20H3

Equipment Leasing & Finance U.S. Economic Outlook

EQUIPMENT LEASING & FINANCE
FOUNDATION
Your Eye on the Future

EQUIPMENT LEASING & FINANCE ECONOMIC OUTLOOK

December 2022

Key Trends to Monitor

Monetary Policy

Labor Market

Recession Risks

EXECUTIVE SUMMARY

Equipment and Software Investment: Equipment and software investment growth boomed in the second half of 2022, providing a solid jump-off point for what will likely prove to be a more challenging year for both the economy and industry in 2023. Rising interest rates are expected to weigh on E&S investment growth next year, though several factors should help to cushion the blow of a looming recession on the equipment finance industry.

Momentum Monitor: As was the case last quarter, most Momentum Monitor verticals are peaking or weakening. High interest rates and slowing global growth have weighed on several verticals, including agriculture equipment and industrial equipment.

Manufacturing: The manufacturing sector continues to outperform expectations given rising interest rates and the global economic slowdown. Though activity appears likely to slow in 2023 given the heightened possibility of sluggish economic growth or an outright recession, optimists can point to recent pro-industrial legislation and a push for supply-chain re-shoring, both of which should give the manufacturing sector a boost this year.

Small Businesses: Main Street business owners continue to express pessimism about their prospects in 2023, and the combined effects of high inflation and tightening financial conditions are likely to contribute to turbulent operating conditions this year. Fortunately, financial stress is still quite low and Main Street lending activity remains positive, at least for now.

Fed Policy: Monetary policy is among the biggest question marks facing the industry this year. Fed officials have hinted at the possibility of slowing down rate hikes while stressing that the Fed remains committed to reining in inflation — even if doing so leads to higher unemployment or a recession. We believe rates will rise above 5% in 2023, and potentially higher.

U.S. Economy: Though GDP bounced back during the second half of the year, underlying economic conditions remain troubling. Consumers continued to spend, but credit card debt is soaring and the savings rate is near an all-time low. The labor market remains strong, but the Fed's goal of driving down inflation is likely to push unemployment up. Elsewhere, the housing market is struggling, financial markets are highly volatile, and the global economy is slowing.

While we believe a soft landing is still possible, our best case for 2023 is a mild recession starting in the second quarter. 2023 will be a tougher year for the equipment finance industry.

2023 Annual Projections

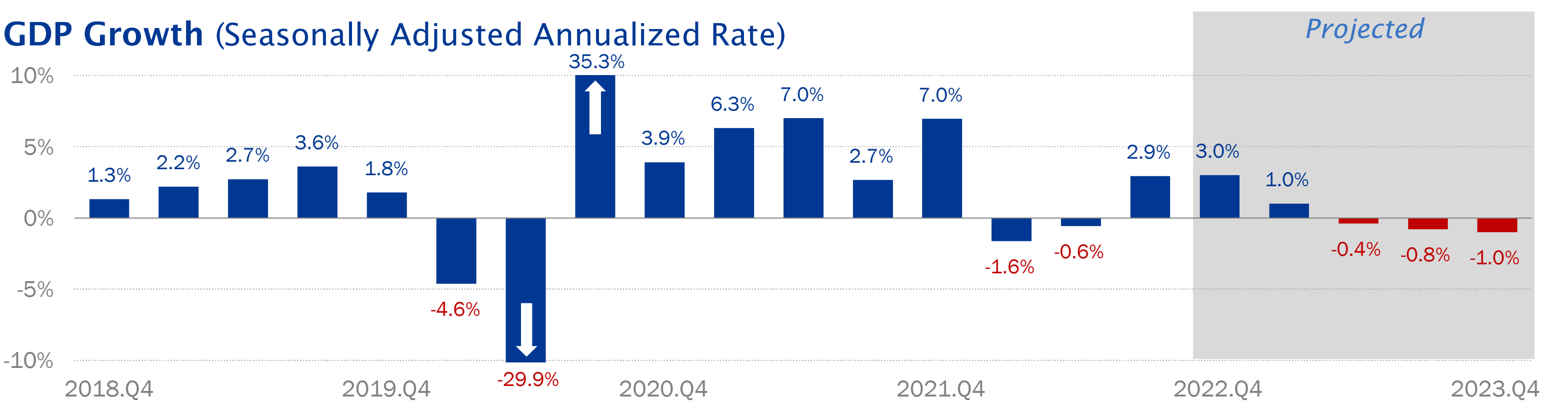
0.9%
GDP Growth

4.2%
E&S Investment Growth

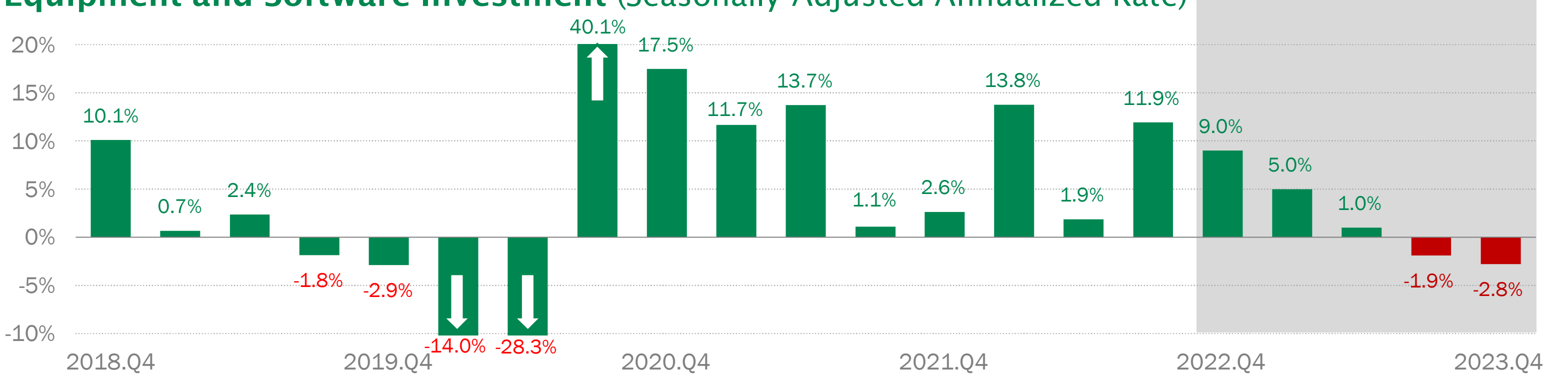
4.8%
Inflation (CPI)

+25bp
Change in Fed Funds Rate from Current Range

GDP Growth (Seasonally Adjusted Annualized Rate)



Equipment and Software Investment (Seasonally Adjusted Annualized Rate)



Source: U.S. Bureau of Economic Analysis; Keybridge LLC

Sectoral Performance

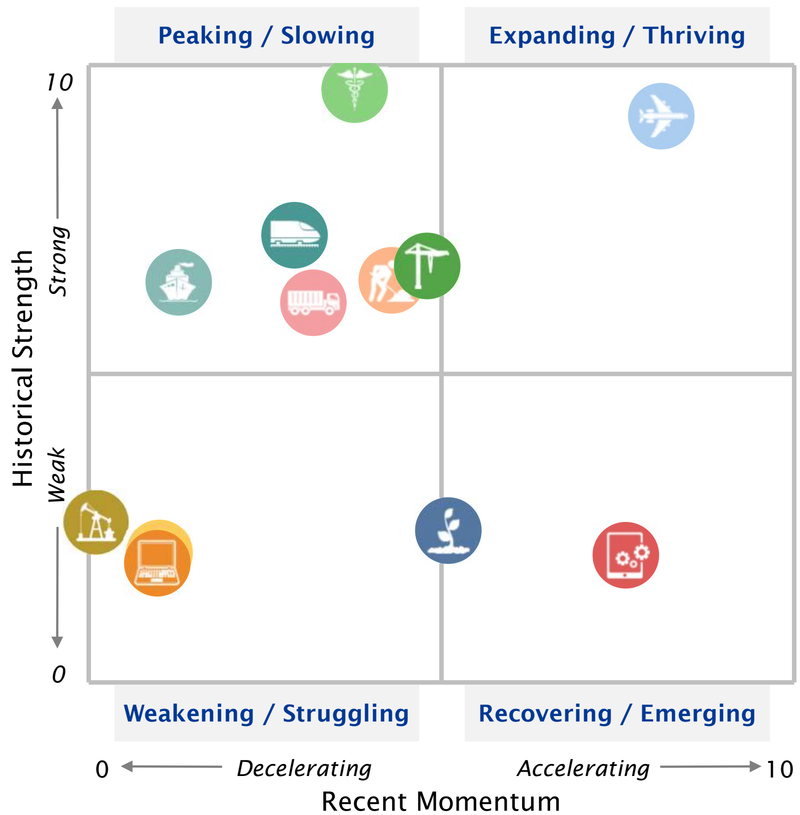
E&S investment booms in Q3

Equipment and Software investment surged 12% (annualized) in Q3 2022, a notable rebound following weak growth in Q2.

Of the 12 investment verticals tracked by the Foundation, eight saw investment growth rise in the third quarter while four saw investment weaken. All eight expanding verticals experienced double-digit investment growth, including Aircraft, Mining & Oilfield Machinery, and Ships & Boats.

Looking ahead, nine equipment verticals are on the left-hand side of the Momentum Monitor Sector Matrix (see chart), indicating that investment growth is either peaking or weakening in these markets. This is a continuation of last quarter's trend, when eight verticals were also showing similar signs. Verticals exhibiting marked weakness include Other Industrial Equipment and Agriculture Equipment, while verticals such as Aircraft and Medical Equipment are performing the best amid a souring economic backdrop.

Momentum Monitor Sector Matrix



For more information on how to interpret the Momentum Monitor, please refer to the Appendix B (p. 14). A full breakdown of each industry vertical is available at *https://www.leasefoundation.org/industry-resources/momentum-monitor/*

Movements to Monitor

Equipment Vertical	Q3 Investment Growth		Next 6 Months	Short-Term Outlook
	Q/Q	Y/Y		
Aircraft	+314%	+23%	▲	Aircraft investment is one of the few unqualified bright spots among tracked verticals. Investment growth has boomed as supply chains unwind and travelers return to the skies, and growth is expected to remain strong in early 2023.
Medical	-1.2%	5.0%	▶	Medical equipment investment growth contracted modestly in Q3 but was still positive on an annual basis. Year-over-year growth is expected to remain muted over the coming six months.
Agriculture	-11%	-2.4%	▼	Agriculture equipment investment has been whipsawed by intense volatility in global food markets. The Index is now essentially tied for its lowest reading in over two years, suggesting investment growth may weaken further in early 2023.
Railroad	117%	+58%	▲	Railroad equipment investment posted its strongest Y/Y growth in at least two decades in the third quarter. Recent movement in the Index suggests that growth may have peaked, though Y/Y growth should remain healthy during the first half of the year.

Credit Supply

Lending standards tighten in Q3

Business lending standards tightened significantly in Q3 as the Fed continued to raise rates in response to high inflation.

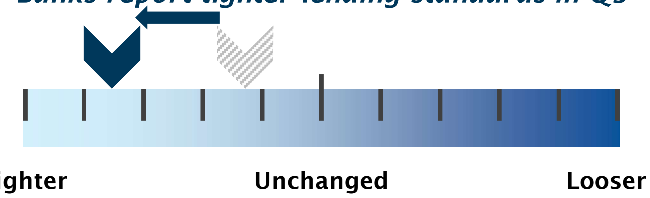
- Overall, lending standards for Commercial and Industrial ("C&I") loans tightened at most banks. For loans to large and middle-market firms, a net 39% of banks reported tightening lending standards, while a net 32% of banks reported tighter standards for loans to smaller firms.
- Lending standards also tightened substantially for commercial real estate ("CRE") loans. A net 58% of banks reported tightening standards for construction and land development loans in Q3.

In consumer credit markets, lending standards tightened across the board.

- Credit card approval standards tightened in Q3, with 19% of banks tightening credit standards, up from 2% the previous quarter.
- Meanwhile, auto loan lending standards were mostly unchanged, though banks tightened lending standards for jumbo mortgage loans (net 7%) and non-jumbo mortgage loans (net 4%).

Credit Supply Conditions

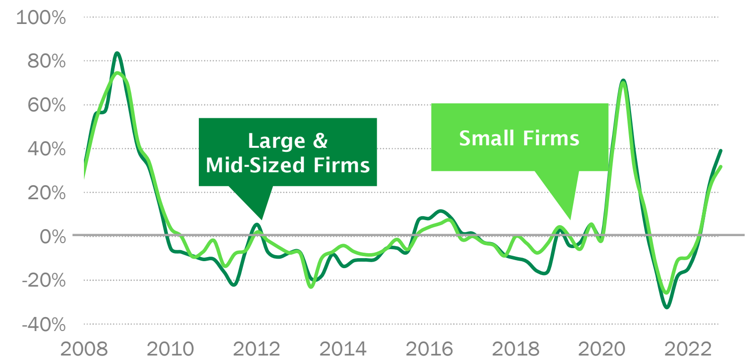
Banks report tighter lending standards in Q3



Source: Federal Reserve Senior Loan Officer Survey

Lenders Tighten Standards for C&I Loans

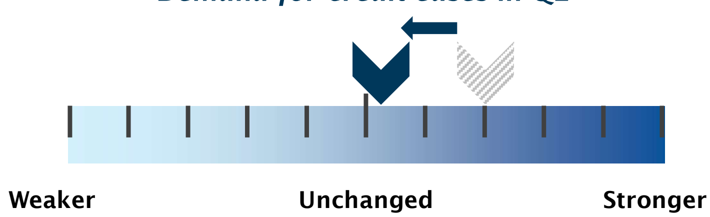
Percent of Respondents



Source: Federal Reserve Senior Loan Officer Survey

Credit Demand Conditions

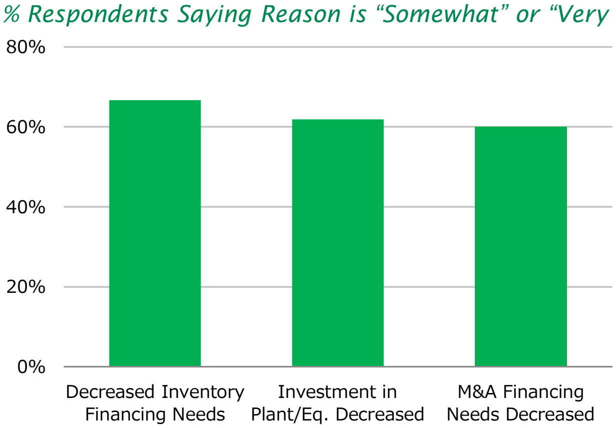
Demand for credit eases in Q2



Source: Federal Reserve Senior Loan Officer Survey

Top Reasons for Weaker C&I Loan Demand

% Respondents Saying Reason is "Somewhat" or "Very Important"



Source: Federal Reserve Senior Loan Officer Survey

Credit Demand

Demand for credit weakens in Q3

Demand for business loans weakened in Q3.

- On net, 9% of banks reported weaker C&I loan demand among medium and large firms in Q3, while a net 20% of banks reported weaker demand from smaller firms. Of those reporting weaker demand, the main reasons were decreasing inventory financing needs, decreasing investment in plant/equipment, and decreasing M&A financing needs (see chart).
- Demand for CRE loans fell sharply, as a net 39% of banks reported weaker demand for construction and land development loans and a net 46% of banks reported weaker demand for loans secured by nonfarm nonresidential properties.

Among households, credit demand was mixed.

- A net 11% of banks reported stronger credit card loan demand as consumers relied more on revolving credit to meet spending needs.
- At the same time, however, credit demand fell in other consumer lending categories in Q3, including auto loans (net 28% decline), and other consumer loans (net 3% decline).

Fed Policy Corner

Inflation persists as Fed doubles down on rate hikes

The Federal Reserve Board of Governors voted unanimously at the November FOMC meeting to increase the fed funds rate by another 75 basis points, the fourth hike of that magnitude in a row.

- During the most recent FOMC press conference, Chairman Powell warned that a sustained period of low economic growth is necessary to bring down inflation and that this would mean economic pain for households.
- Powell emphasized labor market conditions, including job openings and employment growth, as metrics that the Fed will follow closely and would significantly affect future decisions regarding interest rates.
- Powell also made clear that the Fed is currently worried more about under-tightening than over-tightening.

One development that gave financial markets reason to believe the Fed may slow their pace of hiking in the near term was the October CPI report (published in mid-November). CPI inflation came in lower than expected, dipping to +7.7% Y/Y from September's 8.2% reading — a positive sign and further evidence that headline inflation has likely peaked. However, the Fed stressed that this is only one data point, and that since there has been scant evidence to date that the labor market is cooling, rates are likely to move higher.

Looking ahead to 2023, financial conditions are likely to remain tight. Since August, the Fed has been shrinking its balance sheet by $95 billion/month, up from $47.5 billion/month in July (see chart). Quantitative tightening will contribute to tighter financial conditions in 2023, even if the Fed slows or pauses its rate hikes later in the year.

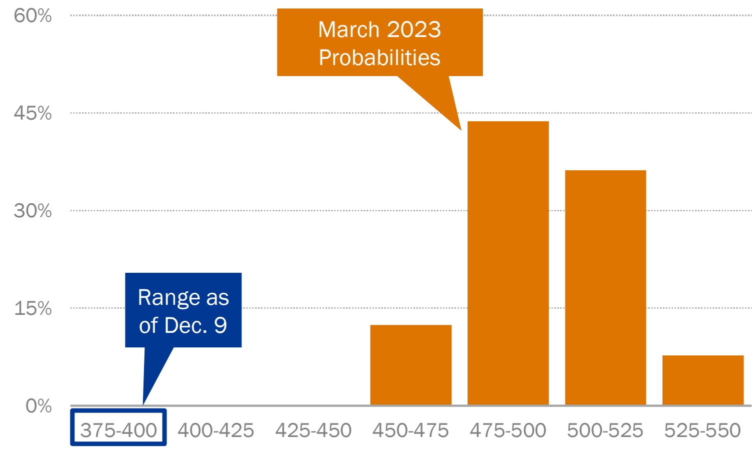
Though the outlook for 2023 includes higher interest rates, several factors are worth monitoring that could result in the Fed taking its foot off the brake before inflation has returned to pre-COVID rates:

- First, the Fed may choose to target an inflation rate above 2%, allowing it to "declare victory" earlier than markets may expect. However, this could give rise to credibility issues for the Fed and un-anchor inflation expectations — a potentially dangerous precedent that may prove difficult to unwind.
- Second, because the effects of monetary policy are lagged, the full effect of rate hikes may not manifest for several quarters. As such, the Fed may pause its hikes before inflation has fallen back to its target.
- Finally, other major central banks are also tightening, which could compound and lead to financial market turmoil and/or a deeper recession.

All told, the Fed has its work cut out as it tries to navigate global geopolitical uncertainty and the risks of stagflation.

Q1 2023 Federal Funds Rate Probabilities

Bps, set by March 2023 FOMC meeting



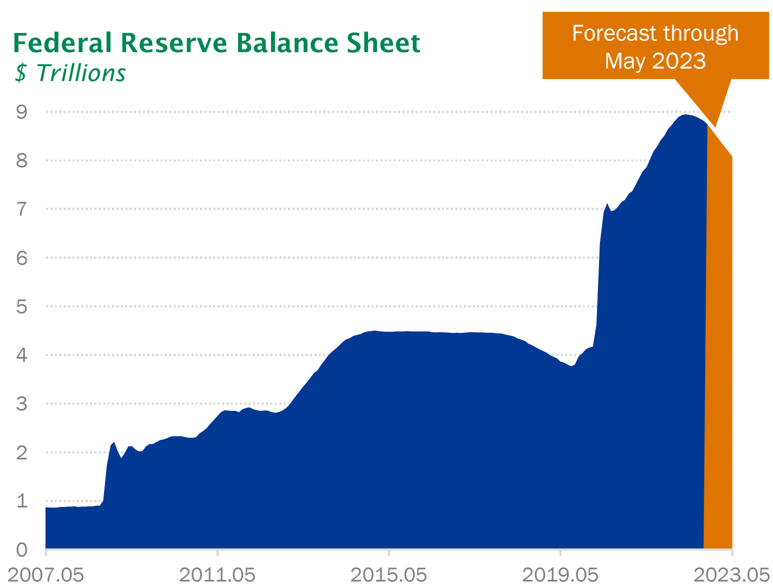
Source: CME Group

> "At some point… it will become appropriate to slow the pace of [rate] increases, [and] there is significant uncertainty. Even so, we still have some ways to go, and data since our last meeting suggest that the ultimate level of interest rates will be higher than previously expected."
>
> - Jerome Powell, Fed Chairman

> "In addition, we are continuing the process of significantly reducing the size of our balance sheet. Restoring price stability will likely require maintaining a restrictive stance of policy for some time."
>
> - Jerome Powell, Fed Chairman

Federal Reserve Balance Sheet

$ Trillions



Source: Federal Reserve, Keybridge calculations

Main Street Outlook

Is Main Street headed for a downturn?

Since recovering from the 2020 recession, small businesses have been battered by persistent headwinds, including record labor shortages, soaring input costs, rising interest rates, and the looming specter of a potential recession. With the Fed committed to beating inflation even at the risk of an economic downturn, many small businesses remain at risk.

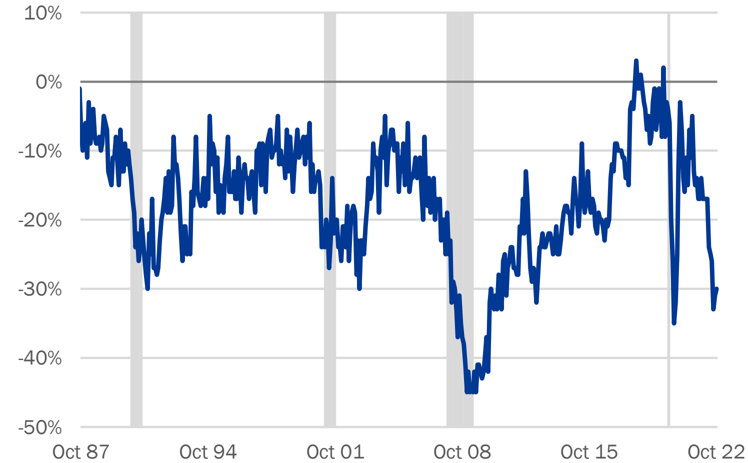
- After falling to its lowest level in nearly a decade earlier this summer, NFIB's Small Business Optimism Index has recovered modestly but remains well below its long-term average (see bottom-left chart).
- NFIB also reported a steep decline in small business earnings in recent months (see top-right chart). The earnings collapse coincides with the acceleration in inflation in early 2022.

Inflation is the key headwind for Main Street. Even though annual CPI growth came in below expectations in October, cost pressures continue to cut into earnings. Chief among these cost pressures are labor costs, which remain elevated thanks to a historically tight labor market. Small businesses still account for an outsize share of unfilled job openings, which has the dual effect of driving up operating costs while lowering revenues below potential. On the bright side, supply chains backlogs have mostly returned to normal levels, but demand is no longer as robust as it has been over the last 12-18 months — a worrying sign that could lead to reduced consumption and slower economic growth in 2023.

Despite these headwinds, small business lending has proved resilient in recent months. Though it remains to be seen whether lending activity will continue to defy rising interest rates, falling demand, and a potential broader economic slowdown, Main Street continued to hold its own in the fourth quarter.

Small Business Earnings Changes

Last three months versus prior three months (SA)



Source: National Federation of Independent Businesses

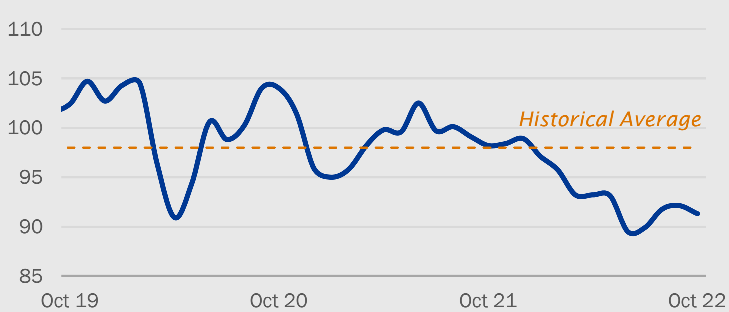
Unfortunately, many small business owners are growing increasingly pessimistic about their prospects in 2023. Tighter monetary policy will make it more difficult for businesses to expand, as the rising cost of borrowing is likely to result in further reductions to capital expenditure plans (see bottom-right chart). When small businesses pare back their capex plans, it is a sign that a recession may be near — indeed, this indicator is one of the most reliable predictors of recessions in previous business cycles.

Despite a gloomy outlook for 2023, most small businesses enter the year on sound financial footing. Defaults and delinquencies reported in Equifax's Commercial Strategic Insights are still below pre-COVID levels, and a Bank of America survey released in October reported that 77% of small business owners felt confident in their ability to weather a recession if one were to occur.

Small Businesses Feeling the Bite from Inflation, Labor Shortages

Small Business Optimism Index

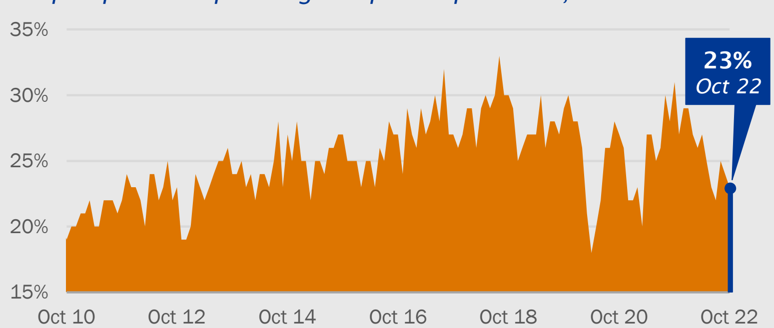
1986 = 100



Source: National Federation of Independent Businesses

Capital Expenditure Plans for Next Three to Six Months

% of respondents planning a capital expenditure, SA



Source: National Federation of Independent Businesses

MLFI-25

NBV holding up amid economic headwinds

According to ELFA's Monthly Leasing and Finance Index (MLFI-25), new business volume increased $11.3 billion in October and was up 6% on both a Y/Y and year-to-date basis. The 3-month moving average rose 4.1% in October and was up 6.7% compared to a year ago (see chart). While growth remains solidly positive in nominal terms, the pace of new business continues to fall short of inflation and is thus negative in real terms.

Portfolio performance was healthy in October. Receivables over 30 days were 1.7%, up from 1.5% in September and unchanged compared to October 2021. Charge-offs edged up to 0.18% but remain low by historical standards and are up only 2 bps compared to a year ago.

Credit approvals were 77% in October, down slightly from 77.3% in September but above the 75.2% reading in August that was a post-pandemic low. Approvals remain at similar levels as 2021 and are generally in line with (or slightly higher than) rates seen prior to the pandemic.

MLFI-25 New Business Volume

Billions, 3-month moving average

Source: ELFA

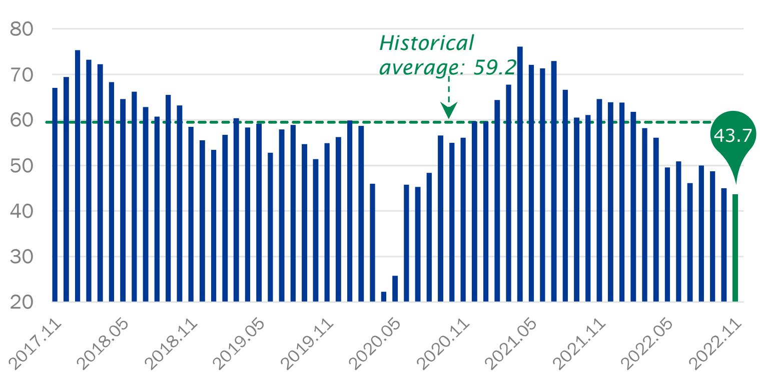
"The equipment finance industry demonstrates its typical resilient nature, producing an increase in October new business volume despite months of interest rate hikes brought on by the Fed's efforts to control inflation. Despite the specter of an imminent recession…equipment finance organizations continue to do what they do best: help supply the nation's businesses with productive assets that enable them to survive and thrive."

— Ralph Petta, President and CEO, ELFA

MCI-EFI

Industry confidence well below pre-pandemic levels

Monthly Confidence Index – Equipment Finance Industry



Source: ELFF

"Markets are uncertain as a result of inflationary pressures, rising rates, and the mid-term elections. Due to ongoing challenges from supply chain delays, we are seeing increased demand for used equipment. Overall, our customers have been resilient and underlying growth has been robust. We anticipate a strong finish to 2022, particularly in the energy transition and sustainable finance sector."

— Aylin Cankardes, President, Rockwell Financial Group

In November, the Monthly Confidence Index for the Equipment Finance Industry (MCI-EFI) fell to 43.7. The current reading remains well below the index's long-term average and marks the lowest level since the partial economic shutdown during the spring of 2020.

- Overall, no respondents expect business conditions to improve over the next four months, unchanged from October. Further, more respondents expect business conditions to worsen in November (54%) compared to October (38%).
- More respondents expect improved access to capital used to acquire equipment over the next four months (14%, up from 4% in October). However, more respondents *also* expect capital access to fall (21%, up from 8% in October), reflecting heightened economic uncertainty.
- Most respondents (75%) rate the current economy as "fair," with the remaining respondents split between "poor" (21%) and "excellent" (4%)
- Looking ahead, most respondents (71%) expect the economy to worsen over the next six months, up from 58% in October.

Industrial Focus

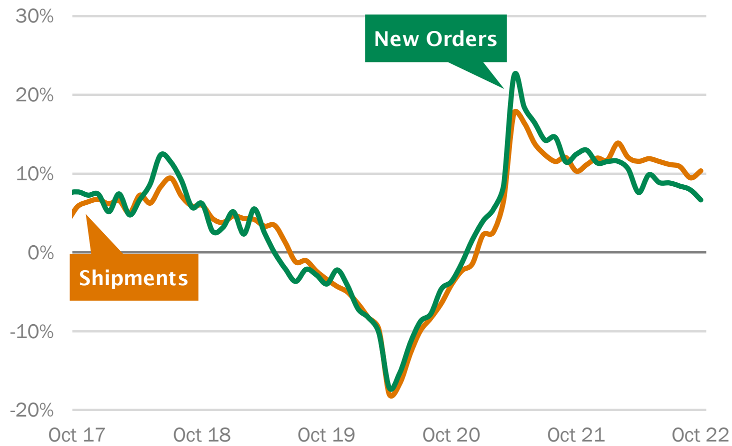
Growth in shipments and new orders slowing

After a historic expansion in early 2021, annual growth in both new orders and shipments of core capital goods has cooled (see chart).

- New orders for nondefense, non-aircraft capital goods (a leading indicator of industry performance) increased 0.7% in October while Y/Y growth eased to 6.6%. This reading marks the 23rd consecutive month of positive Y/Y growth, but at the slowest pace since early 2021.
- Shipments of nondefense capital goods excluding aircraft (a concurrent indicator of industry performance) increased 1.3% in October and are up 10.3% Y/Y.

Equipment investment has maintained steady growth since the onset of the pandemic. However, higher interest rates, inflation, and broader economic uncertainty are likely to continue to slow the pace of growth in 2023.

Shipments vs. New Orders of Core Capital Goods
Year-on-year percent change



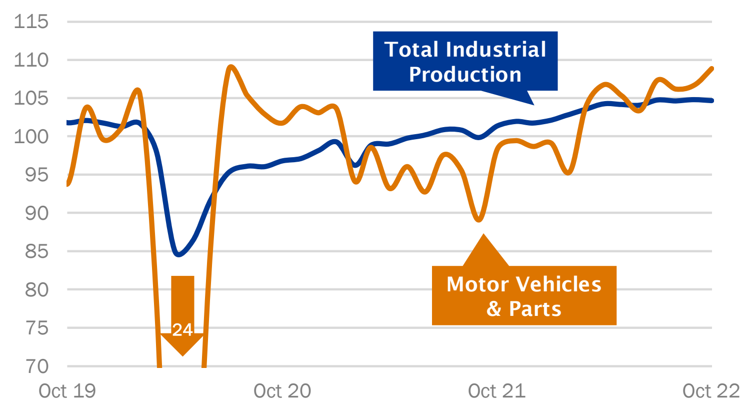
Source: Census Bureau

Industrial production holding steady

Industrial Production slipped 0.1 point to 104.7 in October.

- Industrial activity has largely plateaued in recent months, and October's reading was a continuation of that trend. With activity falling below expectations, the industrial sector may be starting to lose momentum amid higher interest rates, high inflation, and falling demand.
- Further, capacity utilization for manufacturing was flat at 79.5% in October, falling short of expectations. CU has held at or just below 80% for most of 2022, a healthy reading by historical standards.
- One bright spot is the production of motor vehicles, as pent-up demand for autos can finally be filled thanks to improved supply chains (see chart).

IP: Total Production vs. Motor Vehicles & Parts
Reindexed, Dec. 2019 = 100



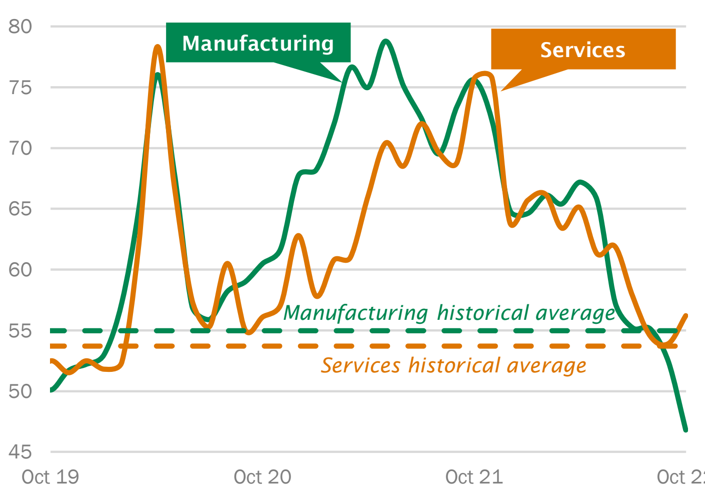
Sources: Federal Reserve Board of Governors; G17 report

Supply chains finally back to 'normal'

While labor shortages and geopolitical turmoil are ongoing concerns, a combination of cooling demand and an improving public health situation have given suppliers a chance to catch their breath. By most measures, supply chain backlogs have returned to their historical averages.

- The ISM Supplier Deliveries Indices show that manufacturing delivery times are quickening rapidly, while services delivery times are still slowing somewhat — albeit at a much more manageable rate than a year ago (*see chart*).
- After remaining elevated throughout the pandemic, trucking, railroad, and shipping costs have returned to normal levels, largely due to declining shipment volume that reflects lower demand.
- Unfortunately, improved supply chains are now giving rise to worries about the strength of the global economy.

ISM Supplier Deliveries Indices
Index, readings over 50 indicate slower delivery times



Source: Institute for Supply Management

State of the U.S. Economy

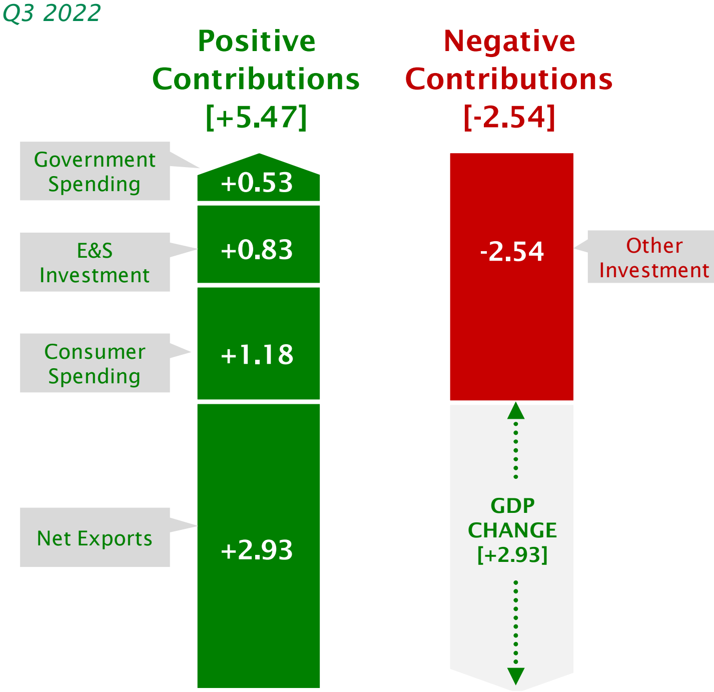
Economy expands after two quarters of decline

The U.S. economy expanded in the third quarter after two consecutive quarters of contraction. Growth was fueled by strong net exports, solid consumer spending, and robust equipment investment. Meanwhile, residential investment and business inventories were drags on growth.

- **Consumer spending**, the economy's largest component, rose 1.7% (annualized) in Q3. Spending on services grew at a strong pace, while spending on goods slowed.
- **Equipment and software (E&S) investment**, a subset of overall business investment and the lifeblood of the equipment finance industry, showed strong growth in Q3, jumping nearly 12% (annualized).
- **Net exports** made the largest positive contribution to growth in Q3 as exports increased 15.3% (annualized) and imports dipped by -7.3% (annualized).
- **Government spending** rose 3.0% (annualized), the first expansion after five consecutive quarterly declines.
- **Other investment** plummeted in Q2, driven by large declines in residential investment and business inventories.

Contributions to GDP Growth

Q3 2022



Source: Bureau of Economic Analysis (BEA)

Growth forecasts lowered as U.S. heads for recession

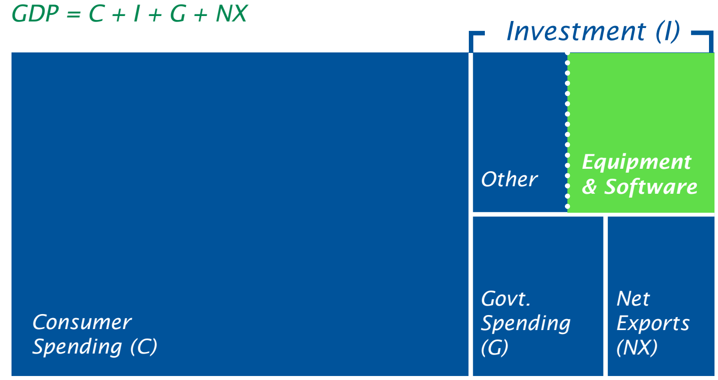
Alarm bells were ringing throughout much of 2022 as the economy contracted during the first half of the year, elevating fears of an imminent recession. However, the economy bounced back in Q3 as the labor market remained strong and consumers held firm despite high inflation. In addition to strong job growth, the economy is finally benefitting from the normalization of supply chains after two years of turmoil. Meanwhile, most measures of financial stress — including consumer and business delinquencies and defaults, as well as home foreclosures and bankruptcies — remain subdued.

On the other hand, inflation remains stubbornly high, and the Fed is committed to reining it in even if this leads to job losses or an outright recession. The housing market predictably suffered as the cost of borrowing increased, and the consumer savings rate has plummeted to less than half its pre-pandemic level — suggesting that a pullback in spending could be just around the corner.

Thought recent data offer some hope that the Fed may yet be able to achieve its desired "soft landing," many economists and business leaders remain unconvinced. In Keybridge's view, the most likely outcome for 2023 is a mild recession beginning in the second quarter of the year. That said, there are several factors that may make the looming downturn less severe for the equipment finance industry than previous recessions, including pro-industrial legislation, equipment order backlogs, and reshoring trends.

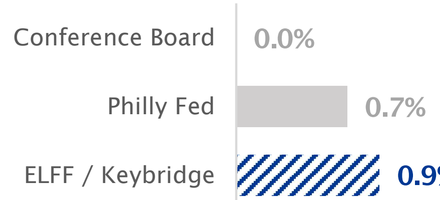
Composition of Gross Domestic Product (GDP)

GDP = C + I + G + NX



Source: Keybridge LLC, based on BEA data

2023 Growth Forecasts*



*Note: Both the Conference Board and Philly Fed forecasts expect weaker growth in the first half of 2023, followed by a slight rebound in growth later in the year. Due to the Bureau of Economic Analysis' method of calculating annual GDP growth (the % change in the average quarterly level of GDP), positive growth earlier in the year has a larger impact on overall annual GDP growth.

Labor Market Strong, But a Double-Edged Sword

Healthy job and wage growth a boon to consumers but a problem for the Fed

The labor market remains a key point of strength. The economy added a consensus-beating 261k jobs in November and, despite easing slightly in October, job openings remain far above pre-pandemic levels (see chart). Further, the unemployment rate held at 3.7% in November, quelling fears that rising interest rates would lead to widespread job loss (at least for now). In short: the labor market is strong, and there are few signs that it is slowing.

However, the historically strong labor market is a double-edged sword for the economy given current inflation levels. Wage growth accelerated in the latest reading and is now running at a nearly 6% annualized rate over the last three months. While this pace of growth is welcome news for workers and will help households absorb high inflation, the fact that wage growth appears to be accelerating is the exact opposite of what the Fed wants to see, as it suggests that additional rate hikes are needed to slow the economy and bring inflation closer to its target level. Further, if sustained, strong nominal wage growth could act as a floor on inflation, making it more difficult for price growth to return to a range that the Fed considers healthy.

Recent job losses in software engineering, human resources, and finance roles could be early indications of cracks in the labor market, and we do expect unemployment to rise by the end of 2023. For now, however, jobs remain plentiful, and the labor market should remain healthy in the near term.

U.S. Job Openings
Millions SA

Source: Bureau of Labor Statistics

Post-COVID Supply Chain Shifts

U.S. poised to benefit from paradigm shift

The pandemic fundamentally altered the globally-distributed, just-in-time supply chain model for manufacturing. Companies that relied on China and other east Asian countries for inputs were left scrambling as global supply chains seized up. Further, just as things seemed to be improving in early 2022, Russia's invasion of Ukraine introduced a new geopolitical risk factor, further complicating supply chains and driving up oil prices (and, by extension, transportation costs) in the process.

Going forward, many large corporations are in the process of "near-shoring" and/or "re-shoring" elements of their supply chains in order to minimize these risks. According to Deloitte's 2022 "Future of Freight" survey, two-thirds of surveyed manufacturing firms intend to move capacity to the United States or are considering it, and nearly one-quarter of their Asia-originating freight is expected to shift to the Americas by 2025. Several pieces of pro-industrial legislation (see right) will help propel this historic transition.

All told, the turmoil that global manufacturing firms have endured because of the pandemic and geopolitical developments have triggered a true paradigm shift in global supply chains. The United States stands to benefit from these events, and equipment markets should see a boost in demand, which in turn should lead to new opportunities for the equipment finance industry in manufacturing sectors.

Pro-Industrial Legislative Boost

Government spending to support demand

Despite razor-thin margins in both the House and Senate, Congress managed to pass three major bills over the last 12 months: the Infrastructure Investment and Jobs Act (IIJA), the CHIPS and Science Act (CHIPS), and the Inflation Reduction Act (IRA). Collectively, these bills authorize at least $600 billion in new funding for a variety of industrial and infrastructure projects and should provide a sharp boost to equipment investment. The new federal funds, which will be disbursed through a combination of direct spending, grants awards, and tax credits, will be dedicated to expanding transportation infrastructure, semiconductor manufacturing plants, and energy infrastructure.

After many years of the manufacturing sector shrinking as a share of the U.S. economy, these initiatives, along with increased wariness of depending on China's manufacturing sector due to the pandemic and geopolitical concerns, could be the catalyst for reversing course. Indeed, while most of this funding has not yet been appropriated, several international manufacturers, including Intel, Micron, and GlobalFoundries, have already announced multibillion dollar investments in their U.S. manufacturing footprints.

Most of the funding from these bills will be distributed over the next five years, and as such they should help backstop the U.S. manufacturing sector and increase the demand for equipment in 2023 and beyond.

Housing Market Pain Deepens

Effects felt in banking sector

The second half of 2022 saw the sharpest decline in home prices since the housing bubble collapse that led to the Great Recession. According to the Shiller Home Price Index, July, August, and September each saw monthly declines of more than 0.5%, and recent data from Redfin suggest that a decline of similar magnitude likely occurred in October as well. Most signs point to continued price declines in the months ahead, with one estimate from Goldman Sachs forecasting a further 5-10% decline in home prices in 2023. Given that housing and related industries account for about 15% of GDP, the housing market downturn will be an important headwind to monitor in the new year.

Another less obvious but nonetheless potentially serious effect of rising interest rates and falling home prices is the pass-through effect on mortgage-backed securities (MBS) and, by extension, bank balance sheets. Together, the four largest U.S. banks have absorbed a $17 billion unrealized MBS loss on their balance sheets. Though this loss does not show up on bank income statements, it does affect key capital ratios, thereby affecting their ability to extend credit. Given that the Fed is expected to keep raising interest rates and reducing their balance sheet by selling MBS, banks will feel even more pressure and may tighten lending standards in response.

Global Economic Slowdown

Developed economies hardest hit

According to the IMF, emerging markets and developing economies are expected to maintain their 2022 growth rate of 3.6% into 2023, but the growth rate for advanced economies is expected be cut in half to just 1.1% on a Q4/Q4 basis. The diverging fortunes of advanced and developing economies is driven by one key factor: energy.

Advanced economies (particularly in Europe) are suffering under the highest energy cost burden in decades. The OECD estimates that member countries will spend nearly 18% of GDP on energy use in 2022, which would be by far the highest share since the 1979 oil crisis and up significantly from roughly 10% pre-pandemic.

Elsewhere, even though developing economies enter 2023 in a generally better position than advanced economies, there are several major downside risk factors threatening to inhibit global growth. China is foremost among these risks, as the government's "Zero COVID" policy is triggering widespread protests that resemble events of the late 1980s. China's overbuilt residential housing sector is collapsing amidst this turmoil, which is weighing heavily on growth given the sector accounts for 20% of economic activity.

The United States remains relatively insulated from the worst effects of the slowing global economy for the time being, but weak growth abroad could weigh on demand for equipment in export-driven verticals such as industrial equipment and agricultural machinery.

Financial Market Turmoil

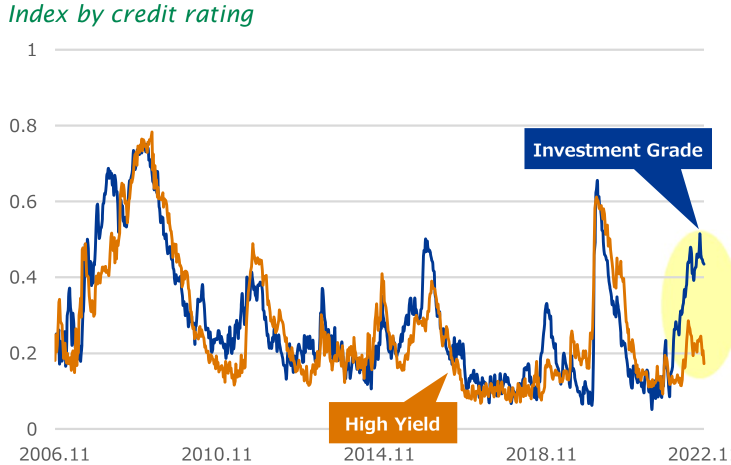
Treasury liquidity issues, corporate debt distress raise contagion fears

While equity markets received a lot of attention in 2022 as rising interest rates sent stocks tumbling after reaching record highs in 2021, another market that is facing its own issues is the market for U.S. Treasurys. U.S. federal government debt is one of the most-traded financial instruments in the world and is viewed as among the safest assets to own, particularly during periods of heightened uncertainty. As such, recent collapses in liquidity in the Treasury market are worrisome and have attracted the attention of Fed officials in recent FOMC meetings. Indeed, in late 2022 U.S. Treasury liquidity touched the lows seen in March 2020 thanks in part to the Fed's shrinking balance sheet and reduced demand from foreign buyers amid higher global interest rates. Although liquidity concerns have not yet led to fallout elsewhere, some economists and market watchers worry that the Treasury market could break at a time of heightened volatility, leading to broader financial market contagion.

Another concern is the corporate debt market, which has been roiled by interest rate hikes and concerns about the strength of the U.S. economy. Per the NY Fed's Corporate Bond Market Distress Index, investment grade bonds are facing their highest level of distress since early 2020, even as high-yield debt faces relatively low stress (see chart).

A final concern that could lead to further turmoil in debt markets is the potential for another debt ceiling showdown. Congressional Republicans have suggested that they may use upcoming debt limit negotiations to secure commitments for reduced spending and potentially other policy priorities, while Democrats typically insist on a "clean" debt limit agreement.

NY Fed Corporate Bond Market Distress Index
Index by credit rating



Source: NY Fed

U.S. Recession Monitor

Wil the economy enter a recession in 2023?

For the last few months, the top question on many business leaders' minds has been "are we headed for a recession?" Indeed, after two consecutive quarters of contraction, it appeared a recession was imminent (and had potentially already begun), and while the growth bounce-back that occurred in Q3 was somewhat reassuring, most economists remain on "recession watch" entering 2023.

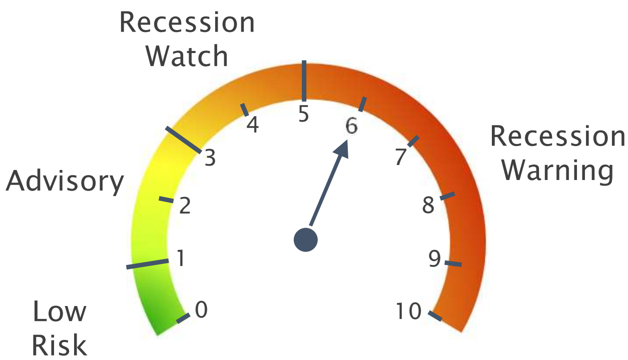
The National Bureau of Economic Research (NBER) is the official arbiter of when a recession begins and ends, and while the oft-cited rule of thumb that a recession is "two consecutive quarters of negative growth" can be useful, the official designation is based on a more sophisticated analysis that considers many aspects of the economy, including employment, industrial production, real personal income, real consumer spending, and real wholesale and retail sales. To assess the likelihood of a near-term recession, it is therefore helpful to look at a range of data that align with NBER's methods, particularly those that have been reliable leading indicators of recessions in the past.

To this end, Keybridge has identified ten industry-relevant indicators that have a strong track record of predicting a recession with varying lead times (see table). As of early December, six of the ten have exceeded the threshold Keybridge considers "recessionary." While there is no hard-and-fast rule, our research indicates that when half or more of the indicators are in the red, the risk of a recession occurring in the next 6–12 months is quite high.

Several factors are driving this result, most notably the high rate of inflation that is causing the Federal Reserve to raise interest rates, which in turn is negatively affecting the housing market as well as businesses' plans to invest. However, it is worth noting that most of the red indicators have long lead times, while most of the near-term indicators are green. This suggests that a recession, if it occurs, is more likely to begin during the second half of the year. This makes intuitive sense, as the Fed's rate hikes take time to spread through the economy — indeed, the labor market remains quite healthy according to most indicators.

Foundation – Keybridge Recession Monitor Signal

Number of indicators signaling "recession"



Foundation – Keybridge Recession Monitor Indicators

Indicator readings sorted by typical lead time

Indicator	Lead	Value
Consumer Expectations – Present Situation Spread [1]	12 – 36 months	-62
Yield Curve *(10-year / 2-year spread)*	12 – 24 months	-72 bp
NAHB Housing Market Index	6 – 18 months	-60%
Leading Economic Index [2]	6 – 12 months	-2.7%
NFIB Capex Index	6 – 12 months	-26%
C&I Loan Delinquency Rate	6 – 12 months	7.0 pp
Elkhart, Indiana Employment [3]	6 – 12 months	1.2%
Capacity Utilization	1 – 6 months	-0.18%
Consumer Confidence/ Unemployment Rate	0 – 6 months	15%
Household Durable Purchasing Sentiment Index[3]	Concurrent	-14%

[1] University of Michigan

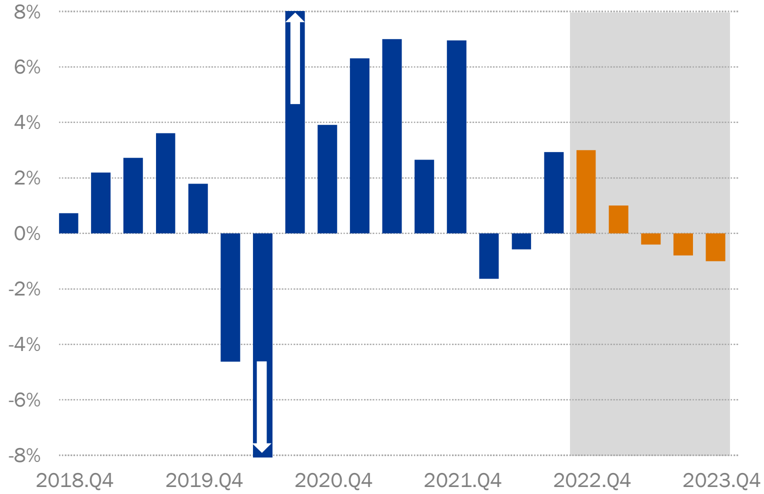
[2] Conference Board

[3] Elkhart, Indiana comprises more than 65% of the recreational vehicle (RV) industry. Since big-ticket items like RVs are among the first goods consumers pull back on, the RV industry is particularly sensitive to downturns in consumer activity.

It is also worth noting that, unlike in previous business cycles, consumers are still benefitting from over $1 trillion in excess savings due to the robust federal response to the pandemic. Thus, even though the personal savings rate has fallen close to an all-time low, the volume of savings that remains could be enough to cushion consumers, avoid a significant spending decline, and stave off the worst effects of a recession. While it is still possible that "this time is different," we believe indicators that have proven to be historically reliable remain our best tools to forecast recession risk.

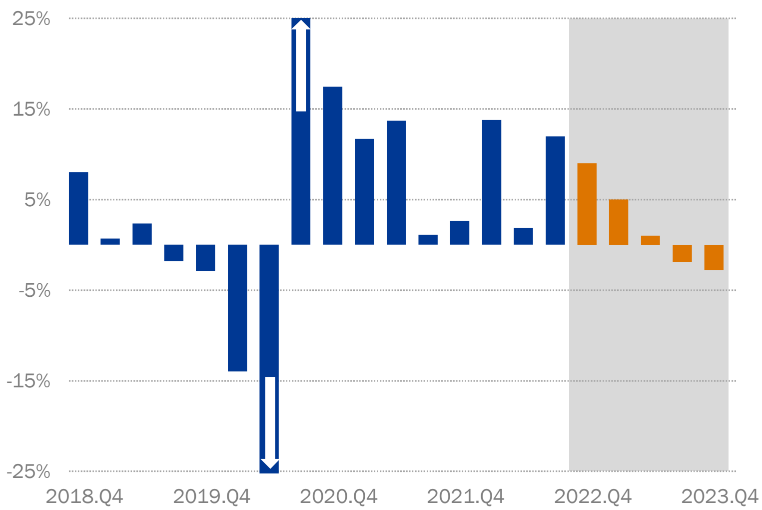
The Foundation intends to monitor the 10 recession indicators closely this year in its forthcoming *Foundation-Keybridge Equipment Finance Industry Recession Monitor*, which will be published quarterly beginning in March 2023.

Real GDP Growth (% SAAR)



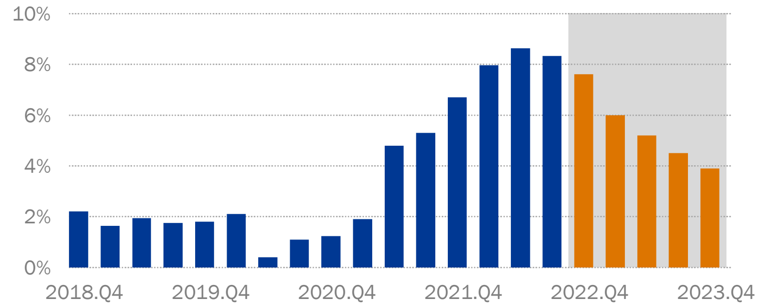
Source: Bureau of Economic Analysis; Keybridge LLC

Real E&S Investment Growth (% SAAR)



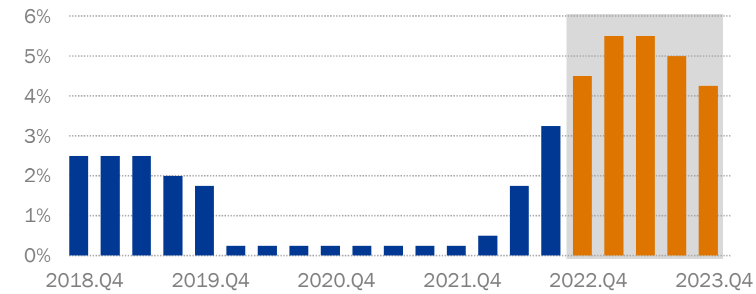
Source: Bureau of Economic Analysis; Keybridge LLC

CPI Inflation (year-on-year %)



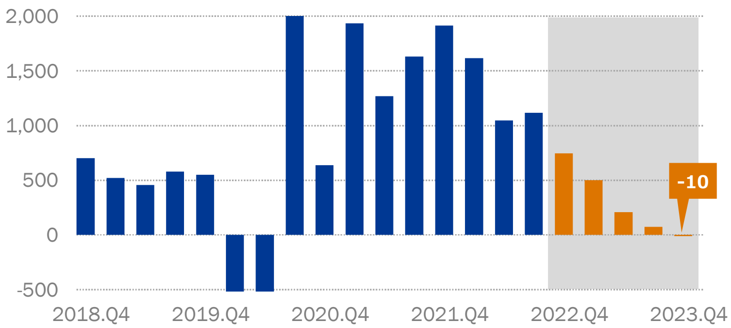
Source: Bureau of Labor Statistics; Keybridge LLC

Fed Funds Target (upper bound, end of period)



Source: Federal Reserve Board of Governors; Keybridge LLC

Total Payroll Growth (thousands)



Source: Bureau of Labor Statistics; Keybridge LLC

INDICATOR	2021	2022e	2023 QUARTERLY ESTIMATES				2023e
			Q1e	Q2e	Q3e	Q4e	
Real GDP *(SAAR %)*	*5.9%*	**2.0%**	1.0%	-0.4%	-0.8%	-1.0%	**0.9%**
Real Investment in Equipment & Software *(SAAR %)*	*11.1%*	**7.2%**	5.0%	1.0%	-1.9%	-2.8%	**4.2%**
Inflation *(year-on-year %)*	*4.7%*	**8.1%**	6.0%	5.0%	4.4%	3.7%	**4.8%**
Federal Funds Target Rate *(upper bound, end of period)*	*0.25%*	**4.50%**	5.50%	5.50%	5.00%	4.25%	**4.25%**
Total Payroll Growth *(thousands)*	*6,743*	**4,508**	500	210	75	-10	**775**

Note: SAAR % refers to the annualized rate of change in seasonally adjusted data from one quarter to the next, which is the Bureau of Economic Analysis' standard method for reporting growth in the national accounts data.

About the Momentum Monitor

Business leaders require actionable forward-looking intelligence to make strategic decisions. Accordingly, the Foundation commissioned Keybridge LLC to develop a series of custom leading indicators for the equipment sector. The Foundation-Keybridge Equipment & Software Investment Momentum Monitor consists of indices for 12 equipment and software investment verticals. These indices are designed to identify turning points in their respective investment cycles with a ~6-month lead time.

The Momentum Monitor is based on Keybridge's extensive research which shows that not all movements in economic data are reliable signals of future economic trends. Keybridge has operationalized its research by constructing indices, each comprised of between 15 to 20 high-frequency indicators. These indicators undergo rigorous testing to determine the optimal thresholds at which their short-term fluctuations are economically meaningful. In simpler terms, the Momentum Monitor sifts out the "noise" in the data and identifies the dominant trends. As a result, each Momentum Monitor index is statistically optimized to signal turning points in the investment cycle without giving false readings of shifts in momentum.

How to Read the Momentum Monitor

The Momentum Monitor Matrix summarizes the current values of each of the 12 Equipment & Software Investment Momentum Indices based on two factors: Recent Momentum (x-axis) and Historical Strength (y-axis):

- "Recent Momentum" indicates a vertical's recent acceleration or deceleration in the past month relative to its average movement during the previous 3 months. Ratings closer to "0" indicate rapid deceleration, while ratings near "10" represent rapid acceleration.
- "Historical Strength" reflects a vertical's strength in the past month relative to its typical level since 1999. Ratings closer to "0" represent an indicator that is weaker than average, while ratings closer to "10" represent an indicator that is stronger than average.

The matrix consists of four quadrants based on readings for each vertical's recent momentum and historical strength. If a vertical falls in the top-left quadrant, its momentum reading is higher than average, but positive movement has slowed (and perhaps reversed) in recent months — suggesting that Y/Y investment growth may slow over the next two quarters. Verticals in the bottom-right quadrant, however, have momentum readings that are below average, but recent movement shows promise — suggesting that Y/Y investment growth may increase over the next two quarters.