
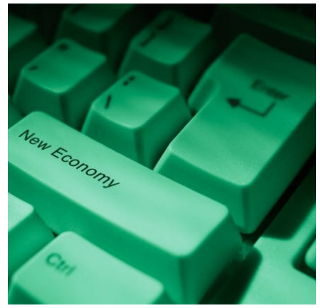



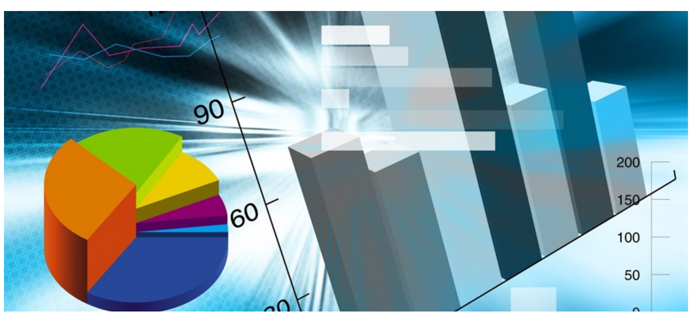

2024

Company Market Outlook

First Quarter

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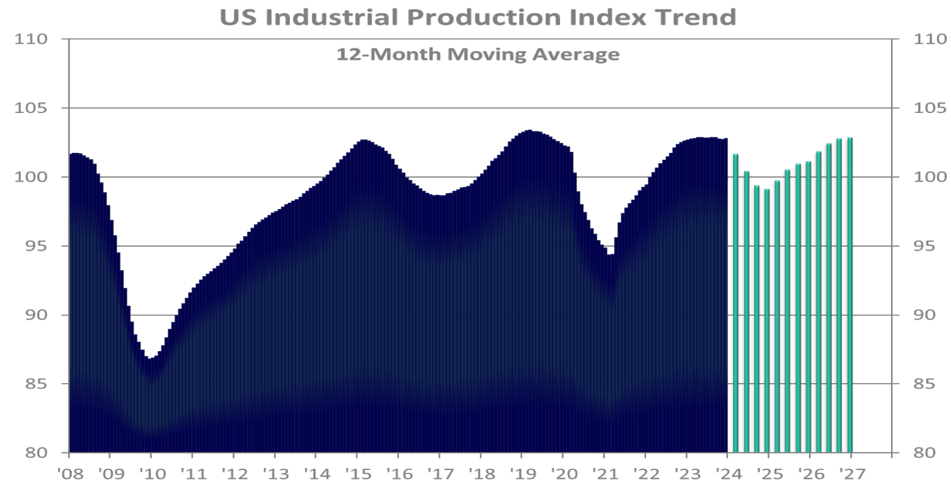
overview



Downward pressure is pervasive and intensifying as consumers struggle with the cumulative impact of elevated inflation and tighter financial conditions. Wholesalers and manufacturers are already contending with year-over-year contraction, while retail and business-to-business spending growth is slowing to a crawl. US Single-Unit Housing Starts, which typically lead the economy, are an exception to this widespread weakness; Starts are in the early stages of recovery. The nonresidential construction sector is also an outlier, but the current acceleration will soon give way to slowing growth.

Supply chains continue to adapt to the ripple effects of 2020. A few industries – such as automotive and aerospace – are still rebuilding inventories, while others have overbuilt inventories and are now correcting course. We are keeping a close eye on inventory-to-sales ratios and the state of the supply chain. We are encouraging our clients to try to improve communications along their supply chains in order to minimize any bullwhip effect.

Evidence for the Mild Decline in 2024

For many markets, mild decline will be the predominant trend in 2024. Consumers, who are a driving force of the US economy, are facing budget challenges. Credit card delinquencies are trending around the highest level in a decade, and savings balances (adjusted for inflation) are running below the long-term trend. The cumulative effect of prior high inflation and elevated borrowing costs will put further pressure on consumers' budgets into 2024, impacting many retail markets and the broader economy.

On the business side, corporate profits are below the year-ago level, corporate bond yields are elevated, and bank lending standards are tightening. Amid these financial factors, coupled with softening economic data, businesses will likely be more conservative in their capital goods investments. However, it is important to note that Corporate Cash Holdings are well-above pre-2020 levels, and businesses are managing their debts relatively well so far. These factors suggest the economic decline will be relatively mild. How 2024 feels to your company will depend on its exposure to the more budget-constrained consumer, its sensitivity to interest rates, its inventory levels, and any market share changes.

Opportunities Lie Ahead—Plan for Rise in 2025 and 2026

Try not to get caught up in the volatility and pessimistic bent of the media. Instead, follow data-driven economic analysis and apply the strategies that align with the pertinent phase of the business cycle. Check out the Management Objectives™ on the last four pages of this report for some ideas, and be sure to look ahead to the Phase A, Recovery, strategies so that you are ready to implement them for maximum benefit when the time comes. The US is still a great place to do business, and we expect the economy to resume its ascent in 2025 and rise through at least 2026. A shift in monetary policy to something more accommodative will likely be a contributing factor. Additionally, we think a 2024 characterized by disinflation and reduced spending will help consumers regain stronger financial funding.

As the volatility of the early 2020s recedes further into the past, the economic ripples will slowly dissipate. Businesses will adapt to new conditions. Still, some challenges will remain. We expect inflation and borrowing costs will remain higher than in the 2010s, so have a plan to protect your margins and do not expect cheap money. Demographic trends will keep the labor market relatively tight, so look for ways to reduce your dependency on labor and increase your efficiency.

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

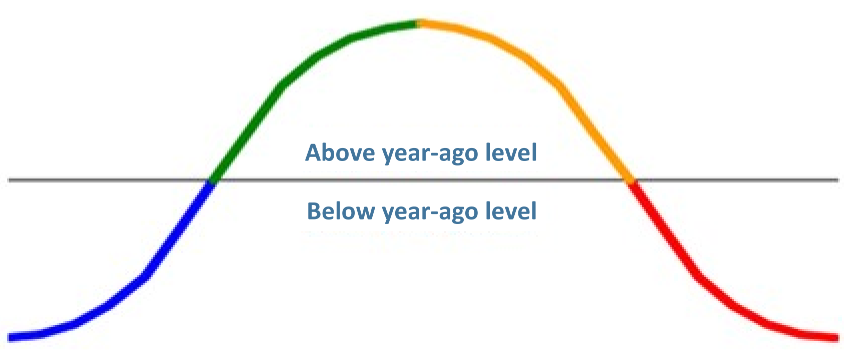
calculating rates-of-change and using leading indicators to see the future.

Business Cycle:

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

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	Phase	Current	2024	2025	2026
6	NFPA Total Shipments	C	3.8%	-10.9%	9.9%	5.1%
7	NFPA Hydraulic Shipments	C	6.3%	-11.0%	9.1%	6.2%
8	NFPA Pneumatic Shipments	C	4.0%	-5.9%	2.9%	5.5%
10	US Logging Production	D	-5.4%	-2.0%	4.4%	-0.3%
10	US Oil and Gas Extraction Production	B	8.3%	-0.8%	2.1%	3.8%
10	US Mining and Oil Field Machinery Production	C	1.1%	-8.6%	8.3%	3.7%
10	US Food Production	D	-1.5%	-0.2%	1.7%	1.5%
10	US Wood Products Production	A	-4.9%	2.6%	2.0%	2.3%
10	US Paper and Products Production	A	-6.6%	-2.3%	-1.7%	0.7%
10	US Petroleum Refineries Production	C	0.5%	-1.7%	3.4%	0.8%
10	US Chemicals and Chemical Products Production	C	1.4%	-3.1%	2.5%	0.5%

RECOVERY | ACCELERATING GROWTH | SLOWING GROWTH | RECESSION

Business Cycle

Page Number	Industry	Phase	Current	2024	2025	2026
10	US Rubber and Plastics Products Production	A	-4.2%	-1.4%	3.6%	2.2%
10	US Fabricated Metal Products Production	D	-0.6%	-4.2%	2.6%	1.8%
10	US Farm Machinery Shipments	D	-21.4%	0.1%	11.0%	9.5%
10	US Lawn and Garden Equipment Production	D	-4.6%	-7.0%	7.4%	2.1%
10	US Construction Machinery Production	C	1.1%	-13.1%	8.7%	3.0%
10	US Machinery New Orders	C	0.4%	-3.0%	4.7%	1.5%
10	US Instruments Production	A	-2.3%	-2.1%	5.8%	3.0%
11	US Metal Working Machinery New Orders	D	-5.1%	-5.0%	8.0%	0.7%
11	US Total Renewable Energy Consumption	B	1.1%	2.8%	3.3%	1.4%
11	US Engines, Turbines, Generators, and Other Power Generation Equipment New Orders	B	11.6%	-9.6%	4.2%	2.9%
11	US Engines and Power Transmission Equipment Production	D	-6.5%	-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	-0.3%	-4.4%	0.3%	5.7%
11	US Material Handling Equipment New Orders	C	6.4%	-4.9%	1.0%	2.2%
11	US Electronic Components Production	B	7.5%	7.7%	4.4%	8.0%
11	US Motor Vehicle Parts Production	C	7.2%	-5.0%	7.2%	2.1%
11	US Ship Building and Repair Production	D	-2.5%	-5.6%	2.7%	1.5%
11	US Medical Equipment and Supplies Production	C	1.9%	1.9%	-0.5%	1.9%
11	US Heavy Duty Truck Production	C	3.5%	-12.9%	6.3%	9.8%
11	North America Light Vehicle Production	C	9.9%	-4.3%	8.3%	2.2%
11	US Industrial Production	C	0.2%	-3.6%	2.0%	1.7%
11	US Electric and Gas Utilities Production	D	-1.8%	-1.8%	3.0%	1.1%
11	US Plastics Products Production	A	-5.1%	-0.9%	3.6%	0.3%

A RECOVERY

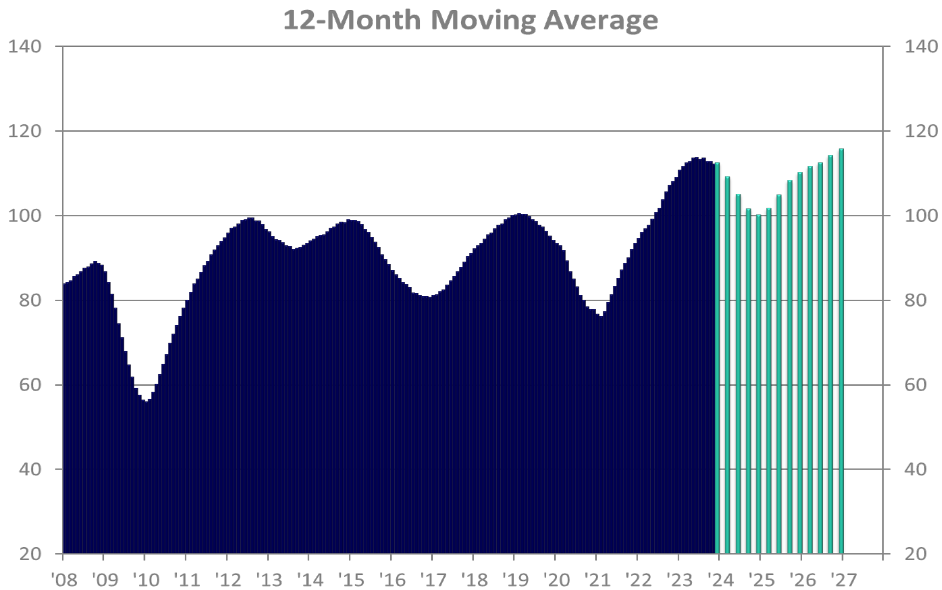
B ACCELERATING GROWTH

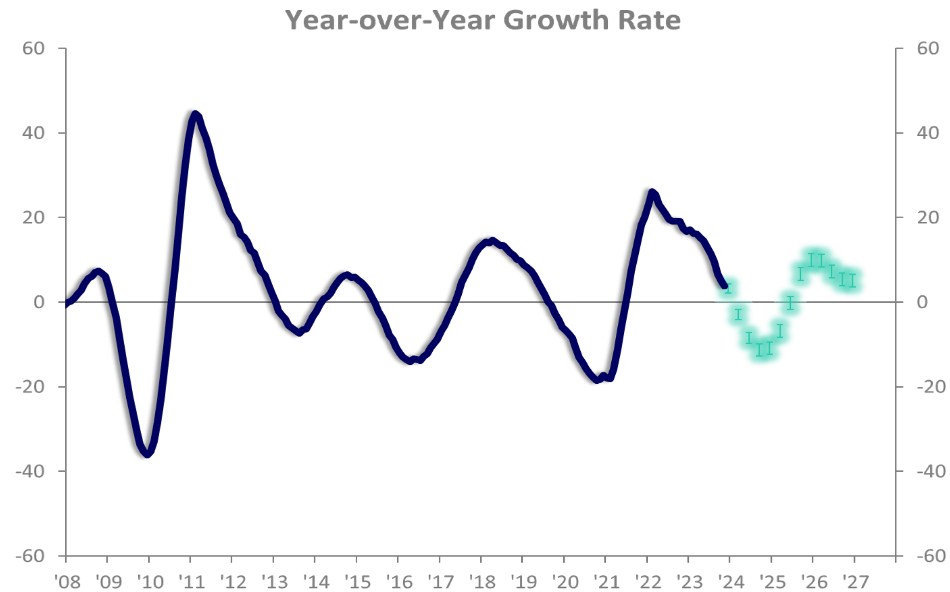
C SLOWING GROWTH

D RECESSION

NFPA Total Shipments

Total Shipments to Decline 11% in 2024; Industrial Recovery in 2025 Will Lift Shipments





Industry Outlook

2024: -10.9%

2025: 9.9%

2026: 5.1%

Outlook & Supporting Evidence

- Annual NFPA Total Shipments are declining and will decline a further 11% in 2024. Still-high borrowing costs and tight lending standards will hinder businesses' willingness to invest in new capital, while consumers will become more budget-conscious and cut spending.
- The lagged effects of contractionary monetary policy will be felt this year and any potential shift in policy would be felt mostly in 2025 and 2026.
- Total Shipments rise will resume at the start of 2025 and generally extend through at least 2026 as macroeconomic headwinds dissipate and the consumer strengthens.
- Weak leading indicator rise suggests this rising trend will be gradual; it will take about two years for Shipments to return to a record-high level. We adjusted the 2026 growth rate up slightly.

Phase & Amplitudes

Phase C

Slowing Growth

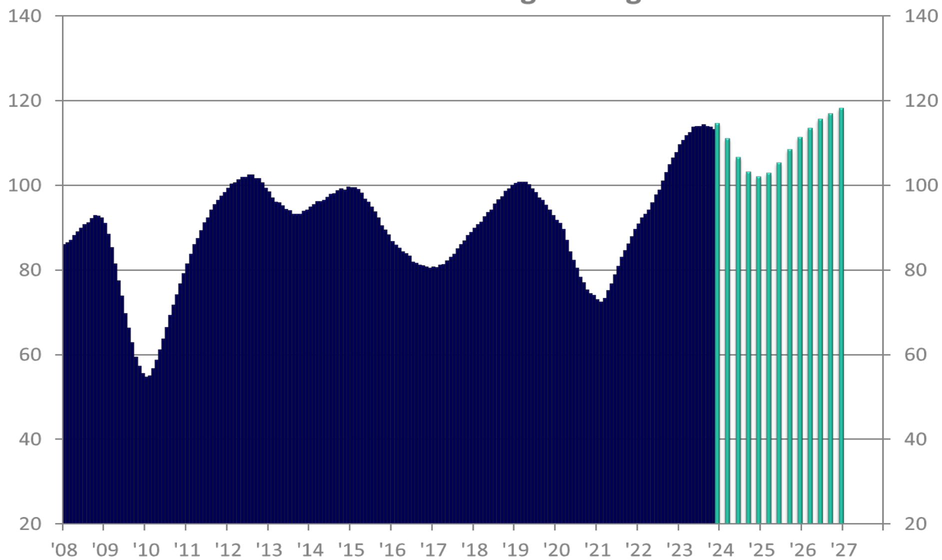
November 2023 Annual Growth Rate (12/12): 3.8%

November 2023 Annual Average (12MMA): 112.3

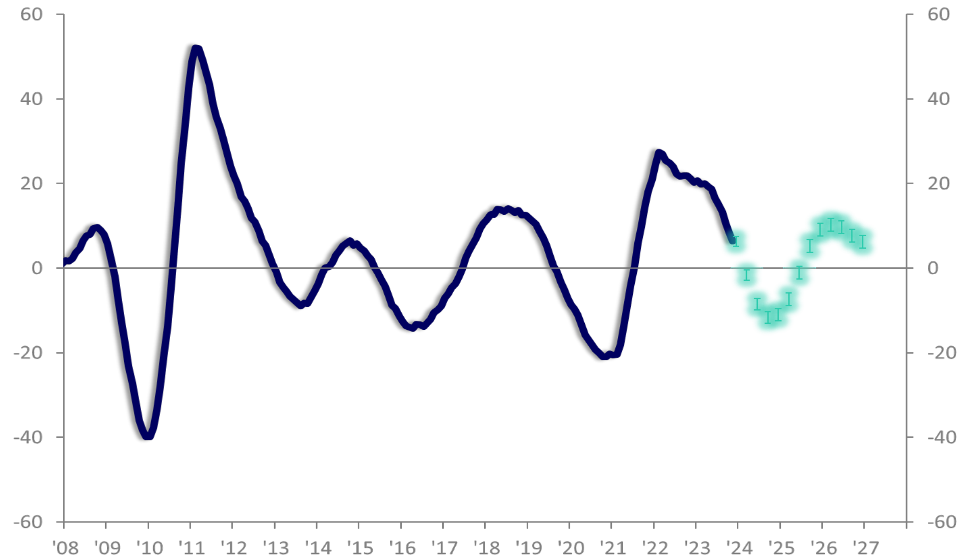
NFPA Hydraulic Shipments

Key Markets to Decline in 2024; Rise in Residential Construction Is a Green Shoot for 2025

12-Month Moving Average



Year-over-Year Growth Rate



Industry Outlook

2024: -11.0%

2025: 9.1%

2026: 6.2%

Outlook & Supporting Evidence

- Annual NFPA Hydraulic Shipments will decline throughout 2024. Rise will take hold in early 2025 and persist through at least 2026, with the forecast period ending in a record high.
- Elevated interest rates (which lead Shipments), flattened corporate profits, and declining inflation-adjusted consumer savings are downside pressures for numerous key hydraulic end markets. Expected lower spending on consumer goods will result in further decline in manufacturing markets, impacting energy and mining upstream and heavy trucking and material handling midstream and downstream.
- Nonresidential construction is shifting to slowing growth, but recovery in new single-unit residential construction is a signal for rise in the macroeconomy and Hydraulic Shipments in early 2025 and beyond.

Phase & Amplitudes

Phase C

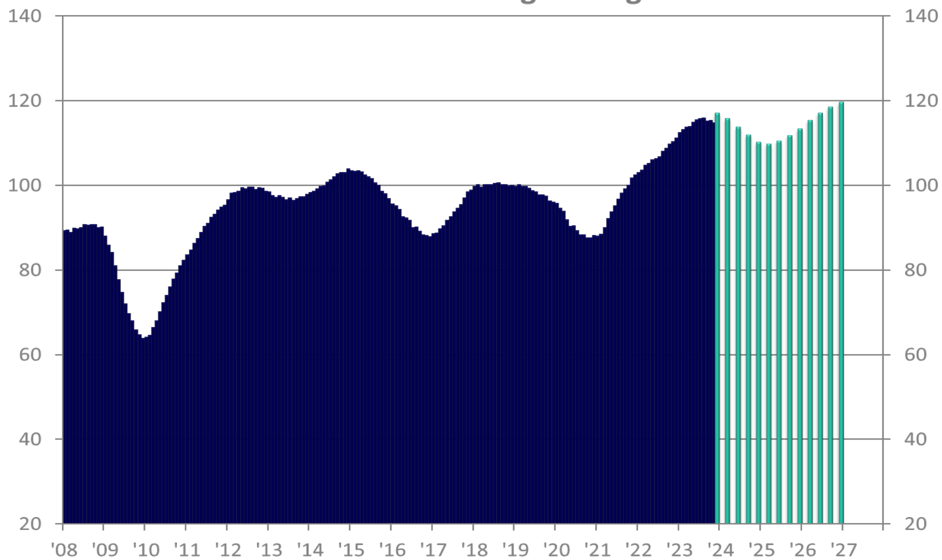
Slowing Growth

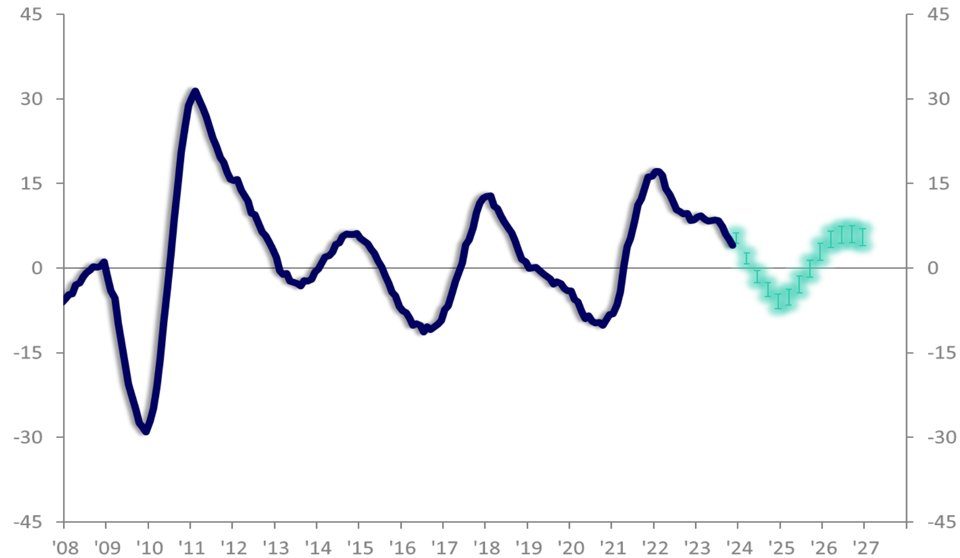
November 2023 Annual Growth Rate (12/12): 6.3%

November 2023 Annual Average (12MMA): 113.3

NFPA Pneumatic Shipments

Pneumatic Shipments to Decline Into Early 2025; Nondiscretionary Markets Are an Upside





Industry Outlook

2024: -5.9%

2025: 2.9%

2026: 5.5%

Outlook & Supporting Evidence

- Annual NFPA Pneumatic Shipments will decline further into early 2025. Rise will take hold by mid-2025 and extend through at least 2026 as macroeconomic conditions improve, including normalized inventories, rising real incomes, and increased near-sourcing.
- The vehicle sector is in or near decline, as heavy-duty truck production contends with less freight movement, and light vehicle production grapples with vehicle affordability.
- Markets that contracted ahead of the manufacturing sector—such as wood, paper, rubber, and plastic—are in Phase A, Recovery. However, macroeconomic conditions will likely mute their recovery this year.
- Food processing and medical equipment, both more non-discretionary in nature, will mildly decline in 2024 and may provide upside opportunities.

Phase & Amplitudes

Phase C

Slowing Growth

November 2023 Annual Growth Rate (12/12): 4.0%

November 2023 Annual Average (12MMA): 114.8

NFPA Markets: Forecast Summary

Economic Opportunities for NFPA Members:

- US Electronic Components Production presents an opportunity for NFPA members during the 2024 macroeconomic downturn, as Production is forecasted to continuously rise and be roughly 8% higher than in 2023. Sectors that rely heavily on electronic components, such as defense, medical, and aircraft, are relatively stable and government assistance to the semiconductor space suggests new domestic opportunities.
- Inputs to residential construction will be an area of opportunity as the single-unit segment is beginning to recover. US Logging Production and US Wood Products Production will end the year in Phase A and B, respectively.
- Within the mining sector, look into opportunities associated with renewable energy; these mined materials, which include copper, nickel, and other rare earth metals, are seeing increased demand, as signaled by rise in US Total Renewable Energy Consumption.

Economic Risks for NFPA Members:

- Elevated geopolitical tensions in the Middle East and conflicts occurring in the Red Sea could pose at least a near-term risk to supply chains and an upward pressure on input prices; an upside is the potential for bolstered reshoring and near-sourcing initiatives.
- US Government Long-Term Bond Yields, which lead NFPA Shipments by about two years, pose a downside risk in terms of both the timing and amplitude of the cyclical low. While the Federal Reserve has signaled they are likely to adopt a more dovish approach to monetary policy in 2024, their exact timetable and magnitude of possible changes are unknown and may have impacts on Shipments.
- In recent years, government spending programs have bolstered economic growth; however, the disbursement of funding for these acts are heavily front-loaded, and while funding will not completely dry up in 2024, the economic benefits will likely recede starting in 2024.
- Some markets face bloated inventories that could exacerbate cyclical decline. Monitor inventory trends in your key end markets as an economic bellwether.

Management Objectives:

- Consider capital investments that can help increase your efficiency or reduce your dependence on labor. With a tight labor market and attendant wage costs expected to persist, you will need to protect your margins.
- Reevaluate your supply and distribution networks, diversifying where possible, to hedge against future supply chain issues.
- NFPA members should build up their cash reserves in 2024 in order to take advantage of opportunities that may present themselves when the US industrial sector begins to recover in early 2025. This may include actions like buying capital equipment or investing in efficiency gains.
- Plan at least half a business cycle ahead for rise in 2025 and 2026. Think back to the past and consider what you wish you had done to prepare.

NFPA Markets

End-Use Markets	R-o-C	Sep-23	Dec-23	Mar-24	Jun-24	Sep-24	Dec-24	Mar-25	Jun-25	Sep-25	Dec-25	Mar-26	Jun-26	Sep-26	Dec-26
US Logging Production	12/12	-1.7%	-5.4%	-4.1%	-5.2%	-4.4%	-2.0%	1.4%	3.5%	4.4%	4.4%	3.8%	2.7%	2.2%	-0.3%
US Oil and Gas Extraction Production	12/12	7.5%	8.3%	4.5%	2.6%	1.0%	-0.8%	-1.5%	-1.2%	0.2%	2.1%	3.5%	4.6%	4.5%	3.8%
US Mining and Oil Field Machinery Production	12/12	2.9%	1.1%	-5.2%	-8.5%	-9.2%	-8.6%	-4.9%	0.2%	4.5%	8.3%	10.6%	10.1%	7.5%	3.7%
US Food Production	12/12	-0.9%	-1.5%	-2.3%	-2.2%	-1.1%	-0.2%	0.9%	1.4%	1.5%	1.7%	1.8%	2.1%	1.9%	1.5%
US Wood Products Production	12/12	-5.4%	-4.9%	-4.4%	-2.1%	0.8%	2.6%	4.2%	3.9%	2.9%	2.0%	1.9%	2.3%	2.8%	2.3%
US Paper and Products Production	12/12	-7.8%	-6.6%	-5.7%	-3.5%	-2.2%	-2.3%	-2.6%	-2.8%	-2.9%	-1.7%	-0.2%	0.7%	1.2%	0.7%
US Petroleum Refineries Production	12/12	-0.3%	0.5%	-1.8%	-2.3%	-2.2%	-1.7%	0.2%	1.9%	3.2%	3.4%	2.8%	2.0%	1.0%	0.8%
US Chemicals and Chemical Products Production	12/12	0.5%	1.4%	-0.1%	-1.4%	-2.8%	-3.1%	-2.0%	-0.5%	1.5%	2.5%	2.6%	2.3%	1.3%	0.5%
US Rubber and Plastics Products Production	12/12	-3.6%	-4.2%	-3.5%	-2.8%	-1.9%	-1.4%	-0.6%	0.7%	2.1%	3.6%	4.2%	3.7%	3.0%	2.2%
US Fabricated Metal Products Production	12/12	0.3%	-0.6%	-2.0%	-3.8%	-4.8%	-4.2%	-2.0%	-0.3%	1.2%	2.6%	3.9%	3.9%	3.0%	1.8%
US Farm Machinery Shipments	12/12	-20.7%	-23.3%	-15.8%	-6.3%	0.8%	0.1%	-4.2%	-3.2%	2.5%	11.0%	19.3%	18.0%	13.7%	9.5%
US Lawn and Garden Equipment Production	12/12	-0.4%	-4.6%	-6.0%	-8.4%	-8.7%	-7.0%	-2.3%	1.8%	5.2%	7.4%	7.5%	6.7%	4.6%	2.1%
US Construction Machinery Production	12/12	4.2%	1.1%	-5.1%	-10.3%	-12.6%	-13.1%	-9.7%	-3.5%	2.8%	8.7%	11.5%	10.0%	7.5%	3.0%
US Machinery New Orders	12/12	1.1%	0.2%	-0.2%	-1.5%	-2.5%	-3.0%	-2.1%	-0.6%	2.3%	4.7%	5.1%	4.7%	3.3%	1.5%
US Instruments Production	12/12	-2.8%	-2.3%	-2.0%	-2.4%	-2.5%	-2.1%	-0.8%	2.1%	4.4%	5.8%	5.9%	4.8%	3.8%	3.0%

A RECOVERY

B ACCELERATING GROWTH

C SLOWING GROWTH

D RECESSION

NFPA Markets

End-Use Markets	R-o-C	Sep-23	Dec-23	Mar-24	Jun-24	Sep-24	Dec-24	Mar-25	Jun-25	Sep-25	Dec-25	Mar-26	Jun-26	Sep-26
US Metal Working Machinery New Orders	12/12	-5.9%	-3.2%	-5.7%	-6.8%	-7.2%	-5.0%	-0.2%	4.1%	7.1%	8.0%	7.1%	4.6%	2.3%
US Total Renewable Energy Consumption	12/12	1.1%	1.3%	1.1%	2.3%	2.5%	2.8%	3.5%	3.5%	3.5%	3.3%	2.9%	2.6%	2.2%
US Engines, Turbines, Generators, and Other Power Generation Equipment New Orders	12/12	10.4%	8.6%	5.7%	-2.4%	-7.4%	-9.6%	-9.0%	-4.9%	-0.4%	4.2%	7.0%	7.3%	5.9%
US Engines and Power Transmission Equipment Production	12/12	-4.4%	-6.5%	-8.2%	-9.1%	-9.5%	-7.6%	-4.5%	-0.5%	4.0%	6.4%	7.8%	8.6%	7.9%
US General Purpose Machinery Production	12/12	0.1%	-0.3%	0.6%	-0.2%	-2.4%	-4.4%	-4.2%	-3.3%	-1.7%	0.3%	1.6%	3.3%	4.9%
US Material Handling Equipment New Orders	12/12	8.9%	6.4%	6.7%	2.9%	-2.0%	-4.9%	-6.3%	-5.0%	-1.6%	1.0%	2.7%	3.2%	2.3%
US Electronic Components Production	12/12	2.5%	7.5%	10.5%	10.7%	9.7%	7.7%	5.1%	3.5%	2.8%	4.4%	6.6%	9.9%	10.0%
US Motor Vehicle Parts Production	12/12	9.0%	7.2%	5.0%	0.5%	-3.8%	-5.0%	-4.2%	-0.6%	4.5%	7.2%	7.0%	5.7%	3.7%
US Ship Building and Repair Production	12/12	-1.2%	-2.5%	-2.8%	-4.2%	-5.5%	-5.6%	-3.9%	-1.3%	1.2%	2.7%	4.0%	3.9%	3.1%
US Medical Equipment and Supplies Production	12/12	3.2%	1.9%	2.1%	3.6%	3.5%	1.9%	-0.2%	-2.4%	-1.9%	-0.5%	1.0%	2.3%	2.3%
US Heavy Duty Truck Production	12/12	8.5%	3.5%	-0.9%	-4.7%	-9.4%	-12.9%	-14.6%	-13.7%	-6.7%	6.3%	16.3%	21.4%	17.9%
North America Light Vehicle Production	12/12	11.4%	9.9%	3.6%	-0.1%	-2.1%	-4.3%	-2.2%	1.4%	5.7%	8.3%	8.5%	6.2%	3.6%
US Industrial Production	12/12	0.7%	0.2%	-1.1%	-2.4%	-3.4%	-3.6%	-1.9%	0.1%	1.6%	2.0%	2.1%	1.9%	1.8%
US Electric and Gas Utilities Production	12/12	-0.4%	-1.8%	-2.2%	-2.5%	-2.5%	-1.8%	0.8%	1.6%	2.5%	3.0%	3.2%	3.1%	2.6%
US Plastics Products Production	12/12	-4.6%	-5.1%	-3.9%	-3.1%	-1.6%	-0.9%	-0.6%	0.4%	2.0%	3.6%	3.8%	3.5%	2.0%

A RECOVERY B ACCELERATING GROWTH C SLOWING GROWTH D RECESSION

INDICATORS

US Leading Indicators

Indicator	Direction		
	1Q24	2Q24	3Q24
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™ trended flat in December with a slight upward bias. Despite the prior rise in the indicator (indicated by the green dots in the table) the current stall in that rise alludes to weakness ahead. Waning macroeconomic fundamentals and still-elevated interest rates corroborate that weakness will persist.

- The US ISM PMI (Purchasing Managers Index) monthly rate-of-change moved higher in December. This indicator suggests an earlier cyclical low for the industrial sector than forecasted. Similarly, the US OECD Leading Indicator 1/12 moved higher in December and signals an imminent annual rate-of-change low for the US Industrial Sector. However, a broader survey of evidence, including the still-inverted yield curve and elevated interest rates, suggests that a low around the end of 2024 or early 2025 is most probable.

- The US Total Industry Capacity Utilization Rate monthly rate-of-change ticked up for a second consecutive month in December, but it is too early to determine if this is a sustainable rising trend. Prior decline in the monthly rate-of-change still suggests US Industrial Production 12/12 decline into at least mid-2024, in line with our forecast.

Many indicators point to decline in industrial activity in the quarters ahead. The lagged effects of contractionary monetary will become more pronounced during 2024, and we foresee continuing consumer weakness on the horizon. Evaluate your cash position periodically as we head into a mild macroeconomic recession and lead with optimism, as downturns are temporary.

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

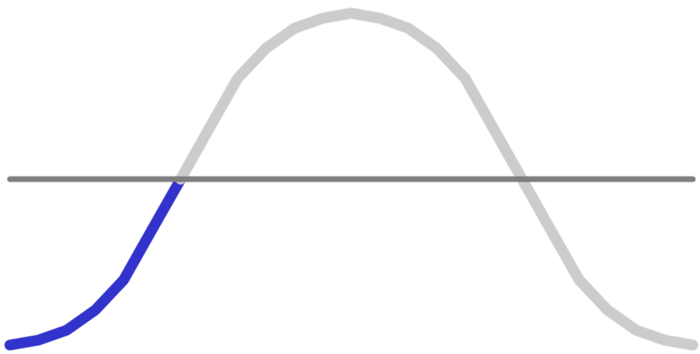
US Industrial Production Index — Index of total industrial production in the United States; includes manufacturing, mining, and utilities. Source: Federal Reserve Board. Index, 2017 = 100, NSA.

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

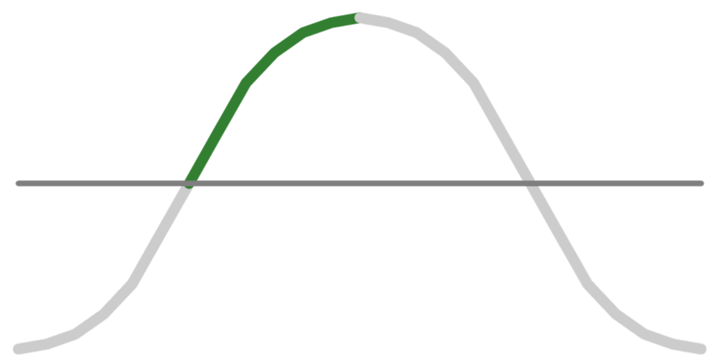
7 Improve corporate governance (rent a CFO; establish a board of advisors or board of directors)

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

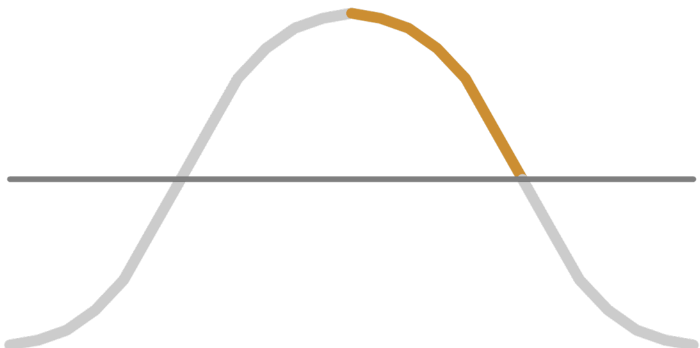
Phase



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

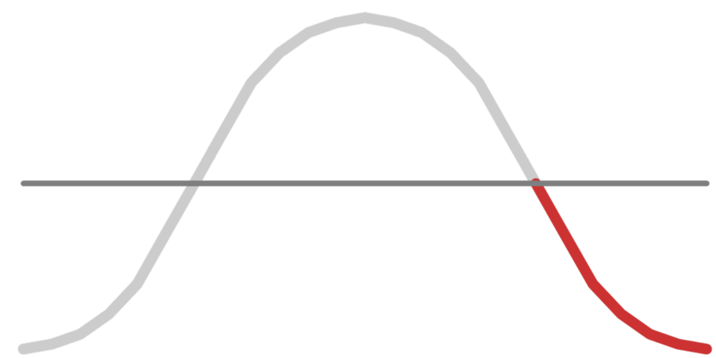
7 Consider capital equipment needs for the next cycle

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