2022 Q4 Update
Equipment Leasing & Finance U.S. Economic Outlook

EQUIPMENT LEASING & FINANCE FOUNDATION
Your Eye on the Future

EQUIPMENT LEASING & FINANCE ECONOMIC OUTLOOK

October 2022

Key Trends to Monitor

Monetary Policy

Geopolitical Conflict

Inflation

EXECUTIVE SUMMARY

Equipment and Software Investment: Equipment and software investment growth fell sharply in the second quarter, though early indicators point to a modest rebound in Q3. Demand may soften in several end-user markets due to higher interest rates, and further rate hikes in the face of high inflation will likely weigh on demand even more over the remainder of the year.

Momentum Monitor: Most Momentum Monitor verticals are showing signs of peaking or weakening. Only railroad, aircraft, medical, and construction are still showing signs of expansion, suggesting that Fed rates hikes will weigh on investment in the months ahead.

Manufacturing Sector: Loosening supply chains have allowed industrial activity to continue expanding even as rising interest rates and high inflation weigh on business confidence. Higher interest rates are likely to drag on manufacturing output over time, but the recent passage of multiple infrastructure-related bills should provide a modest tailwind for the industry next year.

Small Businesses: Main Street's outlook for the rest of the year has worsened. The dual impacts of high inflation and surging interest rates are likely to impact smaller firms first and hardest, though the good news is that SMBs are starting from a place of relative strength. Still, with borrowing more expensive and sales expectations weak, small business owners are likely to feel more pressure to slow or pause plans to expand and hire, particularly if consumer demand falls.

Fed Policy: Despite rapidly increasing interest rates, the Fed's actions to quell inflation seem to have had little effect thus far. Fed officials have repeatedly emphasized the importance of reining in inflation and preventing expectations from becoming unanchored — even if this means sending the U.S. economy into a recession.

U.S. Economy: The U.S. economy contracted through the first two quarters of 2022, amplifying recession fears. The labor market remains a bright spot, but higher interest rates are increasingly taking a toll on the U.S. housing market as well as the global economy, which is suffering under the weight of the strongest dollar in decades. The potential for rising consumer stress and higher energy prices are factors to watch.

We expect the Fed to continue hitting the brakes on the economy until inflation falls significantly, and there is still hope that a "soft landing" can be achieved. However, while we continue to believe a recession is unlikely to occur in 2022, storm clouds continue to gather.

2022 Annual Projections

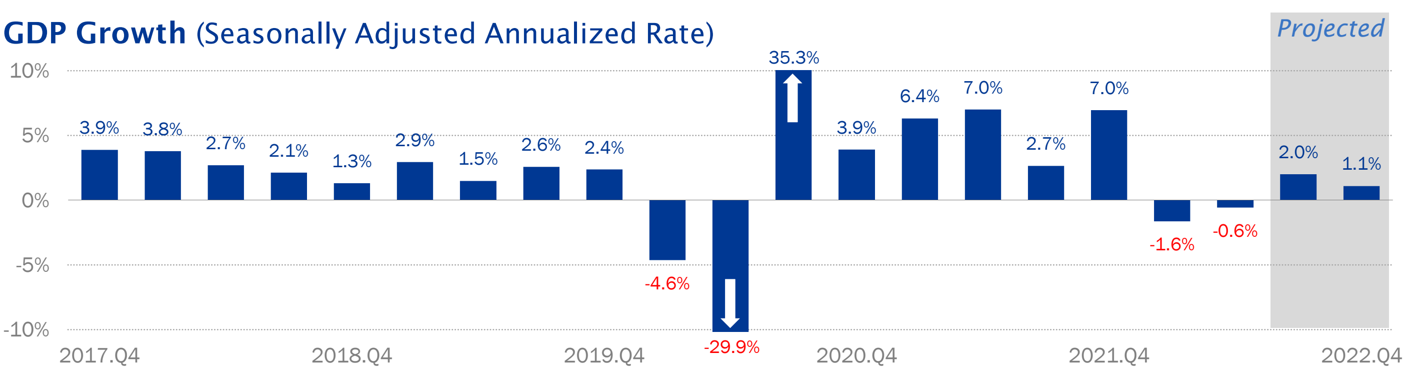
1.8%
GDP Growth

5.9%
E&S Investment Growth

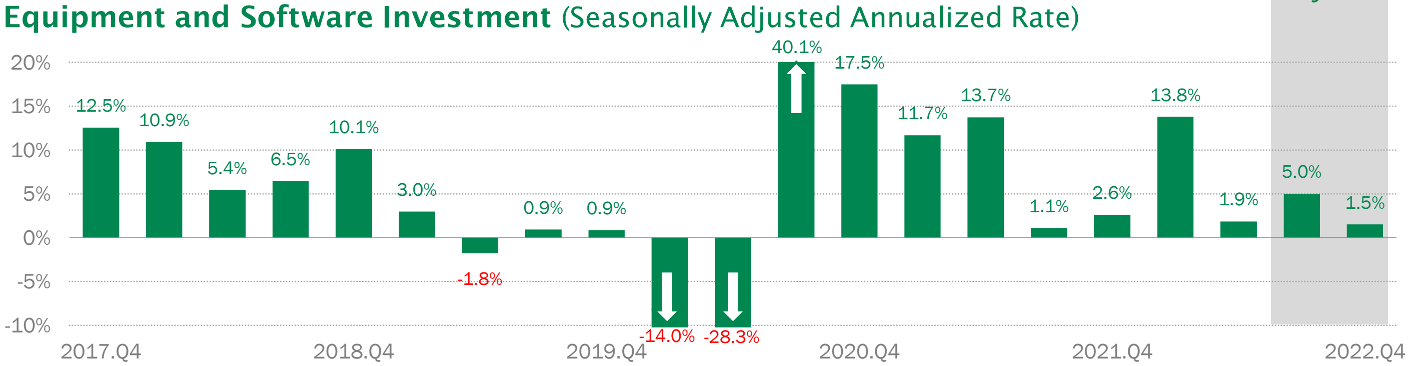
8.2%
Inflation

+125 bp
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

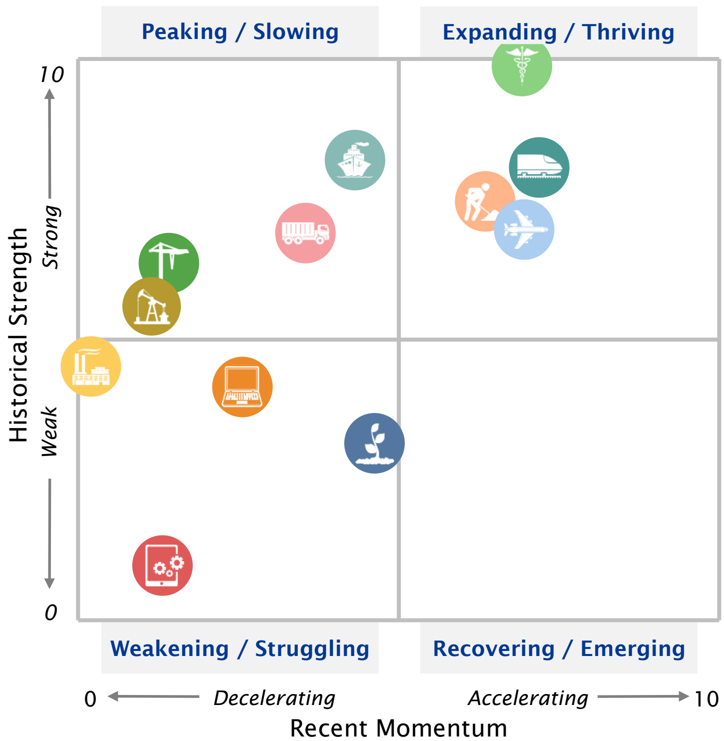
E&S investment slows in Q2

Equipment and Software investment grew just 1.9% (annualized) in Q2 2022, a notable slowdown from strong growth in the first quarter.

Of the 12 investment verticals tracked by the Foundation, nine saw investment growth rise in the second quarter while three saw investment weaken. Six verticals experienced double-digit investment growth, including Agricultural Machinery, Mining & Oilfield Machinery, and Railroad Equipment.

Looking ahead, eight 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 notable change from last quarter, when most verticals were still showing signs of growth. The effects of Fed interest rate hikes appear to be filtering through the economy, and though most verticals are not showing cause for serious alarm, demand is expected to soften late this year and early next year as the Fed continues its fight against inflation.

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	Q1 Investment Growth		Next 6 Months	Short-Term Outlook
	Q/Q	Y/Y		
Mining & Oil	+22%	+8.4%	▲	Mining & oilfield machinery investment has benefited from robust demand for energy in the U.S. and abroad. Though there have been some signs of peaking growth, activity is expected to remain in healthy territory over the coming six months.
Medical	5.5%	6.3%	▶	Medical equipment investment growth is expected to sidewind over the coming two quarters after slowing on a Y/Y basis for each of the last five months.
Software	+10%	+11%	▲	Software investment growth has decelerated for four straight quarters, and though Y/Y growth should remain in healthy territory, the latest Index reading suggests that growth will slow further.
Other Industrial	-9.6%	+9.5%	▼	Other Industrial equipment is showing signs of serious weakening in the most recent reading, with the Index falling to its lowest reading since late 2020. Interest rate hikes are expected to weigh on investment growth in the coming months.

Credit Supply

Lending standards tighten in Q2

In a departure from the previous quarter, business lending standards tightened significantly in Q2 as the Fed raised 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 24% of banks reported tightening lending standards, while a net 22% of banks reported tighter standards for loans to smaller firms.
- Lending standards also tightened for commercial real estate ("CRE") loans. A net 48% of banks reported tightening standards for construction and land development loans in Q2, following the Q1 trend.

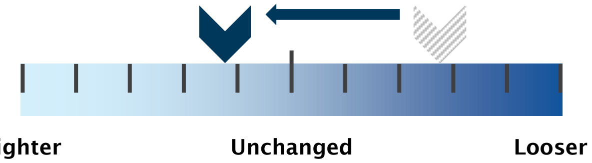
Among consumer lenders, credit conditions were mixed.

- While banks on net reported unchanged standards for approving credit cards, a net 6.7% reported expanding credit limits.
- Meanwhile, a net 1.8% of banks reported tighter standards for auto loans, with a net 5.2% and 7.1% of banks also reporting tighter standards for jumbo mortgage loans and revolving home equity credit lines, respectively.

Net Change in Credit Supply Conditions

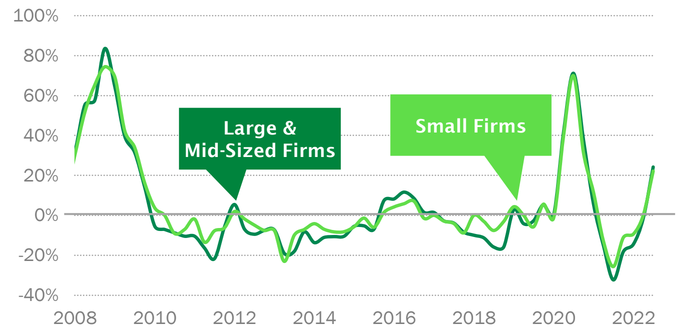
Fed Senior Loan Officer Survey

Banks report tighter lending standards in Q2



Tightening Standards on C&I Loans

Percent of Respondents

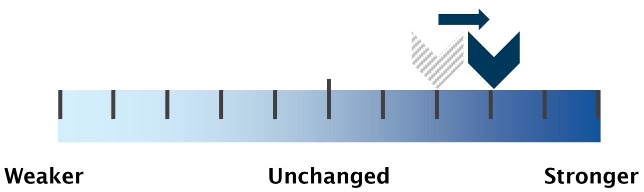


Source: Federal Reserve Senior Loan Officer Survey

Net Change in Credit Demand Conditions

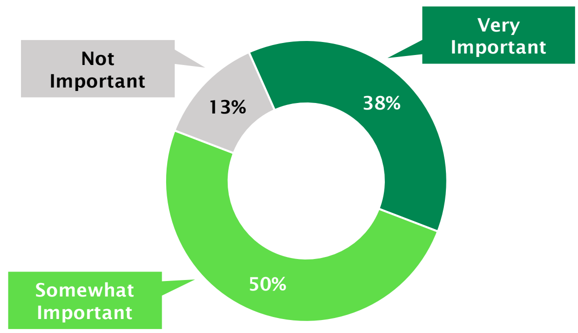
Fed Senior Loan Officer Survey

Demand for credit expands in Q2



"Customer Inventory Financing Needs" Driving Stronger Demand for C&I Loans

Percent of Respondents



Source: Federal Reserve Senior Loan Officer Survey

Credit Demand

Demand for credit is mixed in Q2

Demand for business loans was mixed in Q2.

- On net, 24% of banks reported stronger C&I loan demand among medium and large firms in Q2, while a net 18% of banks reported stronger demand from smaller firms. Of those reporting stronger demand, the most frequently-cited reason was "customer inventory financing needs" (see chart).
- For CRE loans, however, a net 17% of banks reported weaker demand for construction and land development loans and a net 15% of banks reported weaker demand loans secured by nonfarm nonresidential properties.

Among households, credit demand was also mixed.

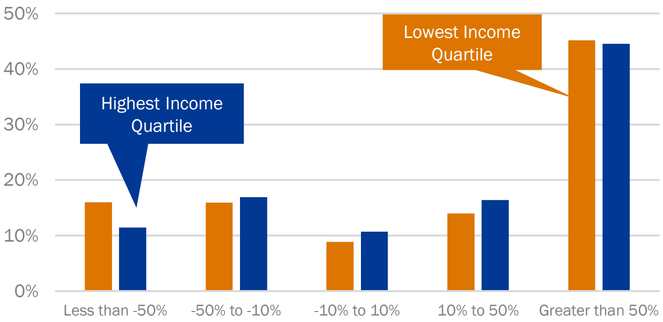
- A net 18% of banks reported stronger credit card loan demand as consumers become increasingly dependent on revolving credit in the face of high inflation and lower savings.
- At the same time, however, credit demand fell in other consumer lending categories in Q2. For example, a net 16% reported weaker demand for auto loans, and banks reported weaker demand across every category of Residential Real Estate ("RRE") loans.

Consumer Finances

Bank balances high, but stress rising?

Consumers remain in good financial position, buoyed by a strong labor market and the lingering effects of stimulus measures. JPMorgan Chase data show that 60% of households have checking account balances above pre--pandemic levels. At the same time, the share of consumers who are substantially worse off than they were pre-COVID is rising — particularly among lower-income households.

Change in Checking Account Balances by Income Level
% change in bank account balances, Q2 2022 vs Q2 2019



Source: JPMorgan Chase

Business Finances

Era of muted stress nearing an end?

As of late summer, inflation, labor shortages, and rising interest rates had not yet caused a significant increase in loan delinquencies. However, signs that financial stress may rise in the months ahead are mounting.

- As of early October, BBB-rated corporate debt (i.e., the lowest investment-grade tier) was yielding more than 6%, the highest rate since 2009.
- Elsewhere, while the Trepp CMBS Special Servicing Rate remains low, the measure rose 13 basis points in July — the first increase since 2020.
- The American Bankers Association's Credit Conditions Index worsened again in Q4, reflecting expectations of reduced credit availability and worsening credit quality over the next 6 months.

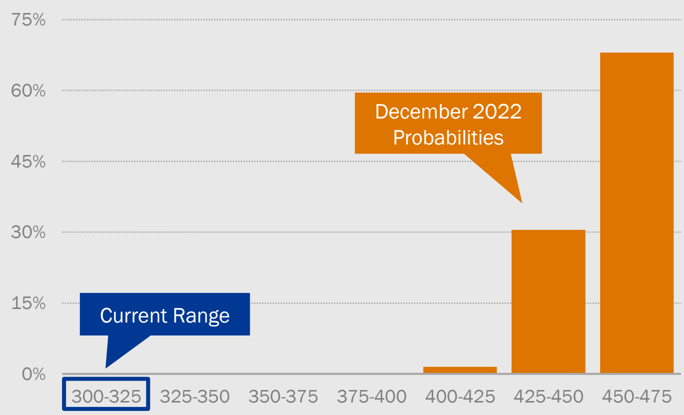
Overall, financial conditions for businesses are still solid, but are expected to worsen over the next year as the Fed continues to grapple with high inflation.

Fed Policy Corner

With inflation high, Fed buckles down

- In September, the FOMC raised interest rates 75 basis points for the third consecutive time. After starting the year near zero, rates were around 3.1% as of mid-October, and Fed's internal projections suggest that they may reach the mid-4% range by the end of the year.
- Meanwhile, market-based expectations have consistently underestimated the degree to which the Fed would raise rates this year. Fed officials have been explicit about their intentions to do whatever it takes to curb inflation — even if that leads to a recession — and markets are finally beginning to reflect that sentiment (see chart).
- The Fed is also shrinking its balance sheet, selling securities at a pace of roughly $50 billion per month from its total of $8.8 trillion.
- Due to increased tightening measures, Fed officials pared back their forecasts for real GDP growth this year to just 0.2% on a Q4/Q4 basis, down from 1.7% in June.
- Similarly, the Fed's expectations for unemployment have risen, with internal forecasts now predicting 3.9% unemployment by the end of this year and 4.4% in 2023, compared to the June projections of 3.7% and 3.9%, respectively. This echoes the Fed's sentiments that continued monetary tightening will not be without any pain (see quotes).
- Many economists, including Larry Summers and Jason Furman, are skeptical that the Fed can rein in inflation without triggering a sharper rise in unemployment.

End-of-Year Federal Funds Rate Probabilities
Bps, set by December FOMC meeting



Source: CME Group

> "We have got to get inflation behind us. I wish there were a painless way to do that, [but] there isn't,"
>
> — Jerome Powell, Fed Chairman

> "No one knows whether this process will lead to a recession or, if so, how significant that recession would be. That's going to depend on how quickly wage and price inflation pressures come down, whether expectations remain anchored, and if we get more labor supply."
>
> — Jerome Powell, Federal Reserve Chairman

Main Street Outlook

Small business burdened by persistent inflation and labor shortages

A slowing U.S. economy will hit small firms first, and hardest. While Main Street remains on reasonably solid footing by many measures, headwinds continue to build heading into the fall and winter months.

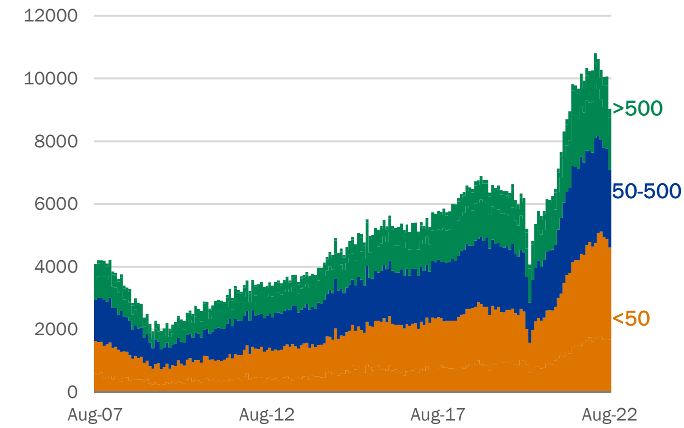
- According to Equifax, small business lending rose in August, but delinquencies and defaults also edged up, a potential early sign of stress.
- NFIB's Small Business Optimism Index (see bottom-left chart) was below its long-term average for the ninth consecutive month in September, and the net share of businesses expressing pessimism about the next six months worsened marginally.

The single largest problem facing small businesses remains inflation, though many are struggling with the related problem of labor shortages (see bottom-right chart). On the bright side, supply chains have improved somewhat.

- **Inflation:** Main Street firms have less power than large firms to raise prices as their costs rise. According to a recent survey from American Express, average profits for small businesses were down 4% compared to a year ago, even as revenues were up 90% over the same period. Further, sales expectations remain exceptionally weak according to the NFIB, largely due to inflation: indeed, the latest reading ranks among the lowest 5% of readings in the survey's history.
- **Hiring:** Small business have struggled to fill job openings (see chart above). As of August, job openings for firms with fewer than 50 employees have doubled compared to pre-pandemic levels and nearly exceeded the *total* number of job openings in the U.S. economy prior to 2015. In order to attract workers, a net 45% of small business owners reported raising compensation in September, a sign that the inflationary power of high wages is unlikely to abate in the near term.

Job Openings by Firm Size

Thousand SA



Source: Bureau of Labor Statistics

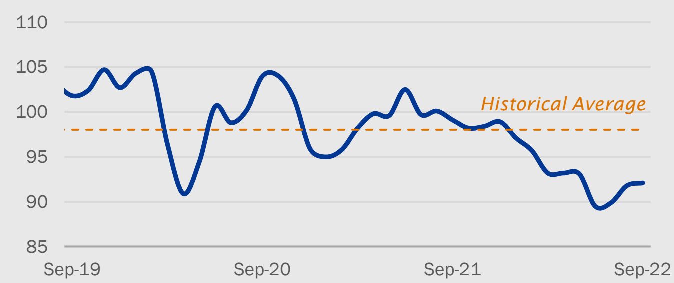
- **Supply chains:** The supply chain snags that have plagued small businesses for much of the last 18 months have eased somewhat, as only 1% of businesses in NFIB's September Survey reported that their inventory is too low (compared to 10% in September 2021). Nevertheless, 32% of respondents still report that supply chain problems have had a significant impact on their business.

On balance, the near-term outlook for Main Street businesses has worsened. Although supply chain improvements are a welcome development for small business owners, these improvements appear to be "too little, too late" as the Fed pursues ever-tighter monetary policy in its efforts to quash inflation. Lending is likely to become more expensive and less accessible, which will put pressure on expansion plans and hiring, particularly if consumer demand falls.

Small Businesses Feeling the Bite from Inflation

Small Business Optimism Index

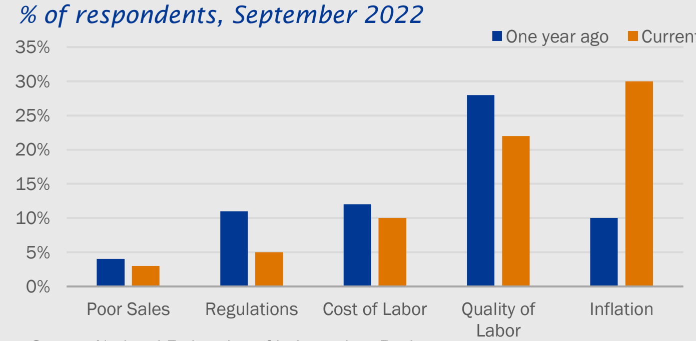
1986 = 100



Source: National Federation of Independent Businesses

Single Most Important Problem for Small Businesses

% of respondents, September 2022



Source: National Federation of Independent Businesses

MLFI-25

NBV holding up amid economic headwinds

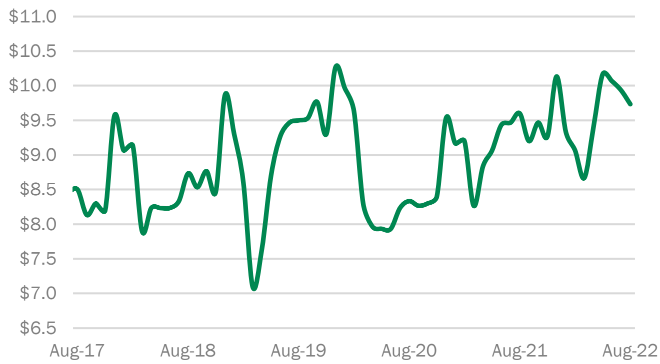
According to ELFA's Monthly Leasing and Finance Index (MLFI-25), new business volume eased to $8.8 billion in August, but was up 3.5% from August 2021 and up 6% year-to-date. The 3-month moving average dipped by 2.0% in August but is up 1.4% compared to a year ago (see chart). While the pace of new business is not keeping up with inflation, growth remains positive in nominal terms.

Portfolio performance was healthy in August. Receivables over 30 days were 1.5%, below July's 1.6% and the 1.8% reading in August 2021. Charge-offs followed a similar trend, edging down to 0.17%, down 1bp compared to the previous month and down from the year-ago reading of 0.23%.

In another sign that credit conditions are tightening for business borrowers, total credit approvals fell sharply to 75.2% in August from 78.0% in July. This measure is now at its lowest point since December 2020, though it remains generally in line with rates seen prior to the pandemic.

MLFI-25 New Business Volume

Billions, 3-month moving average



Source: ELFA

"Up to this point at least, steadily rising interest rates do not appear to dampen enthusiasm of businesses that prefer the utilization of productive assets versus their ownership, which is the essence of the equipment finance sector.

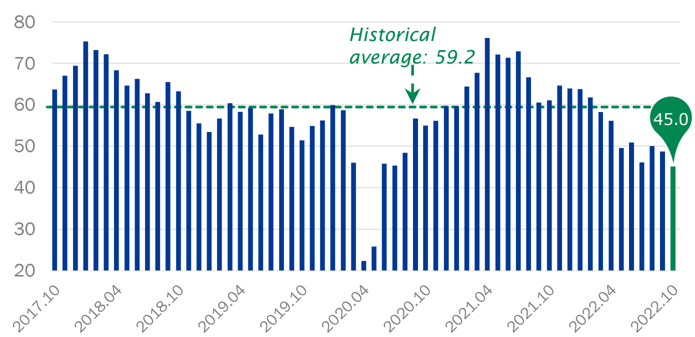
With the Fed's most recent 75-basis point jump...and the prospect of a hard landing, time will tell whether—and to what extent—these same business owners continue to grow and invest in equipment."

— Ralph Petta, President and CEO, ELFA

MCI-EFI

Industry confidence sidewinds below pre-pandemic levels

Monthly Confidence Index – Equipment Finance Industry



Source: ELFF

"More increases to the Fed funds rate are coming, as is quantitative tightening to the tune of $95 billion per month. Highly leveraged participants in our industry will pay the price, as well as highly leveraged borrowers/lessees. While the definition of a true recession is being hotly debated, there is little doubt that more challenging times are ahead and the hopes of a 'soft landing' are much less likely."

— Bruce J. Winter, President, FSG Capital, Inc.

In October, the Monthly Confidence Index for the Equipment Finance Industry (MCI-EFI) fell to 45.0. The current reading remains well below the index's long-term average and marks the lowest since the depths of the COVID-induced decline of 2020.

- Overall, no respondents expect business conditions to improve over the next four months, a decrease from 3.6% in September and 15% in August. Further, more respondents expect conditions to worsen in October (38%) compared to September (21%).
- Expectations for access to capital used to acquire equipment worsened in October. Only 4.2% of respondents expect capital access to rise over the next four months, compared to 14% in September. Most respondents (88%) expect capital access to remain the same.
- Most respondents (67%) rate the current economy as "fair," but a rising share (25%) rate it as "poor."
- Looking ahead, most respondents (58%) expect the economy to worsen over the next six months, a higher reading than September's (54%) and significantly above August's (37%).

Industrial Focus

New orders and shipments remain strong

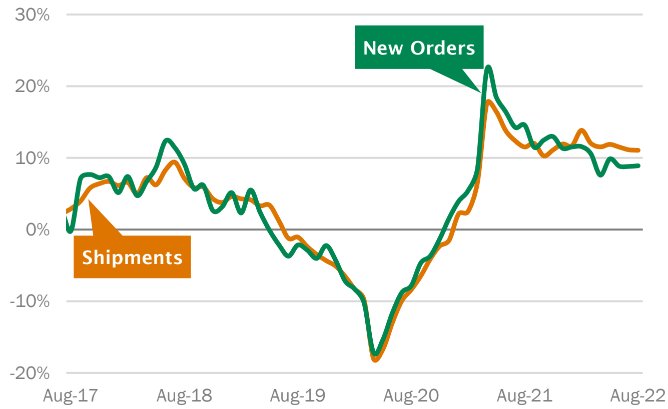
After sharp deceleration in late 2021, both new orders and shipments of core capital goods have held at a roughly 10% Y/Y growth rate for a year (see chart).

- New orders for nondefense, non-aircraft capital goods (a leading indicator of industry performance) increased 1.4% in August, and Y/Y growth was mostly unchanged at 8.9% — representing the 21st consecutive month of positive Y/Y growth.
- Shipments of nondefense capital goods excluding aircraft (a concurrent indicator of industry performance) increased 0.4% in August and are up 11.1% Y/Y.

Equipment investment has been a key factor in the strong expansion of nonresidential fixed investment since the onset of the pandemic, and this growth has shown few signs of slowing in the near term. Demand for equipment remains strong.

Shipments vs. New Orders of Core Capital Goods

Year-on-year percent change



Source: Census Bureau

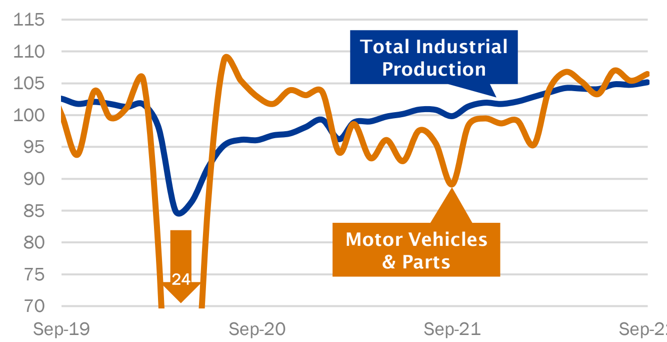
Industrial production rebounds in September

Industrial Production rose 0.4 point to 105.2 in September.

- September's improvement in industrial activity was underscored by upward revisions to prior months' data as well. Manufacturing output rose more than expected.
- Further, capacity utilization for manufacturing rose to 80.0% in September, signaling healthy demand amid a sea of headwinds such as inflation and rising interest rates.
- Production of motor vehicles and parts has likewise held up remarkably well given the headwinds facing consumers and the broader economy (see chart).

IP: Total Production vs. Motor Vehicles & Parts

Reindexed, Dec. 2019 = 100



Source: Federal Reserve Board of Governors, G17 report

Policy developments in Congress should boost equipment demand in 2023

Infrastructure Investment and Jobs Act (IIJA)

The IIJA passed in November 2021 will provide $1.2 trillion of investment ($550 billion of which is newly authorized funding) for domestic infrastructure projects.

- The IIJA attempts to improve America's infrastructure, which the American Society of Engineers gave a 'C-' in its 2021 Infrastructure Report Card.
- Just over half of the new spending ($284 billion) will be used to fun major surface transportation projects, such as the Gateway Tunnel that will run from New Jersey to New York City. About $240 billion will be used for utilities projects, such as broadband expansion in rural areas and improving the resiliency of the energy grid.

All told, this spending is expected to provide a significant boost to key equipment end-use markets such as trucks and automobiles, construction equipment, and railroads.

The CHIPS and Science Act of 2022

The CHIPS act passed in July provides more than $52 billion in subsidies for chip manufacturers to build fabrication plants in the U.S.

- Since 1990, the share of commercial semiconductor manufacturing located in the U.S. has shrunk from 37% to 12% today.
- CHIPS Act funding will primarily be disbursed through manufacturing grants and research investment but will also include a 25% tax credit for semiconductor manufacturing investment.
- Most of the funding should be disbursed over 2022 and 2023. This should have tangible effects on reshoring semiconductor manufacturing, a net positive for domestic equipment and software demand.

State of the U.S. Economy

Economy contracts through first half of year

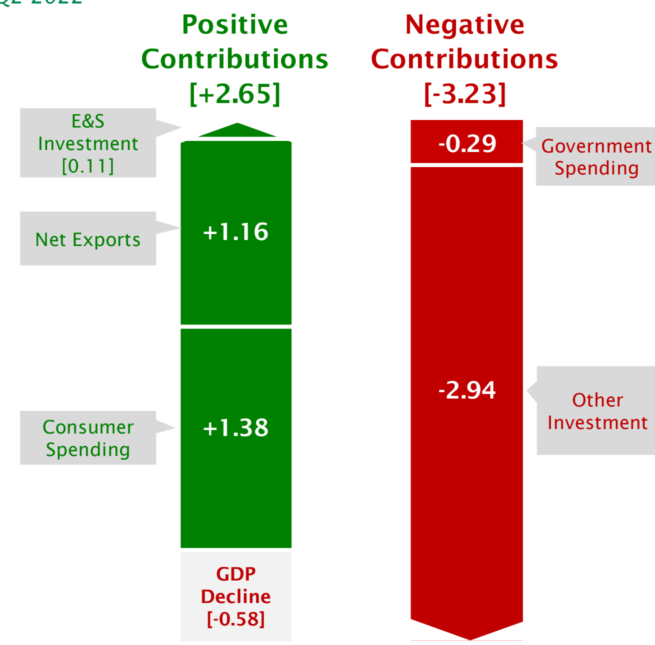
The U.S. economy contracted in Q2 due to a sharp decline in inventories, residential investment, and government spending. Meanwhile, consumer spending and net exports showed healthy growth.

- **Consumer spending**, the economy's largest component, rose 2.0% (annualized) in Q2. Spending on services grew at a strong pace, while spending on goods eased slightly.
- **Equipment and software (E&S) investment**, a subset of overall business investment and the lifeblood of the equipment finance industry, was essentially flat following strong growth in Q1.
- **Net exports** made the largest positive contribution to growth in Q2 as exports jumped 13.8% (annualized) and imports rose just 2.2% (annualized).
- **Government spending** fell 1.6% (annualized), the fifth consecutive quarter of negative growth.
- **Other investment** plummeted in Q2, driven by large declines in residential investment and inventories. Non-residential investment was mostly unchanged.

Despite back-to-back quarterly contractions — an oft-cited "rule of thumb" for dating recessions — most economists do not believe the economy is currently in a recession.

Contributions to GDP Growth

Q2 2022



Source: Bureau of Economic Analysis (BEA)

Odds of "soft landing" fall amidst global economic deterioration

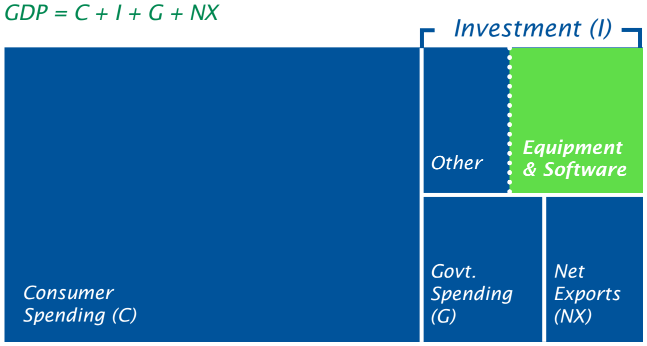
The U.S. economy contracted through the first two quarters of 2022, amplifying recession fears. However, consumer spending expanded through the first half of the year, buoyed by sustained job growth, low unemployment, and healthy wage growth. Further, the industrial core of the economy continued to hum along in Q2, defying worries of a downturn stemming from high energy prices and the slowing global economy.

However, many of the factors highlighted in the Foundation's previous economic outlook have worsened in recent months. The U.S. housing sector has buckled under the strain of high prices and fast-rising interest rates and appears likely to worsen before it improves. The global economic backdrop is among the worst of the last two decades, and the Fed's quest to control inflation by tightening monetary policy could lead to further turmoil.

One of the biggest questions facing the U.S. economy is the path of consumer financial stress. Thus far, Americans have proven to be remarkably resilient in the face of the highest inflation in decades. However, the likelihood of higher oil and energy prices, rising interest rates, and stubbornly high inflation over the next 6+ months are unmistakable threats to the financial well-being of U.S. households. We expect the Fed to continue to hit the brake pedal on the economy until inflation falls significantly — and while we believe this is ultimately necessary, it may trigger a recession.

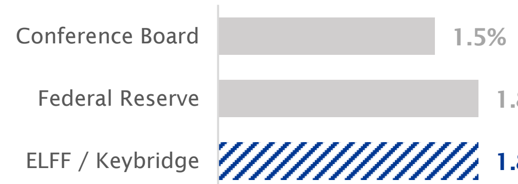
Composition of Gross Domestic Product (GDP)

GDP = C + I + G + NX



Source: Keybridge LLC, based on BEA data

2022 Growth Forecasts*



*Note: The Bureau of Economic Analysis reports annual GDP growth as the percent change in the average level of quarterly GDP from one year to the next. The Federal Reserve forecasts GDP on a Q4/Q4 basis, so the Federal Reserve forecast presented here is an implied rate of growth based on the Q4/Q4 forecast.

Labor Market Holding Steady, for Now

Fed has jobs and wage growth in its sights

Though inflation remains high and interest rates are causing pain throughout housing and equity markets, the labor market is still in good shape. Employers added 263,000 jobs in September, a slowdown from earlier this year but still squarely in "healthy growth" territory. Furthermore, the unemployment rate fell to 3.5% from 3.7% in August, matching a multi-decade low.

At this point, most sectors have regained the jobs lost early in the pandemic (see top chart). Service sector industries have recovered quickly, with major sectors such as Professional & Business Services and Transportation & Warehousing leading the way. However, strong growth in the service sector has become a double-edged sword as robust demand for workers driven a severe shortage of available labor, pouring accelerant on wage growth and putting upward pressure on inflation.

Indeed, the key issue for many employers has been their ability to find workers to fill existing openings. The number of job openings per unemployed person rose this year to unprecedented levels (see middle chart), underscoring the tight labor market. While this ratio dipped slightly to 1.7 in August, it remains far above normal levels.

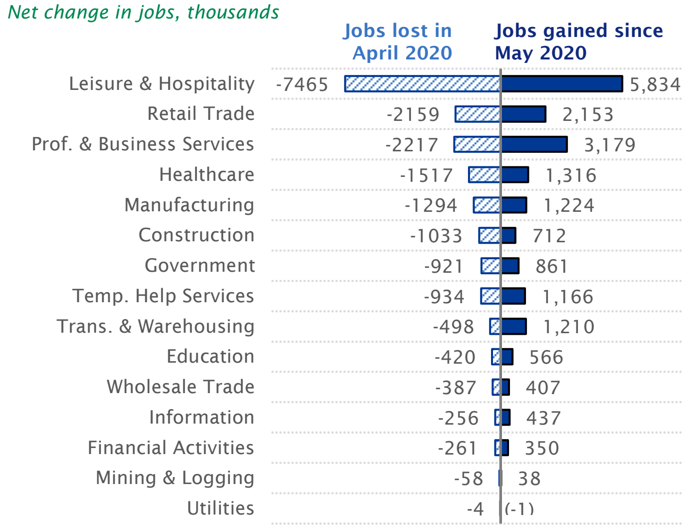
While demographic trends (e.g., Baby Boomer retirements and reduced immigration) are part of the story, increased selectiveness of workers has been another significant driver of labor market tightness. Total quits have surged in lockstep with job openings, and the ratio of quits per worker is now near an all-time high. Fueled by the pandemic, this "Great Resignation" reflects increased worker bargaining power and a change in worker preferences as many employees seek greater flexibility for remote work, improved work/life balance, and higher pay.

To compete for scarce talent, employers are unsurprisingly increasing compensation. According to the Atlanta Federal Reserve's Wage Growth tracker, median wage growth through August was 6.7%, the highest rate in decades. While wages have risen the most among lower-income earners (see bottom chart), nearly every income quartile is seeing wages rise much faster than the historical norm.

The conundrum facing the economy is that two of its bright spots — strong employment and wage growth — are the very things the Federal Reserve is aiming to weaken. Rate increases may in fact have already begun cooling the labor market, as evidenced by a dip in job openings in August. However, one month of data is far from enough for the Fed to declare victory, and the labor market remains strong. As long as this is true, the Fed is likely to remain laser focused on its goal of reining in inflation through tighter monetary policy — even if this drives unemployment higher over the coming months.

Change in Employment by Major Industrial Sector

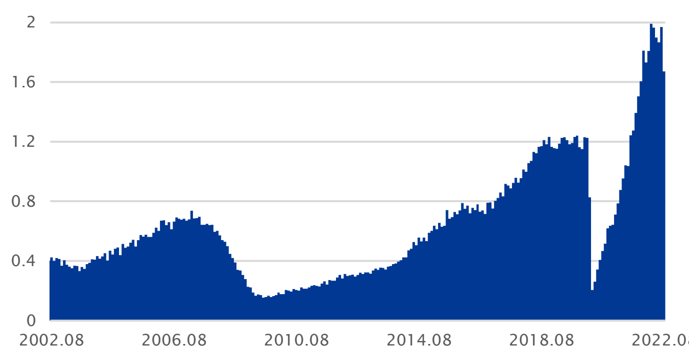
Net change in jobs, thousands



Source: Bureau of Labor Statistics

Job Openings per Unemployed Person

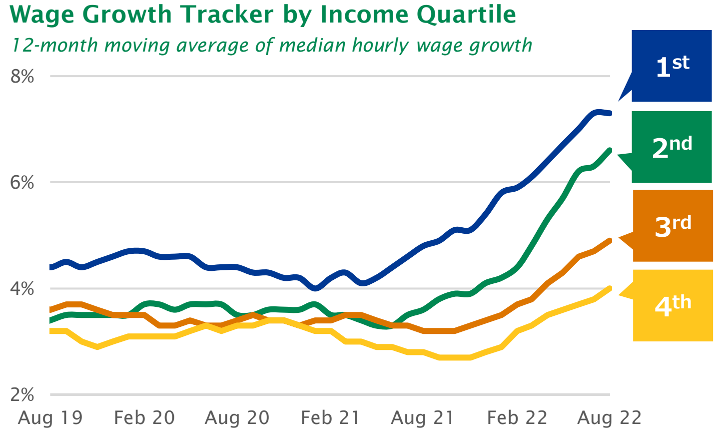
Ratio SA



Source: Bureau of Labor Statistics

Wage Growth Tracker by Income Quartile

12-month moving average of median hourly wage growth



Source: Federal Reserve Bank of Atlanta

Global Economic Turmoil Deepens

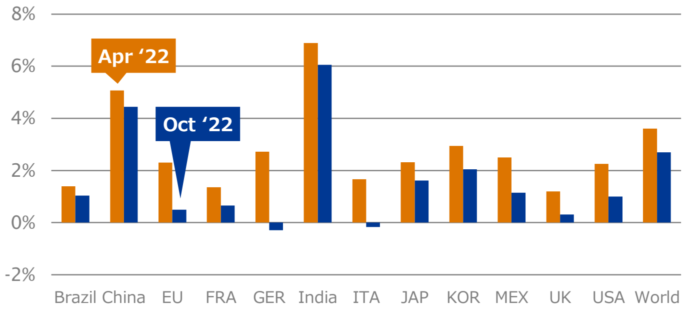
Interest rates, inflation, and war crush growth forecasts

High inflation, rising interest rates, and geopolitical uncertainty are weighing on growth — so much so that the IMF is forecasting the worst non-recessionary annual growth since 2001 next year (see chart). These headwinds are impacting developing and developed nations alike, and things may get worse before they improve.

- **Interest rates** are wreaking havoc on global financial markets and commodity importers. The Fed's rate hikes have pushed the U.S. dollar to multidecade highs against major currencies, making it more difficult for importers (especially energy importers) to purchase foreign goods. Rising rates have also made it more difficult to finance debt, raising the prospect of sovereign defaults, especially among developing nations.
- **Inflation** is expected remain a major problem in the coming months — so much so that the IMF titled its most recent global outlook: "Countering the Cost of Living Crisis." Few nations will be insulated from the negative effect of inflation on real wage growth, savings rates, and consumer and business confidence. Further, with additional Fed rate hikes likely on the way and central banks in other countries responding with higher rates of their own, there is a growing risk of "destructive synergy" that could result in unnecessary economic pain.

Forecasted 2023 GDP Growth, Select Countries

% change Y/Y, Current Forecast (Oct) vs. Previous Forecast (Apr)



Source: IMF

- **Geopolitical uncertainty** has only worsened in recent months. Recent events in the Russia-Ukraine war have raised several worrying "what if" scenarios regarding what could happen next, including nuclear escalation. Elsewhere in the world, other countries are seeing protests against rising cost of living, human rights abuses, and more. Meanwhile, Italy's government has veered sharply to the right and the United Kingdom's politics are in disarray.

Sharply slowing housing sector

Rising interest rates slam the brakes on the housing market

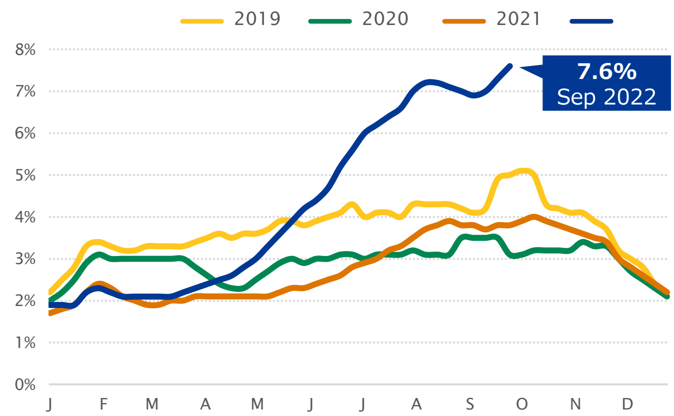
In 2021, the housing market grew at record pace. Fueled by rock bottom interest rates, changing homebuyer preferences, and a strong stock market, home prices skyrocketed 17% Y/Y. However, as the Fed began tightening monetary policy to fight inflation, the housing market predictably began to slow. The average 30-year fixed mortgage rate jumped above 7% in October — the highest rate in two decades — and may rise further.

Worsening affordability has taken a heavy toll on demand, pushing home prices lower. Data from Black Knight shows that the median home price fell 0.98% in August following a 1.03% decline in July — the two largest declines since the Great Recession. More recent data from Redfin showing the share of active listings with price drops reveals a housing landscape that has only worsened since then, with the share of sellers *lowering* prices to attract buyers nearly doubled year-ago levels (see chart). And while home listings are still selling by historical standards, mortgage applications are now roughly half of what they were at their peak in 2021.

This worsening selling environment is causing a rising share of homeowners to resort to renting their homes because they cannot find buyers. Meanwhile, homebuilder sentiment has continued to worsen, with the NAHB Housing Market Index plummeting at its fastest pace since the Great Recession. All told, the housing market is set for more pain in the months to come, and given that housing and associated industries (plumbers, electricians, etc.) account for about 15% of GDP, the downturn is likely to have negative consequences for the U.S. economy overall.

Active Listings with Price Drops

% of total metro area listings, drop occurred In last four weeks



Source: Redfin

Will Consumer Finances Hold Up to Rate Hikes?

Early signs of rising financial stress mounting

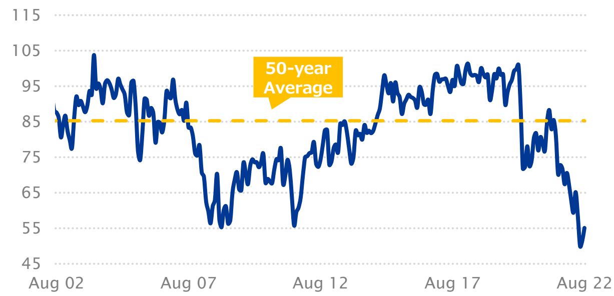
As discussed earlier, bank account balances remain elevated for many households, suggesting that there is still some buffer between consumers and rising prices. However, wage growth has lagged inflation for 17 straight months and real hourly earnings for private-sector employees are now at levels last seen in July 2019. This, along with high inflation, has driven down consumer sentiment (see chart). Fortunately, low confidence has not yet manifested in reduced spending, as consumers have relied on a combination of pent-up savings and credit cards to avoid a significant pullback. Eventually, however, negative real wage growth is likely to lead to reduced consumer spending, and this could in turn lead to lower business revenues, reduced hiring, and softer demand for equipment — particularly if business operating costs remain elevated.

Objective measures of consumer stress are showing warning signs too. For example, revolving credit has risen sharply since mid-2021 and is now at a historical peak, while credit utilization as a share of one's credit line is also climbing steadily. Rising credit card debt has been followed by an uptick in delinquencies, though late payments are still low compared to pre-pandemic levels.

The increase in credit utilization has been coupled with a decline in the savings rate, which is now at levels last seen during the 2008-09 recession. New data from the NY Fed shows that household spending expectations fell sharply in September, suggesting that consumers are starting to feel the pinch and adjust their spending habits accordingly.

All told, consumers financial stress will be a critical factor to watch in late 2022 and early 2023.

Consumer Sentiment
Index



Source: University of Michigan

Where Will Energy Prices Go?

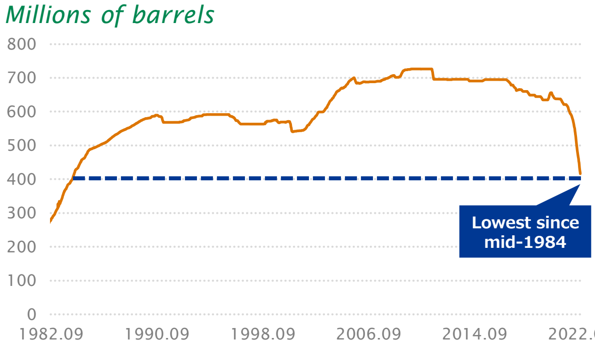
Looming winter months could be darkest yet

Russia's invasion of Ukraine kicked off one of the sharpest run-ups in energy prices in recent memory as domestic gasoline prices shot above $5/gallon. Internationally, the consequences of Russia's invasion were much more dire. Prior to February 2022, Europe imported roughly 40% of its natural gas, 25% of its crude oil, and 45% of its coal from Russia. Following international sanctions against Russia, Europe moved quickly to decouple from Russian energy sources, but a transition of that scale and complexity takes time, and the winter spike in energy demand is fast approaching.

Looking ahead, energy market dynamics remain a major factor to watch for the global economy.

- **Europe** is set for prolonged double-digit inflation this winter, and rolling blackouts appear increasingly likely given recent damage to key gas lines and the inability to source sufficient LNG to meet demand. A European recession appears to be a near certainty.
- **OPEC** recently announced new production cuts totaling 2 million barrels per day, or roughly 2% of global demand. These cuts will help put a floor on global oil prices at a time when demand is already outstripping supply.
- **The U.S.** has been drawing large volumes of crude from the Strategic Petroleum Reserve to help contain oil prices, but reserve stocks have fallen sharply (see chart). One worrying development is the ongoing discussion of a potential energy export ban, which would lower domestic prices at the expense of global markets and allies.

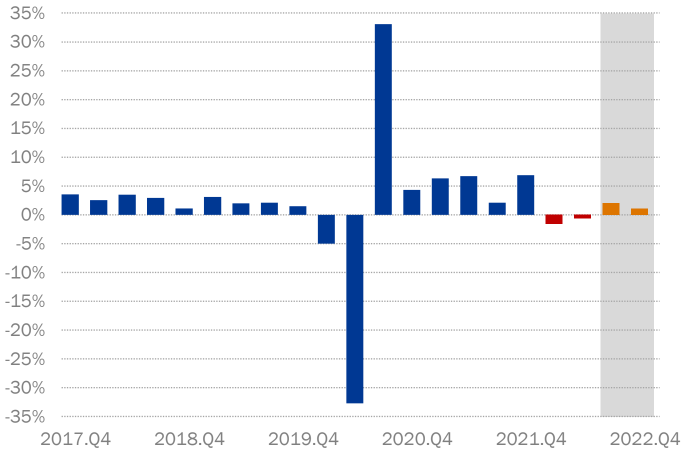
U.S. Strategic Petroleum Reserve Crude Oil Stocks
Millions of barrels



Source: EIA

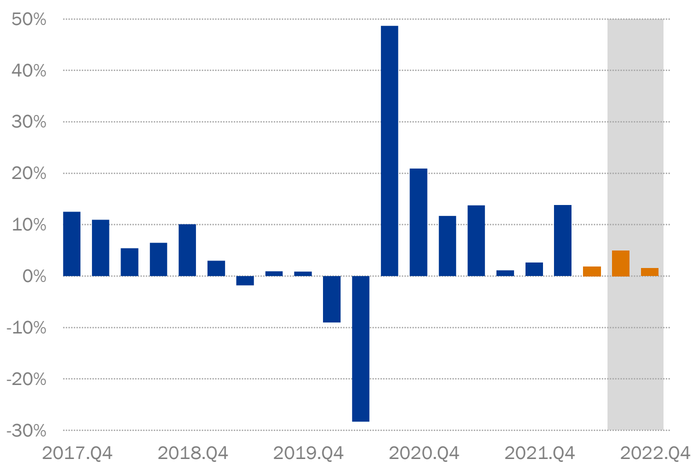
Overall, elevated energy prices appear likely to persist, with risk skewed to the upside. Though the specter of a global recession looms, global oil supply and demand are already misaligned, and OPEC has promised further cuts should prices fall further due to weak demand. Domestic energy policy remains a major question mark for the U.S. outlook, and conflicting signals from the Biden administration have failed to encourage more production. Energy markets should be closely monitored, as energy prices will have an outsize impact on equipment demand.

Real GDP Growth (% SAAR)



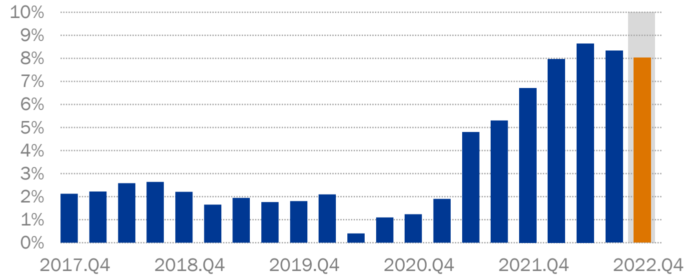
Source: Bureau of Economic Analysis; Keybridge LLC

Real E&S Investment Growth (% SAAR)



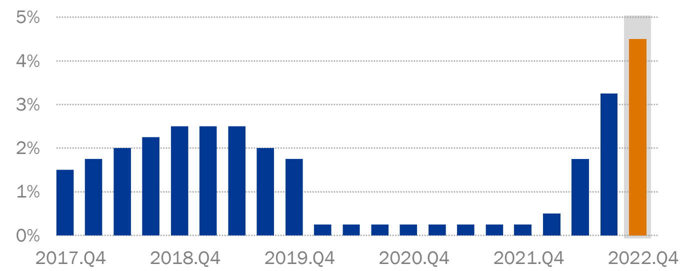
Source: Bureau of Economic Analysis; Keybridge LLC

CPI Inflation (year-on-year %)



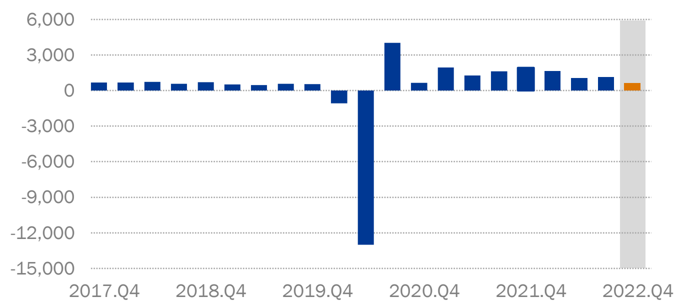
Source: Bureau of Labor Statistics; Keybridge LLC

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,	2020	2021	2022 QUARTERLY ESTIMATES				2022e
			Q1	Q2	Q3e	Q4e	
Real GDP *(SAAR %)*	*-2.8%*	*5.9%*	-1.6%	-0.6%	2.0%	1.1%	**1.8%**
Real Investment in Equipment & Software *(SAAR %)*	*-5.2%*	*11.1%*	13.8%	1.9%	5.0%	1.5%	**5.9%**
Inflation *(year-on-year %)*	*1.2%*	*4.7%*	8.0%	8.6%	8.3%	8.0%	**8.2%**
Federal Funds Target Rate *(upper bound, end of period)*	*0.25%*	*0.25%*	0.50%	1.75%	3.25%	4.50%	**4.50%**
Total Payroll Growth *(thousands)*	*-9,292*	*6,743*	1,616	1,047	1,150	605	**4,383**

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.