Q4 Update — October

2017 Equipment Leasing & Finance U.S. Economic Outlook

EQUIPMENT LEASING & FINANCE
FOUNDATION
Your Eye on the Future

TABLE OF CONTENTS

Summary **1**

Equipment & Software Investment Outlook **2**

Foundation-Keybridge U.S. Equipment & Software Investment Momentum Monitor 2

Equipment & Software Investment Annual Growth Forecast 6

U.S. Capital Investment and Credit Markets **7**

Recent Trends in Capital Investment 7

Recent Trends in Credit Markets 8

Update on Fed Policy 10

Overview of the U.S. Economy **11**

Recent Trends in the U.S. Economy 11

Economic Tailwinds 12

Economic Headwinds 13

Additional Factors to Watch 13

Projections for Key Economic Indicators 15

Appendix **16**

Quarterly Data 16

Monthly Data 17

About the Outlook 18

About the Momentum Monitor 18

How to Read the Momentum Monitor 19

About Keybridge 20

SUMMARY

Equipment & Software Investment Outlook: Equipment and software investment has grown at a solid pace in 2017, driven by the combination of elevated business confidence, a recovering oil sector, and the release of pent-up investment following last year's poor performance. A strong labor market and improved global growth prospects should boost economic growth through the rest of the year, though a soft housing market and geopolitical tensions are significant headwinds to monitor. Several sources of uncertainty (including federal policy debates on taxes and trade, wage growth, and the hurricane aftermath) create outstanding risks and opportunities for the industry.

- Agriculture Machinery investment growth may improve modestly over the next two quarters.
- Construction Machinery investment growth is likely to decelerate over the next three to six months.
- Materials Handling Equipment investment is expected to strengthen over the next three to six months.
- All Other Industrial Equipment investment should continue to improve over the next three to six months.
- Medical Equipment investment growth is likely to continue to slow down over the next three to six months.
- Mining & Oilfield Machinery investment growth will continue to rebound over the next two quarters, though growth rates may peak soon.
- Aircraft investment growth may decelerate over the next three to six months.
- Ships & Boats investment growth is likely to strengthen over the next three to six months.
- Railroad Equipment investment growth should improve over the next three to six months, though recent negative movement is notable and should be monitored.
- Trucks investment growth is expected to rebound over the next two quarters.
- Computers investment growth should remain solid over the next two quarters.
- Software investment growth should remain steady over the next three to six months.

U.S. Capital Investment & Credit Markets: U.S. credit conditions remain decent, with virtually no change in supply from last quarter and a moderate weakening in credit demand for both consumers and businesses. The Federal Reserve signaled its intention to reduce its balance sheet and continue to tighten credit conditions over the next several months. However, gradual increases to interest rates is not expected to crimp capital spending growth.

Overview of the U.S. Economy: The U.S. economy remains reasonably solid, despite a weak first quarter and an expected hit to third quarter growth caused by Hurricanes Harvey and Irma. Labor markets are strong, consumer spending continues to grow at a healthy pace, and business investment has rebounded from its dismal performance last year. However, residential investment has disappointed (particularly in the second quarter), while reduced government spending will detract somewhat from U.S. growth prospects. Overall, the economy should grow at a moderately strong pace for the remainder of 2017.

Bottom Line for the Equipment Finance Sector: After solid growth in Q1 and Q2, equipment and software investment will improve significantly on its weak 2016 performance. While elevated business confidence suggests that investment should remain solid in the months ahead, several uncertainties relating to tax policy and trade policy, along with heightened geopolitical tensions, create a mix of opportunities and risks that complicate the generally healthy picture. Overall, we expect the economy to grow 2.3% in 2017 (revised down from 2.4% in our Q3 outlook), while equipment and software investment is projected to expand 4.3% (up from 3.6% in the Q3 outlook).

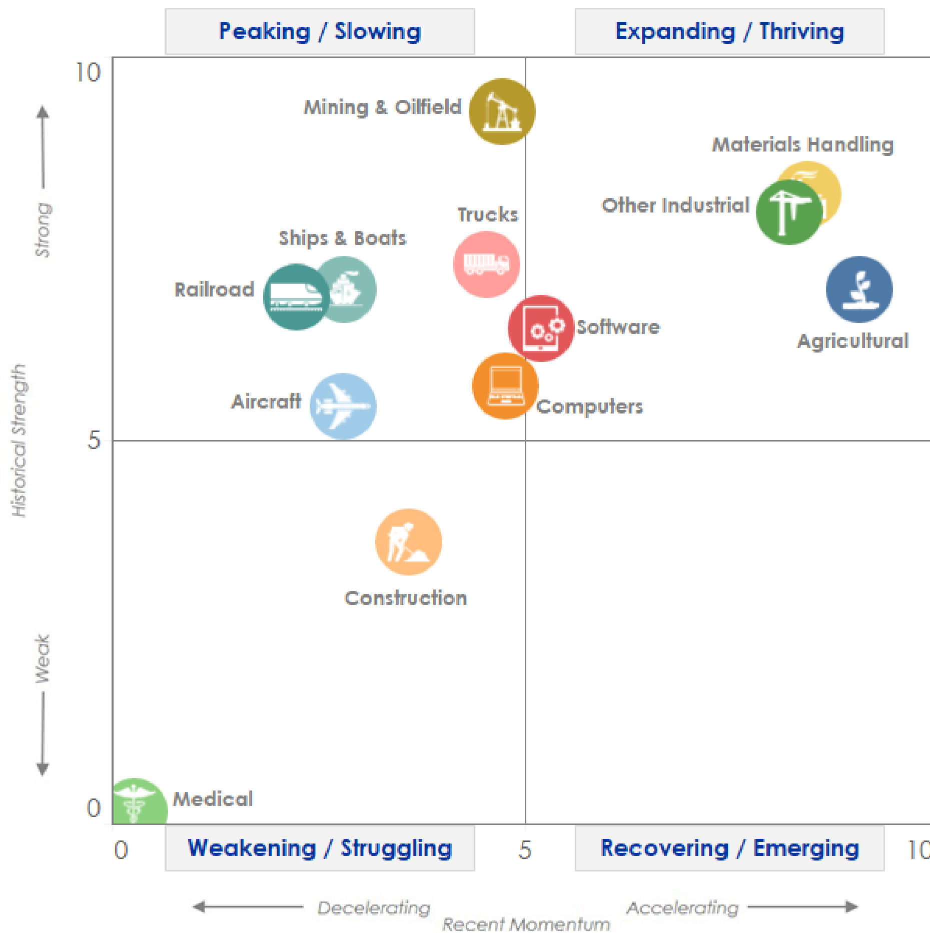
EQUIPMENT & SOFTWARE INVESTMENT OUTLOOK

We expect equipment and software investment to grow by 4.3% in 2017. The investment outlook for most equipment verticals has been solid over the course of 2017, particularly for industrial and energy-reliant sectors. Momentum readings are above the long-term historical average in 10 of 12 verticals; however, recent momentum accelerated in just 4 of 12 verticals, indicating that growth for several verticals may be peaking in the near future.

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

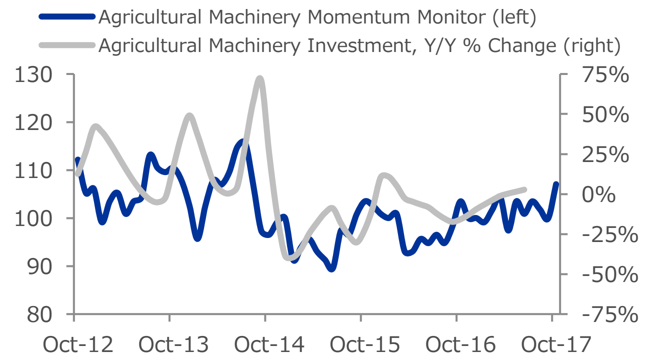


The matrix above summarizes the current values of each of the 12 Equipment & Software Investment Momentum Indices based on two factors: Recent Momentum (x-axis) and Historical Strength (y-axis):

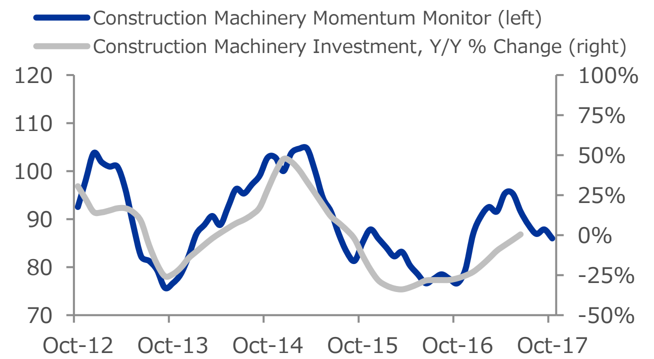
- "Recent Momentum" indicates a vertical's recent acceleration or deceleration in the past month relative to its average movement during the previous 3 months. Ratings closer to "0" indicate rapid deceleration, while ratings near "10" represent rapid acceleration.
- "Historical Strength" reflects a vertical's 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 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 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.

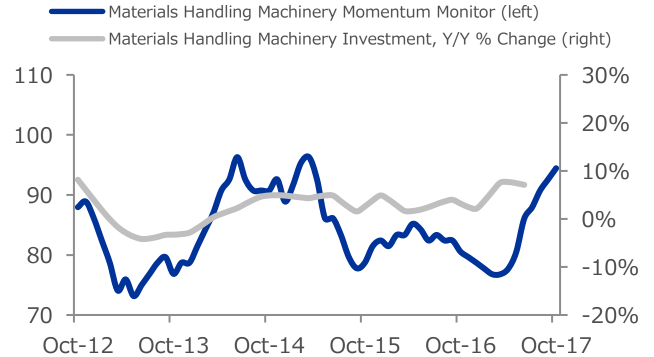
Agricultural Machinery Investment in Agricultural Machinery expanded at an annual rate of 19% in Q2 2017 and is up 2.7% from one year ago. The Agriculture Machinery Momentum Index jumped from 99.9 (revised) in September to 107.1 in October, its strongest reading in over three years. Poultry Production rose 12.5% in August, while Pork Production surged 18.5%, its greatest one-month increase since October 2007. Overall, the Index's recent movement indicates the potential for a modest strengthening in agricultural machinery investment growth over the next three to six months.



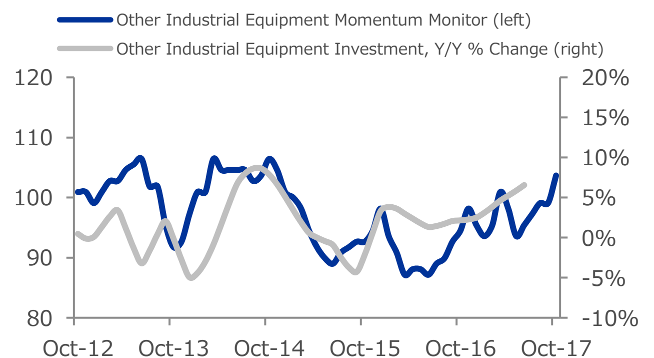
Construction Machinery: Investment in Construction Machinery surged at a 27% annual rate in Q2 2017 (its strongest increase in three years) and is now up 0.5%, its first year-over-year expansion since Q2 2015. The Construction Momentum Index declined from 87.9 (revised) in September to 86.0 in October. Construction Machinery Shipments rose 2.4% in July, but For-Sale Housing Stock jumped 21.3% in August. Overall, the Index points to a likely deceleration in construction machinery investment growth over the next three to six months.



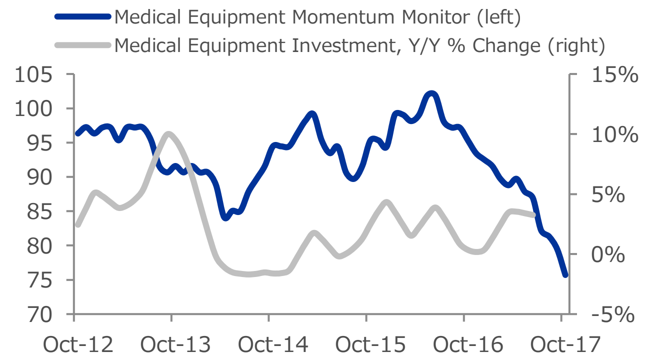
Materials Handling Equipment: Investment in Materials Handling Equipment rose by a 7.3% annual rate in Q2 2017, and is up 7.1% year-over-year. The Materials Handling Momentum Index increased from 92.6 (revised) in September to 94.4 in October. Machinery Inventory Prices rose 1.9% in July, but were somewhat offset by a 0.2% increase in Materials Handling Import Prices in August. Overall, the Index points to strengthening investment growth in materials handling equipment over the next two quarters.



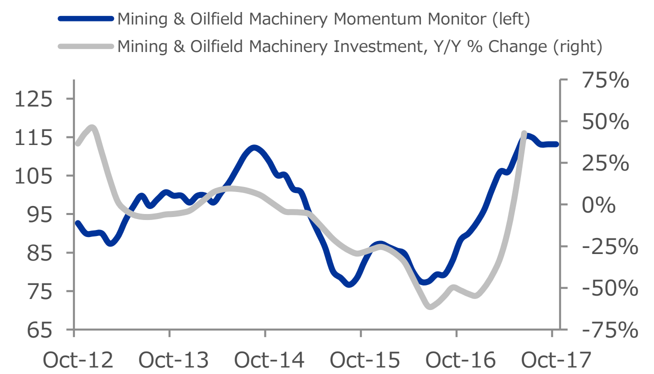
Other Industrial Equipment: Investment in All Other Industrial Equipment increased by a 14% annual rate in Q2 2017 and is up 6.5% from a year ago. The Other Industrial Equipment Momentum Index improved from 99.1 (revised) in September to 103.7 in October, its strongest reading since November 2014. Manufacturing Employment and Durable Goods Inventories both increased 0.3% in August. Overall, the Index's recent movement points to continued improvement in other industrial equipment investment over the next three to six months.



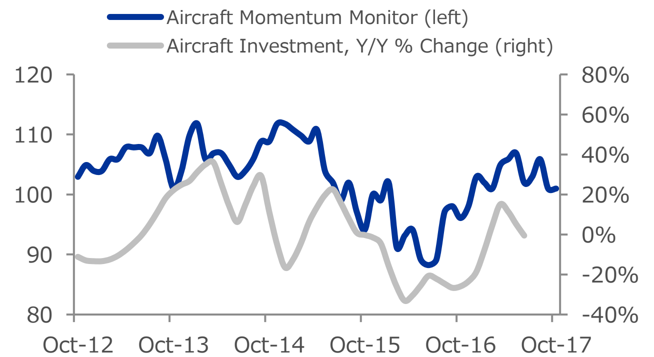
Medical Equipment: Investment in Medical Equipment expanded at a 3.1% annual rate in Q2 2017 and is up 3.2% year-over-year. The Medical Equipment Momentum Index dipped from 79.4 (revised) in September to 75.7 in October. The Export Price Index for Medical Equipment rose 0.7%, its greatest monthly gain since January 2013, but was offset by a 0.7% decline in the Monthly Household Estimate. Overall, the Index continues to suggest a slowdown in medical equipment investment over the next three to six months.



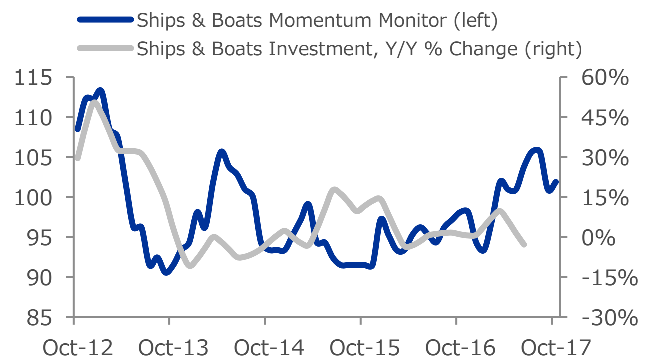
Mining & Oilfield Machinery: Investment in Mining & Oilfield Machinery surged at a 51% annual pace in Q2 2017, and is up 43% from one year ago, its first year-over-year expansion since Q3 2014. The Mining & Oilfield Machinery Momentum Index held steady at 113.2 from September (revised) to October. Mining & Logging added 5,000 Production & Nonsupervisory jobs in August. Overall, the Index points to a sustained rebound in mining & oilfield machinery investment over the next two quarters, though year-over-year growth rates may peak in the near future.



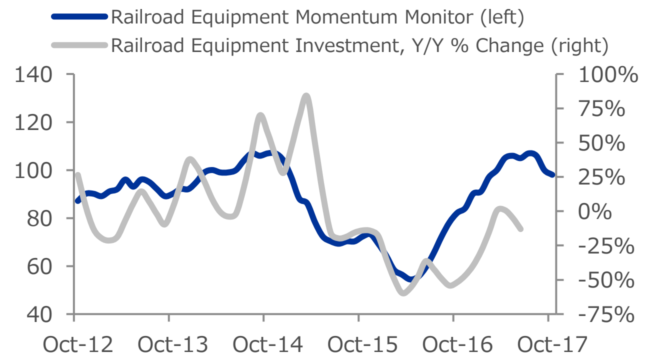
Aircraft: Investment in Aircraft increased at a 6.9% annual pace in Q2 2017 but is down 0.5% year-over-year. The Aircraft Momentum Index held steady at 101.0 from September (revised) to October. Shipments of Non-Defense Aircraft fell 11.5% in August, their largest monthly decline in nearly two years, while Inventories of Defense Aircraft rose 2.2%. Overall, the Index's recent movement points to a potential deceleration in aircraft investment growth over the next three to six months.



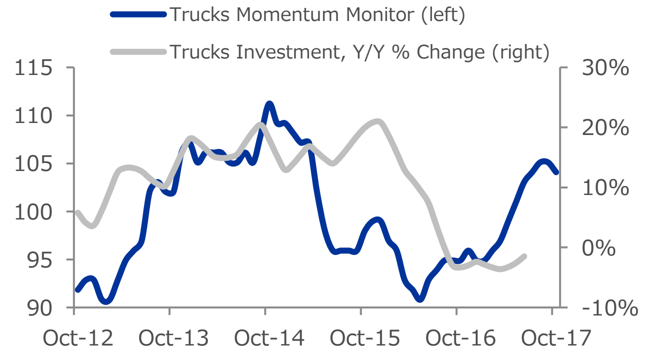
Ships & Boats: Investment in Ships & Boats fell at an annual rate of 15% in Q2 2017 and is down 2.9% year-over-year. The Ships & Boats Momentum Index increased from 100.9 (revised) in September to 101.9 in October. Grain Exports surged 175%, the biggest jump since July 2015, but Inventories of Ships & Boats dropped 1.5%. Overall, the Index points to stronger investment growth in ships & boats over the next two quarters.



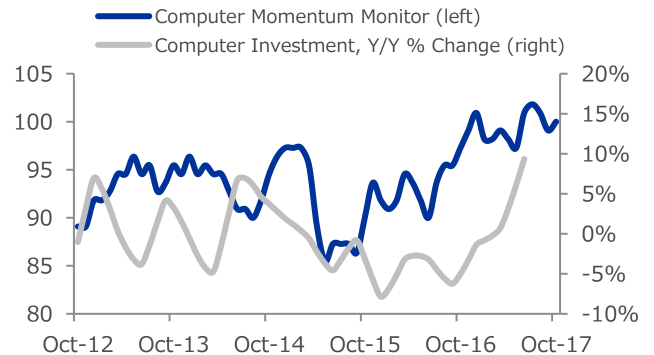
Railroad Equipment: Investment in Railroad Equipment declined at a 49% annual rate in Q2 2017 and is down 13% year-over-year. The Railroad Equipment Momentum Index fell from 100.0 (revised) in September to 98.0 in October. Crude Oil Exports plummeted 55.4% in August, the sixth consecutive monthly decline and largest monthly drop in over 18 years; Crude Oil Imports also fell 14.0%. Overall, the Index continues to suggest railroad equipment investment growth will improve over the next three to six months, though recent negative movement is notable and should be monitored.



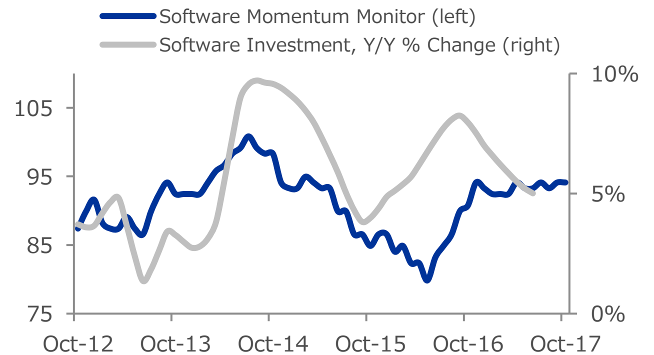
Trucks: Investment in Trucks expanded at a 6.4% annual rate in Q2 2017 but is down 1.6% from year-ago levels. The Trucks Momentum Index slipped from 105.1 (revised) in September to 104.1 in October. The ISM Manufacturing Index rose 2.0 points to 60.8 in September, marking its highest reading since May 2004. However, Inventories of Transportation Equipment rose 1.8%. Overall, the Index continues to signal an emerging rebound in trucking investment over the next three to six months.



Computers: Investment in Computers increased at a 44% annual pace in Q2 2017 and is up 9.4% year-over-year. The Computers Momentum Index increased from 99.1 in September to 100.0 in October. In July, New Orders of Electro-Medical Devices surged 4.1%. Overall, the Index signals continued solid growth in computers investment over the next two quarters.



Software: Investment in Software rose by a 6.9% annual rate in Q2 2017, its 16th straight expansion, and is up 5.0% year-over-year. The Software Momentum Index held steady at 94.1 from September (revised) to October. The NFIB Small Business Optimism Index rose in August by one tenth, while the ISM Chicago Business Barometer held steady at 58.9 and remains well above the expansionary threshold. Overall, the Index suggests little change in software investment growth over the next three to six months.



Equipment & Software Investment Annual Growth Forecast

Year-on-Year % Growth Rates

Sector	Historical Average	Last 4 Quarters	Next 4 Quarters
Agricultural Machinery	4.8%	2.7%	-1 to 5%
Construction Machinery	-2.9%	0.5%	-5 to 2%
Materials Handling Equipment	1.2%	7.1%	8 to 12%
Other Industrial Equipment	0.4%	6.5%	4 to 9%
Medical Equipment	1.8%	3.2%	-6 to -2%
Mining & Oilfield Equipment	-5.0%	42.8%	15 to 30%
Aircraft	-0.1%	-0.5%	-5 to 5%
Ships & Boats	1.6%	-2.9%	4 to 8%
Railroad Equipment	-0.7%	-13.0%	2 to 12%
Trucks	5.3%	-1.6%	5 to 15%
Computers	2.8%	9.4%	5 to 10%
Software	4.5%	5.0%	2 to 6%

Source: Macrobond Financial, Keybridge (forecasts)

U.S. Capital Investment and Credit Markets

2017 is shaping up to be a solid year for capital spending. Businesses are confident, interest rates remain low, and pent-up demand after a lackluster 2016 is boosting business investment activity. Equipment and software investment saw solid growth in both Q1 and Q2 of 4.5% and 8.3%, respectively. Credit market conditions remain healthy, despite a moderate downturn in credit demand over the last quarter. Overall, we expect equipment and software investment to expand by 4.3% in 2017.

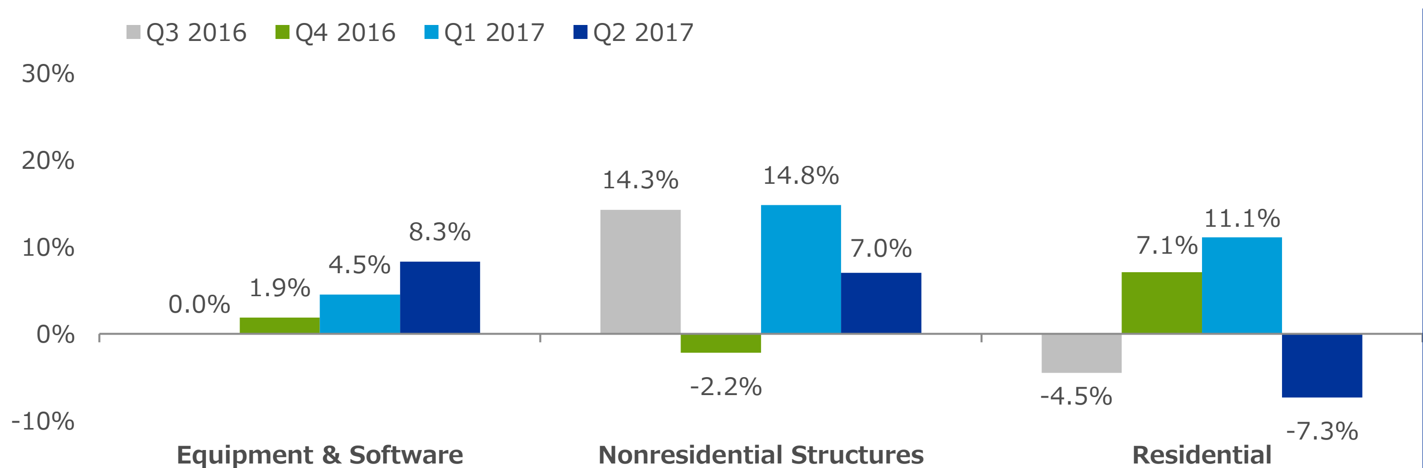
Despite flagging inflation and wage growth and a slight hit to growth prospects in the wake of Hurricanes Harvey and Irma, the Fed recently began unwinding its balance sheet while continuing to gradually raise interest rates. The net result will be a modest to moderate tightening in credit conditions. Based on recent signals coming from the Fed, we anticipate one more rate hike in December.

Recent Trends in U.S. Capital Investment

Equipment and software investment grew at an 8.3% annualized rate in the second quarter of 2017, its strongest pace since Q3 2014. Nonresidential structures grew at a solid 7.0% annualized rate, but residential investment slumped by 7.3% annualized.

Investment Growth Rates

Quarter-on-Quarter, Seasonally Adjusted Annualized Growth Rate



Source: Macrobond Financial

- **Equipment Leasing and Financing:** The equipment leasing and finance industry is growing at a moderately strong pace so far in 2017. The ELFA Monthly Leasing and Finance Index ("MLFI-25") for August reported new business volume at $7.8 billion, up 1% from year-ago levels and up 5.5% year-to-date. Portfolio performance remains generally strong: 30-day delinquencies, at 1.50%, are up one tenth of a percent since July and two tenths of a percent from August 2016, but remain low by historical standards. Charge-offs, at 0.44%, are up from last month but flat compared to year-ago levels.

  The Foundation's Monthly Confidence Index for the Equipment Finance Industry ("MCI-EFI") ticked down in September from 64.4 to 63.7. Despite this moderation, however, industry confidence remains well above its 2016 average of 55.0. Sustained confidence likely reflects a cyclical upturn in investment growth in the first half of 2017, as well as the expectation

that businesses will continue to invest confidently in the latter half of the year. Industry executives noted that high confidence likely also stems from optimism about Congress's ability to deliver on a tax reform package this year. Despite a potential hit to the U.S. economy from Hurricanes Harvey and Irma, others noted that the recovery will likely spur the need for new investment and equipment financing.

Looking ahead, we expect that industry growth should remain solid for the remainder of 2017 and early 2018. However, the sustainability of the recent uptick in business investment will depend in part on the federal government's capacity to enact pro-business policies, such as tax reform, infrastructure spending, and smart regulation.

- **Equipment Verticals:** Equipment and software investment posted solid gains in the second quarter of 2017. Of the 12 equipment verticals tracked by the Foundation, only two experienced negative annualized growth (Railroad Equipment declined 49% and Ships & Boats declined 15%), while the other 10 verticals grew moderately to robustly. Five equipment verticals posted double-digit annualized growth, including Mining & Oilfield Machinery (+51%), Computers (+44%), Construction Machinery (+27%), Agricultural Machinery (+19%), and All Other Industrial Equipment (+14%).

  Looking forward, we expect that continued stabilization in the energy sector will allow the recent rebound in Mining & Oilfield investment to continue, although the breakout growth experienced in the first two quarters may slow somewhat. This recovery is likely to have ripple effects throughout the industrial sector and help drive equipment demand in the Materials Handling and All Other Industrial verticals.

- **Other Factors:** Recent industrial sector data continue to paint a picture of generally strong health, notwithstanding a significant slowdown stemming from Hurricane Harvey's effects on Texas. After six consecutive monthly gains, industrial production fell 0.9% in August, with the Fed estimating that the bulk of the decline was caused by Hurricane Harvey. For similar reasons, capacity utilization fell in August from 76.9% to 76.1%. However, shipments and new orders of durable goods continue to post strong gains: shipments (a leading indicator of same-quarter business activity) rose 0.3% in August and are up 4.5% on the year, while new orders (a leading indicator of next-quarter business activity) jumped 1.7% in August and are up 5.1% on the year. Additionally, the ISM Purchasing Managers' Index (PMI) climbed to 60.8 in September, marking a 13-year high in manufacturing activity. A further boost to industrial and manufacturing activity may result from a significant weakening of the U.S. dollar in the third quarter. The Fed's major currencies nominal FX index peaked last December at around 96.5, and has since fallen to roughly 87.0 at the end of September. All else equal, a weaker dollar should lift U.S. exports, as U.S. goods and services become relatively cheaper on the world market. However, downside risks to trade remain (see later section).

Recent Trends in Credit Markets

Credit market conditions remain decent: while lending standards are mostly unchanged, a recent downturn in demand for credit across multiple consumer and business loan types squeezes business opportunities for lenders. However, portfolios are exceptionally strong and financial stress continues to decline from historic lows.

Summary of Credit Conditions

Factor	Conditions Compared With Last Quarter
Supply	Little Change
Demand	Moderate Decrease
Financial Stress	Slight Decrease

- **Credit Supply & Pricing:** Credit supply conditions were mixed in the second quarter of 2017. The July Fed Loan Officer Survey

indicates that banks left standards for commercial and industrial ("C&I") loans virtually unchanged. Meanwhile, standards for commercial real estate ("CRE") loans tightened across all major categories, particularly for construction and land development loans and for multifamily residential properties. For loans to households, banks reported that standards for residential real estate ("RRE") loans weakened slightly, but that standards for consumer loans tightened somewhat (primarily for auto and credit card loans). In a special question, banks reported that their current lending standards are easier overall than the average since 2005.

- **Credit Demand:** Demand for credit weakened moderately across most major business and consumer loan categories in Q2 2017, with the exception of residential real estate. The July Fed Loan Officer Survey showed that demand for C&I loans weakened for large and middle-market firms due to several factors (e.g., shifts in borrowing to other bank and nonbank sources, as well as reduced demand for financing inventories, accounts receivable, plant and equipment investments, and mergers and acquisitions). Banks also reported softer demand for CRE and consumer loans, including auto and credit cards loans. However, demand for RRE loans increased across most categories.

  It is notable that weakening demand for credit is at odds with persistently elevated business and consumer confidence throughout 2017 and illustrating the divergence between "soft" data (e.g., confidence surveys of businesses and consumers) and "hard" data (e.g., actual investments and purchases made by businesses and consumers). On the business side, optimism is particularly high among manufacturers: the National Association of Manufacturers' Outlook Index experienced the highest two-quarter average in its history in Q1 and Q2, while the Purchasing Managers' Index for manufacturing is likewise at historic highs. Large business confidence is also elevated, with Business Roundtable's CEO Economic Outlook Index at 94.5, its highest since Q2 2014. Small businesses likewise remain confident; the National Federation of Independent Business ("NFIB") Small Business Optimism Index stood at 105.3 in August, just six tenths below its historic, post-election highs. However, the Thomson Reuters/PayNet Small Business Lending Index ("SBLI") — which is a hard data measurement of the actual volume of new commercial loans and leases to small business — dropped 11% in July, and its average level in 2017 is virtually unchanged from its 2016 average. This discrepancy underscores the fact that while business investment has been moderately strong this year, businesses' confidence in the economy and their own situation has generally exceeded actual capital expenditures and demand for credit.

  On the consumer side, the Conference Board's Consumer Confidence Index stood at 119.8 in September, a slight decline from July and August but still significantly above 2016 levels. Meanwhile, the University of Michigan's Consumer Sentiment Index was at 95.1 in September, well above its 2016 average of 91.8. Overall, confidence measures suggest that consumer spending should be significantly stronger than it has been thus far in 2017, and they also belie recent declines in demand for auto and credit card loans.

- **Financial Stress:** In the second quarter, financial stress declined slightly from levels that were already historically low. The Kansas City Fed Financial Stress Index declined to -0.84 in August (its lowest reading in three years), while the St. Louis Fed Financial Stress Index was virtually unchanged last quarter but remains well below year-ago levels. The loan delinquency rate fell from 1.52 percent to 1.35 percent in the second quarter, while the lease delinquency rate slipped from 0.99 percent to 0.98 percent.

- **Other Factors:** Ten-year Treasury yields eased slightly overall in the third quarter, from 2.35 percent at the beginning of July to a low of 2.07 percent at the beginning of September, after which they rose again to 2.20 percent at the end of

September. The general decline is likely related to a downgraded near-term economic growth outlook for the United States, especially in comparison to other advanced economies. Another important development in the past quarter is a continued flattening of the yield curve. For example, the difference between one-year and ten-year Treasury yields has declined from roughly 110 basis points in early July to just over 90 basis points at the end of September — which could imply the market's skepticism about the United States' long-term growth potential or suggest that rising short-term interest rates are out-of-sync with the country's short-term growth outlook.

Update on Fed Policy

At its September meeting, the Federal Open Market Committee (FOMC) signaled its first major policy shift since the Great Recession, announcing that it would begin to reduce its $4.5 trillion balance sheet and unwind its "quantitative easing" policy put in place to stimulate economic growth in the wake of the recession. This move is expected to tighten credit conditions and exert upward pressure on interest rates, although the effects are likely to play out over several years. The market consensus prior to the meeting was that the Fed would likely slow down on interest rate hikes for late 2017 and early 2018, but the Fed's statements regarding the U.S. economy's short- to medium-term growth outlook were more upbeat than many analysts expected. As a result, there is a greater likelihood of another rate increase in 2017 and several more next year. The market response was a surge in Treasury yields and the U.S. dollar. In a follow-up statement, Fed Chair Janet Yellen highlighted the threat that a slower pace of interest rate normalization could lead to rapidly mounting inflationary pressures, especially given a historically low unemployment rate. We expect that the Fed will follow through on its signaling and raise its benchmark interest rate by another 25 basis points in December – in line with our previous forecast.

OVERVIEW OF THE U.S. ECONOMY

2017 is shaping up to be another year of moderate economic growth. A strong labor market, healthy consumer spending, and improved private sector investment have powered the U.S. economy throughout the year, despite subpar residential investment and decreased government spending. A surge in consumer and business confidence at the end of 2016 raised expectations for 2017 growth, but a weak 1.2% expansion in the first quarter provided a poor jump-off point for the year and substantially reduced annual growth prospects. Solid growth in Q2 (+3.1%) and expectations of moderate growth in Q3 and Q4, however, virtually guarantee that 2017 will be a significant improvement over 2016.

The equipment finance industry is experiencing better growth this year, driven by faster investment growth in equipment and software. The effects of Hurricanes Harvey and Irma could lead to reduced economic growth and business activity in the short term, but may also present an opportunity for several segments of the equipment finance industry in late 2017 and early 2018 as communities rebuild.

Overall, we project the U.S. economy to grow 2.3% in 2017 — down slightly from our Q3 forecast, but well above last year's 1.5% growth rate. Real investment in equipment and software is expected to rise 4.3% in 2017 (up from -0.9% in 2016).

Recent Trends in the U.S. Economy

U.S. economic growth should grow at a moderate pace in the latter part of 2017. Consumer spending, which comprises roughly two-thirds of U.S. GDP, appears to be steady, while business investment is in the midst of a cyclical upswing, as pent up demand from a weak 2016 is released over the course of the year and the oil sector continues to recover. However, weak residential investment and reduced government spending are detracting somewhat from economic growth. Several uncertainties facing the United States in the coming months will affect U.S. growth, including the aftermath of Hurricanes Harvey and Irma, negotiations on updates to NAFTA, and uncertain prospects for corporate and individual tax reform.

Indicator	Recent Activity
Consumption	Consumer spending expanded 3.3% (annualized) in Q2 2017.
Equipment & Software Investment	Equipment & software investment expanded by a solid 8.3% (annualized) in Q2, its strongest quarter in almost three years.
Residential Investment	Residential investment fell 7.3% (annualized) in Q2 after experiencing double-digit growth in Q1
Government Expenditures	Government expenditures fell 0.2% (annualized), as a drop in state and local spending (-1.5%) outweighed an increase in federal (+1.9%).
Net Exports	Net exports improved, as exports rose 3.5% (annualized) in Q2, while imports increased 1.5% (annualized).

- **GDP:** The U.S. economy grew at a strong 3.1% annualized pace in the second quarter of 2017, a significant improvement on the first quarter's 1.2% annualized growth. Personal consumption expenditures rebounded to 3.3% after a disappointing 1.9% in Q1, while nonresidential fixed investment grew by a solid 6.7% — in line with the 7.2% growth rate in Q1 and further evidence of a more positive economic environment for businesses. Business investment growth was driven by a healthy increase in both structures (+7.0%) and equipment & software (+8.3%). However, residential investment slumped significantly (-7.3%), while government spending posted its second straight quarter of negative growth (-0.2%).

- **Inflation:** Inflationary pressures remain generally subdued, despite stabilized oil prices and a strong labor market. Headline inflation accelerated in August to 1.9% from 1.7% in July, but stands well below its previous peak of 2.7% in February, when inflationary pressures appeared to be building. Core inflation (which excludes volatile food and energy prices) has similarly declined from levels experienced earlier this year and has remained at 1.7% for the past four months. Although oil prices had been building throughout 2016, the WTI spot price has generally remained in the $45-50 range this year, which has tamped down inflationary pressures. Overall wage growth has been similarly flat, holding at 2.5% growth for the past five months even as the U.S. labor market continues to strengthen. These two factors have kept inflation in check throughout the year, and while we continue to expect stronger wage growth given labor market conditions, inflation appears unlikely to ramp up significantly in the short term.
- **Growth Forecasts:** The *Economist* Poll of Forecasters for September estimated 2.1% GDP growth for 2017, down one tenth of a percent from its August forecast. More optimistically, the Federal Reserve's September "central tendency" forecast ranged from 2.2–2.5%, an upgrade from its June forecast of 2.1-2.2%.

Economic Tailwinds

The U.S. economy continues to benefit from a strong labor market: most Americans are able to find a good job, yet employers do not yet appear to be feeling the pinch of a widespread labor shortage. Meanwhile, a cyclical upturn in the global economy should help fill the sails of the U.S. economy.

- **Sustained Employment Growth:** Despite low unemployment, which has hovered around 4.5% for the last several months, the U.S. economy continues to add jobs at a healthy clip. Total nonfarm payroll employment rose by 156,000 in August; this year, nonfarm payrolls have averaged 176,000 per month, only a slight decline from 2016's average of 187,000 per month. Growth has been particularly strong in the equipment finance industry. Building from an already strong 13% increase in industry employment in 2016, industry job gains surged in early 2017 and stood 17% above year-ago levels in August. Continued job gains could be a sign that higher wages and income growth are around the corner, which would likely lead to stronger consumer spending. However, strong job gains amid an already tight labor market can be a double-edged sword for the equipment finance industry, as firms are likely to face higher labor costs and increased difficulty finding qualified employees.
- **International Growth Synchrony:** For the first time since 2010, the world's major economic blocs all appear to be growing simultaneously. This summer, both the International Monetary Fund ("IMF") and the Organization for Economic Cooperation and Development ("OECD") forecast global GDP growth at 3.5%, which would represent a significant improvement on 2016's 3.1% pace. More recent data have confirmed the strength of the global economy, particularly in the Eurozone and Japan. Composite Purchasing Manufacturing Indices ("PMI") for the Eurozone surged in September, leading the European Central Bank to raise its GDP growth forecast to 2.2% for 2017 (up from 1.7% in 2016). Japan is likewise expected to grow significantly faster this year than last: the latest *Economist* poll of forecasters puts Japanese growth at 1.6% for 2017 (up from 1.0% in 2016). Russia and Brazil are emerging from recessions suffered last year, while China and India continue to grow at a steady pace. A global economy that finally appears to be firing on most cylinders should bode well for U.S. growth in late 2017 and 2018, as higher global demand should boost U.S. exports and encourage firms to invest.

Economic Headwinds

Although the economy is growing at a moderate pace and the outlook for businesses has improved significantly since 2016, several headwinds may dampen growth in the months ahead, including a weak housing sector and heightened geopolitical risks.

- **Housing Slump:** Real private residential fixed investment contracted 7.3% (annualized) in Q2 2017, its largest decline in seven years after experiencing double-digit growth the previous quarter. Given recent housing market data, residential investment may contract again in Q3. For example, the National Association of Realtors ("NAR") Pending Home Sales Index fell 2.6% in August and is down nearly 3% on the year due to a lack of housing supply; privately-owned housing starts fell 0.8% in August; and the National Association of Home Builders ("NAHB") Housing Market Index fell 3 points. While aggregate demand for housing is strong and prices are steadily rising, supply continues to lag due to a combination of factors, including labor shortages and rising input prices (particularly for lumber). As resources are redirected toward rebuilding homes in Texas and Florida from hurricane damage (see below), these problems may worsen in the near term. Looking ahead, it is likely that home builders will eventually ramp up construction to meet demand, thus alleviating the shortage. However, there is some evidence that regional disparities — between high-demand, lot-poor urban areas on the one hand, and low-demand, spacious rural areas on the other — may persist, making it difficult for home builders to meet demand in some areas.
- **Heightened Geopolitical Risk:** Ongoing political instability threatens to derail or depress a year of overall global economic strength. In the last quarter, tensions have surged between the United States and North Korea over the latter's increasing nuclear capabilities. Venezuela is fast approaching the brink of a chaotic sovereign default, coupled with the risk of a violent political altercation as the country's citizens struggle to meet basic needs. Deadly terrorist attacks continue to occur in populated economic centers like London and Barcelona. Despite renewed confidence in early 2017, the European Union continues to struggle to contain crises, as evidenced by never-ending confusion in the Brexit negotiations, a German election result likely to create more political instability in the Eurozone's largest economy, and the threat of a contentious and potentially violent showdown between the Spanish government and the secessionist region of Catalonia. Moreover, the recent Equifax breach is the latest reminder that businesses and governments alike continue to struggle to prevent cyberattacks. Although it can often be difficult to ascertain how geopolitical tensions and security threats affect day-to-day business, these issues tend to "fatten" tail risks — that is, a greater probability that an unlikely event with massive, systematic consequences may occur.

Additional Factors to Watch

Several uncertainties face the U.S. economy going forward, posing both opportunities and risks.

- **Corporate Tax Reform:** The Trump Administration recently released its blueprint for individual and corporate tax reform, marking the start of a likely months-long debate in Congress over the exact form the new tax code should take. Many economists note that the inefficiencies in the U.S. tax code — for example, the combination of a high statutory corporate tax rate (35%) and thousands of offsetting loopholes, as well as a global (as opposed to territorial) corporate taxation scheme that encourages holding income offshore — hurt U.S. growth potential. These problems could be alleviated through fundamental reforms to the U.S. tax system. However, based on previous attempts (including the last major reform in 1986), such efforts typically require years of negotiation. Comprehensive reform is complicated because although all parties

agree with the idea of simplifying the tax code, each industry and interest group is reluctant to surrender special provisions that benefit their core constituents. For example, eliminating the deductibility of interest expenses would pose a major threat to the equipment leasing industry, along with other industries that rely on debt to finance investments.

For these reasons, it is more likely that Congress will opt for a smaller-scale, temporary tax cut that would expire after 10 years. This approach may rile fiscal hawks who oppose policies that are not revenue neutral, and it likely won't help individuals and businesses as much as comprehensive reform would. Nonetheless, reduced tax rates on businesses would likely spur hiring and investment, and reduced rates on consumers would encourage additional spending. Without comprehensive reform, cutting taxes would almost certainly increase the federal deficit and adversely affect the country's long-term fiscal health, but would also promote economic growth in the short- and medium-term — which could be sufficient to win the support of Congressional Republicans who are eager for a legislative win before the midterm elections.

- **NAFTA Renegotiations:** The United States, Canada, and Mexico have just completed their third round of negotiations on the North American Free Trade Agreement ("NAFTA"). Although trade talks are often conducted in secret until all sides have had the opportunity to form their positions and make necessary concessions, details have emerged that may have notable consequences for U.S. businesses that operate or trade with Canada and Mexico, as well as other U.S. firms along the supply chain. Much of the negotiations so far have revolved around simply modernizing a 25-year-old agreement with new rules governing digital trade and telecommunications. Contentious issues include (1) "rules of origin," governing what percentage of a good must be made in North America to qualify for tariff-free treatment, (2) new labor protections, and (3) a sunset clause whereby all three nations must renew NAFTA every five years to prevent expiration. Given the common goal of completing most negotiations by the end of 2017, it is unlikely that all three parties will agree to sweeping changes to the agreement in such a short time frame. However, even small tweaks could pose new compliance issues for firms and add new complications to the supply chain. Ideally, the negotiations will lead to a more fair and efficient NAFTA that benefits firms and labor across North America, but the reality may or may not resemble this desired outcome — and scrapping the agreement outright would likely harm all three countries' economies. Firms should closely monitor developments in the NAFTA negotiations through the end of the year.

- **Potential Wage Growth Acceleration:** With unemployment consistently below 5% for the past year and reaching a 20-year low of 4.3% in July, wage pressures should grow as employers are forced to compete for qualified workers. The last time unemployment fell to this level in the mid-1990s, wage growth accelerated to 4% year-on-year. To the surprise of many economists, wage growth has stagnated despite low unemployment; year-on-year growth in average hourly earnings has not budged from 2.5% for the past five months. This has raised questions about whether long-term structural factors, including diminished productivity growth, automation, declining unionization, and globalization have reduced workers' bargaining power.

  Nevertheless, basic supply and demand principles should drive wage increases over the coming months. Indeed, some signs of wage pressures are already emerging. For example, several major retailers (e.g., Walmart, Target, and Costco) have recently announced across-the-board wage increases for their employees, as they struggle to retain workers in an increasingly competitive market. Additionally, widespread labor shortages in the construction industry have forced some home builders and downstream suppliers to raise wages, leading to higher labor and input costs in the housing market. Wage gains will increase purchasing power and consumer spending, but will also increase inflationary pressures.

- **Hurricane Recovery:** Hurricanes Harvey and Irma hit two of the United States' most economically productive regions, comprising a significant share of the U.S. economy. (Although the whole of each state was not affected, Texas is the United States' second-largest economy, contributing almost 9 percent of U.S. GDP, while Florida is the country's fourth-largest, comprising 5 percent.) Damage from both hurricanes is therefore likely to have a significant effect on the U.S. economy over the coming year.
  - The immediate negative effect is already showing up in recent economic data. U.S. industrial production and capacity utilization, for example, both fell in August, and a substantial portion of the decline is due to the hurricanes. Overall business activity typically slows after a hurricane hits, as employees cannot make it to work, oil rigs and factories temporarily shut down, and consumers are less likely to spend discretionary income.
  - The initial negative effect of hurricanes is offset (at least in part) shortly thereafter as federal disaster aid is injected into the economy to repair damaged homes, businesses, and infrastructure. As a result, after the initial period of disaster response concludes and recovery efforts begin, business investment in equipment and structures is expected to surge.
  - Longer-term, however, conventional economic wisdom holds that the ultimate effect on economic growth is negative. Individuals who suffer damage to their homes and cars are not always fully compensated (particularly in flood events, where FEMA's National Flood Insurance Program caps the value of insurance policies and claims). The relative decline in consumers' lifelong income lowers aggregate demand for products across the total economy, causing a minor, long-term decrease in economic activity.

Projections for Key Economic Indicators

Indicator	2015	2016	2017 Quarterly Estimates				2017e
			Q1	Q2	Q3e	Q4e	
Real GDP (SAAR %)	2.9%	1.5%	1.2%	3.1%	2.7%	3.6%	2.3%
Real Investment in Equipment & Software (SAAR %)	4.0%	-0.9%	4.5%	8.3%	6.0%	5.8%	4.3%
Inflation (year-on-year %)	0.1%	1.3%	2.5%	1.9%	2.0%	2.1%	2.1%
Federal Funds Target Rate (lower bound, end of period)	0.25%	0.50%	0.75%	1.00%	1.00%	1.25%	1.25%
10-year Treasury Rate (end of period)	2.3%	2.5%	2.4%	2.31%	2.31%	2.45%	2.45%
Total Payroll Growth (in thousands)	+2,713	+2,240	+498	+562	+445	+520	+2,025

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	2015			2016				2017	
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Real Gross Domestic Product (SAAR %)									
GDP	2.7%	1.6%	0.5%	0.6%	2.2%	2.8%	1.8%	1.2%	3.1%
Consumer Spending	3.0%	2.8%	2.7%	1.8%	3.8%	2.8%	2.9%	1.9%	3.3%
Gross Private Fixed Investment	0.8%	2.0%	-6.2%	-4.0%	-2.7%	2.4%	8.5%	-1.2%	3.9%
Inv: Equipment & Software	1.5%	8.2%	-2.0%	-8.1%	2.0%	0.0%	1.9%	4.5%	8.3%
Inv: Agricultural Machinery	30.2%	34.5%	-24.0%	-32.3%	2.1%	-11.3%	9.7%	-3.9%	18.8%
Inv: Construction Machinery	-39.8%	-31.9%	-24.3%	-38.4%	-17.1%	-30.5%	-0.7%	15.9%	27.3%
Inv: Materials Handling Equipment	5.7%	-2.8%	12.2%	-7.3%	8.9%	3.1%	4.5%	14.0%	7.3%
Inv: All Other Industrial Equipment	13.2%	-1.1%	4.4%	-3.8%	6.1%	1.8%	6.1%	4.5%	14.1%
Inv: Medical Equipment	-5.1%	10.9%	10.1%	-8.3%	3.9%	-1.5%	8.0%	3.6%	3.1%
Inv: Mining & Oilfield Machinery	-37.3%	-31.1%	-18.7%	-48.2%	-92.2%	93.3%	-45.9%	162.7%	51.2%
Inv: Aircraft	-3.3%	5.2%	-56.0%	-55.3%	91.6%	-23.2%	-33.3%	78.9%	6.9%
Inv: Ships & Boats	17.4%	-17.5%	32.1%	-31.9%	37.9%	-13.9%	27.8%	-4.5%	-15.6%
Inv: Railroad Equipment	-85.2%	173.0%	-44.1%	-88.2%	-9.3%	-26.5%	69.5%	-10.1%	-48.9%
Inv: Trucks	19.5%	29.6%	4.2%	0.7%	-2.2%	-13.7%	6.8%	-4.3%	6.4%
Inv: Computers	3.5%	12.4%	-21.1%	-4.5%	3.5%	-1.0%	-3.3%	3.8%	44.2%
Inv: Software	4.0%	2.5%	6.9%	9.4%	10.3%	6.4%	2.1%	4.8%	6.9%
Credit Conditions									
Nonfinancial Sector Debt (% of SAAR GDP)	63.3%	63.7%	64.4%	65.3%	65.8%	66.5%	66.7%	67.1%	67.7%
Loan Delinquency Rate	0.8%	0.9%	1.0%	1.5%	1.6%	1.6%	1.6%	1.5%	1.4%
Lease Delinquency Rate	0.8%	0.8%	0.8%	0.9%	1.0%	1.0%	1.1%	1.0%	1.0%
Net Tightening of C&I Loan Standards	-5.3%	-7.0%	7.4%	8.2%	11.6%	8.5%	1.5%	1.4%	-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	2016				2017								
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Employment													
Change in Total Payrolls (thousands)	249	124	164	155	216	232	50	207	145	210	189	156	-
Change in Private Payrolls (thousands)	223	132	178	150	204	222	59	194	153	207	202	165	-
Unemployment Rate	4.9%	4.8%	4.6%	4.7%	4.8%	4.7%	4.5%	4.4%	4.3%	4.4%	4.3%	4.4%	-
Business Activity													
Industrial Production	103.0	103.2	102.9	103.8	103.5	103.7	103.9	105.0	105.1	105.3	105.7	104.7	-
Capacity Utilization	75.6%	75.7%	75.5%	76.0%	75.7%	75.8%	75.9%	76.6%	76.6%	76.7%	76.9%	76.1%	-
PMI Composite Index	51.7	52.0	53.5	54.5	56.0	57.7	57.2	54.8	54.9	57.8	56.3	58.8	60.8
NFIB Small Business Optimism Index	94.1	94.9	98.4	105.8	105.9	105.3	104.7	104.5	104.5	103.6	105.2	105.3	-
Consumer Activity													
Consumer Confidence	103.5	100.8	109.4	113.3	111.6	116.1	124.9	119.4	117.9	117.3	120.0	120.4	119.8
Personal Consumption (M/M % Chg)	0.5%	0.1%	0.3%	0.4%	-0.1%	0.0%	0.7%	0.1%	0.3%	0.2%	0.2%	-	-
Retail Sales (M/M % Chg)	0.8%	0.6%	0.1%	0.9%	0.5%	-0.2%	0.1%	0.3%	0.0%	-0.1%	0.3%	-0.2%	-
Lending Activity													
C&I Loans (M/M % Chg)	0.9%	0.7%	0.2%	-0.2%	0.1%	-0.1%	-0.6%	0.5%	0.2%	0.2%	0.2%	0.3%	-
MLFI-25 New Business Volume (Bil.$)	9.4	8.2	6.4	12.1	6.2	5.9	8.9	7.9	7.7	9.8	7.9	7.8	-
MLFI-25 Avg Losses as a % of Net Rec.	0.46%	0.37%	0.40%	0.42%	0.43%	0.38%	0.68%	0.38%	0.47%	0.38%	0.35%	0.44%	-
MLFI-25 Credit Approval Ratio	76.6%	77.3%	76.0%	77.4%	75.4%	74.8%	74.5%	75.9%	77.0%	75.9%	76.0%	75.3%	-
Interest Rates (% avg of period)													
Fed Funds Target Rate (Lower Bound)	0.25	0.25	0.25	0.50	0.50	0.50	0.75	0.75	0.75	1.00	1.00	1.00	1.00
1-Year Treasury Rate	0.59	0.66	0.74	0.87	0.83	0.82	1.01	1.04	1.12	1.20	1.22	1.23	1.28
3-Year Treasury Rate	0.90	0.99	1.22	1.49	1.48	1.47	1.59	1.44	1.48	1.49	1.54	1.48	1.51
10-Year Treasury Rate	1.63	1.76	2.14	2.49	2.43	2.42	2.48	2.30	2.30	2.19	2.32	2.21	2.20
30-Year Treasury Rate	2.35	2.50	2.86	3.11	3.02	3.03	3.08	2.94	2.96	2.80	2.88	2.80	2.78
AAA Corporate Bond Yield	3.41	3.51	3.85	4.06	3.92	3.95	4.01	3.87	3.85	3.68	3.70	3.64	3.63
BAA Corporate Bond Yield	4.31	4.38	4.70	4.83	4.66	4.64	4.68	4.57	4.55	4.37	4.39	4.31	4.30
Prices													
Headline Inflation (Y/Y % Chg)	1.5%	1.6%	1.7%	2.1%	2.5%	2.7%	2.4%	2.2%	1.9%	1.6%	1.7	1.9%	-
Core Inflation (Y/Y % Chg)	2.2%	2.1%	2.1%	2.2%	2.3%	2.2%	2.0%	1.9%	1.7%	1.7%	1.7	1.7%	-
Oil Price (West Texas Int., $/barrel)	47.72	46.83	49.41	53.75	52.75	54.00	50.54	49.31	48.29	46.02	50.21	47.26	51.67

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 Q2 report is the first update to the 2016 Annual Outlook, and two more quarterly updates will follow in July and 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

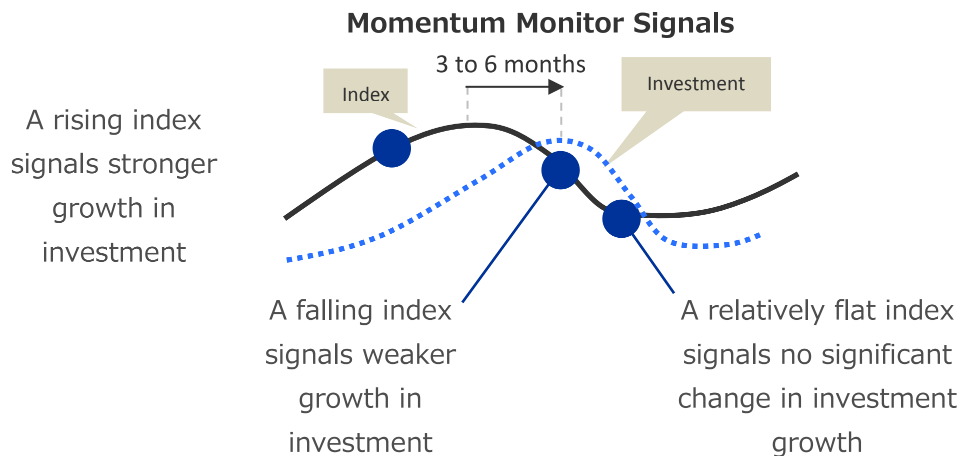
Business leaders require actionable forward-looking intelligence to make strategic decisions. Accordingly, the Foundation commissioned Keybridge LLC to develop a series of custom leading indicators for the equipment sector. The Foundation-Keybridge Equipment & Software Investment Momentum Monitor consists 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 between 10 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

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.



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.