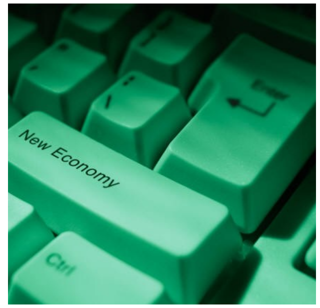

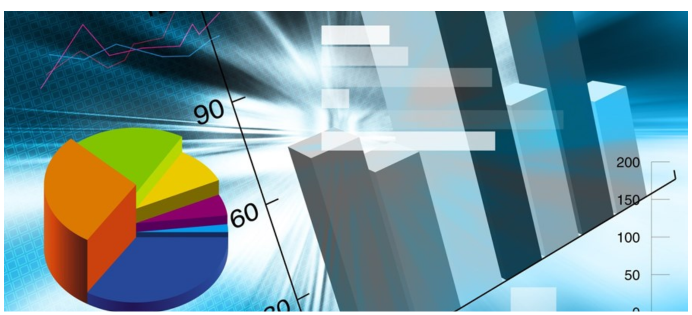

NATIONAL FLUID POWER ASSOCIATION
NFPA

2024
Company Market Outlook

Second Quarter

ITR ECONOMICS

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overview

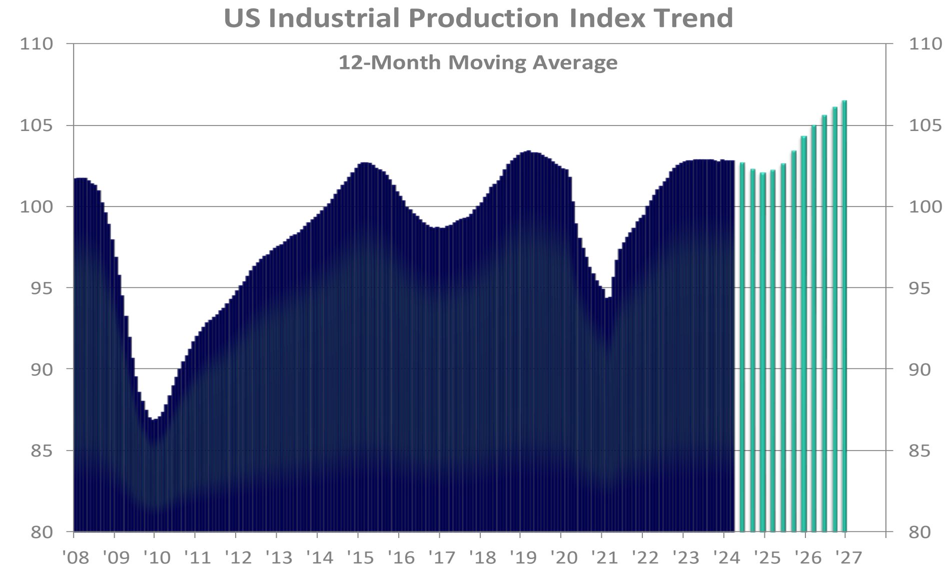
Divergent Outcomes Are Likely in 2024

Consumers are the bedrock of the US economy, and middle-to-upper-income demographics are proving resilient. Consumers are buying a record dollar-value and volume of goods and services, funded through rising income, lower savings, and - in some cases - more debt. Record buying is occurring despite material economic headwinds. Consumer prices are up roughly 20% over the last four years and borrowing costs have soared from record lows to multi-decade highs. These pressures have been felt more acutely by lower-income consumers. Meanwhile, many middle-to-upper-income consumers are benefiting from relatively high home values and equity values. Our analysis indicates that spending by higher-income consumers is having a larger impact on the economic data relative to spending by lower-income consumers.

Relatively strong middle-to-upper-income consumers are driving growth in housing construction, as they are more likely to be able to buy despite still-elevated mortgage rates. Rise in US Single-Unit Housing Starts is likely to persist in the coming years given the tight stock of existing homes and expected improvement in financial conditions.

We expect slowing growth for US Real GDP in 2024, with the potential for one quarter of mild decline. The retail and services sectors are likely to see slowing growth. Sizable government spending is an upside for the economy and is benefiting not only the public sector, but it is also having knock-on positive effects in the private sector, noticeable in the nonresidential construction and services sectors.

Businesses are showing hesitance toward capex amid the slowing macroeconomy, high borrowing costs, and tight credit conditions. Total Manufacturing New Orders have plateaued and existing manufacturing capacity is being utilized at a lower rate. Contraction is likely for many non-high tech industrial markets in 2024, if it has not already materialized. Businesses, including those in the manufacturing sector, are holding larger amounts of cash than is typical this cycle, which may offset some of the downside impact of tight monetary policy. This is part of the reason we expect this downturn to be mild. The resilient consumer and near-sourcing will also contribute to the mildness of the downturn.



Growth Will Follow in 2025 and 2026; What to Know for Planning

Know your markets and where your products place relative to your competition. If your business caters directly to consumers, consider your end users' demographics, as your sales performance may differ depending on customers' income levels or on regional trends. Consider how price- and interest-rate-sensitive your clients are, as it will likely be hard to lift prices this year, and rates will likely move slightly lower but remain relatively high. Companies with exposure to the services sector or public spending are more likely to experience a soft landing relative to the industrial sector. Look for opportunities tied to reshoring.

If possible, try to keep an extra cash buffer this year to help you mitigate the current high interest rates and to provide both security and flexibility. This year will also be a good time to try to improve efficiencies and cut back on discretionary spending to help offset the impacts of wage pressures.

Evidence for the next business cycle rising trend is already forming. Accelerating growth in US Single-Unit Housing Starts, which lead the US economy, suggests 2025 will be a stronger year than 2024 for many markets. Additionally, the FOMC is signaling potentially lower rates late this year, though sticky inflation could delay this policy shift. Discernable impacts to the economy typically lag changes in rates, meaning much of the impact of these potential cuts would be seen in 2025 into 2026. Even if your market is poised for a downturn this year, make sure to look beyond and focus on how your business can be best positioned for the rise coming in 2025 and 2026.

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.

Our video tutorials offer step-by-step instruction for

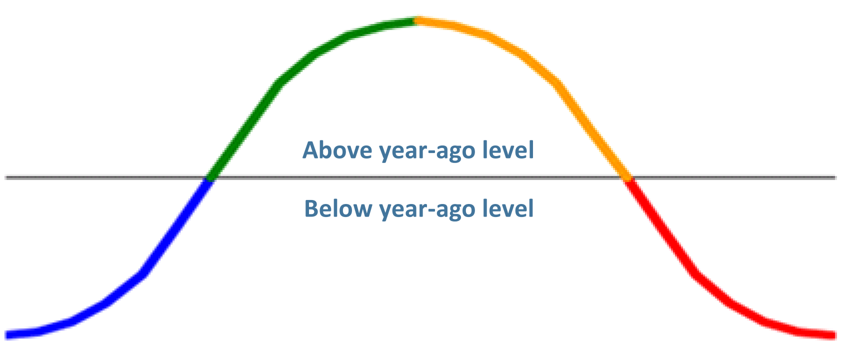
calculating rates-of-change and using leading indicators to see the future.

Business Cycle:

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

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.

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.



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	Phase	Current	2024	2025	2026
6	NFPA Total Shipments	D	-0.5%	-2.6%	7.0%	2.8%
7	NFPA Hydraulic Shipments	C	1.3%	-3.9%	6.9%	4.4%
8	NFPA Pneumatic Shipments	D	-0.7%	-3.2%	2.9%	5.5%
10	US Logging Production	D	-9.1%	-2.0%	4.4%	-0.3%
10	US Oil and Gas Extraction Production	C	6.4%	2.8%	2.2%	4.2%
10	US Mining and Oil Field Machinery Production	D	-0.5%	-2.7%	5.2%	1.9%
10	US Food Production	D	-2.3%	-0.2%	1.7%	1.5%
10	US Wood Products Production	A	-3.5%	2.6%	2.0%	2.3%
10	US Paper and Products Production	A	-4.7%	-2.3%	-1.7%	0.7%
10	US Petroleum Refineries Production	B	1.2%	0.2%	-0.5%	2.4%
10	US Chemicals and Chemical Products Production	C	1.2%	-3.1%	2.5%	0.5%

A RECOVERY

B ACCELERATING GROWTH

C SLOWING GROWTH

D RECESSION

Business Cycle

Page Number	Industry	Phase	Current	2024	2025	2026
10	US Rubber and Plastics Products Production	A	-3.2%	-1.4%	3.6%	2.2%
10	US Fabricated Metal Products Production	D	-0.8%	-0.9%	1.9%	1.6%
10	US Farm Machinery Shipments	A	-16.1%	6.6%	13.5%	-1.5%
10	US Lawn and Garden Equipment Production	D	-6.8%	-7.0%	7.4%	2.1%
10	US Construction Machinery Production	D	-1.7%	-13.1%	8.7%	3.0%
10	US Machinery New Orders	C	0.2%	-3.0%	4.7%	1.5%
10	US Instruments Production	A	-1.6%	-2.1%	5.8%	3.0%
11	US Metal Working Machinery New Orders	D	-4.2%	-5.0%	8.0%	0.7%
11	US Total Renewable Energy Consumption	C	1.4%	2.8%	3.3%	1.4%
11	US Engines, Turbines, Generators, and Other Power Generation Equipment New Orders	C	11.7%	-9.6%	4.2%	2.9%
11	US Engines and Power Transmission Equipment Production	D	-10.7%	-7.6%	6.4%	6.3%

A RECOVERY

B ACCELERATING GROWTH

C SLOWING GROWTH

D RECESSION

Business Cycle

Page Number	Industry	Phase	Current	2024	2025	2026
11	US General Purpose Machinery Production	D	-0.6%	-4.4%	0.3%	5.7%
11	US Material Handling Equipment New Orders	C	5.5%	-4.9%	1.0%	2.2%
11	US Electronic Components Production	B	11.8%	7.7%	4.4%	8.0%
11	US Motor Vehicle Parts Production	C	6.7%	3.1%	-0.5%	3.5%
11	US Ship Building and Repair Production	D	-3.2%	-5.6%	2.7%	1.5%
11	US Medical Equipment and Supplies Production	C	1.4%	1.9%	-0.5%	1.9%
11	US Heavy Duty Truck Production	C	2.2%	-3.9%	2.7%	2.6%
11	North America Light Vehicle Production	C	8.0%	0.5%	0.9%	3.7%
11	US Industrial Production	C	0.0%	-0.8%	2.2%	2.1%
11	US Electric and Gas Utilities Production	D	-0.2%	-0.3%	2.4%	0.6%
11	US Plastics Products Production	A	-3.7%	-0.9%	3.6%	0.3%

A — RECOVERY

B — ACCELERATING GROWTH

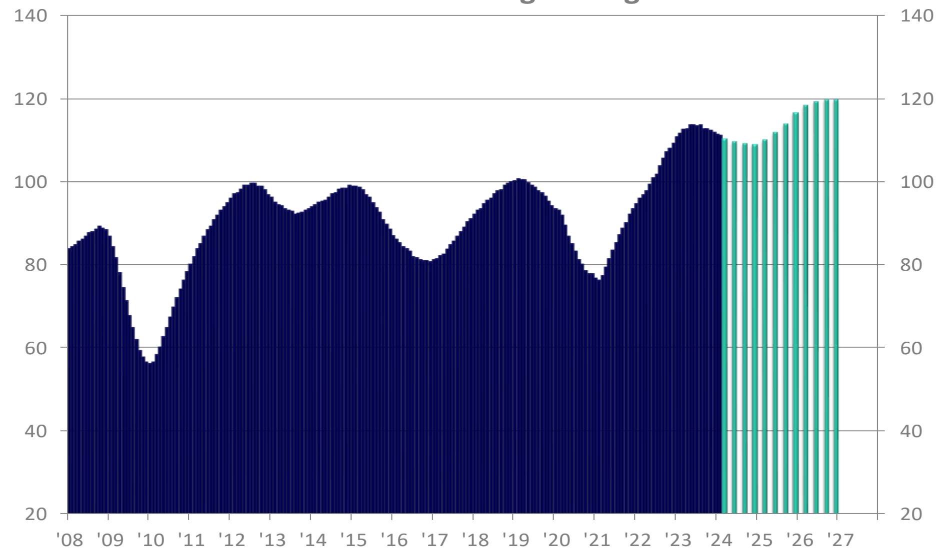
C — SLOWING GROWTH

D — RECESSION

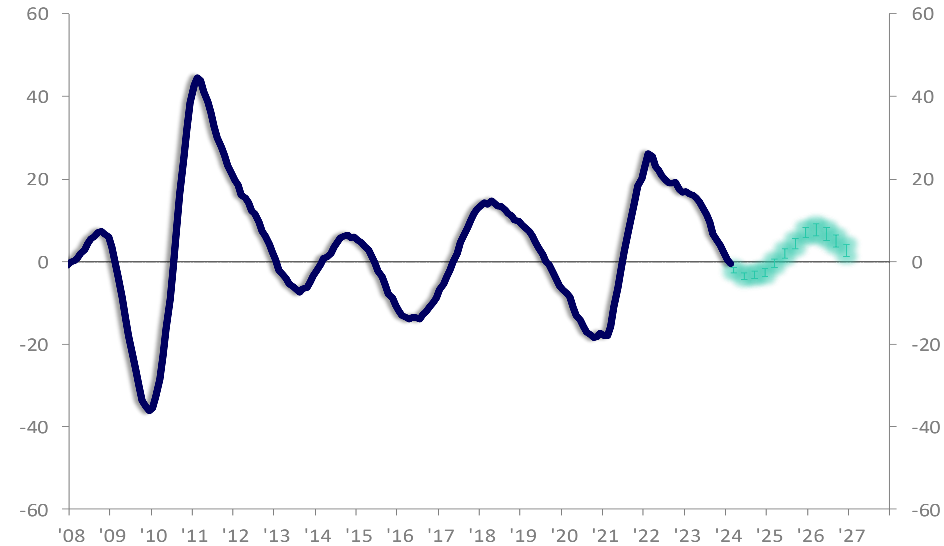
NFPA Total Shipments

Forecast Lifted; Decline in 2024 Will Be Mild on Median but Divergent Outcomes Are Likely

12-Month Moving Average



Year-over-Year Growth Rate



Industry Outlook

2024: -2.6%

2025: 7.0%

2026: 2.8%

Outlook & Supporting Evidence

- We lifted the NFPA Total Shipments forecast by 8.7%, 5.8%, and 3.5% for the coming three year-ends. We now expect a milder downturn in the industrial sector with divergent outcomes for individual markets. Upside factors include government spending, investments in high-tech industries, a resilient middle-to-upper-income consumer, and onshoring. Inflation is proving to be sticky and will contribute to higher dollar values. However, some markets are feeling more downward pressure from interest rates.
- We still expect annual Shipments to decline into the end of this year, but we now expect 2.6% decline in 2024 as opposed to double-digit decline.
- Annual Shipments will rise will rise in 2025 and 2026. We anticipate more accommodative monetary policy and renewed business confidence will push annual Shipments to record highs.

Phase & Amplitudes

Phase D

Recession

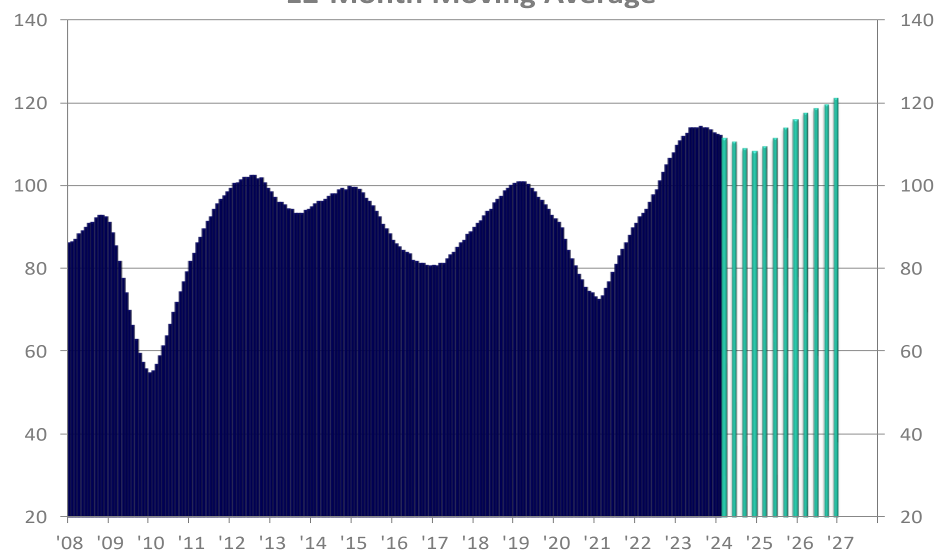
February 2024 Annual Growth Rate (12/12): -0.5%

February 2024 Annual Average (12MMA): 111.2

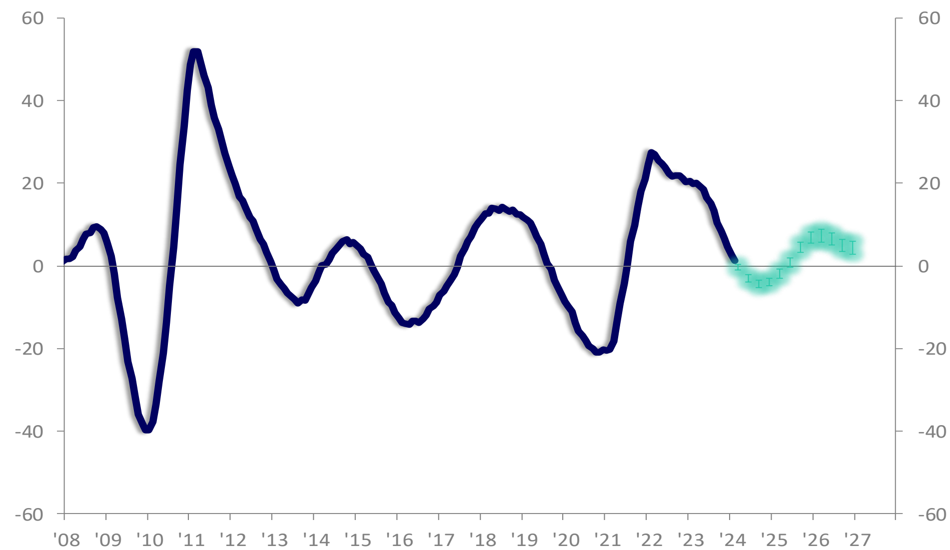
NFPA Hydraulic Shipments

Forecast Lifted; Mildness of Decline Due in Part to Government Spending and Sticky Inflation

12-Month Moving Average



Year-over-Year Growth Rate



Industry Outlook

2024: -3.9%

2025: 6.9%

2026: 4.4%

Outlook & Supporting Evidence

- The forecast for NFPA Hydraulic Shipments was lifted by 6.3%, 4.1%, and 2.4% for 2024, 2025, and 2026, in alignment with our upgraded industrial outlook and slightly stickier inflation. Elevated corporate cash holdings are buffering the downside effect of elevated financing costs in the B2B space, while rising incomes and the wealth effect of high equity and home valuations are contributing to resilient demand for consumer durables such as light vehicles. Government spending has benefited some end markets, such as construction machinery. On the flip side, farm machinery is down double-digits and is underperforming other offroad segments.
- Decline in annual Shipments will extend until the end of this year. Annual Shipments will then rise through at least year-end 2026.

Phase & Amplitudes

Phase C

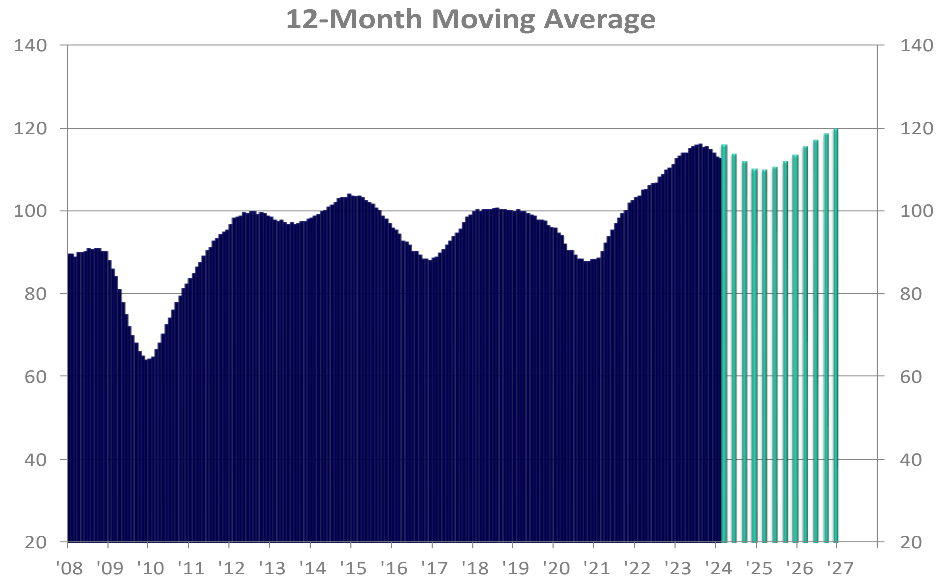
Slowing Growth

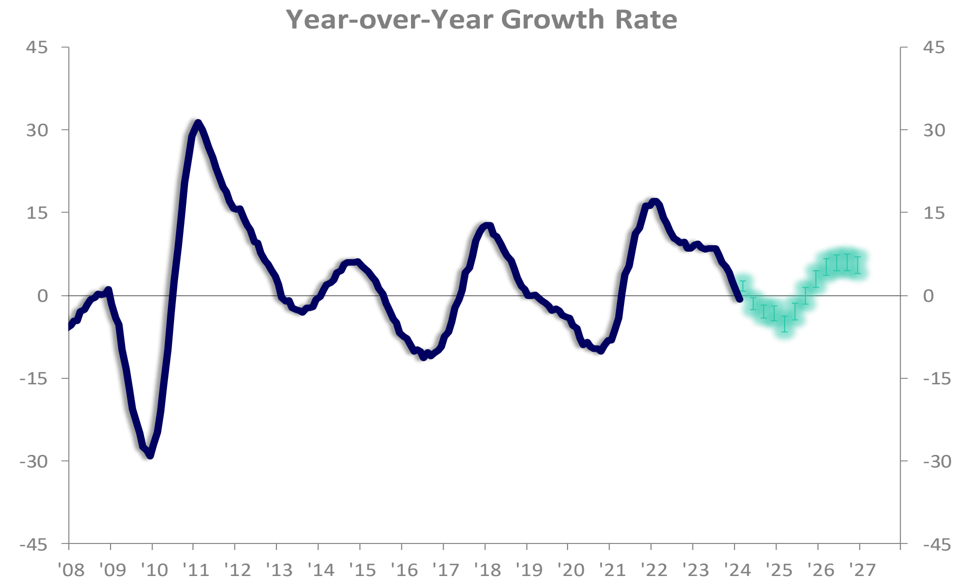
February 2024 Annual Growth Rate (12/12): 1.3%

February 2024 Annual Average (12MMA): 112.2

NFPA Pneumatic Shipments

Further Mild Decline Alongside Manufacturing Will Last Into Early 2025





Industry Outlook

2024: -3.2%

2025: 2.9%

2026: 5.5%

Outlook & Supporting Evidence

- NFPA Pneumatic Shipments in 2023 came in about 2% below our forecast range. Our annual average forecast is unchanged, but we adjusted the 2024 growth rate to reflect the weaker point of reference.
- Annual Shipments will decline into early 2025 as prior rate increases weigh on demand. US Manufacturing Production is mildly declining while consumer retail activity is slowing in growth; these trends are likely to persist through 2024. We expect decline in Pneumatic Shipments to be similarly mild.
- Rise will then take hold and persist through at least 2026, with Shipments reaching record-high levels in 2026. At this time, we anticipate a more favorable financing environment for businesses. However, prolonged elevation in interest rates could pose a downside risk to the forecast.

Phase & Amplitudes

Phase D

Recession

February 2024 Annual Growth Rate (12/12): -0.7%

February 2024 Annual Average (12MMA): 112.5

NFPA Markets: Forecast Summary

Economic Opportunities for NFPA Members:

- A wide range of sectors are benefiting from government spending. Public construction, manufacturing construction, and renewable energy are direct beneficiaries. Knock-on effects are evident in accelerating Electronic Components Production and the fact that Construction Machinery Production is only in a mild recession despite being historically very interest rate sensitive. Heightened geopolitical conflict has increased defense-related sectors and the desirability of domestic production for commodities such as metals and petroleum.
- The chemical sector is performing well relative to other manufacturing sectors. Future decline will likely be mild, and this sector has especially high corporate cash holdings which could be employed to increase capacity.
- Sectors aimed at consumer goods will fare well given the relative health of middle-to-upper-income consumers despite financial headwinds. US Total Retail Sales will continue to rise through at least year-end 2026, though growth will slow this year.
- Acceleration in Single-Unit Housing Starts are a positive sign for eventual recovery in construction-materials-related markets such as logging and wood products as well as consumer durables such as appliances and lawn and garden equipment.

Economic Risks for NFPA Members:

- While some amount of interest rate decline is still likely late this year, sticky inflation and a strong job market are making the Federal Reserve more hawkish. Rates staying higher for longer could negatively impact capex.
- Tensions overseas continue to raise uncertainty about the global supply chain. Keep up communication along your supply chain.
- Government spending has been a boon to some sectors of the economy, but future levels of spending are uncertain. Elevated government deficit spending is a long-term risk as the US's interest expenses balloon.

Management Objectives:

- Assess your need for labor as it relates to expected expansion in 2025, considering the time it takes to train up employees. We anticipate that the labor market will remain tight in the coming years. Plan ahead so that a labor shortage does not constrain your growth in 2025 and 2026.
- Look to optimize your operations and trim any unprofitable clients or products. Where possible, make changes to these unprofitable products to better serve your bottom line as an alternative to discontinuing them.
- Improve efficiencies to buffer your margins. While sticky inflation could inflate your top line, there is a risk of profitless prosperity if you do not actively manage your margins.

NFPA Markets

End-Use Markets	R-o-C	Jun-24	Sep-24	Dec-24	Mar-25	Jun-25	Sep-25	Dec-25	Mar-26	Jun-26	Sep-26	Dec-26	Mar-27
US Logging Production	12/12	-5.2%	-4.4%	-2.0%	1.4%	3.5%	4.4%	4.4%	3.8%	2.7%	2.2%	-0.3%	-2.3%
US Oil and Gas Extraction Production	12/12	5.9%	4.4%	2.8%	1.9%	1.7%	1.8%	2.2%	3.3%	3.8%	4.4%	4.2%	3.4%
US Mining and Oil Field Machinery Production	12/12	-2.4%	-2.9%	-2.7%	-2.3%	0.1%	3.0%	5.2%	6.6%	6.0%	4.5%	1.9%	0.3%
US Food Production	12/12	-2.2%	-1.1%	-0.2%	0.9%	1.4%	1.5%	1.7%	1.8%	2.1%	1.9%	1.5%	1.0%
US Wood Products Production	12/12	-2.1%	0.8%	2.6%	4.2%	3.9%	2.9%	2.0%	1.9%	2.3%	2.8%	2.3%	2.0%
US Paper and Products Production	12/12	-3.5%	-2.2%	-2.3%	-2.6%	-2.8%	-2.9%	-1.7%	-0.2%	0.7%	1.2%	0.7%	-0.3%
US Petroleum Refineries Production	12/12	1.6%	1.3%	0.2%	-1.2%	-1.9%	-1.7%	-0.5%	1.3%	2.7%	3.0%	2.4%	1.8%
US Chemicals and Chemical Products Production	12/12	-1.4%	-2.8%	-3.1%	-2.0%	-0.5%	1.5%	2.5%	2.6%	2.3%	1.3%	0.5%	-0.2%
US Rubber and Plastics Products Production	12/12	-2.8%	-1.9%	-1.4%	-0.6%	0.7%	2.1%	3.6%	4.2%	3.7%	3.0%	2.2%	1.6%
US Fabricated Metal Products Production	12/12	-1.1%	-1.1%	-0.9%	-0.9%	-0.4%	0.6%	1.9%	2.9%	3.2%	2.6%	1.6%	0.8%
US Farm Machinery Shipments	12/12	-4.8%	0.0%	6.6%	9.6%	13.3%	16.9%	13.5%	8.1%	2.8%	-0.7%	-1.5%	0.0%
US Lawn and Garden Equipment Production	12/12	-8.4%	-8.7%	-7.0%	-2.3%	1.8%	5.2%	7.4%	7.5%	6.7%	4.6%	2.1%	0.4%
US Construction Machinery Production	12/12	-10.3%	-12.6%	-13.1%	-9.7%	-3.5%	2.8%	8.7%	11.5%	10.0%	7.5%	3.0%	2.0%
US Machinery New Orders	12/12	-1.5%	-2.5%	-3.0%	-2.1%	-0.6%	2.3%	4.7%	5.1%	4.7%	3.3%	1.5%	0.5%
US Instruments Production	12/12	-2.4%	-2.5%	-2.1%	-0.8%	2.1%	4.4%	5.8%	5.9%	4.8%	3.8%	3.0%	2.5%

A RECOVERY — B ACCELERATING GROWTH — C SLOWING GROWTH — D RECESSION

NFPA Markets

End-Use Markets	R-o-C	Jun-24	Sep-24	Dec-24	Mar-25	Jun-25	Sep-25	Dec-25	Mar-26	Jun-26	Sep-26	Dec-26	Mar-27
US Metal Working Machinery New Orders	12/12	-6.8%	-7.2%	-5.0%	-0.2%	4.1%	7.1%	8.0%	7.1%	4.6%	2.3%	0.7%	-1.8%
US Total Renewable Energy Consumption	12/12	2.3%	2.5%	2.8%	3.5%	3.5%	3.5%	3.3%	2.9%	2.6%	2.2%	1.4%	1.9%
US Engines, Turbines, Generators, and Other Power Generation Equipment New Orders	12/12	-2.4%	-7.4%	-9.6%	-9.0%	-4.9%	-0.4%	4.2%	7.0%	7.3%	5.9%	2.9%	-0.3%
US Engines and Power Transmission Equipment Production	12/12	-9.1%	-9.5%	-7.6%	-4.5%	-0.5%	4.0%	6.4%	7.8%	8.6%	7.9%	6.3%	5.2%
US General Purpose Machinery Production	12/12	-0.2%	-2.4%	-4.4%	-4.2%	-3.3%	-1.7%	0.3%	1.6%	3.3%	4.9%	5.7%	5.3%
US Material Handling Equipment New Orders	12/12	2.9%	-2.0%	-4.9%	-6.3%	-5.0%	-1.6%	1.0%	2.7%	3.2%	2.3%	2.2%	2.1%
US Electronic Components Production	12/12	10.7%	9.7%	7.7%	5.1%	3.5%	2.8%	4.4%	6.6%	9.9%	10.0%	8.0%	6.0%
US Motor Vehicle Parts Production	12/12	4.8%	3.3%	3.1%	1.3%	-0.3%	-0.8%	-0.5%	1.1%	3.2%	4.1%	3.5%	2.6%
US Ship Building and Repair Production	12/12	-4.2%	-5.5%	-5.6%	-3.9%	-1.3%	1.2%	2.7%	4.0%	3.9%	3.1%	1.5%	-1.0%
US Medical Equipment and Supplies Production	12/12	3.6%	3.5%	1.9%	-0.2%	-2.4%	-1.9%	-0.5%	1.0%	2.3%	2.3%	1.9%	2.6%
US Heavy Duty Truck Production	12/12	-0.4%	-3.8%	-3.9%	-5.9%	-4.7%	-1.1%	2.7%	5.4%	5.9%	4.5%	2.6%	0.7%
North America Light Vehicle Production	12/12	3.5%	1.2%	0.5%	-0.5%	-1.0%	-0.4%	0.9%	3.5%	5.3%	5.1%	3.7%	2.4%
US Industrial Production	12/12	-0.2%	-0.6%	-0.8%	-0.6%	-0.1%	1.1%	2.2%	2.7%	2.9%	2.6%	2.1%	1.9%
US Electric and Gas Utilities Production	12/12	1.4%	0.2%	-0.3%	-1.1%	-0.7%	0.9%	2.4%	2.5%	1.6%	0.9%	0.6%	0.7%
US Plastics Products Production	12/12	-3.1%	-1.6%	-0.9%	-0.6%	0.4%	2.0%	3.6%	3.8%	3.5%	2.0%	0.3%	0.1%

A RECOVERY

B ACCELERATING GROWTH

C SLOWING GROWTH

D RECESSION

INDICATORS

US Leading Indicators

Indicator	Direction		
	2Q24	3Q24	4Q24
ITR Leading Indicator™	🟢	🟢	N/A
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 economy in the given quarter. Red denotes the opposite.

What it means for the US economy

• The ITR Leading Indicator™ rose in March. Despite recent rise in the Indicator, elevated interest rates coupled with recent weakness seen across a collection of consumer indicators suggest there will be mild decline in US Industrial Production this year.

• The US Total Industry Capacity Utilization Rate is signaling that relatively less capacity is being used and suggests downward momentum for Industrial Production into the second half of this year.

• The ITR Retail Sales Leading Indicator™ rose in March to its highest level since 2022. Strength among middle-to-upper-income consumers has bolstered US Retail Sales despite unfavorable financing conditions; however, growth in US Retail Sales is slowing as some consumers show signs of distress, evidenced in rising credit card delinquency rates.

Downward pressure is likely to last for much of 2024 but will be relatively mild. It is important to start preparing now for the next cyclical rising trend in 2025 and 2026, keeping implementation times in mind. What can you do to improve efficiency and margins? What can you do to reduce the impacts of a tight labor market on your business? What new markets or products might you want to move into?

Appendix — Market Definitions

US Logging Production Index — This industry comprises establishments primarily engaged in one or more of the following: (1) cutting timber; (2) cutting and transporting timber; and (3) producing wood chips in the field. Source: Federal Reserve Board. NAICS Code: 1133. 2017 = 100, not seasonally adjusted (NSA).

US Oil and Gas Extraction Production Index — Includes exploration and extraction of crude petroleum and natural gas; drilling, completing, and equipping wells; operating separators, emulsion breakers, desilting equipment, and field gathering lines for crude petroleum and natural gas; and all other activities in the preparation of oil and gas up to the point of shipment from the producing property. Also includes the production of crude petroleum, the mining and extraction of oil from oil shale and oil sands, and the production of natural gas, sulfur recovery from natural gas, and recovery of hydrocarbon liquids. Source: Federal Reserve Board. NAICS Code: 211. Index, 2017 = 100, NSA.

US Mining and Oil Field Machinery Production Index — This industry comprises establishments primarily engaged in manufacturing oil and gas field and underground mining machinery and equipment. Includes coal breakers, cutters, and pulverizers, core drills, mining cars, derricks, drilling equipment, rock crushing equipment, etc. Source: Federal Reserve Board. NAICS Code: 33313. Index, 2017 = 100, NSA.

US Food Production Index — Industries in the US Food Manufacturing subsector transform livestock and agricultural products into products for intermediate or final consumption. The industry groups are distinguished by the raw materials (generally of animal or vegetable origin) processed into food products. The food products manufactured in these establishments are typically sold to wholesalers or retailers for distribution to consumers. Source: Federal Reserve Board. NAICS Code: 311. Index, 2017 = 100, NSA.

US Wood Products Production Index — Industries in the Wood Product Manufacturing subsector manufacture wood products, such as lumber, plywood, veneers, wood containers, wood flooring, wood trusses, manufactured homes (i.e., mobile homes), and prefabricated wood buildings. The production processes of the Wood Product Manufacturing subsector include sawing, planing, shaping, laminating, and assembling of wood products starting from logs that are cut into bolts, or lumber that then may be further cut, or shaped by lathes or other shaping tools. The lumber or other transformed wood shapes may also be subsequently planed or smoothed, and assembled into finished products, such as wood containers. The Wood Product Manufacturing subsector includes establishments that make wood products from logs and bolts that are sawed and shaped, and establishments that purchase sawed lumber and make wood products. With the exception of sawmills and wood preservation establishments, the establishments are grouped into industries mainly based on the specific products manufactured. Source: Federal Reserve Board. NAICS Code: 321. Index, 2017 = 100, NSA.

Appendix — Market Definitions

US Paper and Products Production Index — Industries in the Paper Manufacturing subsector make pulp, paper, or converted paper products. The manufacturing of these products is grouped together because they constitute a series of vertically connected processes. More than one is often carried out in a single establishment. There are essentially three activities. The manufacturing of pulp involves separating the cellulose fibers from other impurities in wood or used paper. The manufacturing of paper involves matting these fibers into a sheet. Converted paper products are made from paper and other materials by various cutting and shaping techniques and includes coating and laminating activities. Source: Federal Reserve Board. NAICS Code: 322. Index, 2017 = 100, NSA.

US Petroleum Refineries Production Index — This industry comprises establishments primarily engaged in refining crude petroleum into refined petroleum. Petroleum refining involves one or more of the following activities: (1) fractionation; (2) straight distillation of crude oil; and (3) cracking. Source: Federal Reserve Board. NAICS Code: 32411. Index, 2017 = 100, NSA.

US Chemicals and Chemical Products Production Index — The US Chemical Manufacturing subsector is based on the transformation of organic and inorganic raw materials by a chemical process and the formulation of products. This subsector distinguishes the production of basic chemicals that comprise the first industry group from the production of intermediate and end products produced by further processing of basic chemicals that make up the remaining industry groups. Source: Federal Reserve Board. NAICS Code: 325. Index, 2017 = 100, NSA.

US Rubber and Plastics Products Production Index — Industries in the Plastics and Rubber Products Manufacturing subsector make goods by processing plastics materials and raw rubber. The core technology employed by establishments in this subsector is that of plastics or rubber product production. Plastics and rubber are combined in the same subsector because plastics are increasingly being used as a substitute for rubber; however the subsector is generally restricted to the production of products made of just one material, either solely plastics or rubber. Source: Federal Reserve Board. NAICS Code: 326. Index, 2017 = 100, NSA.

US Fabricated Metal Products Production Index — Industries in the Fabricated Metal Product Manufacturing subsector transform metal into intermediate or end products, other than machinery, computers and electronics, and metal furniture, or treat metals and metal formed products fabricated elsewhere. Important fabricated metal processes are forging, stamping, bending, forming, and machining, used to shape individual pieces of metal; and other processes, such as welding and assembling, used to join separate parts together. Establishments in this subsector may use one of these processes or a combination of these processes. Source: Federal Reserve Board. NAICS Code: 332. Index, 2017 = 100, NSA.

Appendix — Market Definitions

US Farm Machinery Shipments — Total shipments in the United States includes agricultural and farm machinery and equipment, and other turf and grounds care equipment, including planting, harvesting, and grass mowing equipment (except lawn and garden-type). Source: US Census Bureau. NAICS Code: 333111. Measured in billions of dollars, NSA.

US Lawn and Garden Equipment Production Index — This U.S. industry comprises establishments primarily engaged in manufacturing powered lawnmowers, lawn and garden tractors, and other home lawn and garden equipment, such as tillers, shredders, yard vacuums, and leaf blowers. Source: Federal Reserve Board. NAICS Code: 333112. Index, 2017 = 100, NSA.

US Construction Machinery Production Index — This industry comprises establishments primarily engaged in manufacturing construction machinery, surface mining machinery, and logging equipment. Includes backhoes, bulldozers, construction tractors, pile-driving equipment, off-highway trucks, road graders, etc. Source: Federal Reserve Board. NAICS Code: 33312. Index, 2017 = 100, NSA.

US Machinery New Orders — New orders for machinery in the United States. Industries in the machinery manufacturing subsector create end products that apply mechanical force. Includes machinery used for saw mills and woodworking, plastics and rubber, paper, textiles, printing, food, and semiconductor industries. Source: US Census Bureau. NAICS Code: 3332. Measured in billions of dollars, NSA.

US Instruments Production Index — This industry comprises establishments primarily engaged in manufacturing navigational, measuring, electromedical, and control instruments. Examples of products made by these establishments are aeronautical instruments, appliance regulators and controls (except switches), laboratory analytical instruments, navigation and guidance systems, and physical properties testing equipment. Source: Federal Reserve Board. NAICS Code: 3345. Index, 2017 = 100, NSA.

US Metal Working Machinery New Orders — New orders for metal working machinery in the United States. This industry comprises establishments primarily engaged in manufacturing metalworking machinery, such as metal cutting and metal forming machine tools; cutting tools; and accessories for metalworking machinery; special dies, tools, jigs, and fixtures; industrial molds; rolling mill machinery; assembly machinery; coil handling, conversion, or straightening equipment; and wire drawing and fabricating machines. Source: US Census Bureau. NAICS Code: 33351. Measured in billions of dollars, NSA.

Appendix — Market Definitions

US Total Renewable Energy Consumption — Total renewable energy consumption in the United States, measured in quadrillions of btu, NSA. Renewable energy is from Energy resources that are naturally replenishing but flow-limited. They are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Renewable energy resources include biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, and tidal action. Energy consumption is the use of energy as a source of heat or power or as a raw material input to a manufacturing process. Source: US Energy Information Administration.

US Engines, Turbines, Generators, and Other Power Generation Equipment New Orders — New orders in the United States for engines, turbines, power transmission equipment, generators, gears, motors, drives, speed changers, etc. Source: US Census Bureau. NAICS Code: 3336. Measured in billions of dollars, NSA.

US Engines and Power Transmission Equipment Production Index — This U.S. industry comprises establishments primarily engaged in manufacturing gears, speed changers, and industrial high-speed drives (except hydrostatic) and mechanical power transmission equipment (except motor vehicle and aircraft), such as plain bearings, clutches (except motor vehicle and electromagnetic industrial control), couplings, joints, and drive chains and internal combustion engines (except automotive gasoline and aircraft). Source: Federal Reserve Board. NAICS Code: 333612-8. Index, 2017 = 100, NSA.

US General Purpose Machinery Production Index — General purpose machinery manufacturing, including pumps and compressors, material handling equipment, elevators and moving stairways, conveyors, industrial trucks, power driven hand tool manufacturing, welding and soldering equipment, packaging machinery, fluid power manufacturing, etc. Source: Federal Reserve Board. NAICS Code: 3339. Index, 2017 = 100, NSA.

US Material Handling Equipment New Orders — New orders for material handling equipment in the United States. This industry comprises establishments primarily engaged in manufacturing material handling equipment, such as elevators and moving stairs; conveyors and conveying equipment; overhead traveling cranes, hoists, and monorail systems; and industrial trucks, tractors, trailers, and stacker machinery. Source: US Census Bureau. NAICS Code: 33392. Measured in billions of dollars, NSA.

US Electronic Components Production Index — This industry comprises establishments primarily engaged in manufacturing semiconductors and other components for electronic applications. Examples of products made by these establishments are capacitors, resistors, microprocessors, bare and loaded printed circuit boards, electron tubes, electronic connectors, and computer modems. Source: Federal Reserve Board. NAICS Code: 3344. Index, 2017 = 100, NSA.

Appendix — Market Definitions

US Motor Vehicle Parts Production Index — Production index for the manufacture of motor vehicle parts. Includes the following parts for motor vehicles: engines and engine parts, alternators, generators, automotive lighting fixtures, coils and ignitions, distributors, spark plugs, windshield washer pumps, fuel pumps, starters, voltage regulators, wiring harnesses, steering and suspension components, brake systems, transmission and power train parts, seating and interior trim, fenders, tops, body parts, air bags, catalytic converters, mufflers, radiators, wheels, air conditioners, and other motor vehicle parts. Source: Federal Reserve Board. NAICS Code: 3363. Index, 2017 = 100, NSA.

US Ship Building and Repair Production Index — This U.S. industry comprises establishments primarily engaged in operating a shipyard. Shipyards are fixed facilities with drydocks and fabrication equipment capable of building a ship, defined as watercraft typically suitable or intended for other than personal or recreational use. Activities of shipyards include the construction of ships, their repair, conversion and alteration, the production of prefabricated ship and barge sections, and specialized services, such as ship scaling. Source: Federal Reserve Board. NAICS Code: 336611. Index, 2017 = 100, NSA.

US Medical Equipment and Supplies Production Index — Medical equipment and supplies manufacturing index for the United States. Examples of products made by these establishments are surgical and medical instruments, surgical appliances and supplies, dental equipment and supplies, orthodontic goods, ophthalmic goods, dentures, and orthodontic appliances. Source: Federal Reserve Board. NAICS Code: 3391. Index, 2017 = 100, NSA.

US Heavy Duty Truck Production Index — Heavy Duty Truck Production. This industry comprises establishments primarily engaged in (1) manufacturing heavy duty truck chassis and assembling complete heavy duty trucks, buses, heavy duty motor homes, and other special purpose heavy duty motor vehicles for highway use or (2) manufacturing heavy duty truck chassis only. Includes trucks weighing 14,000 pounds or more. Source: Federal Reserve Board. NAICS Code: 33612. Index, 2017 = 100, NSA.

North America Light Vehicle Production — Passenger car and light-duty truck production (classes 1-3) in the US, Canada, and Mexico combined, including transplants. A passenger car is a road motor vehicle, other than a motorcycle, intended for the carriage of passengers and designed to seat no more than nine persons (including the driver). Source: WardsAuto. Measured in millions of units, NSA.

Appendix — Market Definitions

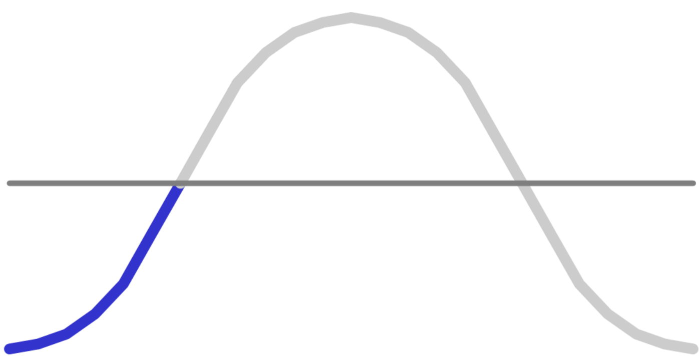
US Industrial Production Index — Index of total industrial production in the United States; includes manufacturing, mining, and utilities. Source: Federal Reserve Board. Index, 2017 = 100, NSA.

US Electric and Gas Utilities Production Index — Index of electric and gas utilities production in the United States. This industry includes establishments primarily engaged in operating electric power generation facilities. These facilities convert other forms of energy, such as water power (i.e., hydroelectric), fossil fuels, nuclear power, and solar power, into electrical energy. The establishments in this industry produce electric energy and provide electricity to transmission systems or to electric power distribution systems. This industry also includes: (1) establishments primarily engaged in operating gas distribution systems (e.g., mains, meters); (2) establishments known as gas marketers that buy gas from the well and sell it to a distribution system; (3) establishments known as gas brokers or agents that arrange the sale of gas over gas distribution systems operated by others; and (4) establishments primarily engaged in transmitting and distributing gas to final consumers. Source: Federal Reserve Board. NAICS Code: 2211, 2212. Index, 2017 = 100, NSA.

US Plastics Products Production Index — This industry group comprises establishments primarily engaged in processing new or spent (i.e., recycled) plastics resins into intermediate or final products, using such processes as compression molding, extrusion molding, injection molding, blow molding, and casting. Within most of these industries, the production process is such that a wide variety of products can be made. Source: Federal Reserve Board. NAICS Code: 3261. Index, 2017 = 100, NSA.

Management Objectives™

Phase



A

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

Management Objectives™

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

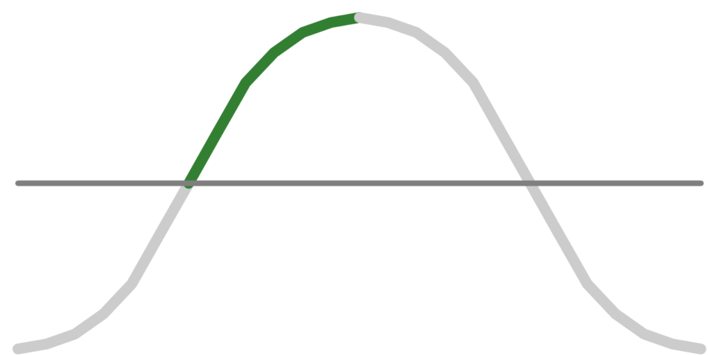
7 Improve corporate governance (rent a CFO; establish a board of advisors or board of directors)

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

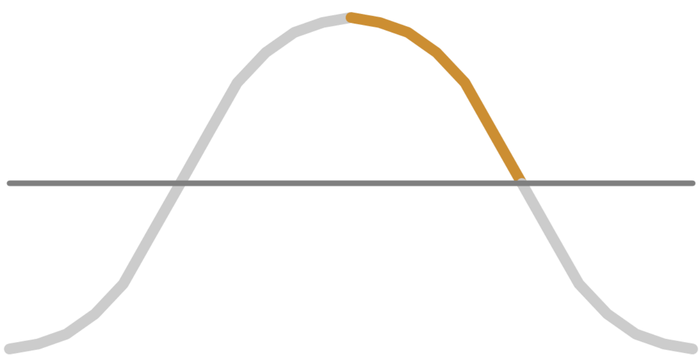
Phase



B

Management Objectives™

Phase



C

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

Management Objectives™

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

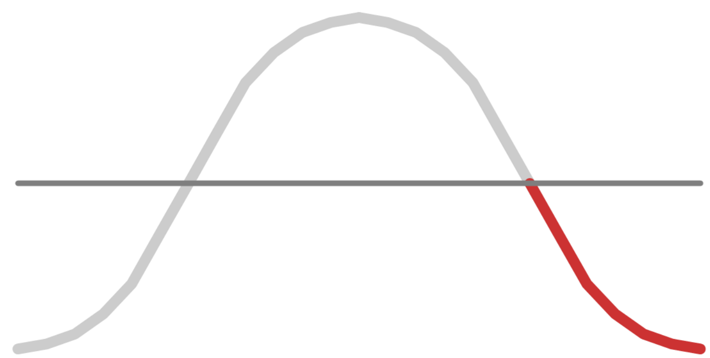
7 Consider capital equipment needs for the next cycle

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