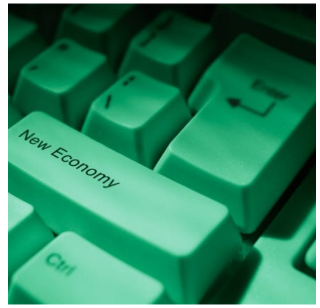
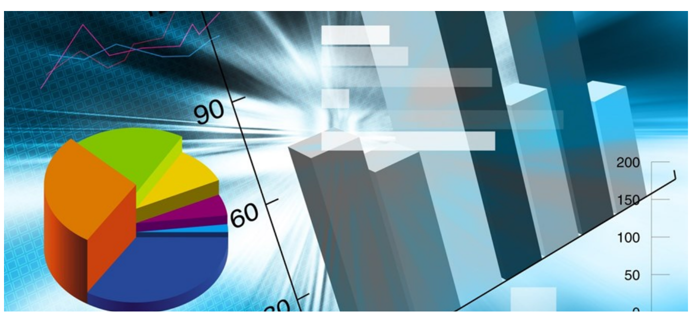




PMPA

PRECISION MACHINED PRODUCTS ASSOCIATION

November 2024

Economic Report

ITR ECONOMICS

Table of Contents

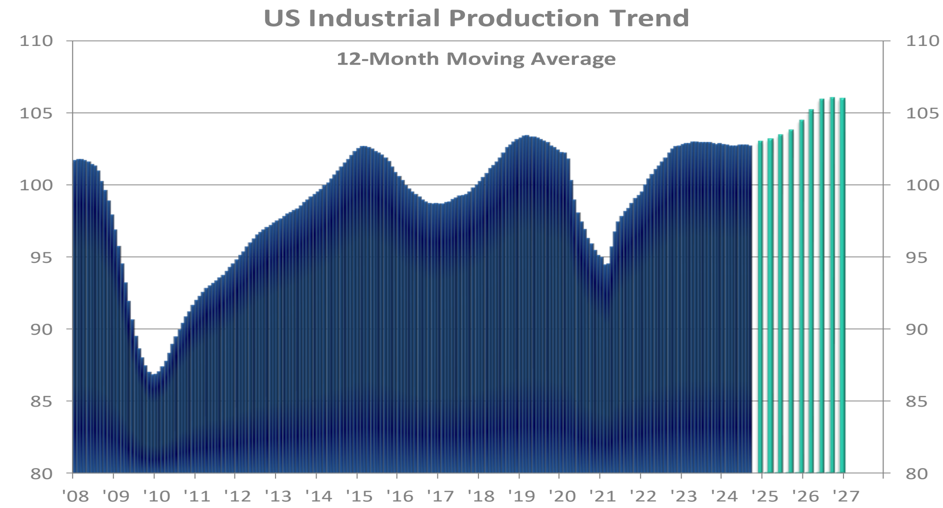
overview

Economic signals are mixed. Inflation is easing, real incomes are rising, and employment is at record highs. However, interest rates remain elevated, muting demand for large-ticket items that are typically financed, and some demographics are under strain from the cumulative inflation of recent years. The industrial sector and B2B spending are plateauing, while US Single-Unit Housing Starts have hit a bump in the road. Consumer spending is keeping things moving but also cutting into consumers' saving ability. As we wrap up 2024 and head toward 2025, there are some key factors to keep in mind.

Interest Rate Cuts: The Federal Reserve has begun to lower rates. Lower rates will provide an eventual boost for markets, such as durable goods and construction, and will offer some relief for consumers holding floating-rate debt, such as credit card debt. The direction of the impact is only half the story; the other key element for planning is the timing, which is unique to your specific business and market. The effects of interest rate cuts are unlikely to be instantaneous, instead taking time to develop. Some potential buyers may remain on the sidelines waiting for further cuts. In some markets, such as nonresidential construction, it can take years for projects to go from conception to completion. Consider the stage of your market – using a construction analogy, are you or your customers doing the site work, putting up the framing, or painting the walls?

Residential Construction: Prior rise in leading US Single-Unit Housing Starts is a solid signal for cyclical rise in the macroeconomy to come, but a recent tick down in Starts suggests there could be some waffling in the macroeconomy during 2025. We will be watching closely to see how reactive this sector is as rates are lowered. A tepid response in this market could pose a risk of stagnation in other sectors dragging on longer.

Stock Market Volatility: In recent years, the S&P 500 has been rising faster than US Corporate Profits, a growing risk factor for stock valuations. Avoid conflating the stock market with the economy, as it is only a small part of the picture and is prone to volatility. Talk to your financial advisor to ensure that your portfolio matches your risk profile.



Employment: The labor market has loosened somewhat but remains robust. Keep in mind that employment decisions lag the macroeconomy, so slowing growth in employment is a reaction to prior macroeconomic softening, not a harbinger of the future. Demographic trends suggest that the labor market will be tight in the coming years. Look for ways to reduce your dependence on labor, if possible. Take an active approach to managing employee morale and retention; otherwise, your growth in 2025-26 could be throttled by labor challenges.

Growth in 2025—Albeit Mild Growth—Brings Opportunities and Challenges

There are tentative signals that 2025 will be a somewhat stronger year than 2024, including rise in the ITR Leading Indicator™ and the ITR Retail Sales Leading Indicator™. For businesses closely tied to the industrial economy, now is a good time to ensure you have not fallen behind with regards to labor and capital investments that will be needed to support mild growth in 2025 and 2026. It is also important to be proactive in addressing longer-term challenges ahead, including the potential for higher energy prices, margin compression, and labor shortages. Reacting to changes alongside everyone else may result in missed growth opportunities – now is the time to get ahead of the curve.

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.**

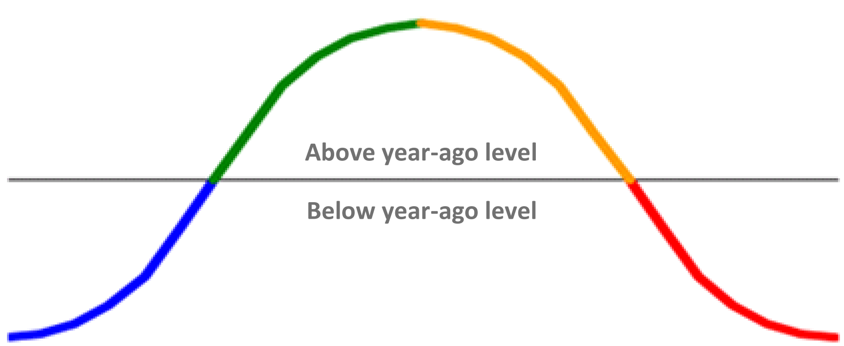
Rates-of-change reveal whether activity levels are rising or falling compared to last year. A rate-of-change trend illustrates and measures cyclical change and trends in the data.

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.

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.

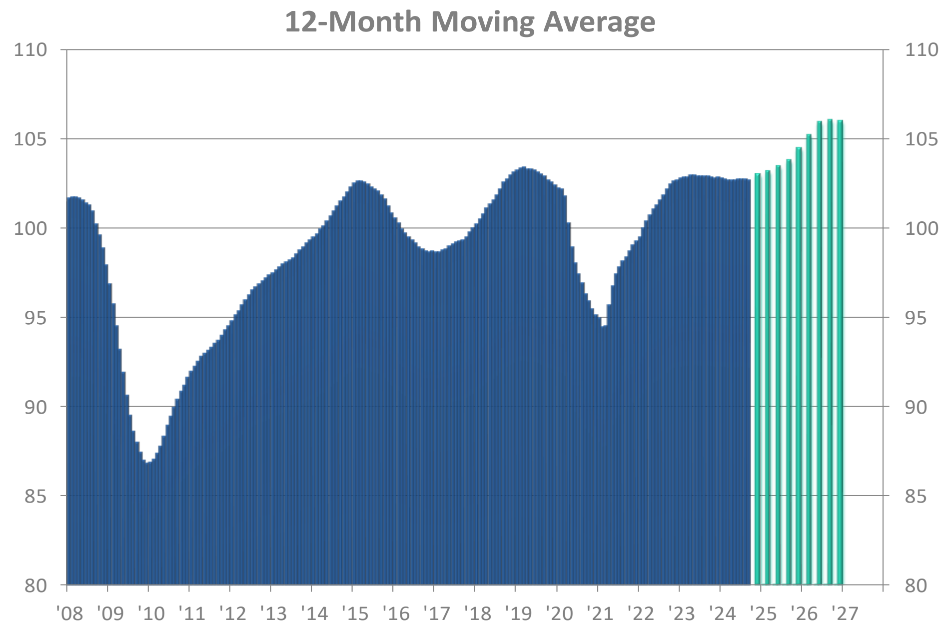
Recession (D): 12/12 is declining and is below zero; the data trend is below the year-ago level and the rate of decline is increasing. This is the second and final negative phase of the business cycle.

Business Cycle

Page Number	Industry	Current 12/12	Phase	2024	2025	2026
4	US Industrial Production Index	-0.2%	A	0.1%	1.4%	1.5%
5	North America Light Vehicle Production	2.0%	C	0.5%	0.9%	3.7%
6	US Aircraft and Parts Production Index	2.7%	C	3.8%	-1.2%	7.1%
7	US Housing Starts	-1.6%	A	-5.1%	8.8%	5.6%
8	US Heavy-Duty Truck Production Index	-0.1%	D	-0.3%	2.4%	5.1%
9	US Medical Equipment and Supplies Production Index	-0.3%	D	-1.1%	0.9%	0.8%
10	US Machinery New Orders	0.1%	C	-0.3%	5.0%	4.4%
11	US Ammunition, Small Arms, Ordnance, and Other Ordnance Accessories Production Index	0.8%	B	5.3%	7.0%	-1.8%

US Industrial Production Index

Outlook Adjusted Upward by Less Than 1%; Expect Near-Term Plateau, Then Rise in 2025 and 2026



Industry Outlook

2024: 0.1%

2025: 1.4%

2026: 1.5%

Outlook & Supporting Evidence

- US Industrial Production has had less of a downward bias than anticipated, and mixed leading indicator evidence suggests rise in 2025 will be milder than expected. We adjusted the forecast, but the changes are less than 1%.
- Annual Production will plateau in the near term. Rise will take hold in 2025, but will be weighted toward the back half of the year. Recent onshoring and government investments will enable Production to surpass the 2019 record high by 2.5% by year-end 2026.
- The Federal Reserve lowered the federal funds rate by 75 basis points so far. Lower rates generally incentivize capital expenditures, but the impact of rate changes can take over a year to materialize in overall macroeconomic data. Therefore, rates are a potential lingering downside

Phase & Amplitudes

Phase A

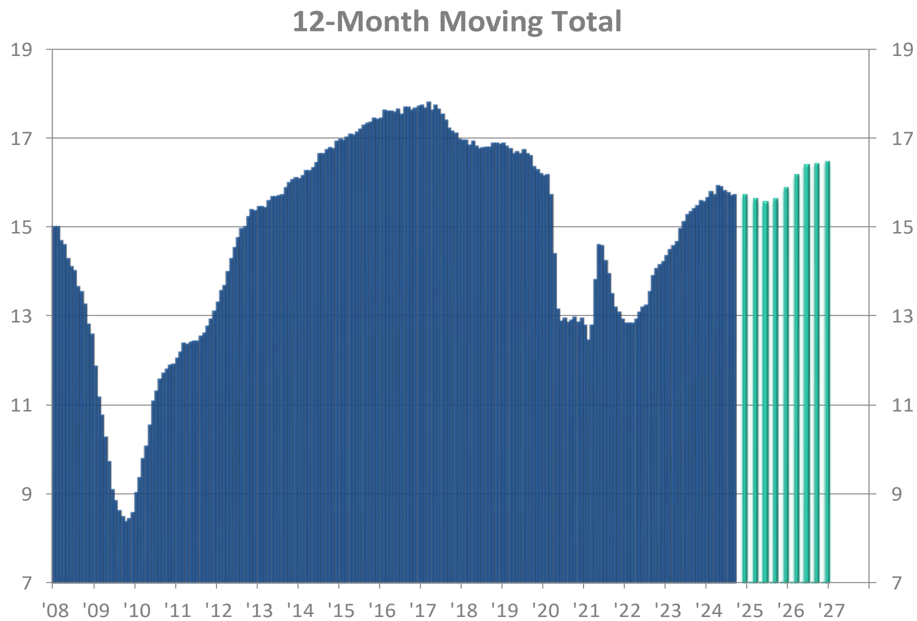
Recovery

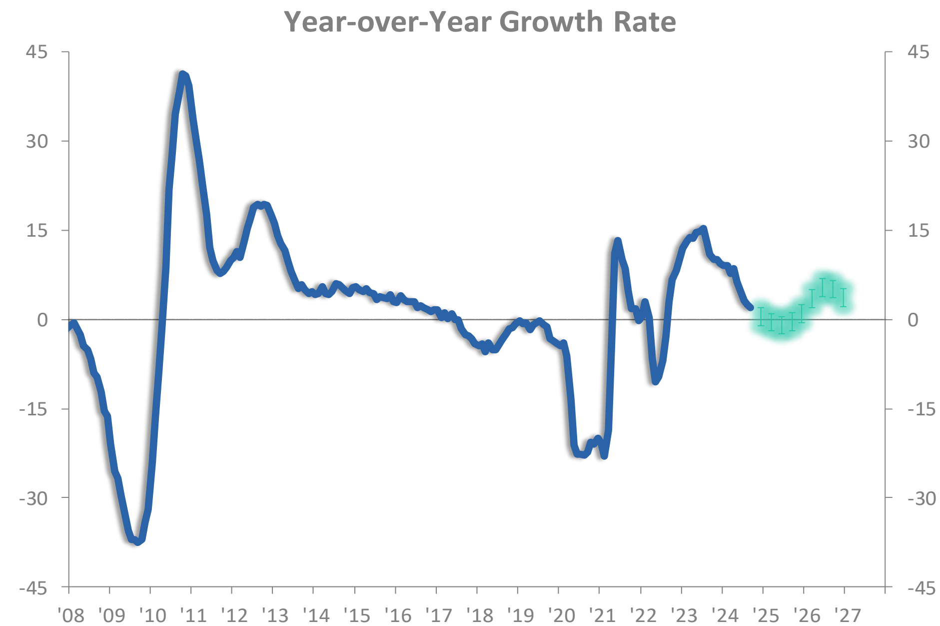
September 2024 Annual Growth Rate (12/12): -0.2%

September 2024 Annual Average (12MMA): 102.7

North America Light Vehicle Production

Vehicle Sales and Pricing Softening; Production to Plateau With a Downward Bias Into Mid-2025





Industry Outlook

2024: 0.5%

2025: 0.9%

2026: 3.7%

Outlook & Supporting Evidence

- Annual North America Light Vehicle Production will plateau with a mild downward bias through the first half of 2025. Sustained annual Production rise will take hold in late 2025 and extend through at least 2026.
- Vehicle sales and pricing have softened slightly. New Vehicle Prices moved marginally lower, with third-quarter prices down 1.2% from one year ago. The volume of light vehicle sales is flat. To attract more buyers, dealers are increasing incentives on new vehicles.
- Following the current lull, we expect the auto market to pick up again as real incomes and employment are rising. Further progress on interest rates would help.

Phase & Amplitudes

Phase C

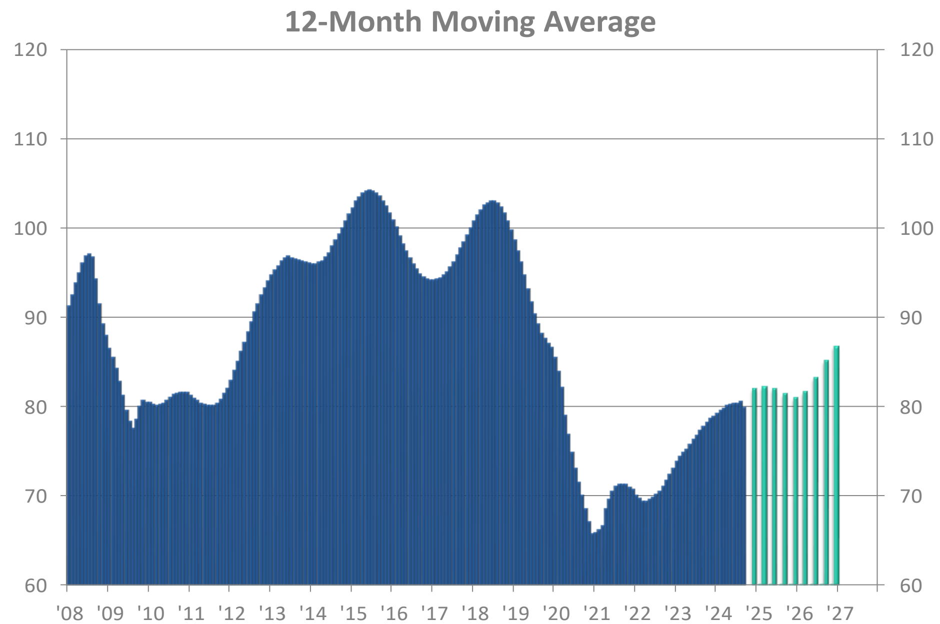
Slowing Growth

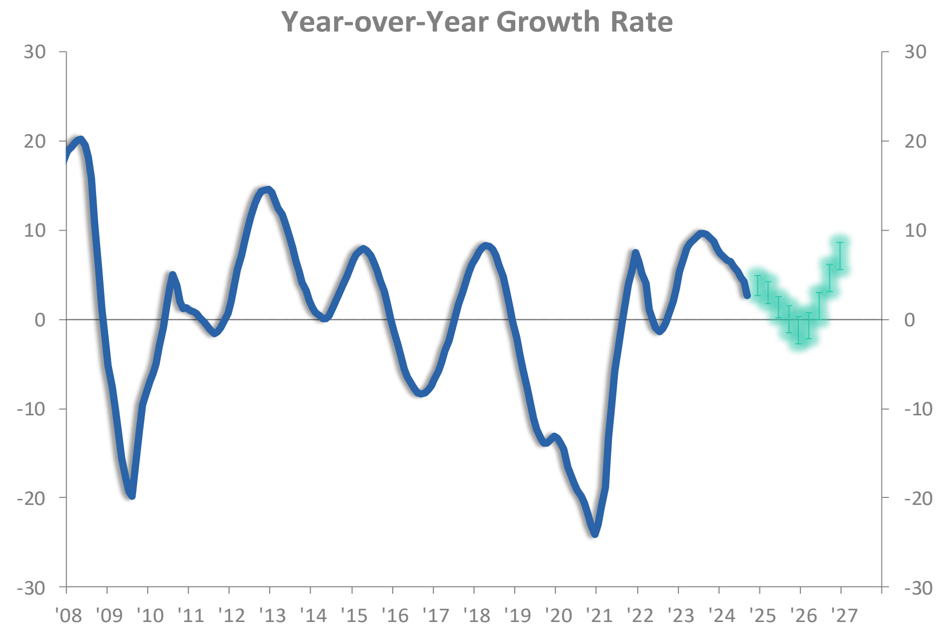
September 2024 Annual Growth Rate (12/12): 2.0%

September 2024 Annual Total (12MMT): 15.7 million units

US Aircraft and Parts Production Index

Boeing Woes Drive Supply-Side Risks in the Near Term; Decline in 2025 Will Be Macro-Driven





Industry Outlook

2024: 3.8%

2025: -1.2%

2026: 7.1%

Outlook & Supporting Evidence

- The Boeing machinist strike is causing US Aircraft and Parts Production to temporarily deviate below our forecast. Market fundamentals support our unchanged outlook, though Boeing's regulatory concerns do pose a downside risk.
- The lagging impact of prior macroeconomic softening and elevated interest rates will result in mild decline in 2025.
- Air travel demand is elevated, and heightened geopolitical tensions could benefit defense-related production, so downside potential is limited from a demand side.
- Our expectation for improving macroeconomic conditions in 2025 supports our outlook for Production rise in 2026.

Phase & Amplitudes

Phase C

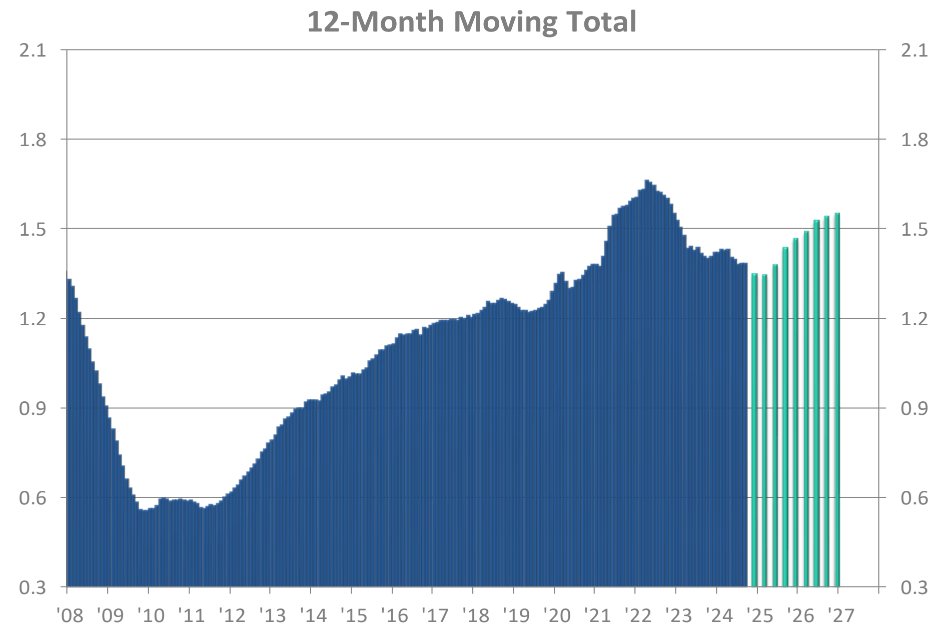
Slowing Growth

September 2024 Annual Growth Rate (12/12): 2.7%

September 2024 Annual Average (12MMA): 79.9

US Housing Starts

Near-Term Downgraded on Still-High Rates, But Growth Still Expected in 2025-26



Industry Outlook

2024: -5.1%

2025: 8.8%

2026: 5.6%

Outlook & Supporting Evidence

- We revised our outlook for annual US Housing Starts downward in the near term due to weak results attributed to the impact of recent hurricanes and still relatively elevated mortgage rates.
- Mortgage rates are determined by the market, and are trending differently from the Federal Funds Rate, which is set by the Federal Reserve. Affordability remains a constraint, though further loosening of monetary policy would help. Nascent rise in US Residential Sector Architectural Billings Index, suggests that activity in the Multi-Unit market is sluggish, but inching towards recovery.
- Annual Starts will decline into early 2025, then rise through at least 2026.

Phase & Amplitudes

Phase A

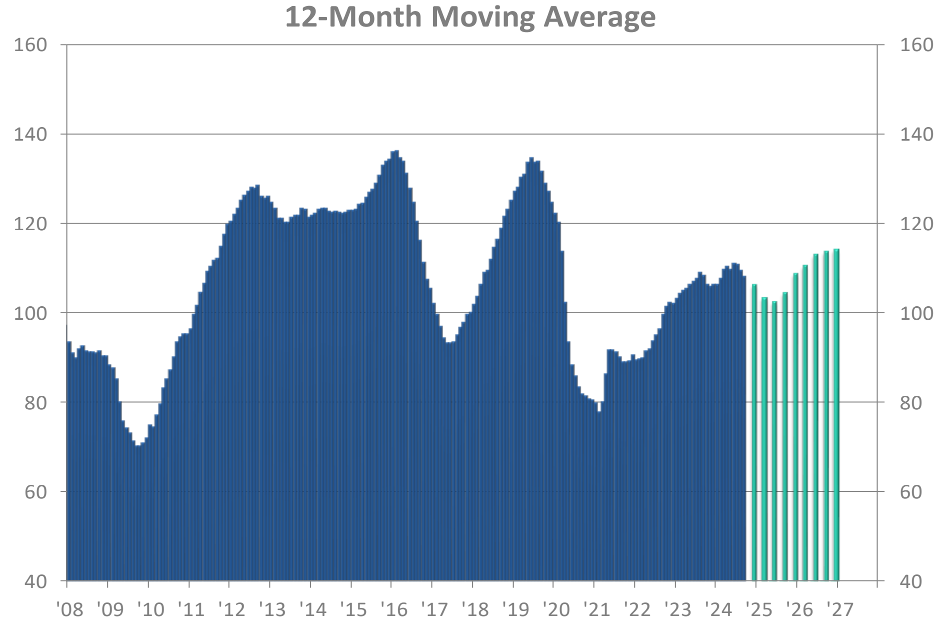
Recovery

September 2024 Annual Growth Rate (12/12): -1.6%

September 2024 Annual Total (12MMT): 1.4 million units

US Heavy-Duty Truck Production Index

Forecast Lifted 4%-6%; Annual Production Decline Still Anticipated Through First Half of 2025



Industry Outlook

2024: -0.3%

2025: 2.4%

2026: 5.1%

Outlook & Supporting Evidence

- US Heavy-Duty Truck Production has proven to be more resilient to high interest rates than previously anticipated due in part to nearshoring trends favoring North American trading partners. Freight volumes are starting to recover, boding well for Production. We revised the forecast for 2024 and 2025 upward by 4%; 2026 was revised upward by 6%.
- Production is teetering on the cusp of Phase C, Slowing Growth, and Phase D, Recession. We still anticipate Production decline through the first half of 2025 given some lingering effects of high rates and the recent freight recession.
- Production will subsequently rise mildly through at least 2026, driven by rising macroeconomic activity and ongoing nearshoring trends.

Phase & Amplitudes

Phase D

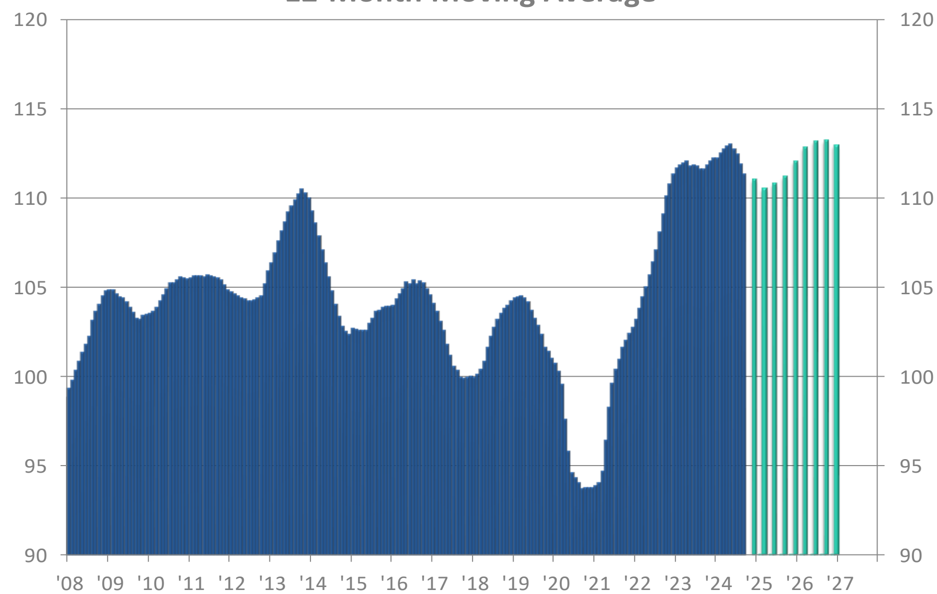
Recession

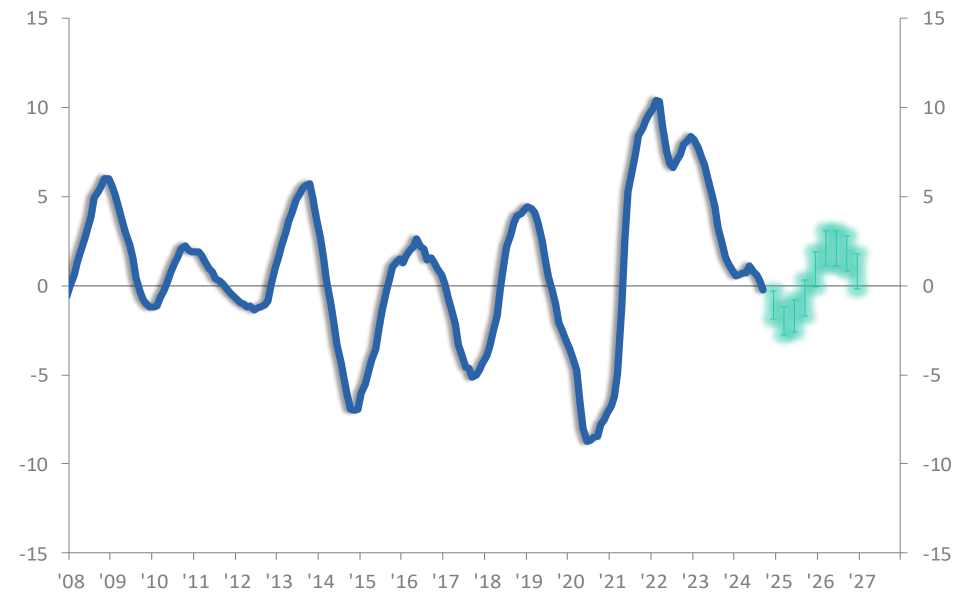
September 2024 Annual Growth Rate (12/12): -0.1%

September 2024 Annual Average (12MMA): 108.2

US Medical Equipment and Supplies Production Index

Aging Demographics and Onshoring Suggest Limited Downside Movement in Medical Market





Industry Outlook

2024: -1.1%

2025: 0.9%

2026: 0.8%

Outlook & Supporting Evidence

- US Medical Equipment and Supplies Production in the 12 months through September came in 0.3% below the year-ago level, transitioning to Phase D, Recession. The current downward momentum represents a minor correction as the medical industry normalizes in the wake of COVID-19. Aging demographics favor this market in the longer term. We anticipate Phase D will be brief, with recovery and rise characterizing most of 2025 and 2026.
- US Medical and Diagnostic Laboratories Services Revenue is signaling green shoots on the horizon, as are pricing trends in select healthcare stocks. Reshoring trends also bode well for this market, presenting opportunities for market share gains.

Phase & Amplitudes

Phase D

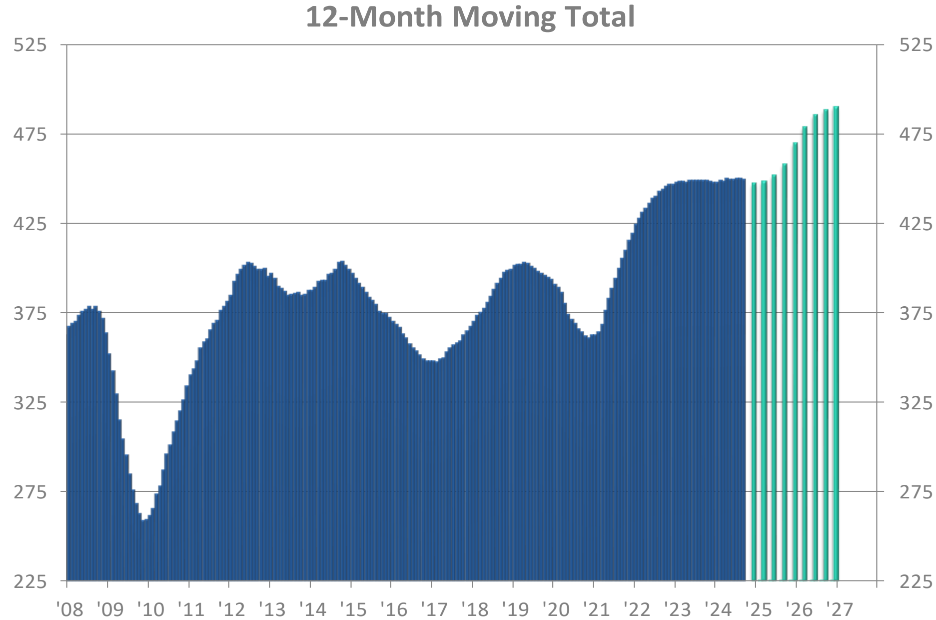
Recession

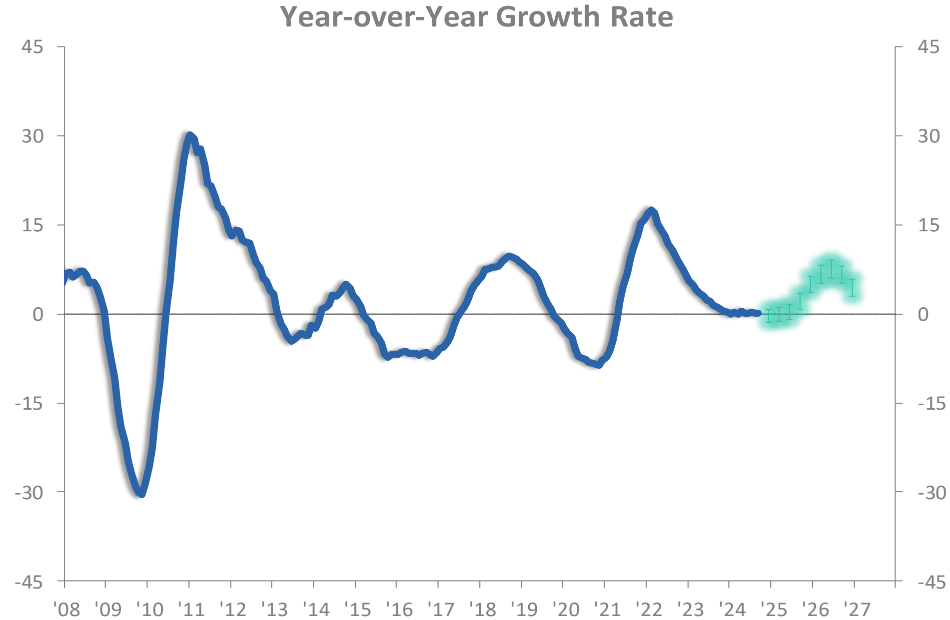
September 2024 Annual Growth Rate (12/12): -0.3%

September 2024 Annual Average (12MMA): 111.4

US Machinery New Orders

Improving Profits, Exports Pave Way for New Orders Rise Ahead, but Results May Vary by Market





Industry Outlook

2024: -0.3%

2025: 5.0%

2026: 4.4%

Outlook & Supporting Evidence

- US Machinery New Orders in the 12 months through August were roughly even with the year-ago level. We anticipate New Orders will generally plateau into early 2025. Rise will then take hold and extend through at least 2026.
- Recent interest rate cuts from the Federal Reserve are a positive sign for machinery markets, but the effects will take time to develop in the market. Some buyers may wait for additional rate cuts before increasing activity.
- While it may be difficult to feel optimistic at this point in the business cycle, there are green shoots forming. The ITR Leading Indicator™ is gradually rising, and US Corporate Profits and US Exports of Goods are in nascent accelerating growth trends.

Phase & Amplitudes

Phase C

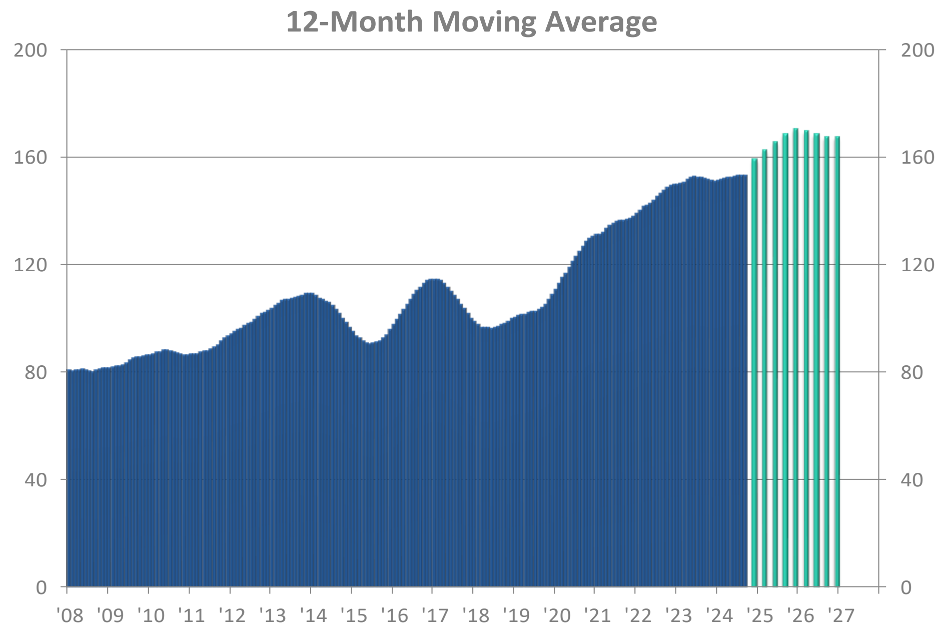
Slowing Growth

September 2024 Annual Growth Rate (12/12): 0.1%

September 2024 Annual Total (12MMT): $449.8 billion

US Ammunition, Small Arms, Ordnance, and Other Ordnance Accessories Production Index

Defense Spending Amidst Geopolitical Conflict Signals Rise, but Consumer Demand Is Muted



Industry Outlook

2024: 5.3%

2025: 7.0%

2026: -1.8%

Outlook & Supporting Evidence

- US Ammunition, Small Arms, Ordance, and Other Ordance Accessories Production in the 12 months through September were 0.8% above the year-ago level. Production came in slightly lower than forecasted - consumer demand appears to be somewhat weak. Annual Production will rise through 2025, then decline mildly through at least 2026.
- Production is in Phase B, Accelerating Growth. Defense spending expectations and ongoing conflicts suggest rise ahead in 2025, though private consumer demand is soft.
- The transition to a new president in January 2025 could mean forthcoming changes to the proposed defense budget that impact future foreign aid, but no specifics are available yet.

Phase & Amplitudes

Phase B

Accelerating Growth

September 2024 Annual Growth Rate (12/12): 0.8%

September 2024 Annual Average (12MMA): 153.3

INDICATORS

US Leading Indicators

Indicator	Direction		
	4Q24	1Q25	2Q25
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

• Leading indicators continue to suggest rise for many sectors through the end of this year and in 2025, though still-high interest rates are dampening the steepness of that ascent. Mild growth is the most probable outcome for most core segments of the US economy next year.

• Recovery in the ITR Leading Indicator™ has stalled in recent months. Recovery this cycle has been shallow compared to prior descent, mirroring the degree of expected recovery in the industrial sector.

• The ITR Retail Sales Leading Indicator™ has declined throughout the third quarter of this year. Should this decline persist, it could mean weakness in the pace of rise for US Total Retail Sales in the second half of 2025.

For many leading indicators, the strength of rise is more muted than robust at this time. Depending on your market, expect a more sluggish upward trend compared to the previous cycle, due in part to the lagged effects of still-elevated interest rates. Technology and renewables-focused markets continue to be areas of relative opportunity.

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). Index, 2017 = 100, not seasonally adjusted (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.

US Aircraft & Parts Production Index — This US industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing or assembling complete aircraft; (2) developing and making aircraft prototypes; (3) aircraft conversion (i.e., major modifications to systems); and (4) complete aircraft overhaul and rebuilding (i.e., periodic restoration of aircraft to original design specifications). It also includes manufacturing aircraft parts or auxiliary equipment and/or developing and making prototypes of aircraft parts and auxiliary equipment. Aircraft parts include such items as aircraft assemblies, brakes, fuselage wing tail assemblies, propellers and parts, wheels, airframe assemblies, engines, turbines, joints, targets, etc. Auxiliary equipment includes such items as crop dusting apparatus, armament racks, inflight refueling equipment, and external fuel tanks. Source: FRB. Index, 2017 = 100, NSA.

US Housing Starts — Total number of privately-owned housing units started in the United States. Start of construction occurs when excavation begins for the footings or foundation of a building. All housing units in a multi-family building are defined as being started when this excavation begins. Source: US Census Bureau. Measured in millions of units, NSA.

US 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: FRB, Index, 2017 = 100, NSA.

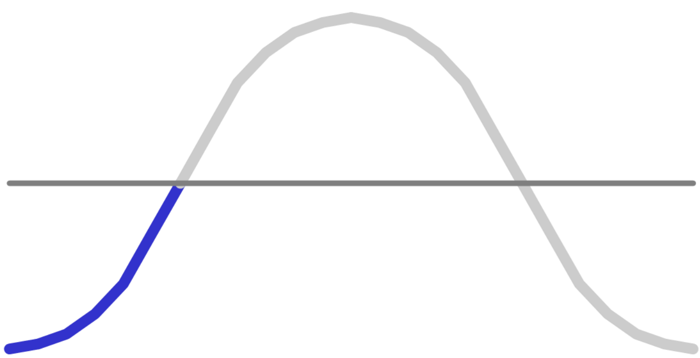
US Medical Equipment & Supplies Production Index — Medical equipment and supplies manufacturing index for the United States. Examples of products made by these establishments are surgical and medical instruments, surgical appliances and supplies, dental equipment and supplies, orthodontic goods, ophthalmic goods, dentures, and orthodontic appliances. Source: FRB. 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 utilize mechanical force, for example, the application of gears and levers, to perform work. Some important processes for the manufacture of machinery are forging, stamping, bending, forming, and machining, which are used to shape individual pieces of metal. Processes such as welding and assembling are used to join separate parts together. Although these processes are similar to those used in metal fabricating establishments, machinery manufacturing is different because it typically employs multiple metal forming processes in manufacturing the various parts of the machine. Moreover, complex assembly operations are an inherent part of the production process. Source: US Census Bureau. Measured in billions of dollars, NSA.

US Ammunition, Small Arms, Ordnance, and Other Ordnance Accessories Production Index — Production index for the manufacture of ammunition, small arms, ordnance, and ordnance accessories. Includes bullets, shot, shells, ammunition cartridges, arming and fusing devices, bombs, detonators, missile warheads, torpedoes, guns, machine guns, cannons, small firearms, flame throwers, pellet guns, pistols, rifles, shotguns, rocket launchers, submachine guns, tank artillery, tranquilizer guns, etc. Source: FRB. 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

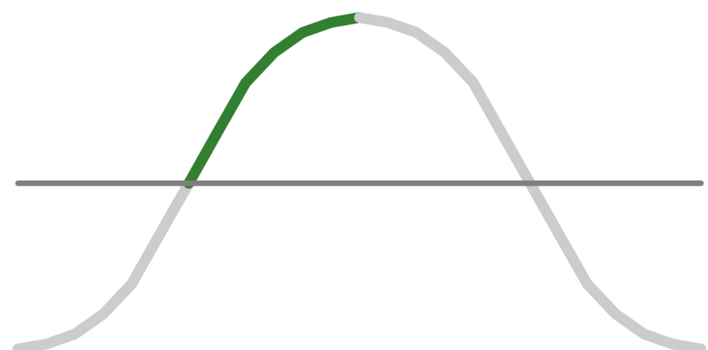
7 Improve corporate governance (rent a CFO; establish a board of advisors or board of directors)

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

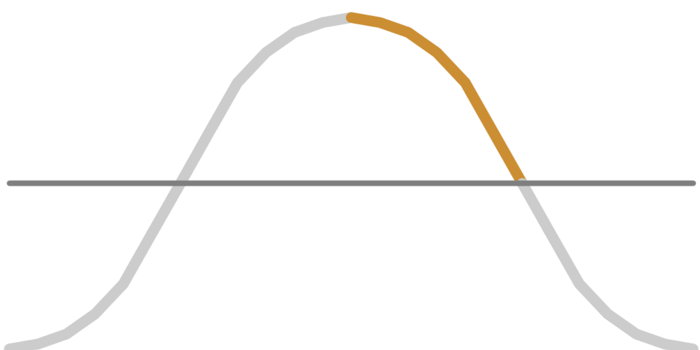
Phase



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

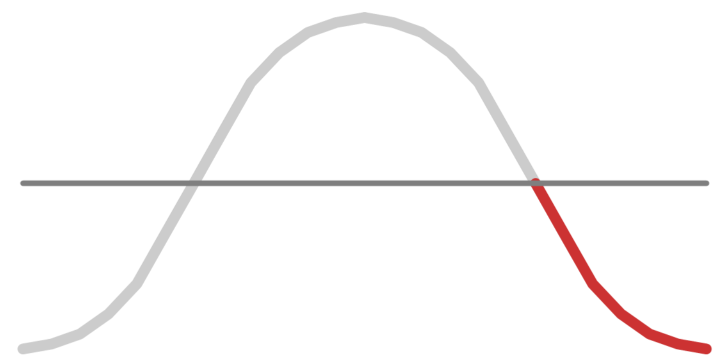
7 Consider capital equipment needs for the next cycle

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