latest three months of data, updated every month. In the example, \$257.8 billion is the quarterly total for the three months ending in February 2021 (i.e., the total for December 2020, January 2021, and February 2021).

Example: Quarterly US Capital Goods New Orders totaled \$257.8 billion in February 2021.

Annual Average (12-Month Moving Average, or 12MMA)

The average of the latest 12 months of data, updated every month. In the example, 119.0 million is the annual average for February 2021 (i.e., the average for the 12-month period from March 2020 through February 2021).

Example: US Private Sector Employment averaged 119.0 million workers during the 12 months through February 2021, down 7.5% from one year earlier.

Annual Total (12-Month Moving Total, or 12MMT)

The total of the latest 12 months of data, updated every month. In the example, \$5.849 trillion is the annual total for February 2021 (i.e., the total for the 12-month period from March 2020 through February 2021).

Example: US Wholesale Trade totaled \$5.849 trillion during the 12 months through February 2021.

Growth Rates

Monthly Growth Rate (1/12 Rate-of-Change)

The percentage change between a given month and the same month one year earlier. In the example, 79.3% is the monthly growth rate for March 2021.

Example: Monthly US Copper Futures Prices were at \$4.00 per pound in March 2021, 79.3% above the March 2020 level of \$2.29.

Quarterly Growth Rate (3/12 Rate-of-Change)

The percentage change between a three-month period and the same three-month period from one year earlier. In the example, 26.3% is the quarterly growth rate for March 2021.

Example: US Crude Oil Spot Prices averaged \$57.79 in the first quarter of 2021, a 26.3% increase from the first quarter of 2020.

Annual Growth Rate (12/12 Rate-of-Change)

The percentage change between a 12-month period and the same 12-month period from one year earlier. In the example, -7.5% is the annual growth rate for February 2021; that is, US Private Sector Employment during March 2020 through February 2021 came in 7.5% below Employment from March 2019 through February 2020.

Example: US Private Sector Employment averaged 119.0 million workers during the 12 months through February 2021, down 7.5% from one year earlier.

Business Cycle Phases



Recovery (A)

The annual growth rate (12/12) is rising, but the rate of growth is still negative. We denote this phase with blue (for improving).



Accelerating Growth (B)

The annual growth rate (12/12) is rising, and the rate of growth is positive. We denote this phase with green (for go).



Slowing Growth (C)

The annual growth rate (12/12) is positive, but the rate of growth is declining. We denote this phase with yellow (for caution).



Recession (D)

The annual growth rate (12/12) is declining, and the rate of growth is negative. We denote this phase with red (for warning).





Industrial Supply Association Markets Dashboard

		Current		Annual Growth Rate Forecast (12/12), Year-End*			
Page Number	Indicator	Growth Rate**	Phase	2022**	2023**	2024**	
4	US Industrial Production Index	6.1%	В	2.8%	1.6%	3.1%	
5	US Civilian Aircraft Equipment Production Index	16.7%	В	15.1%	-2.9%	11.9%	
6	US Automobile Production Index	-14.9%	D	-4.3%	11.2%	15.3%	
7	US Private Nonresidential Construction	-0.6%	Α	13.4%	7.6%	3.9%	
8	US Primary Metals Production Index	14.5%	В	5.0%	0.6%	4.6%	
9	US Real Gross Domestic Product (Quarterly Growth Rate)	5.6%	С	1.7%	2.0%	3.2%	

^{*}Coloring denotes the business cycle phase at year-end. For example, if a value in the 2021 column is colored blue, the corresponding indicator is forecasted to be in Phase A, Recovery, at year-end 2021.

Green denotes Phase B, yellow Phase C, and red Phase D.

**Annual growth rate (12/12) except where otherwise noted.



Recovery (A)



Accelerating Growth (B)



Slowing Growth (C)



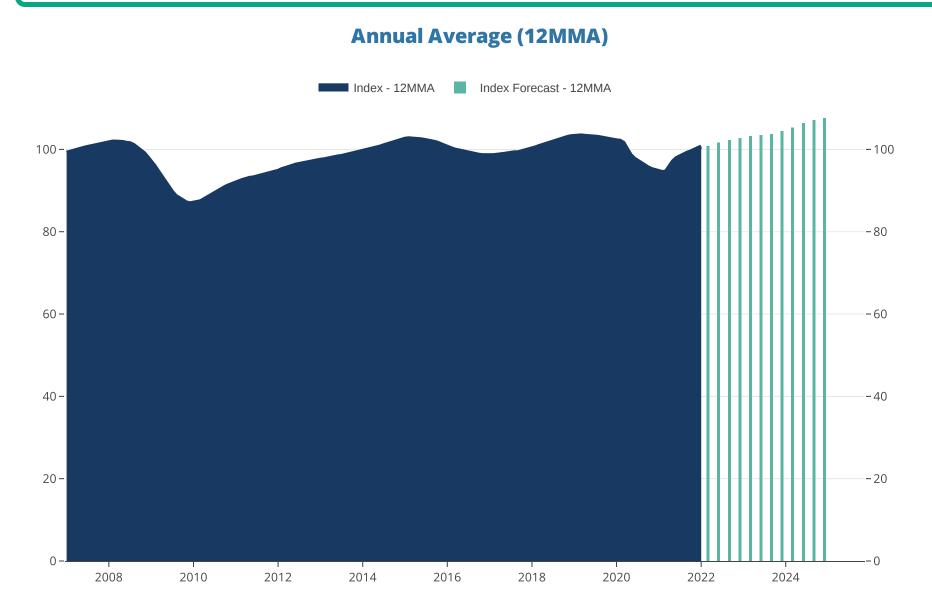
Recession (D)





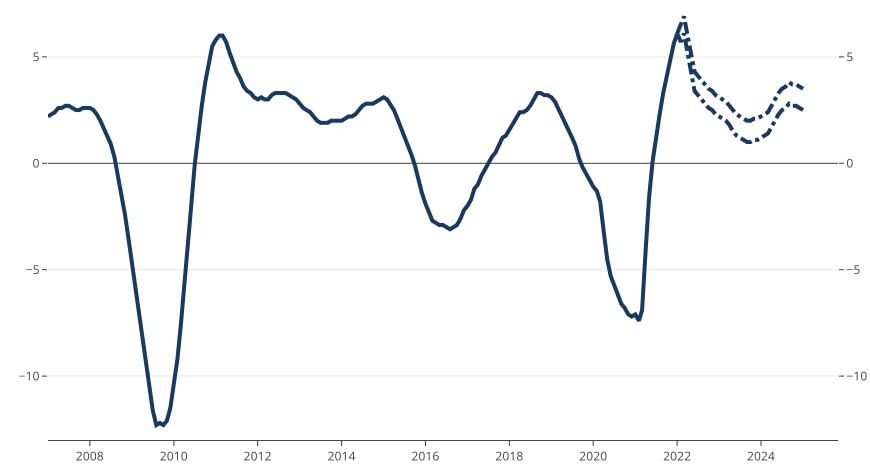
US Industrial Production Index

Production to Rise Through 2024, But Growth Rates Will Retreat to More Historically Normal Levels



Annual Growth Rate (12/12) ■ Index - 12/12 ■ ■ Index Forecast - 12/12





Current Phase



Phase B **Accelerating** Growth

Current Indicator Amplitude

- January 2022 Annual Growth Rate (12/12): 6.1%
- January 2022 Annual Average (12MMA), 2017=100: 100.7

Industry Outlook

Year Annual Growth Rate

2022 2.8% 2023 1.6% 2024 3.1%

	Mar- 22	Jun- 22	Sep- 22	Dec- 22	Mar- 23	Jun- 23	Sep- 23	Dec- 23	Mar- 24	Jun- 24	Sep- 24	Dec- 24
Lower Forecast Range	6.1	3.4	2.8	2.3	2.0	1.3	1.0	1.1	1.4	2.3	2.8	2.6
Annual Growth Rate (%)	6.5	3.9	3.3	2.8	2.5	1.8	1.5	1.6	1.9	2.8	3.3	3.1
Upper Forecast Range	6.9	4.3	3.7	3.2	2.9	2.3	2.0	2.1	2.4	3.3	3.8	3.6

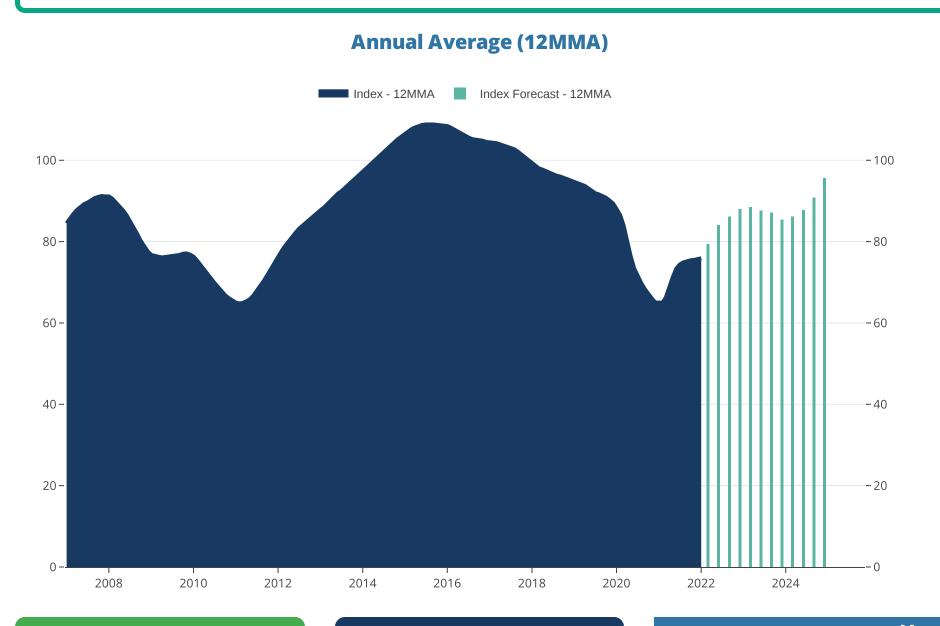
Lower Forecast Range	100.4	101.1	101.7	102.3	102.8	102.9	103.2	103.9	104.7	105.8	106.6	107.1
Annual Average Index (2017=100)	100.8	101.6	102.2	102.7	103.2	103.4	103.7	104.4	105.2	106.3	107.1	107.6
Upper Forecast Range	101.1	102.0	102.6	103.2	103.7	103.9	104.2	104.9	105.7	106.8	107.6	108.1

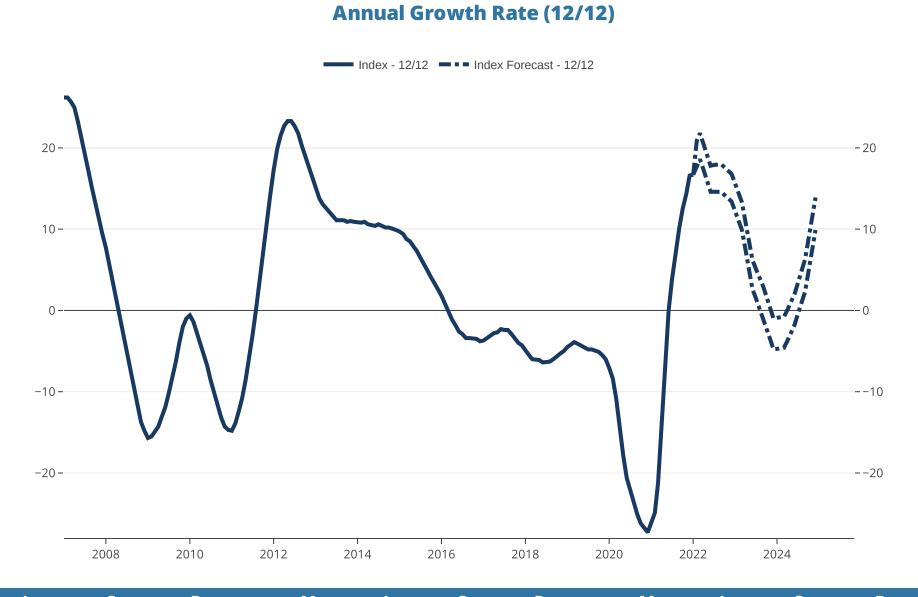




US Civilian Aircraft Equipment Production Index

Demand Is Conducive for Rise in Production; Regulatory Clearance Could Be a Determining Factor





Current Phase



Phase B
Accelerating
Growth

Current Indicator Amplitude

- January 2022 Annual Growth Rate (12/12): 16.7%
- January 2022 Annual Average (12MMA), 2017=100: 75.9

Industry Outlook	

Year Annual Growth Rate

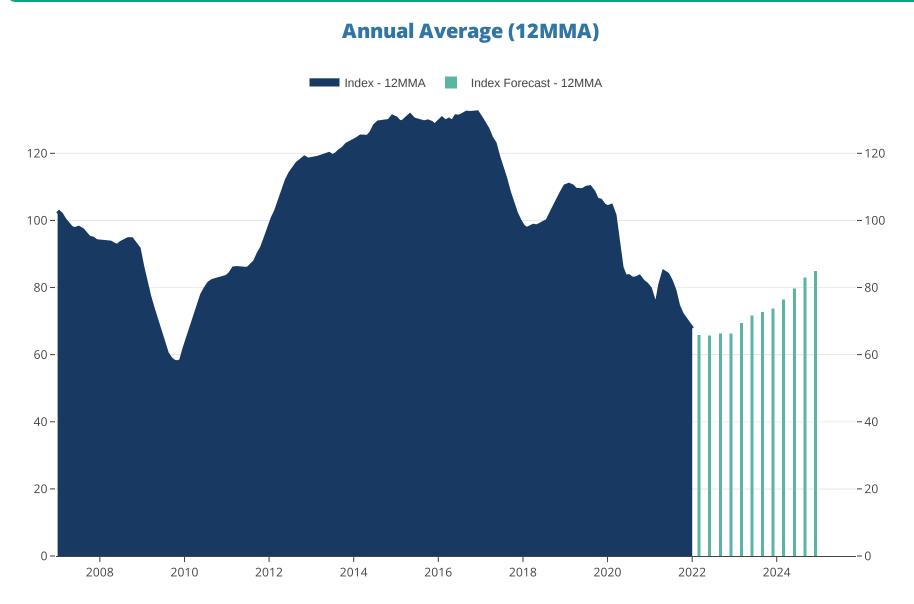
2022 15.1%2023 -2.9%2024 11.9%

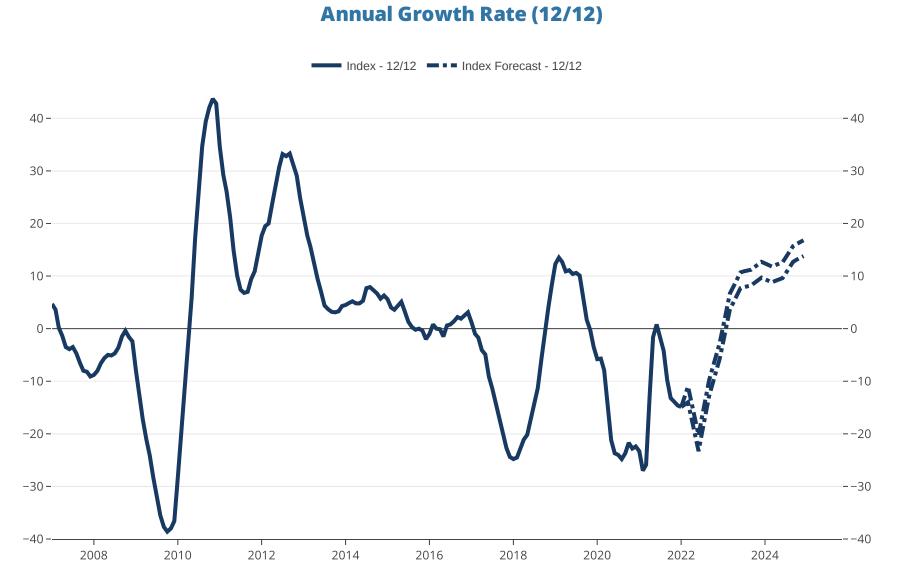
	Mar- 22	Jun- 22	Sep- 22	Dec- 22	Mar- 23	Jun- 23	Sep- 23	Dec- 23	Mar- 24	Jun- 24	Sep- 24	Dec- 24
Lower Forecast Range	18.6	14.6	14.6	13.4	9.9	2.6	-0.8	-4.8	-4.6	-1.8	2.3	9.9
Annual Growth Rate (%)	20.2	16.2	16.3	15.1	11.6	4.4	1.1	-2.9	-2.7	0.1	4.3	11.9
Upper Forecast Range	21.8	17.8	18.0	16.8	13.3	6.2	3.0	-1.0	-0.8	2.0	6.3	13.9
Lower Forecast Range	78.3	82.8	84.9	86.6	87.2	86.1	85.4	83.7	84.4	86.1	89.1	93.9
Annual Average Index (2017=100)	79.3	84.0	86.1	87.9	88.5	87.6	87.1	85.4	86.1	87.7	90.8	95.6
Upper Forecast Range	80.4	85.1	87.4	89.2	89.9	89.2	88.7	87.1	87.8	89.4	92.5	97.3



US Automobile Production Index

Forecast Lowered; Flat Production in 2022 Due to Supply Issues; Demand to Drive Rise in 2023-24





Current Phase



Phase D Recession

Current Indicator Amplitude

- January 2022 Annual Growth Rate (12/12): -14.9%
- January 2022 Annual Average (12MMA), 2017=100: 67.8

Industry Outlook

Year Annual Growth Rate
2022 -4.3%

2023 11.2%2024 15.3%

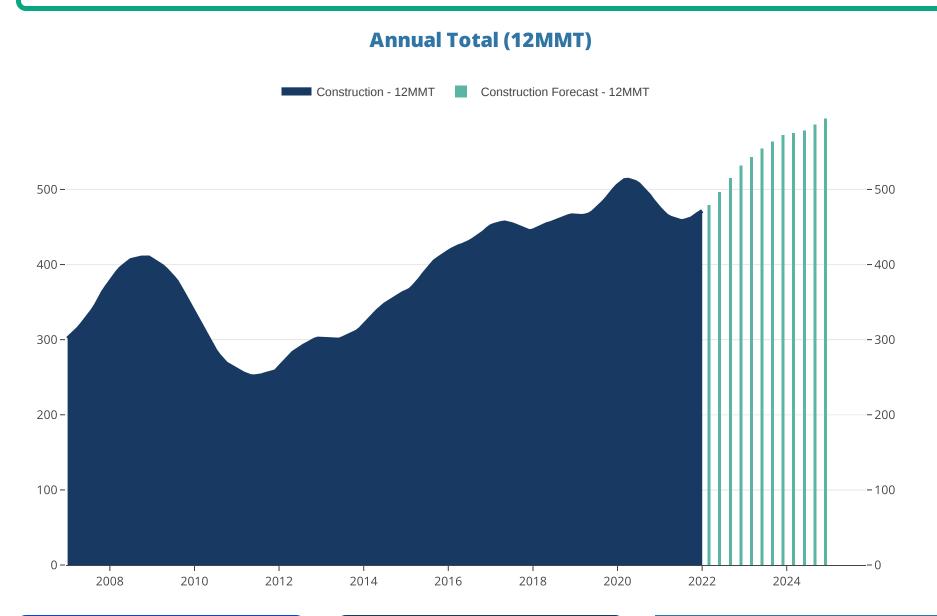
	Mar- 22	Jun- 22	Sep- 22	Dec- 22	Mar- 23	Jun- 23	Sep- 23	Dec- 23	Mar- 24	Jun- 24	Sep- 24	Dec- 24
Lower Forecast Range	-14.0	-23.3	-12.8	-5.8	3.7	7.7	8.2	9.7	8.8	9.6	12.7	13.8
Annual Growth Rate (%)	-12.5	-21.8	-11.3	-4.3	5.2	9.2	9.7	11.2	10.3	11.1	14.2	15.3
Upper Forecast Range	-11.0	-20.3	-9.8	-2.8	6.7	10.7	11.2	12.7	11.8	12.6	15.7	16.8
Lower Forecast Range	64.7	64.3	65.1	65.2	68.3	70.6	71.6	72.7	75.4	78.5	81.8	83.8
Annual Average Index (2017=100)	65.8	65.6	66.2	66.2	69.3	71.6	72.6	73.7	76.4	79.6	82.9	84.9
Upper Forecast Range	67.0	66.9	67.3	67.3	70.2	72.6	73.6	74.7	77.4	80.7	84.0	86.0





US Private Nonresidential Construction

Forecast Lifted; Construction to Rise Through 2024 With Double-Digit Rise In 2H22-1H23



Annual Growth Rate (12/12)



Current Phase



Phase A Recovery

Current Indicator Amplitude

- January 2022 Annual Growth Rate (12/12): -0.6%
- January 2022 Annual Total (12MMT), Billions of \$: 471.4

Industry Outlook

 Year
 Annual Growth Rate

 2022
 13.4%

 2023
 7.6%

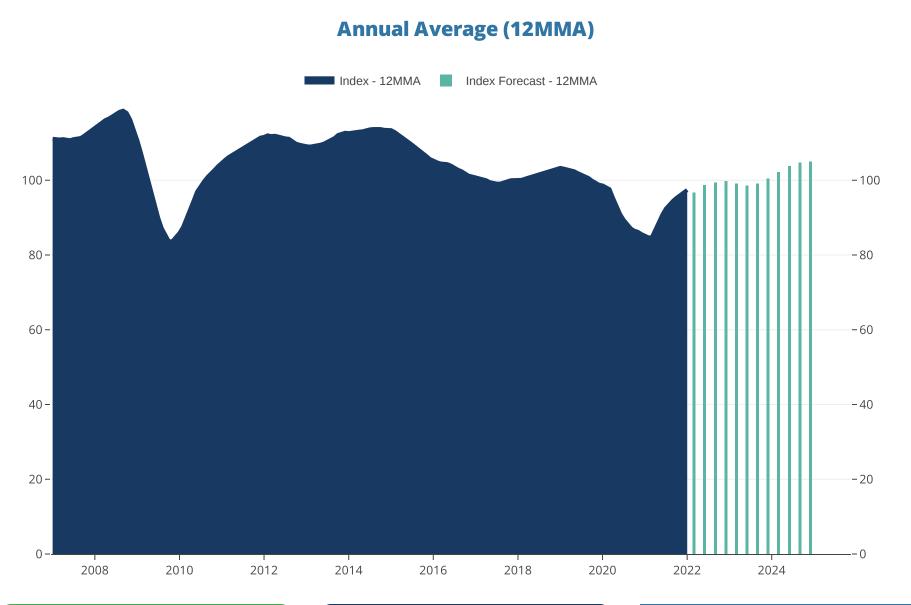
 2024
 3.9%

	Mar- 22	Jun- 22	Sep- 22	Dec- 22	Mar- 23	Jun- 23	Sep- 23	Dec- 23	Mar- 24	Jun- 24	Sep- 24	Dec- 24
Lower Forecast Range	2.2	7.1	10.9	12.2	12.2	10.4	8.0	6.1	4.3	2.8	2.5	2.4
Annual Growth Rate (%)	3.0	8.1	12.0	13.4	13.4	11.7	9.5	7.6	5.8	4.3	4.0	3.9
Upper Forecast Range	3.8	9.1	13.1	14.6	14.6	13.0	11.0	9.1	7.3	5.8	5.5	5.4
Lower Forecast Range	475.2	491.6	509.8	526.0	537.4	547.7	556.1	564.0	566.5	569.7	577.9	585.5
Annual Total Construction (Billions of \$)	479.0	496.1	514.9	531.6	543.1	554.2	563.8	572.0	574.6	578.0	586.4	594.1
Upper Forecast Range	482.7	500.7	520.0	537.2	548.9	560.6	571.5	580.0	582.8	586.3	594.8	602.6



US Primary Metals Production Index

Softer Industrial Demand in 2023 to Result in Mild Decline, Interrupting an Otherwise Rising Trend



2016

2018

2020

2022

2024

Annual Growth Rate (12/12)

Current Phase



Phase B
Accelerating
Growth

Current Indicator Amplitude

- January 2022 Annual Growth Rate (12/12): 14.5%
- January 2022 Annual Average (12MMA), 2017=100: 97.4

Industry Outlook

Year Annual Growth Rate
2022 5.0%

2023 0.6%2024 4.6%

	Mar- 22	Jun- 22	Sep- 22	Dec- 22	Mar- 23	Jun- 23	Sep- 23	Dec- 23	Mar- 24	Jun- 24	Sep- 24	Dec- 24
Lower Forecast Range	12.8	8.0	4.8	3.8	1.2	-1.6	-1.8	-0.9	1.5	3.8	4.0	3.0
Annual Growth Rate (%)	13.8	9.1	6.0	5.0	2.5	-0.2	-0.3	0.6	3.0	5.3	5.6	4.6
Upper Forecast Range	14.8	10.2	7.2	6.2	3.8	1.2	1.2	2.1	4.5	6.8	7.2	6.2
Lower Forecast Range	95.9	97.7	98.3	98.7	97.9	97.1	97.7	98.9	100.6	102.2	103.1	103.4
Annual Average Index (2017=100)	96.7	98.7	99.4	99.8	99.1	98.5	99.1	100.4	102.1	103.7	104.7	105.0
Upper Forecast Range	97.6	99.7	100.6	100.9	100.4	99.9	100.6	101.9	103.6	105.2	106.2	106.6

2014

2010

2008

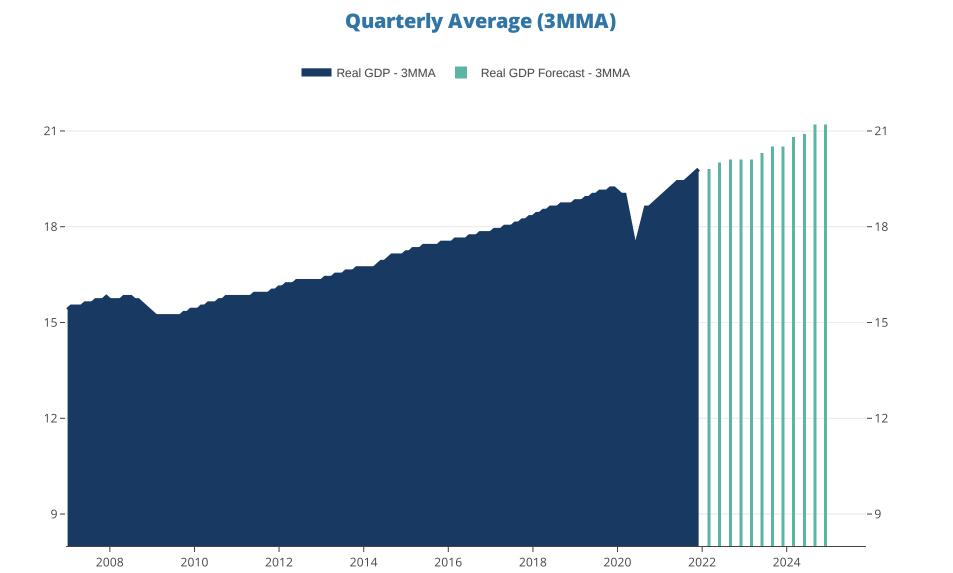
2012





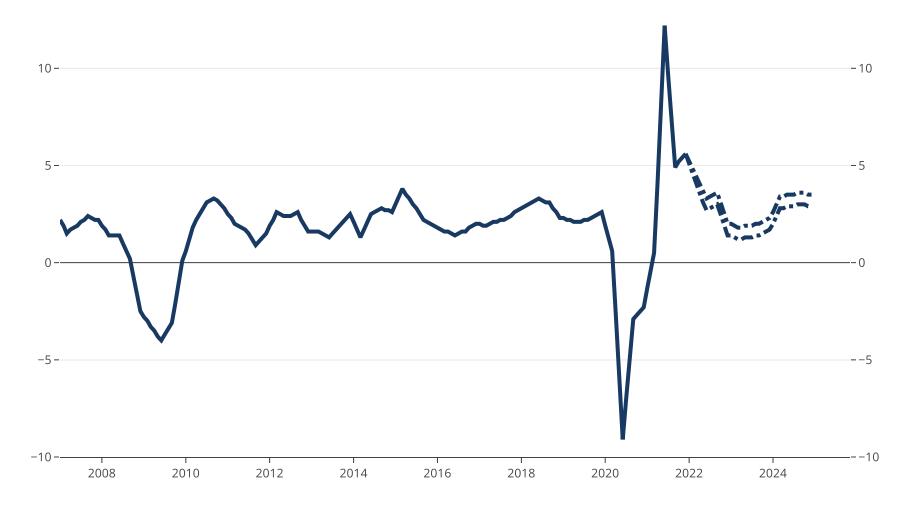
US Real Gross Domestic Product

Forecast Revised Upward by Less Than 1%; GDP to Post Slowing Growth Into 2023 but Avoid Recession



Quarterly Growth Rate (3/12)

Real GDP - 3/12 Real GDP Forecast - 3/12



Current Phase



Current Indicator Amplitude

- December 2021 Quarterly Growth Rate (3/12): 5.6%
- December 2021 Quarterly Average (3MMA), Trillions of Chained 2012 \$: 19.8

Industry Outlook

<u>Year</u>	<u>Quarterly Growth Rate</u>	
2022	1.7%	
2023	2.0%	
2024	3.2%	

	Mar- 22	Jun- 22	Sep- 22	Dec- 22	Mar- 23	Jun- 23	Sep- 23	Dec- 23	Mar- 24	Jun- 24	Sep- 24	Dec- 24
Lower Forecast Range	4.0	2.7	3.0	1.4	1.2	1.3	1.4	1.7	2.8	2.9	3.0	2.9
Quarterly Growth Rate (%)	4.2	3.0	3.3	1.7	1.5	1.6	1.7	2.0	3.1	3.2	3.3	3.2
Upper Forecast Range	4.4	3.3	3.6	2.0	1.8	1.9	2.0	2.3	3.4	3.5	3.6	3.5
Lower Forecast Range	19.8	19.9	20.1	20.1	20.1	20.2	20.4	20.5	20.7	20.9	21.1	21.1
Quarterly Average Real GDP (Trillions of Chained 2012 \$)	19.8	20.0	20.1	20.1	20.1	20.3	20.5	20.5	20.8	20.9	21.2	21.2
Upper Forecast Range	19.9	20.0	20.2	20.2	20.2	20.3	20.5	20.6	20.8	21.0	21.2	21.3





US Leading Indicators

Indicator	Direction						
	1Q22	2Q22	3Q22				
ITR LEADING INDICATOR™							
ITR RETAIL SALES LEADING INDICATOR™							
US OECD LEADING INDICATOR	•						
US ISM PMI (PURCHASING MANAGERS INDEX)							
US TOTAL CAPACITY UTILIZATION RATE	•	•	N/A				
Green denotes that the indicator signals cyclical rise for the denotes the opposite.	economy in the	e given quar	ter. Red				

What It Means for the US Economy

- Prior trends in our arsenal of leading indicators suggest US Industrial Production will transition to a slowing growth trend by the second quarter of this year.
- Thus far, the leading indicators are confirming our expectation that the macroeconomy will not enter a recessionary trend. We are monitoring the indicators closely.
- Consumers are strong, as evidenced by ongoing rise in the ITR Retail Sales Leading Indicator™; this consumer strength will help keep the macroeconomy from falling into a recessionary trend.

Leading indicators are pointing to cyclical decline into at least late this year. Analyze your company's rate-of-change in relation to that of a benchmark for the economy or your industry. Do your peaks and troughs occur concurrently with the benchmark's, or is there a consistent difference? Does your company tend to have soft landings at the bottom of the business cycle or do you typically fall into Phase D, Recession? Understanding these factors will help you apply our macroeconomic and market-specific analysis to your individual company.





Market Definitions

US Industrial Production Index

Index of total industrial production in the United States; includes manufacturing, mining, and utilities. Source: Federal Reserve Board (FRB). 2017 = 100, not seasonally adjusted (NSA).

US Automobile Production Index

Automobile Production. This U.S. industry comprises establishments primarily engaged in (1) manufacturing complete automobiles (i.e., body and chassis or unibody) or (2) manufacturing automobile chassis only. Source: FRB. Index, 2017 = 100, NSA.

US Primary Metals Production Index

Industries in the Primary Metal Manufacturing subsector smelt and/or refine ferrous and nonferrous metals from ore, pig or scrap, using electrometallurgical and other process metallurgical techniques. Establishments in this subsector also manufacture metal alloys and superalloys by introducing other chemical elements to pure metals. The output of smelting and refining, usually in ingot form, is used in rolling, drawing, and extruding operations to make sheet, strip, bar, rod, or wire, and in molten form to make castings and other basic metal products. Source: FRB. Index, 2017 = 100, NSA.

US Civilian Aircraft Equipment Production Index

Index for US establishments primarily engaged in one or more of the following: (1) manufacturing aircraft engines and engine parts; (2) developing and making prototypes of aircraft engines and engine parts; (3) aircraft propulsion system conversion (i.e., major modifications to systems); (4) aircraft propulsion systems overhaul and rebuilding (i.e., periodic restoration of aircraft propulsion system to original design specifications). Source: FRB. NAICS Code: 336412,3. Index, 2017 = 100, NSA.

US Private Nonresidential Construction

Private nonresidential construction in the United States. Includes private construction of the following types: office, commercial, automotive, lodging, dining, retail, warehouse, storage facilities, schools, dormitories, sports facilities, galleries, museums, hospitals, medical buildings, special care facilities, religious buildings, fitness centers, amusement parks, movie theaters, social centers, transportation facilities, power facilities, and manufacturing facilities. Source: US Census Bureau. Measured in billions of dollars, NSA.

US Real Gross Domestic Product

Real (inflation-adjusted) gross domestic product (GDP) in the United States. GDP is the monetary value of all the finished goods and services produced within a country's borders in a specific time period. GDP includes all private and public consumption, government outlays, investments and exports minus imports that occur within a defined territory. Put simply, GDP is a broad measurement of a nation's overall economic activity. Source: Bureau of Economic Analysis. Measured in trillions of 2012 chained dollars, seasonally adjusted annual rate (SAAR).





Management Objectives™

Phase A



Recovery

- Scrupulously evaluate the supply chain
- Model positive leadership (culture turns to behavior)
- Start to phase out marginal opportunities
 (products, processes, people); repair margins
- Perform due diligence on customers and extend credit
- Be on good terms with a banker; you will need the cash more now than in any other phase
- Invest in customer market research; know what they value and market/price accordingly
- Hire key people and implement company-wide training programs ahead of Phase B
- Allocate additional resources to sales and marketing
- Invest in system/process efficiencies
- Make opportunistic capital and business acquisitions; use pessimism to your advantage

Phase B



Accelerating Growth

- Ensure quality control keeps pace with increasing volume
- Invest in workforce development: hiring, training, retention
- Ensure you have the right price escalator; space out price increases
- Maximize your profit margins through differentiation; stand out from the crowd and set yourself apart
- Use improved cash flow to strategically position the business to beat the business cycle
- Expand credit to customers
- Improve corporate governance (rent a CFO; establish a board of advisors or board of directors)
- Communicate competitive advantages; build the brand
- Query users for what they want and what is important to them
- Sell the business in a climate of maximum goodwill

Phase C



Slowing Growth

- Know if your markets are headed for a soft landing or a hard landing
- Cash is king; beware of unwarranted optimism
- Stay on top of aging receivables
- Revisit capital expenditure plans
- Lose the losers: if established business segments are not profitable during this phase, eliminate them
- Use competitive pricing to manage your backlog through the coming slowdown
- Avoid committing yourself to long-term expenses at the top of the price cycle, but lock in revenue
- Go entrepreneurial and/or counter-cyclical
- Evaluate your vendors for financial strength; if needed, look for additional vendors as a safety net
- If the cycle looks recessionary, cross-train key people to prepare for workforce attrition/reduction

Phase D



Recession

- Implement aggressive cost-cutting measures
- Offer alternative products with a lower cost basis
- Perform due diligence on acquisitions while valuations are falling
- Reduce advertising as consumers become more price conscious
- Enter or renegotiate long-term leases
- Negotiate labor contracts
- Consider capital equipment needs for the next cycle
- Tighten credit policies
- Develop programs for advertising, training, and marketing to implement in Phase A
- Lead with optimism, remembering that Phase D is temporary

