


National Paper
Trade Association

February 2020
Economic Report


ITR ECONOMICS

Table of Contents

Economic Overview.....	1
Terminology & Methodology.....	2
Business Cycle.....	3
US Paper and Paper Products Production Index.....	4
US Pulp, Paper, and Board Mills Production Index.....	5
US Commercial Printing Production Index.....	6
US Paper Bags and Treated Paper Products Production Index.....	7
US Periodical, Book, and Other Publishers Production Index.....	8
US Media Spending on Print Advertising.....	9
US Durable Goods New Orders (without Aircraft).....	10
US Paper Producer Price Index.....	11
US Leading Indicators.....	12
Appendix — Market Definitions.....	13
Management Objectives™.....	14

[Click Here for a Brief Explanation of How to Read This Report](#)

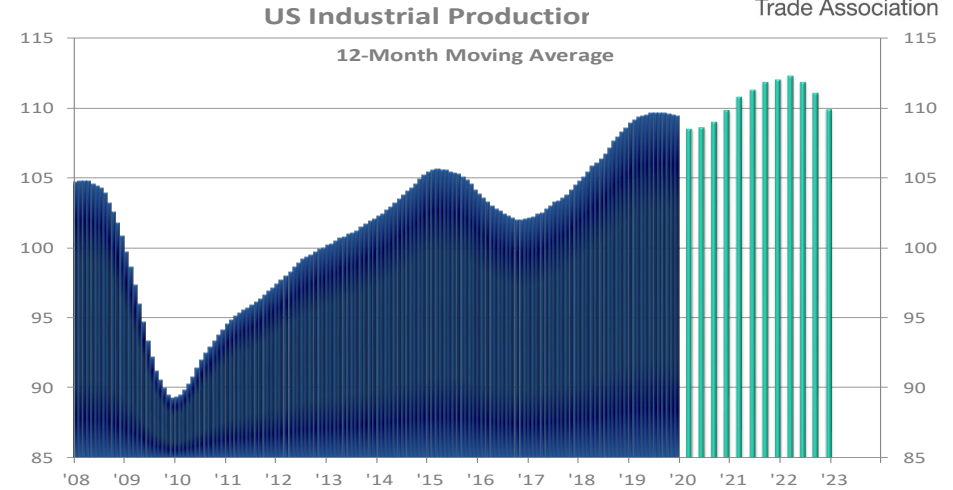
overview

The next two or three quarters are going to feel tough for many. The industrial economy has been on the back side of the business cycle for over one year. At this stage, few businesses are unaffected by the broad-based weakness in the US and global economies. This period of the business cycle can be particularly stressful; leaders will likely feel increasing pressure to meet performance metrics as they work against mounting headwinds. For many, things are going to get worse before they get better, but the good news is we are not that far from the low and this is NOT another Great Recession. US industrial activity and business-to-business spending are expected to reach a trough around mid-2020.

We are at a critical juncture of the business cycle, wherein decision makers will need to start implementing their strategic plans for the upcoming rising trend. Companies that prepare will be at an advantage relative to their competitors. While planning for upcoming rise may feel counterintuitive at this point, this imperative is based on leading indicator evidence. The monthly rates-of-change for the JP Morgan Global Purchasing Managers Index and the OECD Plus Six Nonmember Economies Leading Indicator have respectively risen for 12 months and 10 months, providing clear indication of an upcoming cyclical rising trend for World Industrial Production. In the US, we are seeing cyclical rise in the following leading indicators:

- ITR Leading Indicator™
- US ISM PMI (Purchasing Managers Index)
- US Stock Market (as measured by the Wilshire Total Market Cap)
- OECD's US Leading Indicator
- US Housing Starts

Evidence in support of a mid-2020 low in the industrial sector is mounting; however, downside risks are present. The trade war is not yet resolved, and the coronavirus outbreak may cause supply chain disruptions. The coronavirus will likely impact some industries more than others, but historical precedent from other outbreaks, such as SARS, suggests it is unlikely to shift the business cycle



for the US economy. It is important to have a contingency plan ready in case decline lasts longer than anticipated, but do not allow fear to keep you from preparing for the next rising trend. Keep your eye on the economic fundamentals and don't get swept away by the news.

Start readying your marketing and sales resources so they may be deployed when business picks up in the second half of the year. If capacity constraints held you back in 2018 and 2019, and your markets are expected to join US Industrial Production in record highs during the next rising trend, ready additional capacity. Relatively low interest rates may help you finance any needed additions. Prices for several commodities, such as steel and oil, are expected to rise in 2020, so you will likely get a better deal on machinery in the near term as opposed to if you wait.

US Industrial Production is expected to reach record highs by 2021, with rise extending into mid-2022. When planning, keep in mind not only our outlook for industrial sector rise into mid-2022, but also our expectation for a more severe recession in 2023. Consider developing new products or entering new markets by 2022 to mitigate the impact of macroeconomic decline beginning around mid-2022.

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.

Business Cycle:

The data trends and rates-of-change identify positions in the business cycle. Those positions are:



Slowly Declining 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

<u>Industry</u>	<u>Current</u>	<u>Phase</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
US Paper and Paper Products Production Index	-3.2%	D	0.1%	-0.3%	-2.1%
US Pulp, Paper, and Board Mills Production Index	-4.3%	D	-1.2%	0.2%	-2.6%
US Commercial Printing Production Index	-3.8%	D	-0.1%	-0.6%	-2.8%
US Paper Bags and Treated Paper Products Production Index	-9.1%	D	0.4%	0.6%	-4.1%
US Periodical, Book, and Other Publishers Production Index	-5.8%	A	-6.8%	-3.7%	-7.5%
US Media Spending on Print Advertising	-14.1%	D	-13.6%	-10.9%	-13.7%
US Durable Goods New Orders (without Aircraft)	1.1%	C	3.3%	3.6%	-2.6%
US Paper Producer Price Index*	-1.1%	D	0.1%	2.9%	-1.2%

*All growth rates are year-over-year except the US Paper Producer Price Index, which quotes the quarterly growth rate (ex. 4Q20 relative to 4Q19), since it is a measure of pricing.



RECOVERY



ACCELERATING GROWTH



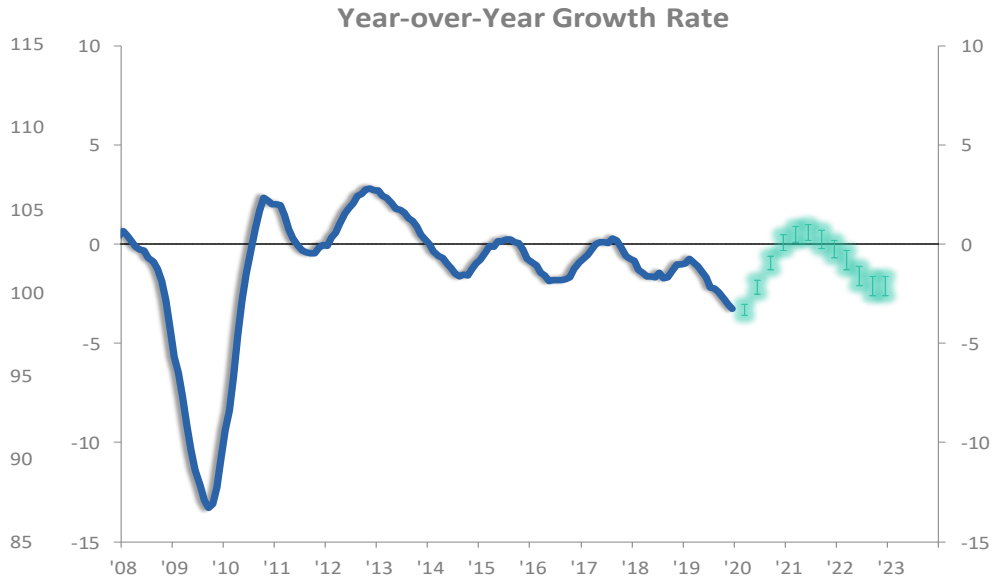
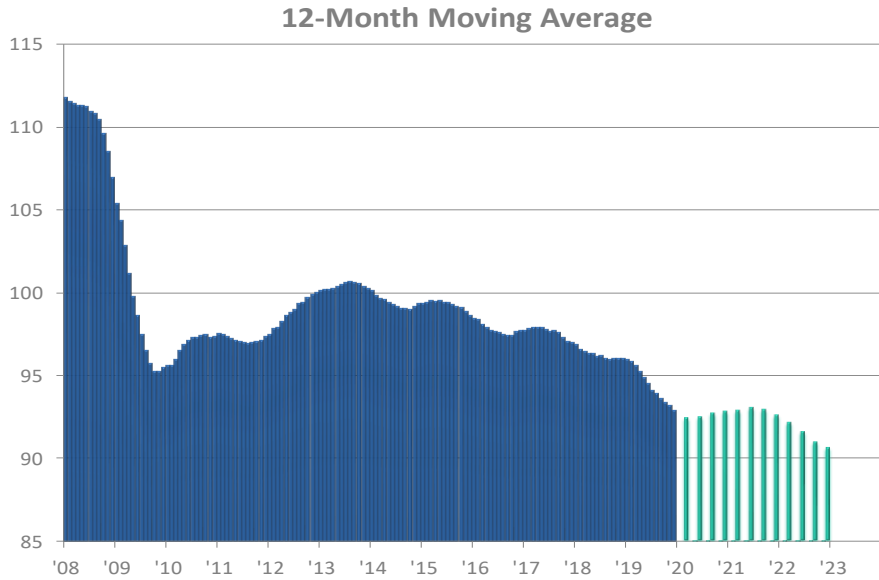
SLOWING GROWTH



RECESSION

US Paper and Paper Products Production Index

Expect Mild Rise in Production From Mid-2020 Into Mid-2021



Industry Outlook

2020: 0.1%

2021: -0.3%

2022: -2.1%

Outlook & Supporting Evidence

- Production in 2019 was down 3.2% from the 2018 level. Expect annual Production to decline in the near term before rising mildly into mid-2021. Production will then decline through at least year-end 2022.
- Imminent Phase A, Recovery, in Production is indicated by the ITR Checking Points™ system and cyclical rise in the US Paper Capacity Utilization Rate.
- Business cycle decline in the second half of 2021 and through at least 2022 will be driven by macroeconomic forces.

Management Objective™

- Conduct market research to understand shifting consumer trends, especially as the focus on environmental impact increases. Diversify your product offerings, if possible, to mitigate risk.

Phase & Amplitudes

Phase D

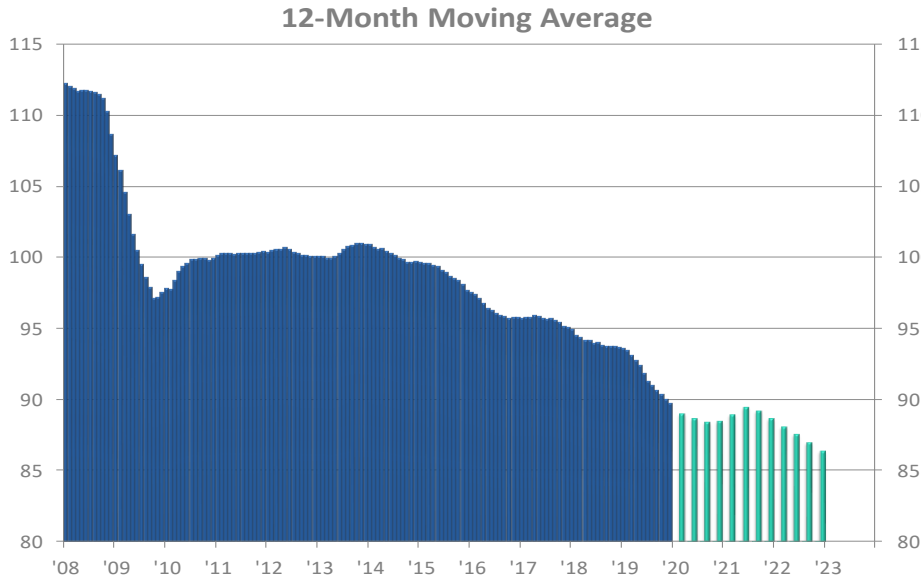
Recession

December 2019 Annual Growth Rate (12/12): -3.2%

December 2019 Annual Average (12MMA): 92.9

US Pulp, Paper, and Board Mills Production Index

Production to Generally Decline Through 2022, but for Brief Rise in Late 2020 and Early 2021



Industry Outlook



2020: -1.2%

2021: 0.2%

2022: -2.6%

Outlook & Supporting Evidence

- Annual Production fell deeper into Phase D, down 4.3% in December. The pace of decline is expected to begin to ease starting in the second quarter.
- Annual Production is expected to decline for the majority of 2020. Upcoming business cycle rise in US Real Gross Domestic Product will likely increase demand for paper products, leading to a brief period of rise in Production late this year and in the first half of 2021.
- Production will then decline through at least year-end 2022.

Management Objective™

- Double-digit growth in e-commerce is expected to persist in the near term and may boost demand for paperboard containers. Target opportunities accordingly.

Phase & Amplitudes

Phase D

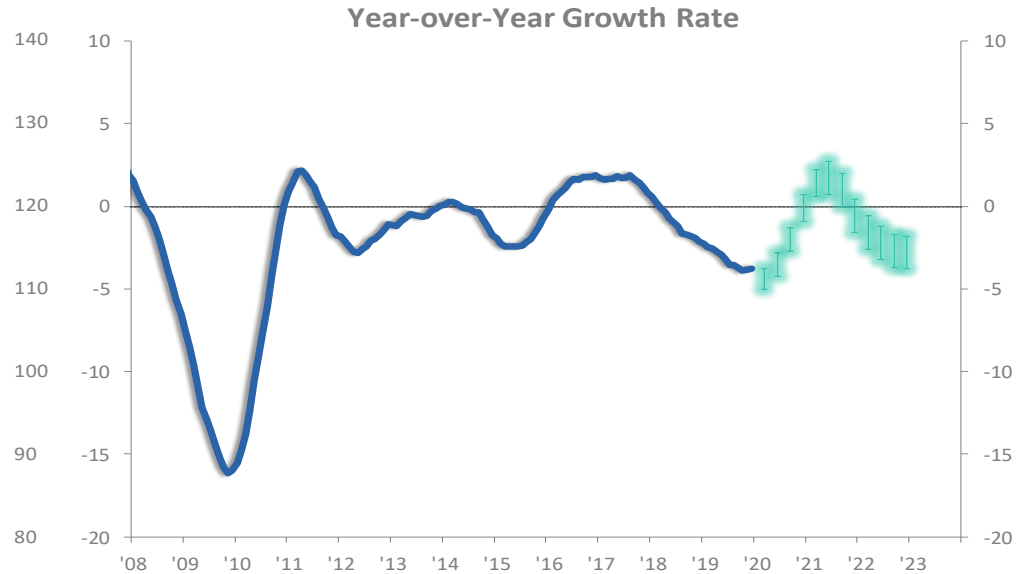
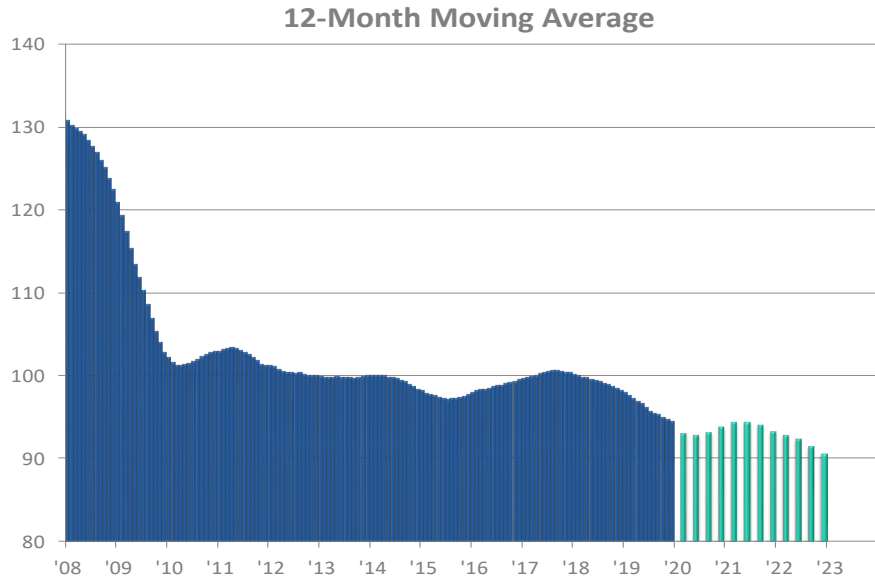
Recession

December 2019 Annual Growth Rate (12/12): -4.3%

December 2019 Annual Average (12MMA): 89.6

US Commercial Printing Production Index

Leading Indicators Suggest Production Will Transition to Phase A, Recovery, Imminently



Industry Outlook

2020: -0.1%

2021: -0.6%

2022: -2.8%

Outlook & Supporting Evidence

- Production during 2019 as a whole was 3.8% below the 2018 level.
- Expect Production to begin rising in the second half of 2020. Rise will extend into the middle of 2021, but Production is unlikely to exceed the current level during that time. Production will then decline into at least late 2022.
- Cyclical rise in the US Printing and Related Support Activities Utilization Rate signals business cycle rise for Production during at least the next two quarters, in line with our outlook.

Management Objective™

- Look to increase your competitive advantages. Growth may need to come from market share gains, since activity through 2022 is expected to be close to or below the current level.

Phase & Amplitudes

Phase D

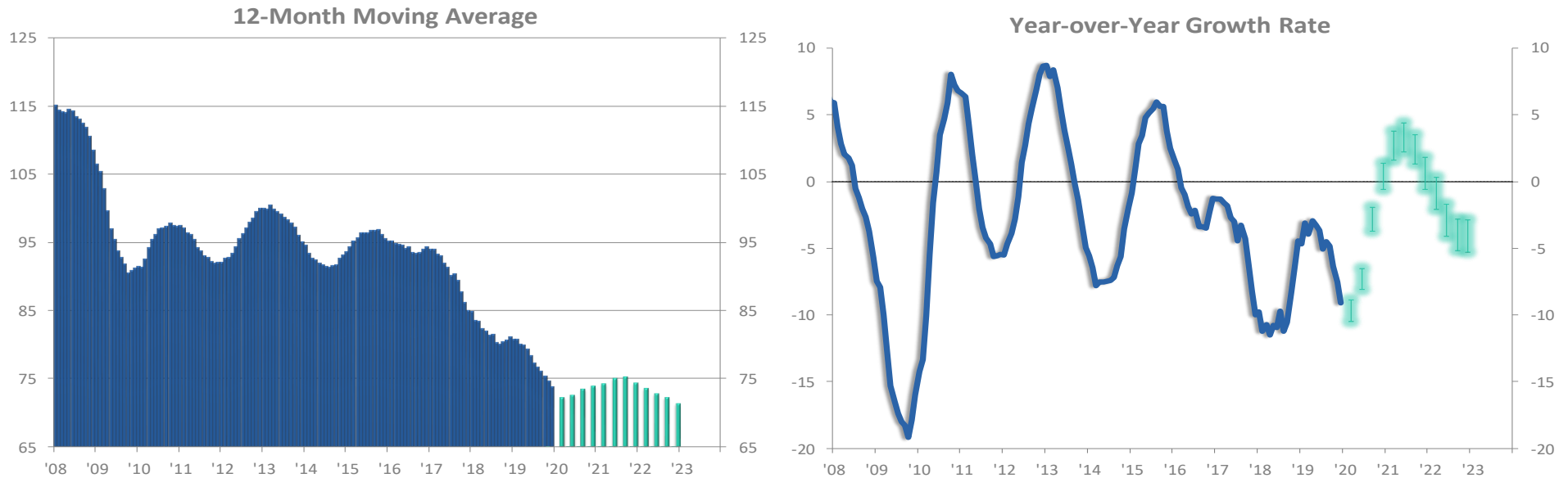
Recession

December 2019 Annual Growth Rate (12/12): -3.8%

December 2019 Annual Average (12MMA): 94.4

US Paper Bags and Treated Paper Products Production Index

Annual Production Low Expected Around Mid-Year; Rise Will Extend Into Late 2021



Industry Outlook

2020: 0.4%

2021: 0.6%

2022: -4.1%

Outlook & Supporting Evidence

- Production in 2019 was 9.1% below the 2018 level.
- Annual Production is expected to transition to a rising trend by mid-year; rise will last into the latter half of 2021. Expect Production to then decline into at least late 2022.
- US Food Production transitioned to a business cycle rising trend, ahead of many industries in the economy. Annual Food Production is expected to rise into early 2022. This market may present opportunities for NPTA members.

Management Objective™

- Eight states have banned single-use plastic bags, and state lawmakers introduced at least 95 bills related to plastic bags in 2019. This may present opportunities for eco-friendly paper products.

Phase & Amplitudes

Phase D

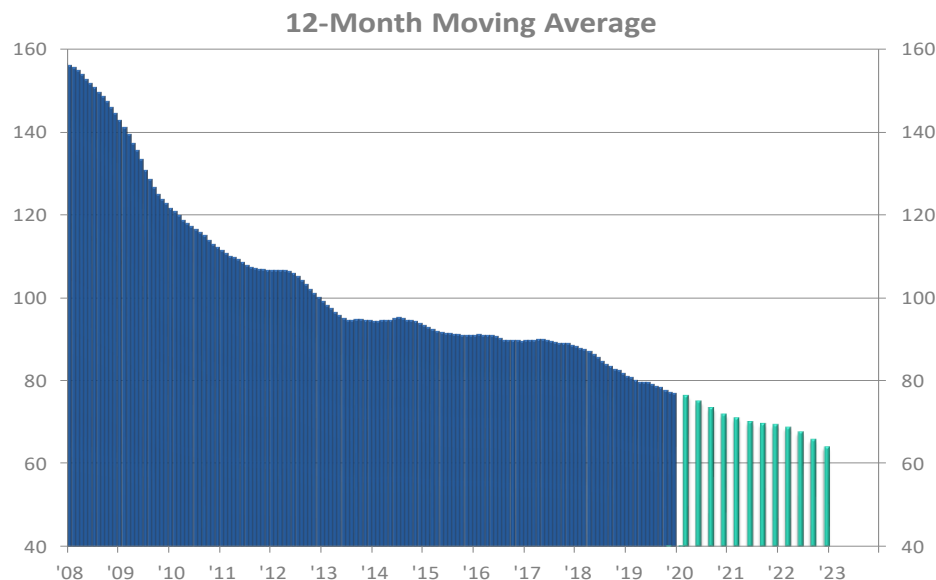
Recession

December 2019 Annual Growth Rate (12/12): -9.1%

December 2019 Annual Average (12MMA): 73.7

US Periodical, Book, and Other Publishers Production Index

Forecast Revised Downward; Timing of Upcoming Business Cycle High and Low Is Unchanged



Industry Outlook

2020: -6.8%

2021: -3.7%

2022: -7.5%

Outlook & Supporting Evidence

- Production in 2019 was 1.2% below our forecast range, and our analysis suggested further deviation was likely in 2020.
- We revised the forecast annual growth rate downward by 1.6 and 0.8 percentage points for 2020 and 2021, respectively.
- Expect annual Production to generally decline throughout the next three years. Decline will be milder in 2021 than in either 2020 or 2022.

Management Objective™

- Ensure your business is right-sized, as Production will be below the current level through at least the end of 2022.

Phase & Amplitudes

Phase A

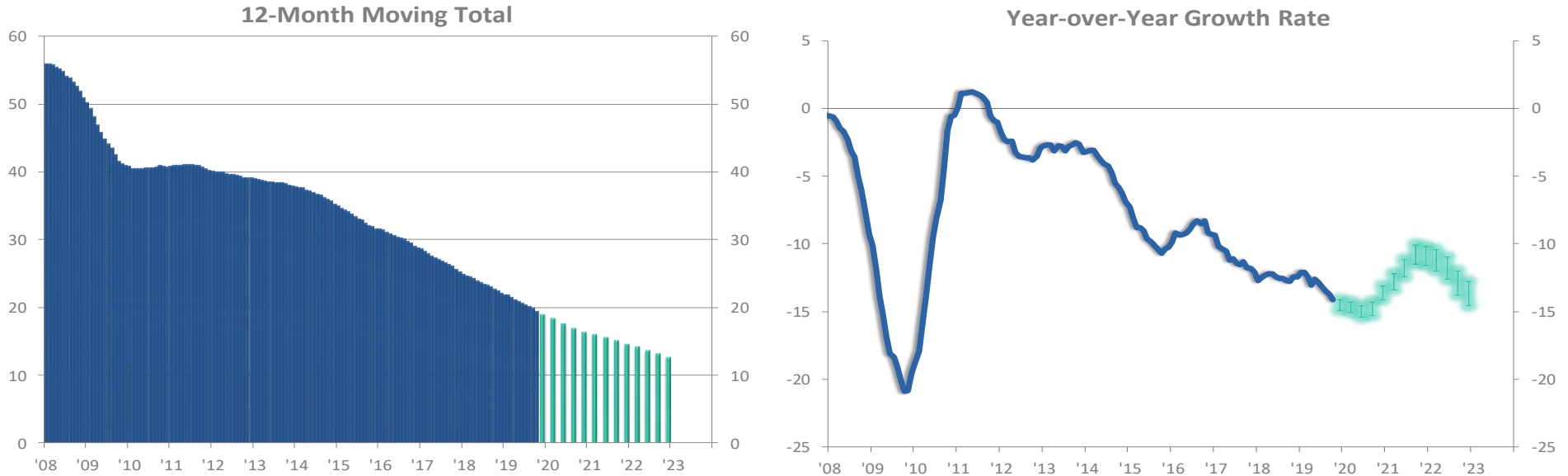
Recovery

December 2019 Annual Growth Rate (12/12): -5.8%

December 2019 Annual Average (12MMA): 76.8

US Media Spending on Print Advertising

Forecast Revised; Pace of Decline Will Be Less Severe in 2021 Than in 2020 or 2022



Industry Outlook

2020: -13.6%

2021: -10.9%

2022: -13.7%

Outlook & Supporting Evidence

- Phase D extended beyond the anticipated business cycle low. This necessitated a downward revision to the forecast. We lowered the annual rate-of-change outlook by 2.3 percentage points for 2020 and 1.1 percentage points for 2021.
- Annual Spending will decline through at least the next three years.
- The pace of decline will be less severe in 2021 relative to 2020 and 2022, as the US macroeconomy is expected to rise to a cyclical peak during 2021.

Management Objective™

- The consumer magazine segment is contracting more sharply than the newspaper and business magazine segments. Limit resources dedicated to consumer magazines, and look to diversify into other markets.

Phase & Amplitudes

Phase D

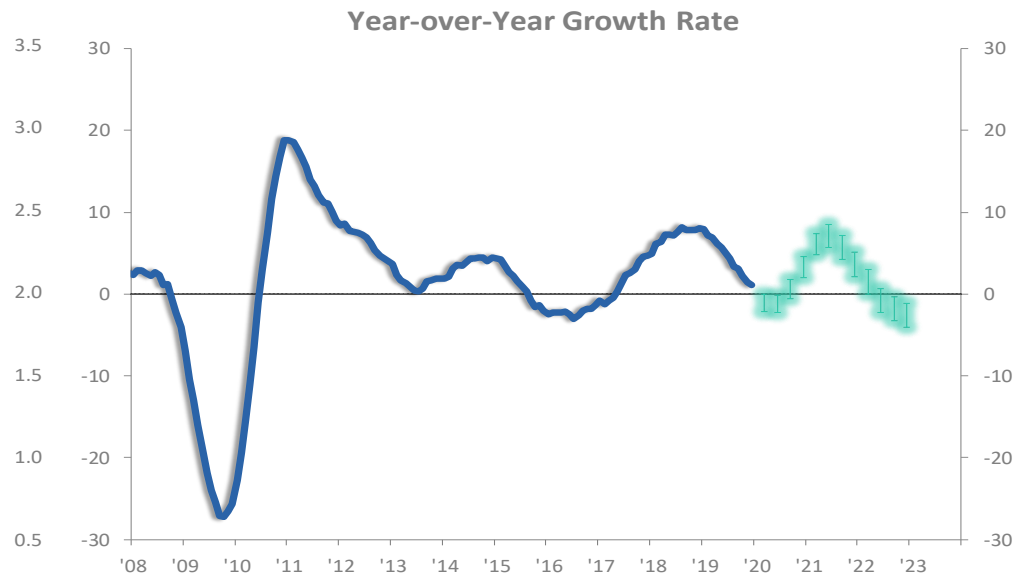
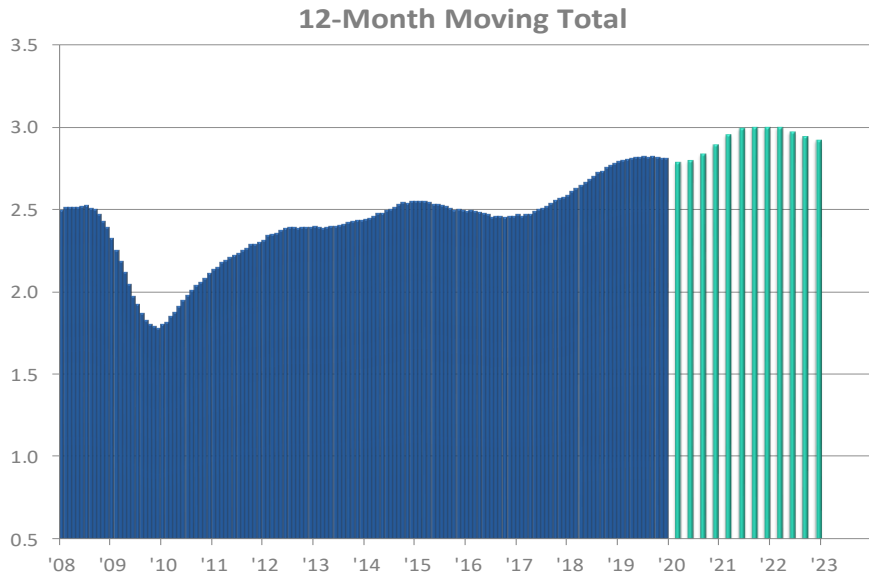
Recession

October 2019 Annual Growth Rate (12/12): -14.1%

October 2019 Annual Total (12MMT): \$19.4 billion

US Durable Goods New Orders (without Aircraft)

Ensure Your Business Is Ready for the Upcoming New Orders Growth Trend



Industry Outlook



2020: 3.3%

2021: 3.6%

2022: -2.6%

Outlook & Supporting Evidence

- New Orders were up 1.1% in 2019 compared to the 2018 level.
- New Orders will grow about 3.5% year over year in both 2020 and 2021. Plan for decline during the majority of 2022.
- Numerous US and global leading indicators are in rising trends, suggesting domestic and global demand for durable goods will likely rise in the second half of this year. This supports our outlook for Phase B in the second half of this year.

Management Objective™

- The trade conflict between the US and China may negatively impact your supply chains. Consider diversifying your supply chains to mitigate potential risk.

Phase & Amplitudes

Phase C

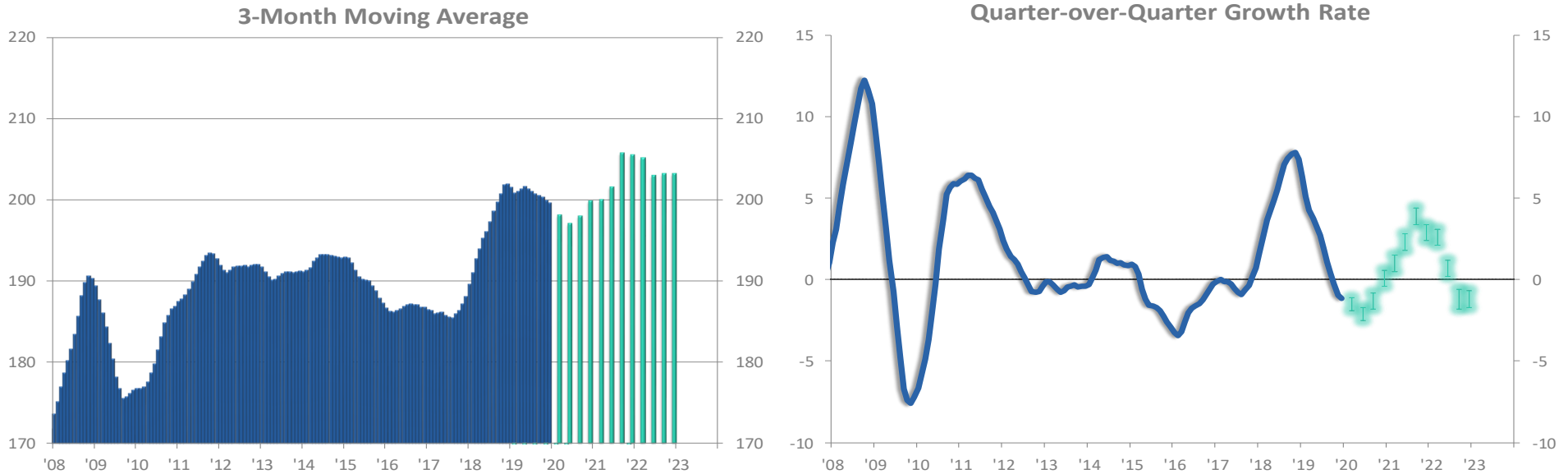
Slowing Growth

December 2019 Annual Growth Rate (12/12): 1.1%

December 2019 Annual Total (12MMT): \$2.810 trillion

US Paper Producer Price Index

Forecast Revised; Quarterly Prices to Decline in Near Term Before Rising Into Late 2021



Industry Outlook

4Q20: 0.1%

4Q21: 2.9%

4Q22: -1.2%

Outlook & Supporting Evidence

- The Price Index average during the fourth quarter was 1.3% below the median of the forecast prepared with October 2018 data. Our analysis indicated further deviation was likely, necessitating a forecast revision.
- The timing of the upcoming business cycle turning points was shifted out by about one quarter to account for the latest data and leading indicator evidence. We revised our Prices quarterly growth rate forecasts downward by 1.2 percentage points for 4Q20 and 0.4 percentage points for 4Q21.
- Quarterly Prices are expected to decline in the near term, then rise into late 2021. Prices will then decline through at least the end of 2022.

Management Objective™

- Quarterly Prices are expected to generally rise for the majority of the next two years. Look to increase efficiencies to mitigate rising costs and protect profit margins.

Phase & Amplitudes

Phase D














Recession

December 2019 Quarterly Growth Rate (3/12): -1.1%

December 2019 Quarterly Average (3MMA): 199.6

INDICATORS

US Leading Indicators

Indicator	Direction			What it means for the US economy
	1Q20	2Q20	3Q20	
ITR Leading Indicator™				<ul style="list-style-type: none"> •The Conference Board's US Leading Indicator suggests further cyclical decline for US Industrial Production into at least mid-2020 •The ITR Leading Indicator™ is in its third month of rise, supporting our outlook for business cycle rise in US Industrial Production beginning in the second half of 2020 •The US ISM PMI (Purchasing Managers Index) rate-of-change is rising, providing further evidence in support of our US industrial sector outlook
ITR Retail Sales Leading Indicator™				
The Conference Board's US Leading Indicator			N/A	
US ISM PMI (Purchasing Managers Index)				
US Total Capacity Utilization Rate			N/A	
<p>Green denotes that the indicator signals cyclical rise for the economy in the given quarter. Red denotes the opposite.</p>				

The ITR Leading Indicator™ and the US ISM PMI (Purchasing Managers Index) are signaling a transition to business cycle rise in the US economy will occur around the middle of this year. General rise in the US housing market, US stock market, and global leading indicators increases our confidence in a mid-2020 low.

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 Paper and Paper Products Production Index — NAICS 322. Industries in the Paper Manufacturing subsector that make pulp, paper, or converted paper products. Source: FRB. Index, 2012 = 100, 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 Paper Bags and Treated Paper Products Production Index — NAICS 32222. This industry comprises establishments primarily engaged in one or more of the following: (1) cutting and coating paper and paperboard; (2) cutting and laminating paper, paperboard, and other flexible materials (except plastics film to plastics film); (3) manufacturing bags, multiwall bags, sacks of paper, metal foil, coated paper, laminates, or coated combinations of paper and foil with plastics film; (4) manufacturing laminated aluminum and other converted metal foils from purchased foils; and (5) surface coating paper or paperboard. Source: FRB. Index, 2012 = 100, NSA.

US Periodical, Book, and Other Publishers Production Index — NAICS 51112-9. This industry comprises establishments known either as magazine publishers or periodical publishers. These establishments carry out the operations necessary for producing and distributing magazines and other periodicals, such as gathering, writing, and editing articles, and selling and preparing advertisements. These establishments may publish magazines and other periodicals in print or electronic form. Source: FRB. Index, 2012 = 100, NSA.

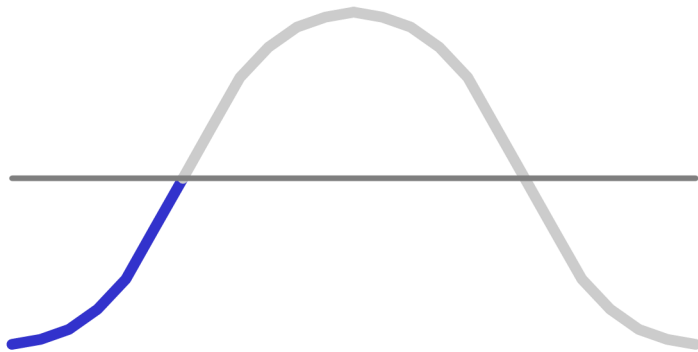
US Media Spending on Print Advertising — Media spending in the US on print advertising. Includes magazine and newspaper advertising. Source: Kantar Media. Measured in billions of dollars, NSA.

US Durable Goods New Orders (without Aircraft) — New orders for durable goods (excluding aircraft) in the US. Includes wood products, nonmetallic mineral products, primary metals, fabricated metals, machinery, computers and electronic products, electrical equipment, appliances and components, transportation equipment except for aircraft, furniture and related products, etc. Source: US Census Bureau. Measured in trillions of dollars, NSA.

US Paper Producer Price Index — Producer Price Index for paper in the US. Includes writing and printing papers, ground wood paper, newsprint, packaging and converting paper, coated and laminated paper, film, gift wrap papers, and other miscellaneous papers. Source: US Bureau of Labor Statistics. Index, 1982 = 100, NSA.

Management Objectives™

Phase



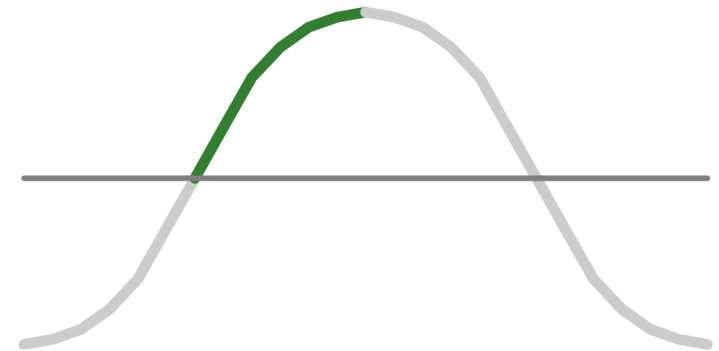
A

- 1 Model positive leadership (culture turns to behavior)
- 2 Establish tactical goals that lead to strategic achievement
- 3 Develop a system for measurement and accountability re: objective 2
- 4 Align compensation plans with objectives 2 and 3
- 5 Be keenly aware of the BE (Break Even) point and check it regularly
- 6 Judiciously expand credit
- 7 Check distributions systems for readiness to accommodate increased activity
- 8 Review and uncover competitive advantages
- 9 Invest in customer market research (know what they value)
- 10 Improve efficiencies with investment in technology and software
- 11 Start to phase out marginal opportunities
- 12 Add sales staff
- 13 Build inventories (consider lead time and turn rate)
- 14 Introduce new product lines
- 15 Determine capital equipment needs and place orders
- 16 Begin advertising and sales promotions
- 17 Hire "top" people
- 18 Implement plans for facilities expansion
- 19 Implement training programs

Management Objectives™

- 1 Accelerate training
- 2 Check the process flow for possible future bottlenecks
- 3 Continue to build inventory
- 4 Increase prices
- 5 Consider outside manufacturing sources if internal pressures are becoming tight
- 6 Find the answer to “What is next?”
- 7 Open distribution centers
- 8 Use improved cash flow to improve corporate governance
- 9 Use cash to create new competitive advantages
- 10 Watch your debt-to-equity ratio and ROI
- 11 Maintain/pursue quality; don’t let complacency set in
- 12 Stay in stock on A items, and be careful with C items
- 13 Consider selling the business in a climate of maximum “goodwill”
- 14 Penetrate new selected accounts
- 15 Develop plan for lower activity in traditional, mature markets
- 16 Freeze all expansion plans (unless related to “What is next?”)
- 17 Spin off undesirable operations
- 18 Consider taking on subcontract work if the backside of the cycle looks recessionary
- 19 Stay realistic – beware of linear budgets
- 20 Begin missionary efforts into new markets
- 21 Communicate competitive advantages to maintain margins

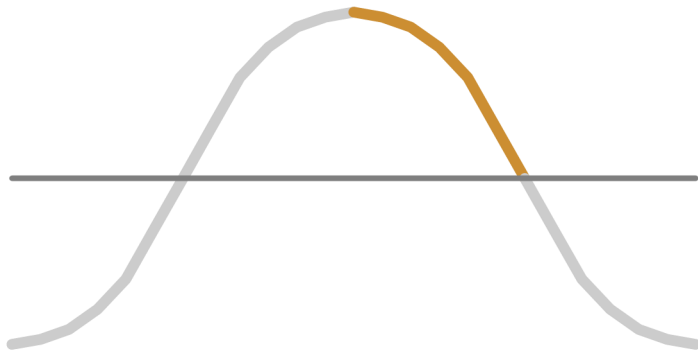
Phase



B

Management Objectives™

Phase



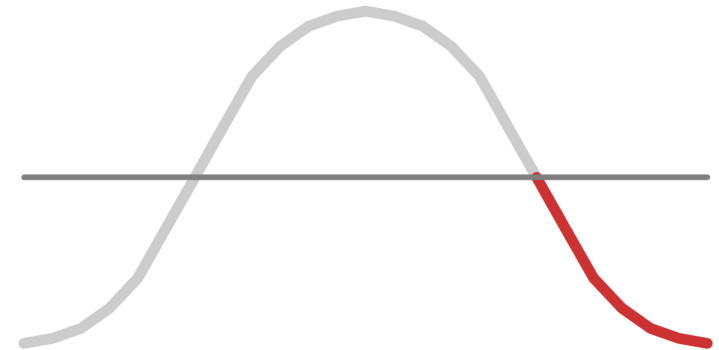
C

- 1 Cross train key people to prepare for workforce reduction if the cycle looks recessionary
- 2 Set budget reduction goals by department
- 3 Avoid long-term purchase commitments late in the price cycle
- 4 Concentrate on cash and balance sheet
- 5 Reduce advertising and inventories
- 6 De-emphasize commodity/services in anticipation of diminishing margins
- 7 Weed out inferior products (lose the losers)
- 8 Encourage distributors to decrease inventory
- 9 Identify and overcome any competitive disadvantages
- 10 Make sure you and the management team are not in denial
- 11 Cross train key people
- 12 Watch Accounts Receivable aging
- 13 Increase the requirements for justifying capital expenditures
- 14 Evaluate vendors for strength (don't get caught honoring their warranties with no one to accept returned goods)
- 15 Manage the backlog through pricing and delivery; try to fill the funnel

Management Objectives™

- 1 Continue force reduction
- 2 Reduce advertising – be very selective
- 3 Continue to avoid long-term purchase commitments
- 4 Review all lease agreements
- 5 Increase the requirements for justifying capital equipment
- 6 Eliminate all overtime
- 7 Reduce overhead labor
- 8 Combine departments with like capabilities and reduce management
- 9 Select targets of opportunity where price will get the business
- 10 Tighten credit policies – increase scrutiny
- 11 Look for opportunistic purchases
- 12 Grab market share as your competitor dies
- 13 Prepare training programs
- 14 Negotiate union contracts, if possible
- 15 Develop advertising and marketing programs
- 16 Enter or renegotiate long-term leases
- 17 Look for additional vendors
- 18 Consider capital expenditures and acquisitions in light of market-by-market potential
- 19 Make acquisitions – use pessimism to your advantage
- 20 Lead with optimism and “can do” attitude to mitigate employee anxiety

Phase



D