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Click Here for a Brief Explanation of How to Read This Report

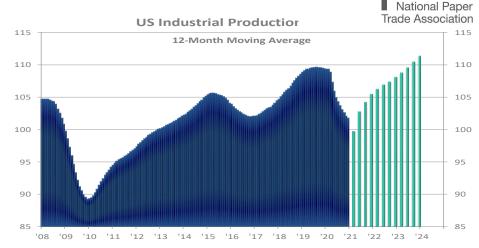
overview

With the onset of the new year, there are a multitude of signals suggesting cause for optimism moving forward. Recovery in the US Industrial Production quarterly data has already begun, and our dashboard of leading indicators suggests that the annual Production trend will transition to Phase A, Recovery, in the coming months.

Though several European countries have reinstated shutdown orders (to varying degrees) in response to rising COVID-19 case numbers, US governors are generally prioritizing keeping state economies open; at the time of this writing, two states have significant business closures. The COVID-19 vaccine may bolster US businesses' confidence in the bourgeoning economic recovery and incentivize investment in the new year. We also expect a more inflationary environment in 2021 as recovering industrial activity yields higher demand for inputs.

Further cause for optimism stems from US Nondefense Capital Goods New Orders (excluding aircraft); New Orders in the fourth quarter of 2020 were up 13.6% from the fourth quarter of 2019. We expect business-to-business spending to generally rise through at least 2021. Within the business-tobusiness sector, US Computers and Electronics New Orders and US Nondefense Communications Equipment New Orders are driving recent positivity as employees and firms invest in equipment to facilitate remote work and investment related to the 5G rollout occurs. In contrast, the US Machinery New Orders segment of the B2B world is recovering more sluggishly, with fourth-quarter New Orders up 3.2% from the fourth quarter of 2019. Those tied to this sector may still experience some weakness early in the year, but it is expected to strengthen as 2021 progresses.

The strength of the consumer is already readily apparent in the single-family housing market. US New Homes Sold in the fourth quarter of 2020 were up 25% from the fourth quarter of 2019. Historically low mortgage rates and low home inventories will likely drive an increase in US Single-Unit Housing Starts



during at least the first half of 2021. Further good news for the consumer lies in the general decline of monthly US Initial Unemployment Insurance Claims as more firms find their footing in the pandemic-impacted business environment. Some data has softened recently: Unemployment Claims ticked up in early January, and the ITR Retail Sales Leading Indicator[™] ticked down in December. However, these are isolated data points, at least for now. Don't get caught up in the volatility of individual data points; instead, remember to watch trends. For the retail sector, rise in the Retail Sales quarterly growth rate – at 4.2% as of December – illustrates the general trend.

With the above giving confidence for the year ahead, work quickly to capitalize on the growth to come. Consider conducting market research to determine whether consumer preferences have changed due to the shutdowns. Ensure your online platform is competitive and that your products still align with your target market. Most importantly, make sure you have the people and equipment you need to take on growth this year. Those too timid to invest in the near term may face higher prices and longer lead times for capital purchases, which may in turn result in lost market share. Look at the economic evidence and act now.

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Terminology & Methodology

Data Trends:

Monthly Moving Total (MMT) vs Monthly Moving Average (MMA):

Totals are used when it makes sense to add the data together, as with units sold or total dollars spent. Averages are used when the data cannot be compounded, such as with an index, percent, price level, or interest rates.

3MMT/A and 12MMT/A:

A 3-month or 12-month moving total/average is the total/average of the monthly data for the most recent 3 and 12 months, respectively. The 3MMT/A illustrates the seasonal changes inherent to the data series. The 12MMT/A removes seasonal variation in order to derive the underlying cyclical trend. It is also referred to as the annual total or annual average.

Rates-of-Change:

A rate-of-change figure is the ratio comparing a data series during a specified time period to the same period one year ago. **Rates-of-change** are expressed in terms of the **annual percent change in a 12MMT/A, 3MMT/A, and actual monthly data.**

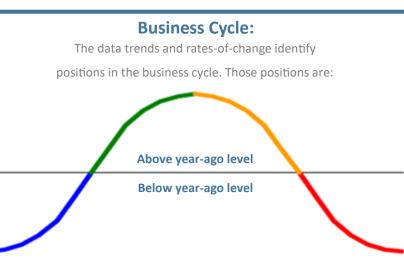
Rates-of-change reveal whether activity levels are rising or falling compared to last year. A rate-of-change trend illustrates and measures cyclical change and trends in the data.

ITR Economics' three commonly used rates-of-change are the **1/12**, **3/12**, and **12/12**, which represent the year-over-year percent change of a single month, 3MMT/A, and 12MMT/A (respectively).

A rate-of-change above 0 indicates the data is higher than one year prior, while a rate-of-change below 0 indicates the data is below one year earlier.

Accelerating Growth (B): 12/12 is rising and is above zero; the data trend is accelerating in its ascent and is above the year-ago level. This is the second positive phase of the business cycle.

Recovery (A): 12/12 is rising but is below zero; the data trend is below the year-ago level and is either heading toward a low or is in the early stages of rise. This is the first positive phase of the business cycle.



Slowing Growth (C): 12/12 is declining but remains above zero; the data trend ascent is slowing or has stopped its rise, but it is still above the year-ago level. This is the first negative phase of the business cycle.

Recession (D): 12/12 is declining and is below zero; the data trend is below the year-ago level and the rate of decline is increasing. This is the second and final negative phase of the business cycle.

Business Cycle

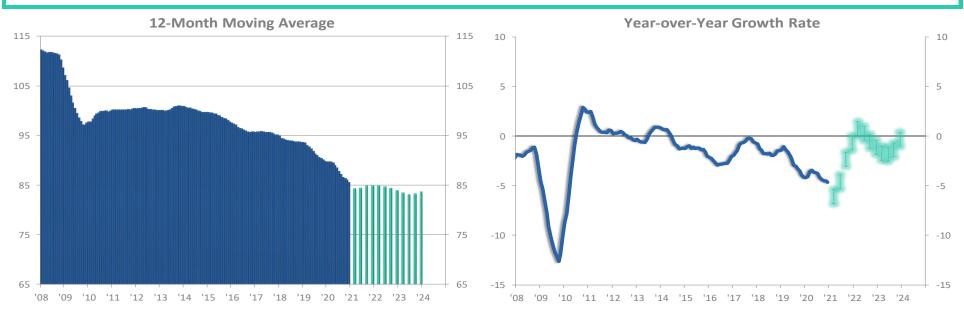
Page Number	Industry	<u>Current</u>	Phase	2021	2022	2023
4	US Pulp, Paper, and Board Mills Production Index	-4.7%	D	-0.7%	-1.1%	-0.3%
5	US Commercial Printing Production Index	-12.5%	D	0.5%	-0.3%	-0.9%
6	US Media Spending on Print Advertising	-30.0%	D	-11.2%	-6.0%	-8.5%





US Pulp, Paper, and Board Mills Production Index

Transition to Phase A Imminent; Activity to Be Relatively Flat in 2021 and First Half of 2022



Outlook & Supporting Evidence

- US Pulp, Paper, and Board Mills Production was down 4.7% in 2020. Results were within the forecast range, and the outlook is unchanged.
- Annual Production will be relatively flat in 2021 and the first half of 2022. Production will then decline into mid-2023 before rising through the end of that year.
- Waning demand in a number of paper end-use markets, including but not limited to office supplies, cigarettes, and newsprint, will keep Production below the current level during at least the next three years.
- However, rising demand for paperboard stemming from accelerating rise in E-Commerce Retail Sales suggests upside potential for Production this year.

Phase & Amplitudes

Phase D

Recession

December 2020 Annual Growth Rate (12/12): -4.7%

December 2020 Annual Average (12MMA): 85.6

Industry

utlook

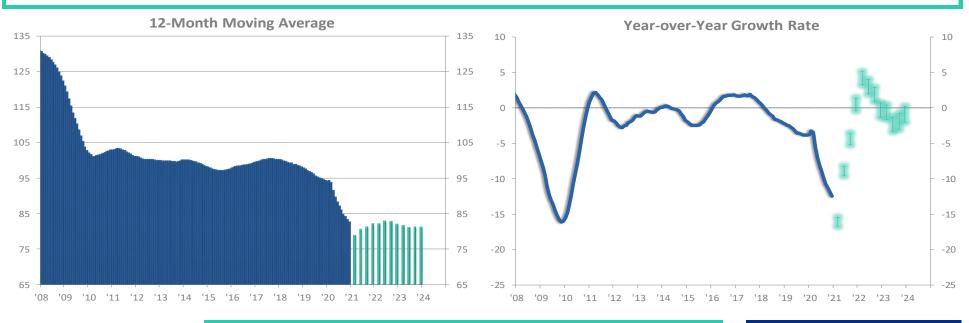
2021: -0.7%

2022: -1.1%

2023: -0.3%

US Commercial Printing Production Index

Positive B2B and Consumer Trends Bode Well for Production Recovery This Year



Outlook & Supporting Evidence

- Results were 0.3% above the forecast range in 2020. Our analysis suggests that while Production may trend slightly above the forecast range in the Outlook near term, the current outlook represents the most likely trajectory for the next three years. The forecast is unchanged. 2021: 0.5%
 - Rising quarterly Production of goods that are commonly printed on, such as apparel, glass, and plastic products, supports our outlook for imminent Phase A, Recovery, in US Commercial Printing Production.
 - Trends in US Disposable Personal Income and US Corporate Profits suggest that both the consumer and business-to-business sectors will fare better. in 2021 than in 2020. This bodes well for Production demand.

Phase & Amplitudes

Phase D

Recession

December 2020 Annual Growth Rate (12/12): -12.5%

December 2020 Annual Average (12MMA): 82.6

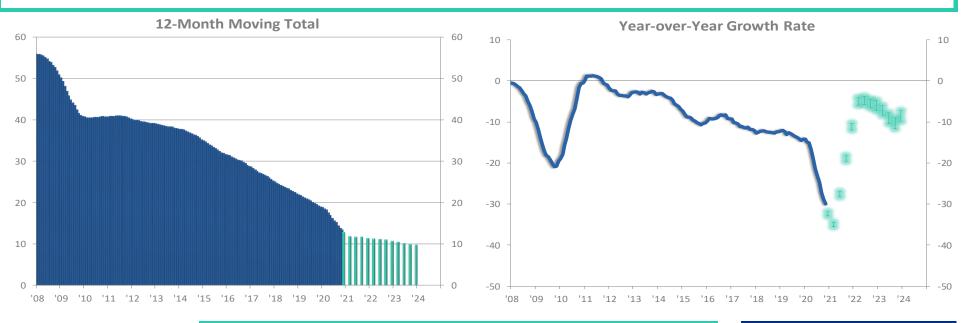
Industry

2022: -0.3%

2023: -0.9%

US Media Spending on Print Advertising

Forecast Revised Upward; Pace of Decline Will Ease From Early This Year Into 2022



Outlook & Supporting Evidence

_		
Industry Outlook	• Results were within the forecast range in the third quarter. However, the best-ever October-to-November percentage increase suggested that Spending would be above forecast range in the coming quarters. We revised	Phase D
Outlook		Recession
2021: -11.2%	the forecast upward by 8.2% for 2021 and by 10.4% for 2022.	
202111.2%	• Annual Spending will decline through at least the next three years. The pace	November 2020 Annual
2022: -6.0%	of decline will ease for the majority of 2021 and into early 2022.	Growth Rate (12/12): -30.0%
	 Rising quarterly trends in a number of leading indicators, including the US Publishing Production Index and US Book Stores Retail Sales, signal an 	
2023: -8.5%	imminent transition to business cycle rise for Spending.	November 2020 Annual Total (12MMT): \$13.4 billion
	 However, a generational shift away from print advertising toward digital advertising will hinder Spending in the coming years. We do not expect Spending to exceed the current level through 2023. 	

Phase & Amplitudes

NDCAUSLeading Indicators

Indicator	Direction			What it means for the US economy		
	1Q21	2Q21	3Q21	• The indicators on this dashboard suggest cyclical rise		
ITR Leading Indicator™			N/A	in US Industrial Production will commence by the second quarter of this year.		
ITR Retail Sales Leading Indicator™				 The ITR Retail Sales Leading Indicator[™] suggests the second sec		
The Conference Board's US Leading Indicator			N/A	despite recent stimulus, sustainable cyclical rise in Retail Sales will not commence until mid-2021.		
US ISM PMI (Purchasing Managers Index)			N/A	 The indicators are suggesting that for many sectors of 		
US Total Capacity Utilization Rate		N/A	N/A	the economy, 2021 will be a year of rise, supported by fiscal and monetary stimulus, a strong consumer, and		
Green denotes that the indicator signals cyclical rise for the economy in the given quarter. Red denotes the opposite.				low interest rates.		

The US industrial sector is on the cusp of a transition to Phase A, Recovery. If you haven't already, start preparing your business now for sustained rise this year. If you wait, you may miss out on growth and be faced with higher capital prices and longer wait times. Use the leading indicator evidence to bolster confidence to prepare for cyclical rise.
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Appendix — Market Definitions

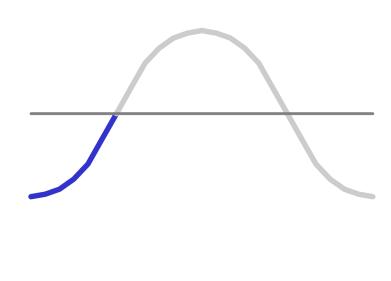
US Industrial Production Index — Index of total industrial production in the United States; includes manufacturing, mining, and utilities. Source: Federal Reserve Board (FRB). 2012 = 100, not seasonally adjusted (NSA).

US Pulp, Paper, and Board Mill Production Index — NAICS 3221. This industry group comprises establishments primarily engaged in manufacturing pulp, paper, or paperboard. Source: FRB. Index, 2012 = 100, NSA.

US Commercial Printing Production Index — NAICS 32311. This industry comprises establishments primarily engaged in printing on apparel and textile products, paper, metal, glass, plastics, and other materials, except fabric (grey goods). The printing processes employed include, but are not limited to, lithographic, gravure, screen, flexographic, digital, and letterpress. Establishments in this industry do not manufacture the stock that they print, but may perform post printing activities, such as folding, cutting, or laminating the materials they print, and mailing. Source: FRB. Index, 2012 = 100, NSA.

US Media Spending on Print Advertising — Media spending in the US on print advertising. Includes magazine and newspaper advertising. Source: Kantar Media. Measured in billions of dollars, NSA.

Phase

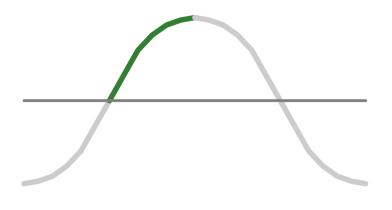


- 1 Scrupulously evaluate the supply chain
- 2 Model positive leadership (culture turns to behavior)
- **3** Start to phase out marginal opportunities (products, processes, people); repair margins
- 4 Perform due diligence on customers and extend credit
- **5** Be on good terms with a banker; you will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



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

Phase



B

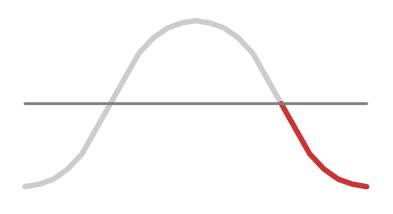
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Phase

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

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

Phase



D

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