Industrial Supply Association DECEMBER 2022



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Table of Contents

Economic Overview	1
Terminology and Methodology	2
Industrial Supply Association Markets Dashboard	3
US Industrial Production Index	4
US Civilian Aircraft Equipment Production Index	5
US Automobile Production Index	6
US Private Nonresidential Construction	7
US Primary Metals Production Index	8
US Real Gross Domestic Product	9
US Leading Indicators	10
Market Definitions	11
Management Objectives™	12





Economic Overview What A Yield Curve Inversion Means For You

Rain or shine, we constantly monitor our system of leading indicators for signs of improvement or deterioration. In the last quarter, we've seen broad-based weakness, coupled with a new signal: short term interest rates – as measured by 3-month treasuries – are now higher than long-term interest rates, as measured by 10-year treasuries. This so-called "inverted yield curve" is a signal that there is an 88% probability of a US Industrial Production recession coming, as the Federal Reserve has raised short-term interest rates too far, too fast.

We lowered our annual average US Industrial Production forecast downward by a slim 0.4% for 2023. Instead of the mild growth (+1.6%) previously forecast, we now expect activity to be virtually flat for 2023 (+0.1%) relative to 2022, with decline developing late in the year. 2024 is impacted more significantly. Prior to the extremely sharp and fast rate hikes by the Fed, we were expecting growth for 2024. Now we expect decline to extend throughout 2024, with 2024 coming in 2.3% below the 2023 average, as it typically takes just over a year for yield-curve inversions to translate into a recession.

At the bottom of the cycle in 3Q24, we are calling for 2.6% year-over-year contraction. We've experienced a similar severity of decline in US Industrial Production three times in the last 30 or so years: the early 1990s macroeconomic recession, the early 2000s macroeconomic recession, and the 2015-16 recession. The 2015-16 recession only impacted the industrial sector and was particularly unrelenting for companies tied to oil prices. Expect this cycle to be more like the early 1990s or early 2000s.

Three main tailwinds – reshoring, backlogs, and a solid consumer balance sheet – will keep the recession relatively mild. Companies continue to be interested in positioning their supply chain closer to the North American consumer base, and backlogs will continue to be worked through as the supply chain loosens. Meanwhile, our examination of consumer balance sheets revealed that the aggregate consumer debt-to-income

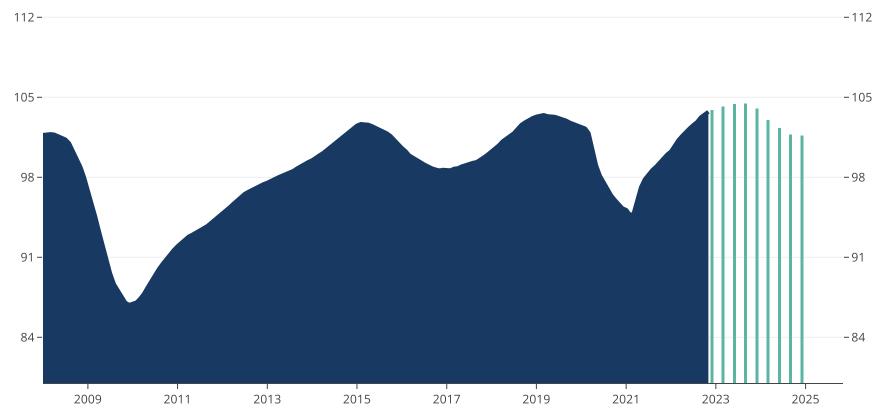
ratio, particularly the credit card debt-to-income ratio, is in a healthy place. Simply put, consumers are not overleveraged, which is the opposite situation that the US economy found itself in going into the Great Recession.

It will be especially important to understand the degree to which your business will (or will not) be impacted by a macroeconomic recession. Use the forecasts in this report to help. In general, industries that benefitted greatly from stimulus in 2020-21 (outdoor equipment, single-family housing in expensive areas, etc.) are most at risk of a pullback in 2023-24. In addition, discretionary markets like tech are likely to underperform essentials in the food industry, healthcare, and utilities, as consumers will prioritize deploying tighter dollars to where they are most needed. Meanwhile, there will be some loosening in the labor market – though not marked, given demographics – particularly in 2024. Take this as an opportunity to upgrade your talent pool in preparation for recovery and rise starting in 2025.

There are an elevated number of risks to our forecast both to the upside and to the downside because of domestic and international political events at play in this cycle. The degree of monetary and fiscal stimulus that was deployed in 2020-21, and is now being withdrawn, is unprecedented. The war in Ukraine and general nationalist/protectionist sentiment around the world, coupled with a pandemic, only adds to the uncertainty. In spite of this, the labor market and consumer balance sheets look very strong, offering upside risk.

What can you do amid the uncertainty? First and foremost, make a plan and work the plan. Determine what impacts the recession will have on your business (reach out to us if you need help). After making those determinations, put baseline budgets and strategies in place to maximize your competitive advantages in the recessionary landscape. Get your employees excited and focused on implementing those strategies, but don't stop there. We will regularly be in contact with our clients and providing updates if the upside or downside risk factors lead us to change our baseline forecasts. You should have plans at the ready to adjust as things develop. Monitor your cash flow more carefully than before. Lastly, lead with confidence and be opportunistic. Your competitors may go into panic mode. Don't follow them there.





US Industrial Production Index Annual 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 Fo	orecast (12/12), Year-End*
Page Number	Indicator	Growth Rate**	Phase	2023**	2024**
4	US Industrial Production Index	4.0%	С	0.1%	-2.3%
5	US Civilian Aircraft Equipment Production Index	8.6%	С	4.0%	-0.6%
6	US Automobile Production Index	18.0%	В	2.7%	-4.6%
7	US Private Nonresidential Construction	6.3%	В	6.7%	0.0%
8	US Primary Metals Production Index	0.2%	С	-4.3%	-7.0%
9	US Real Gross Domestic Product (Quarterly Growth Rate)	1.9%	С	0.9%	-0.3%

*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.





Accelerating Growth (B)



Slowing Growth (C)

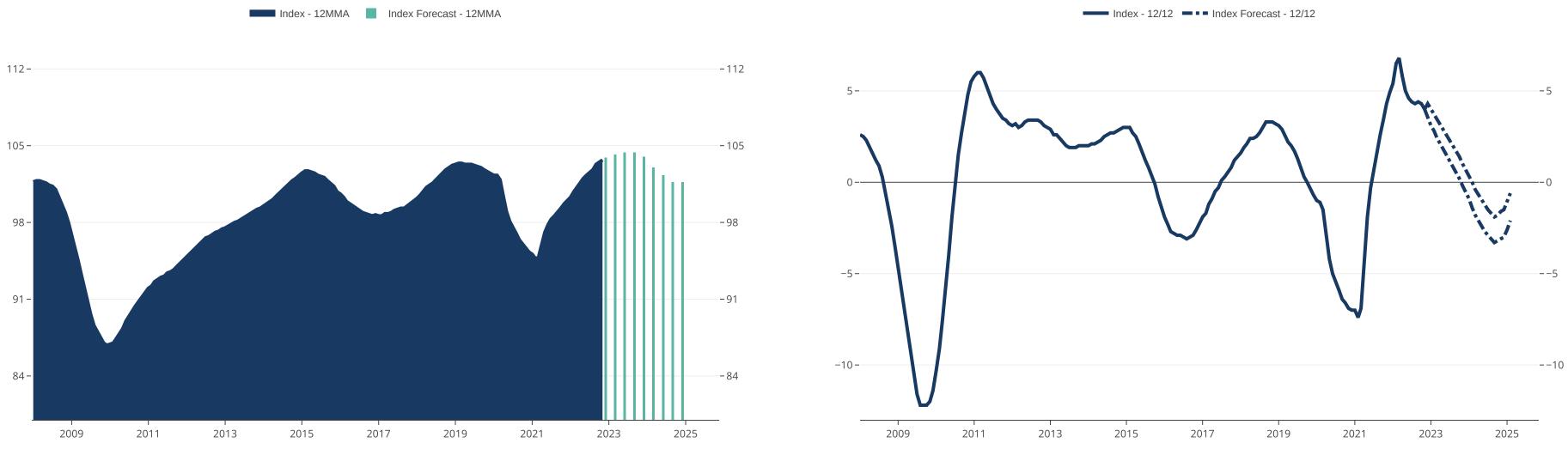




Consulting US Industrial Production Index

Outlook Revised Due to Inverted Yield Curve; Mild Phase D, Recession, Expected in 2024

Annual Average (12MMA)



	Current Phase	
\bigwedge	Phase C Slowing Growth	

Current Indicator Amplitude

- November 2022 Annual Growth Rate (12/12): 4.0%
- November 2022 Annual Average (12MMA), 2017=100:103.7

I	ndustry Outlook	
<u>Year</u>	Annual Growth Rate	
2022	3.9%	
2023	0.1%	
2024	-2.3%	

21 2023 2025		2009	2011	2013	2015	2017 2019	2021	2023 202	5
	Dec- 22	Mar- 23	Jun- 23	Sep- 23	Dec- 23	Mar- 24	Jun- 24	Sep- 24	Dec- 24
Lower Forecast Range	3.5	2.4	1.5	0.5	-0.5	-1.8	-2.7	-3.3	-3.0
Annual Growth Rate (%)	3.9	2.9	2.1	1.1	0.1	-1.1	-2.0	-2.6	-2.3
Upper Forecast Range	4.3	3.4	2.6	1.7	0.7	-0.4	-1.3	-1.9	-1.5
Lower Forecast Range	103.5	103.7	103.8	103.8	103.4	102.3	101.6	101.0	100.9
Annual Average Index (2017=100)	103.9	104.2	104.4	104.4	104.0	103.0	102.3	101.7	101.7
Upper Forecast Range	104.3	104.7	105.0	105.1	104.6	103.8	103.0	102.5	102.4



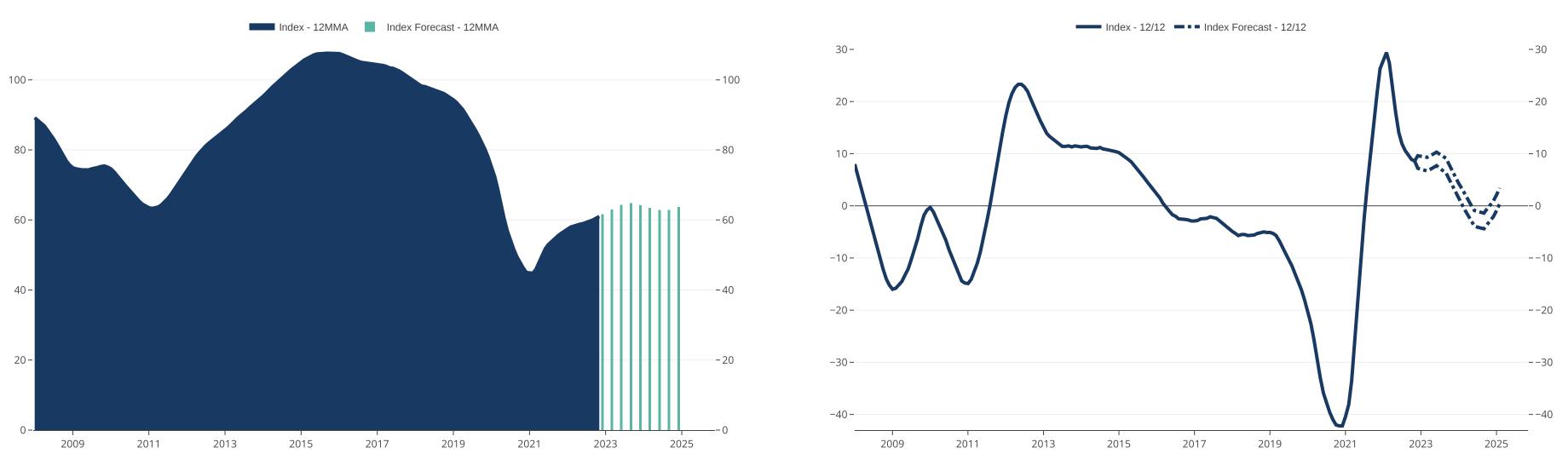
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Consulting US Civilian Aircraft Equipment Production Index

Forecast Lifted for 2023, Lowered for 2024 Because of Industry and Macro Trends

Annual Average (12MMA)



Current Phase	
Phase C Slowing Growth	

Current Indicator Amplitude

- November 2022 Annual Growth Rate (12/12): 8.6%
- November 2022 Annual Average (12MMA), 2017=100: 61.0

l	ndustry Outlook
<u>Year</u>	Annual Growth Rate
2022	8.4%
2023	4.0%
2024	-0.6%

	Dec- 22	Mar- 23	Jun- 23	Sep- 23	Dec- 23	Mar- 24	Jun- 24	Sep- 24	Dec- 24
Lower Forecast Range	7.2	6.7	7.7	6.3	2.6	-0.8	-3.9	-4.4	-2.1
Annual Growth Rate (%)	8.4	8.0	9.0	7.7	4.0	0.7	-2.4	-2.9	-0.6
Upper Forecast Range	9.6	9.3	10.3	9.1	5.4	2.2	-0.9	-1.4	0.9
Lower Forecast Range	60.9	62.2	63.6	63.8	63.2	62.4	61.8	61.8	62.7
Annual Average Index (2017=100)	61.6	62.9	64.3	64.7	64.1	63.4	62.8	62.8	63.7
Upper Forecast Range	62.3	63.7	65.1	65.5	64.9	64.3	63.8	63.8	64.7



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Consulting **US Automobile Production Index**

Forecast Lowered for 2024; Annual Production to Decline Mildly From Mid-2023 Through 2024

Annual Average (12MMA)



	Current Phase	
\bigwedge	Phase B Accelerating Growth	

Current Indicator Amplitude

- November 2022 Annual Growth Rate (12/12): 18.0%
- November 2022 Annual Average (12MMA), 2017=100:89.6

I	ndustry Outlook	
<u>Year</u>	<u>Annual Growth Rate</u>	
2022	22.7%	
2023	2.7%	

-4.6%

2024

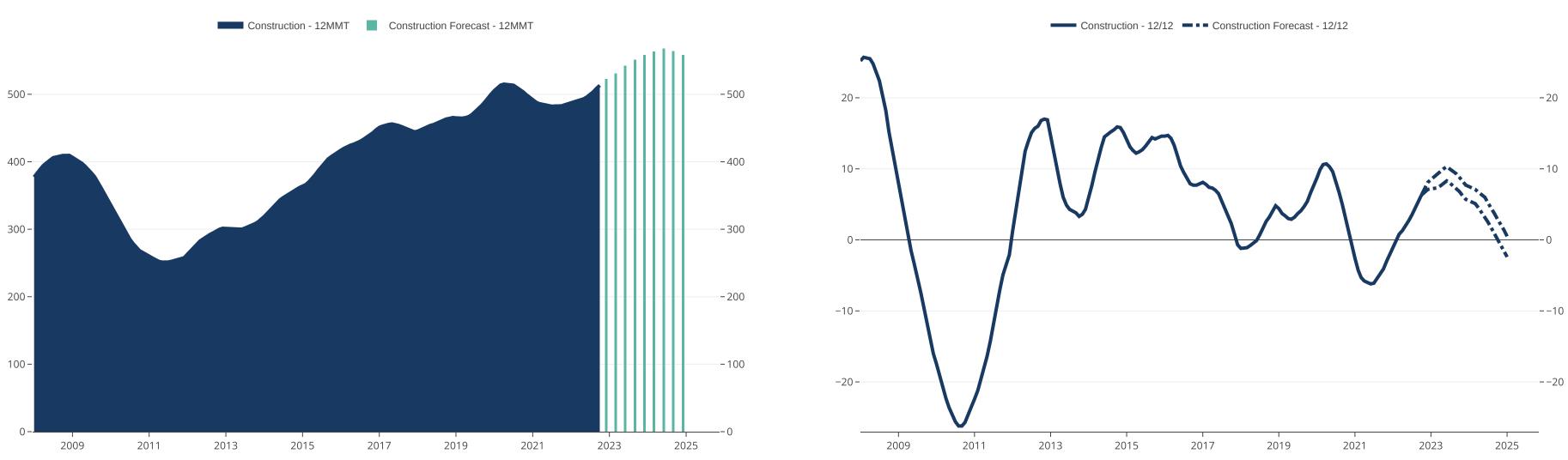
1 2023 2025		2009	2011	2013	2015	2017 2019	2021	2023 2	2025
	Dec- 22	Mar- 23	Jun- 23	Sep- 23	- Dec 23			Sep- 24	Dec- 24
Lower Forecast Range	21.2	26.0	21.2	8.0	1.2	2 -3.8	3 -5.8	-6.0	-6.1
Annual Growth Rate (%)	22.7	27.5	22.7	9.5	2.7	7 -2.3	3 -4.3	-4.5	-4.6
Upper Forecast Range	24.2	29.0	24.2	11.0	4.2	2 -0.8	3 -2.8	-3.0	-3.1
Lower Forecast Range	90.1	93.5	95.2	93.2	92.	3 91.0	0 90.8	88.8	88.0
Annual Average Index (2017=100)	91.2	94.6	96.4	94.4	93.	7 92.	4 92.2	90.2	89.4
Upper Forecast Range	92.3	95.7	97.6	95.7	95.	0 93.9	9 93.7	91.6	90.8



Consulting **US Private Nonresidential Construction**

Annual Spending Forecast Lifted for 2023, Lowered for 2024; Cycle to Culminate in a 2025 Recession

Annual Total (12MMT)



	Current Phase	
\bigwedge	Phase B Accelerating Growth	
Cu	rrant Indicator	

Current Indicator Amplitude

- October 2022 Annual Growth Rate (12/12): 6.3%
- October 2022 Annual Total (12MMT), Billions of \$: 513.2

Industry Outlook								
<u>Year</u>	Annual Growth Rate							
2022	7.6%							
2023	6.7%							
2024	0.0%							

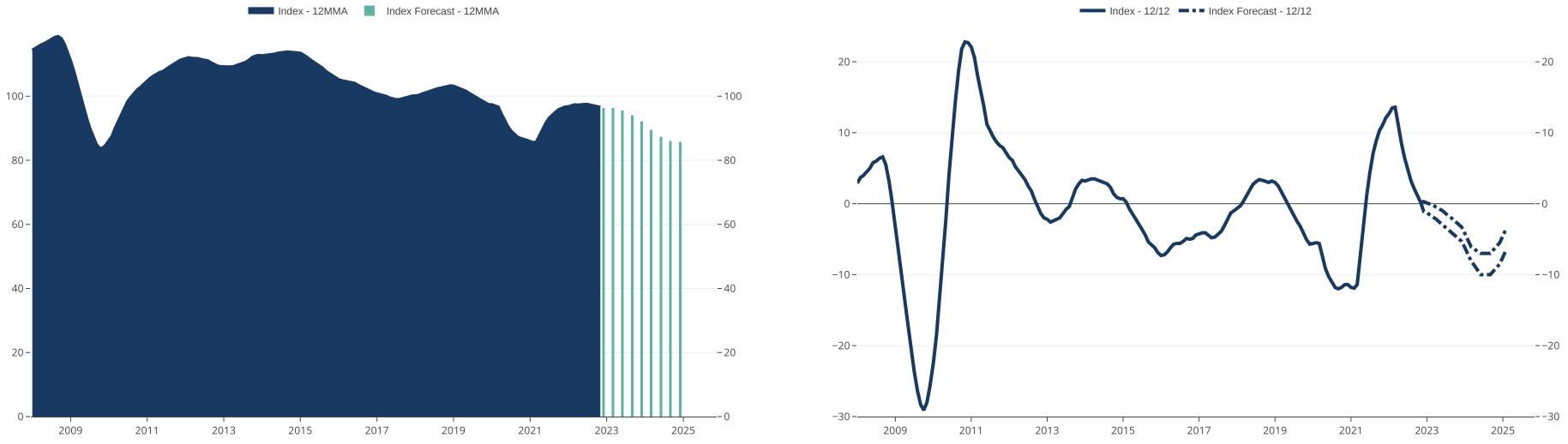
21 2023 2025		2009	2011	2013	2015 2017	2019	2021	2023 2025	
	Dec- 22	Mar- 23	Jun- 23	Sep- 23	Dec- 23	Mar- 24	Jun- 24	Sep- 24	Dec- 24
Lower Forecast Range	7.1	7.3	8.3	7.3	5.7	5.1	3.3	0.9	-1.4
Annual Growth Rate (%)	7.6	8.3	9.3	8.3	6.7	6.1	4.7	2.3	0.0
Upper Forecast Range	8.1	9.3	10.3	9.3	7.7	7.1	6.0	3.7	1.4
Lower Forecast Range	520.3	526.0	537.3	546.1	552.5	557.9	560.1	556.1	549.9
Annual Total Construction (Billions of \$)	522.7	530.9	542.2	551.2	557.7	563.2	567.5	563.8	557.7
Upper Forecast Range	525.2	535.8	547.2	556.3	563.0	568.6	574.8	571.6	565.6



Consulting US Primary Metals Production Index



Annual Average (12MMA)



Current Phase	
Phase C Slowing Growth	<u>Ye</u> 20
Current Indicator Amplitude	20 20

- November 2022 Annual Growth Rate (12/12): 0.2%
- November 2022 Annual Average (12MMA), 2017=100:96.5

Industry Outlook									
<u>Year</u>	Annual Growth Rate								
2022	-0.4%								
2023	-4.3%								
2024	-7.0%								

1 2023 2025		2009	2011	2013	2015 2017	2019	2021	2023 2025	50
	Dec- 22	Mar- 23	Jun- 23	Sep- 23	Dec- 23	Mar- 24	Jun- 24	Sep- 24	Dec- 24
Lower Forecast Range	-1.1	-1.8	-3.0	-4.1	-5.3	-8.1	-10.0	-10.0	-8.5
Annual Growth Rate (%)	-0.4	-1.0	-2.0	-3.1	-4.3	-7.1	-8.5	-8.5	-7.0
Upper Forecast Range	0.3	-0.2	-1.0	-2.1	-3.3	-6.1	-7.0	-7.0	-5.5
Lower Forecast Range	95.6	95.5	94.5	93.0	91.2	88.5	85.9	84.6	84.3
Annual Average Index (2017=100)	96.3	96.3	95.4	94.0	92.1	89.4	87.3	86.0	85.7
Upper Forecast Range	96.9	97.1	96.4	95.0	93.1	90.4	88.8	87.4	87.0

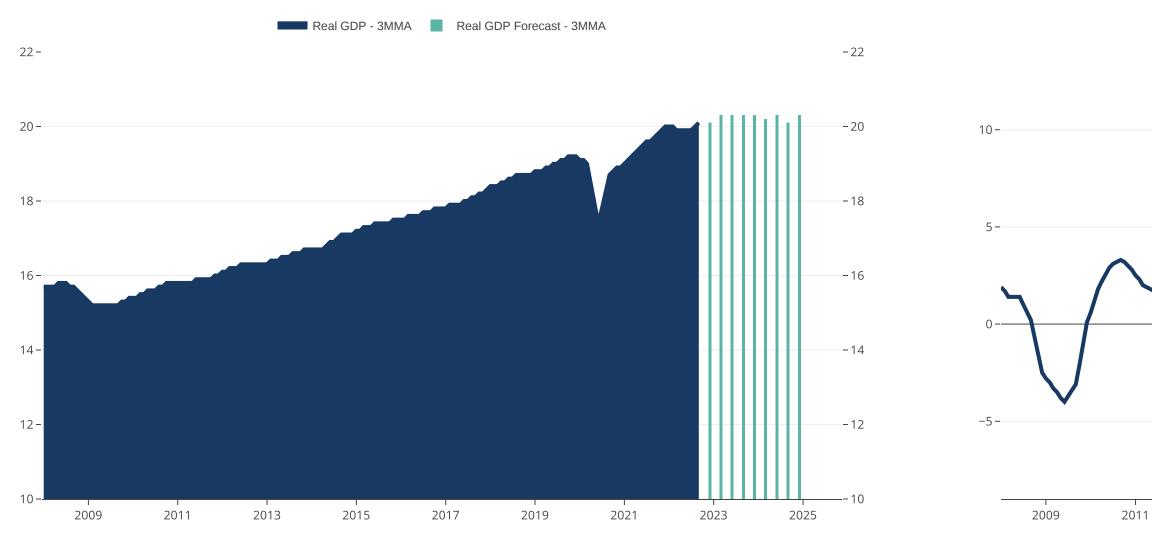


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Consulting US Real Gross Domestic Product

Forecast Lowered Given Signals From Bond Market; Mild Decline to Characterize Majority of 2024

Quarterly Average (3MMA)



Phase C Slowing Growth	Current Phase								
	\bigwedge								

Current Indicator Amplitude

- September 2022 Quarterly Growth Rate (3/12): 1.9%
- September 2022 Quarterly Average (3MMA), Trillions of Chained 2012 \$: 20.1

Industry Outlook									
<u>Year</u>	<u>Quarterly Growth Rate</u>								
2022	0.7%								
2023	0.9%								
2024	-0.3%								

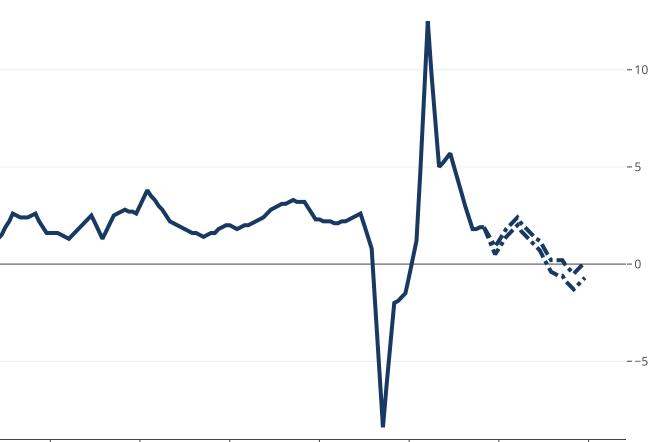
	Dec- 22	Mar- 23	Jun- 23	Sep- 23	Dec- 23	Mar- 24	Jun- 24	Sep- 24	Dec- 24
Lower Forecast Range	0.5	1.4	2.0	1.3	0.7	-0.4	-0.6	-1.3	-0.7
Quarterly Growth Rate (%)	0.7	1.6	2.2	1.5	0.9	-0.1	-0.2	-0.9	-0.3
Upper Forecast Range	0.9	1.8	2.4	1.7	1.2	0.2	0.2	-0.5	0.1
Lower Forecast Range	20.1	20.2	20.3	20.3	20.3	20.2	20.2	20.1	20.2
Quarterly Average Real GDP (Trillions of Chained 2012 \$)	20.1	20.3	20.3	20.3	20.3	20.2	20.3	20.1	20.3
Upper Forecast Range	20.2	20.3	20.4	20.4	20.4	20.3	20.4	20.2	20.4



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Quarterly Growth Rate (3/12)

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



1	1	1	1	I	I	1
2012	2015	2017	2010	2021	2022	2025
2013	2013	2017	2019	2021	2023	2023



US Leading Indicators



What It Means for the US Economy

• The general consensus among leading indicators is that the US industrial sector will remain on the back side of the business cycle through at least the first half of 2023.

 We have yet to see sustainable upward movement in the leading indicators in this dashboard; this contributed to our decision to revise our US Industrial Production outlook.

 Further decline in the ITR Retail Sales Leading Indicator[™] signals that business cycle momentum will continue to wane for US Total Retail Sales in the coming quarters.

Ongoing decline in the leading indicators signal tougher economic conditions in the quarters ahead. Make sure your sales goals are realistic given waning economic conditions and a shift in pricing to disinflation. Consider building up a larger cash cushion for the likely recession in 2024. Make sure you don't overleverage, but at the same time don't be afraid to make investments that will pay off in the long run, such as efficiency improvements and those that boost your competitive advantage. Remember to lead with confidence; recessions are temporary and the long-term trajectory of the US economy is rise.



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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).



Consulting

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