# 2019 Equipment Leasing & Finance U.S. Economic Outlook

Q3 Update — July

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EQUIPMENT LEASING & FINANCE FOUNDATION

Your Eye on the Future

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# SUMMARY

**Equipment & Software Investment Outlook:** Equipment and software investment growth decelerated in Q1 but remained positive due to the second-fastest growth in software investment since 2009. Meanwhile, equipment investment fell 1.0% in the first quarter, the first quarterly contraction since early 2016. Business conditions for the equipment finance industry eased in the first half of the year as the U.S manufacturing sector weakened, and investment growth in several key verticals is expected to slow or contract in the second half of 2019.

Over the next three to six months:

- Agricultural Machinery investment growth (Y/Y) is likely to remain modestly positive;
- Construction Machinery investment growth (Y/Y) is likely to further weaken and potentially stall;
- Materials Handling Equipment investment growth (Y/Y) is likely to weaken and may turn negative;
- All Other Industrial Equipment investment growth (Y/Y) is likely to weaken and may stall;
- Medical Equipment investment (Y/Y) should grow at a moderate pace;
- Mining & Oilfield Machinery investment growth (Y/Y) is likely to remain steady;
- Aircraft investment growth (Y/Y) is likely to remain negative;
- Ships & Boats investment growth (Y/Y) should remain sluggish and may stall;
- Railroad Equipment investment growth (Y/Y) is unlikely to improve and may worsen;
- Trucks investment (Y/Y) is expected to grow moderately;
- Computers investment growth (Y/Y) will likely continue to weaken, potentially into negative territory; and
- Software investment growth (Y/Y) should remain solid.

**U.S. Capital Investment & Credit Markets**: Capital spending eased in the beginning of 2019, consistent with declining macroeconomic fundamentals. Business investment faces further downside risk if the industrial sector continues to slow and trade relations remain turbulent. Although banks continue to tighten lending standards to consumers amid waning credit demand among businesses and consumers, overall credit market conditions remain mostly healthy. Financial stress remains relatively low by historical standards, though both delinquencies and charge-offs are on the rise.

**Overview of the U.S. Economy:** The U.S. economy grew at a healthy 3.1% pace in the first quarter, exceeding expectations. However, despite the solid headline number, there are reasons to be concerned about the economy's core, particularly consumer spending and business fixed investment. Trade frictions are undoubtedly contributing to the softness in the U.S. manufacturing sector, which continued to struggle in Q2 and does not appear to be on the verge of a rebound. Though domestic oil production has been a key bright spot for the U.S. economy and the increasingly dovish Federal Reserve has helped buoy financial markets, there are several risk factors that merit close attention for the rest of the year, including the efficacy of China's efforts to stimulate its economy, the divergence between small- and big-business optimism, and the potential for a protracted slowdown in consumer spending later this year.

**Bottom Line for the Equipment Finance Sector:** Equipment and software investment growth is likely to continue slowing in the second half of 2019. Q1 showed a growing divergence between software investment, which surged, and equipment investment, which contracted. Consumer confidence has eased this year while consumer spending has moderated, large businesses are showing signs of pulling back (though small businesses remain upbeat), and the global growth picture continues to weaken. In light of stronger-than expected growth in Q1, we now expect the economy to grow 2.5% in 2019, up from our previous estimate of 2.2%. Meanwhile, we project that equipment and software investment will expand 3.9% this year, down from our previous estimate of 4.5%.

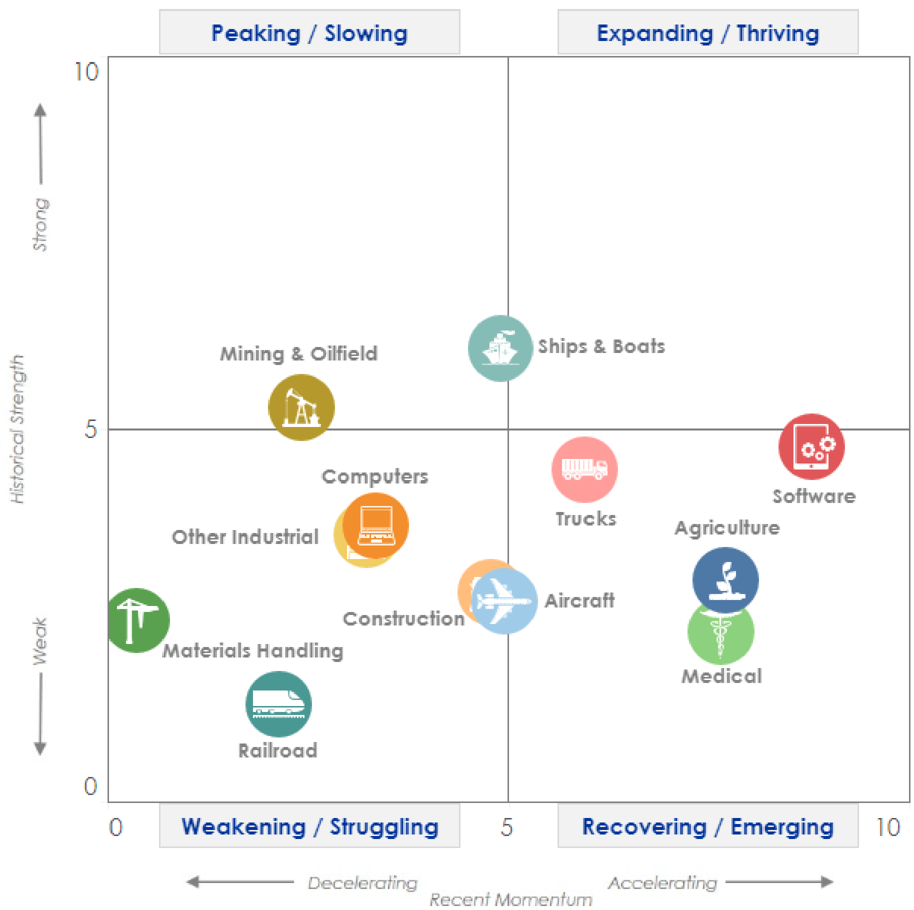
# Equipment & Software Investment Outlook

We expect equipment and software investment to expand by 3.9% in 2019, mirroring weaker macroeconomic fundamentals as the business cycle matures. As illustrated in the Momentum Monitor Sector Matrix below, momentum readings are below the long-term historical average (y-axis) in 10 of 12 verticals, while 8 of the 12 verticals saw recent momentum (x-axis) decelerate.

## Foundation-Keybridge U.S. Equipment & Software Investment Momentum Monitor

*For more information on how to interpret the Momentum Monitor, please refer to the Appendices on pages 18–19.

### Momentum Monitor Sector Matrix

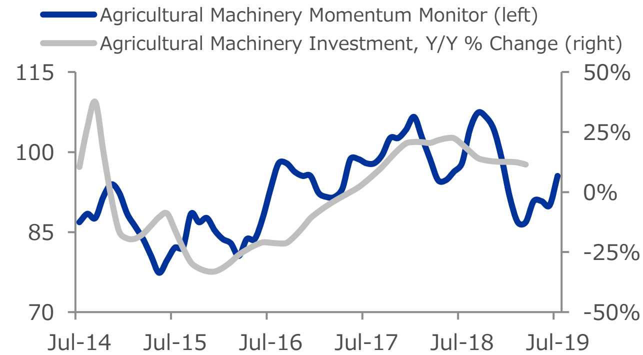



The matrix above summarizes the current values of each of the 12 Equipment & Software Investment Momentum Indices based on two factors: Recent Momentum (x-axis) and Historical Strength (y-axis):

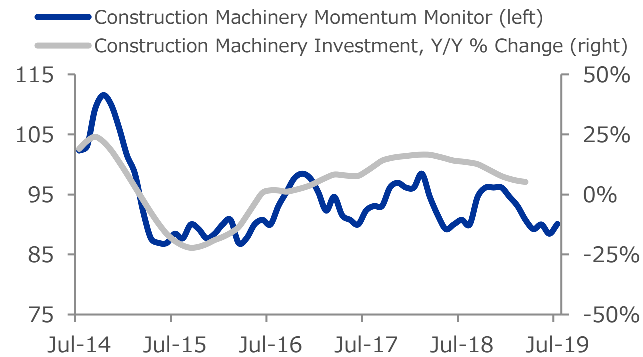
- "Recent Momentum" indicates a vertical's recent acceleration or deceleration in the past month relative to its average movement during the previous 3 months. Ratings closer to "0" indicate rapid deceleration, while ratings near "10" represent rapid acceleration.
- "Historical Strength" reflects a vertical's 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 resides 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 investment levels may fall over the next 1-2 quarters. Verticals in the bottom-right quadrant, however, have momentum readings that are below average, but recent movement shows promise — suggesting that investment levels may rise over the next 1-2 quarters.

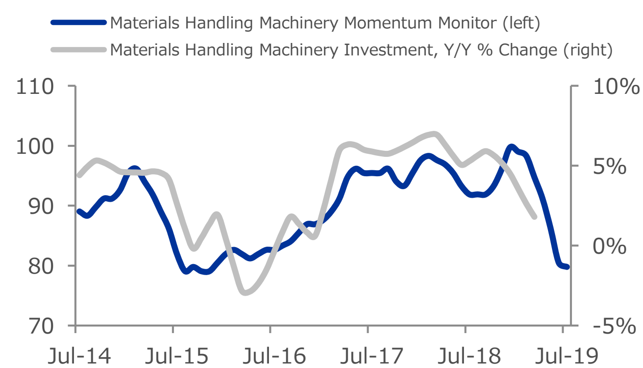
**Agricultural Machinery:** Investment in Agricultural Machinery fell 2.8% (annualized) in Q1 2019 but is up 11% from one year ago. The Agriculture Momentum Index inched up from increased from 90.0 (revised) in June to 95.5 in July, its highest level since December. Wholesale Trade of Miscellaneous Durable Goods improved 0.7% in April, and Soybean Futures improved 2.0% in June. Overall, the Index points to positive growth in agricultural machinery investment over the next three to six months.



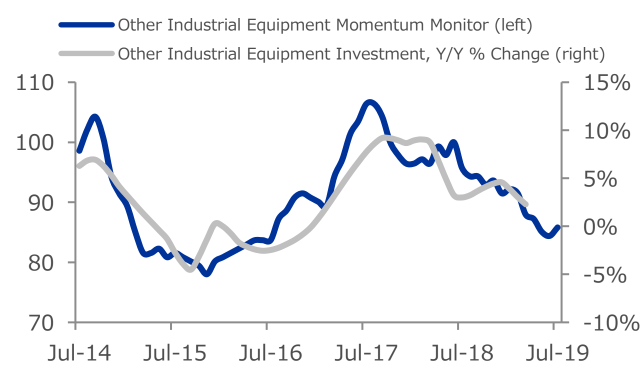

**Construction Machinery:** Investment in Construction Machinery increased at a 10% annualized rate in Q1 2019 and is up 5.2% year-over-year. The Construction Momentum Index improved from 88.5 (revised) in June to 90.1 in July. In May, Non-Residential Construction Spending fell 0.9%, while New Privately-Owned Houses declined 2.6%, their seventh decrease in a year. Overall, the Index suggests further weakening and potentially stalled growth in construction machinery investment over the next three to six months.



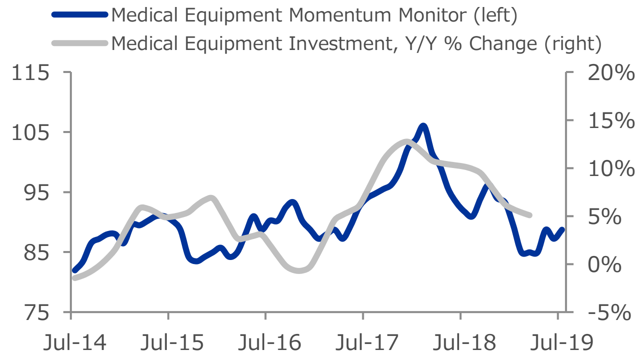

**Materials Handling Equipment:** Investment in Materials Handling Equipment decreased at a 1.4% annualized rate in Q1 2019 but is up 1.8% year-over-year. The Materials Handling Momentum Index eased from 80.5 (revised) in June to 79.8 in July, its lowest level since November 2015. In May, Unfilled Orders for Materials Handling Equipment eased 0.5%, and Earnings in Materials Handling Equipment Manufacturing fell 0.5%, their sixth consecutive decline. Overall, the Index points to slowing and potentially negative growth in materials handling equipment investment over the next two quarters.



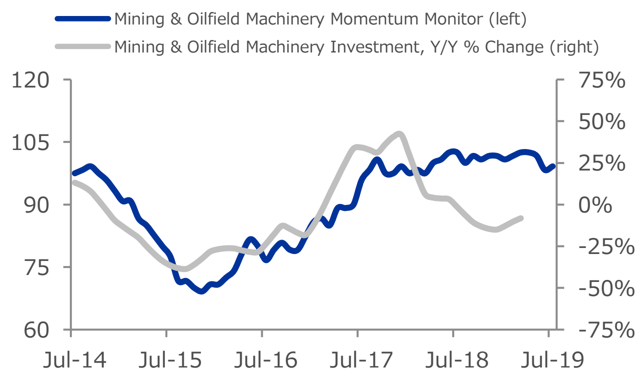

**Other Industrial Equipment:** Investment in All Other Industrial Equipment declined at a 3.6% annualized rate in Q1 2019 but is up 2.3% from a year ago. The Other Industrial Equipment Momentum Index increased from 84.4 (revised) in June to 85.8 in July. Domestic Manufacturing & Trade Sales fell 0.9% in April, but Exports of Other Industrial Supplies rose 2.1% in May, their strongest improvement since July 2018. Overall, despite this month's modest improvement, the Index continues to suggest weaker and potentially stalled growth in other industrial equipment investment over the next three to six months.



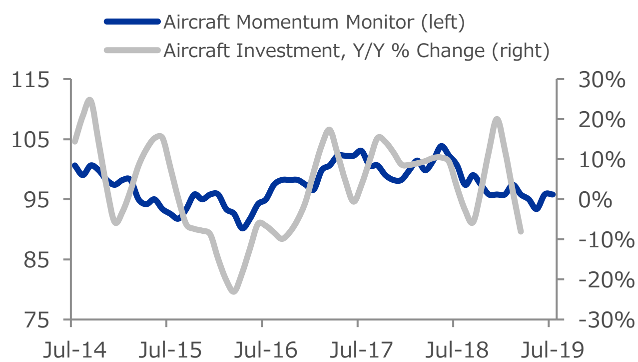
**Medical Equipment:** Investment in Medical Equipment crept up at a 0.7% annualized rate in Q1 2019 and rose 5.1% year-over-year. The Medical Equipment Momentum Index rose from 87.2 (revised) in June to 88.7 in July. Consumer Spending on Professional Medical Services rose 0.3% in May, and the S&P 500 Health Care Index rose 6.3% in June, its strongest improvement since November 2018. Overall, the Index points to moderate growth in medical equipment investment over the next two quarters.



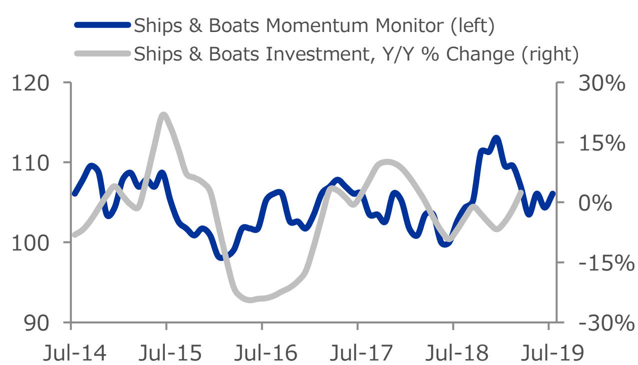

**Mining & Oilfield Machinery:** Investment in Mining & Oilfield Machinery dropped at a 13% annualized rate in Q1 2019 and is down 8.2% year-over-year. The Mining & Oilfield Machinery Momentum Index increased slightly from 98.3 in June to 99.2 in July. In June, Mining & Logging Employment rose 0.9%, its ninth consecutive improvement, but the Bloomberg Natural Gas Sub-Index dropped 6.2%. Overall, recent movement in the Index suggests little change in mining & oilfield machinery investment over the next three to six months, but its elevated position is encouraging.



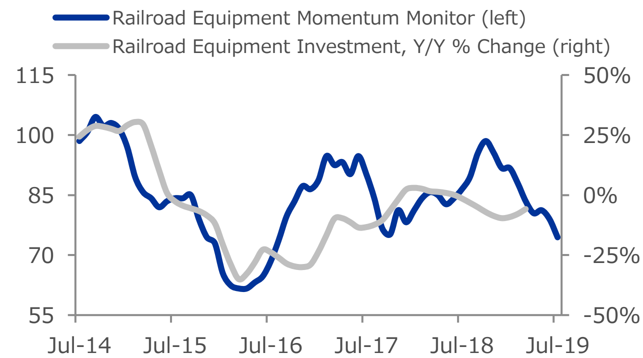

**Aircraft:** Investment in Aircraft declined 39% (annualized) in Q1 2019 and is down 8.0% on a year-over-year basis. The Aircraft Momentum Index held steady at 95.8 from June to July. Imports of Civilian Aircraft rose 12% in May, but the S&P 500 Volatility Index fell 19% in June, its eighth decline in the past year. Overall, the Index points to continued weak growth in aircraft investment over the next two quarters, despite this month's improvement.



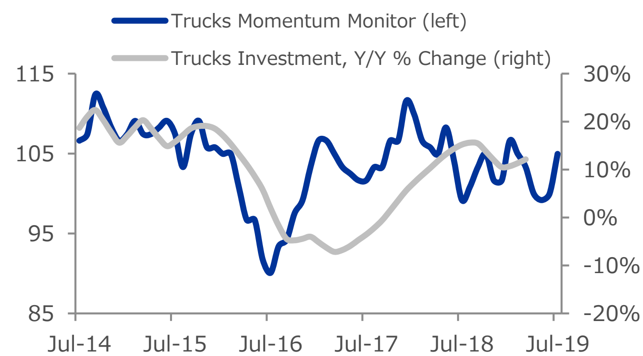

**Ships & Boats:** Investment in Ships & Boats increased at an annualized rate of 16% in Q1 2019 and rose 2.4% year-over-year. The Ships & Boats Momentum Index rose from 104.3 (revised) in June to 106.1 in July. In May, the Producer Price Index for Ship and Boat Building rose 0.3%, but Industrial Production of Ships and Boats fell 1.2%. Overall, the Index points to sluggish and potentially stalled growth in ships and boats investment over the next three to six months.



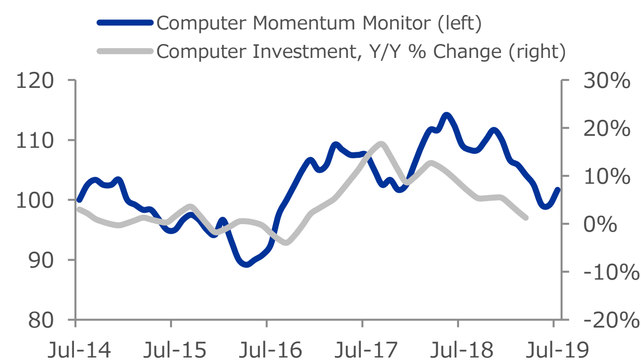
**Railroad Equipment:** Investment in Railroad Equipment increased at an 18% annualized rate in Q1 2019 but is down 5.8% year-over-year. The Railroad Equipment Momentum Index dropped from 78.9 (revised) in June to 74.4 in July, its lowest level since August 2016. Industrial Production for Railroad Rolling Stock decreased 1.5% in May, its steepest decline since September, and the ISM Manufacturing Supplier Deliveries Index dropped 1.3 points in June. Overall, the Index points to continued weakness in railroad equipment investment growth over the next three to six months.



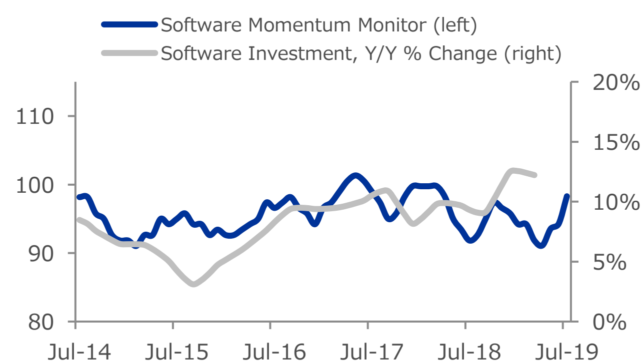

**Trucks:** Investment in Trucks surged at a 19% annualized rate in Q1 2019 and is up 12% from year-ago levels. The Trucks Momentum Index increased from 100.0 (revised) in June to 105.0 in July, its highest level since February. In May, Earnings for Freight Trucking increased 1.5%, their tenth improvement in the past year, and Coal Production rose 1.9%. Overall, the Index suggests continued moderate growth in trucks investment over the next three to six months.




**Computers:** Investment in Computers increased at an annualized rate of 9.6% in Q1 2019 and is up 1.3% year-over-year. The Computers Momentum Index improved from 99.2 (revised) in June to 101.7 in July, its first improvement in eight months. In May, Manufacturers' Inventories of Computers & Electronic Products decreased 0.6%, and Computer Export Prices fell 2.5%. Overall, the Index points to continued sluggish growth in computers investment over the next two quarters.




**Software:** Investment in Software surged at an 17% annualized rate in Q1 2019 and is up 12% year-over-year. The Software Momentum Index rose from 94.3 (revised) in June to 98.3 in July. In May, the Producer Price Index for Software Publishers rose 1.1%, and the ZEW Current Economic Situation Indicator improved 5.2%. Overall, the Index points to continued solid growth in software investment over the next two quarters.



## Equipment & Software Investment Annual Growth Forecast

Year-on-Year % Growth Rates

| Sector | 10-Year Historical Average | Last 4 Quarters | Next 4 Quarters |
|---|---|---|---|
| **Agricultural Machinery** | 1.7% | 11.5 | -2 to 6% |
| **Construction Machinery** | 6.3% | 5.2 | -2 to 5% |
| **Materials Handling Equipment** | 3.9% | 1.8 | -6 to 2% |
| **Other Industrial Equipment** | 3.2% | 2.3 | -6 to 2% |
| **Medical Equipment** | 5.6% | 5.1 | 2 to 7% |
| **Mining & Oilfield Equipment** | 1.2% | -8.2 | -4 to 5% |
| **Aircraft** | 6.8% | -8.0 | -2 to 5% |
| **Ships & Boats** | -0.2% | 2.4 | -2 to 5% |
| **Railroad Equipment** | 4.3% | -5.8 | -12 to -2% |
| **Trucks** | 24.9% | 12.1 | 2 to 8% |
| **Computers** | 5.0% | 1.3 | -3 to 4% |
| **Software** | 8.2% | 12.2 | 8 to 15% |

Source: Macrobond Financial, Keybridge (forecasts)

# U.S. Capital Investment and Credit Markets

Capital spending eased over the first half of 2019, and a deepening industrial sector slowdown and heightened trade uncertainty pose additional downside risk to business investment over the remainder of the year. Credit market conditions remain largely healthy and stable, although banks have continued to tighten some lending standards for consumers and credit demand has waned among both business and consumers. Further, although financial stress inched up, delinquencies and charge-offs remain well within historical norms.

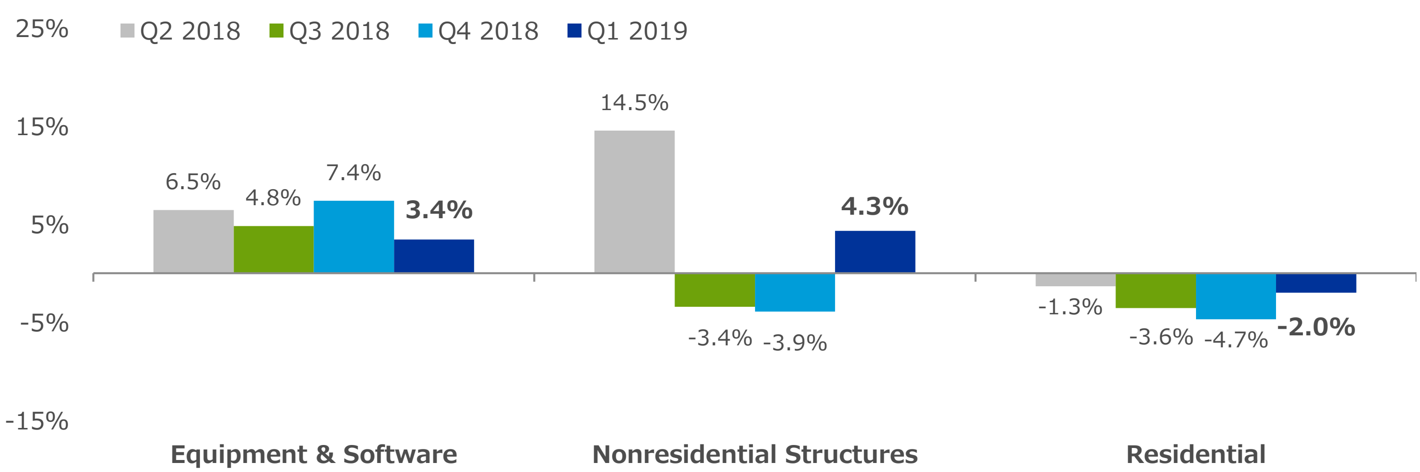
Given weaker-than-expected investment growth in the first quarter of 2019, our forecast for equipment and software investment growth has been revised downward to 3.9% in 2019, significantly slower than the 8.1% growth experienced last year. Following a pause in rate hikes, we expect the Federal Reserve to cut interest rates once before the end of the year (though multiple rate hikes is not out of the question if economic conditions worsen).

## Recent Trends in U.S. Capital Investment

Equipment and software investment growth decelerated to 3.4% (annualized) in the first quarter, down from 7.4% in Q4 2018. Investment in nonresidential structures rose 4.3% (annualized) following two consecutive quarters of contraction. Meanwhile, residential investment decreased 2.0% (annualized), its fifth consecutive quarterly decline.

## Investment Growth Rates

Quarter-on-Quarter, Seasonally Adjusted Annualized Rate




Source: Macrobond Financial

- **Equipment Leasing and Financing:** After a slow start to 2019, new business volume growth for the equipment finance industry has improved in recent months but remains soft. According to the ELFA Monthly Leasing and Finance Index ("MLFI-25"), the industry gained $9.1 billion in new business volume in May, up 18% compared to a year ago. Year to date, however, cumulative new business volume is flat compared to 2018. Portfolio performance has weakened slightly but remains healthy: 30-day delinquencies rose to 1.70% in May and are up ten basis points from a year ago, while average charge offs rose to 0.46%, an increase of 0.15 point from a year ago.

  After mostly steady growth thus far in 2019, the Foundation's Monthly Confidence Index for the Equipment Finance Industry ("MCI-EFI") fell more than 6 points to 52.8 in June, its lowest level since July 2016. Four out of five industry executives surveyed expect business conditions to stay the same over the next four months, while just 3% expect business conditions to improve (down from 16% in May). Of those surveyed, 40% of industry executives rate the current U.S. economy as "excellent" (down from 52% in May), while 57% rate the economy as fair and 3% as poor. Most (70%) expect economic conditions to stay the same over the next six months, while 27% believe conditions will worsen (up from 13% in May). Executives noted that uncertainty due to trade tensions and the U.S. political climate are potential impediments to growth.

- **Equipment Verticals**: Equipment and software investment growth slowed to 3.4% in the first quarter, the weakest pace since late 2016. Of the 12 equipment verticals tracked by the Foundation, seven experienced positive annualized growth and five posted double-digit gains, including Trucks (+19%), Railroad Equipment (+18%), Software (+17%), Ships and Boats (+16%), and Construction Machinery (+10%). Five verticals experienced declines in investment growth in the first quarter, with two experiencing double-digit declines: Aircraft (-39%) and Mining and Oilfield Machinery (-13%). Looking ahead, several investment verticals appear set to weaken over the next 3–6 months (particularly those in the manufacturing / industrial sector), though Software investment surged in Q1 and should remain strong in the near-term.

- **Other Factors:** According to most indicators, the industrial sector has softened over the first half of the year. Industrial production inched up 0.4% in May but remains negative on the year, while capacity utilization recovered slightly to 78.1% after consistently declining since November 2018. The ISM Purchasing Manager's Index PMI also indicates industrial sector weakness, falling to 51.7 (-14% Y/Y) in June to its lowest level since October 2016. Additionally, the U.S. trade deficit increased in May, climbing to $55.5 billion due to a slowing global economy and uncertainty surrounding trade with key global partners. However, there are some positive signs in the data: shipments of non-defense capital goods excluding aircraft (a leading indicator of same-quarter business activity) increased 0.6% in May after rising 0.4% (revised) in April, while new orders of core capital goods (a leading indicator of next-quarter business activity) rose 0.5% after falling 1.1% the previous month.

## Recent Trends in Credit Markets

U.S. credit markets remain healthy despite the late stage of the credit cycle. The supply of credit to businesses remained largely unchanged in Q1 compared to Q4 and tightened slightly for consumers, while credit demand continued to soften among both businesses and consumers. Financial stress inched up but remains near historic lows.

- **Credit Supply & Pricing:** Credit supply conditions remained largely unchanged for businesses in the first quarter of 2019. According to the April Fed Loan Officer Survey, standards for commercial real estate ("CRE") loans tightened slightly over the past three months, particularly for construction and land development loans. However, banks reported that standards for commercial and industrial ("C&I") loans remained essentially unchanged in the first quarter, and a significant net share of banks reported easing terms for C&I loans to large and mid-sized firms.

  The April Fed Loan Officer Survey reports that a moderate net share of banks tightened standards on credit card loans in the first quarter, while terms remained largely unchanged. Some banks reported tightening terms on auto loans, though standards for auto loans, residential real estate, and other consumer loans remained largely unchanged.

### Summary of Credit Conditions

| Factor | Conditions Compared With Last Quarter |
|---|---|
| Supply | Slight Decrease |
| Demand | Slight Decrease |
| Financial Stress | Slight Increase |

- **Credit Demand:** Business demand for credit declined over the past three months. According to the April Fed Loan Officer Survey, demand for C&I loans eased due to declining capital investment and reduced M&A financing. Likewise, demand for CRE loans continued to decline, particularly for construction and land development loans. Confidence in the construction industry softened but remains elevated by historical standards: the NAHB/Wells Fargo Housing Market Index declined 2.0 points to 64.0 in June and is down 5.9% from year-ago levels but remains solidly in expansionary territory. Meanwhile, private nonresidential construction spending has plateaued over the past three years.

  Measures of business confidence and activity were mixed. Both the NFIB Small Business Optimism Index and the PayNet Small Business Lending Index ("SBLI") suggest elevated confidence among smaller firms — indeed, the PayNet SBLI reached an all-time high in April. However, the Business Roundtable CEO Economic Outlook Survey declined 5.7 points from Q1 2019 to Q2, with the capital spending sub-index declining 2.9 points.

  Consumer demand for credit also eased in the second quarter, with banks reporting weaker demand for credit card and other consumer loans. One potential contributor to this decline is consumer optimism, which has eased recently: the Conference Board's Consumer Confidence Index fell 10 points in June to 121.5 (its sharpest monthly drop in almost four years) while the University of Michigan's Index of Consumer Sentiment fell to 98.2 after rising for much of the year. Another likely factor is lackluster growth in real disposable income during the first part of the year, although more recent data released in April and May are more encouraging.

- **Financial Stress:** Measures of financial stress have inched up over the first half of the year. For example, the Kansas City Fed Financial Stress Index ticked up from -0.45 in April to -0.42 in May, while the St. Louis Fed Financial Stress Index decreased slightly from -1.2 to -1.3. Meanwhile, loan delinquencies reached 1.14% in Q1, increasing for the first time since 2016, and lease delinquencies crept up to 1.17%, the highest levels observed since 2011. Among small businesses, the PayNet Small Business Delinquency Index (SBDI) 31–90 Days Past Due fell one basis point to 1.51% in May — hovering near multi-year highs — and is up nine basis points annually. Despite these increases, however, most measures of financial stress remain low by historical standards.

- **Other Factors:** After stabilizing near 2.5% in April, ten-year Treasury yields have steadily fallen and are in the 1.95-2.05% range in early July, their lowest levels in two and a half years. Yields on 30-year notes have also declined, dropping roughly 50 basis points from April levels, while short term interest rates have declined 20 basis points over the same time period. While parts of the yield curve remain inverted, the 10-year / 2-year spread — Keybridge's preferred spread for predicting a recession in the next 12–18 months — remains positive, rising to around 20 basis points as of early July.

## Update on Fed Policy

After raising rates in December, the Federal Open Market Committee adopted a wait-and-see approach for the first half of the year, and in June voted to hold interest rates steady at 2.25–2.50% despite evidence of a slowing economy. Nonetheless, Federal Reserve Chairman Jerome Powell voiced concerns over trade developments and softening global growth and acknowledged that the case for more accommodative monetary policy has increased — a statement most market-watchers believe signals at least one rate cut (and possibly multiple cuts) before the end of the year. While it remains unclear whether a rate cut is warranted given economic fundamentals, the Fed may ultimately cut rates to support financial market stability.

# Overview of the U.S. Economy

After surpassing most expectations with solid 3.1% growth in the first quarter of 2019 — the third quarter of 3%+ growth in the last year — the U.S. economy is now exhibiting broad-based signs of slowing. Several sectors of the economy that were growth drivers in 2017 and 2018 have noticeably weakened, including consumer spending and equipment investment (which contracted for the first time in three years). Indeed, final sales to private domestic purchasers — a measure of "core" economic activity by U.S. consumers and businesses that excludes government spending, inventories, and net exports — expanded at its weakest pace since late 2015.

Though we do not forecast a recession for 2019, the balance of headwinds and tailwinds has shifted to the downside. Ongoing trade conflicts have escalated (particularly with China), and the negative economic effects are increasingly rippling through the economy. The U.S. manufacturing sector has continued to decline in no small part due to the trade war, and there are signs that the downturn may deepen during the second half of the year. One bright spot for the U.S. economy is the oil sector, which has continued to set new production records despite significant price volatility. Meanwhile, the Federal Reserve has shown a willingness to cut rates in the coming months, a development that financial markets overwhelmingly expect. Despite these positive factors, however, there is much uncertainty in the economy, and most of the unknowns carry significant downside risk.

***Overall, we project the U.S. economy will grow 2.5% in 2019, above previously published estimate due to stronger-than-expected growth in the first quarter.***

## Recent Trends in the U.S. Economy

U.S. economic conditions have moderated in recent months. Though overall growth in the first quarter was stronger than expected, the drivers of that growth were several one-off factors that are unlikely to be maintained. These include a massive inventory buildup (likely in part due to the escalating trade war), a huge drop in imports (technically a positive for GDP accounting purposes, but also a sign of weakening domestic demand), and unusually strong government spending, particularly at the state and local level. The "core" economy that excludes these more volatile components is less sanguine, as both consumers and businesses pulled back in the first quarter. Indeed, real final sales to private domestic purchasers expanded at just 1.3% (annualized) in Q1, the weakest pace in six years. Meanwhile, residential investment contracted for the fifth consecutive quarter. A historically tight labor market and healthy wage growth may help consumer spending rebound after a slow start to the year, but on balance U.S. economic growth is slowing.

| Indicator | Recent Activity |
|---|---|
| Consumption | Consumer spending rose at an annualized rate of 0.9%, a muted growth rate. |
| Equipment & Software Investment | Equipment & software investment growth slowed to 3.4% (annualized). |
| Residential Investment | Residential investment fell 2.0% (annualized), the fifth straight quarterly decline. |
| Government Expenditures | Government spending grew 2.8% (annualized), an acceleration from Q4. |
| Net Exports | Net exports improved sharply in Q1, contributing 0.94 percentage point to growth as exports grew 5.4% and imports fell 1.9% (both annualized). |

- **GDP:** The U.S. economy expanded at an annualized rate of 3.1% in the first quarter, providing a solid jump-off point for the year. However, consumer spending growth slowed to just 0.9% in Q1, while business investment growth slowed to 4.4%. Equipment & software investment likewise eased (+3.4% annualized), and nonresidential structures investment rebounded (+4.3% annualized) after two consecutive quarters of contraction. Meanwhile, residential investment fell 2.0% (annualized) in Q1, the fifth consecutive quarterly decline. Net exports improved dramatically from Q4 — mainly due to a contraction in imports — and added 0.94 percentage point to GDP. Finally, government spending, which unexpectedly contracted in the fourth quarter, expanded 2.8% (annualized) in the first quarter, driven by defense and state/local spending.

- **Inflation:** Inflationary pressures remain muted. The headline consumer price index has held at or below 2% for the entirety of 2019 mainly due to lower oil prices, while core inflation (which excludes food and energy prices) has also eased and, at 2.0%, is at its lowest level in over a year.

  Despite a multidecade-low unemployment rate, the combination of flagging global growth, a strong dollar, lower oil prices, and a cooling U.S. economy suggest that inflation is unlikely to accelerate during the second half of the year.

- **Growth Forecasts:** The *Economist* Poll of Forecasters for June estimated a growth rate of 2.2% for 2019, while the *Wall Street Journal* consensus forecast also calls for 2.2% growth. These estimates are at the upper end of the Federal Reserve's June "central tendency" forecast of 2.0–2.2% growth for 2019.

## Economic Tailwinds

The U.S. oil sector has continued to set new production records despite recent price volatility, a reflection of changing fundamentals of domestic energy production. Meanwhile, the Federal Reserve is signaling a willingness to cut rates later this year, a development likely to help consumers and businesses alike.

- **Thriving oil sector:** U.S. crude oil production has reached all-time highs in recent weeks, surpassing 12 million barrels per day to make the United States the world's leading oil producer. Despite substantial price volatility (including two separate 25% price declines over the last six months), the break-even price for U.S. oil production continues to fall, allowing drillers to keep the pumps running. Indeed, the Dallas Federal Reserve Bank's Q1 Energy Survey found that some West Texas exploration & production firms now enjoy breakeven prices below $30/barrel for existing wells and under $50/barrel for new wells. These production records and cost efficiencies may encourage further investment in the oil sector this year, even if oil prices fall. While the Oil and Mining Machinery Momentum Monitor has shown little movement in recent months, its current position is near a five-year high, which is encouraging.

- **Dovish Federal Reserve:** At the end of May, the "implied probability" (based on futures markets) of the FOMC cutting rates at its July meeting was less than 20%. Just one month later, the market-implied probability of a July rate cut is now 100%. While financial market expectations do not perfectly foretell movements in the Fed funds rate, the FOMC has been reluctant to surprise financial markets with unexpected rate changes and appears to be testing market reactions to potential changes through speeches and policy statements. The cut(s) that markets expect this year would, all else equal, help ease some of the financial stress on consumers and businesses, especially those who face variable interest rates on their borrowing (e.g., credit card debt). At the same time, a 25- or 50-point reduction in the federal funds rate, on its own, is unlikely to trigger a wholesale shift in consumer spending or business expenditures.

## Economic Headwinds

Over the course of the second quarter, the United States ratcheted up its trade war with China, threatened across-the-board tariffs on Mexico, and explored the possibility of imposing tariffs on European automobiles. Together, these actions have weakened business confidence, driven international firms to realign supply chains, and slowed overall world trade flows. Meanwhile, the U.S. manufacturing sector has clearly weakened — and its condition may worsen further during the second half of the year unless trade tensions ease.

- **Trade tensions:** Over the last few months, tensions between the United States and top trading partners — including China, Mexico, the European Union, and Japan — have escalated. The Trump Administration is attempting to use the United States' economic leverage to negotiate trade deals that are more favorable to domestic workers (particularly in the manufacturing sector), but these disputes have increased uncertainty and dampened business confidence, investment, and trade flows. As previously noted, the Business Roundtable CEO Economic Outlook Index declined for a fifth consecutive quarter in Q2, with CEOs of corporate giants like IBM, JPMorgan, and Cummins publicly pointing to trade relations as a key reason for declining confidence. Similarly, over 600 U.S. companies signed a letter to the White House in June describing the harmful impact of tariffs on their businesses.

  As the consequences of trade tensions become more acute, three disputes merit attention:

  - The trade war between the United States and China has escalated. Negotiations broke down in May, after which the United States raised tariffs to 25% on $200 billion of Chinese imports and announced plans to establish an additional 25% tariff on an additional $300 billion of imported Chinese goods. While China predictably retaliated with tariffs on $60 billion of US imports, of greater concern is that tensions have now escalated beyond tariffs. For example, the United States issued a national security order effectively blacklisting Chinese telecoms giant Huawei, while China threatened to place companies undermining its commercial interests on an "unreliable entities" list and hinted that it could cut off crucial exports of rare earths. In late June, the two countries agreed to resume negotiations and American companies have been allowed to resume shipments to Huawei, but whether these talks will lead to a long-term reduction in trade friction is highly uncertain.
  - While Mexico and Canada are on-board with the new USMCA agreement, its ratification faces significant uncertainty in the United States, particularly in the Democrat-controlled House of Representatives. It remains to be seen whether Congress and the Administration will be able to forge an agreement necessary to approve the deal before the approaching U.S. presidential election effectively closes the window for a vote until 2021.
  - Uncertainty also remains around the Administration's decision to impose tariffs of up to 25% on imported vehicles and parts from the European Union, Japan, and other countries. In May, the President delayed these tariffs for six months in favor of negotiations, but the progress and ultimate outcome of these talks remains to be seen.

- **Worsening U.S. manufacturing performance:** U.S. manufacturing-sector output declined further in the second quarter and is barely above its year-ago level. The combined effects of waning global demand, a strong dollar, and escalating trade wars continue to weigh heavily on key manufacturing sector indicators, including:

  - The ISM Manufacturing PMI, which is at its lowest since October 2016;
  - Shipments of durable goods, which have seen growth fall to just 2.4% Y/Y, nearly the slowest since 2017;
  - New orders of durable goods, which plunged -2.8% in May, the largest annual contraction since July 2016;

- Manufacturing capacity utilization, which has declined in five out of the last six months;
- Job gains in manufacturing, which have slowed to just 8k/month this year after expanding 22k/month last year;
- Average weekly hours for production & nonsupervisory workers in the manufacturing sector, which are at their lowest level since 2014;
- The American Chemistry Council's Chemical Activity Barometer (a leading indicator of industrial production), which in June fell on an annual basis for the first time since February.

These indicators suggest that manufacturing output will remain subdued and may decline further in the second half of the year if trade tensions worsen. As such, we expect relatively muted growth in equipment investment over the remainder of the year, with the potential for a significant decline if several downside risk factors materialize.

## Additional Factors to Watch

The outlook for the rest of 2019 is largely dependent on how several key uncertainties take shape, including: Will Beijing's stimulus efforts succeed in propping up China's economy? Will the divergence between small- and big-business confidence evaporate due to a decline in small business confidence? And will slowing disposable income growth and lower consumer confidence lead to a spending pullback later this year?

- **China stimulus success?** The Chinese economy is expected to grow at its slowest rate in a quarter-century this year. Industrial output growth has slowed to its weakest level since 2002, fixed asset investment growth fell to its lowest rate on record, and Chinese imports have plunged in recent months (a sign of softening domestic demand). Compounding the effects of this slowdown is the bruising, ongoing trade war with the United States that escalated in the second quarter and may result in additional tariffs on all U.S.-bound Chinese exports.

  In response, Beijing has ramped up its stimulus efforts. Total social financing from new bank loans increased nearly 20% Y/Y over the March–May period, the fastest growth since 2010. Meanwhile, Beijing has directed local governments to increase bond issuance to fund public works projects in an effort to shore up the economy. The effect of these actions should be closely monitored, not only because they carry potentially significant macroeconomic ramifications for the rest of the world, but also for what they signal regarding the state of China's financial sector.

  China's financial fragility has been well-documented, but until recently most market-watchers assumed that the Peoples' Bank of China (PBOC; China's central bank) would not allow massive losses in the event of insolvency. However, the recent bankruptcy and subsequent takeover of a small bank in northern China saw the PBOC announce — much to investors' dismay — that not all the bank's liabilities would be guaranteed. Coupled with the recent explosion in interbank lending and rising interest rates, the possibility that the PBOC may be unwilling or unable to prop up the Chinese financial system in the event of systemic distress makes the success of Beijing's stimulus efforts even more critical to China's economy.

- **Diverging small and big business outlooks?** While the last two years have been characterized by booming business confidence in the wake of tax reform and other factors, there has been a clear cooling of confidence among large companies in recent months, while smaller firms remain historically upbeat. For example:
  - The Business Roundtable CEO Economic Outlook Index decreased 5.7 points in the second quarter — reflecting lower expectations for sales, hiring, and capital spending — and has fallen for five consecutive quarters since peaking after the passage of tax reform last year. Similarly, 97% of CFOs participating in Deloitte's first quarter "CFO Signals" survey

reported expectations for an economic downturn by 2020 (though most expect it to be mild), and optimism about their own companies' prospects dipped in the second quarter to the second-lowest reading since 2016.

- The NFIB Small Business Optimism Index and the Wells Fargo/Gallup Small Business Index, on the other hand, remain historically elevated, fueled by the anticipation of improving real sales and business conditions. The small business sector's bright outlook is also reflected in the PayNet Small Business Lending Index (SBLI), which is hovering near all-time highs.

The divergence in confidence is likely due, at least in part, to bigger firms' greater exposure to the slowing global economy and rising trade tensions. While small firms are not immune to global pressures and can be harmed by tariffs via higher input prices, their impact may not be as immediate or severe given that small firms are, relative to large firms, more insulated from the global economy. Compared to larger firms, small firms also depend more heavily on domestic consumers, whose behavior and outlook had been a bright spot in the US economy and a cause for business optimism (last month notwithstanding). If consumer confidence continues to decline, it could trigger a decline in small business confidence as well.

- **Potential for consumer slowdown?** Consumers account for around two-thirds of U.S. economic activity, so a spending slowdown (or surge) can have an outsize impact on overall growth. Although consumer spending was healthy for most of 2018 and provided a solid foundation for economic growth, recent indications of consumer financial health have been mixed.
  - On the positive side, the unemployment rate remains near a 50-year low and there are 1.6 million more job openings than unemployed persons. This tight labor market has resulted in ten straight months of nominal annual wage growth of at least 3%, the strongest growth in a decade. At the same time, inflation continues to run below 2% — meaning that consumers are seeing significant "real" (inflation-adjusted) wage gains — which is likely to lead to increased spending. Indeed, real spending increased at a solid pace in May, pointing to healthy consumer spending growth in Q2. Similarly, retail sales have rebounded from early-year weakness and are up more than 4% year-to-date.
  - However, several recent developments suggest that consumer spending could weaken later this year. For example, the Conference Board's Consumer Confidence Index plunged in June to its lowest level since before the passage of tax reform (though it remains to be seen if lower confidence will translate to slower spending), and real disposable income is barely above its December 2018 level. Moreover, consumer financial health has begun to deteriorate in certain areas: serious delinquencies for auto loans rose to a seven-year high of 4.69% in the first quarter, while the share of lenders tightening standards for credit cards jumped to its highest since 2009 in the first quarter.

Though the consumer sector is not yet "flashing red," there are reasons to be concerned that spending may slow in the second half of the year. If spending slows but does not contract, the U.S. economy should continue to expand, though at a slower pace than 2018. However, if consumers pull back sharply and spending contracts, a broad economic downturn is more likely.

## Projections for Key Economic Indicators

| Indicator | 2017 | 2018 | 2019 Quarterly Estimates | | | | 2019e |
|---|---|---|---|---|---|---|---|
| | | | Q1 | Q2e | Q3e | Q4e | |
| **Real GDP (SAAR %)** | 2.2% | 2.9% | 3.1% | 1.6% | 1.6% | 1.5% | 2.5% |
| **Real Investment in Equipment & Software (SAAR %)** | 6.9% | 8.1% | 3.4% | 2.0% | 1.7% | 1.5% | 3.9% |
| **Inflation (year-on-year %)** | 2.1% | 2.4% | 1.6% | 1.7% | 1.7% | 1.8% | 1.7% |
| **Federal Funds Target Rate (upper bound, end of period)** | 1.50% | 2.50% | 2.50% | 2.5% | 2.25% | 2.25% | 2.25% |
| **10-year Treasury Rate (end of period)** | 2.40% | 2.70% | 2.40% | 2.00% | 2.00% | 2.00% | 2.00% |
| **Total Payroll Growth (in thousands)** | +2,153 | +2,679 | +541 | 512 | 450 | 425 | 1908 |

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.

# QUARTERLY DATA

| Indicator | 2017 | | | | 2018 | | | | 2019 |
|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 |
| **Real Gross Domestic Product (SAAR %)** | | | | | | | | | |
| GDP | 1.8% | 3.0% | 2.8% | 2.3% | 2.2% | 4.2% | 3.4% | 2.2% | 3.1% |
| Consumer Spending | 1.8% | 2.9% | 2.2% | 3.9% | 0.5% | 3.8% | 3.5% | 2.5% | 0.9% |
| Gross Private Fixed Investment | 4.9% | 5.7% | 8.8% | 0.8% | 9.6% | -0.5% | 15.2% | 3.7% | 6.0% |
| Inv: Equipment & Software | 9.7% | 10.5% | 10.1% | 6.7% | 10.9% | 6.5% | 4.8% | 7.4% | 3.4% |
| Inv: Agricultural Machinery | 0.6% | 24.6% | 24.5% | 34.1% | 1.2% | 32.9% | -5.9% | 26.9% | -2.8% |
| Inv: Construction Machinery | 18.3% | 16.8% | 10.3% | 18.8% | 20.5% | 7.3% | 4.7% | -0.9% | 10.0% |
| Inv: Materials Handling Equipment | 7.5% | 8.4% | 3.7% | 6.1% | 9.5% | 1.0% | 7.2% | 0.6% | -1.4% |
| Inv: All Other Industrial Equipment | 5.0% | 16.5% | 8.9% | 4.7% | 5.3% | -5.4% | 10.8% | 8.3% | -3.6% |
| Inv: Medical Equipment | 12.8% | 8.1% | 14.8% | 15.4% | 5.1% | 6.2% | 11.4% | 2.4% | 0.7% |
| Inv: Mining & Oilfield Machinery | 104.4% | 39.4% | 37.1% | 3.5% | -35.7% | 24.1% | -22.5% | -15.5% | -12.7% |
| Inv: Aircraft | 71.6% | -8.1% | 46.5% | -39.6% | 76.9% | -8.8% | -19.0% | 58.9% | -39.1% |
| Inv: Ships & Boats | 10.6% | -1.9% | 7.9% | 18.9% | -20.1% | -33.7% | 51.7% | -5.9% | 16.2% |
| Inv: Railroad Equipment | 3.0% | -18.2% | 3.4% | 25.7% | 0.1% | -22.9% | -16.4% | 3.4% | 18.1% |
| Inv: Trucks | -5.9% | -1.2% | 5.3% | 27.0% | 11.9% | 14.1% | 9.4% | 6.7% | 18.7% |
| Inv: Computers | 11.5% | 29.4% | 14.1% | -15.3% | 28.7% | 15.6% | -2.3% | -15.1% | 9.6% |
| Inv: Software | 11.7% | 13.1% | 11.3% | -2.6% | 18.6% | 12.5% | 9.1% | 9.9% | 17.5% |
| **Credit Conditions** | | | | | | | | | |
| Nonfinancial Sector Debt (% of SAAR GDP) | 71.7% | 72.2% | 72.4% | 72.7% | 72.7% | 73.6% | 73.5% | 73.4% | 74.0% |
| Loan Delinquency Rate | 1.5% | 1.3% | 1.3% | 1.2% | 1.1% | 1.1% | 1.0% | 1.0% | 1.1% |
| Lease Delinquency Rate | 1.0% | 1.0% | 1.0% | 1.0% | 0.9% | 1.0% | 1.0% | 1.0% | 1.2% |
| Net Tightening of C&I Loan Standards | 1.4% | -2.8% | -3.9% | -8.5% | -10.0% | -11.3% | -15.9% | -15.9% | 2.8% |

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.

# MONTHLY DATA

| Indicator | 2018 | | | | | | | 2019 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| **Employment** | | | | | | | | | | | | | |
| Change in Total Payrolls (thousands) | 262 | 178 | 282 | 108 | 277 | 196 | 227 | 312 | 56 | 153 | 224 | 75 | 224 |
| Change in Private Payrolls (thousands) | 236 | 173 | 246 | 108 | 285 | 200 | 224 | 297 | 46 | 153 | 205 | 90 | 191 |
| Unemployment Rate | 4.0% | 3.9% | 3.8% | 3.7% | 3.8% | 3.7% | 3.9% | 4.0% | 3.8% | 3.8% | 3.6% | 3.6% | 3.7% |
| **Business Activity** | | | | | | | | | | | | | |
| Industrial Production | 108.2 | 108.7 | 109.5 | 109.7 | 109.9 | 110.5 | 110.6 | 110.1 | 109.5 | 109.6 | 109.2 | 109.6 | - |
| Capacity Utilization | 78.6% | 78.8% | 79.3% | 79.3% | 79.3% | 79.6% | 79.5% | 79.0% | 78.4% | 78.4% | 77.9% | 78.1% | - |
| PMI Composite Index | 60.0 | 58.4 | 60.8 | 59.5 | 57.5 | 58.8 | 54.3 | 56.6 | 54.2 | 55.3 | 52.8 | 52.1 | 51.7 |
| NFIB Small Business Optimism Index | 107.2 | 107.9 | 108.8 | 107.9 | 107.4 | 104.8 | 104.4 | 101.2 | 101.7 | 101.8 | 103.5 | 105.0 | - |
| **Consumer Activity** | | | | | | | | | | | | | |
| Consumer Confidence | 127.1 | 127.9 | 134.7 | 135.3 | 137.9 | 136.4 | 126.6 | 121.7 | 131.4 | 124.2 | 129.2 | 131.3 | 121.5 |
| Personal Consumption (M/M % Chg) | 0.3% | 0.3% | 0.3% | 0.0% | 0.4% | 0.4% | -0.6% | 0.4% | -0.1% | 0.9% | 0.0% | - | - |
| Retail Sales (M/M % Chg) | 0.0% | 0.7% | -0.1% | -0.3% | 1.2% | -0.1% | -2.0% | 1.5% | -0.5% | 1.8% | 0.3% | 0.8% | - |
| **Lending Activity** | | | | | | | | | | | | | |
| C&I Loans (M/M % Chg) | 0.9% | 0.7% | 0.1% | 0.3% | 0.7% | 1.2% | 1.4% | 0.8% | 0.4% | 0.7% | -0.1% | 0.0% | - |
| MLFI-25 New Business Volume (Bil.$) | 9.10 | 8.20 | 8.90 | 8.50 | 8.90 | 8.00 | 12.70 | 7.20 | 5.90 | 8.20 | 8.80 | 9.10 | - |
| MLFI-25 Avg Losses as a % of Net Rec. | 0.33% | 0.31% | 0.29% | 0.40% | 0.37% | 0.37% | 0.55% | 0.35% | 0.35% | 0.37% | 0.32% | 0.46% | - |
| MLFI-25 Credit Approval Ratio | 75.8% | 76.2% | 76.4% | 75.7% | 76.5% | 77.2% | 77.9% | 76.1% | 76.0% | 75.3% | 76.8% | 75.9% | - |
| **Interest Rates (% avg of period)** | | | | | | | | | | | | | |
| Fed Funds Target Rate (Lower Bound) | 1.75% | 1.75% | 1.75% | 2.00% | 2.00% | 2.00% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% |
| 1-Year Treasury Rate | 2.33% | 2.39% | 2.45% | 2.56% | 2.65% | 2.70% | 2.66% | 2.58% | 2.55% | 2.49% | 2.42% | 2.34% | 2.00% |
| 3-Year Treasury Rate | 2.65% | 2.70% | 2.71% | 2.84% | 2.94% | 2.91% | 2.67% | 2.52% | 2.48% | 2.37% | 2.31% | 2.16% | 1.78% |
| 10-Year Treasury Rate | 2.91% | 2.89% | 2.89% | 3.00% | 3.15% | 3.12% | 2.83% | 2.71% | 2.68% | 2.57% | 2.53% | 2.40% | 2.07% |
| 30-Year Treasury Rate | 3.05% | 3.01% | 3.04% | 3.15% | 3.34% | 3.36% | 3.10% | 3.04% | 3.02% | 2.98% | 2.94% | 2.82% | 2.57% |
| AAA Corporate Bond Yield | 3.96% | 3.87% | 3.89% | 3.98% | 4.14% | 4.22% | 4.02% | 3.93% | 3.79% | 3.77% | 3.70% | 3.67% | 3.42% |
| BAA Corporate Bond Yield | 4.84% | 4.79% | 4.77% | 4.88% | 5.07% | 5.22% | 5.13% | 5.12% | 4.95% | 4.84% | 4.70% | 4.63% | 4.46% |
| **Prices** | | | | | | | | | | | | | |
| Headline Inflation (Y/Y % Chg) | 2.9% | 2.9% | 2.7% | 2.3% | 2.5% | 2.2% | 1.9% | 1.6% | 1.5% | 1.9% | 2.0% | 1.8% | - |
| Core Inflation (Y/Y % Chg) | 2.3% | 2.4% | 2.2% | 2.2% | 2.1% | 2.2% | 2.2% | 2.2% | 2.1% | 2.0% | 2.1% | 2.0% | - |
| Oil Price (West Texas Int., $/barrel) | 74.13 | 69.88 | 69.84 | 73.16 | 65.31 | 50.78 | 45.15 | 53.84 | 57.21 | 60.19 | 63.83 | 53.49 | 58.20 |

## ABOUT THE OUTLOOK

The Equipment Leasing & Finance Foundation (the Foundation) recognizes that with the wide variety and increasing complexity of economic data available to the public, the best way to utilize key equipment investment data is to have it all in one place, where business leaders can access it easily and quickly, thus assisting them in making the best business decisions.

The Foundation partnered with Keybridge LLC to produce this economic outlook, highlighting key trends in equipment investment and placing them in the context of the broader U.S. economic climate. The outlook report also includes an analysis of domestic capital spending as well as an evaluation of how capital spending is affected by various related and exogenous factors, both currently and in the foreseeable future. Additionally, the outlook includes custom leading indicators for 12 equipment and software verticals. The Foundation-Keybridge U.S. Equipment & Software Investment Momentum Monitor, described below, is published monthly.

This Q3 report is the second update to the 2019 Annual Outlook, and one more quarterly update will follow in October. This research was guided by a steering committee of dedicated industry volunteers who gave their time and expertise by providing comments and suggestions throughout the development of the report.

## 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 3-6 month lead time.

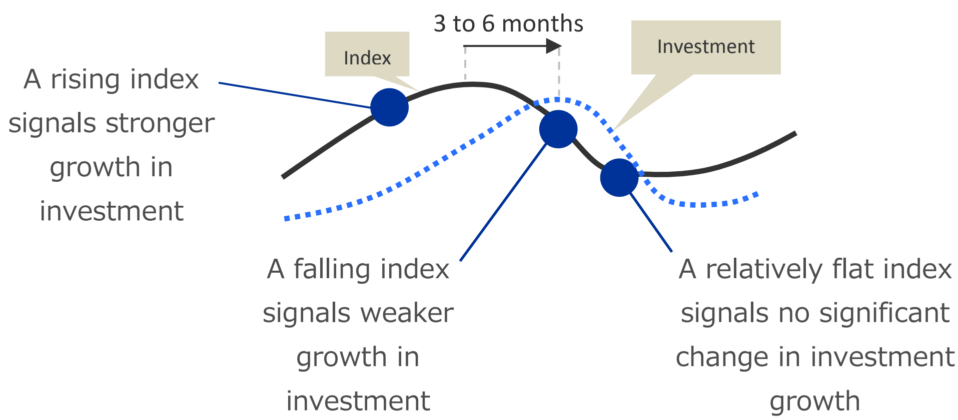
The Momentum Monitor is based on Keybridge's extensive research which shows that not all movements in economic data are reliable signals of future economic trends. Keybridge has operationalized its research by constructing indices, each comprised of 15–20 high-frequency indicators. These indicators undergo 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

Each Momentum Monitor index provides a signal of the direction and magnitude of growth in equipment investment over the next 3 to 6 months. It is important to note that index values do not correspond to particular growth rates. Instead, the Momentum Monitor indices should be interpreted within the context of prior index readings and investment growth rates. For example, there are several simple rules to follow when examining the latest index values:

1. A rising index signals that growth in investment will accelerate from the current rate;
2. A falling index signals that growth in investment will decelerate from the current rate; and
3. No change in the index signals no meaningful change from the current growth rate.

**Momentum Monitor Signals**




To help the reader interpret the latest Momentum Monitor signals, a summary report for each equipment vertical follows a specific outline:

**Materials Handling Equipment:**
1 Investment in Materials Handling Machinery inched up at a 0.3% annualized rate in Q4 2014 and is up 7.3% year-over-year. 2 The Materials Handling Momentum Index slipped from 93.5 in February to 92.5 in March. 3 A 23% decline in the MNI-Chicago Business Barometer and a spike in Economic Policy Uncertainty offset gains in Machinery Sales, Manufacturing Sales, and the ISM Manufacturing Suppliers Deliveries Index. 4 The Index's recent trend continues to indicate that growth may moderate over the next three to six months.

1 The first sentence reports the latest growth rate for investment in a given vertical. This provides a context for interpreting the order of magnitude of growth over the next 3 to 6 months.

2 The second sentence explains the latest movement in the index, indicating whether momentum is accelerating or decelerating.

3 The report then describes the specific indicators driving the latest index value. This allows readers to understand the key drivers of the outlook.

4 Finally, the report ends with an interpretation of where investment growth is heading over the next 3 to 6 months.

# ABOUT KEYBRIDGE

Keybridge is a public policy economics consulting firm. Keybridge provides analytical support and strategic advice to a select clientele that includes Fortune 500 companies, global financial firms, G-7 governments, premier industry associations, and non-profit organizations. Keybridge's experience and expertise make it uniquely suited to assist organizations that frequently operate at the interface of business, economics, and public policy.

Founded in 2001, Keybridge's mission is to provide balanced, credible, and timely technical analysis and strategic insights that inform business decisions and drive public policy debates. Our dedication to the principles of sound analysis, clear communication, and unmatched client service guide our work and serve as the foundation of our success.

Keybridge's senior staff is comprised of experts with distinguished academic credentials and extensive experience in the areas of economics and public policy. On a day-to-day basis, Keybridge principals work closely with clients to develop strategy and conduct timely analysis. For longer-term projects and highly specialized topics, the firm leverages its network of advisers — including world-class experts in the fields of econometrics, energy, and finance — to build project teams tailored to clients' unique needs.

Keybridge provides clients with access to a full suite of analytical services, including macroeconomic risk assessments, econometric modeling studies, policy impact studies, qualitative policy evaluations, and survey design and analysis. For clients requiring regular consultations, Keybridge offers on-going strategic advisory services in the areas of macroeconomic trends and risks, international trade and finance, and energy and environmental economics. Keybridge also assembles and manages inter-disciplinary teams of experts to conduct thought leadership projects to assist clients with building competitive advantages or reforming policy debates through the development, sharing, and application of innovative ideas. Keybridge's principals are regularly asked to present research and share insights with economic, financial, and policy audiences around the world, including corporate strategic planning committees, congressional committees, and international conferences.

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