The U.S. Economy in a Snapshot compiles observations of staff members of the Federal Reserve Bank of New York’s Research and Statistics Group. The views, model results, and analysis presented are solely those of the individual contributors and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System. The analysis presented herein is based on data released through November 11, 2015.
- The economy expanded at a slower pace in the third quarter compared to the second quarter.
  - Real consumption expenditures were a little softer in September; nevertheless, the general trend for consumer spending remains fairly solid.

- Indicators from the manufacturing sector and for business equipment spending showed continued softness.

- While housing data were mixed in September, the general tone continues to suggest a very gradual improvement in conditions.

- Payroll growth in October showed a sharp rebound from recent months’ pace and the unemployment rate fell. The labor force participation rate was unchanged, while the employment-population ratio rose.
  - There were tentative signs of some pickup in wage growth.

- Inflation remained well below the FOMC’s longer-term objective, although some underlying measures of inflation have risen modestly.

- Since early October, sentiment has improved about the global economic growth outlook and financial market volatility has subsided.

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### Output remains below its potential level

- The advance estimate of 1.5% real GDP growth for 2015Q3 was consistent with the pattern of subdued growth in this expansion.
  - Output advanced at a 2% rate from 2014Q3, similar to the yearly pace of growth observed during this expansion.

- The gap between real GDP and the Congressional Budget Office’s (CBO) measure of real potential GDP was a little over 3% in 2015Q3.
  - Potential growth is projected to be slightly above 2% over 2015-20. The estimate of NAIRU is projected to fall gradually to 5% by mid-2017.
Some improvement in the labor market

- The unemployment rate declined slightly to 5.0% in October.

- The labor force participation rate was unchanged at 62.4% in October, which is lower than the range around 62.8% that prevailed from October 2013 to May 2015.
  - Even within demographic groups, participation was essentially unchanged in October.

- The employment-population ratio increased slightly from 59.2% to 59.3%.
  - For prime-age workers (25-54 year old), the employment-population ratio was unchanged at 77.2%.

Inflation remains low

- The total PCE deflator fell 0.1% in September, while the core PCE deflator (which excludes food and energy prices) was up 0.15%.
  - There was a large decline in energy prices (5.0%) in September, which followed a 2.3% decline in August.

- On a 12-month change basis, the total PCE deflator increased by 0.2%. The core PCE deflator rose 1.3% from a year earlier, the same pace it has maintained for eight of the past nine months.
  - Both measures remained at levels significantly below the FOMC’s longer-run objective of 2%, held down in part by the effects of declines in energy prices and in prices of non-energy imports.
Output growth slowed in Q3

- According to the advance release, real GDP expanded at a 1.5% annual rate in Q3.
  - In the second quarter, real GDP increased 3.9%.
- Consumer spending continued to be the main driver of growth, increasing at a 3.2% annual rate and contributing 2.2 percentage points to growth.
  - There was, however, a sharp slowing in the pace of inventory investment that subtracted 1.4 percentage points from growth.
- Real final sales to domestic purchasers, which excludes inventory investment and net exports, increased at a 3% growth rate.

Manufacturing activity remains weak

- Total industrial production declined 0.2% in September.
  - While industrial production increased 1.8% (annual rate) in 2015Q3, it declined in both August and September.
- Manufacturing production fell by 0.1% in September.
  - Most of the recent decline in manufacturing activity was driven by lower production in high-tech industries, which more than offset the (small) rebound in motor vehicles and parts.
- The ISM survey has generally declined since late 2014, with the October reading at 50.1.
  - The recent low readings of the index mainly reflect weakness in both its employment and inventory components.
**Disposable Income, Consumption, and Wealth**

- **Household Net Worth (Right Axis)**
- **Real Disposable Income (Left Axis)**
- **Real Personal Consumption (Left Axis)**

Source: Bureau of Economic Analysis, Federal Reserve Board, via Haver Analytics

Note: Shading shows NBER recessions.

**Consumer spending slightly softer in September**

- Real consumption expenditures grew 0.2% in September, after growing 0.4% in August.
  - Goods consumption was flat in September, while services consumption increased 0.3%.
  - Despite the softness in September, real consumer spending grew at a healthy 3.2% annual rate in Q3.

- Real disposable income rose 0.2% in September, following its strong pace of 0.4% in August.
  - Employees compensation was flat, following two months of strong gains.

- The personal saving rate rose slightly to 4.8% in September, with the Q3 average at 4.7% compared to 4.6% in Q2.

**Consumer confidence remains elevated**

- Both measures of consumer confidence remain near cyclical highs.

- The Conference Board's Consumer Confidence Index has changed little on net over the last four months.
  - The Present Situation component, which mainly reflects perceptions of job availability, is in line with levels observed since January 2015.

- After declining for three consecutive months, the Reuters/University of Michigan’s Index of Consumer Sentiment turned up in October.
  - While the index is below readings in the first half of 2015, it remains elevated compared to one year ago.
**Business Sector**

**Equipment Investment and Capacity Utilization**

- **Quarter % Change**
- **% of Capacity**

- **Manufacturing Capacity Utilization Rate (Right Axis)**
- **Real Business Investment in New Equipment (Left Axis)**

Source: Bureau of Economic Analysis, Federal Reserve Board, via Haver Analytics

Note: Shading shows NBER recessions.

**Moderate growth of equipment spending in Q3**

- Real business investment in equipment rose at a moderate 5.3% annual rate in 2015Q3.
  - Over the past four quarters, business equipment spending has risen 0.7%, which is very weak for an expansion period.

- Historically, the rate of growth of business spending on equipment has been positively correlated with the manufacturing capacity utilization rate.

- The manufacturing capacity utilization rate was 75.9% in September, down from 76.1% in August.
  - The utilization rate has changed little over the past year and remains below pre-recession levels.

**Nondefense Capital Goods ex. Aircraft**

- **Bil. $, 3 MMA**

Source: Census Bureau, via Haver Analytics

Note: Shading shows NBER recessions.

**Orders and shipments fairly flat recently**

- Monthly data on new orders and shipments of nondefense capital goods are high frequency indicators of business investment in new equipment.

- New orders and shipments changed only slightly in September. The levels of both remain below their respective mid-2014 levels.

- New orders were below shipments in September; this pattern has occurred in 7 of the 9 monthly data releases for 2015.
  - Based on historical patterns, orders below shipments is generally consistent with weak momentum in equipment spending over the near term.
**HOUSING SECTOR**

### Housing Starts

**Thousands, 3 MMA**

- **Total Multifamily (Left Axis)**
- **Single Family (Right Axis)**

![Graph of Housing Starts](image)

Source: Census Bureau, via Haver Analytics  
Note: Shading shows NBER recessions.

### Housing construction trends higher

- Total housing starts have continued to trend higher, with a three-month moving average just shy of 1.2 million units (seasonally-adjusted annual rate) as of September. This is the highest reading since December 2007.
  - The strongest recovery has been in multifamily starts. A three-month moving average of starts in this sector reached 420,000 in September, up from under 100,000 in early 2010.
  - The recovery in the single family sector has been more muted, likely reflecting the continued tightness of mortgage underwriting standards.

- Despite these gains and continued low mortgage interest rates, housing starts per capita remain about 50% below the longer-term average from 1968-2003.

### Single Family Housing Market

**12 Month % Change**

- **Single Family House Price Index (Left Axis)**
- **Months’ Supply (Right Axis)**

![Graph of Single Family Housing Market](image)

Source: CoreLogic, National Association of Realtors, via Haver Analytics  
Note: Shading shows NBER recessions.

### Single family housing inventory remains low

- The level of single family homes for sale remains at the low end of the historical range.
  - September’s single family homes for sale inventory stood at 5 months’ worth of sales, near the bottom of the normal range for inventories.
  - The single family inventory has been around 5 months’ sales since mid-2013.

- House price growth has strengthened.
  - House prices in September were 6.2% above their year-ago level.
  - House price appreciation has strengthened since earlier in the year.
  - 12-month house price growth has been positive since early 2012.
**GOVERNMENT SECTOR**

### Real Government Consumption and Gross Investment

![Graph showing real government consumption and gross investment](image)

- **Government sector is expanding modestly**
  - Total real government consumption and gross investment is now growing modestly on a year-over-year basis after contracting for a 4 year period.
  - Real consumption and gross investment at the federal level declined 1.1% over the four quarters ending in 2015Q3.
    - Nondefense spending is rising modestly, while defense spending continues to decline.
  - Real consumption and gross investment at the state and local level grew 1.9% over the four quarters ending in 2015Q3.
    - The state and local sector represents over 60% of total government consumption and gross investment.

### Real State & Local Consumption and Gross Investment

![Graph showing real state and local consumption and gross investment](image)

- **State and local construction spending recovers**
  - State and local investment spending grew at a rapid 6.4% rate over the four quarters ending in 2015Q3.
    - Growth was driven largely by construction spending, which is roughly 74% of investment or 13% of consumption and gross investment.
    - Construction put in place grew by 5.8% over the period.
    - Construction spending declined steeply and recovered slowly between 2009 and 2014, but it has now reached 81% of its 2009Q2 peak.
  - Consumption spending, primarily employment, remained relatively stable over the year.
    - State and local consumption spending grew 0.9% over the four quarters ending in 2015Q3.
INTERNATIONAL DEVELOPMENTS

Net Exports: Contribution to GDP Growth

Growth contribution of net exports was zero in Q3

- Net exports did not add to or subtract from real GDP growth in Q3.
  - This follows a contribution of 0.2 percentage points in Q2.
- Real export growth remained weak in 2015Q3, increasing only 1.9% at a seasonally adjusted annual rate (SAAR).
  - Over the year, real exports were up only 1.5%.
  - The strong dollar and weakness in foreign GDP growth continue to keep exports below its post-1990 trend growth rate of 5%.
- Real import growth was sluggish at 1.8% (SAAR) in 2015Q3.
  - This follows average real import growth of 6.8% (SAAR) over the previous three quarters.

Euro Area Inflation and Survey Forecasts

Low inflation environment persists in euro area

- Survey-based measures of inflation expectations at the short-term (one-year-ahead) horizon have generally been declining since 2013.
  - The European Central Bank’s Survey of Professional Forecasters (SPF) is conducted quarterly.
- ECB’s Governing Council aims to maintain inflation below, but close to, 2% over the medium term:
  - During the past three years, inflation has been below the mean short-term forecast.
  - Despite the current low inflation environment, most SPF respondents continue to envision a pickup in inflation in 2016.
  - The mean short-term forecast is reported at 1.1% in the most recent 2015Q4 survey.
**Employment and hours growth have picked up**

- Nonfarm payroll employment increased by 271,000 in October.
  - Payroll employment increased on average by 187,000 per month in the last three months, below the corresponding gains during the summer but close to those of April.

- With the pickup in payroll employment growth and average weekly hours holding steady at 34.5 hours, aggregate hours worked increased by 0.3% in October.
  - The 12-month change in aggregate hours was 2.1%.

**Employment growth widespread across sectors**

- The one month diffusion index (reflecting the balance between industries increasing and decreasing employment) was 61.8 in October, and has almost fully retraced the decline from 62.0 in February of 2015.

- When measured over a three-month period, however, the index declined from 60.5 to 59.7 and indicates that the widespread gains in the October report were not enough to entirely offset the weakness in August and September.
**Prime-age Employment-to-Population Ratio**

- The prime-age (25-54 year old) employment-to-population ratio was 77.2% in October.
- This ratio improved notably from 74.9% in October 2011 to 77.3% in February 2015, with the increase lead by prime-age men.
  - Since February there has been no improvement in prime-age employment.
  - This ratio still lies considerably below its pre-recession peak of 80.3%.

**Average Hourly Earnings Growth: All Employees**

- Average hourly earnings in October increased by 0.4% over the month and by 2.5% over the past 12 months.
  - The 12-month change was the largest gain since July 2009, but below pre-recession levels.
- With the increase in average weekly hours, average weekly earnings in October increased by 0.4% from $866.30 to $869.40.
- Part of the monthly gains may be payback for lower levels of earnings in September, which may have been affected by the Labor Day holiday during the September reference week.
INFLATION

CPI Inflation: Core Goods and Core Services

![Chart showing CPI inflation for Core Goods and Core Services from 2000 to 2016. The chart indicates 12-month percentage changes. The shaded areas represent NBER recessions. Source: Bureau of Labor Statistics, via Haver Analytics. Note: Shading shows NBER recessions.]

Stronger core CPI inflation reading in September

- Core CPI index had its largest monthly increase since April.
  - The core CPI index rose 0.2% in September, after increasing 0.1% in August. The 12-month change rose to 1.9% from 1.8% in August.

- Prices rose in September for all major components of core services, while core goods prices were flat after falling for the previous four months.
  - The 12-month change in core services prices was 2.7% in September, up from 2.6% in August.
  - The 12-month change in core goods prices was -0.5% in September, the same decline as in August.

Michigan Inflation Expectations 5 to 10 Years

![Chart showing Michigan Inflation Expectations from 2000 to 2016. The chart includes the 75th percentile, median, and 25th percentile. Source: University of Michigan. Note: Shading shows NBER recessions.]

Survey shows declining long-term inflation expectations

- Long-term inflation expectations from the University of Michigan survey have fallen in recent months.
  - The median of long-term inflation expectations (five to ten years ahead) declined from 2.7% in July to 2.5% in October.
  - The entire distribution shifted downward between July and October, with the 75th and 25th percentile decreasing by 0.5 and 0.4 percentage points, respectively.

- Long-term inflation expectations return to a historical low.
  - The median of long-term inflation expectations in October matches that of September 2002.
  - This is the lowest reading since the survey began collecting long-term forecasts in April 1990.
Volatility of US stocks retreated from August high

- Equity option-implied market volatility has fallen back below its long-run median.
  - At a level of 16.1 on November 11, the VIX (a measure of expected volatility of the S&P 500 over the next 30 days) is slightly below its long-run median of 18.0, having retreated from its August 24 peak of 40.7.

- Stock market valuations have recovered from August lows.
  - A day after the August 24 volatility peak, the S&P 500 fell to a low of 1867.6, a more than 10% decline from peak levels of around 2100 earlier in the year.
  - The index has since recovered and closed at 2081.7 on November 10.

International equity markets recover

- Chinese stock market indices recover from August lows.
  - From September 8 to September 30, the Shanghai A Share Index fell 4% amid concerns of slower global growth and depreciation of emerging market currencies.
  - Since September 30, the Shanghai A Share Index has rallied and returned 19% amid signs of a strengthening US economy and stabilization of commodity prices.

- Other international equities staged similar recoveries.
  - The DAX Index increased 12% since September 30 due to an improved international outlook.
  - Japanese stocks also improved since then, returning 13% from September 30 to November 10.
**Expected Federal Funds Rate**

The expected path for the Federal Funds rate implied by rates on overnight indexed swaps (OIS) has increased significantly since late October.

Market expectations of the lift-off date were revised sharply toward the near term as October's FOMC statement and stronger-than-expected labor report increased market participants' perceived likelihood of lift-off in December.

The latest market-implied forecast for December is still below the median forecast suggested by the FOMC's Summary of Economic Projections (SEP) and the NY Fed Primary Dealer Survey.

**10-Year Treasury and Term Premium**

Consistent with the steeper path for OIS rates, the yield on 10-year Treasury securities rose to 2.34% on November 10, up 30 basis points since October 1.

Much of the yield increase is also attributed to an increase in expected short term interest rates rather than term premia by the term-structure model of Adrian-Crump-Moench.
**FINANCIAL MARKETS**

### 5-10 Year Forward Decomposition

**Inflation expectations remain well anchored**
- Market-implied TIPS-based measures of long-term inflation expectations ("breakeven") rose.
  - The breakeven inflation rate ticked up slightly from 1.70% on October 2 to 1.84% on November 10.
  - The breakeven inflation rate remains at the low end of the range observed in recent years.
- Variation in the breakeven inflation rate appears largely driven by changes in the inflation risk premium, with implied expected inflation (as measured by the Adrian-Crump-Moench model) remaining stable.
  - The inflation risk premium remains near multi-year lows of around -0.3%.

**US Dollar Exchange Rates**

**The dollar appreciated significantly**
- The dollar appreciated broadly relative to other major currencies.
  - After depreciating at the end of August, the USD-EUR exchange rate exhibited notable swings on changing views of fundamentals throughout September and October. The dollar depreciated in early October and has rallied since then.
  - Despite the intra-month volatility, the dollar ended almost unchanged vis-à-vis the RMB from October 2 to November 10.
  - Similarly volatile patterns appeared in the USD-JPY exchange rate, which ended higher on November 10 relative to October 2.
**SPECIAL TOPIC - DECOMPOSING OIL PRICE MOVEMENTS**

### Decomposition of Post-2010 Oil Price Movements

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<th>Year</th>
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**Sources:** Author’s calculations based on Energy Information Administration via Haver Analytics, Thomson Reuters Datastream, Bloomberg.

### Expanding supply impacting oil prices since 2012

- Using a statistical model and a large number of financial variables, weekly oil price changes can be decomposed into demand effects, supply effects and an unexplained part ("residual").
- Oil prices have declined by about 50% since 2010.
  - From 2010 to 2012, rising demand and some supply-side pressures pushed oil prices higher.
  - From 2012 to mid-2014, offsetting effects of rising demand and increasing supply led to stable oil prices.
  - Since mid-2014, excess supply has generally dominated oil price dynamics – prices fell back to $81.37 in late 2014 and then to slightly above $40 in October.

### Decomposition of Recent Oil Price Movements

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**Sources:** Author’s calculations based on Energy Information Administration via Haver Analytics, Thomson Reuters Datastream, Bloomberg.

### Demand weighing more on oil prices recently

- For the period May 1 – October 30, oil prices have declined by almost 30%.
- Prior to August, falling demand and rising supply were putting similar downward pressures on prices.
- Since August, oil demand has become the dominant factor underlying oil price weakness.
  - This recent pattern contrasts with the pattern observed from 2012-2014.
  - After an initial recovery in early October, the price of oil began to decline again with supply factors playing a greater role.