## Prefatory Note

The attached document represents the most complete and accurate version available based on original files from the FOMC Secretariat at the Board of Governors of the Federal Reserve System.

Please note that some material may have been redacted from this document if that material was received on a confidential basis. Redacted material is indicated by occasional gaps in the text or by gray boxes around non-text content. All redacted passages are exempt from disclosure under applicable provisions of the Freedom of Information Act.

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Class II FOMC – Restricted (FR)

# Report to the FOMC on Economic Conditions and Monetary Policy

## Book A

Economic and Financial Conditions:
Current Situation and Outlook

September 11, 2013

Prepared for the Federal Open Market Committee
by the staff of the Board of Governors of the Federal Reserve System

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# Domestic Economic Developments and Outlook

The information that we have received since the July Tealbook has been mixed but, on balance, seems to point to a somewhat weaker pace of economic recovery from this point forward than we anticipated in our previous projection. In the labor market, the past two monthly reports on payroll employment were both disappointing. The unemployment rate once again surprised us to the downside, but the signal from that downward move was muddied by a further decline in the labor force participation rate. With regard to production, we now estimate that real output rose at an annual rate of 2 percent in the first half of this year, ½ percentage point more than our estimate in the July Tealbook. However, this upward revision was concentrated in spending categories where we do not expect any carryover in momentum. And in light of an apparent softening in the trajectory of consumer spending, as well as slightly more restrictive financial conditions, we have revised down our forecast for real GDP growth in the second half of the year to 2½ percent, ¼ percentage point less than in our previous projection.

Our medium-term projection for real activity is a little weaker than in the July Tealbook, reflecting a further rise in interest rates and a higher exchange value of the dollar. Even so, we still expect economic activity to accelerate gradually through 2015 because of the waning of a number of headwinds that have been restraining growth in recent years, including the economic and fiscal stresses in Europe and restrictive fiscal policy domestically. All told, our forecast has real GDP increasing 3 percent in 2014 and 3½ percent in 2015, ¼ percentage point lower in each year than in the July Tealbook. In 2016, we expect real GDP to rise 3¼ percent.

In line with the gradual pickup in aggregate demand, the unemployment rate is projected to fall from about 7¼ percent in the current quarter to 5¼ percent at the end of 2016—close to our estimate of the natural rate. Largely as a result of its lower starting point, the projected path of the unemployment rate is a little lower than in the July Tealbook, and it crosses the Committee's 6½ percent threshold in the first quarter of 2015, one quarter earlier than in our previous projection. However, because we also made a small downward revision to our estimate of the natural rate of unemployment, our projection for the labor utilization gap has narrowed by a little less than implied by the revision to the unemployment rate.

## Revisions to the Staff Projection since the Previous SEP

The FOMC last published its Summary of Economic Projections (SEP) following the June FOMC meeting. The table below summarizes revisions to the staff economic projection since the June Tealbook.

The staff projection for real GDP growth is somewhat weaker than in the June Tealbook, the result of both weaker indicators for the near term and less favorable financial assumptions. However, the projection for the unemployment rate is little revised on net: It ends 2013 a bit lower, reflecting the incoming data, and it is unrevised thereafter, reflecting the offsetting influences of the weaker GDP growth outlook and a small further downward revision to our estimate of the natural rate of unemployment. In 2016, the staff projects another year of above-trend GDP growth and a further decline in the unemployment rate to 5¼ percent—close to our estimate of the natural rate.

The staff projection for overall PCE inflation has revised up this year relative to the June projection, reflecting the rise in oil prices over the summer. Beyond this year, however, the projection for both core and headline inflation is revised slightly lower, largely the result of a change in the BEA's methodology for measuring the nonmarket component of prices. In 2016, we project inflation to continue to edge higher but still to be below 2 percent.

The unemployment rate is still projected to cross the Committee's 6½ percent threshold in early 2015, and the policy rule that governs our assumption for the federal funds rate calls for the rate to lift off from the effective lower bound in the second quarter of 2015, the same as in June.

**Staff Economic Projections Compared with the June Tealbook**

| Variable | 2013 H1 | 2013 H2 | 2013 | 2014 | 2015 | 2016 | Longer run |
|---|---|---|---|---|---|---|---|
| Real GDP[1] | 2.0 | 2.5 | 2.3 | 3.1 | 3.4 | 3.2 | 2.3 |
| June Tealbook | 2.0 | 2.9 | 2.5 | 3.4 | 3.6 | | 2.3 |
| Unemployment rate[2] | 7.5 | 7.2 | 7.2 | 6.6 | 5.8 | 5.3 | 5.2 |
| June Tealbook | 7.5 | 7.3 | 7.3 | 6.6 | 5.8 | | 5.2 |
| PCE inflation[1] | .6 | 1.6 | 1.1 | 1.2 | 1.4 | 1.6 | 2.0 |
| June Tealbook | .4 | 1.3 | .9 | 1.4 | 1.6 | | 2.0 |
| Core PCE inflation[1] | 1.1 | 1.4 | 1.2 | 1.5 | 1.6 | 1.7 | n.a. |
| June Tealbook | 1.0 | 1.4 | 1.2 | 1.6 | 1.8 | | n.a. |
| Federal funds rate[2] | .12 | .13 | .13 | .13 | .85 | 1.90 | 4.00 |
| June Tealbook | .12 | .13 | .13 | .13 | 1.04 | | 4.00 |
| Memo: Federal funds rate, end of period | .13 | .13 | .13 | .13 | 1.00 | 2.00 | 4.00 |
| June Tealbook | .13 | .13 | .13 | .13 | 1.25 | | 4.00 |

1. Percent change from final quarter of preceding period to final quarter of period indicated.
2. Percent, final quarter of period indicated.
n.a. Not available.

Recent readings on core consumer prices have come in as expected and appear consistent with our view that the especially low pace of inflation in the first half of the year would prove transitory. Accordingly, our core inflation forecast is broadly similar to the July Tealbook, with core PCE price inflation expected to step up to 1.4 percent in the second half of this year and to move gradually higher over the medium term, reaching 1.7 percent in 2016. Our headline inflation forecast has been pushed up in the near term by the recent rise in imported crude oil prices. Over the medium term, though, energy prices are expected to recede, causing total PCE inflation to run a little below core inflation. The inflation projection is a touch lower in this Tealbook over the medium term, reflecting a change in the measurement of the nonmarket component of PCE prices.

We view the degree of uncertainty attending our projection of real activity as being similar to the average over the past 20 years—the benchmark used by the FOMC. We continue to view the risks to the outlook for real activity as being skewed to the downside, in part because of the constraints imposed on monetary policy by the zero lower bound on interest rates. We also regard the uncertainty around our inflation forecast as being about normal and view these risks as roughly balanced. This assessment of risk is unchanged from the June Tealbook—the last time that Committee participants submitted economic projections.

## KEY BACKGROUND FACTORS

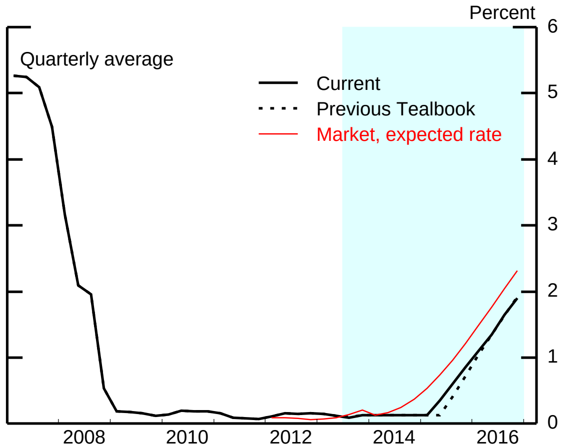
### Monetary Policy

Our assumptions regarding purchases under the LSAP program are unrevised this round. We assume that the Committee will begin to slow the pace of purchases this year and will end them by the middle of 2014, bringing the cumulative purchase amount under the current program to about $1.2 trillion. Market participants' expectations for asset purchases appear to be aligned fairly well with these assumptions.

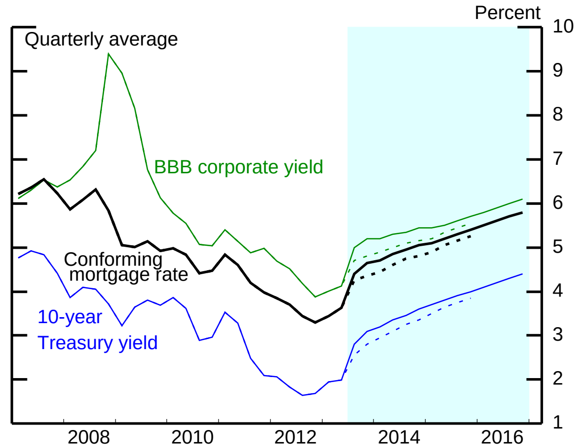
Given the revision to the unemployment rate projection already mentioned, the policy rule that governs our assumption for the federal funds rate calls for the rate to lift off from its effective lower bound in the second quarter of 2015—one quarter earlier than in the previous Tealbook. After liftoff, the trajectory of the federal funds rate is quite similar to the one in the previous projection.

# Key Background Factors underlying the Baseline Staff Projection

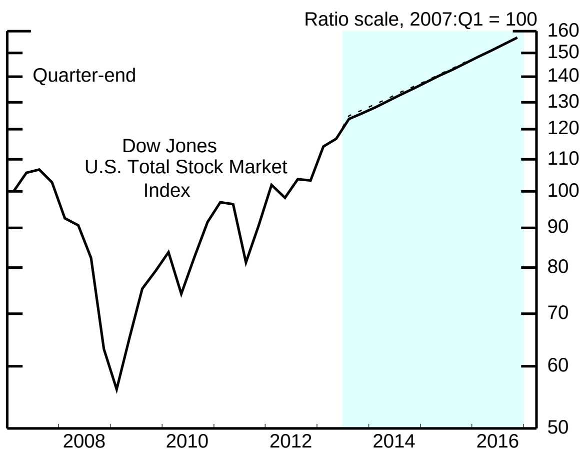
## Federal Funds Rate



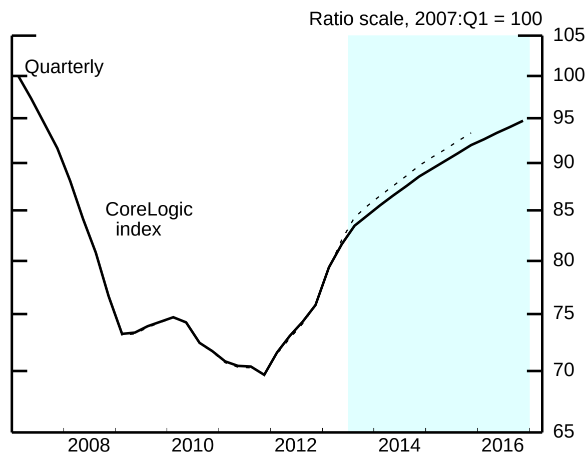

## Long-Term Interest Rates



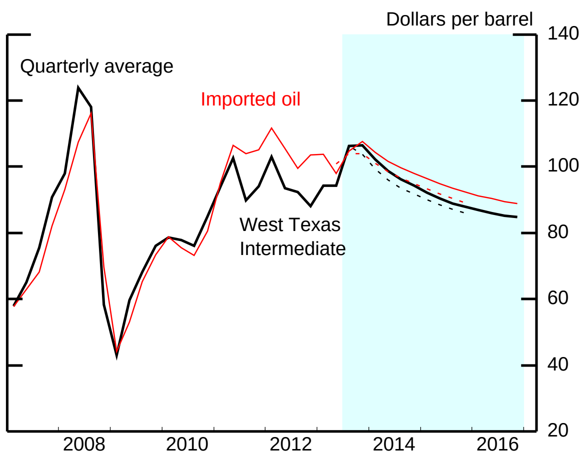

## Equity Prices



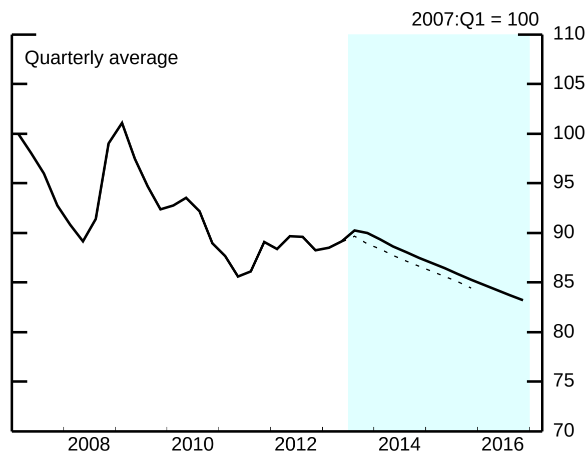

## House Prices




## Crude Oil Prices




## Broad Real Dollar



## Other Interest Rates

In contrast to the staff, market participants have apparently slightly raised their expected path of the federal funds rate over the medium term; also, the Treasury term premium has risen noticeably further. In sum, the 10-year Treasury yield has increased more than 40 basis points since the July Tealbook. We interpret much of the increase in the 10-year yield as having pulled forward some of the changes we had expected to occur in coming quarters, so we have flattened the projected contour of the yield somewhat. Nonetheless, we continue to anticipate a significant rise in the Treasury yield over the medium term, primarily reflecting the movement of the 10-year valuation window through the period of extremely low short-term interest rates and a gradual waning of the effects of the FOMC's balance sheet policies on term premiums. All told, the 10-year Treasury yield is expected to climb gradually from 3 percent at present to almost 4½ percent by the end of 2016.

Yields on investment-grade corporate bonds have increased in line with those on comparable-maturity Treasury securities in recent weeks, leaving their implied risk spreads about unchanged. As in the July Tealbook, the projected pickup in economic growth that we are anticipating over the medium term is expected to gradually narrow this risk spread, producing a somewhat less pronounced rise in corporate bond yields than in Treasury yields. Interest rates on conventional 30-year home mortgages have also moved up since the July Tealbook, but only about 30 basis points on net. Our previous forecast had anticipated such a narrowing in the spread between mortgage rates and Treasury yields by year-end, so we did not adjust our projection for a fairly flat spread over the medium term this round, and thus have allowed the higher path for Treasury yields to completely pass through to higher mortgage rates.

## Equity Prices and Home Prices

The Dow Jones U.S. total stock market index has edged down since the July Tealbook, and we have revised down the projected level of equity prices about ½ percent, on average, through the end of 2016. As in our previous forecast, we expect stock prices to rise at an average annual rate of 7½ percent over the next few years—a pace sufficient, we think, to bring the implied equity risk premium down toward more typical levels over time.

The latest readings have continued to show increases in national home prices, although the rate of price appreciation has slowed markedly from the especially rapid pace seen earlier in the year. The CoreLogic index values for June and July came in a little below our forecast, leading us to revise down the projected level of house prices slightly. We continue to expect a further deceleration in house prices to an average rate of about 4½ percent per year over the next few years on average.

## Fiscal Policy

Our fiscal policy assumptions are little changed in this forecast. In particular, we have maintained our assumption that policy continues to exert considerable restraint on the growth of aggregate demand. Our best guess is that the restraint is beginning to moderate, with fiscal policy at all levels of government reducing the rate of real GDP growth by a little less than 1 percentage point (excluding multiplier effects) during the second half of this year after deducting about 1¼ percentage points from GDP growth during the first half. That said, the precise timing of the drag is quite difficult to pin down. In the medium term, we expect the drag from fiscal policy to diminish to ¾ percentage point in 2014 and ¼ percentage point in 2015. And we continue to expect the federal unified budget deficit to drop from about 7 percent of GDP in fiscal year 2012 to less than 4 percent this year. Beyond this year, we project it will gradually narrow to around 2 percent of GDP by 2016 owing to further improvements in the economy and ongoing policy actions to reduce the deficit.

Two important risks to our fiscal policy assumptions pertain to the need for legislative action over the next several weeks. New legislation is required both to fund the federal government beyond September 30—the end of the current fiscal year—and to raise the statutory debt limit, as the Treasury has announced that it expects to run out of financing capacity in mid-October. Our projection assumes that the Congress and the Administration will eventually provide funding for fiscal 2014 consistent with full sequestration and will lift the debt ceiling without defaulting on any government obligations. However, with negotiations between the Administration and the Congress currently stalled and negotiating positions far apart, we attach considerable uncertainty to the policy outlook.

## Foreign Activity and the Dollar

Foreign real GDP growth ticked up in the second quarter, but, at an annual rate of 2 percent, it was well below trend and ¼ percentage point lower than expected in the July Tealbook. Although activity firmed in the advanced foreign economies and in a number of emerging market economies (EMEs), overall foreign growth was held down by a surprisingly sharp contraction in Mexico, which has a high trade weight in our foreign aggregate. In the second half of the year, aggregate foreign growth is expected to move up to an average pace of 2¾ percent, in part as Mexican growth again turns positive. However, this second-half forecast is a bit lower than we projected in the July Tealbook, as the restraint from greater financial stresses in some EMEs is only partly offset by stronger momentum in China and in Europe. Thereafter, we project that foreign growth will step up further to 3 percent in 2014 and to 3½ percent in 2015 and 2016, supported by waning fiscal drag and improving financial conditions in the euro area as well as the influence of stronger growth in the advanced economies on external demand for the EMEs.

The broad nominal dollar index has appreciated 1 percent since the previous Tealbook. The dollar was about unchanged against the currencies of the advanced foreign economies, but it appreciated about 1½ percent against an aggregate of EME currencies in response to rising interest rates in the advanced economies as well as to a weaker outlook and heightened investor focus on vulnerabilities in certain countries. Over the medium term, we project the broad real dollar to depreciate at an annual rate of about 2½ percent, little changed from the previous Tealbook.

## Oil and Other Commodity Prices

Oil prices have risen in recent weeks because of increasing tensions in the Middle East—in particular, the potential for U.S. military intervention in Syria. Although Syria is not a major oil producer, an escalation of the conflict there could further destabilize the region and threaten crude oil transportation networks. After spiking earlier in the period, when U.S. intervention appeared more imminent, the spot price of Brent crude oil closed at about $111 per barrel on September 10, up about $3 from the July Tealbook.[1] In light of these developments, we have revised up our forecast for the price of imported oil by about $3 per barrel. In all, the price of imported oil is projected to hold steady at about $108 per barrel through the end of this year and then decline over the remainder of the forecast period, reaching $89 per barrel at the end of 2016; as usual, this forecast is guided by the path of futures prices.

[1] The price of West Texas Intermediate crude oil is about unchanged over this period, held down by the waning of earlier North American supply disruptions.

## Summary of the Near-Term Outlook

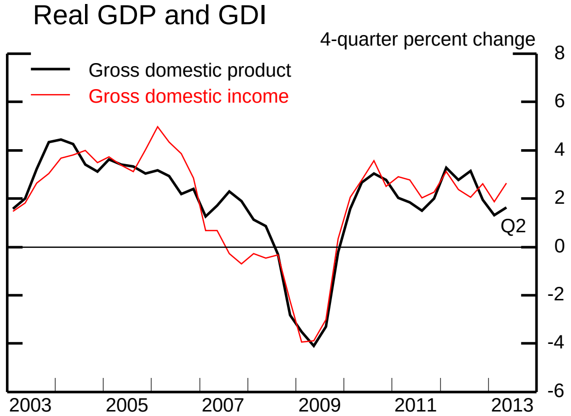
(Percent change at annual rate except as noted)

| Measure | 2013:H1 | | 2013:Q3 | | 2013:Q4 | |
|---|---|---|---|---|---|---|
| | Previous Tealbook | Current Tealbook | Previous Tealbook | Current Tealbook | Previous Tealbook | Current Tealbook |
| **Real GDP** | **1.4** | **2.0** | **2.3** | **2.2** | **3.3** | **2.7** |
| Private domestic final purchases | 2.6 | 2.2 | 2.8 | 2.3 | 4.0 | 3.7 |
| Personal consumption expenditures | 2.1 | 2.2 | 2.6 | 2.0 | 3.5 | 3.1 |
| Residential investment | 11.9 | 13.3 | 4.2 | 2.6 | 17.3 | 12.0 |
| Nonres. private fixed investment | 3.7 | -.2 | 3.7 | 3.7 | 4.0 | 5.1 |
| Government purchases | -4.2 | -2.3 | -3.2 | -2.5 | -2.0 | -2.7 |
| *Contributions to change in real GDP* | | | | | | |
| Inventory investment[1] | -.1 | .8 | .2 | .4 | .6 | .2 |
| Net exports[1] | .1 | -.1 | .4 | .4 | -.2 | -.1 |
| **Unemployment rate[2]** | **7.5** | **7.5** | **7.5** | **7.3** | **7.4** | **7.2** |
| **PCE chain price index** | **.5** | **.6** | **1.8** | **1.9** | **1.0** | **1.3** |
| Ex. food and energy | 1.1 | 1.1 | 1.5 | 1.5 | 1.4 | 1.3 |

1. Percentage points.
2. Percent. For 2013:H1, the 2013:Q2 value is shown.

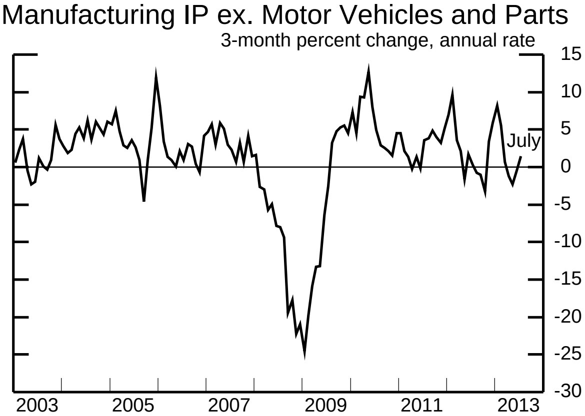
### Recent Nonfinancial Developments (1)

Real GDP and GDI



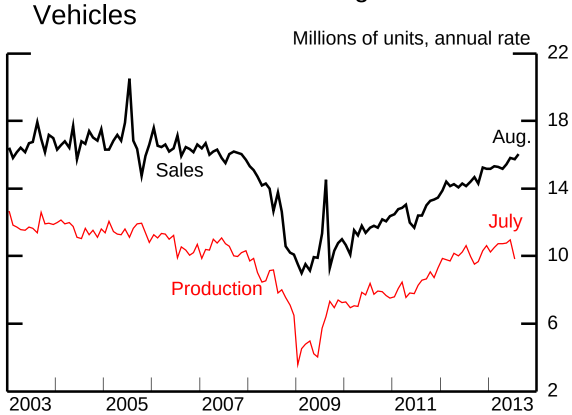

Source: U.S. Dept. of Commerce, Bureau of Economic Analysis.

Manufacturing IP ex. Motor Vehicles and Parts



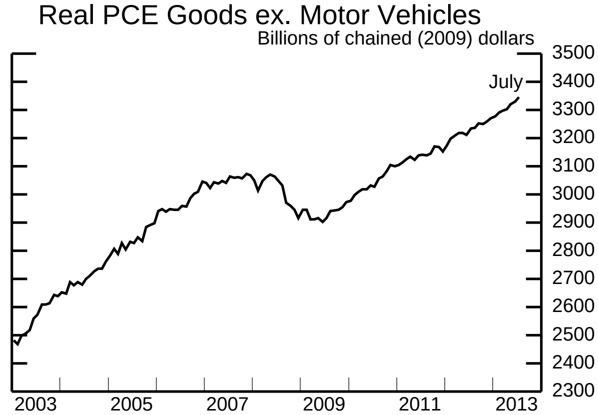

Source: Federal Reserve Board, G.17 Statistical Release, "Industrial Production and Capacity Utilization."

Sales and Production of Light Motor Vehicles




Source: Ward's Auto Infobank.

Real PCE Goods ex. Motor Vehicles




Source: U.S. Dept. of Commerce, Bureau of Economic Analysis.

Our broad index of nonfuel commodity prices has also been revised up relative to the July Tealbook, reflecting recent increases in metals prices in response to indications of improved Chinese demand. Over the forecast period, as in the previous Tealbook, we expect our overall commodity price index to increase only slightly.

## Recent Developments and the Near-Term Outlook for Real GDP

Real GDP is estimated to have increased at a faster—though still only moderate—pace during the first half of this year compared with our projection in the July Tealbook. However, this upward revision was concentrated in inventory investment and government spending—two areas where we do not expect positive momentum to be carried forward. Indeed, we have revised down our projection for real output growth in the second half of the year, primarily because we have a somewhat less robust take on the outlook for consumer spending. In all, real GDP growth is projected to increase from an annual rate of 2 percent in the first half of this year (½ percentage point more than in the July Tealbook) to 2½ percent in the second half (¼ percentage point less than in July).

### Household Spending

We now estimate real PCE to have increased at an annual rate of 2¼ percent in the first half of 2013, a touch higher than in our July Tealbook projection. We continue to expect a moderate step-up in the rate of PCE growth in the second half—supported by both the gains in wealth over the past year and the waning drag from fiscal policy. Consistent with this acceleration, motor vehicle sales have moved up noticeably in recent months and are expected to remain at about the current level through the end of the year. Nevertheless, we have trimmed the extent of the projected acceleration in real PCE in light of the weaker-than-expected pace of real consumer spending in July and the decline in the Thomson Reuters/Michigan measure of consumer sentiment. In all, our second-half projection for the growth in real PCE is marked down by ½ percentage point to 2½ percent.[2]

The sharp rise in mortgage rates since the spring appears to be affecting housing activity, restraining construction of single-family homes and pulling forward sales (see the box "The Rise in Mortgage Rates and Housing Activity"). Meanwhile, multifamily construction appears to have flattened out this year after having risen appreciably in the

[2] We will receive the August retail sales release on Friday, September 13.

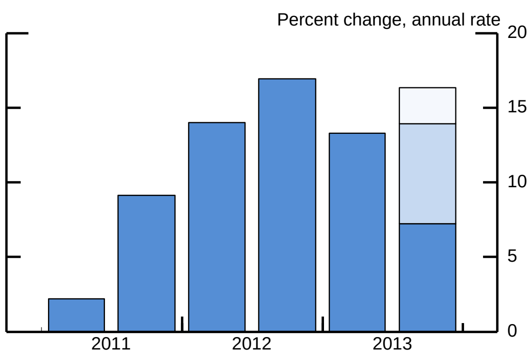
## The Rise in Mortgage Rates and Housing Market Activity

Mortgage rates have risen roughly 100 basis points from their lows around the time of the April Tealbook, and we expect this increase to reduce housing demand over the second half of this year. To illustrate the sensitivity of our projection to mortgage rates, the left-hand figure below provides three forecasts of real residential investment. (Other determinants of housing demand are assumed to be the same as in the current Tealbook projection.) If mortgage rates had remained flat at their April levels and were anticipated to stay at those levels through the end of this year, we would be forecasting real residential investment to rise at an annual rate of 16 percent in the second half of this year (the full height of the rightmost bar). If, instead, rates had followed the gradual upward-sloping path that we anticipated in the April Tealbook, we would be forecasting an increase of 14 percent at an annual rate (the darkest and medium-shaded portions of the bar). And with the rate configuration that we anticipate in this edition of the Tealbook, we are forecasting an increase of 7 percent at an annual rate (the darkest portion of the bar). In addition, we expect the slowing in demand to reduce house price appreciation a few percentage points.

The sensitivity of residential investment to mortgage rates that we have built into our projection is attenuated by about one-fourth relative to typical historical norms, for the following reasons. First, tight credit means that a smaller fraction of potential borrowers qualify for a mortgage, making aggregate housing demand less sensitive to interest rates. Second, refinance activity has plunged in response to the rise in mortgage rates, easing the capacity constraints that we believe to have held down mortgage originations for home purchase to some degree in recent years.[1] Third, a smaller fraction of homebuyers are financing their purchases with mortgages, and buyers who use other sources of funding are probably less sensitive to the recent rise in interest rates.

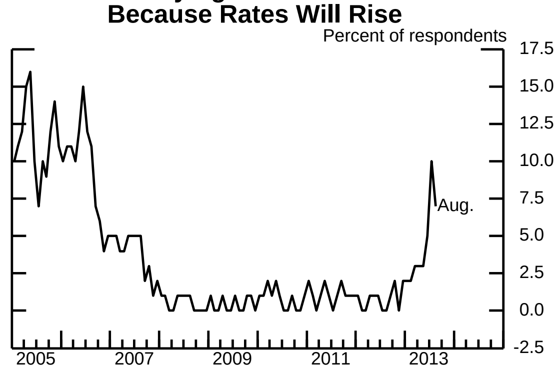
The data on housing activity to date suggest that the rise in rates is beginning to have some effect.[2] Single-family permits declined 2½ percent in July, while newly signed contracts for the

**Growth in Real Residential Investment**




Source: Department of Commerce, Bureau of Economic Analysis. Data from 2013:Q2 to 2013:Q4 are staff projections.

**Homebuying Conditions Good Because Rates Will Rise**




Note: Percent of respondents reporting it is a good time to buy a home because "rates will go up" or "credit will be tighter later."
Source: Thomson Reuters/University of Michigan Surveys of Consumers.

[1] See the box "Crowding Out in the Mortgage Market" in the Financial Developments section of the January 2013 Tealbook.

[2] Many of the series mentioned in this paragraph can be found in the Nonfinancial Data Sheet "Indicators of Single-Family Housing" in this Tealbook. That data sheet also shows the 30-year fixed mortgage rate.

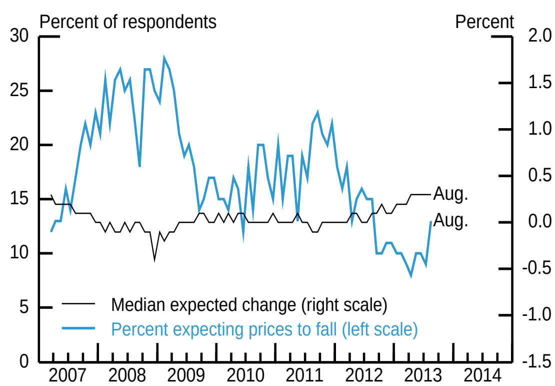
purchase of new homes fell 13 percent, although these latter data are volatile. Meanwhile, the pending home sales index, which reflects newly signed contracts for existing homes, decreased 1 percent in July. In addition, applications for home purchase mortgages, which tend to occur soon after a sales contract is signed, declined modestly in July and August.

Readings on both sales of existing homes and house prices through July show little evidence of a rate-related decline in demand because they are recorded when contracts are closed, and contracts closed in July were primarily negotiated in May and June. In fact, existing home sales *rose* 4 percent in July. Part of this increase could reflect a pull-forward of demand as some buyers rushed to lock in rates in anticipation of further rate increases. Indeed, as shown in the right-hand figure on the previous page, the fraction of households in the Michigan survey that reported it is a good time to buy a home because "interest rates will go up" or "credit will be tighter later" jumped in July.

Of course, considerable uncertainty surrounds our housing projection. One downside risk is that the rise in rates could cause potential homebuyers to downgrade their house price expectations substantially. To date, survey-based measures of house price expectations show little support for this concern (see lower-left figure). Moreover, futures prices for the Case-Shiller 10-city composite index have moved *up* on balance since the close of the April Tealbook. However, we cannot dismiss this possibility going forward. A related downside risk is that the rise in mortgage rates could generate more general uncertainty about the housing market.

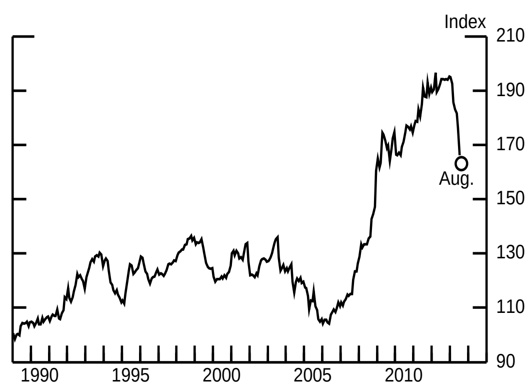
On the upside, the forces supporting the recovery—including pent-up demand for housing, the still-low cost of housing in many areas, and improving labor market conditions—could buoy demand by more than we expect. Even with the recent increases in mortgage rates and house prices, housing still remains affordable by most measures (see the lower-right figure for one example). And market participants do not seem particularly concerned about the rise in rates. Neither builders' nor Realtors' ratings of traffic of potential buyers or expectations of sales in the next six months have deteriorated since April, and lenders tell us that they still see solid prospects for home purchase mortgage originations going forward.

**Year-Ahead House Price Expectations**




Source: Thomson Reuters/University of Michigan Surveys of Consumers.

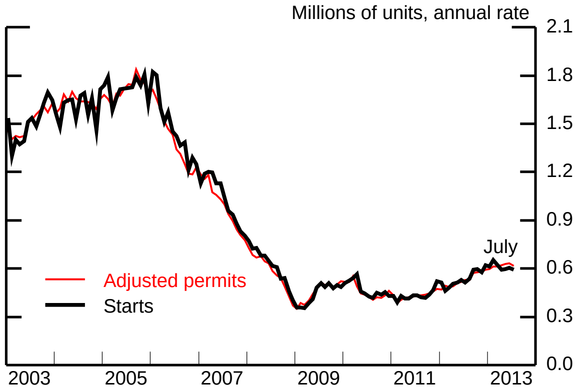
**Housing Affordability Index**




Note: Value of 100 means that a family with the median income has exactly enough income to qualify for a mortgage on a median-priced home. A value above 100 means it has more than enough. Seasonally adjusted by Board staff.
Source: National Association of Realtors. August is a staff estimate.

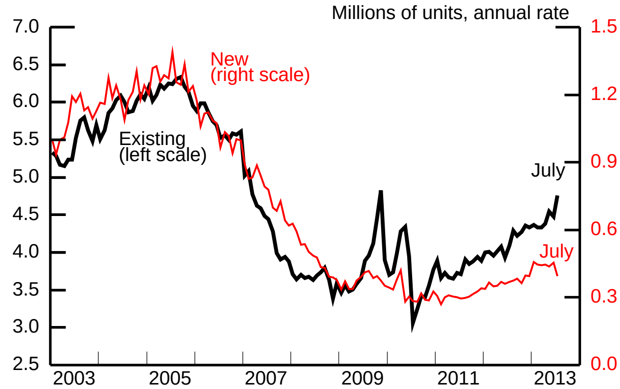
# Recent Nonfinancial Developments (2)

## Single-Family Housing Starts



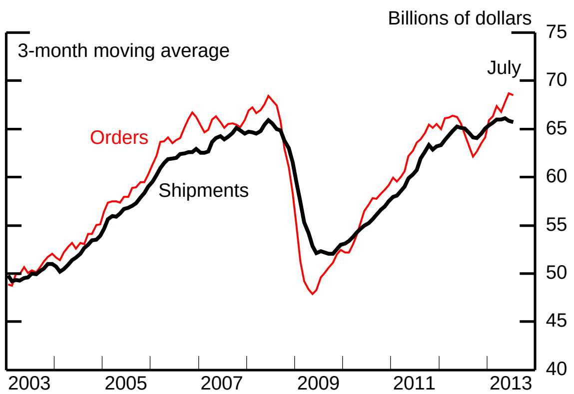

Note: Adjusted permits equal permits plus starts outside of permit-issuing areas.
Source: U.S. Census Bureau.

## Single-Family Home Sales



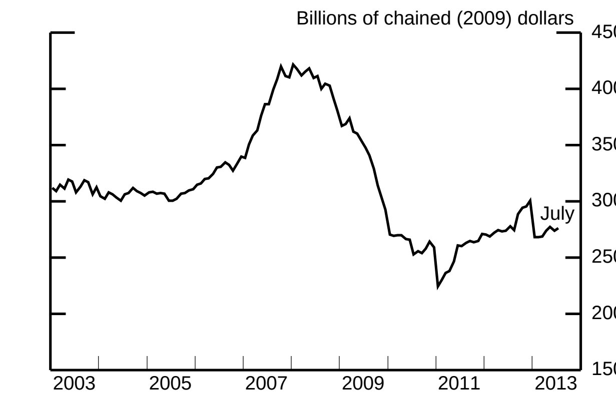

Source: For existing, National Association of Realtors; for new, U.S. Census Bureau.

## Nondefense Capital Goods ex. Aircraft



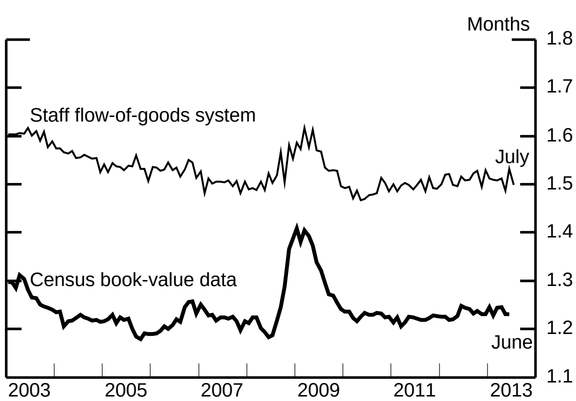

Source: U.S. Census Bureau.

## Nonresidential Construction Put in Place



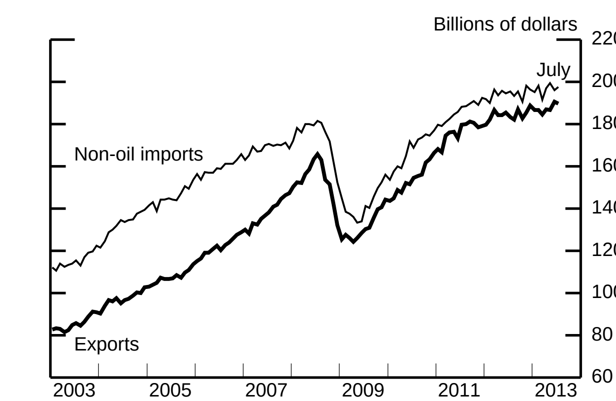

Note: Nominal CPIP deflated by BEA prices through 2013:Q1 and by staff's estimated deflator thereafter.
Source: U.S. Census Bureau.

## Inventory Ratios ex. Motor Vehicles




Note: Flow-of-goods system covers total industry ex. motor vehicles and parts, and inventories are relative to consumption. Census data cover manufacturing and trade ex. motor vehicles and parts, and inventories are relative to sales.
Source: U.S. Census Bureau; staff calculation.

## Exports and Non-oil Imports




Source: U.S. Dept. of Commerce, Bureau of Economic Analysis; U.S. Census Bureau.

past several years. The surge of newly completed apartment units entering the market this year and the deceleration in rents may be deterring builders from beginning new projects. All told, growth in residential investment is expected to slow from an average annual rate of 13 percent in the first half of 2013 to 7 percent in the second half.

## Business Investment

Real private investment in equipment and intangibles (E&I) is projected to increase at a modest annual pace of only about 4½ percent during the second half of the year. To be sure, readings on business sentiment have improved significantly of late, and capital goods orders remain above shipments. Nevertheless, shipments of nondefense capital goods were quite soft in June and July, the recent rise in corporate bond rates will likely act as a drag on investment, and business output has decelerated to a modest pace on average in recent quarters. Moreover, near-term earnings expectations for capital goods producers remain lackluster. Our projection for the growth of investment spending this year, which incorporates the methodological changes introduced with the comprehensive revision of the NIPA, is weaker than in the July Tealbook.[3]

Averaging through some large quarterly swings, real nonresidential investment excluding drilling and mining was flat over the year ending in the second quarter as high vacancy rates, low commercial real estate prices, and tight financing conditions have continued to weigh on demand for new buildings. The information received since the July Tealbook points toward more of the same over the next two quarters, as nominal outlays for nonresidential construction remained low in June and July and the architectural billings index through July stayed at a level consistent with only tepid gains over the rest of the year. Meanwhile, we expect that the level of oil and gas prices and continued deployment of new drilling technologies will support a moderate increase in real investment in drilling and mining structures in the near term.

In the comprehensive revision to the NIPA, nonfarm inventory investment is shown as having added ½ percentage point more to real GDP growth in the first half of this year than earlier estimated. However, the level of inventory investment was still

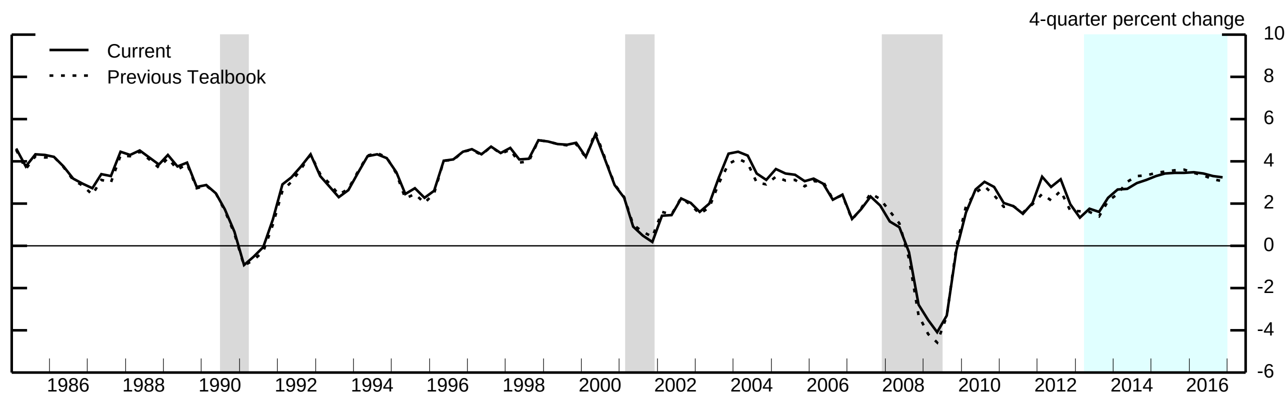
[3] As part of the comprehensive revision, the BEA incorporated two new categories of spending into business investment: (a) research and development and (b) entertainment originals. Along with expenditures on software, spending in these new categories is included under the heading of private fixed investment in intangibles. Our assessment that the forecast for spending on E&I has been downgraded from July is based on a comparison of the current projection for investment in E&I with the July Tealbook projection for investment in equipment and software.

## Projections of Real GDP and Related Components
(Percent change at annual rate from final quarter of preceding period except as noted)

| Measure | 2013 | 2013 H1 | 2013 H2 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| **Real GDP** | **2.3** | **2.0** | **2.5** | **3.1** | **3.4** | **3.2** |
| Previous Tealbook | 2.1 | 1.4 | 2.8 | 3.3 | 3.6 | 3.0 |
| Final sales | 1.7 | 1.3 | 2.2 | 3.1 | 3.6 | 3.5 |
| Previous Tealbook | 1.8 | 1.2 | 2.4 | 3.2 | 3.8 | |
| Personal consumption expenditures | 2.4 | 2.2 | 2.6 | 3.6 | 3.8 | 3.1 |
| Previous Tealbook | 2.5 | 2.1 | 3.0 | 3.7 | 3.9 | |
| Residential investment | 10.2 | 13.3 | 7.2 | 15.8 | 14.8 | 8.9 |
| Previous Tealbook | 11.2 | 11.9 | 10.6 | 18.9 | 16.0 | |
| Nonresidential structures | -1.0 | -6.4 | 4.6 | 2.7 | 2.7 | 2.5 |
| Previous Tealbook | 1.3 | -1.2 | 3.9 | 2.5 | 3.1 | |
| Equipment and intangibles | 3.0 | 1.7 | 4.4 | 5.3 | 5.9 | 5.7 |
| Previous Tealbook[1] | 4.8 | 5.8 | 3.8 | 5.7 | 6.2 | |
| Federal purchases | -5.8 | -5.1 | -6.5 | -5.4 | -3.8 | .0 |
| Previous Tealbook | -7.6 | -8.9 | -6.3 | -5.5 | -3.8 | |
| State and local purchases | -.2 | -.4 | .1 | .3 | 1.1 | 1.5 |
| Previous Tealbook | -.7 | -1.1 | -.3 | .0 | 1.0 | |
| Exports | 3.5 | 3.2 | 3.8 | 4.4 | 6.1 | 7.0 |
| Previous Tealbook | 3.4 | 3.0 | 3.8 | 4.8 | 6.4 | |
| Imports | 2.8 | 3.4 | 2.1 | 4.4 | 5.1 | 4.6 |
| Previous Tealbook | 2.9 | 3.2 | 2.7 | 4.7 | 5.4 | |
| | Contributions to change in real GDP (percentage points) | | | | | |
| Inventory change | .5 | .8 | .3 | .0 | -.2 | -.2 |
| Previous Tealbook | .3 | .3 | .4 | .1 | -.2 | |
| Net exports | .0 | -.1 | .2 | -.1 | .0 | .2 |
| Previous Tealbook | .0 | -.1 | .1 | -.1 | .0 | |

1. Reflects the values for equipment and software, the most comparable series prior to the comprehensive revision.

### Real GDP




Note: The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

fairly modest. Moreover, inventory-to-sales ratios from book-value data and the staff's flow-of-goods system, as well as inventory indexes from regional and national manufacturing surveys, do not point to significant inventory imbalances. We expect inventory investment to provide only a small boost to GDP growth in the second half of this year.

## Government

The ongoing decline in real federal government purchases slowed unexpectedly in the second quarter, as these outlays fell at an annual rate of only about 1½ percent, following a decrease of 8½ percent in the first quarter. We nevertheless continue to expect that the sequestration and other factors, including the drawdown of overseas defense operations, will depress these purchases going forward and that they will drop 6½ percent in the second half of the year.

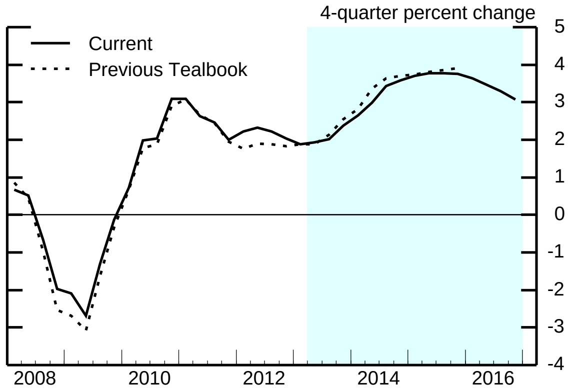
Real state and local government purchases edged lower in the first half of the year, largely because of a continued fall in outlays for construction. In contrast, the contraction in state and local government employment appears to have ended as net hiring has been slightly positive this year. In the second half of 2013, we expect that the resources available to these jurisdictions will not change much, as a continued increase in tax receipts is partially offset by a reduction in grants-in-aid from the federal government caused by the sequestration. Accordingly, we expect real purchases of state and local governments to be about flat.

## Foreign Trade

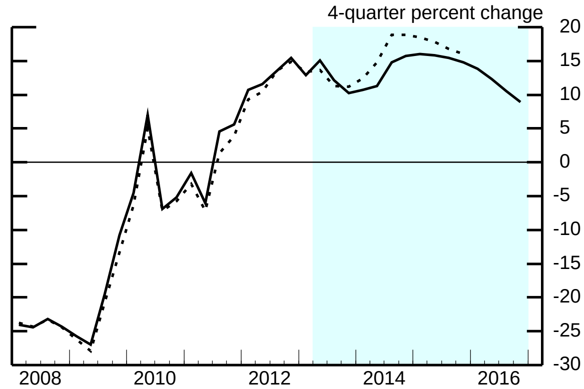
Following three quarters of lackluster performance, both real exports and imports rebounded strongly in the second quarter. Exports rose at an annual rate of 8 percent, pushed up in part by a resumption of Boeing 787 shipments following previous delays. We expect export growth to step down to a 3¾ percent rate in the second half of 2013, a pace more consistent with still-subdued foreign growth and some drag from prior dollar appreciation. Meanwhile, imports rose at an annual rate of 6¼ percent in the second quarter; however, we expect import growth to fall to a mere 2¼ percent pace in the second half as real oil imports decline at a faster pace and U.S. growth picks up only a little. Altogether, the external sector is expected to contribute a little less than ¼ percentage point to the growth rate of real GDP in the second half, modestly greater than in the July Tealbook, as lower projected U.S. demand holds back import growth.

# Components of Final Demand

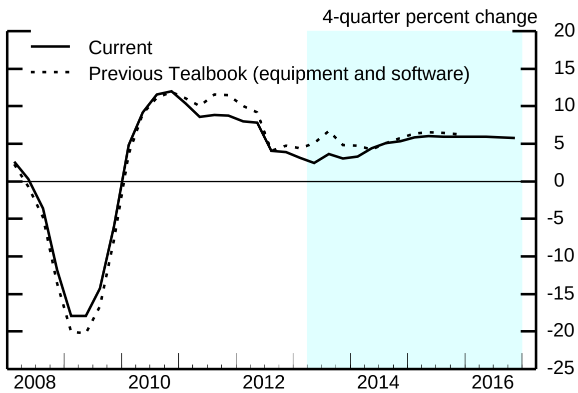
## Personal Consumption Expenditures



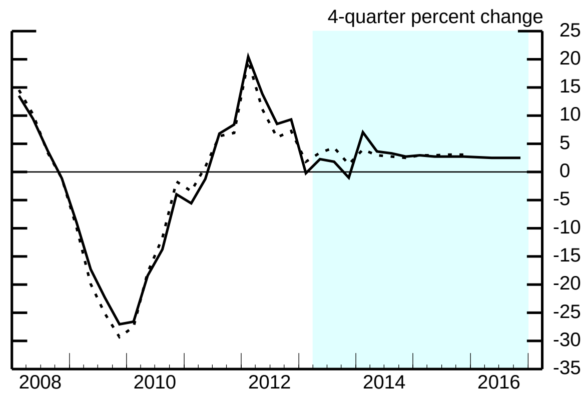

## Residential Investment



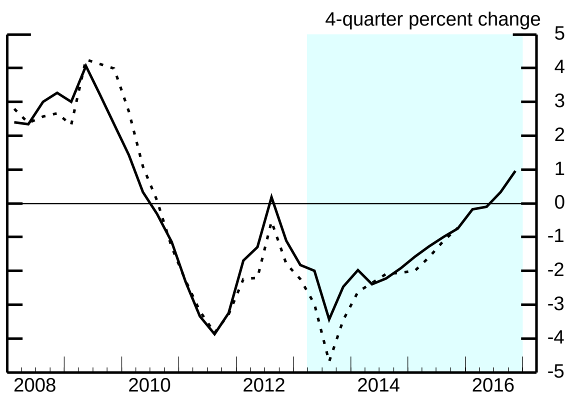

## Equipment and Intangibles



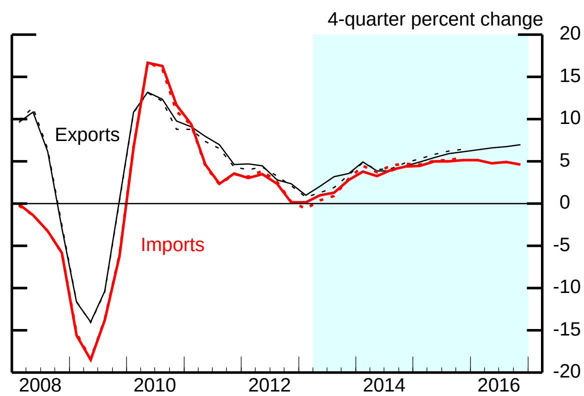

## Nonresidential Structures




## Government Consumption & Investment




## Exports and Imports




Source: U.S. Department of Commerce, Bureau of Economic Analysis.

### The Industrial Sector

Manufacturing output edged down in July and has been about flat, on net, since early this year. However, data on worker hours and physical production suggest that factory output posted a solid gain in August. Moreover, indicators of near-term manufacturing activity, such as the national and regional manufacturing surveys, are, on balance, consistent with moderate gains thereafter. We expect manufacturing production to expand at an annual rate of about 3 percent in the second half of the year, broadly similar to our forecast in the previous Tealbook.

## The Medium-Term Outlook for Real GDP

We have trimmed our projection for real GDP growth over the medium term, as the changes to our key conditioning assumptions have been negative on net. On the downside, financial conditions have become somewhat less supportive: The exchange value of the dollar has increased, and interest rates are somewhat higher than we anticipated in the July Tealbook. On the upside, though, we have made small upward revisions to our estimate of both actual and potential GDP growth over the medium term in response to the inclusion of additional intangibles in measured GDP. Folding in these changes, we now forecast real GDP growth to step up from 2¼ percent this year to 3 percent next year and to 3½ percent in 2015, about ¼ percentage point lower in both 2014 and 2015 than in our previous projection. In 2016, we project an additional year of above-trend growth of 3¼ percent.

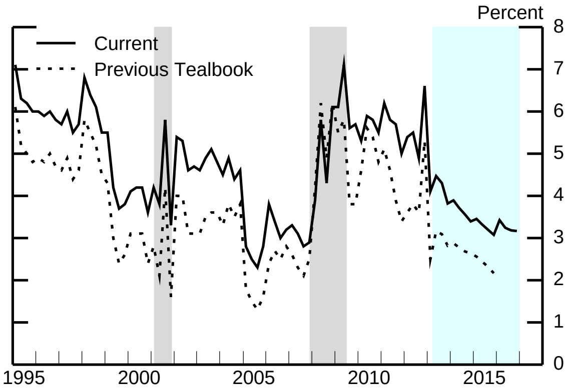
As has been the case for some time, our projection of an acceleration in real GDP over the next two years reflects the expectation that a number of the headwinds that have been holding back the growth in economic activity in recent years will ease. In particular, we believe the restraint from federal fiscal policy is beginning to wane, and we look for European financial and economic conditions to continue their gradual improvement. In addition, we think that mortgage credit will become more broadly available. Given the still highly accommodative stance of monetary policy, these factors are expected to produce a growing sense among households and firms that downside risks to the recovery have diminished, which should, in turn, reduce asset risk premiums and gradually lead to greater consumer spending and more business investment and hiring.

These dynamics are particularly evident in our forecast for consumer spending. Real PCE is projected to rise 2½ percent this year before accelerating to increases of 3½ percent in 2014 and 3¾ percent in 2015. This projected acceleration reflects the

Domestic Econ Devel & Outlook

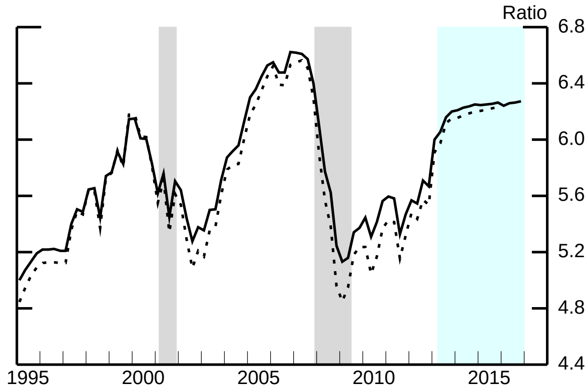
# Aspects of the Medium-Term Projection

## Personal Saving Rate



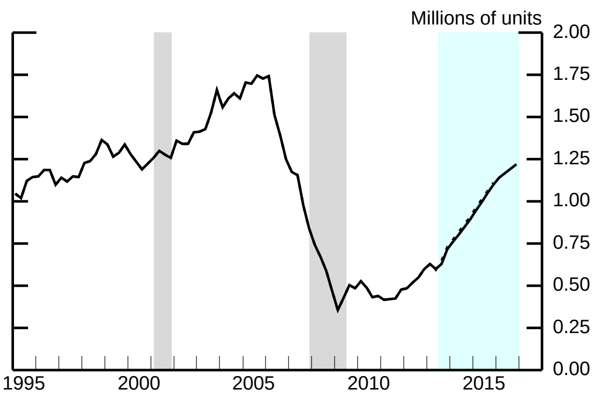

Source: U.S. Dept. of Commerce, Bureau of Economic Analysis.

## Wealth-to-Income Ratio



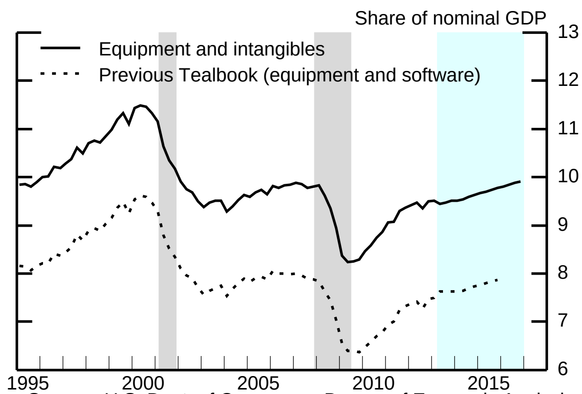

Note: Household net worth as a ratio to disposable personal income.
Source: For net worth, Federal Reserve Board, flow of funds data; for income, U.S. Dept. of Commerce, Bureau of Economic Analysis.

## Single-Family Housing Starts



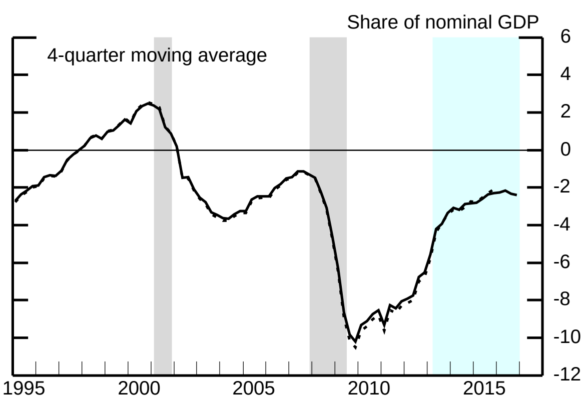

Source: U.S. Census Bureau.

## Equipment and Intangibles Spending



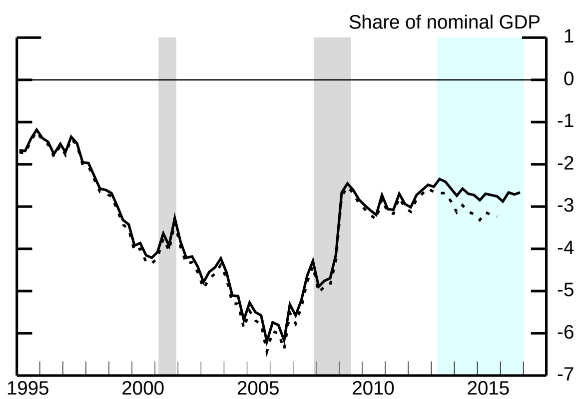

Source: U.S. Dept. of Commerce, Bureau of Economic Analysis.

## Federal Surplus/Deficit




Source: *Monthly Treasury Statement.*

## Current Account Surplus/Deficit




Source: U.S. Dept. of Commerce, Bureau of Economic Analysis.

Note: The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research.

fading effects of this year's tax increases, gains in household wealth produced by rising house and equity prices, and improved consumer confidence. Nonetheless, our trajectory for consumer spending is a little lower than in the July Tealbook, reflecting higher interest rates and some endogenous response to the weaker economic outlook.

Rising income and confidence are also expected to boost residential construction, although these effects will likely be damped by the further rise in mortgage rates we anticipate to occur over the next several years. We expect the growth in residential investment to run at a solid rate of around 15 percent in 2014 and 2015.

Real outlays for E&I are expected to rise roughly 5½ percent per year in 2014 and 2015. Although faster than the tepid 3 percent pace of growth expected this year, our medium-term projection for E&I growth is modest by historical standards and reflects our expectation that business output will increase at only a moderate pace over this period. Similarly, we expect only subdued gains in nonresidential structures over the medium term.

As foreign growth recovers and the dollar begins to depreciate, we expect real exports of goods and services to accelerate from a 3½ percent growth rate in 2013 to 6 percent in 2015; this forecast is a bit weaker than the July Tealbook due to the recent dollar appreciation. Real import growth is expected to pick up from 2¾ percent this year to 5 percent in 2015, supported by the ongoing domestic recovery. This projection is also down slightly from the July Tealbook as the boost from the stronger dollar is more than offset by the drag from the weaker outlook for domestic growth. Overall, net exports are expected to be about neutral for U.S. GDP growth in 2013 and then to be a slight drag through the end of 2015. With roughly offsetting revisions to exports and imports, the net export contribution is little changed relative to the July Tealbook.

## The Outlook for the Labor Market and Inflation

### Recent Developments and Near-Term Outlook for the Labor Market

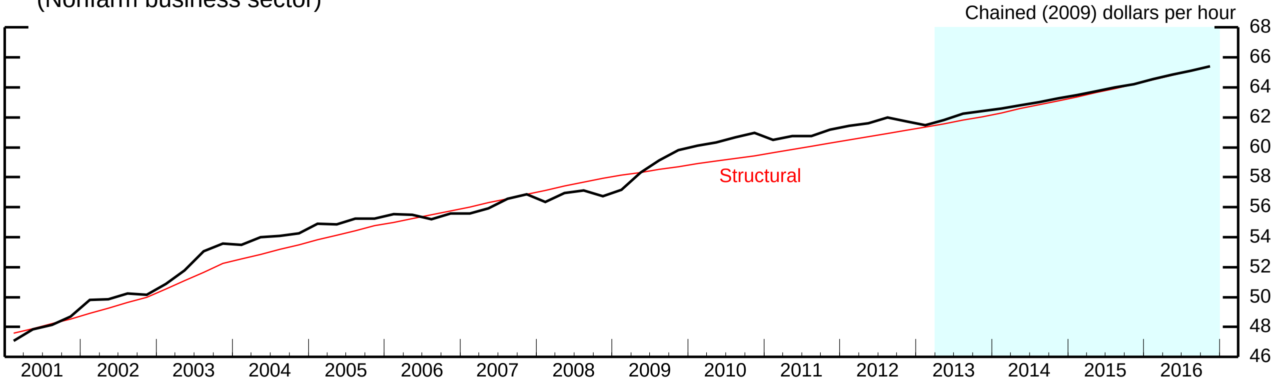
While the incoming data continue to suggest a gradual improvement in labor market conditions, the news has not been uniformly positive. Total payroll employment growth is currently estimated to have averaged 137,000 in July and August, about 45,000

## Decomposition of Potential GDP
(Percent change, Q4 to Q4, except as noted)

| Measure | 1974-95 | 1996-2000 | 2001-11 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| Potential real GDP | 3.1 | 3.4 | 2.2 | 1.9 | 2.1 | 2.2 | 2.2 | 2.1 |
| Previous Tealbook | 3.0 | 3.4 | 2.1 | 1.9 | 2.0 | 2.1 | 2.1 | |
| *Selected contributions*[1] | | | | | | | | |
| Structural labor productivity[2] | 1.5 | 2.7 | 2.2 | 1.4 | 1.5 | 1.7 | 1.8 | 1.9 |
| Previous Tealbook | 1.4 | 2.6 | 2.1 | 1.4 | 1.5 | 1.7 | 1.7 | |
| Structural hours | 1.5 | 1.0 | .6 | .7 | .7 | .6 | .6 | .5 |
| Previous Tealbook | 1.5 | 1.0 | .6 | .7 | .7 | .6 | .6 | |
| Labor force participation | .4 | .0 | -.3 | -.3 | -.5 | -.3 | -.3 | -.3 |
| Previous Tealbook | .4 | .0 | -.3 | -.3 | -.4 | -.3 | -.3 | |
| Memo: | | | | | | | | |
| GDP gap[3] | -2.4 | 1.9 | -3.6 | -3.6 | -3.4 | -2.5 | -1.3 | -.2 |
| Previous Tealbook | -2.4 | 1.9 | -3.6 | -3.9 | -3.8 | -2.6 | -1.2 | |

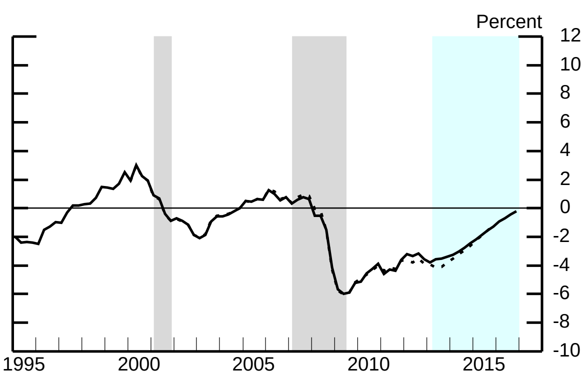
Note: For multiyear periods, the percent change is the annual average from Q4 of the year preceding the first year shown to Q4 of the last year shown.
1. Percentage points.
2. Due to substantial revisions from the Bureau of Economic Analysis to productive investment as part of the latest comprehensive revision, staff estimates of the components of structural productivity are not available for this Tealbook.
3. Percent difference between actual and potential GDP in the final quarter of the period indicated. A negative number indicates that the economy is operating below potential.

### Structural and Actual Labor Productivity
(Nonfarm business sector)



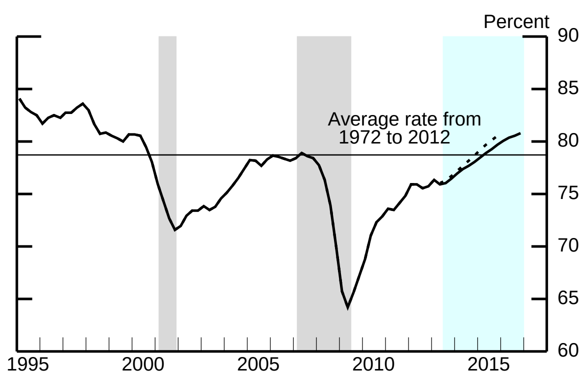

Source: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Department of Commerce, Bureau of Economic Analysis; staff assumptions.

### GDP Gap




Note: The GDP gap is the percent difference between actual and potential GDP; a negative number indicates that the economy is operating below potential.
Source: U.S. Dept. of Commerce, BEA; staff assumptions.

### Manufacturing Capacity Utilization Rate




Source: Federal Reserve Board, G.17 Statistical Release, "Industrial Production and Capacity Utilization."

Note: The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research.

less per month than we had anticipated in the July Tealbook.[4] These readings, combined with the downward revisions to employment in May and June, leave the level of total payrolls in August about 130,000 lower than our projection in the previous Tealbook. The news from the household survey was somewhat more upbeat, as the unemployment rate moved down to 7.3 percent in August, 0.2 percentage point lower than we expected in the most recent Tealbook. However, the labor force participation rate also ticked down 0.2 percentage point in August—compared with our July Tealbook projection of no change—somewhat tempering the positive message from the decline in the unemployment rate.[5] That said, the broader U-5 and U-6 measures of unemployment also declined in July and August.

Other indicators of labor market activity received since the July Tealbook also send somewhat mixed signals about improvement in the labor market. Initial claims for unemployment insurance have continued to edge lower and the hiring plans of small businesses rose substantially in July and August. However, there has been little change, on net, over the past few months in measures of job openings, hiring rates, and household and consumer expectations for future labor market conditions. Finally, the staff's labor market conditions index, which summarizes the movements in 19 labor market indicators, improved slightly over July and August.

On the basis of this evidence, we now expect nonfarm payroll gains of around 155,000 in September and 165,000 per month in the fourth quarter; both figures are down 20,000 from the July Tealbook. We now project that the unemployment rate will edge down further to 7.2 percent in the fourth quarter, 0.2 percentage point lower than in our previous projection.

## Potential GDP and the Natural Rate of Unemployment

We have made two adjustments to our estimates of potential output. First, the comprehensive revision of the NIPA contained an upward restatement of real GDP growth, reflecting in part the incorporation of additional intangibles into the definition of fixed investment. As the comprehensive revision did not substantially alter the

[4] We have received the labor market reports for both July and August since the July Tealbook.

[5] The reported drop in labor force participation in August might have been exaggerated by seasonal adjustment issues associated with the return of teenagers to school combined with a later-than-usual survey week. We therefore expect a partial reversal of the August decline in the participation rate in September.

## The Outlook for the Labor Market

| Measure | 2013 | 2013 H1 | 2013 H2 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| Output per hour, nonfarm business[1] | 1.1 | .3 | 1.9 | 1.4 | 1.5 | 1.8 |
| Previous Tealbook | .3 | -.7 | 1.4 | 1.6 | 1.7 | |
| Nonfarm private employment[2] | 181 | 201 | 162 | 202 | 241 | 198 |
| Previous Tealbook | 198 | 206 | 190 | 209 | 250 | |
| Labor force participation rate[3] | 63.3 | 63.4 | 63.3 | 63.3 | 63.2 | 63.1 |
| Previous Tealbook | 63.4 | 63.4 | 63.4 | 63.3 | 63.3 | |
| Civilian unemployment rate[3] | 7.2 | 7.5 | 7.2 | 6.6 | 5.8 | 5.3 |
| Previous Tealbook | 7.4 | 7.5 | 7.4 | 6.8 | 6.0 | 5.5 |

1. Percent change from final quarter of preceding period at annual rate.
2. Thousands, average monthly changes.
3. Percent, average for the final quarter in the period.
Source: U.S. Department of Labor, Bureau of Labor Statistics; staff assumptions.

## Inflation Projections
(Percent change at annual rate from final quarter of preceding period)

| Measure | 2013 | 2013 H1 | 2013 H2 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| PCE chain-weighted price index | 1.1 | .6 | 1.6 | 1.2 | 1.4 | 1.6 |
| Previous Tealbook | .9 | .5 | 1.4 | 1.3 | 1.5 | 1.7 |
| Food and beverages | .9 | .9 | 1.0 | .7 | 1.3 | 1.4 |
| Previous Tealbook | 1.0 | .9 | 1.1 | .8 | 1.3 | |
| Energy | -1.1 | -7.7 | 6.0 | -3.1 | -1.4 | -.7 |
| Previous Tealbook | -4.0 | -8.5 | .8 | -2.4 | -1.6 | |
| Excluding food and energy | 1.2 | 1.1 | 1.4 | 1.5 | 1.6 | 1.7 |
| Previous Tealbook | 1.3 | 1.1 | 1.5 | 1.6 | 1.7 | 1.8 |
| Prices of core goods imports[1] | -1.0 | -1.0 | -1.0 | 1.5 | 1.5 | 1.6 |
| Previous Tealbook | -.4 | -.9 | .1 | 1.4 | 1.5 | |

1. Core goods imports exclude computers, semiconductors, oil, and natural gas.
Source: U.S. Department of Commerce, Bureau of Economic Analysis.

relationship between the unemployment rate and output in the recent cycle, we passed this upward adjustment to past *actual* output growth into our estimate of past *potential* output growth, and we carried the intangibles portion of this adjustment forward into our projection for potential output growth.

Second, the decline in the unemployment rate since mid-2012 in the face of only modest output gains led us to reduce the growth of potential output in 2012 and early 2013 relative to the higher rate implied by the comprehensive revision. This change narrows the estimated GDP gap and implies that the unemployment rate has a little farther to fall to come back into line with GDP, and thus admits the possibility that we may see additional declines in unemployment in an environment of modest GDP growth. All told, the growth in potential output is unrevised in 2012 and is revised up 0.1 percentage point thereafter relative to the July Tealbook. Nonetheless, at a bit more than 2 percent per year, the average rate of potential output growth over the medium term remains broadly similar to our July forecast.

We have also made small downward adjustments to our projections of the natural rate of unemployment and trend labor force participation. We made similar adjustments in the June Tealbook, but in light of the additional downward surprises in the unemployment and labor force participation rates in recent months, we have moved a little further in the same direction in the current projection—we revised down our estimate of the level of the natural rate and the trend rate of labor force participation by 0.1 percentage point each from early 2013 onward.[6]

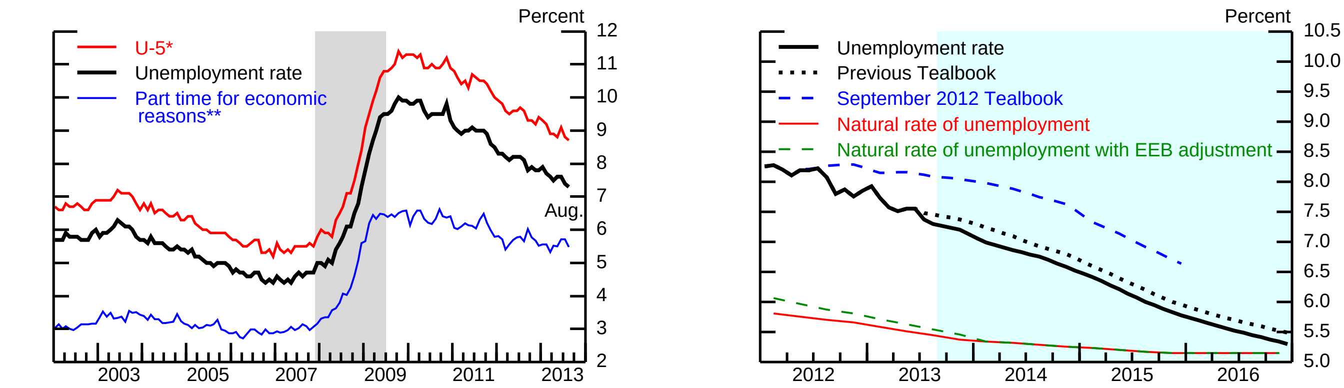
## The Medium-Term Outlook for the Labor Market

Our projected path for gains in total payroll employment over the medium term reflects the acceleration in real GDP that we have in this forecast. In particular, total job gains are projected to step up from 155,000 per month in the second half of this year to about 190,000 per month in 2014 and 240,000 per month in 2015—a trajectory that is somewhat weaker than in the July Tealbook. As noted above, the unemployment rate is 0.2 percentage point lower at the start of the forecast period as a result of the incoming data. From this lower starting point, the unemployment rate declines to 5.8 percent at the end of 2015.

[6] Taken together, the adjustments made to the natural rate of unemployment and trend labor force participation have no implication for our estimate of potential output.

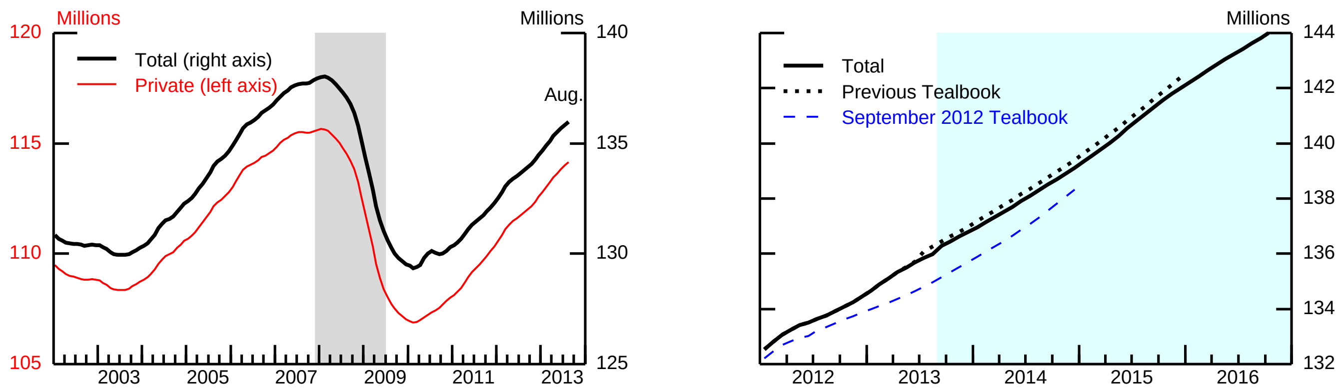
# Labor Market Developments and Outlook

## Measures of Labor Underutilization



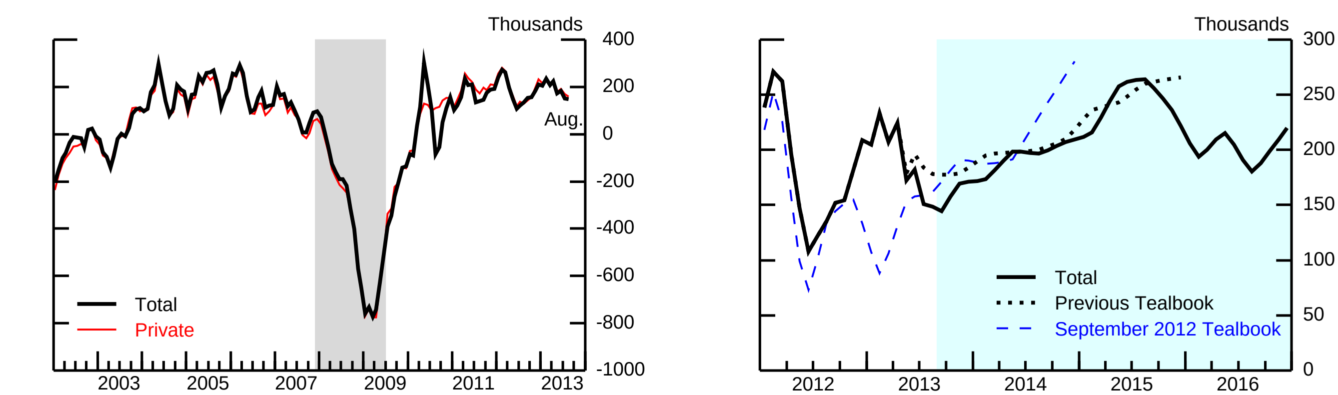

* U-5 measures total unemployed plus all marginally attached to the labor force, as a percent of the labor force plus persons marginally attached to the labor force.
** Percent of Current Population Survey employment.
EEB Extended and emergency unemployment benefits.
Source: U.S. Department of Labor, Bureau of Labor Statistics.

## Level of Payroll Employment*




* 3-month moving averages in history; average levels in each quarter during the forecast period.
Source: U.S. Department of Labor, Bureau of Labor Statistics.

## Change in Payroll Employment*




* 3-month moving averages in history; average monthly changes in each quarter during the forecast period.
Source: U.S. Department of Labor, Bureau of Labor Statistics.

Note: In September 2012, judgmental projections were prepared through 2015 for the Summary of Economic Projections variables, including the unemployment rate, while projections for other variables, including the labor force participation rate and payroll employment, were prepared only through 2014. This exhibit therefore reports a 2015 projection from the September 2012 Tealbook only for the unemployment rate.

The top-right figure of the "Labor Market Developments and Outlook" exhibit compares our current unemployment rate projection with our projection from September 2012, when the Committee first tied its asset purchase decisions to an improvement in the outlook for labor market conditions. By the end of 2013, the unemployment rate is projected to be 7.2 percent, nearly 1 percentage point lower than the 8.1 percent rate that prevailed in August 2012 (the last observation that the Committee had in hand for the September 2012 FOMC meeting); through the end of 2015, our forecast for the unemployment rate averages about 1 percentage point lower than the September 2012 Tealbook's projection. Meanwhile, the outlook for total payroll employment growth past the third quarter of this year has changed relatively little, on average, since our forecast one year ago. However, our current projection for the level of total payroll employment at the end of this year is ¾ percent, or 1.1 million jobs, above what we projected in September 2012, partly due to faster-than-expected job growth during the first half of this year and partly due to the benchmark revision which boosted the estimated level of employment one year ago.[7]

## Resource Utilization

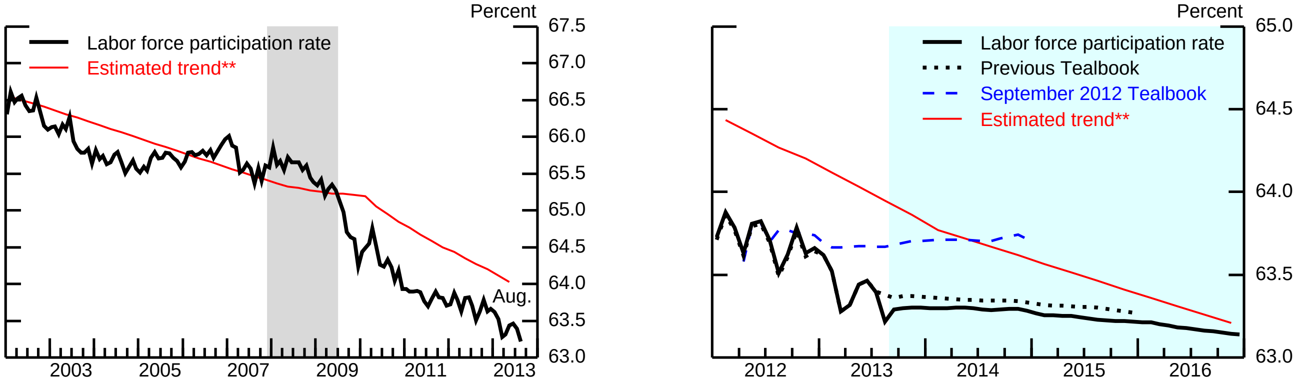
We estimate that real GDP in the second quarter of this year was 3½ percent below its potential level—a ½ percentage point narrower output gap than we estimated in the July Tealbook; this revision reflects the changes made to our supply-side assumptions, as well as the upward revision to GDP growth in the first half of this year. Despite this narrower starting point, with GDP rising less quickly than in our previous projection and potential output rising more quickly, the output gap shrinks by less over the medium term. By the final quarter of 2015, the projected level of GDP stands 1¼ percent lower than potential GDP, unchanged from our previous projection. The labor utilization gap is also narrower at the start of the projection, as our downward adjustment to the natural rate only partially offsets the lower-than-previously-projected unemployment rate. At the end of 2015, the unemployment rate is a little more than ½ percentage point above the natural rate—a gap that is slightly narrower than in our July projection.[8] In the manufacturing sector, capacity utilization is currently almost

[7] On September 26, the Bureau of Labor Statistics is scheduled to publish its preliminary estimate of the benchmark revision to payroll employment.

[8] The slight discrepancy between the revision to the output and labor utilization gaps at the end of 2015 reflects a reestimation of our Okun's law relationship.

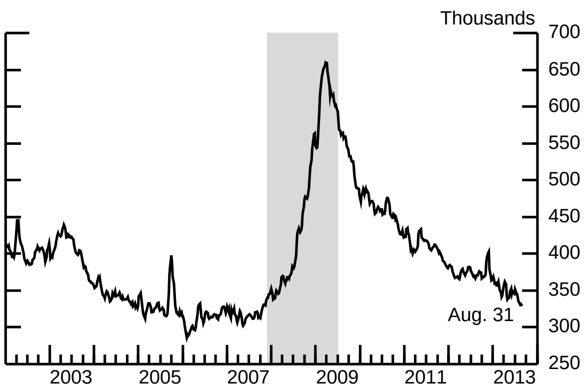
# Labor Market Developments and Outlook (2)

## Labor Force Participation Rate*



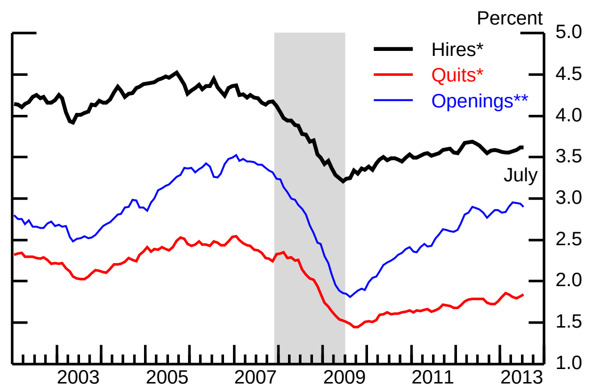

* Published data adjusted by staff to account for changes in population weights.
** Includes staff estimate of the effect of extended and emergency unemployment benefits.
Source: U.S. Department of Labor, Bureau of Labor Statistics; staff assumptions.

## Initial Unemployment Insurance Claims*



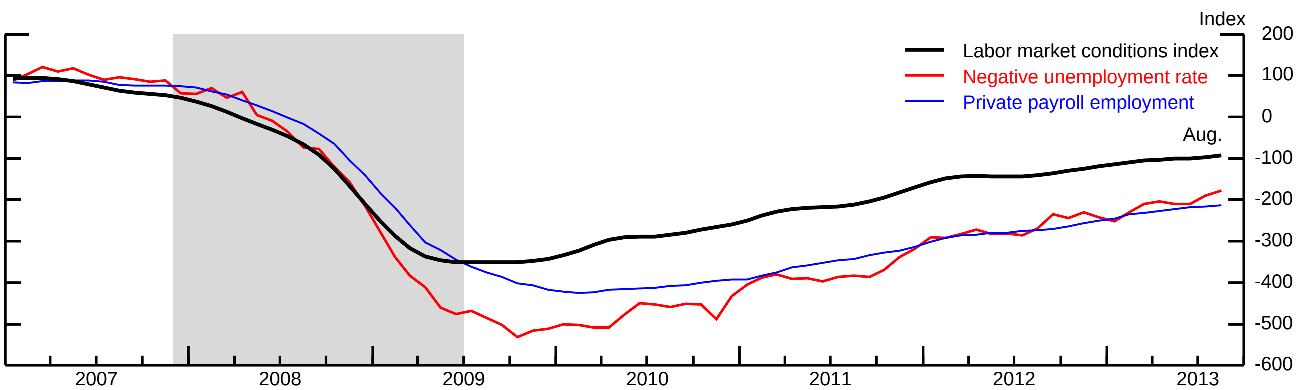

* 4-week moving average.
Source: U.S. Department of Labor, Employment and Training Administration.

## Private Hires, Quits, and Job Openings




* Percent of private nonfarm payroll employment, 3-month moving average.
** Percent of private nonfarm payroll employment plus unfilled jobs, 3-month moving average.
Source: Job Openings and Labor Turnover Survey.

## Indexes of Selected Labor Market Indicators




Note: Labor market conditions index estimated by staff; indexes for unemployment rate and private payroll employment are deviation from estimated trend normalized to have mean zero and unit standard deviation over the period July 1976 to September 2008, multiplied by 100.

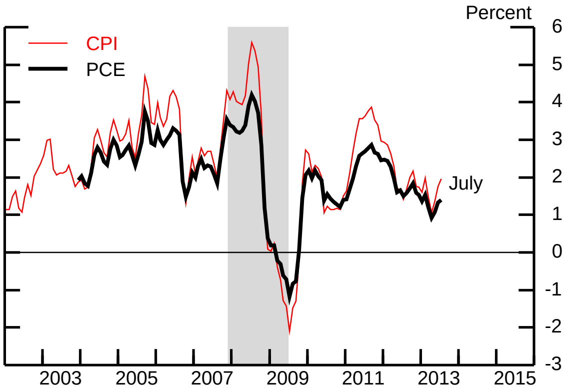
## Labor Market Data and Projections

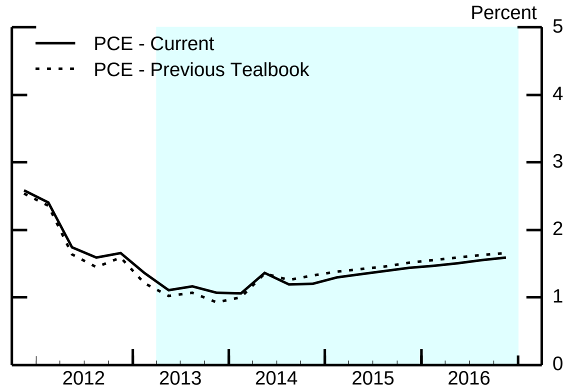
| Indicator | Aug. 2012[1] | Projection for mid-2014[2] in the Tealbook dated: | | | |
|---|---|---|---|---|---|
| | | Sept. 2012 | Dec. 2012 | June 2013[3] | Sept. 2013[3] |
| Unemployment rate (percent) | 8.1 | 7.8 | 7.6 | 6.9 | 6.8 |
| Labor force participation rate (percent) | 63.5 | 63.7 | 63.7 | 63.3 | 63.3 |
| *Monthly change in payroll employment (thousands, three-month averages)* | | | | | |
| Total | 94 | 212 | 197 | 211 | 197 |
| Private | 109 | 210 | 195 | 219 | 205 |
| Level of total payroll employment (millions) | 133.3 | 137.0 | 137.1 | 138.1 | 138.0 |
| Total hours worked (percent change)[4] | 1.0 | 2.3 | 2.0 | 2.6 | 2.5 |
| Total hours worked (billions)[4] | 184.6 | 190.3 | 190.8 | 193.2 | 193.0 |

1. The figures for August 2012 refer to data as originally published in the September employment situation release along with the staff's real-time translation of those data into hours worked. These were the latest available data at the time of the September FOMC meeting.
2. Calculated as the mean of the 2014:Q2 and 2014:Q3 projections.
3. Projections of payrolls and hours worked include the effects of the benchmark revision to the payroll survey.
4. Total hours worked are aggregate hours in the nonfarm business sector. Because that series is available only on a quarterly basis, the August 2012 figures refer to the quarterly percent change and level in 2012:Q3. The percent changes and levels in hours are at annual rates.
Source: U.S. Department of Labor, Bureau of Labor Statistics; staff projections.

# Inflation Developments and Outlook
(Percent change from year-earlier period)

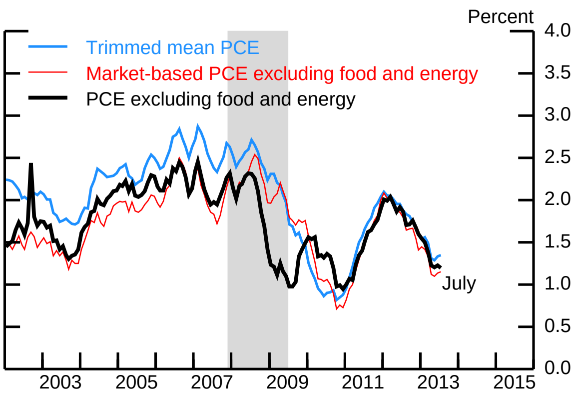
## Headline Consumer Price Inflation

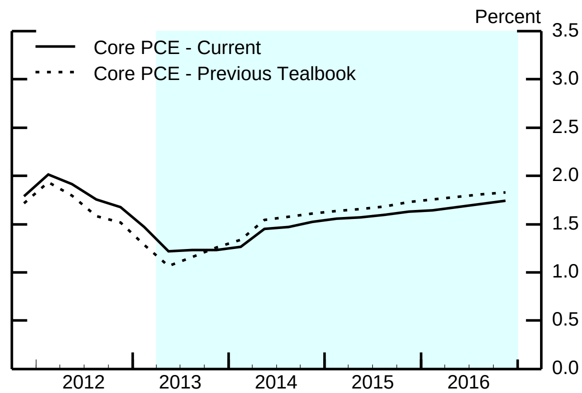



Source: For CPI, U.S. Department of Labor, Bureau of Labor Statistics; for PCE, U.S. Department of Commerce, Bureau of Economic Analysis.

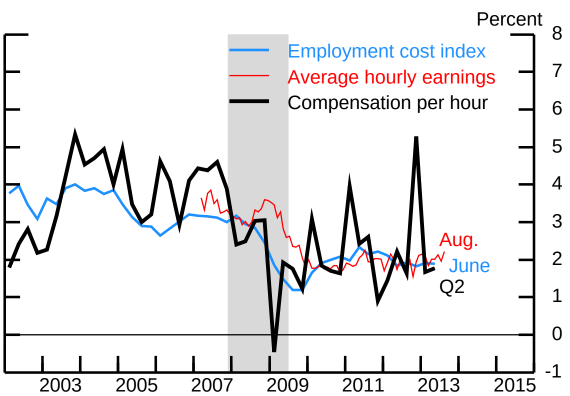
## Measures of Underlying PCE Price Inflation

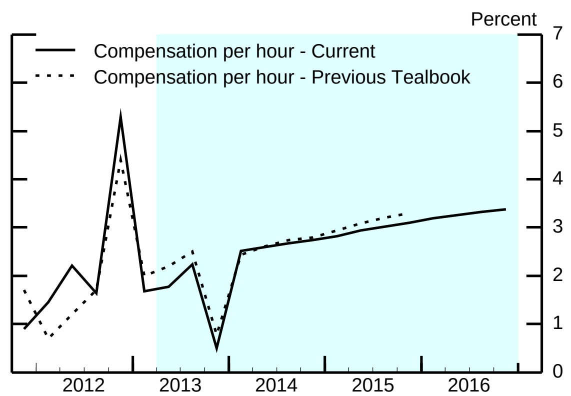



Source: For trimmed mean PCE, Federal Reserve Bank of Dallas; otherwise, U.S. Department of Commerce, Bureau of Economic Analysis.

## Labor Cost Growth (Private Industry)




Note: The compensation per hour value for 2013:Q2 is a staff estimate.
Source: U.S. Department of Labor, Bureau of Labor Statistics.

3 percentage points below its long-run average but rises to its long-run average by mid-2015.[9]

## The Outlook for Prices and Compensation

Headline PCE prices rose at an annual rate of only ½ percent in the first half of this year as consumer energy prices dropped sharply and core prices decelerated. Over the second half of this year, though, total PCE price inflation is projected to increase to 1½ percent as energy prices rebound and core PCE price inflation edges up. Compared with the July Tealbook, our projection for total PCE inflation in the second half of this year is up about ¼ percentage point, reflecting the recent rise in imported crude oil prices.

After running at a very subdued 1 percent annual pace over the first half of this year, core PCE price inflation is forecast to pick up to just under 1½ percent in the second half as transitory influences from medical prices and nonmarket prices ebb. Although recent data on core consumer prices have come in as expected, this near-term projection is nevertheless down a touch from the July Tealbook due to lower-than-expected data on import prices.

We have marked up our projection for consumer energy price inflation in the second half of this year to around 6 percent because of the increase in oil prices; we had expected these prices to move sideways in the July Tealbook. Nevertheless, given the downward tilt in our projected oil price path, we continue to expect that PCE energy prices will edge lower over the medium term.

Consumer food prices are projected to increase 1 percent this year and then decelerate to an increase of about ¾ percent next year, as this year's steep declines in farm commodity price futures show through to the retail level. In 2015, we expect that these prices will rise 1¼ percent, a little below core inflation.

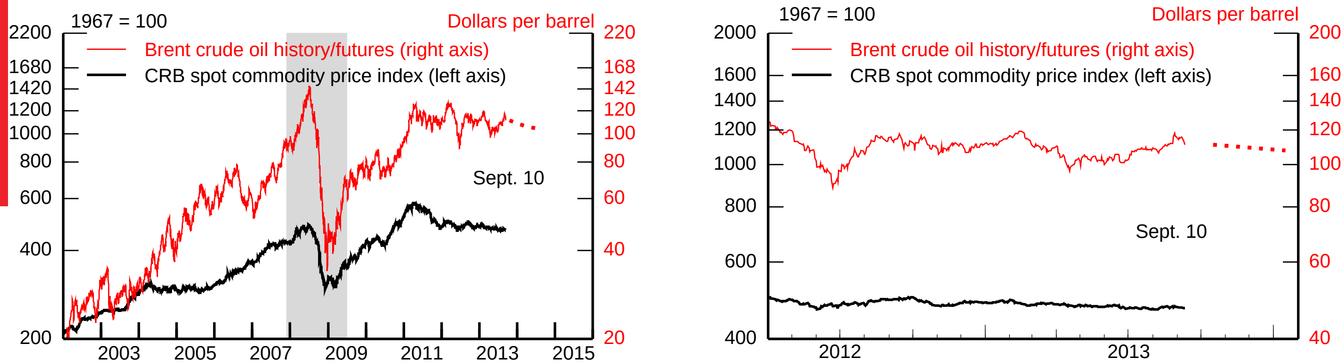
Falling core import prices are damping domestic inflation. After declining at an annual rate of 2½ percent in the second quarter, prices of imported core goods are

[9] The degree of slack in the manufacturing sector appears to be a bit smaller than that for the broader economy, in part because of unprecedented declines in production capacity from 2007 to 2010 that occurred as manufacturers shuttered plants that had been chronically underutilized. Note that we estimate capacity in the industrial sector based largely on survey data that seek to capture the highest level of output that plants can sustainably maintain given sufficient availability of variable inputs, such as labor and materials.

# Inflation Developments and Outlook (2)

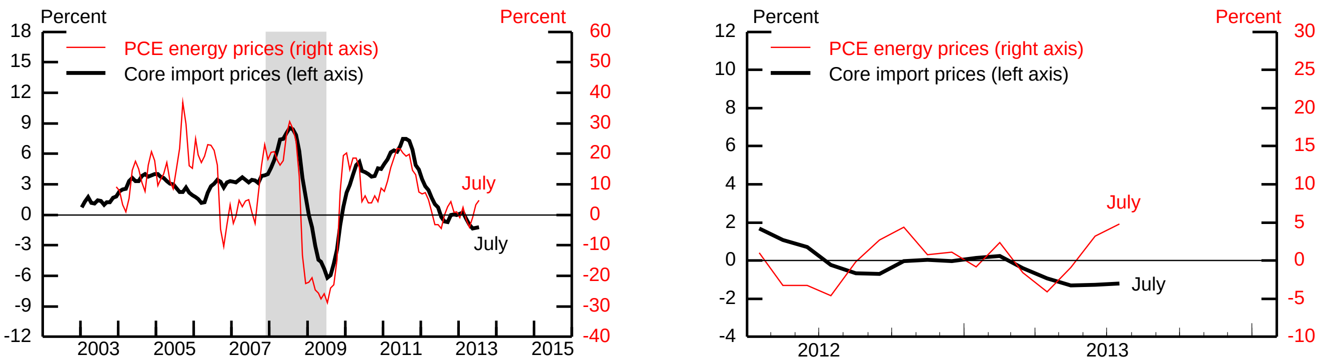
(Percent change from year-earlier period, except as noted)

## Commodity and Oil Price Levels



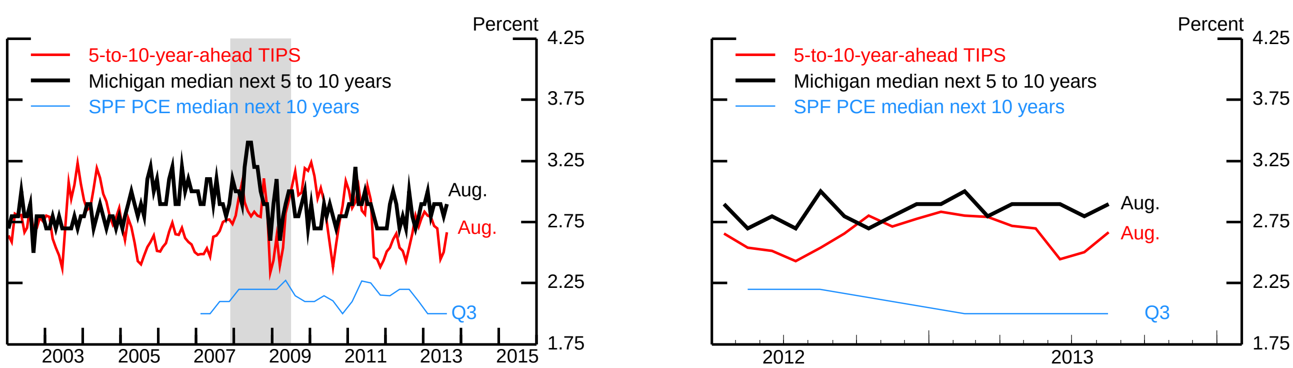

Note: Futures prices are the latest observations on monthly futures contracts.
Source: For oil prices, U.S. Department of Energy, Energy Information Agency; for commodity prices, Conference Research Board (CRB).

## Energy and Import Price Inflation




Source: For core import prices, U.S. Dept. of Labor, Bureau of Labor Statistics; for PCE, U.S. Dept. of Commerce, Bureau of Economic Analysis.

## Long-Term Inflation Expectations




Note: Based on a comparison of an estimated TIPS (Treasury inflation-protected securities) yield curve with an estimated nominal off-the-run Treasury yield curve, with an adjustment for the indexation-lag effect.
SPF Survey of Professional Forecasters.
Source: For Michigan, Thomson Reuters/University of Michigan Surveys of Consumers; for SPF, the Federal Reserve Bank of Philadelphia; for TIPS, Federal Reserve Board staff calculations.

expected to decline at a similar pace in the current quarter, reflecting recent dollar appreciation as well as the continued pass-through of the fall in commodity prices earlier in the year. Relative to the July Tealbook, the third-quarter forecast has been revised down by 2 percentage points, reflecting a weaker-than-anticipated reading for July. We have also marked down our projection for the fourth quarter; core import prices are now expected to be little changed, compared with the ½ percent increase we had projected in the July Tealbook. For the remainder of the forecast period, core import price inflation is expected to run about 1½ percent per year, consistent with the relatively flat projected trajectory for commodity prices and our assumed pace of dollar depreciation.

Readings on long-term inflation expectations remain stable. Median 5-to-10-year-ahead inflation expectations from the final August Michigan survey stood at 2.9 percent—well within the relatively narrow range seen in recent years. Expectations for PCE price inflation over the next 10 years, as measured by the median of the Survey of Professional Forecasters, were unchanged at 2 percent in the third quarter. Similarly, TIPS-based measures of inflation compensation are little changed, on balance, since the previous Tealbook.

With stable long-run inflation expectations, a small projected acceleration in commodity and import prices beyond this year, and a gradually diminishing margin of slack—as well as our judgment that the softness earlier in the year in core inflation reflected transitory factors—we expect core PCE inflation to rise from 1.2 percent this year to 1.5 percent in 2014 and then to edge up further, reaching 1.7 percent in 2016. This contour is 0.1 percentage point lower than in the July Tealbook owing to a downward adjustment to our projection for nonmarket prices.[10] Given the projected trajectory for energy prices, total PCE inflation is expected to be marginally lower than core inflation over the medium term. Thus, through 2015, the PCE inflation projection remains below the Committee's long-run objective of 2 percent.

Increases in labor compensation remain subdued. For the second half of this year, we expect compensation per hour in the nonfarm business sector to rise about 2½ percent, unchanged from our July Tealbook projection. Over the medium term, we expect the

[10] During this year's comprehensive revision, the BEA made a number of changes to their methods for measuring implicitly priced financial services, which enters the nonmarket component of PCE. These changes lowered both total and core PCE inflation over the past 25 years by an average of 0.1 percentage point per year. We have carried forward this downward adjustment into our inflation projection.

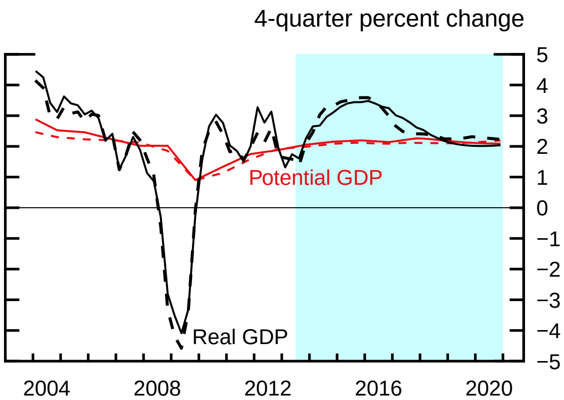
# The Long-Term Outlook

(Percent change, Q4 to Q4, except as noted)

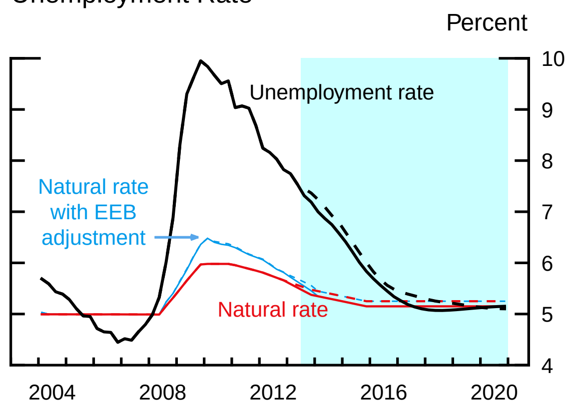
| Measure | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Longer run |
|---|---|---|---|---|---|---|---|
| Real GDP | 2.3 | 3.1 | 3.4 | 3.2 | 2.6 | 2.2 | 2.3 |
| Previous Tealbook | 2.1 | 3.3 | 3.6 | 3.0 | 2.4 | 2.2 | 2.3 |
| Civilian unemployment rate[1] | 7.2 | 6.6 | 5.8 | 5.3 | 5.1 | 5.1 | 5.2 |
| Previous Tealbook | 7.4 | 6.8 | 6.0 | 5.5 | 5.3 | 5.2 | 5.2 |
| PCE prices, total | 1.1 | 1.2 | 1.4 | 1.6 | 1.8 | 1.9 | 2.0 |
| Previous Tealbook | .9 | 1.3 | 1.5 | 1.7 | 2.0 | 2.0 | 2.0 |
| Core PCE prices | 1.2 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 |
| Previous Tealbook | 1.3 | 1.6 | 1.7 | 1.9 | 2.0 | 2.0 | 2.0 |
| Federal funds rate[1] | .1 | .1 | .8 | 1.9 | 2.8 | 3.3 | 4.0 |
| Previous Tealbook | .1 | .1 | .7 | 1.9 | 2.8 | 3.4 | 4.0 |
| 10-year Treasury yield[1] | 3.1 | 3.6 | 4.0 | 4.4 | 4.6 | 4.7 | 4.8 |
| Previous Tealbook | 2.8 | 3.4 | 3.9 | 4.2 | 4.2 | 4.2 | 4.8 |

1. Percent, average for the final quarter of the period.

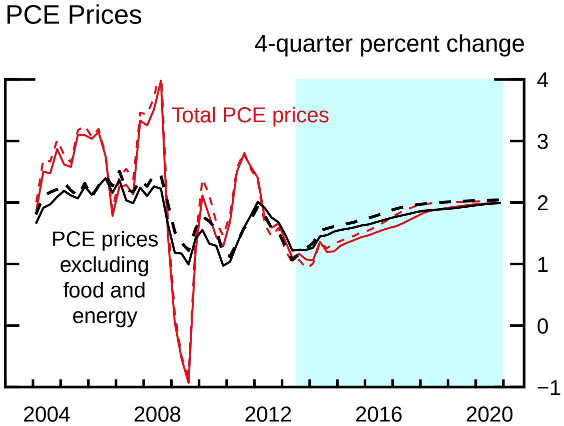
Real GDP



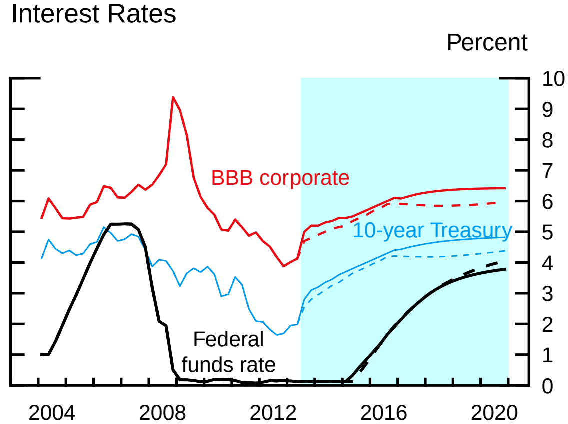

Unemployment Rate




PCE Prices




Interest Rates




Note: In each panel, shading represents the projection period, and dashed lines are the previous Tealbook.

gradual tightening of the labor market to push hourly compensation growth up to 3 percent by 2015.

## The Long-Term Outlook

We have extended the staff's forecast beyond the medium term using the FRB/US model and our assumptions about long-run supply-side conditions, fiscal policy, and other factors. The contour of the long-term outlook depends on the following key assumptions:

- Monetary policy seeks to stabilize PCE inflation at 2 percent over the longer term, consistent with the Committee's policy strategy statement. As noted earlier, the Committee's unemployment rate threshold is crossed in the baseline projection in the first quarter of 2015. Thereafter, the federal funds rate is set according to the inertial version of the Taylor (1999) rule.

- The Federal Reserve's holdings of securities continue to put downward pressure on longer-term interest rates, albeit to a diminishing extent. The process of returning the SOMA portfolio to a normal size is expected to be completed in 2021.

- Risk premiums on corporate equities and bonds continue to decrease gradually to normal levels, and financial institutions further ease their lending standards.

- The federal budget deficit begins to widen after 2017, primarily reflecting fast-rising transfer payments for retirement and health-care programs. Federal debt remains a little below 75 percent of GDP in 2017 and 2018 before beginning to rise later in the decade.

- The real foreign exchange value of the dollar stays constant from 2017 onward. The price of crude oil holds steady in real terms. Foreign real GDP growth slows from 3½ percent in 2016 to an annual rate of about 3 percent later in the decade.

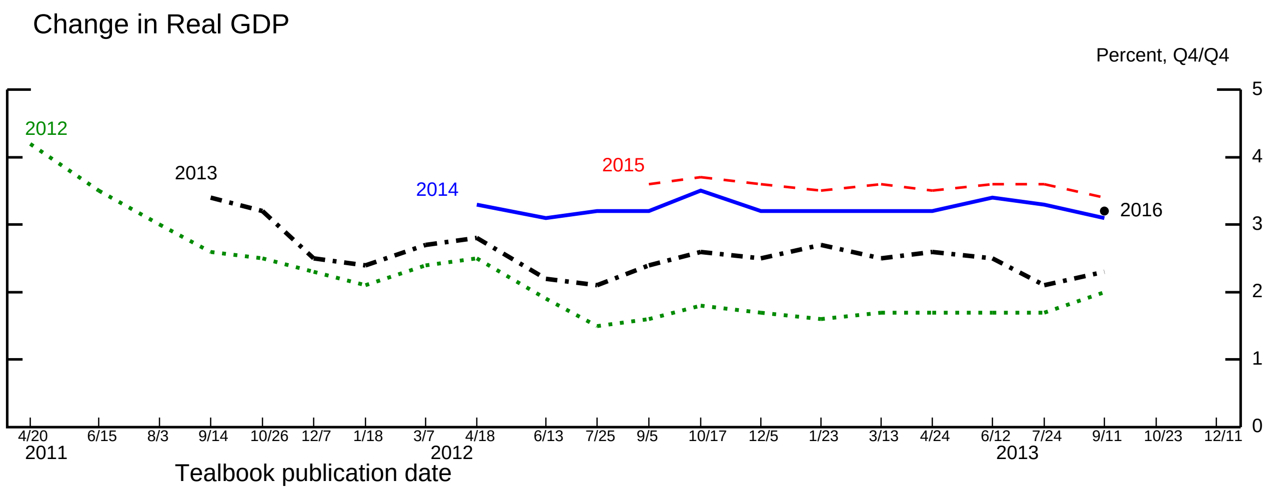
- The natural rate of unemployment is 5.2 percent throughout the longer-term outlook. Potential GDP rises at an average pace of 2¼ percent per year from 2017 to 2020.

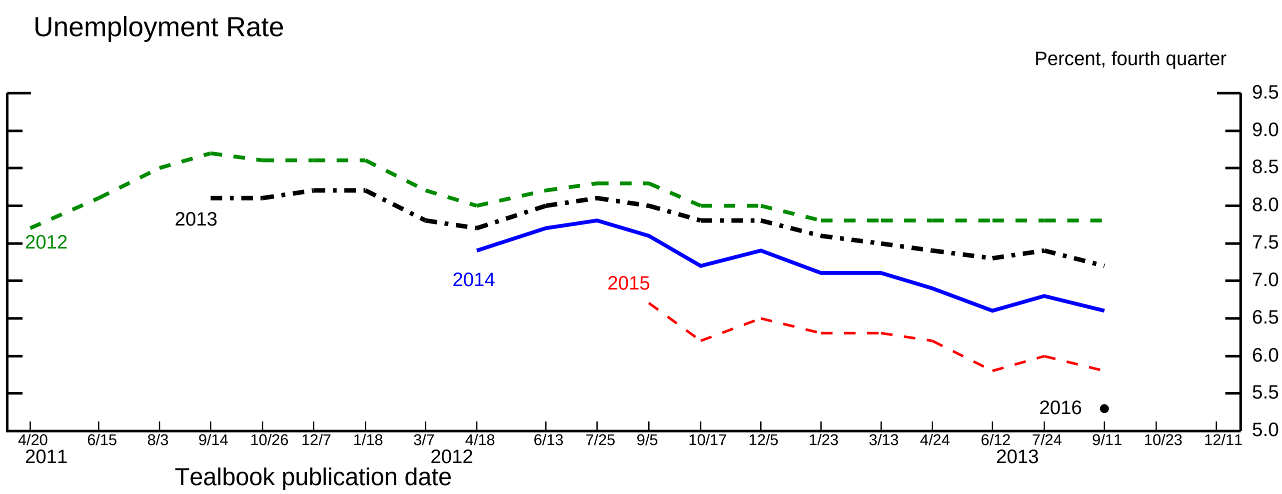
The economy is projected to enter 2017 with output still slightly below its potential level, unemployment slightly above its natural rate, and inflation below the long-run objective of the Committee. In the staff's long-term forecast, the small remaining gaps in activity relative to potential are absorbed as a consequence of real GDP rising 2½ percent in 2017. Thereafter, the pace of gains in real GDP slows to the rate of potential growth, in large part reflecting the progressive withdrawal of monetary accommodation. The unemployment rate falls through 2017 to near its natural rate of 5.2 percent and remains close to that level thereafter. Long-run inflation expectations are assumed to remain well anchored, and, with slack in labor and product markets having been taken up, consumer price inflation moves up to 2 percent by 2019. The nominal federal funds rate is 3¾ percent at the end of this decade and eventually stabilizes at around 4 percent in the middle of the next decade.[11]

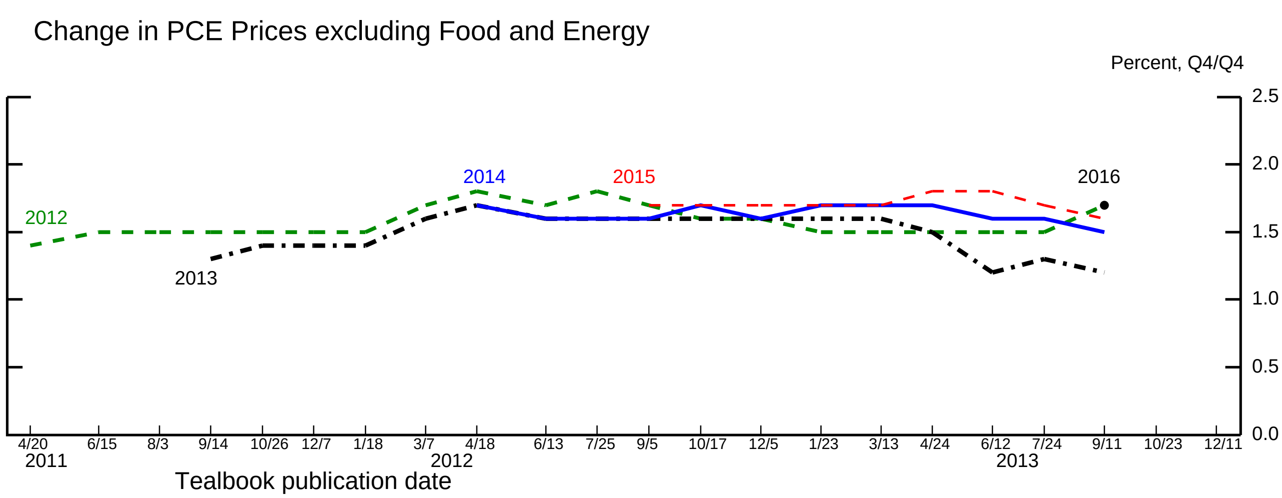
[11] The upward revision to long-term interest rates in the second half of the decade reflects a change in our procedure for calculating the path for longer-term Treasury yields. The longer-term Treasury yields now reflect perfect foresight on the part of financial market participants about the future path of the federal funds rate, which is more in line with the methods used for the medium-term financial assumptions.

Domestic Econ Devel & Outlook

# Evolution of the Staff Forecast



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# International Economic Developments and Outlook

Foreign real GDP expanded at an annual rate of only 2 percent in the second quarter, a little higher than in the first quarter but still quite subdued by historical standards. Although economic activity accelerated in the advanced foreign economies (AFEs) from its very weak pace earlier this year, growth barely increased in the emerging market economies (EMEs), held back by a significant contraction of output in Mexico. Economic growth strengthened in many other EMEs, particularly in Asia, but generally remained below trend.

We project foreign economic growth to rise to 2¾ percent in the second half of this year and strengthen further over the forecast period to reach 3½ percent in 2016. In the AFEs, encouraging data from the euro area support our conviction that the region has exited recession. However, we anticipate that the recovery there will remain sluggish in the face of continued fiscal and financial headwinds. Elsewhere in the AFEs, still accommodative monetary policies should help sustain the improvement in activity. And a firming recovery in the United States, along with stronger activity in the AFEs, should support external demand and an acceleration of output for the EMEs despite some near-term drag from tightened financial conditions (as discussed in more detail later).

Our outlook for aggregate foreign growth is revised down a bit in the second half of this year and the first half of next year but about unchanged thereafter. Although we revised up near-term growth in Europe and China based on more promising indicators, this revision was more than offset by markdowns elsewhere. We extended forward some of Mexico's surprising first-half weakness. Perhaps more importantly, financial conditions in a number of EMEs worsened further of late, as outflows from emerging market funds accelerated again, interest rates moved up, and currencies depreciated. All told, these developments should restrain economic activity, and in response we marked down our forecast for economic growth in EMEs by about ¼ percentage point in the near term. Nonetheless, this revision is tempered by the positive effects of currency depreciation. Those economies with the weakest macroeconomic fundamentals, such as Brazil and India, have experienced the greatest financial turmoil, and we revised down their growth the most. (See the box "Financial Distress and Vulnerabilities in Emerging Market Economies.")

## Financial Distress and Vulnerabilities in Emerging Market Economies

The financial stresses experienced in May and June by many emerging market economies (EMEs) have re-emerged after a brief respite. Outflows from emerging market bond and equity funds, shown in the upper-left figure on the next page, have accelerated again in recent weeks, although they remain smaller than the large outflows seen in June. At the same time, as can be seen in the upper-right figure, the currencies of several EMEs resumed their depreciations against the dollar in mid-July and have declined a substantial amount since then. Additionally, emerging market bond yields have moved up further (not shown).

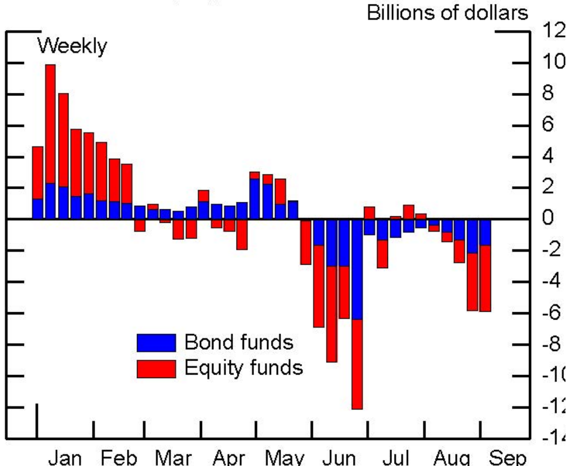
Nevertheless, financial conditions have not deteriorated uniformly across the EMEs. Since mid-July, for example, the currencies of Korea and Taiwan have been quite stable, even as those of Brazil, India, and Turkey have moved down further despite significant interventions in these countries. This variation suggests that even though the emerging market selloff has been driven in part by common factors, such as changes in market perceptions regarding the future policies of the Federal Reserve or cloudier prospects for EME growth, investors are distinguishing among EMEs.

We investigated the importance of economic vulnerabilities to this variation in investor response. To do so, we first ranked each economy from least vulnerable to most vulnerable according to four macroeconomic indicators: (1) the ratio of the current account to GDP, (2) the ratio of government debt to GDP, (3) the average inflation rate since the beginning of 2012, and (4) the rise in domestic credit to the private sector as a share of GDP in recent years. Averaging each country's rankings across these four categories, we created an index with larger values indicating greater relative vulnerability. Based on this index (lower-left figure on the next page), the most vulnerable economies are Brazil, Turkey, and India, and the least vulnerable are Korea, Chile, and Taiwan. We then examined the relationship between the extent of vulnerability and one measure of financial market stress—how much the exchange rate has changed since the end of April. As can be seen in the lower-right figure, more vulnerable economies, according to our criteria, have indeed experienced more currency depreciation. We also verified that greater vulnerabilities are associated with larger increases in interest rates since the end of April, further suggesting that country-specific factors have contributed to recent market pressure on EMEs.

Although currency depreciations should offer some macroeconomic stimulus over time, our sense is that the increase in interest rates and declines in confidence associated with financial stress will constitute a net negative for economic activity in EMEs. Accordingly, we substantially revised down our activity outlook for Brazil and India because of increased financial stress and reduced to a lesser degree our outlook for other EMEs.

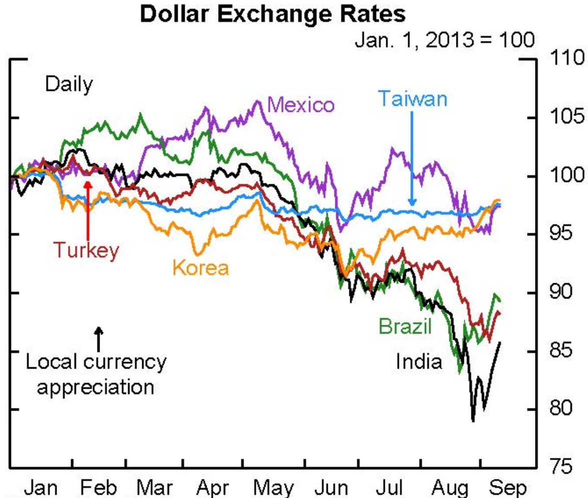
Moreover, there is some chance that the interaction of domestic vulnerabilities with rising global interest rates and increased investor jitters could trigger a financial crisis in an EME. Were such an event to occur, there might well be serious contagion effects among other EMEs, possibly pushing them into crisis as well. Under those circumstances, economic activity in the EMEs more generally could slow sharply, leading to serious consequences for U.S. growth, a scenario described in the Risks and Uncertainty section. This is not our baseline scenario, but the risk of such an outcome has increased.

**Emerging Market Fund Flows**



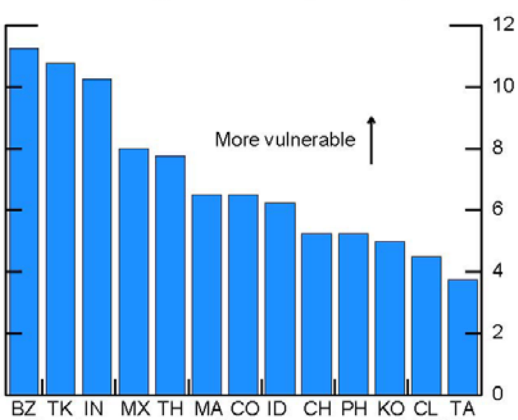

Source: Emerging Portfolio Fund Research.

**Dollar Exchange Rates**



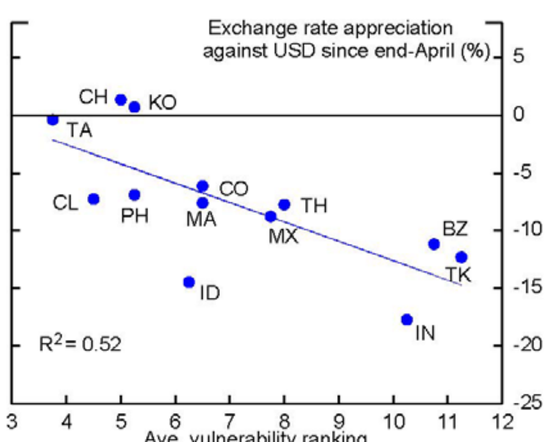

Source: Bloomberg.

**Average Vulnerability Ranking***




*Based on current account/GDP, gross government debt/GDP, average inflation since Jan. 2012, and change in credit to private sector/GDP since 2005-07.
Source: CEIC; Haver Analytics; IMF International Financial Statistics and World Economic Outlook; staff calculations.

**Exchange Rate Appreciation versus Vulnerability**




BZ=Brazil, CH=China, CL=Chile, CO=Colombia, ID=Indonesia, IN=India, KO=Korea, MA=Malaysia, MX=Mexico, PH=Philippines, TA=Taiwan, TH=Thailand, TK=Turkey.
Source: CEIC; Haver Analytics; IMF International Financial Statistics and World Economic Outlook; staff calculations.

Our baseline forecast assumes that financial stresses in EMEs level off in coming months. However, the recent deterioration in investor sentiment toward vulnerable economies indicates that the risk of greater financial turbulence has increased, potentially involving contagion to other EMEs and engendering a broad-based slowdown in foreign economic activity. Another downside risk is that an escalation of geopolitical tensions in the Middle East could push oil prices up, undermining the already tepid global recovery. (We explore both of these scenarios in the Risks and Uncertainty section.) Finally, notwithstanding the more positive tone of news from the euro area and China, risks remain that financial and economic conditions in these economies could deteriorate sharply.

Inflation in the AFEs should pick up to 1¾ percent at an annual rate in the second half of this year, nearly ½ percentage point more than in the previous Tealbook, amid higher energy prices. Further out, inflation is expected to hover around this pace, little changed from our previous Tealbook forecast. EME inflation is also expected to pick up a bit, to 3¼ percent over the forecast period, in some cases boosted by pass-through effects of recent currency depreciations.

With still large output gaps and limited price pressures, monetary policy in the AFEs is slated to remain accommodative. In contrast, a number of central banks in vulnerable EME countries have tightened policy and intervened in foreign exchange markets to stem capital outflows and depreciation pressures. As financial stresses persist, we expect additional tightening measures in these countries.

## Advanced Foreign Economies

Following a modest expansion in the first quarter, AFE output rose at nearly a 2 percent pace in the second quarter, ½ percentage point above our July Tealbook estimate. GDP in Europe rebounded more vigorously than expected and recent indicators point to stronger momentum, leading us to mark up the outlook for the region. In contrast, the weaker U.S. projection is expected to weigh a little on near-term prospects for Canada. On net, we anticipate that AFE GDP growth will remain just below 2 percent in the second half of 2013, a bit higher than projected in July. Thereafter, as euro-area financial pressures ease further, fiscal drag wanes, and monetary policy remains accommodative, we continue to project AFE growth to edge up throughout the forecast, reaching almost 2½ percent in 2016.

Increases in consumer energy prices led us to revise up our forecast for AFE inflation in the current quarter by ½ percentage point to nearly 2 percent. Inflation should moderate to 1½ percent next quarter, as energy prices stabilize, and remain around that rate through the end of 2015 (excluding the effects of the Japanese consumption tax hikes). Consistent with a somewhat improved economic outlook for Europe, we now expect the European Central Bank (ECB) and the Bank of England (BOE) to raise their policy rates one quarter earlier than previously projected, in the second half of 2015, and to implement further rate hikes in 2016.

## Euro Area

The recession in the euro area appears to be at an end. After six consecutive quarters of contraction, euro-area GDP expanded 1.2 percent at an annual rate in the second quarter, much better than the zero growth we had estimated in the July Tealbook. This figure may somewhat overstate the underlying momentum in the economy, as output was boosted by temporary factors, including a rebound in construction activity from a weather-related slump in the first quarter. That said, recent data point to continued positive growth. In July, euro-area retail sales moved up, supporting the view that consumption is gradually firming, and the unemployment rate held steady at 12.1 percent. In August, the composite PMI finally moved into expansionary territory and consumer confidence reached its highest level in two years. We now project that euro-area GDP will expand ¼ percent in the current quarter and nearly 1 percent in the next, a bit faster than we had previously anticipated.

We see the recovery strengthening modestly next year but continuing to face significant headwinds, including tight fiscal conditions, distressed balance sheets, and limited credit availability. Therefore, we project that euro-area GDP growth will edge up to just 1¼ percent in 2014 before rising to 2 percent in 2016. Compared with the July Tealbook, this projection is a tad higher in 2014—mostly reflecting a lower expected path for financial stresses—and unchanged thereafter.

Amid rising energy prices, euro-area inflation is projected to increase to 1½ percent in the second half of this year from ¾ percent in the first half. As the output gap slowly closes, inflation should tick up to 1¾ percent by the end of the forecast period, as in the July Tealbook. At its September meeting, the ECB kept the benchmark policy rate at 50 basis points and reiterated its intention to maintain low rates for an extended period. Consistent with our revisions to the euro-area outlook, we now expect the ECB to raise the benchmark rate in the third quarter of 2015, one quarter earlier than in the July Tealbook, and to bring it to 1¼ percent by the end of the forecast horizon.

### United Kingdom

Second-quarter U.K. GDP rose 2.9 percent, ½ percentage point more than we had estimated in the July Tealbook, with upside surprises in net exports, government spending, and investment. Recent indicators suggest ongoing strength. Retail sales grew 1.1 percent in July, and PMIs for construction and manufacturing rose sharply in August. Accordingly, we revised up our forecast for GDP growth in the second half of this year ¾ percentage point, to 2¾ percent. Our projection for output growth in 2014 is also a touch higher, at 2¼ percent, partly reflecting better growth prospects in the euro area. We expect GDP growth to reach 2½ percent in 2015 and to remain at that rate in 2016, nearly unchanged from the July Tealbook.

We estimate that the recent upswing in oil prices and a planned hike in university tuitions will lift quarterly inflation in the second half of this year to an average of 2¾ percent, a bit higher than in the July Tealbook. Thereafter, our inflation forecast is unchanged as we project that inflation will settle down to about 2 percent. Consistent with the BOE's recently announced forward guidance (see the box "Forward Guidance by the Bank of England") and our forecast for the unemployment rate, we expect the BOE to keep the Bank Rate at 0.5 percent through the third quarter of 2015 and to maintain the current size of its asset holdings for some time beyond then. Our forecast for the first rate hike is one quarter earlier than in the July Tealbook, reflecting the stronger outlook for the U.K. economy.

### Japan

Real GDP rose 3.8 percent in the second quarter following similarly strong performance in the first, driven by further gains in private consumption and net exports. Indicators for activity in the third quarter have been mixed. Industrial production rebounded in July and the manufacturing PMI points to further expansion in August, but in July merchandise exports plunged and real consumption edged down, leading us to mark down third-quarter GDP growth by ½ percentage point. That said, growth should average a solid 2¾ percent in the second half of the year, owing to highly accommodative fiscal and monetary policies. We expect that two planned consumption tax hikes and diminishing stimulus from past yen depreciation will cause output growth to slow to an average rate of about 1 percent in 2014 and 2015.

Consumer prices rose sharply in June and July, largely reflecting the effect of yen depreciation and higher oil prices. Accordingly, we forecast that inflation will jump from 0.8 percent in the second quarter to 3 percent in the current quarter. As energy prices stabilize, inflation should hover just above ½ percent over the next two quarters. Thereafter, with the Bank of Japan (BOJ) assumed to maintain its asset purchase program through the end of 2015, inflation should gradually rise to 1 percent by 2015 (net of the effect of consumption tax hikes) and to 1½ percent in 2016. With inflation approaching its 2 percent target, we expect the BOJ to implement its first rate hike in late 2016.

### Canada

Real GDP growth in Canada slowed as expected to 1.7 percent in the second quarter from 2.2 percent in the first. This slowing reflected temporary factors, including the effect of flooding in Alberta and Toronto in June. Recent data support our projection that growth will rebound to an average rate of 2¼ percent in the second half of the year. Employment and the manufacturing PMI were above their second-quarter levels through August. Going forward, we see Canadian output growth at 2½ percent in 2014, increasing gradually to 2¾ percent in 2016.

We expect inflation to average 1¾ percent in the second half of the year, a little higher than in the July Tealbook because of higher energy prices. Thereafter, we project that firming economic activity will gradually push inflation to the 2 percent target by the end of the forecast period. We continue to assume that the Bank of Canada will start raising its policy rate in the second half of 2014.

## Emerging Market Economies

Aggregate second-quarter growth for the EMEs came in at an annual rate of only 2¼ percent, about ¾ percentage point lower than projected in the July Tealbook and some 2 percentage points below its trend pace. This revision was driven almost entirely by data from Mexico, which saw a surprisingly large contraction in activity. In contrast, a number of other emerging economies (particularly in Asia) finally showed in the second quarter the moderate pickup of growth that we had been forecasting. In addition, third-quarter indicators point to a firming of growth in China.

We expect EME growth to step up to 3¾ percent in the second half of the year and to rise to a trend-like pace of 4½ percent by the middle of next year, as Mexico returns to positive growth in the current quarter, Chinese activity picks up, and the

## Forward Guidance by the Bank of England

On August 7, the Monetary Policy Committee (MPC) of the Bank of England (BOE) announced forward guidance on its policy.[1] The MPC said that it intends to keep the policy rate (the Bank Rate) at its current level of 0.5 percent and the stock of assets purchased at £375 billion at least until the unemployment rate has fallen to 7 percent, which the MPC expects to occur around mid-2016.

That guidance would cease to hold if any of the following three "knockouts" were breached:

1. The MPC projects consumer price inflation 18 to 24 months ahead to be 0.5 percentage point or more above the 2 percent target.
2. "Medium-term inflation expectations no longer remain sufficiently well anchored."
3. "The Financial Policy Committee judges that the stance of monetary policy poses a significant threat to financial stability. . . ."

In addition to providing greater clarity about the MPC's reaction function, the guidance was intended to keep market participants from "revising up excessively their expectations of the future path of Bank Rate" as the economic recovery gains traction. However, the market-implied path of U.K. policy rates, shown in the upper-left figure on the next page, has risen significantly since early August, appearing to price in a rate hike in early 2015.

Part of the explanation for the failure of the BOE's guidance to restrain the run-up in rates may lie with the strength of recent data on the U.K. economy. Part may also be driven by global factors such as anticipations of Federal Reserve policy. However, on the day of the announcement, U.K sovereign yields edged up, the British pound appreciated, and stock prices fell. That immediate market reaction may have reflected concerns that the unemployment threshold or any one of the three knockouts might bring about a rate hike earlier than in the BOE's forecast, despite the BOE's statement that there is "no presumption that breaching any of these knockouts would lead to an immediate increase in Bank Rate or sale of assets."[2]

On the eve of the guidance release, market expectations appeared to have coalesced around a range of 6½ to 7 percent for the unemployment rate threshold. The announced 7 percent threshold was at the high side of market expectations and therefore did not signal a commitment to greater policy accommodation. Moreover, as shown by the BOE's fan chart in the upper-right figure, the speed at which the unemployment rate is projected to fall to the threshold is quite uncertain. Although the BOE sees around a 50 percent probability that the rate will remain above 7 percent through mid-2016, the outlook also includes a significant chance that the threshold will be reached much earlier. The BOE is counting on a rebound in labor productivity, which collapsed after the recession, to slow the fall in

[1] See the Bank of England (2013), *Monetary Policy Trade-Offs and Forward Guidance*, MPC document, August, www.bankofengland.co.uk/publications/Documents/inflationreport/2013/ir13augforwardguidance.pdf.

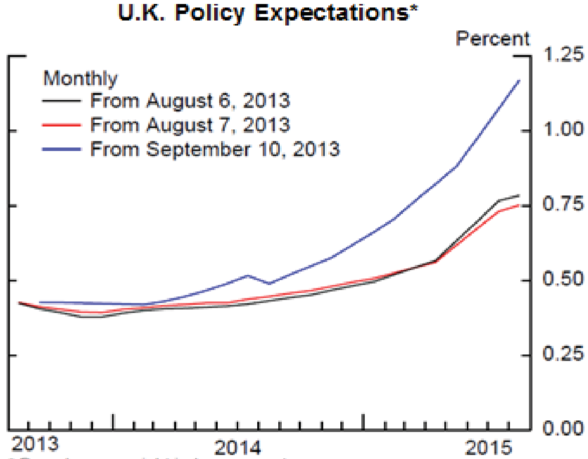
[2] See the Bank of England (2013), "Bank of England Provides Explicit Guidance Regarding the Future Conduct of Monetary Policy," press release, August 7, www.bankofengland.co.uk/publications/Pages/news/2013/096.aspx.

unemployment, even as GDP growth picks up. However, market participants may expect productivity to underperform and the unemployment rate to fall more rapidly.

Markets also may be assigning some probability to the prospect that one of the inflation knockouts could be triggered before the unemployment rate crosses the 7 percent threshold. In particular, the BOE's current inflation forecast, shown in the lower-left figure, has a central tendency within the 18-to-24-month window of just above 2 percent. However, with U.K. inflation running persistently above 2½ percent, markets may be concerned that inflation could fall more slowly than currently forecast. In addition, as shown in the lower-right figure, the BOE's forecast for inflation 18 to 24 months ahead, which over the past six years has almost uniformly underpredicted actual inflation, has been rising over time and is currently quite near the 2½ percent knockout level.

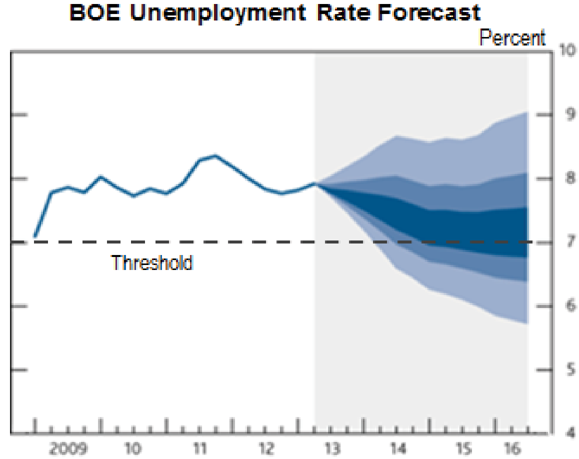
Our projection for the path of the U.K. policy rate falls between that of the market and that implied by the BOE's forecast for the unemployment rate. In our baseline forecast, which assumes some pickup in labor productivity, the unemployment rate falls below 7 percent in 2015, and we see the first BOE rate hike late that year.

**U.K. Policy Expectations***



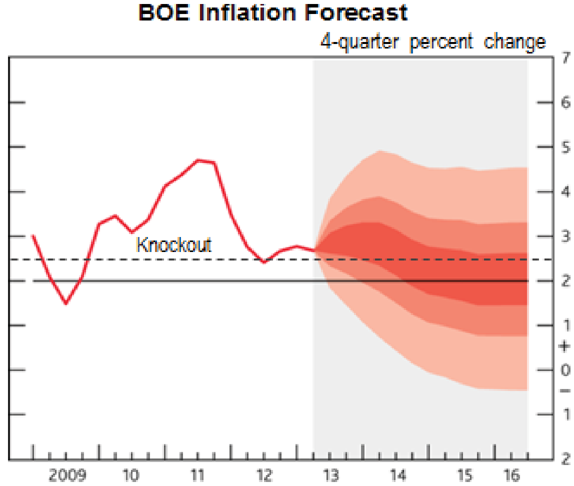

* Based on overnight index swap rates.
Source: Bloomberg.

**BOE Unemployment Rate Forecast**



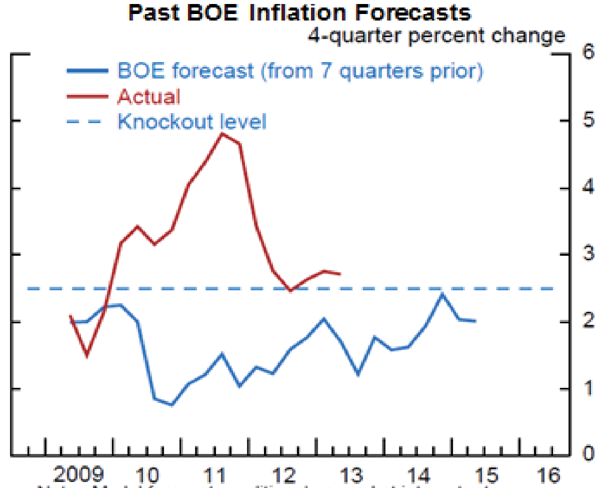

Source: BOE Inflation Report. Darkest blue band represents 30 percent confidence interval.

**BOE Inflation Forecast**




Source: BOE Inflation Report. Darkest orange band represents 30 percent confidence interval.

**Past BOE Inflation Forecasts**




Note: Modal forecast conditional on market interest rate expectations and announced asset purchase program.
Source: BOE Inflation Report.

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recovery in the advanced economies continues to boost external demand. Reflecting recent positive indicators, we marked up our outlook for China and some other emerging Asian economies. Nevertheless, our near-term outlook for growth in the EMEs is ¼ percentage point lower than in the July Tealbook. We downgraded the outlook for Mexico significantly in light of the second-quarter downward surprise and a markdown to U.S. manufacturing activity. In addition, to account for the recent heightening of financial stresses, we have revised down growth in some especially vulnerable EMEs—Brazil, India, and Indonesia—by around ½ percentage point, and in several others by lesser amounts. Although, over time, the cumulative depreciations of their currencies should provide some offset via net exports, the rise in interest rates and capital outflows should restrain activity through increased financing costs and a falloff in credit growth.

Our baseline forecast does not call for any of the EMEs to enter into a crisis. Despite the markets' focus on economies with pronounced vulnerabilities, economic fundamentals and policy space generally remain much better than they were during the crisis periods of the 1980s and 1990s. However, the downside risk of much greater financial turbulence, which could push one or more of these economies into crisis, has increased.

We see inflation in the EMEs remaining at an annual rate of about 3 percent in the current quarter. EME inflation is expected to pick up a bit to 3¼ percent over the remainder of the forecast period, as recent currency depreciations in some economies pass through to consumer prices. Over the intermeeting period, the central banks of Brazil and Indonesia raised their policy rates, citing concerns about currency depreciation and its implications for inflation. Some other countries, such as India and Turkey, also implemented measures to tighten policy. In contrast, the Bank of Mexico cut its policy rate in response to the surprisingly weak GDP data.

## China

In China, data since the July Tealbook indicate that GDP growth has picked up from the soft 7 percent pace in the first half of the year. In July and August, industrial production accelerated, and investment and retail sales growth remained relatively strong. The PMI also moved higher in August, with a large increase in the new orders subindex, suggesting that the positive momentum should continue in the coming months. Thus, we marked up GDP growth in the second half of this year about ¼ percentage point, to a little more than 7½ percent in the third quarter and nearly 8 percent in the fourth. GDP growth is projected to remain around that pace in the first half of 2014—about our estimate of Chinese potential—before gradually slowing to 7½ percent by the end of the forecast period as trend growth declines. Chinese authorities enacted some targeted stimulus measures in late July, such as tax cuts for smaller enterprises, but with the improved outlook for the economy, larger-scale stimulus policies are unlikely as authorities remain focused on economic reforms.

### Other Emerging Asia

Real GDP growth stepped up to 3¾ percent in the second quarter, 1 percentage point higher than what we had estimated in the July Tealbook, reflecting surprisingly strong data releases in many countries. An exception was India, where growth disappointed, led by a sharp contraction in the manufacturing sector. We expect growth for these economies will average about 3¾ percent in the second half of the year. We marked down our estimate of growth in Indonesia and India given recent financial turbulence and weak incoming data such as PMIs, but these revisions were offset by stronger exports and output data elsewhere in the region. Over the medium term, we have growth rising to 4½ percent, as external demand from the advanced economies picks up.

We expect inflation in emerging Asia to increase from 1¾ percent in the second quarter to 3¾ percent in the third quarter, in part as Indonesia reduces its subsidy on energy prices and food prices rise in Korea. We expect inflation to stabilize around 3½ percent over the rest of the forecast period.

### Latin America

Mexican real GDP fell nearly 3 percent in the second quarter, a whopping 4½ percentage points below our July Tealbook estimate, and first-quarter GDP growth was also revised down to about zero from an already tepid 1¾ percent. Although GDP components will not be released until late September, other second-quarter data pointed to weakness in domestic demand that appeared to reflect a combination of factors—higher uncertainty about future taxes, softness in housing construction, and shortfalls in some categories of U.S. manufacturing production. However, the auto sector remained a bright spot, as vehicle production and exports expanded.

We anticipate a modest economic recovery in Mexico, with growth rising to 2¾ percent in the second half of this year and to about 3½ percent thereafter. Incoming data support this view, with exports up in July and the manufacturing PMI moving into expansionary territory in August. Nevertheless, the forecast is revised down ½ percentage point in the second half of this year, as we have taken on board some of the weakness in the first half, and just a bit thereafter because of a lower path for U.S. manufacturing production over the forecast period.

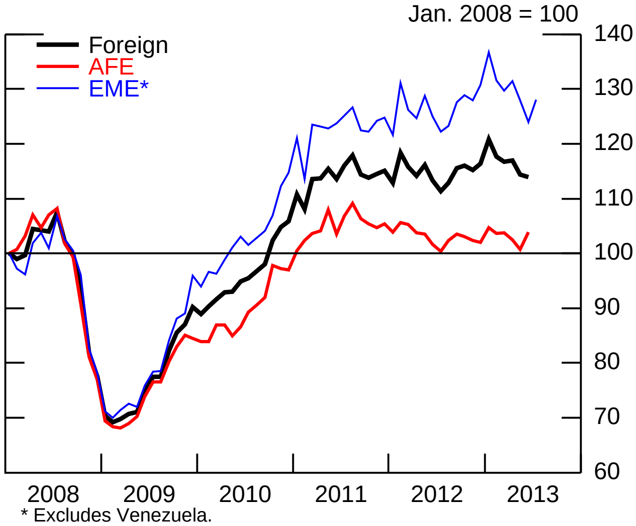
Inflation in Mexico jumped to an annual rate of 5¼ percent in the second quarter as administered prices for public transportation were increased. We estimate that inflation will moderate to about 2 percent in the current quarter, reflecting declines in food prices through August. Once these transitory factors play out, we see Mexican inflation hovering near 3½ percent over the forecast period. In response to concerns of growing economic slack, the Bank of Mexico cut its policy rate 25 basis points.

Brazilian real GDP jumped 6 percent in the second quarter, 3½ percentage points above our July Tealbook estimate, boosted by a sharp rebound in exports. But recent indicators have worsened—exports contracted in July and August and PMIs weakened further through August. Moreover, there are signs that recent financial stresses are weighing on the economy. In July, consumer confidence fell sharply, credit growth slowed, and the cost of credit rose further for households and firms. Accordingly, we expect real GDP growth to average 1¼ percent in the second half of the year before gradually rising to 3¾ percent by 2016, as financial conditions slowly improve and growth in the advanced economies strengthens further. This projection is marked down from the previous Tealbook, especially in the near term, on higher financial stresses and tighter monetary policy conditions.

We estimate that inflation in Brazil moderated further to an annual rate of 4¾ percent in the current quarter from almost 6 percent in the second quarter, reflecting a decline in food prices after earlier increases. Despite this moderation and a further tightening of monetary policy, we project inflation to pick up again to 5¾ percent over the next few quarters—a somewhat higher forecast than we wrote down in the July Tealbook—because of the pass-through from substantial past depreciation of the real. Thereafter, we see inflation settling at about 5¼ percent.

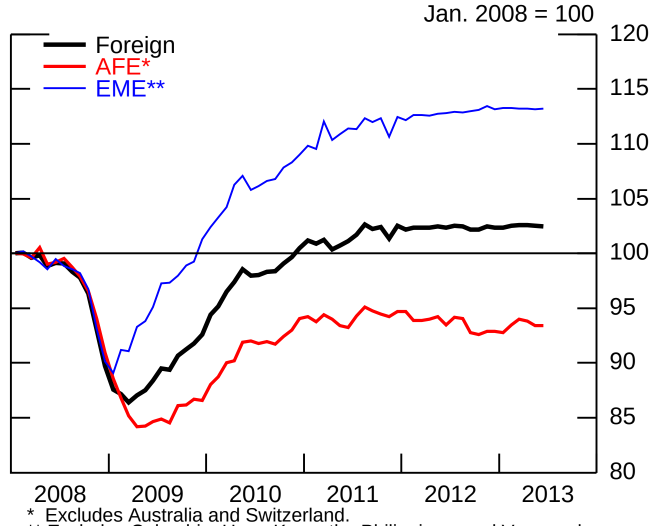
# Recent Foreign Indicators

## Nominal Exports



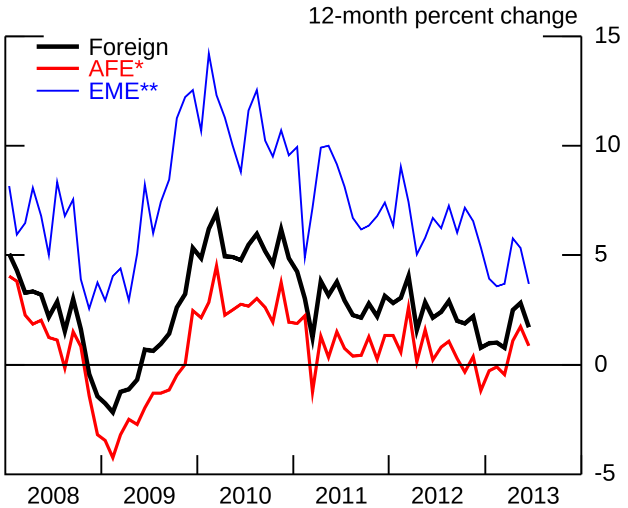

* Excludes Venezuela.

## Industrial Production



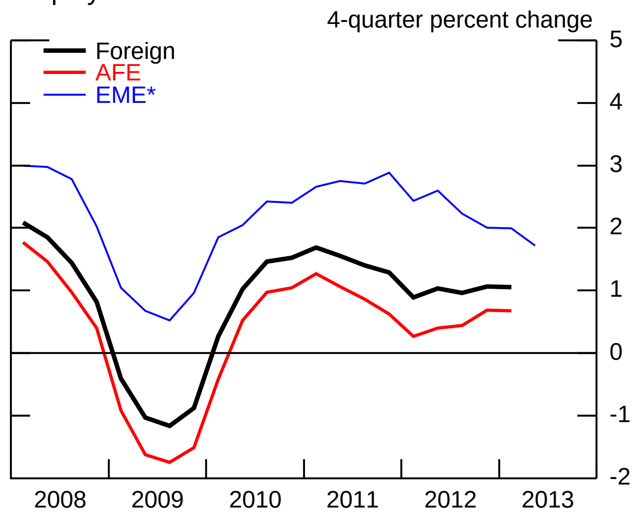

* Excludes Australia and Switzerland.
** Excludes Colombia, Hong Kong, the Philippines, and Venezuela.

## Retail Sales



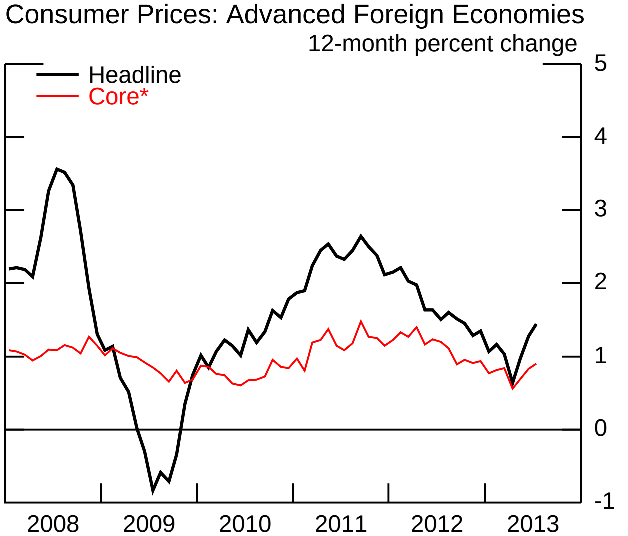

* Excludes Australia and Switzerland.
** Includes Brazil, China, Indonesia, Korea, Singapore, and Taiwan.

## Employment



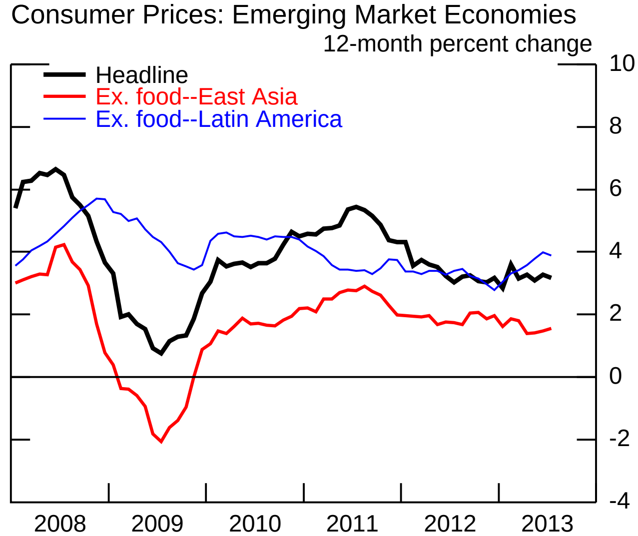

* Excludes Argentina and Mexico.

## Consumer Prices: Advanced Foreign Economies




Note: Excludes Australia, Sweden, and Switzerland.
* Excludes all food and energy; staff calculation.

## Consumer Prices: Emerging Market Economies




Source: Haver Analytics and CEIC.

# The Foreign GDP Outlook

**Real GDP***

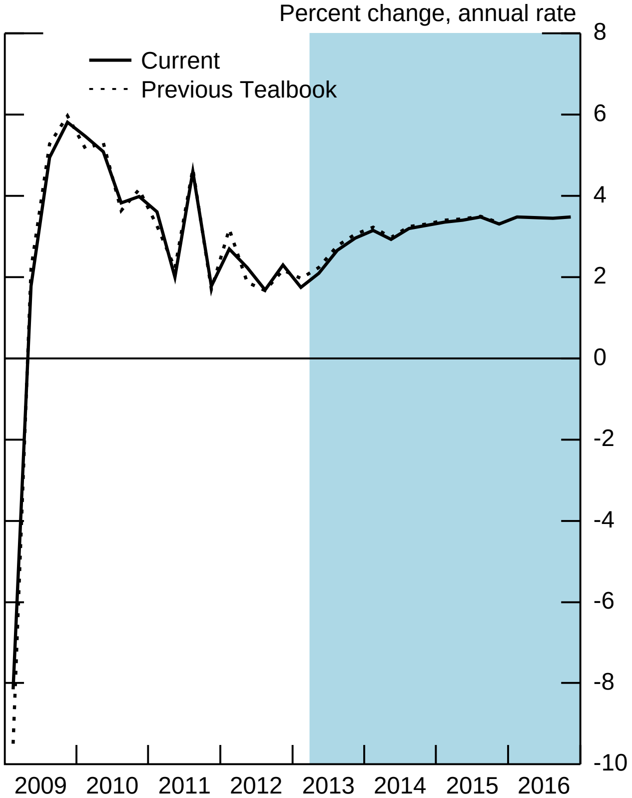
Percent change, annual rate

| | 2012 | 2013 Q1 | 2013 Q2 | 2013 Q3 | 2013 Q4 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| **1. Total Foreign** | **2.2** | **1.8** | **2.1** | **2.7** | **3.0** | **3.1** | **3.4** | **3.5** |
| *Previous Tealbook* | *2.2* | *2.0* | *2.2* | *2.8* | *3.1* | *3.2* | *3.4* | ... |
| **2. Advanced Foreign Economies** | **0.4** | **1.4** | **1.9** | **1.8** | **1.9** | **1.9** | **2.2** | **2.4** |
| *Previous Tealbook* | *0.4* | *1.4* | *1.4* | *1.8* | *1.8* | *1.9* | *2.2* | ... |
| 3. Canada | 1.0 | 2.2 | 1.7 | 2.5 | 2.2 | 2.5 | 2.6 | 2.8 |
| 4. Euro Area | -1.0 | -0.6 | 1.2 | 0.3 | 0.9 | 1.3 | 1.9 | 2.1 |
| 5. Japan | 0.3 | 4.1 | 3.8 | 2.5 | 3.1 | 0.8 | 1.0 | 1.2 |
| 6. United Kingdom | -0.0 | 1.1 | 2.9 | 2.9 | 2.5 | 2.3 | 2.5 | 2.5 |
| **7. Emerging Market Economies** | **4.2** | **2.1** | **2.3** | **3.5** | **4.1** | **4.4** | **4.6** | **4.6** |
| *Previous Tealbook* | *4.1* | *2.5* | *3.1* | *3.8* | *4.4* | *4.5* | *4.6* | ... |
| 8. China | 7.8 | 7.0 | 6.9 | 7.6 | 7.9 | 7.8 | 7.7 | 7.5 |
| 9. Emerging Asia ex. China | 3.9 | 1.8 | 3.8 | 3.4 | 3.9 | 4.1 | 4.5 | 4.6 |
| 10. Mexico | 3.2 | 0.1 | -2.9 | 2.4 | 3.1 | 3.6 | 3.6 | 3.5 |
| 11. Brazil | 1.4 | 2.6 | 6.0 | 0.5 | 2.0 | 3.0 | 3.5 | 3.7 |

* GDP aggregates weighted by shares of U.S. merchandise exports.
... Not applicable.

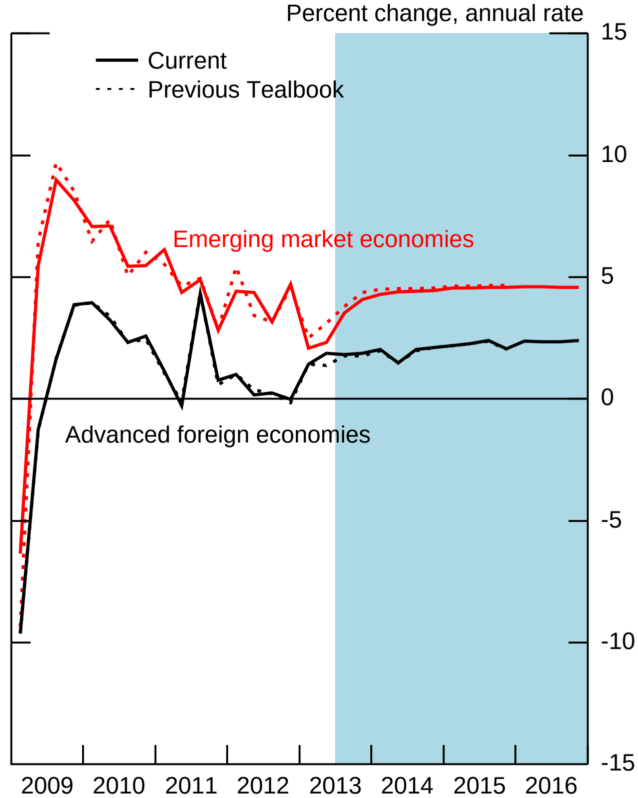
**Total Foreign GDP**

Percent change, annual rate




**Foreign GDP**

Percent change, annual rate



# The Foreign Inflation Outlook

**Consumer Prices***

Percent change, annual rate

| | 2012 | 2013 Q1 | 2013 Q2 | 2013 Q3 | 2013 Q4 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| **1. Total Foreign** | **2.3** | **2.2** | **1.9** | **2.6** | **2.6** | **2.6** | **2.7** | **2.6** |
| *Previous Tealbook* | *2.3* | *2.3* | *1.9* | *2.3* | *2.3* | *2.6* | *2.7* | ... |
| **2. Advanced Foreign Economies** | **1.3** | **0.9** | **0.5** | **1.9** | **1.5** | **1.8** | **1.8** | **1.8** |
| *Previous Tealbook* | *1.3* | *0.9* | *0.5* | *1.3* | *1.3* | *1.7* | *1.8* | ... |
| 3. Canada | 0.9 | 1.6 | 0.0 | 1.7 | 1.9 | 1.8 | 1.8 | 2.1 |
| 4. Euro Area | 2.3 | 0.7 | 0.6 | 1.7 | 1.5 | 1.4 | 1.6 | 1.7 |
| 5. Japan | -0.2 | -0.4 | 0.8 | 3.0 | 0.6 | 2.7 | 2.5 | 1.5 |
| 6. United Kingdom | 2.6 | 2.3 | 1.5 | 2.7 | 2.7 | 1.9 | 1.9 | 1.8 |
| **7. Emerging Market Economies** | **3.1** | **3.3** | **3.0** | **3.1** | **3.4** | **3.3** | **3.3** | **3.3** |
| *Previous Tealbook* | *3.1* | *3.4* | *3.0* | *3.0* | *3.1* | *3.3* | *3.3* | ... |
| 8. China | 2.1 | 3.2 | 2.1 | 2.8 | 2.9 | 3.0 | 3.0 | 3.0 |
| 9. Emerging Asia ex. China | 3.5 | 3.5 | 1.8 | 3.8 | 3.6 | 3.4 | 3.4 | 3.4 |
| 10. Mexico | 4.1 | 3.2 | 5.3 | 2.1 | 3.8 | 3.4 | 3.4 | 3.4 |
| 11. Brazil | 5.6 | 7.0 | 5.8 | 4.7 | 5.7 | 5.5 | 5.3 | 5.3 |

* CPI aggregates weighted by shares of U.S. non-oil imports.
... Not applicable.

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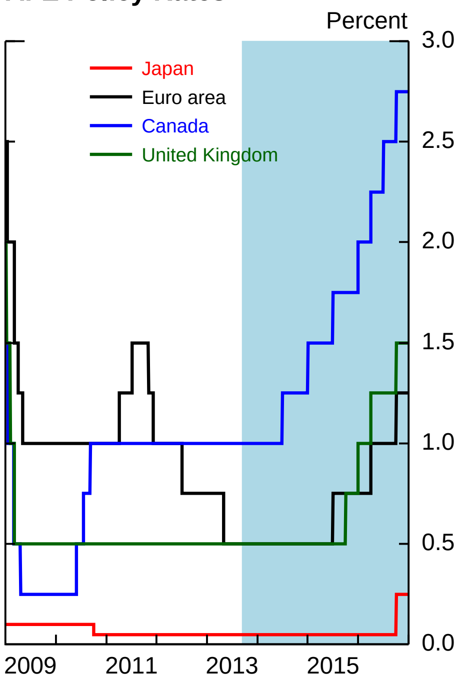
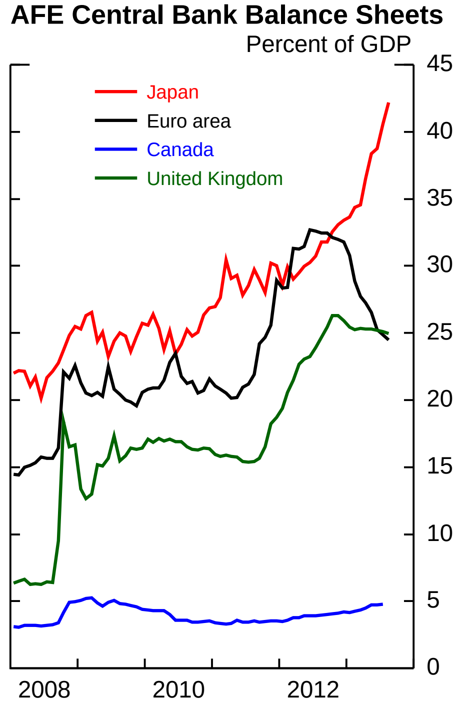
## Foreign Monetary Policy

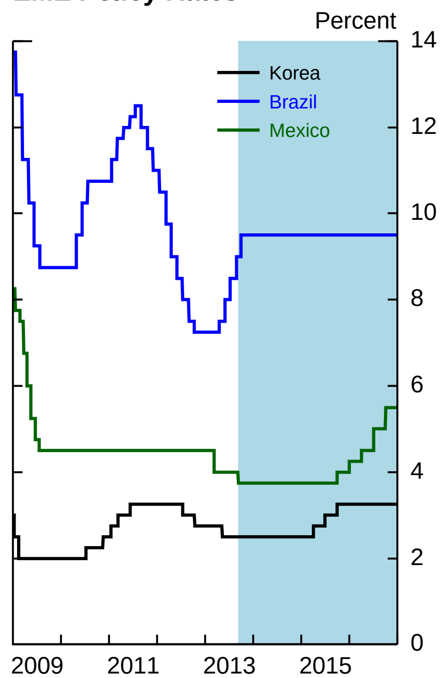
**AFE Policy Rates**




**AFE Central Bank Balance Sheets**



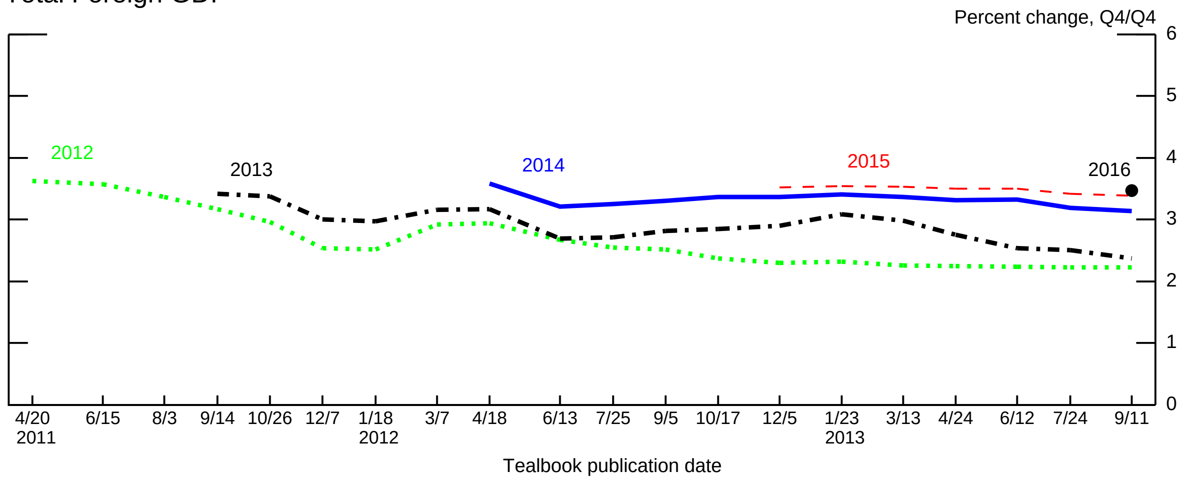

**EME Policy Rates**



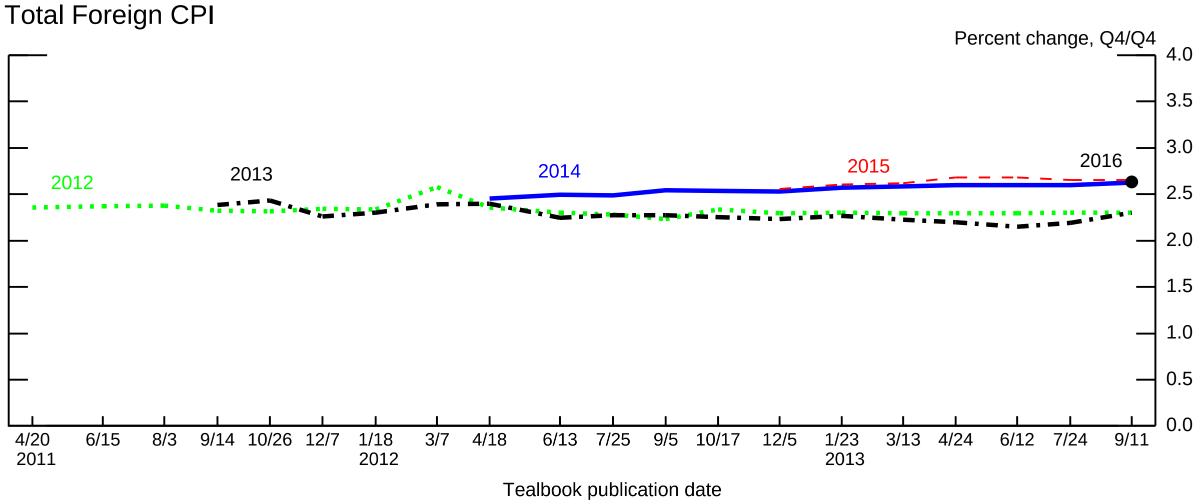
Int'l Econ Devel & Outlook

# Evolution of Staff's International Forecast

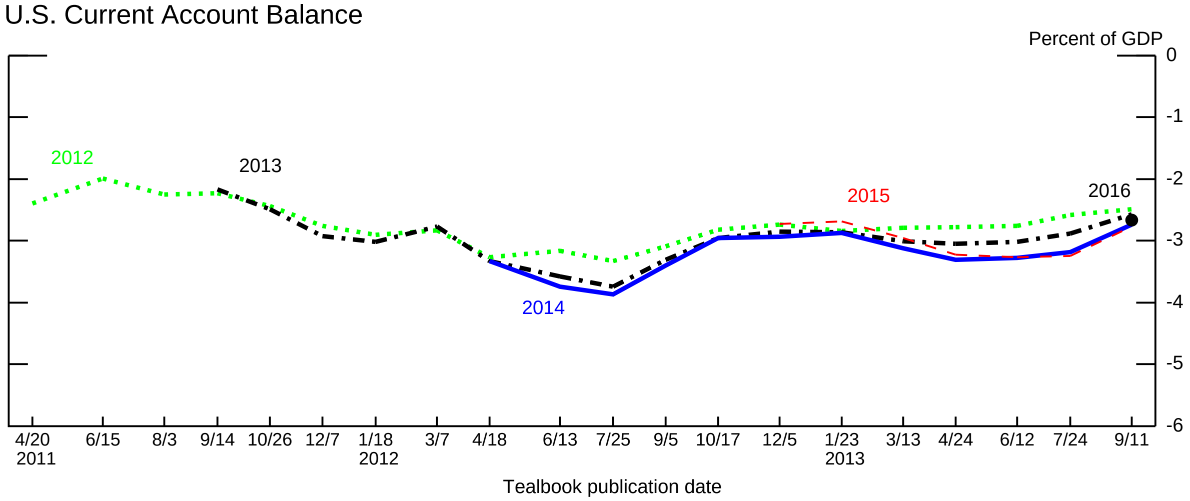
## Total Foreign GDP




## Total Foreign CPI




## U.S. Current Account Balance



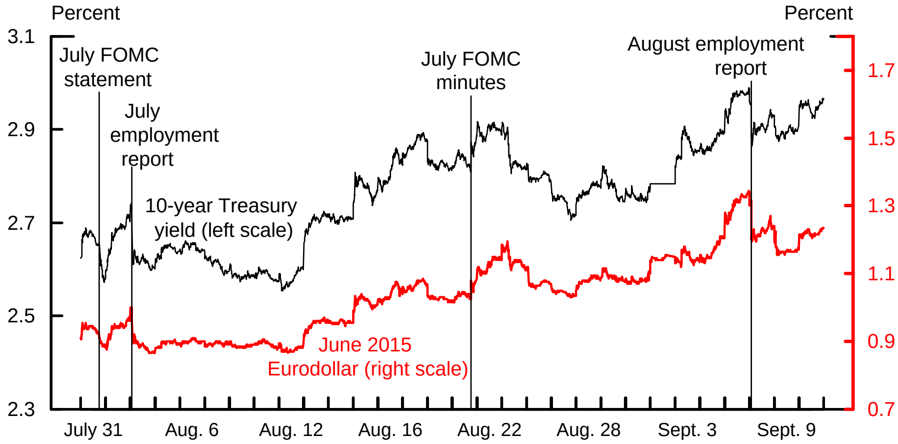
# Financial Developments

Market expectations that the Committee will begin to cut the pace of asset purchases at the September meeting appeared to increase over the intermeeting period. In addition, the implied path for the federal funds rate priced into derivatives markets shifted up, apparently reflecting in part wider term premiums associated with increased uncertainty about the monetary policy outlook. Reflecting these developments, interest rates moved up and the foreign exchange value of the dollar increased slightly.

- Responses to the Survey of Primary Dealers suggest that market participants have marked up somewhat the odds that the FOMC will begin to cut the pace of asset purchases at the September meeting. Views on the likely size of the reduction (conditional on its occurring) were unchanged, with a $10 billion reduction for Treasury securities and a $5 billion reduction for MBS seen as most likely.
- Five- and 10-year Treasury yields rose about 40 basis points and 35 basis points, respectively, over the period. Increased uncertainty about the policy outlook, along with investors' apparent tendency to view a lower path for asset purchases as likely to be associated with a higher path for the federal funds rate, reportedly contributed to the rise in yields. Yields on corporate bonds and agency MBS rose about in line with those on Treasury securities. Concerns about the U.S. debt limit have left no significant imprint in markets thus far.
- Equity prices over the period were fairly volatile but, on net, little changed.
- The foreign exchange value of the dollar increased a bit less than 1 percent over the period, with most of the gains coming against emerging market currencies. Many emerging market economies continued to experience financial turbulence, partly in response to the heightened expectations of policy normalization in the United States and other advanced economies.
- The available data suggest that aggregate borrowing by households and nonfinancial firms has been fairly resilient in the face of higher interest rates, but the full effects of higher rates on borrowing have probably not yet shown through.

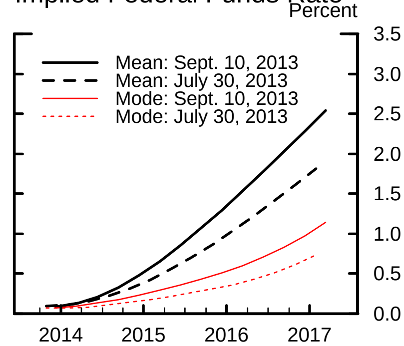
# Longer-Term Interest Rates and Policy Expectations

Selected Interest Rates



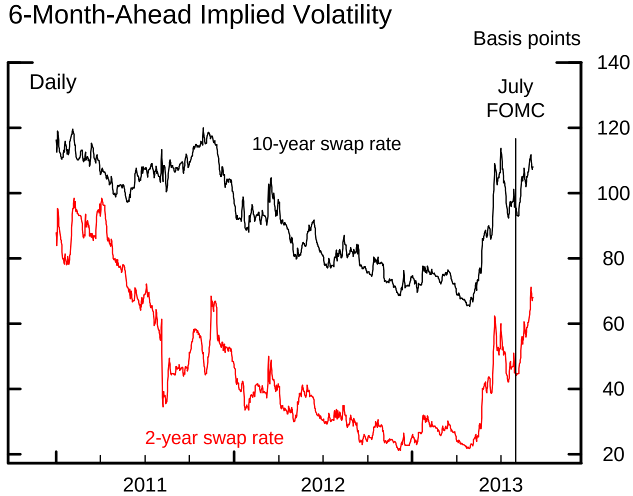

Note: 5-minute intervals. 8:00 a.m. to 4:00 p.m. No adjustments for term premiums.
Source: Bloomberg.

Implied Federal Funds Rate



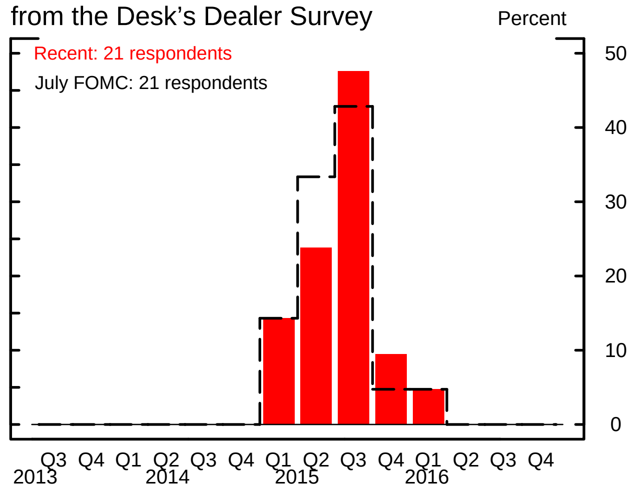

Note: Mean is estimated using overnight index swap quotes. Mode is estimated from the distribution of federal funds rate implied by interest rate caps. Both include a term premium of zero basis points per month.
Source: Bloomberg and CME Group.

6-Month-Ahead Implied Volatility



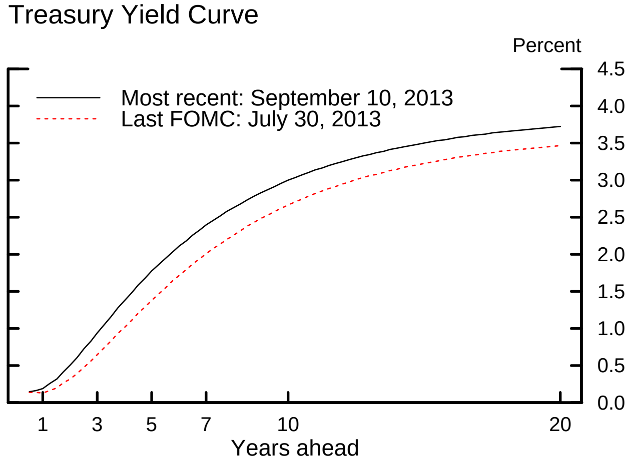

Source: J.P. Morgan.

Distribution of Modal Timing of First Rate Increase from the Desk's Dealer Survey



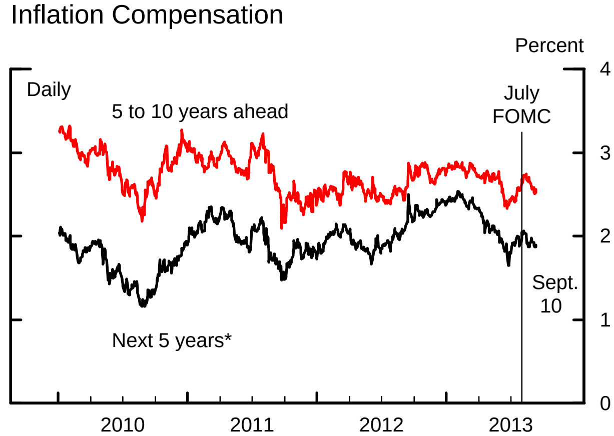

Source: Desk's dealer survey from September 9, 2013.

Treasury Yield Curve




Note: Smoothed yield curve estimated from off-the-run Treasury coupon securities. Yields shown are those on notional par Treasury securities with semiannual coupons.
Source: Federal Reserve Board.

Inflation Compensation




Note: Estimates based on smoothed nominal and inflation-indexed Treasury yield curves.
* Adjusted for lagged indexation of Treasury inflation-protected securities (carry effect).
Source: Barclays PLC and staff estimates.

Financial Developments

## TREASURY AND OTHER BENCHMARK YIELDS AND POLICY EXPECTATIONS

Five-, 10-, and 30-year Treasury yields increased about 40, 35, and 25 basis points, respectively, over the intermeeting period. These increases came amid somewhat higher expectations among market participants that the FOMC will begin to cut the pace of large-scale asset purchases at its September meeting and greater uncertainty about the outlook for monetary policy.

The federal funds rate path implied by a straight read of financial market quotes steepened notably during the period, and intermediate-horizon forward interest rates showed pronounced increases.[1] A staff model that accounts for the zero lower bound on nominal interest rates attributes a substantial portion of the shift in the implied federal funds rate path to higher term premiums, consistent with the rise in option-implied measures of uncertainty about the future trajectory for the federal funds rate. Market commentary suggested that a portion of this increased uncertainty may be attributable to investors' sense that potential changes in Federal Reserve leadership could influence the Committee's approach to monetary policy. Moreover, some investors apparently continued to revise up their expectations for the federal funds rate, as they placed higher odds on a reduction in asset purchases.

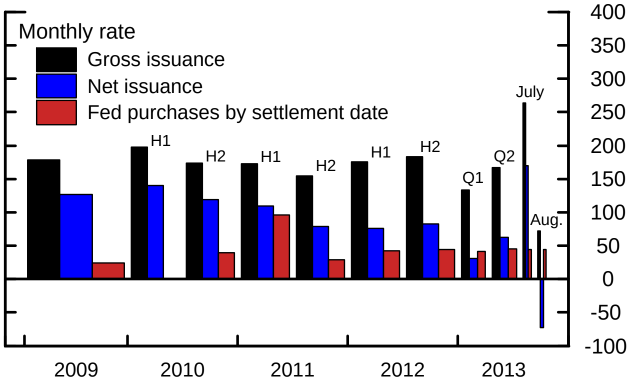
In contrast to the market-based quotes, the results from the Open Market Desk's September Survey of Primary Dealers showed little change in the projected liftoff date for the federal funds rate and the subsequent path of the policy rate relative to the July survey. The median expectation of the mostly likely time of the first increase in the target federal funds rate remained at the third quarter of 2015. Compared with the July survey, the median dealer is a bit more confident that the FOMC will begin to cut the pace of asset purchases at its September meeting. Among those who expect a reduction in September, the median dealer now expects a cut of $10 billion in Treasury securities and $5 billion in MBS purchases, unchanged from the July survey. In a special question, dealers were asked to rate the importance of a range of factors that potentially contributed to the recent increase in the 10-year Treasury yield. Dealers rated "change in market perception of appropriate policy rate path," "uncertainty over monetary policy," and "uncertainty over Federal Reserve leadership succession" as the most important factors driving the increase in the 10-year yield.

[1] The effective federal funds rate averaged 8 basis points over the intermeeting period, with the intraday standard deviation averaging about 5 basis points.

# Treasury and Agency Finance and Market Functioning

## Nominal Treasury Issuance and Fed Purchases

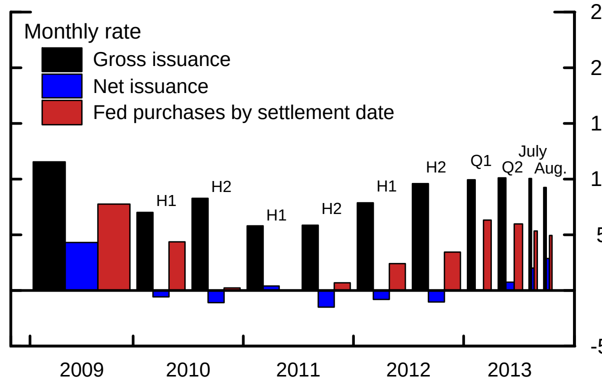
Billions of dollars




Note: Excludes bills.
Source: U.S. Department of the Treasury; Federal Reserve Bank of New York.

## Agency MBS Issuance and Fed Purchases

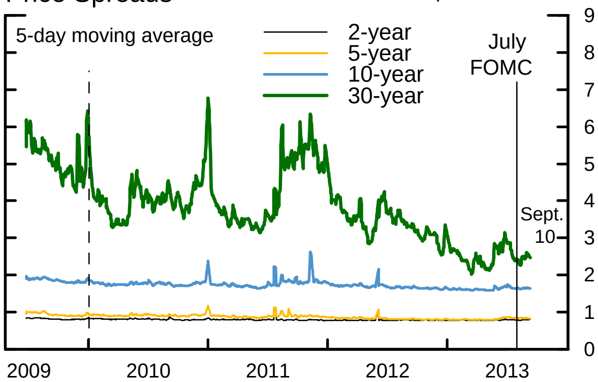
Billions of dollars




Note: Issuance and purchases of 30-year fixed-rate agency MBS.
Source: Federal Reserve Bank of New York.

## Average Nominal On-the-Run Daily Bid-Asked Price Spreads

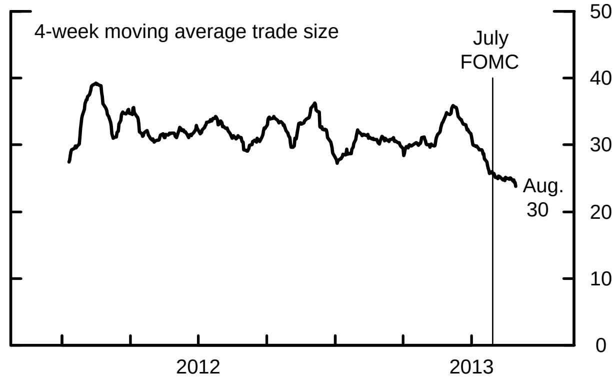
Cents per 100 dollars




Note: Series contain breaks and are considered more reliable starting on January 1, 2010 (indicated by the dashed vertical line), and going forward.
Source: BrokerTec.

## MBS Average Daily Trade Size

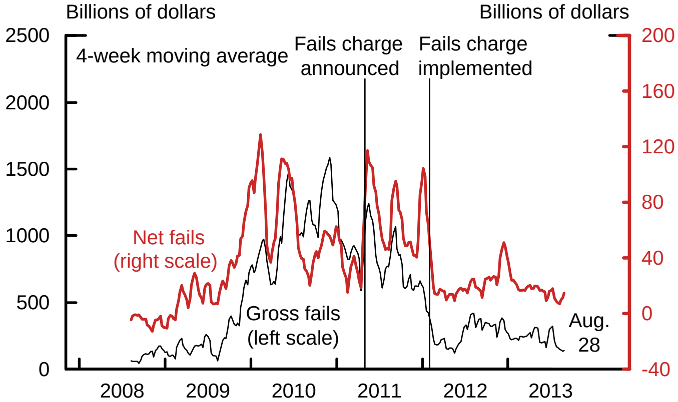
Millions of dollars




Note: Calculated from outright dealer-to-client volumes of 15- and 30-year MBS across issuers with coupon rates between 2 percent and 6 percent.
Source: Federal Reserve Bank of New York; FINRA TRACE.

## Agency MBS Fails

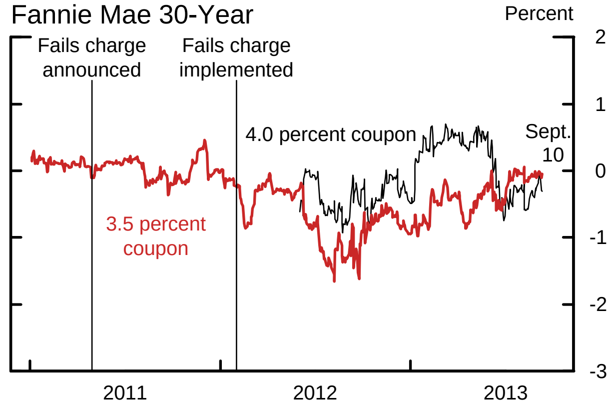
Billions of dollars
Billions of dollars




Note: Par value. Gross fails are the sum of fails-to-receive and fails-to-deliver, while net fails are the difference.
Source: Federal Reserve Board, FR 2004, Government Securities Dealers Reports.

## Dollar-Roll-Implied Financing Rates (Front Month), Fannie Mae 30-Year

Percent




Source: J.P. Morgan.

Financial Developments

In addition to these developments, heightened tensions in Syria reportedly triggered intermittent flight-to-safety flows, resulting in some downward pressure on Treasury yields. The perceived odds and potential scale of a U.S. intervention have fluctuated but seemed to have diminished significantly by the end of the period.

Market dynamics such as deleveraging, convexity hedging, and crowded trades that were thought to have amplified the increases in longer-term interest rates earlier in the summer appear to have moderated in August and September. Indeed, mortgage convexity-hedging flows have reportedly been small, and the pace of net redemptions from bond funds—though still significant—slowed over the intermeeting period. That said, anecdotes from some market participants suggest that the rebalancing process that has been associated with the recent increase in interest rates may not yet be complete.

Agency MBS yields and interest rates in the primary mortgage market rose about in line with the 10-year Treasury yield, ending the period approximately 30 basis points higher at about 3.7 percent and 4.55 percent, respectively. Yields on investment- and speculative-grade corporate bonds also rose about in line with those on Treasury securities of comparable maturity. In addition, yields on Treasury inflation-protected securities (TIPS) followed those on nominal Treasury securities, leaving TIPS-based inflation compensation little changed, on net, over the intermeeting period.

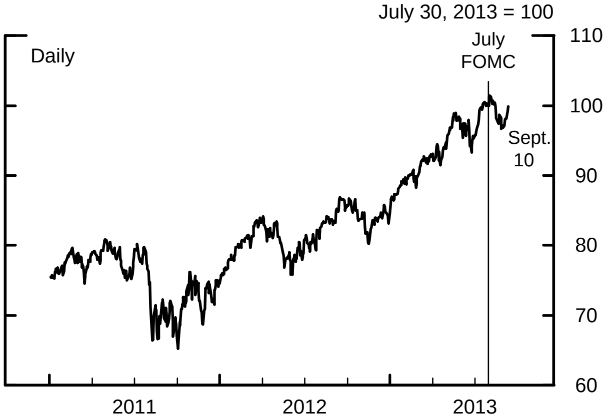
## TREASURY AND AGENCY FINANCE AND MARKET FUNCTIONING

The Treasury continued to operate under a "debt issuance suspension period," which allows it to use accounting measures to remain below the statutory debt limit while issuing new securities.[2] Consistent with the staff's view, the Treasury announced on August 26 its expectation that these accounting measures will be exhausted in mid-October, and that thereafter, the Treasury would be forced to fund the government only with the cash on hand on any given day. Yields on Treasury bills maturing after October 15 suggest that market participants have not thus far priced in any financial

[2] In the latest quarterly refunding statement, the Treasury announced that it expected to reduce auction sizes in the two- and three-year nominal sector over the coming quarter in light of improvement in the fiscal outlook. It also anticipated that the first auction of floating-rate notes (FRNs) would be in January 2014. The Treasury FRNs are expected to provide several benefits to the market, including assisting the Treasury in managing the maturity profile of the nation's marketable debt, expanding the Treasury's investor base, and helping to finance the government at the lowest cost. Treasury FRNs will have a two-year maturity and an interest rate that is reset daily; the rate from the most current 13-week Treasury bill auction will serve as the reference rate.

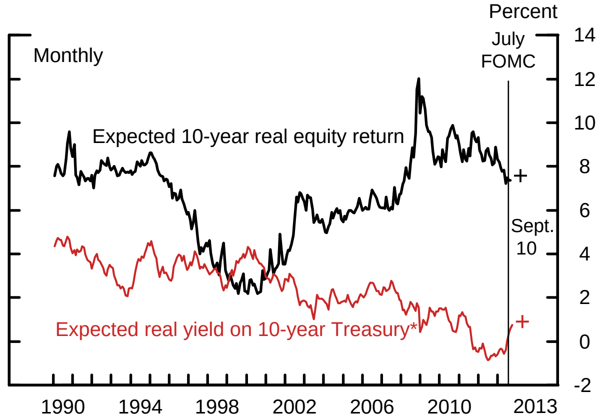
# Equity Prices and Corporate Earnings

## S&P 500 Stock Price Index



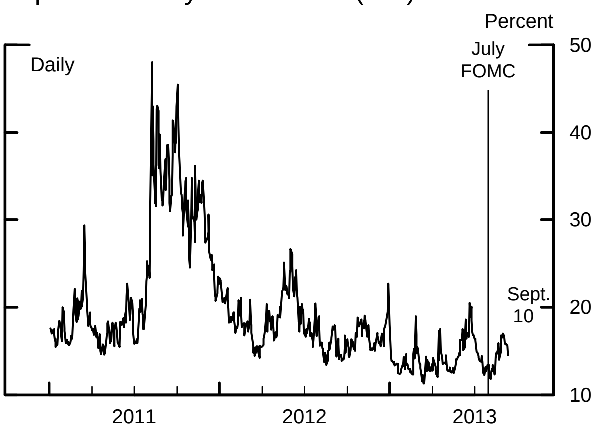

Source: Bloomberg.

## Equity Risk Premium



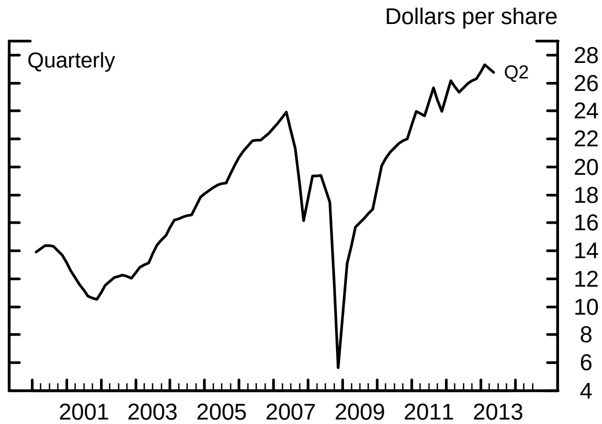

* Off-the-run 10-year Treasury yield less Philadelphia Fed 10-year expected inflation.
+ Denotes the latest observation using daily interest rates and stock prices and latest earnings data.
Source: Thomson Reuters.

## Implied Volatility on S&P 500 (VIX)



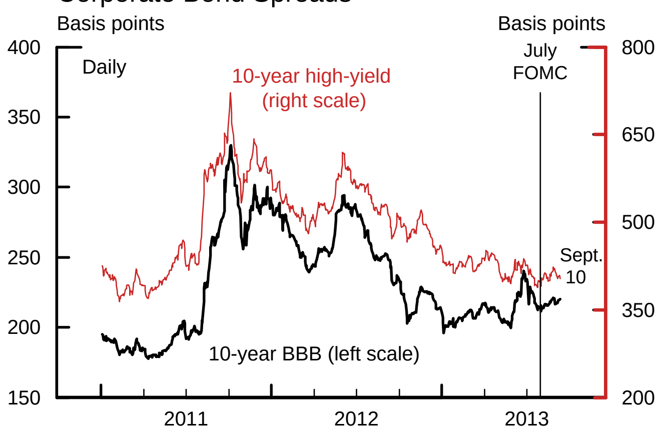

Source: Chicago Board Options Exchange.

## S&P 500 Earnings per Share



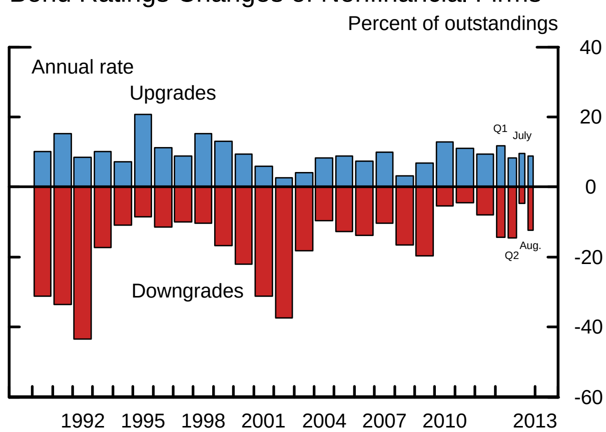

Source: Thomson Financial.

## Corporate Bond Spreads




Note: Spreads over 10-year Treasury yield.
Source: Staff estimates of smoothed corporate yield curves based on Merrill Lynch data and smoothed Treasury yield curve.

## Bond Ratings Changes of Nonfinancial Firms




Source: Calculated using data from Moody's Investors Service.

market disruptions from the potential debt-limit breach (see the box “Debt Subject to Limit”).

The Desk continued outright purchases of Treasury securities and agency MBS as liquidity in the latter market improved modestly but remained below long-term averages.[3] The spread between the executed and the second-most-favorable price offered in Federal Reserve MBS operations—a measure of liquidity—narrowed a bit compared with the widest level reached during the preceding intermeeting period. That said, the average MBS trade size continued to be smaller than it was at the start of the year amid continued volatility in the market, fewer mortgage originations, and light summer trading. Dollar-roll implied financing rates for 30-year Fannie Mae 3.5 percent and 4.0 percent coupon securities stayed near their recent high levels, suggesting limited settlement pressure in the TBA market for these securities, and the Desk engaged in less dollar roll activity during the July and August settlement cycles than earlier in the year.[4]

## Domestic Equity Market Developments

Equity prices trended down, on net, in August, as investors appeared to have been focused primarily on the tighter outlook for monetary policy and the risks associated with a wider conflict in Syria. However, the decline was fully retraced later in the period as concerns about Syria ebbed and the news on economic activity in China improved on net. The VIX, an index of options-implied volatility for one-month returns on the S&P 500 index, was little changed, on net, during the period, and the equity risk premium—as measured by the difference between the staff’s estimate of the expected equity return for the S&P 500 index and the expected real 10-year Treasury yield—was also about unchanged. Gross equity issuance by nonfinancial firms remained solid, boosted in part by a surge in initial public offerings.

## Foreign Developments

Over the intermeeting period, investors continued to pull back from exposure to the emerging market economies (EMEs) against a backdrop of higher interest rates in the

[3] Over the intermeeting period, the Desk purchased $58 billion of Treasury securities and $88 billion of agency MBS, including the reinvestment of principal payments from agency debt and MBS holdings.

[4] The Desk began purchasing 4.5 percent coupon agency MBS this intermeeting period, which are currently scheduled to settle in November.

## Debt Subject to Limit

The U.S. Treasury is operating under a debt issuance suspension period (DISP) and using extraordinary measures to avoid breaching the statutory debt limit of \$16.699 trillion.[1] The Board staff estimates that \$29 billion remain of the roughly \$305 billion in extraordinary measures, implying, as shown in the top figure on the next page, that the Treasury can continue operations and not breach the debt ceiling until at least mid-October.[2] Consistent with this projection, in a letter to the Congress on August 26, Secretary of the Treasury Lew noted that the Treasury expects to exhaust extraordinary measures in the middle of October. However, forecasts for the breach date are inherently uncertain, in part reflecting difficulties in predicting Treasury nonmarketable debt issuances and September corporate tax payments.[3]

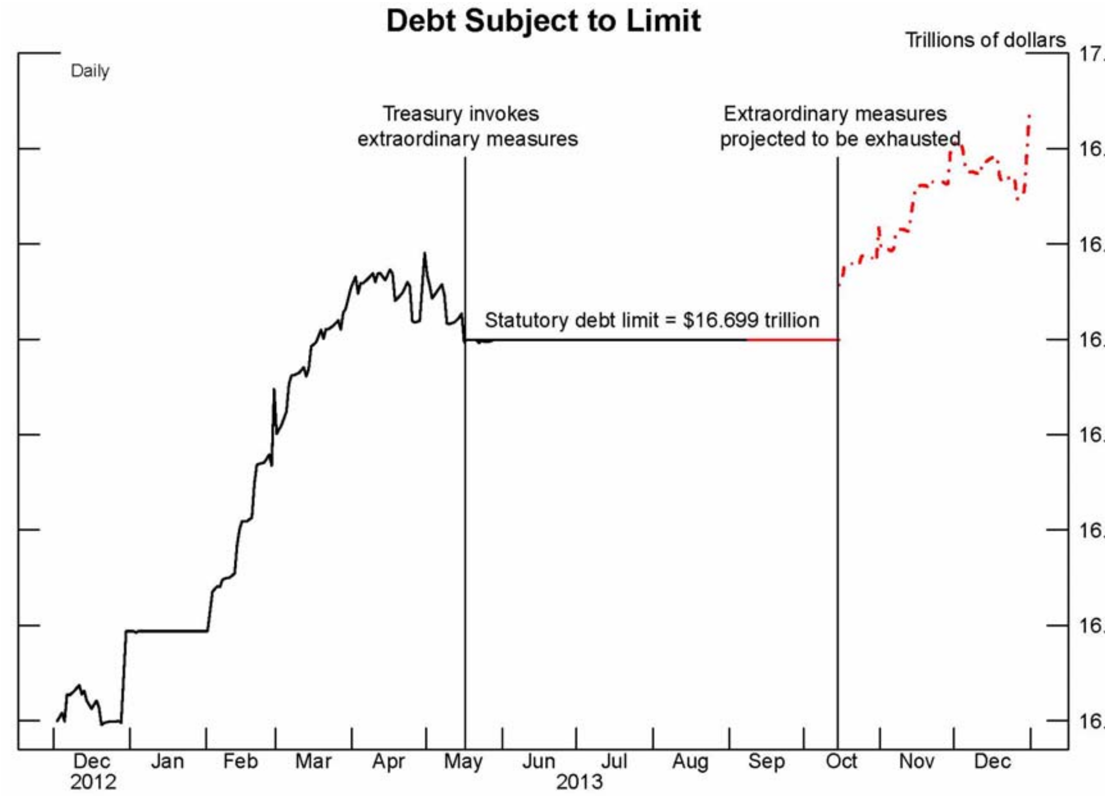
Market participants do not thus far appear to be pricing in any financial market disruptions as a result of the looming debt limit breach. For example, as shown in the bottom figure on the next page, Treasury bill yields around the projected breach date do not exhibit noticeable spikes around mid-October. Similarly, spreads on one-year and five-year U.S. credit default swaps are little changed over the intermeeting period. That said, in past debt limit episodes, stresses in these measures usually did not emerge until a debt limit breach appeared imminent.

Fitch Ratings recently stated that failure to reach agreement on raising the debt limit in a timely manner would prompt a review of the U.S. sovereign credit rating. However, S&P raised the outlook on the U.S. government's credit rating from negative to stable in June, under the assumption that the debt limit would be raised without any market disruptions. Similarly, Moody's changed the outlook on its U.S. sovereign bond rating from negative to stable in July, with no mention of debt limit concerns.

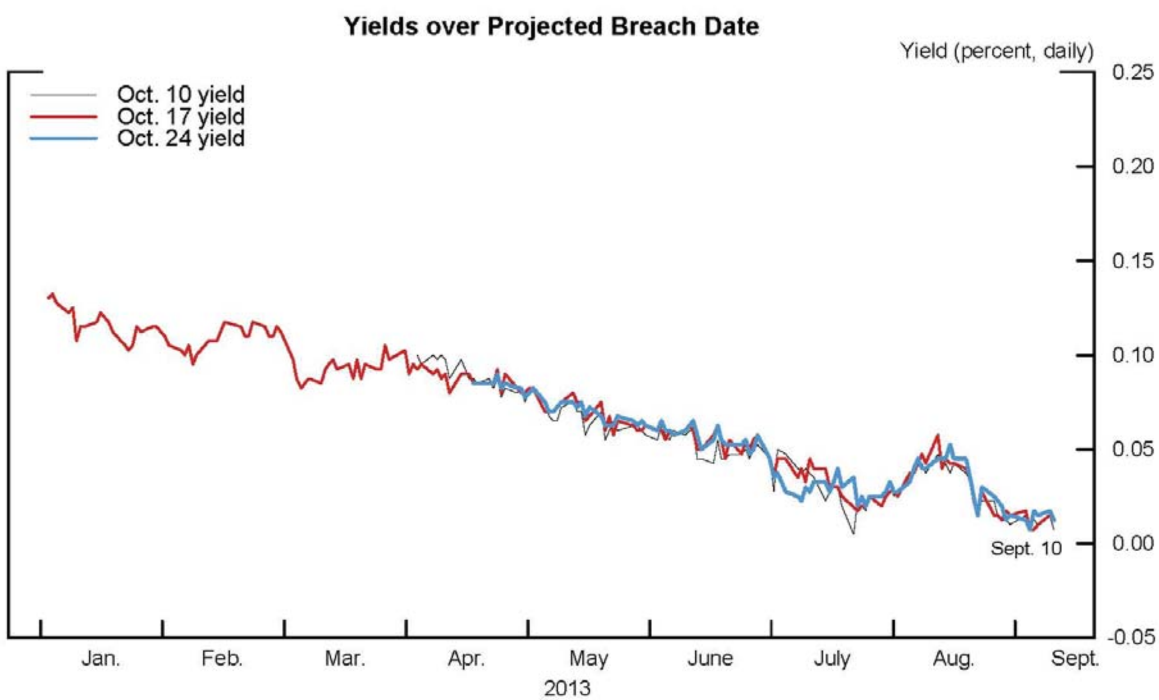
[1] On May 20, 2013, the Treasury declared a three-month DISP that was extended by two months on August 2, 2013. The Treasury is allowed to use the following accounting measures: suspend daily reinvestment of the Treasury securities held by the Government Securities Investment Fund (\$160 billion), redeem existing investments and suspend new investment in the Civil Service Retirement and Disability Fund (\$115 billion), suspend the daily reinvestment of dollar balances held by the Exchange Stabilization Fund into Treasury securities (\$23 billion), and suspend new investments in the Postal Service Retiree Health Benefits Fund (\$5 billion).

[2] The staff projection assumes the Treasury's net bill issuance falls to near zero in the second half of October and coupon issuance patterns in October remain in line with recent months' issuances. The breach date could be extended by at most a couple of weeks if the Treasury decreased net coupon issuance, which would be a notable deviation from its "regular and predictable" debt management strategy. The smaller amount of net coupon issuance would keep debt subject to limit under the ceiling, but drain the Treasury's cash balance. The Treasury's cash balance would fall and could possibly allow the government to operate until late October.

[3] Nonmarketable debt includes the Federal Old-Age and Survivors Insurance Trust Fund (Social Security) and the Civil Service Retirement and Disability Fund.




Source: U.S. Department of the Treasury, staff estimate.

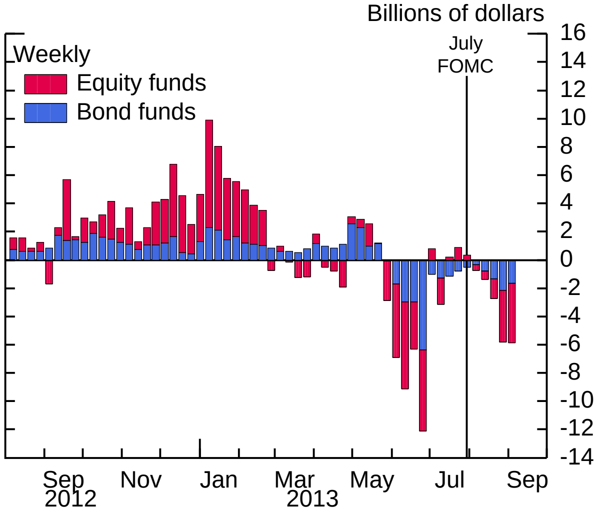



Source: Federal Reserve Bank of New York.

Financial Developments

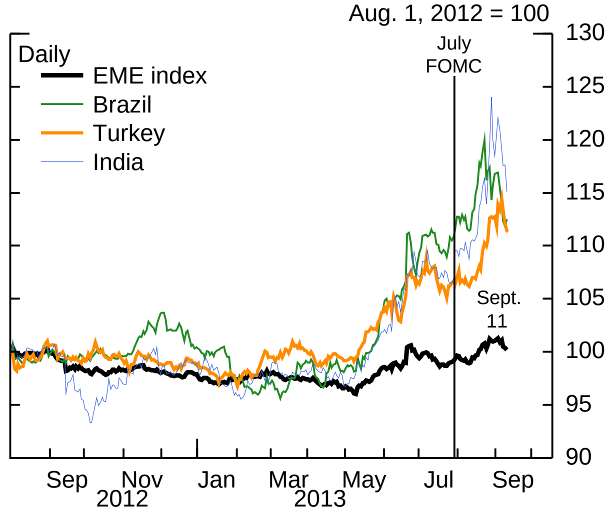
# Foreign Developments

Flows to Emerging Market Economies Funds



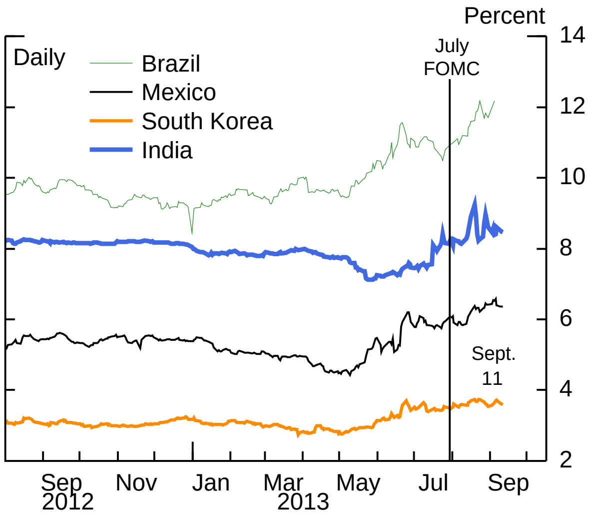

Source: Emerging Portfolio Fund Research.

Dollar Exchange Rates



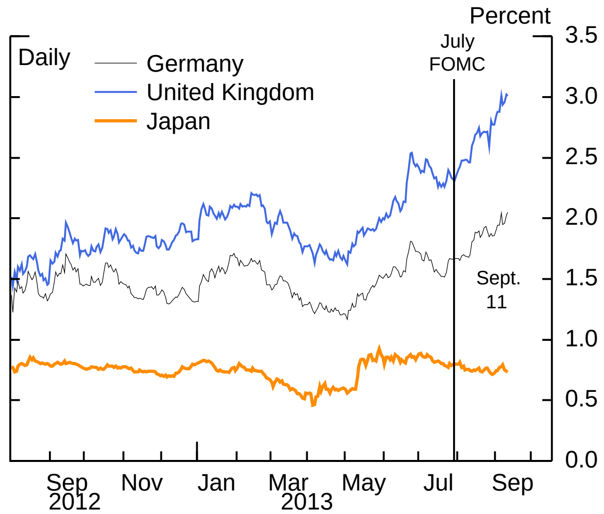

Source: Federal Reserve Board; Bloomberg.

EME 10-Year Nominal Benchmark Yields



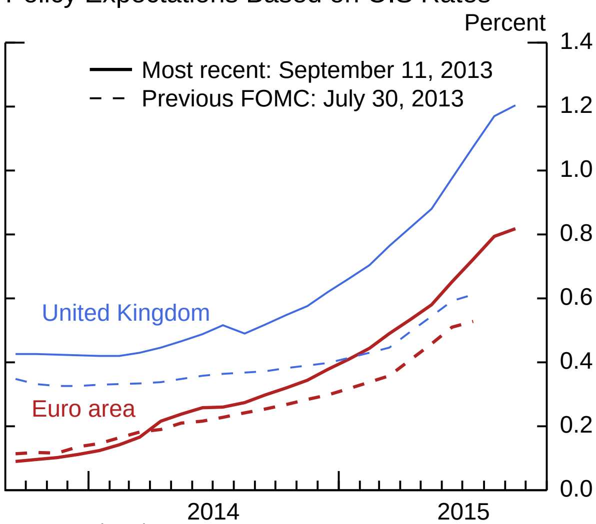

Source: Bloomberg.

AFE 10-Year Nominal Benchmark Yields



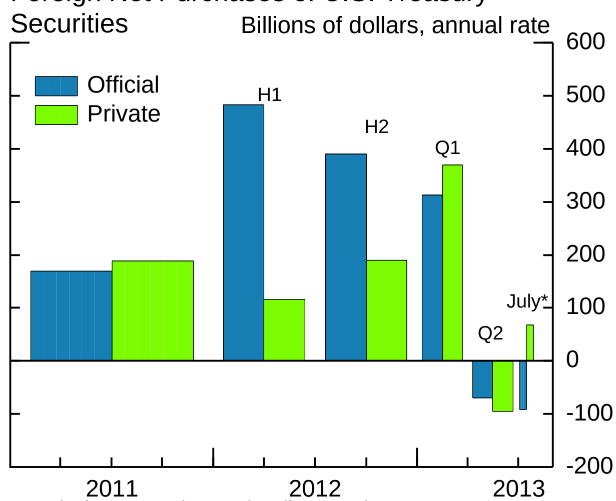

Source: Bloomberg.

Policy Expectations Based on OIS Rates




Source: Bloomberg.

Foreign Net Purchases of U.S. Treasury Securities




* July data are embargoed until September 17, 2013.
Source: TIC data adjusted for staff estimates.

Financial Developments

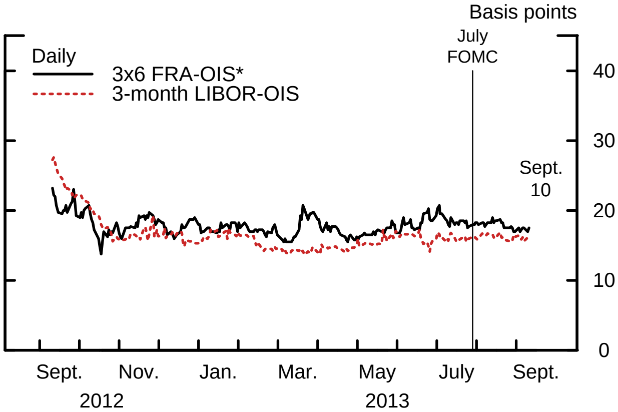
advanced economies, some improvement in the outlook for Europe, and slowing growth in the EMEs themselves. As a result, flows out of EME bond and equity funds, which had been substantial in June, continued through early September, though at a more moderate pace. On a trade-weighted basis, EME currencies have depreciated a bit less than 1 percent against the dollar since the July FOMC meeting. The currencies of Brazil, India, Indonesia, and Turkey continued to depreciate sharply against the dollar through August but have since retraced some of these declines. In response to market pressures, some governments took actions to support their currencies, including tightening monetary policy, modifying capital controls, and purchasing their currencies in foreign exchange markets. EME sovereign yields and CDS premiums on sovereign debt increased over the period, particularly in those countries experiencing the sharpest currency depreciations. EMEs that have experienced disappointing growth, high inflation, or large current account deficits have come under the greatest market pressure (see the box "Financial Distress and Vulnerabilities in Emerging Market Economies" in the International Economic Developments and Outlook section).

Sovereign yields in the United Kingdom and Germany continued to rise as data on economic activity in Europe generally came in above market expectations. As in the United States, the rise in yields appears to have reflected increases in both policy expectations and term premiums. OIS rates at the one- to two-year maturity rose in the euro area and the United Kingdom despite the recent provision of forward guidance by central banks in both economies that seems to preclude any near-term rise in policy rates (see the box "Forward Guidance by the Bank of England" in the International Economic Developments and Outlook section). Sovereign yield spreads in Spain and Italy declined during the period and European equity markets rose modestly. On net over the period, the dollar was up slightly against the major currencies.

Foreign official investors, including those from the EMEs facing currency depreciation pressures, made substantial sales of U.S. securities, especially Treasury securities, in June. However, July data indicate smaller sales of Treasury securities that were more than offset by purchases of agency debt, and recent data on custody holdings at the FRBNY suggest that foreign official investors continued buying agencies in August. Foreign private investors bought small amounts of U.S. Treasury securities and sold U.S. corporate securities in both June and July.

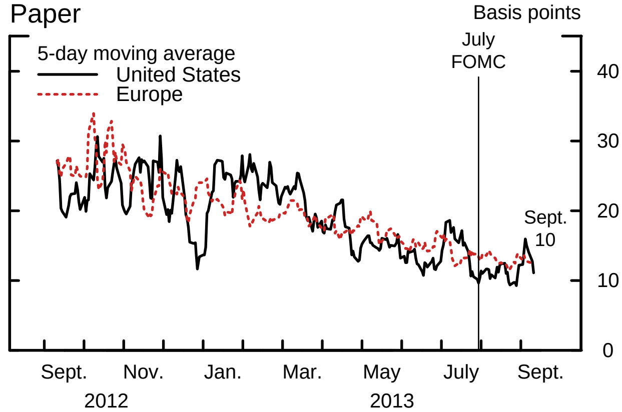
## Short-Term Funding Markets and Financial Institutions

### Funding Spreads



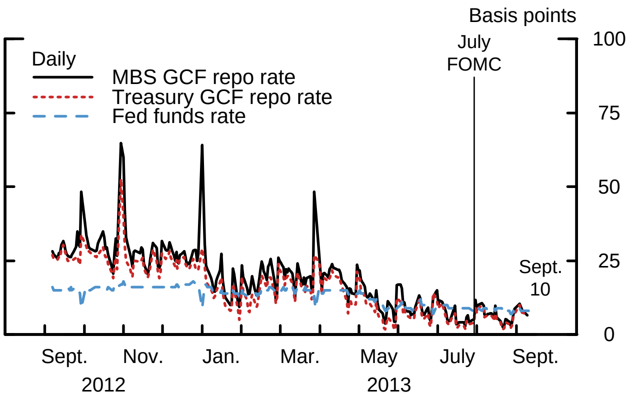

*Spread is calculated from a LIBOR forward rate agreement (FRA) 3 to 6 months in the future and the forward overnight index swap (OIS) rate for the same period.
Source: Bloomberg.

### 30-Day Rates on Unsecured Financial Commercial Paper



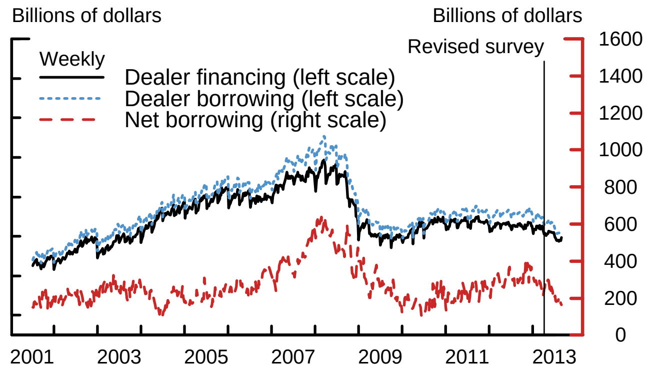

Source: Depository Trust & Clearing Corporation.

### Overnight Funding Rate



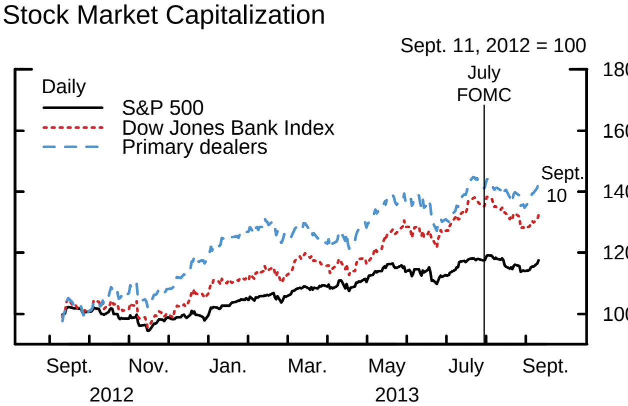

Source: Depository Trust & Clearing Corporation; Bloomberg; Federal Reserve.

### Dealer Financing and Borrowing



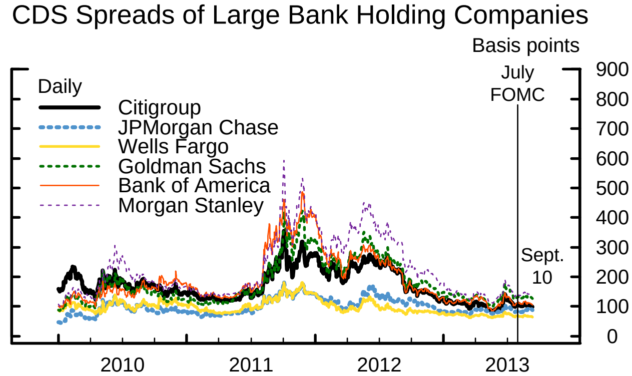

Note: Data are through August 28, 2013. Amounts show dealer borrowing and lending against U.S. Treasury securities, corporate securities, and federal agency and GSE securities, including MBS and agency debentures.
Source: Federal Reserve Board; Federal Reserve Bank of New York.

### Stock Market Capitalization




Note: Average stock market capitalization for 16 primary dealers.
Source: Bloomberg; Compustat; Yahoo! Finance.

### CDS Spreads of Large Bank Holding Companies




Source: Markit.

Financial Developments

## SHORT-TERM FUNDING MARKETS AND FINANCIAL INSTITUTIONS

Conditions in short-term dollar funding markets remained generally benign during the intermeeting period. The spread between three-month LIBOR and comparable-maturity OIS rates was about unchanged, and forward-looking measures of funding stress were quiescent. Although rates on U.S. unsecured financial CP stepped up a bit in early September, they ended the period about unchanged. In secured funding markets, overnight GCF repo rates continued to be low across collateral types, consistent with a reported scarcity of available collateral and reduced financing activities of dealers.

Responses to the September 2013 Senior Credit Officer Opinion Survey on Dealer Financing Terms generally suggested little change over the past three months in the credit terms applicable to most classes of counterparties covered by the survey. One notable exception was that nearly one-fourth of the dealers reported tightening nonprice terms offered to trading REITs. Respondents noted that the use of financial leverage by most classes of counterparties remained largely unchanged during this period. That said, a moderate net fraction of respondents reported a decline in financial-leverage use by hedge funds, and a more substantial net fraction of dealers reported a decrease in financial-leverage use by trading REITs. About one-fourth of respondents also indicated that demand for funding for agency MBS had decreased somewhat. In response to special questions in the survey, dealers indicated that liquidity and functioning deteriorated in a number of fixed-income markets during the period of heightened volatility from May to early July. These markets included those for Treasury securities and agency MBS, which are typically perceived to be the most liquid and deep, as well as those for TIPS and corporate bonds.

Stocks prices for financial-sector firms underperformed the broad equity market somewhat over the intermeeting period. That said, CDS spreads for the largest bank holding companies remained stable at levels near the bottom of their range over the past five years.

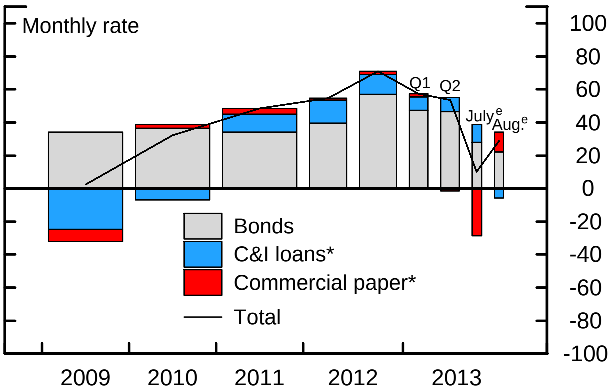
## BORROWING BY THE NONFINANCIAL SECTORS

The available data suggest that aggregate borrowing by nonfinancial businesses, households, and municipal governments has been fairly resilient in the face of higher longer-term interest rates. However, the full effects of higher rates on borrowing have probably not yet shown through.

# Business and Municipal Finance

## Selected Components of Net Debt Financing, Nonfinancial Firms

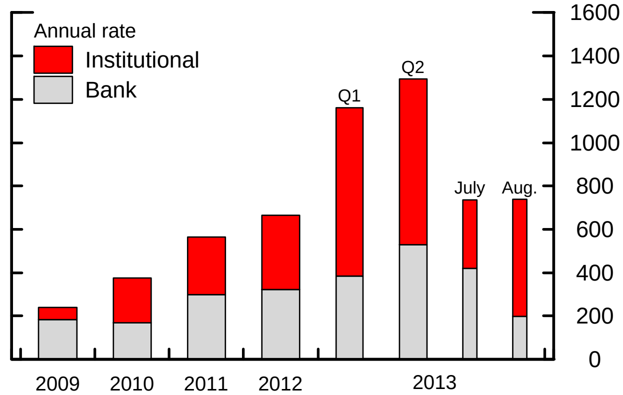
Billions of dollars




e Staff estimate of net corporate bond issuance for July and August and of change in C&I loans outstanding for August.
* Period-end basis, seasonally adjusted.
Source: Depository Trust & Clearing Corporation; Thomson Reuters Financial; Federal Reserve Board.

## Leveraged Loan Issuance, by Lender Type

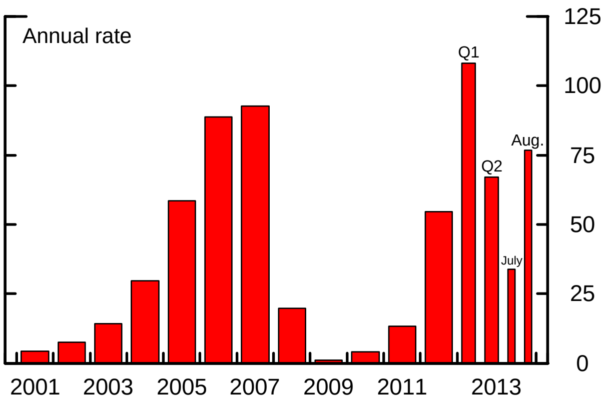
Billions of dollars




Source: Thomson Reuters LPC LoanConnector.

## U.S. CLO Issuance

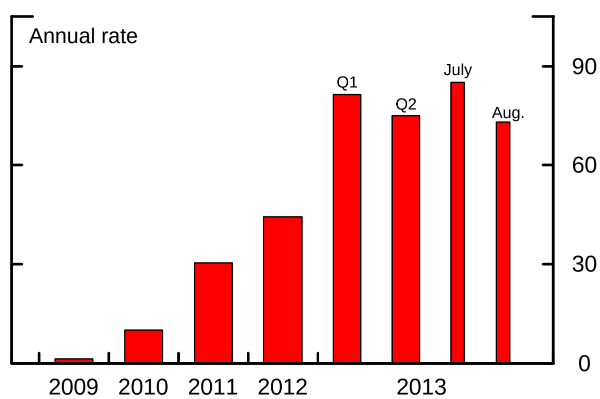
Billions of dollars




Note: CLO is collateralized loan obligation. July and August data are subject to revision at quarter-end.
Source: Thomson Reuters LPC LoanConnector.

## CMBS Issuance

Billions of dollars

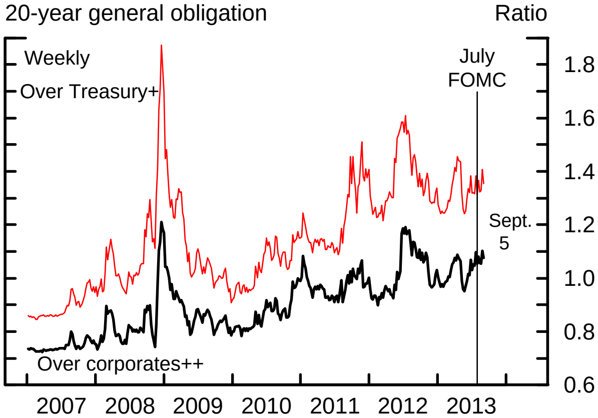



Note: CMBS is commercial mortgage-backed securities.
Source: Commercial Mortgage Alert.

## Municipal Bond Yield Ratio

20-year general obligation

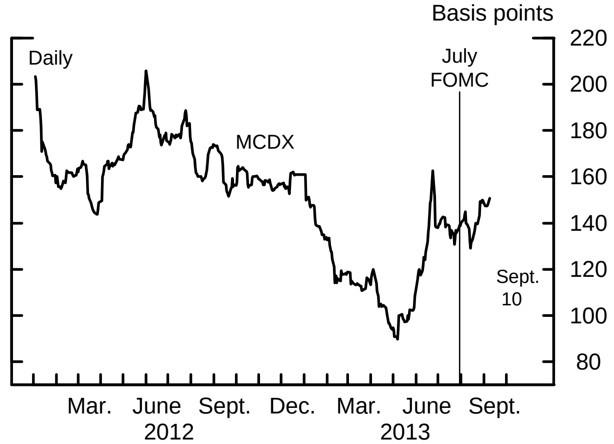
Ratio




+ Bond Buyer GO 20-year index over 20-year Treasury.
++ Bond Buyer GO 20-year index over estimated AAA 20-year yield.
Source: Bond Buyer; Merrill Lynch.

## Municipal CDS

Basis points




Note: The MCDX is a municipal credit default swap index.
Source: Markit.

Credit flows to nonfinancial businesses remained robust, as the overall credit quality of nonfinancial corporations stayed solid. Relative to typical summer lulls, gross issuance of corporate bonds and leveraged loans was robust in August, while commercial and industrial (C&I) loans on banks' books continued to expand moderately, on average, in July and August. Moreover, available reports from firms on their bond-financing plans suggest that gross issuance will likely pick up further in the coming months. Commercial real estate (CRE) loans at banks accelerated over the summer, and CMBS issuance remained strong despite a slight widening of CMBS spreads.

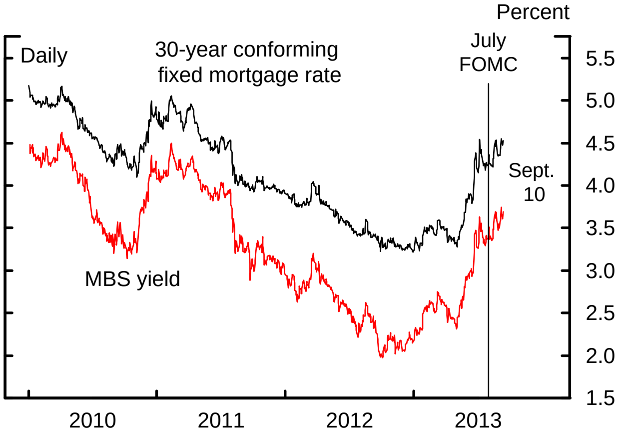
News about the home mortgage market has been mixed. While refinancing applications plunged with the rise in longer-term interest rates, applications for purchase mortgages declined modestly. Anecdotes from the mortgage industry are broadly consistent with the aggregate applications data: Although several lenders have announced layoffs in response to the decline in refinancing activity, lenders reportedly do not anticipate a persistent decline in purchase mortgage originations, which appear to have been supported by labor market improvements and pent-up housing demand. Indeed, although the pace of home price appreciation moderated a bit in July, it has so far remained robust despite higher interest rates, with national house price indexes increasing between 6 and 12 percent from a year earlier. A better read on the full effects of higher interest rates on household borrowing is expected to be available in the fall.

In terms of nonmortgage credit, auto and student loans both continued to expand rapidly in recent months, while revolving credit balances stayed about flat, reflecting still-tight credit conditions in many segments of the credit card market. Consumer ABS issuance remained robust in July and August as ABS yield spreads stabilized at levels somewhat wider than earlier this year.

Regarding the municipal bond market, despite persistent outflows from tax-exempt bond funds, ongoing bankruptcy proceedings for Detroit, and greater scrutiny of Puerto Rico's significant fiscal problems, few signs of widespread distress emerged during the intermeeting period. Broad market sentiment was reportedly buoyed by a further modest easing of budget pressures for many other states and localities. Gross issuance of long-term municipal bonds remained solid in August, and yield ratios on general obligation municipal bonds over comparable-duration Treasury securities were, on balance, about unchanged.

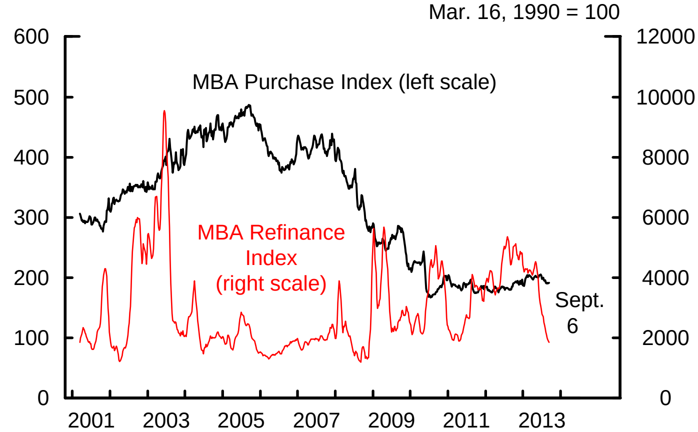
# Household Finance

## Mortgage Rate and MBS Yield



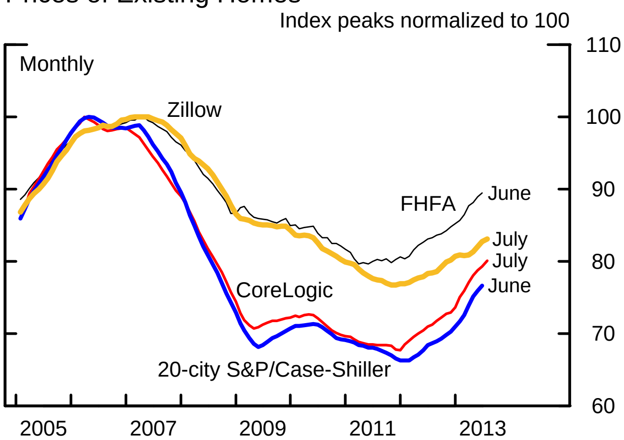

Note: The MBS yield is the Fannie Mae 30-year current-coupon rate.
Source: For MBS yield, Barclays; for mortgage rate, Loansifter.

## Purchase and Refinance Activity



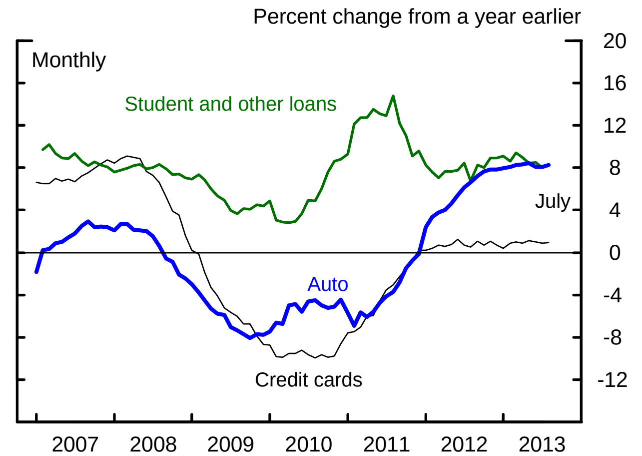

Note: The data are seasonally adjusted by FRB staff.
Source: Mortgage Bankers Association.

## Prices of Existing Homes



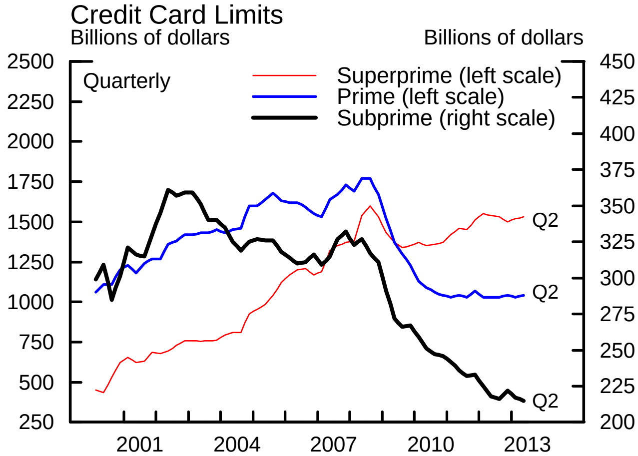

Source: For FHFA, Federal Housing Finance Agency; for CoreLogic, CoreLogic; for S&P/Case-Shiller, Standard & Poor's; for Zillow, Zillow.

## Consumer Credit



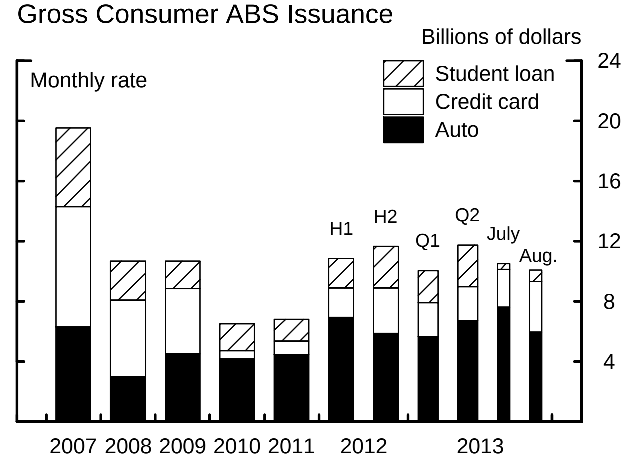

Note: The data are not seasonally adjusted.
Source: Federal Reserve Board.

## Credit Card Limits




Note: Subprime denotes a credit score below 660; prime, a credit score between 660 and 779; and superprime, a credit score above 779.
Source: Equifax.

## Gross Consumer ABS Issuance




Source: Inside MBS & ABS; Merrill Lynch; Federal Reserve Board.

## Commercial Banking and Money

Bank credit declined in July and August amid the ongoing rise in longer-term interest rates. Growth in loan categories such as C&I, CRE, and auto that are more likely to have floating interest rates or relatively short maturities—and therefore less duration risk—has tended to hold up in recent months. Indeed, according to the August Survey of Terms of Business Lending, interest rates and loan rate spreads on newly originated C&I loans declined amid ongoing competition among banks for such assets. In contrast, assets with longer duration—including residential mortgages and some securities—have decreased. Net unrealized gains on banks' holdings of available-for-sale securities decreased somewhat further in July and August.

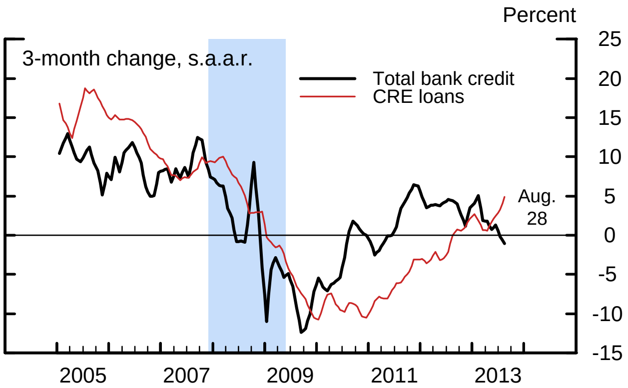
M2 expanded fairly rapidly in July and August as the sharp selloff in fixed-income markets that began in June, along with the associated outflows from bond funds, likely continued to support reallocations to M2 assets. The monetary base continued to expand rapidly, primarily reflecting the increase in reserve balances resulting from the Federal Reserve's asset purchases.[5] The accumulation of reserve balances over the period left the stock of balances last month about evenly split between those held by domestic institutions and those held by U.S. branches and agencies of foreign banks.



[5] During the intermeeting period, the Federal Reserve conducted its third fixed-rate, full-allotment offering of term deposits under the Term Deposit Facility (TDF). Tenders totaled $11.7 billion at a rate of 26 basis points, with 25 depository institutions participating. Participation in TDF operations has increased coincident with the change in format and staff outreach. As a result, the depository institutions (DIs) participating in the most recent operations together hold a larger portion of total excess reserve balances than the pool of DIs that participated in earlier operations.

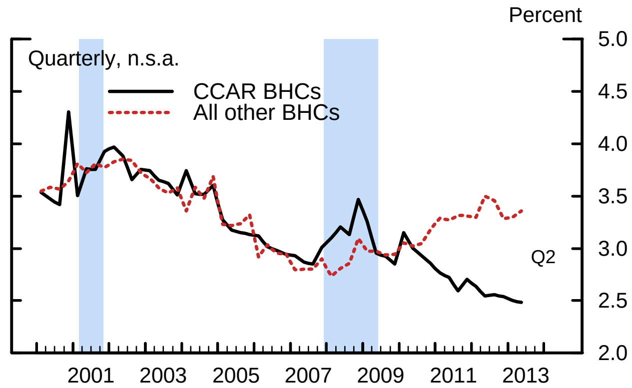
# Commercial Banking and Money

## Change in Bank Credit



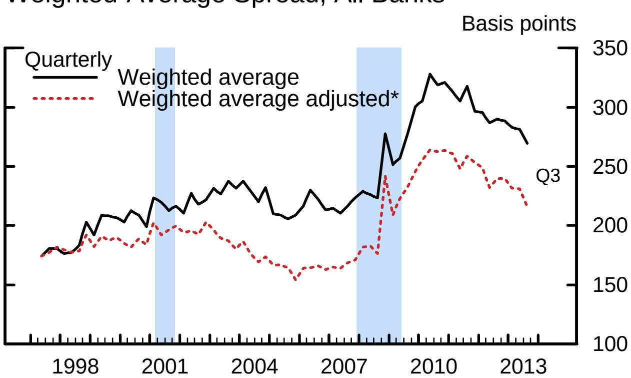

Note: The data have been adjusted to remove the estimated effects of certain changes to accounting standards and nonbank structure activity of $5 billion or more. CRE is commercial real estate.
Source: Federal Reserve Board.

## Net Interest Margin, by BHC Type



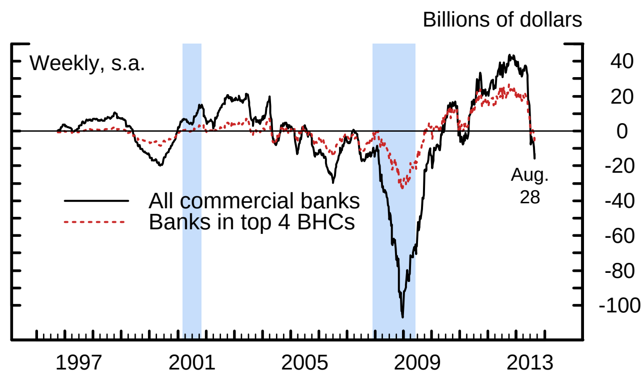

Note: CCAR BHCs are Comprehensive Capital Analysis and Review bank holding companies.
Source: Federal Reserve Board, FR Y-9C, Consolidated Financial Statements for Holding Companies.

## Weighted-Average Spread, All Banks




Note: The observation for Q3 is as of August 9, 2013. C&I loans of amounts less than $25 million. Spreads are computed over market interest rates on instruments with maturities comparable to each loan's repricing interval.
*Adjusted for changes in nonprice loan characteristics.
Source: Survey of Terms of Business Lending.

## Net Unrealized Gains at Commercial banks




Note: The top 4 BHCs are Bank of America, Citigroup, JPMorgan Chase, and Wells Fargo.
Source: Federal Reserve Board.

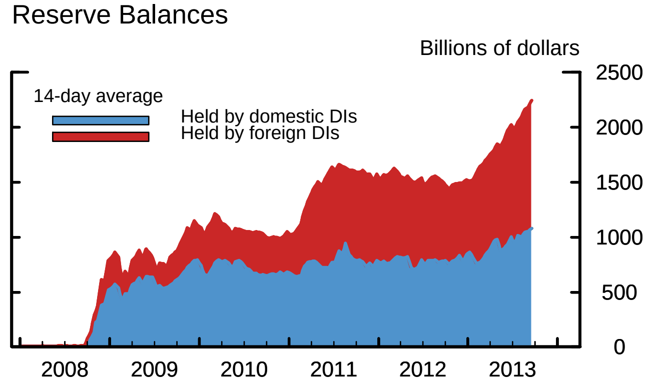
## Growth of M2 and Its Components

Percent, s.a.a.r.

| | M2 | Liquid deposits | Small time deposits | Retail MMFs | Curr. |
|---|---|---|---|---|---|
| 2012 | 7.5 | 11.2 | -16.9 | -5.3 | 9.0 |
| 2013:H1 | 4.7 | 6.7 | -19.8 | 2.5 | 6.0 |
| 2013:Q1 | 4.9 | 6.8 | -20.3 | 5.6 | 5.8 |
| 2013:Q2 | 4.4 | 6.4 | -20.2 | -.6 | 6.0 |
| July & Aug. | 9.7 | 12.0 | -21.0 | 9.9 | 8.1 |

Note: Retail MMFs are retail money market funds.
Source: Federal Reserve Board.

## Reserve Balances




Note: DIs are depository institutions. Domestic depository institutions consist of commercial banks, savings and loan associations, savings banks or mutual savings banks, and credit unions. Foreign depository institutions consist of U.S. branches and agencies of foreign banks and Edge Act and agreement corporations.
Source: Federal Reserve Board.

Note: The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.

# Risks and Uncertainty

## Assessment of Risks

We continue to view the uncertainty around our projection for economic activity as roughly normal relative to the experience of the past 20 years (the benchmark used by the FOMC), a period that includes considerable volatility.[1] We see a number of risks attending our forecast, including those posed by an intensification of economic and financial stresses in emerging market economies (EMEs) or the euro area; the need to lift the federal debt limit and settle on annual budget appropriations in the coming months; and the possibility that the tightening in financial conditions in recent months will exert greater restraint on the recovery, particularly in the housing sector, than we project. A related concern is the ability of the economy to weather future negative shocks, as monetary policy has a limited capacity to counteract the effects of any new adverse developments. Given these considerations, we continue to believe that the risks to domestic economic activity are skewed to the downside.

Our view of the risks to the economic outlook has been informed by the staff's recently completed quantitative surveillance (QS) assessment of vulnerabilities in the financial system, which concluded that developments over the summer had mixed and largely offsetting implications for financial stability. On the one hand, the sharp rise in interest rates and the associated outflows from bond funds eased concerns about overvaluation in some fixed-income markets and reduced some of the momentum toward greater risk-taking. On the other hand, some developments this summer—including continued strong demand for risky business credits, forced asset sales by some levered investors, and reduced liquidity provision by dealers during the period of market volatility—highlighted the presence of channels that could amplify future shocks. The September QS assessment reiterated the financial system's vulnerabilities stemming from

[1] The benchmark estimates of uncertainty about real activity have increased sharply over the past several years. In particular, as the fixed 20-year window used to assess the size of typical forecast errors has moved forward to include the experience of the past five years, the estimated standard errors for out-year projections of the unemployment rate almost doubled between 2008 and 2011 and have remained at this higher level with the current 20-year sample. As a result, the benchmark estimates of uncertainty about economic activity are no longer dominated by the experience of the Great Moderation period. In contrast, benchmark estimates of uncertainty about inflation are essentially unchanged relative to earlier sample periods.

## Alternative Scenarios

(Percent change, annual rate, from end of preceding period except as noted)

| Measure and scenario | 2013 H1 | 2013 H2 | 2014 | 2015 | 2016 | 2017-18 |
|---|---|---|---|---|---|---|
| *Real GDP* | | | | | | |
| Extended Tealbook baseline | 2.0 | 2.5 | 3.1 | 3.4 | 3.2 | 2.4 |
| Higher interest rates with spillovers | 2.0 | 2.3 | 2.3 | 2.7 | 3.0 | 2.5 |
| Faster recovery | 2.0 | 4.0 | 3.7 | 3.1 | 2.7 | 2.1 |
| Supply-side damage | 2.0 | 2.4 | 2.7 | 2.5 | 2.0 | 1.6 |
| Low inflation | 2.0 | 2.4 | 2.7 | 2.8 | 3.0 | 2.8 |
| EME financial crisis | 2.0 | 2.2 | 1.8 | 3.4 | 3.7 | 2.7 |
| Higher oil prices | 2.0 | 2.2 | 2.7 | 3.1 | 3.1 | 2.6 |
| *Unemployment rate*[1] | | | | | | |
| Extended Tealbook baseline | 7.5 | 7.2 | 6.6 | 5.8 | 5.3 | 5.1 |
| Higher interest rates with spillovers | 7.5 | 7.2 | 6.9 | 6.5 | 6.1 | 5.7 |
| Faster recovery | 7.5 | 7.0 | 6.0 | 5.3 | 5.1 | 5.2 |
| Supply-side damage | 7.5 | 7.1 | 6.1 | 5.0 | 4.8 | 5.2 |
| Low inflation | 7.5 | 7.2 | 6.8 | 6.2 | 5.8 | 5.1 |
| EME financial crisis | 7.5 | 7.2 | 7.1 | 6.4 | 5.8 | 5.3 |
| Higher oil prices | 7.5 | 7.2 | 6.8 | 6.1 | 5.6 | 5.3 |
| *Total PCE prices* | | | | | | |
| Extended Tealbook baseline | .6 | 1.6 | 1.2 | 1.4 | 1.6 | 1.8 |
| Higher interest rates with spillovers | .6 | 1.6 | 1.2 | 1.3 | 1.5 | 1.6 |
| Faster recovery | .6 | 1.6 | 1.2 | 1.4 | 1.7 | 1.9 |
| Supply-side damage | .6 | 1.7 | 1.4 | 1.8 | 2.0 | 2.1 |
| Low inflation | .6 | 1.2 | .3 | .2 | .2 | .3 |
| EME financial crisis | .6 | .6 | .1 | 1.3 | 1.9 | 2.2 |
| Higher oil prices | .6 | 4.4 | 1.0 | 1.4 | 1.7 | 1.8 |
| *Core PCE prices* | | | | | | |
| Extended Tealbook baseline | 1.1 | 1.4 | 1.5 | 1.6 | 1.7 | 1.9 |
| Higher interest rates with spillovers | 1.1 | 1.4 | 1.5 | 1.5 | 1.6 | 1.7 |
| Faster recovery | 1.1 | 1.4 | 1.5 | 1.6 | 1.8 | 2.0 |
| Supply-side damage | 1.1 | 1.5 | 1.7 | 2.0 | 2.1 | 2.2 |
| Low inflation | 1.1 | 1.0 | .6 | .4 | .3 | .4 |
| EME financial crisis | 1.1 | 1.3 | 1.0 | 1.4 | 1.8 | 2.1 |
| Higher oil prices | 1.1 | 1.5 | 1.8 | 1.8 | 1.8 | 1.9 |
| *Federal funds rate*[1] | | | | | | |
| Extended Tealbook baseline | .1 | .1 | .1 | .8 | 1.9 | 3.3 |
| Higher interest rates with spillovers | .1 | .1 | .1 | .1 | .8 | 2.1 |
| Faster recovery | .1 | .1 | .7 | 1.8 | 2.8 | 3.5 |
| Supply-side damage | .1 | .1 | .7 | 2.3 | 3.5 | 4.1 |
| Low inflation | .1 | .1 | .1 | .1 | .4 | 1.2 |
| EME financial crisis | .1 | .1 | .1 | .2 | 1.3 | 3.3 |
| Higher oil prices | .1 | .1 | .1 | .8 | 1.7 | 3.0 |

1. Percent, average for the final quarter of the period.

the complexity and interconnectedness of large financial institutions and from structural issues in wholesale short-term funding markets. Nonetheless, it suggested that current vulnerabilities in the U.S. financial system are not unusually pronounced, in large part because, relative to the period before the crisis and regulatory reform, loss-absorbing capital has increased, and the reliance on short-term funding and the exposure of financial institutions to household credit risk have decreased.

With regard to inflation, we see significant uncertainty around our projection but do not view the current level of uncertainty as unusually high. Longer-run inflation expectations appear to have remained stable in recent years despite large fluctuations in the prices of crude oil and other commodities and persistently wide margins of slack in labor and product markets. Furthermore, we still view the risks to our inflation forecast as broadly balanced. On the downside, there is the possibility that the soft readings on inflation seen earlier this year could reemerge if low levels of resource utilization or subdued increases in unit labor costs persist longer or have larger effects than we currently project. On the upside, an increase in inflation expectations, potentially related to concerns about the size of the Federal Reserve's balance sheet and the ability to execute a timely exit from the current stance of policy, could cause inflation to rise, as could a stronger-than-expected recovery or a larger amount of damage to the supply side of the economy than assumed in the baseline.

## ALTERNATIVE SCENARIOS

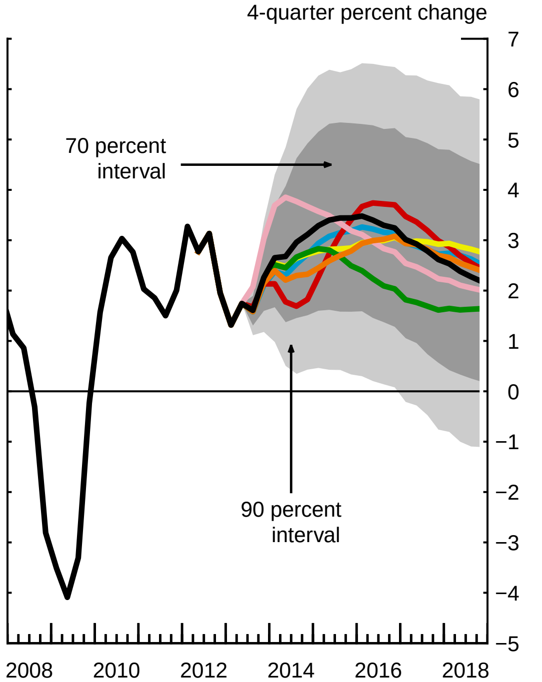
To illustrate some of the risks to the outlook, we construct a number of alternatives to the baseline projection using simulations of staff models. In the first scenario, long-term interest rates are persistently higher than in the baseline, restraining activity in the housing sector and boosting the dollar relative to the baseline. The second scenario considers the possibility that the substantial decline in the unemployment rate seen over the past year is a more accurate signal of the pace of the recovery than the modest gains in real GDP, and that going forward GDP accelerates more markedly. In the third scenario, by contrast, the combination of steady declines in the unemployment rate and tepid GDP growth seen over recent quarters reflects greater damage to the supply side than assumed in the baseline. The fourth scenario considers the risk that the softness in consumer price inflation seen earlier this year will prove to be more persistent than expected. The final two scenarios explore risks to the U.S. economy from foreign economic developments—in the fifth scenario, recent financial stresses experienced by

# Forecast Confidence Intervals and Alternative Scenarios

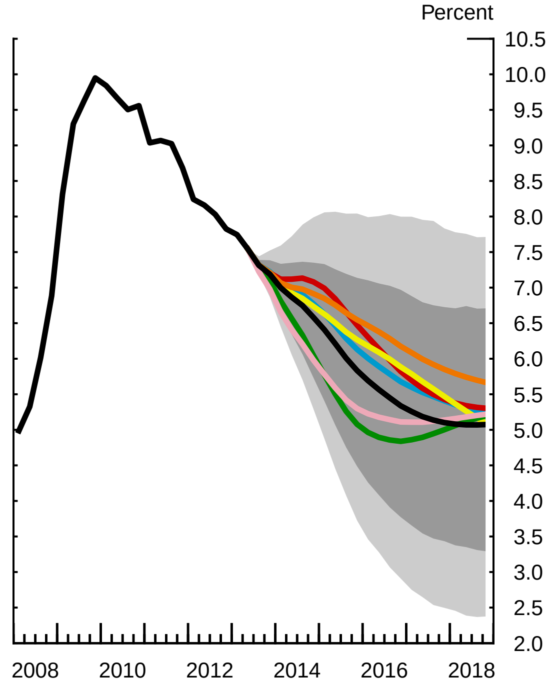
## Confidence Intervals Based on FRB/US Stochastic Simulations

- Extended Tealbook baseline
- Higher interest rates with spillovers
- Faster recovery
- Supply−side damage
- Low inflation
- EME financial crisis
- Higher oil prices

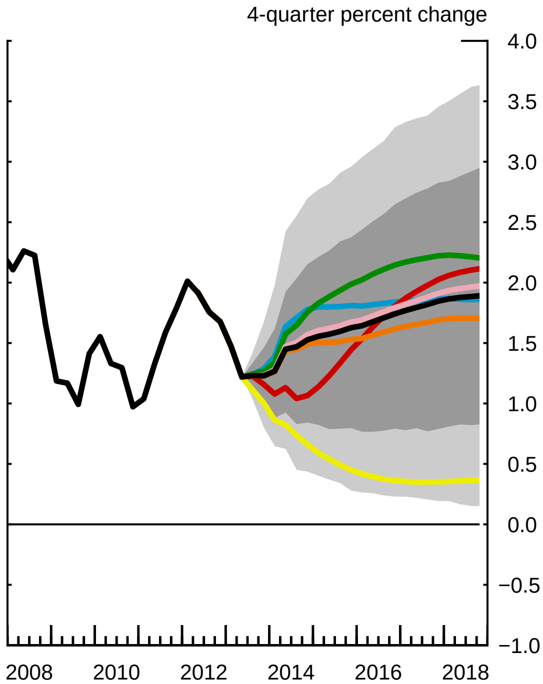
### Real GDP



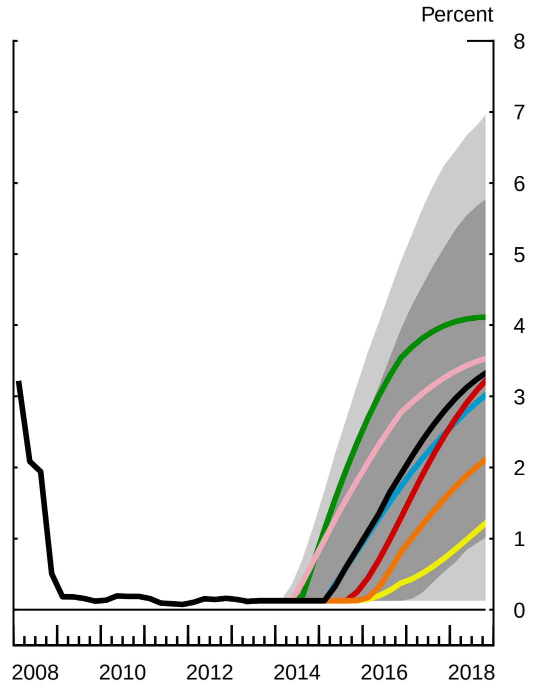

### Unemployment Rate




### PCE Prices excluding Food and Energy




### Federal Funds Rate



EMEs escalate into a full-blown crisis, and in the sixth, geopolitical tensions lead to a sharp run-up in oil prices.

We generate the first four scenarios using the FRB/US model and the last two using the multicountry SIGMA model. In the FRB/US simulations, as in the baseline forecast, the federal funds rate follows an inertial version of the Taylor (1999) rule, subject to the FOMC's thresholds for the unemployment rate and projected inflation. For the SIGMA simulations, we use a broadly similar policy rule, subject to the same thresholds, but employ an alternative concept of resource utilization.[2] In all cases, we assume that the size and composition of the SOMA portfolio follow their baseline paths.

## Higher Interest Rates with Housing Spillovers

Over the past six months, longer-term interest rates have moved markedly higher than we had expected. In this scenario, we assume Treasury yields once again surprise us. Specifically, longer-term interest rates are assumed to run persistently above the baseline and are about 75 basis points higher by early next year, causing the dollar to appreciate about 2½ percent relative to the baseline by 2014. Moreover, and in contrast to the baseline forecast, we assume that these increases in yields have a sharp depressing effect on housing activity.[3] House prices decelerate sharply through late 2015 and are 10 percent below baseline by 2016. These developments shave about ¾ percentage point off the average annual growth rate of real GDP through 2015. The unemployment rate remains above 6½ percent until late 2015, at which point total inflation is still running below 1½ percent. The shortfall in economic performance relative to the baseline causes the first increase in the federal funds rate to be delayed until the second quarter of 2016.

## Faster Recovery

Real GDP has grown only modestly over the past few years, and yet the unemployment rate has declined substantially. In the staff baseline projection, we have interpreted the weak readings on GDP as resulting from headwinds that will continue to restrain aggregate demand going forward. An alternative possibility is that the recent

[2] The SIGMA policy rule uses a measure of slack equal to the difference between actual output and the model's estimate of the level of output that would occur in the absence of slow adjustment of wages and prices.

[3] The box "The Rise in Mortgage Rates and Housing Market Activity" in the Domestic Economic Developments and Outlook section describes the sensitivity of the baseline forecast to the increase in mortgage rates since April.

## Selected Tealbook Projections and 70 Percent Confidence Intervals Derived from Historical Tealbook Forecast Errors and FRB/US Simulations

| Measure | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| *Real GDP* | | | | | | |
| *(percent change, Q4 to Q4)* | | | | | | |
| Projection | 2.3 | 3.1 | 3.4 | 3.2 | 2.6 | 2.2 |
| Confidence interval | | | | | | |
| Tealbook forecast errors | 1.4–3.1 | 1.2–5.0 | 1.3–5.6 | . . . | . . . | . . . |
| FRB/US stochastic simulations | 1.6–2.9 | 1.5–4.9 | 1.6–5.3 | 1.3–5.2 | .6–4.8 | .2–4.5 |
| *Civilian unemployment rate* | | | | | | |
| *(percent, Q4)* | | | | | | |
| Projection | 7.2 | 6.6 | 5.8 | 5.3 | 5.1 | 5.1 |
| Confidence interval | | | | | | |
| Tealbook forecast errors | 6.8–7.6 | 5.8–7.4 | 4.5–7.2 | . . . | . . . | . . . |
| FRB/US stochastic simulations | 7.0–7.4 | 5.7–7.4 | 4.5–7.1 | 3.8–7.0 | 3.4–6.7 | 3.3–6.7 |
| *PCE prices, total* | | | | | | |
| *(percent change, Q4 to Q4)* | | | | | | |
| Projection | 1.1 | 1.2 | 1.4 | 1.6 | 1.8 | 1.9 |
| Confidence interval | | | | | | |
| Tealbook forecast errors | .6–1.5 | .0–2.4 | .2–2.6 | . . . | . . . | . . . |
| FRB/US stochastic simulations | .7–1.5 | .3–2.1 | .4–2.5 | .4–2.7 | .6–2.9 | .7–3.1 |
| *PCE prices excluding* | | | | | | |
| *food and energy* | | | | | | |
| *(percent change, Q4 to Q4)* | | | | | | |
| Projection | 1.2 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 |
| Confidence interval | | | | | | |
| Tealbook forecast errors | .9–1.5 | .8–2.2 | .6–2.6 | . . . | . . . | . . . |
| FRB/US stochastic simulations | 1.0–1.5 | .8–2.2 | .8–2.4 | .8–2.6 | .8–2.8 | .8–3.0 |
| *Federal funds rate* | | | | | | |
| *(percent, Q4)* | | | | | | |
| Projection | .1 | .1 | .8 | 1.9 | 2.8 | 3.3 |
| Confidence interval | | | | | | |
| FRB/US stochastic simulations | .1–.1 | .1–.8 | .1–2.4 | .1–3.9 | .5–5.1 | 1.0–5.8 |

Note: Shocks underlying FRB/US stochastic simulations are randomly drawn from the 1969–2012 set of model equation residuals.

Intervals derived from Tealbook forecast errors are based on projections made from 1979 to 2012, except for PCE prices excluding food and energy, where the sample is 1981–2012.

. . . Not applicable. The Tealbook forecast horizon has typically extended about 2 years.

gains in real GDP growth have been understating the true strength of the economy, and other indicators—such as GDI and labor market conditions—have in fact been sending a clearer signal. In this scenario, the improvements seen in household wealth and consumer sentiment over the past year lead to a more rapid pickup in consumer spending than in the baseline projection. Real GDP rises at an annual rate of 4 percent in the second half of this year and about 3½ percent on average over 2014 and 2015; the unemployment rate falls below 6½ percent by mid-2014 and reaches its natural rate of 5.2 percent by early 2016. With resource slack decreasing more rapidly, wages and unit labor costs accelerate gradually relative to the baseline; however, with long-term inflation expectations assumed to remain well anchored, consumer price inflation rises to only 2 percent by 2018. The federal funds rate lifts off from its effective lower bound by the third quarter of 2014.

## Supply-Side Damage

In this scenario, the observations of sluggish real GDP growth and a falling unemployment rate in recent years indicate not that the estimates of GDP understate the strength of the economy, as in the previous scenario, but rather that the damage to aggregate supply during the past several years is greater than is assumed in the baseline. Accordingly, potential output is assumed to have expanded at an annual rate of only 1¼ percent since 2011, ½ percentage point lower than in the baseline, and continues to rise more slowly than in the baseline through 2018. As a result, the current output gap is 1½ percentage points narrower than in the baseline. Real GDP rises at a rate of 2½ percent per year, on average, through 2015, but the unemployment rate nonetheless continues to decline at roughly the same pace as it has since late 2010 and falls below 6½ percent by the third quarter of 2014.[4] With resource slack substantially narrower and productivity gains smaller than in the baseline, inflation rises to 2 percent by 2016, and the federal funds rate begins to rise from its effective lower bound in the fourth quarter of 2014, two quarters earlier than in the baseline.

## Low Inflation

In the baseline forecast, the low readings on core inflation seen earlier this year are assumed to have been partially transitory, and over the next few years, inflation gradually moves back toward 2 percent. In this scenario, the recent performance of

[4] Although the projection of the unemployment rate is lower than in the baseline, living standards are lower in this scenario as a result of slower productivity growth.

inflation proves to be a harbinger of a longer-lasting decline in actual inflation, bringing down longer-run inflation expectations and thereby leading to a mutually reinforcing downward dynamic. Inflation is below 1 percent next year and edges down further thereafter, falling close to zero. In this environment, investors become increasingly concerned that the economy is mired in a weak state with price behavior verging on deflation and monetary policy remaining constrained by the effective lower bound for the federal funds rate. As a result, bond premiums rise and put upward pressure on real long-term interest rates, modestly restraining household and business spending and boosting unemployment relative to the baseline over the next few years. While the unemployment rate falls below its 6½ percent threshold in the third quarter of 2015, the policy rule does not prescribe the first increase in the federal funds rate until the third quarter of 2016. By then, the unemployment rate is nearly at its natural rate. But given the persistent downward shift in inflation expectations, inflation remains well below the FOMC's long-run objective.

### Financial Crisis in the Emerging Market Economies

Financial conditions in the EMEs have deteriorated over the past several months as EME growth has come in weaker than anticipated and interest rates have risen in the advanced economies. In our baseline, we expect these stresses to remain manageable, but the likelihood of more disruptive events has risen. This scenario considers the possibility that financial stress in the EMEs intensifies markedly, precipitating a financial crisis in one or more of the most vulnerable economies which then spills over to EMEs more broadly. Sovereign and private borrowing costs in the EMEs soar, and the confidence of EME households and businesses weakens significantly. These events cause EME currencies to depreciate more than 5 percent on average relative to the baseline, even though EME central banks are assumed to raise policy rates in order to attenuate capital outflows. All told, real GDP in the EMEs declines 4½ percent relative to the baseline by the end of 2014.

The financial stress in the EMEs is assumed to have some financial spillovers to the rest of the world, including the United States: Corporate bond spreads rise and equity prices decline relative to the baseline, while flight-to-safety flows push down term premiums on government bond yields. In addition, weaker foreign economic activity and the stronger exchange value of the dollar depress U.S. net exports. As a result, U.S. real GDP growth drops to a meager 1¾ percent in 2014, and the unemployment rate stays above 7 percent through 2014 before beginning to gradually decline. With substantially greater resource slack and lower import prices, overall U.S. consumer price inflation slows to ½ percent in the second half of 2013 and to nearly zero in 2014. Under these conditions, the federal funds rate remains at its effective lower bound two quarters longer than in the baseline, until the end of 2015.

## Higher Oil Prices

The escalating tensions in Syria and the political turmoil in Egypt have elevated the risk of an abrupt reduction in global oil supply. In this scenario, we assume that greater geopolitical stresses and supply and transportation disruptions temporarily increase oil prices $35 per barrel above baseline at the end of this year, but that prices then partially recede, leveling out at $15 per barrel above baseline.[5] U.S. domestic demand falls relative to the baseline because higher oil prices reduce households' real income and lower the return on firms' investments, while real exports also decline because of weaker foreign economic activity. U.S. real GDP rises at an annual rate of about 2½ percent, on average, in the second half of this year and next year—¼ percentage point below baseline—and the unemployment rate is roughly 6¾ percent at the end of 2014, about ¼ percentage point higher than in the baseline. Reflecting the rise in energy costs, overall PCE inflation jumps to 4½ percent at an annual rate in the second half of this year. However, because the public recognizes that the direct impetus of higher oil prices to inflation is only temporary, inflation expectations remain well anchored and actual inflation subsequently moves back to baseline. In response to the partly offsetting implications for policy of higher inflation and weaker real activity, the federal funds rate lifts off from its effective lower bound at the same time as in the baseline but rises more gradually thereafter.

[5] Financial markets appear to assign a fairly low weight to the possibility that oil prices will rise significantly more than envisioned in this scenario. In particular, staff analysis using options on oil futures suggests a less than 5 percent chance that the price of crude oil will rise more than $35 relative to the Tealbook baseline by the end of this year. Even so, much larger oil-price hikes seem conceivable in response to a range of possible geopolitical developments, including a more pervasive disruption of Middle East production than is captured in our scenario.

**Alternative Projections**
(Percent change, Q4 to Q4, except as noted)

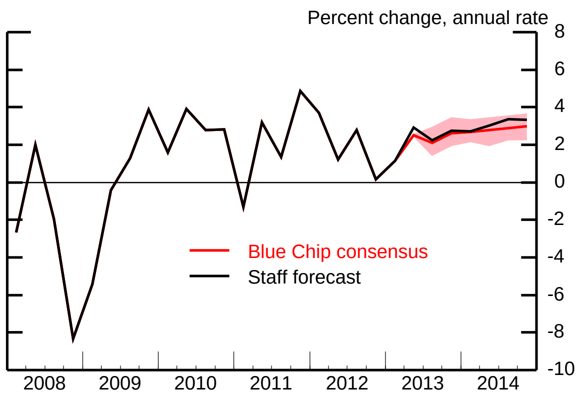
| Measure and projection | 2013 Previous Tealbook | 2013 Current Tealbook | 2014 Previous Tealbook | 2014 Current Tealbook | 2015 Previous Tealbook | 2015 Current Tealbook |
|---|---|---|---|---|---|---|
| *Real GDP* | | | | | | |
| Staff | 2.1 | 2.3 | 3.3 | 3.1 | 3.6 | 3.4 |
| FRB/US | 1.6 | 1.7 | 3.0 | 1.8 | 3.5 | 2.3 |
| EDO | 2.1 | 2.2 | 3.0 | 3.0 | 2.9 | 3.0 |
| Blue Chip | 2.1 | 2.1 | 2.8 | 2.8 | ... | ... |
| *Unemployment rate*[1] | | | | | | |
| Staff | 7.4 | 7.2 | 6.8 | 6.6 | 6.0 | 5.8 |
| FRB/US | 7.6 | 7.4 | 7.7 | 7.9 | 7.1 | 7.9 |
| EDO | 7.6 | 7.5 | 7.3 | 7.3 | 7.1 | 7.1 |
| Blue Chip | 7.3 | 7.3 | 6.9 | 6.8 | ... | ... |
| *Total PCE prices* | | | | | | |
| Staff | .9 | 1.1 | 1.3 | 1.2 | 1.5 | 1.4 |
| FRB/US | .9 | 1.0 | 1.0 | .8 | .9 | .8 |
| EDO | .9 | 1.1 | 1.5 | 1.4 | 1.5 | 1.5 |
| Blue Chip[2] | 1.3 | 1.5 | 2.0 | 2.0 | ... | ... |
| *Core PCE prices* | | | | | | |
| Staff | 1.3 | 1.2 | 1.6 | 1.5 | 1.7 | 1.6 |
| FRB/US | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 | 1.0 |
| EDO | 1.2 | 1.2 | 1.5 | 1.4 | 1.5 | 1.5 |
| Blue Chip | ... | ... | ... | ... | ... | ... |
| *Federal funds rate*[1] | | | | | | |
| Staff | .1 | .1 | .1 | .1 | .7 | .8 |
| FRB/US | .1 | .1 | .1 | .1 | .1 | .1 |
| EDO | .7 | .4 | 1.6 | 1.4 | 2.3 | 2.1 |
| Blue Chip[3] | .1 | .1 | .2 | .2 | ... | ... |

Note: Blue Chip forecast completed on September 10, 2013.
1. Percent, average for Q4.
2. Consumer price index.
3. Treasury bill rate.
... Not applicable. The Blue Chip forecast typically extends about 2 years.

Risks & Uncertainty

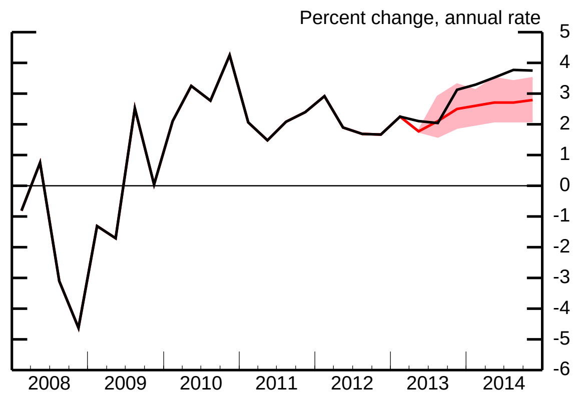
# Tealbook Forecast Compared with Blue Chip
(Blue Chip survey released September 10, 2013)

Real GDP

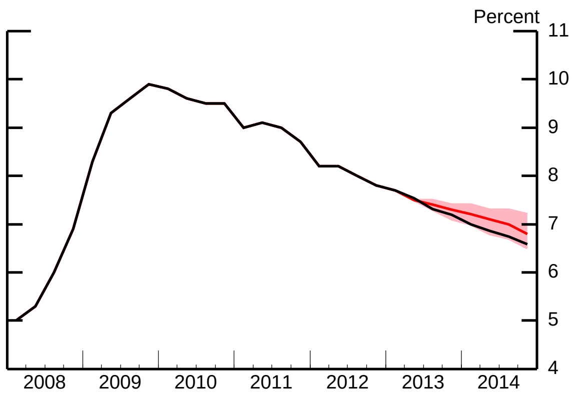



Note: The shaded area represents the area between the Blue Chip top 10 and bottom 10 averages.

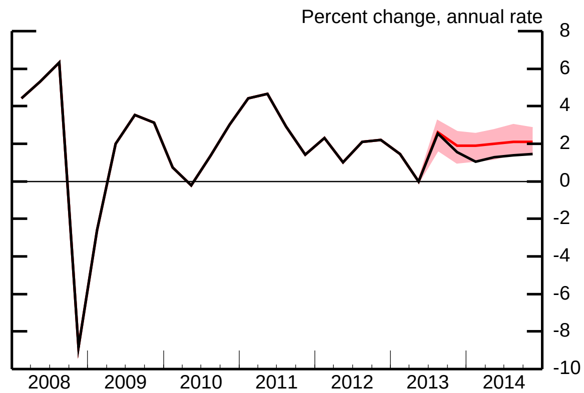
Real PCE



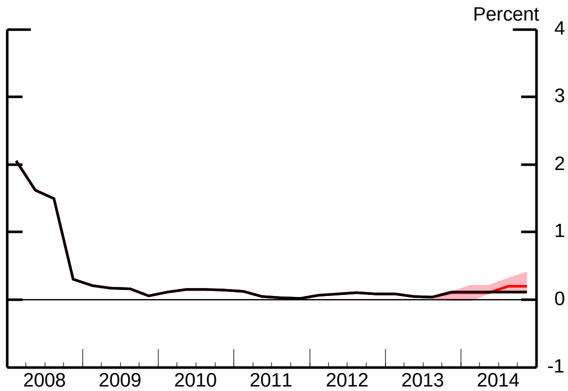

Unemployment Rate



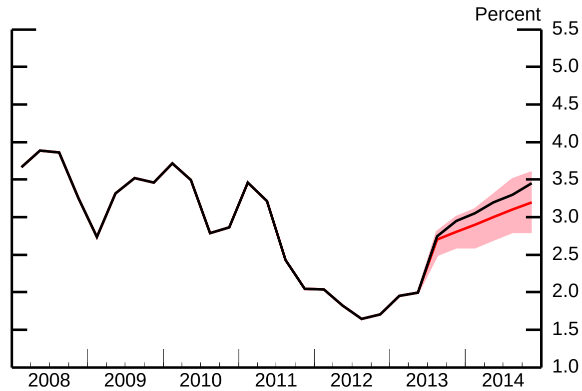

Consumer Price Index




Treasury Bill Rate




10-Year Treasury Yield




Note: The yield is for on-the-run Treasury securities. Over the forecast period, the staff's projected yield is assumed to be 15 basis points below the off-the-run yield.

Risks & Uncertainty

## Assessment of Key Macroeconomic Risks (1)

### Probability of Inflation Events
(4 quarters ahead—2014:Q3)

| Probability that the 4-quarter change in total PCE prices will be ... | Staff | FRB/US | EDO | BVAR |
|---|---|---|---|---|
| *Greater than 3 percent* | | | | |
| Current Tealbook | .02 | .01 | .06 | .04 |
| Previous Tealbook | .05 | .04 | .10 | .01 |
| *Less than 1 percent* | | | | |
| Current Tealbook | .39 | .56 | .37 | .21 |
| Previous Tealbook | .32 | .41 | .34 | .45 |

### Probability of Unemployment Events
(4 quarters ahead—2014:Q3)

| Probability that the unemployment rate will ... | Staff | FRB/US | EDO | BVAR |
|---|---|---|---|---|
| *Increase by 1 percentage point* | | | | |
| Current Tealbook | .01 | .15 | .19 | .02 |
| Previous Tealbook | .01 | .09 | .22 | .02 |
| *Decrease by 1 percentage point* | | | | |
| Current Tealbook | .25 | .01 | .21 | .16 |
| Previous Tealbook | .19 | .03 | .21 | .17 |

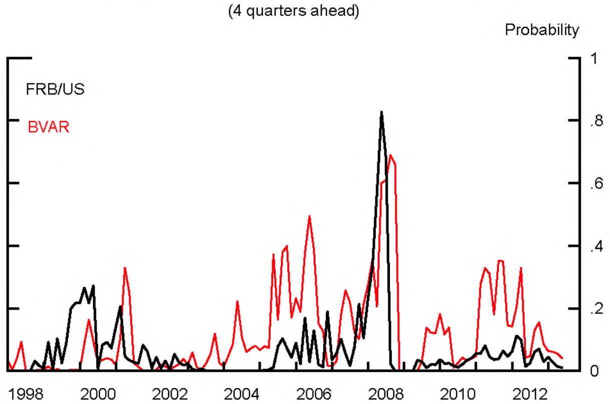
### Probability of Near-Term Recession

| Probability that real GDP declines in each of 2013:Q4 and 2014:Q1 | Staff | FRB/US | EDO | BVAR | Factor Model |
|---|---|---|---|---|---|
| Current Tealbook | .02 | .08 | .04 | .05 | .09 |
| Previous Tealbook | .02 | .04 | .05 | .09 | .16 |

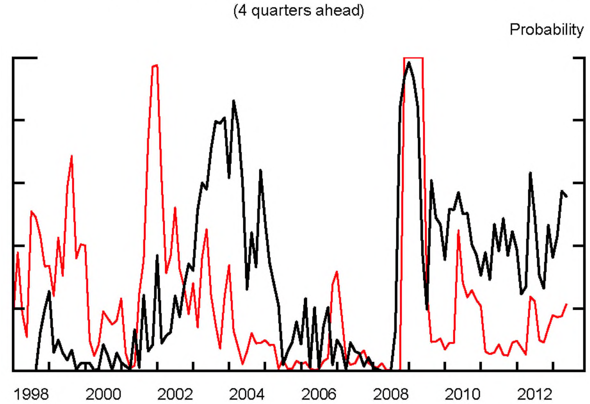
Note: “Staff” represents Tealbook forecast errors applied to the Tealbook baseline; baselines for FRB/US, BVAR, EDO, and the factor model are generated by those models themselves, up to the current-quarter estimate. Data for the current quarter are taken from the staff estimate for the second Tealbook in each quarter; if the second Tealbook for the current quarter has not yet been published, the preceding quarter is taken as the latest historical observation.

# Assessment of Key Macroeconomic Risks (2)

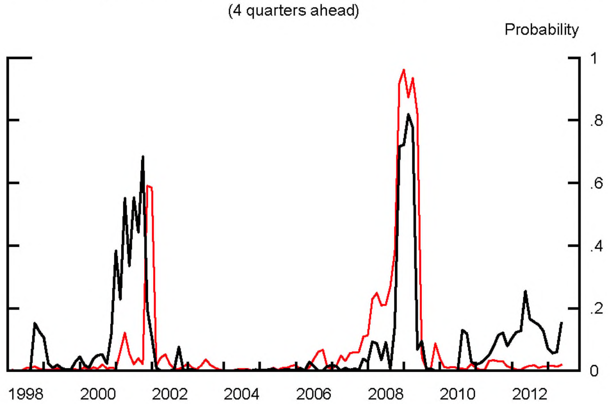
Probability that Total PCE Inflation Is above 3 Percent
(4 quarters ahead)



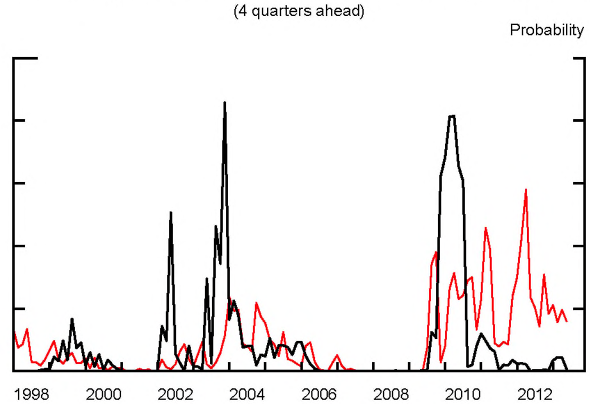

Probability that Total PCE Inflation Is below 1 Percent
(4 quarters ahead)



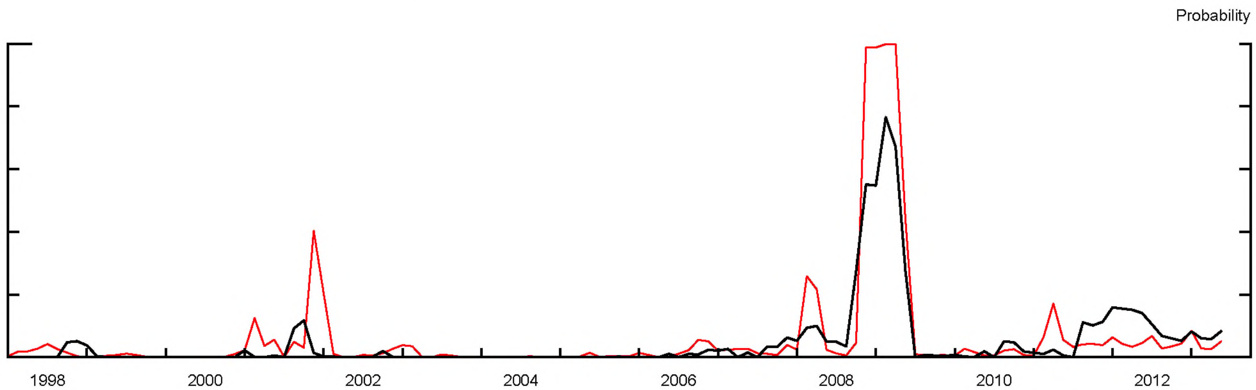

Probability that the Unemployment Rate Increases 1 ppt
(4 quarters ahead)




Probability that the Unemployment Rate Decreases 1 ppt
(4 quarters ahead)




Probability that Real GDP Declines in Each of the Next Two Quarters




Note: See notes on facing page. Recession and inflation probabilities for FRB/US and the BVAR are real-time estimates. See Robert J. Tetlow and Brian Ironside (2007), "Real-Time Model Uncertainty in the United States: The Fed, 1996-2003," *Journal of Money and Banking*, vol. 39 (October), pp. 1533-61.

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**Changes in GDP, Prices, and Unemployment**
(Percent, annual rate except as noted)

| Interval | Nominal GDP | | Real GDP | | PCE price index | | Core PCE price index | | Unemployment rate[1] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 07/24/13 | 09/11/13 | 07/24/13 | 09/11/13 | 07/24/13 | 09/11/13 | 07/24/13 | 09/11/13 | 07/24/13 | 09/11/13 |
| *Quarterly* | | | | | | | | | | |
| 2013:Q1 | 3.1 | 2.8 | 1.8 | 1.1 | 1.0 | 1.1 | 1.3 | 1.4 | 7.7 | 7.7 |
| Q2 | 1.1 | 3.7 | 1.1 | 2.9 | -.1 | .0 | .8 | .8 | 7.5 | 7.5 |
| Q3 | 4.3 | 4.2 | 2.3 | 2.2 | 1.8 | 1.9 | 1.5 | 1.5 | 7.5 | 7.3 |
| Q4 | 4.4 | 4.1 | 3.3 | 2.7 | 1.0 | 1.3 | 1.4 | 1.3 | 7.4 | 7.2 |
| 2014:Q1 | 4.9 | 4.2 | 3.2 | 2.7 | 1.3 | 1.0 | 1.6 | 1.5 | 7.2 | 7.0 |
| Q2 | 5.0 | 4.5 | 3.3 | 3.0 | 1.3 | 1.2 | 1.6 | 1.5 | 7.1 | 6.9 |
| Q3 | 4.9 | 4.8 | 3.3 | 3.4 | 1.3 | 1.3 | 1.6 | 1.5 | 6.9 | 6.7 |
| Q4 | 5.0 | 4.8 | 3.4 | 3.3 | 1.3 | 1.3 | 1.6 | 1.5 | 6.8 | 6.6 |
| 2015:Q1 | 5.4 | 5.0 | 3.7 | 3.4 | 1.5 | 1.4 | 1.7 | 1.6 | 6.6 | 6.4 |
| Q2 | 5.2 | 5.1 | 3.5 | 3.5 | 1.5 | 1.4 | 1.7 | 1.6 | 6.4 | 6.2 |
| Q3 | 5.3 | 5.2 | 3.6 | 3.5 | 1.5 | 1.4 | 1.7 | 1.6 | 6.2 | 6.0 |
| Q4 | 5.2 | 5.0 | 3.5 | 3.4 | 1.5 | 1.5 | 1.7 | 1.6 | 6.0 | 5.8 |
| *Two-quarter*[2] | | | | | | | | | | |
| 2013:Q2 | 2.1 | 3.3 | 1.4 | 2.0 | .5 | .6 | 1.1 | 1.1 | -.3 | -.3 |
| Q4 | 4.4 | 4.1 | 2.8 | 2.5 | 1.4 | 1.6 | 1.5 | 1.4 | -.1 | -.3 |
| 2014:Q2 | 4.9 | 4.3 | 3.3 | 2.9 | 1.3 | 1.1 | 1.6 | 1.5 | -.3 | -.3 |
| Q4 | 4.9 | 4.8 | 3.4 | 3.4 | 1.3 | 1.3 | 1.6 | 1.5 | -.3 | -.3 |
| 2015:Q2 | 5.3 | 5.1 | 3.6 | 3.4 | 1.5 | 1.4 | 1.7 | 1.6 | -.4 | -.4 |
| Q4 | 5.2 | 5.1 | 3.6 | 3.4 | 1.5 | 1.5 | 1.7 | 1.6 | -.4 | -.4 |
| *Four-quarter*[3] | | | | | | | | | | |
| 2012:Q4 | 3.5 | 3.8 | 1.7 | 2.0 | 1.6 | 1.7 | 1.5 | 1.7 | -.9 | -.9 |
| 2013:Q4 | 3.2 | 3.7 | 2.1 | 2.3 | .9 | 1.1 | 1.3 | 1.2 | -.4 | -.6 |
| 2014:Q4 | 4.9 | 4.6 | 3.3 | 3.1 | 1.3 | 1.2 | 1.6 | 1.5 | -.6 | -.6 |
| 2015:Q4 | 5.3 | 5.1 | 3.6 | 3.4 | 1.5 | 1.4 | 1.7 | 1.6 | -.8 | -.8 |
| 2016:Q4 | | 5.0 | 3.0 | 3.2 | 1.7 | 1.6 | 1.8 | 1.7 | -.5 | -.5 |
| *Annual* | | | | | | | | | | |
| 2012 | 4.0 | 4.6 | 2.2 | 2.8 | 1.8 | 1.8 | 1.7 | 1.8 | 8.1 | 8.1 |
| 2013 | 2.9 | 3.3 | 1.7 | 1.7 | 1.1 | 1.2 | 1.2 | 1.3 | 7.5 | 7.4 |
| 2014 | 4.5 | 4.3 | 3.0 | 2.9 | 1.2 | 1.2 | 1.5 | 1.4 | 7.0 | 6.8 |
| 2015 | 5.2 | 5.0 | 3.5 | 3.4 | 1.4 | 1.4 | 1.7 | 1.6 | 6.3 | 6.1 |
| 2016 | | 5.0 | 3.2 | 3.4 | 1.6 | 1.5 | 1.8 | 1.7 | 5.7 | 5.5 |

1. Level, except for two-quarter and four-quarter intervals.
2. Percent change from two quarters earlier; for unemployment rate, change is in percentage points.
3. Percent change from four quarters earlier; for unemployment rate, change is in percentage points.

# Greensheets

## Changes in Real Gross Domestic Product and Related Items

(Percent, annual rate except as noted)

| Item | 2013 Q2 | 2013 Q3 | 2013 Q4 | 2014 Q1 | 2014 Q2 | 2014 Q3 | 2014 Q4 | 2015 Q1 | 2015 Q2 | 2015 Q3 | 2015 Q4 | 2013[1] | 2014[1] | 2015[1] | 2016[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Real GDP | 2.9 | 2.2 | 2.7 | 2.7 | 3.0 | 3.4 | 3.3 | 3.4 | 3.5 | 3.5 | 3.4 | 2.3 | 3.1 | 3.4 | 3.2 |
| *Previous Tealbook* | 1.1 | 2.3 | 3.3 | 3.2 | 3.3 | 3.3 | 3.4 | 3.7 | 3.5 | 3.6 | 3.5 | 2.1 | 3.3 | 3.6 | 3.0 |
| Final sales | 2.4 | 1.9 | 2.5 | 2.5 | 3.0 | 3.4 | 3.5 | 3.6 | 3.5 | 3.8 | 3.7 | 1.7 | 3.1 | 3.6 | 3.5 |
| *Previous Tealbook* | 1.1 | 2.1 | 2.7 | 2.9 | 3.1 | 3.3 | 3.5 | 3.6 | 3.7 | 4.0 | 3.8 | 1.8 | 3.2 | 3.8 | |
| Priv. dom. final purch. | 2.9 | 2.3 | 3.7 | 3.7 | 4.2 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.4 | 2.6 | 4.2 | 4.4 | 3.6 |
| *Previous Tealbook* | 2.5 | 2.8 | 4.0 | 4.1 | 4.3 | 4.5 | 4.5 | 4.6 | 4.6 | 4.6 | 4.5 | 3.0 | 4.4 | 4.6 | |
| Personal cons. expend. | 2.1 | 2.0 | 3.1 | 3.3 | 3.5 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.7 | 2.4 | 3.6 | 3.8 | 3.1 |
| *Previous Tealbook* | 1.5 | 2.6 | 3.5 | 3.7 | 3.7 | 3.7 | 3.7 | 3.9 | 3.9 | 3.9 | 3.9 | 2.5 | 3.7 | 3.9 | |
| Durables | 6.1 | 7.1 | 8.7 | 7.7 | 9.1 | 9.8 | 9.3 | 8.9 | 8.8 | 8.9 | 8.9 | 6.9 | 9.0 | 8.9 | 6.3 |
| Nondurables | 1.8 | 3.4 | 2.8 | 2.8 | 2.8 | 3.0 | 2.9 | 3.0 | 3.1 | 3.0 | 2.9 | 2.6 | 2.9 | 3.0 | 2.5 |
| Services | 1.6 | .8 | 2.3 | 2.8 | 2.9 | 3.0 | 3.1 | 3.2 | 3.2 | 3.2 | 3.1 | 1.6 | 2.9 | 3.2 | 2.7 |
| Residential investment | 14.1 | 2.6 | 12.0 | 14.7 | 16.3 | 16.3 | 15.9 | 15.9 | 15.3 | 14.6 | 13.4 | 10.2 | 15.8 | 14.8 | 8.9 |
| *Previous Tealbook* | 9.8 | 4.2 | 17.3 | 19.2 | 19.3 | 19.6 | 17.4 | 17.8 | 16.6 | 15.6 | 14.2 | 11.2 | 18.9 | 16.0 | |
| Nonres. priv. fixed invest. | 4.4 | 3.7 | 5.1 | 3.2 | 4.9 | 5.6 | 5.3 | 5.1 | 5.2 | 5.2 | 5.3 | 2.1 | 4.7 | 5.2 | 5.0 |
| *Previous Tealbook*[2] | 7.2 | 3.7 | 4.0 | 3.1 | 4.7 | 5.7 | 5.6 | 5.3 | 5.4 | 5.5 | 5.1 | 3.8 | 4.8 | 5.3 | |
| Equipment & intangibles | .9 | 3.6 | 5.2 | 3.6 | 5.3 | 6.4 | 6.0 | 5.8 | 5.9 | 6.0 | 6.1 | 3.0 | 5.3 | 5.9 | 5.7 |
| *Previous Tealbook*[2] | 7.4 | 3.6 | 4.1 | 3.8 | 5.5 | 6.9 | 6.7 | 6.1 | 6.4 | 6.5 | 6.0 | 4.8 | 5.7 | 6.2 | |
| Nonres. structures | 18.1 | 4.2 | 5.0 | 1.8 | 3.5 | 2.7 | 2.8 | 2.9 | 2.7 | 2.6 | 2.5 | -1.0 | 2.7 | 2.7 | 2.5 |
| *Previous Tealbook* | 6.6 | 3.8 | 3.9 | 1.4 | 2.9 | 2.8 | 2.7 | 3.1 | 3.0 | 3.2 | 3.0 | 1.3 | 2.5 | 3.1 | |
| Net exports[3] | -420 | -406 | -408 | -416 | -421 | -426 | -425 | -425 | -433 | -428 | -426 | -414 | -422 | -428 | -409 |
| *Previous Tealbook*[3] | -393 | -381 | -388 | -399 | -402 | -405 | -402 | -405 | -408 | -405 | -404 | -387 | -402 | -405 | |
| Exports | 8.0 | 4.9 | 2.7 | 4.0 | 3.8 | 4.7 | 5.3 | 5.7 | 6.1 | 6.4 | 6.2 | 3.5 | 4.4 | 6.1 | 7.0 |
| Imports | 6.2 | 1.6 | 2.7 | 4.7 | 4.0 | 4.6 | 4.3 | 4.7 | 6.3 | 4.5 | 4.9 | 2.8 | 4.4 | 5.1 | 4.6 |
| Gov't. cons. & invest. | -.4 | -2.5 | -2.7 | -2.3 | -2.1 | -1.8 | -1.5 | -.9 | -.8 | -.7 | -.5 | -2.5 | -1.9 | -.7 | 1.0 |
| *Previous Tealbook* | -3.7 | -3.2 | -2.0 | -1.5 | -2.7 | -2.2 | -1.9 | -1.2 | -1.0 | -.3 | -.3 | -3.4 | -2.1 | -.7 | |
| Federal | -1.6 | -6.0 | -7.0 | -6.2 | -5.7 | -5.1 | -4.6 | -4.1 | -3.9 | -3.8 | -3.3 | -5.8 | -5.4 | -3.8 | .0 |
| Defense | -.6 | -6.6 | -8.2 | -7.0 | -6.3 | -5.7 | -5.3 | -4.7 | -4.3 | -4.0 | -3.4 | -6.8 | -6.1 | -4.1 | .0 |
| Nondefense | -3.2 | -5.1 | -4.9 | -4.9 | -4.7 | -4.2 | -3.6 | -3.1 | -3.3 | -3.5 | -3.1 | -4.2 | -4.3 | -3.3 | .0 |
| State & local | .4 | .0 | .1 | .3 | .3 | .3 | .4 | 1.0 | 1.1 | 1.1 | 1.1 | -.2 | .3 | 1.1 | 1.5 |
| Change in priv. inventories[3] | 58 | 75 | 81 | 95 | 97 | 97 | 91 | 90 | 91 | 81 | 69 | 64 | 95 | 83 | 51 |
| *Previous Tealbook*[3] | 32 | 38 | 56 | 67 | 75 | 76 | 73 | 76 | 73 | 62 | 52 | 41 | 73 | 66 | |
| Nonfarm[3] | 39 | 55 | 62 | 80 | 84 | 84 | 79 | 88 | 88 | 79 | 67 | 44 | 82 | 81 | 48 |
| Farm[3] | 20 | 20 | 20 | 15 | 13 | 13 | 13 | 2 | 2 | 2 | 2 | 19 | 13 | 2 | 2 |

1. Change from fourth quarter of previous year to fourth quarter of year indicated.
2. Previous Tealbook lines for nonresidential private fixed investment and equipment and intangibles reflect the values for business fixed investment and equipment and software, respectively, the most comparable series prior to the comprehensive revision.
3. Billions of chained (2009) dollars; Previous Tealbook lines in billions of chained (2005) dollars.

**Changes in Real Gross Domestic Product and Related Items**
(Change from fourth quarter of previous year to fourth quarter of year indicated, unless otherwise noted)

| Item | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|
| Real GDP | 1.9 | -2.8 | -.2 | 2.8 | 2.0 | 2.0 | 2.3 | 3.1 | 3.4 | 3.2 |
| *Previous Tealbook* | 2.2 | -3.3 | -.1 | 2.4 | 2.0 | 1.7 | 2.1 | 3.3 | 3.6 | 3.0 |
| Final sales | 2.0 | -2.2 | -.4 | 2.0 | 1.8 | 2.5 | 1.7 | 3.1 | 3.6 | 3.5 |
| *Previous Tealbook* | 2.4 | -2.6 | -.5 | 1.7 | 1.7 | 2.1 | 1.8 | 3.2 | 3.8 | |
| Priv. dom. final purch. | .8 | -4.1 | -2.3 | 3.5 | 3.0 | 2.9 | 2.6 | 4.2 | 4.4 | 3.6 |
| *Previous Tealbook* | 1.2 | -4.5 | -2.8 | 3.2 | 2.9 | 2.6 | 3.0 | 4.4 | 4.6 | |
| Personal cons. expend. | 1.5 | -2.0 | -.1 | 3.1 | 2.0 | 2.0 | 2.4 | 3.6 | 3.8 | 3.1 |
| *Previous Tealbook* | 1.7 | -2.5 | -.3 | 2.9 | 1.9 | 1.8 | 2.5 | 3.7 | 3.9 | |
| Durables | 4.1 | -12.9 | 2.5 | 9.3 | 5.7 | 7.8 | 6.9 | 9.0 | 8.9 | 6.3 |
| Nondurables | .1 | -2.7 | .2 | 3.3 | .7 | 1.6 | 2.6 | 2.9 | 3.0 | 2.5 |
| Services | 1.5 | .2 | -.6 | 2.1 | 1.9 | 1.3 | 1.6 | 2.9 | 3.2 | 2.7 |
| Residential investment | -21.3 | -24.3 | -10.8 | -5.2 | 5.6 | 15.5 | 10.2 | 15.8 | 14.8 | 8.9 |
| *Previous Tealbook* | -20.7 | -24.4 | -13.3 | -5.7 | 3.9 | 14.9 | 11.2 | 18.9 | 16.0 | |
| Nonres. priv. fixed invest. | 7.1 | -8.9 | -12.2 | 8.1 | 8.6 | 5.0 | 2.1 | 4.7 | 5.2 | 5.0 |
| *Previous Tealbook*[1] | 7.9 | -9.4 | -15.7 | 7.7 | 10.2 | 5.4 | 3.8 | 4.8 | 5.3 | |
| Equipment & intangibles | 3.9 | -11.8 | -6.0 | 12.0 | 8.7 | 3.9 | 3.0 | 5.3 | 5.9 | 5.7 |
| *Previous Tealbook*[1] | 3.9 | -13.6 | -7.8 | 11.9 | 11.4 | 4.7 | 4.8 | 5.7 | 6.2 | |
| Nonres. structures | 17.1 | -1.2 | -27.1 | -4.0 | 8.3 | 9.3 | -1.0 | 2.7 | 2.7 | 2.5 |
| *Previous Tealbook* | 17.3 | -1.2 | -29.4 | -1.8 | 6.9 | 7.3 | 1.3 | 2.5 | 3.1 | |
| Net exports[2] | -704 | -547 | -392 | -463 | -446 | -431 | -414 | -422 | -428 | -409 |
| *Previous Tealbook*[2] | -649 | -495 | -355 | -420 | -408 | -401 | -387 | -402 | -405 | |
| Exports | 9.8 | -2.9 | .4 | 9.8 | 4.6 | 2.4 | 3.5 | 4.4 | 6.1 | 7.0 |
| Imports | .7 | -5.9 | -6.2 | 11.7 | 3.5 | .1 | 2.8 | 4.4 | 5.1 | 4.6 |
| Gov't. cons. & invest. | 1.8 | 3.3 | 2.3 | -1.1 | -3.3 | -1.1 | -2.5 | -1.9 | -.7 | 1.0 |
| *Previous Tealbook* | 1.9 | 2.7 | 4.0 | -1.3 | -3.3 | -1.8 | -3.4 | -2.1 | -.7 | |
| Federal | 2.7 | 8.4 | 3.9 | 3.2 | -3.9 | -2.3 | -5.8 | -5.4 | -3.8 | .0 |
| Defense | 2.5 | 9.4 | 3.6 | 2.0 | -4.2 | -5.0 | -6.8 | -6.1 | -4.1 | .0 |
| Nondefense | 2.9 | 6.5 | 4.6 | 5.5 | -3.3 | 2.6 | -4.2 | -4.3 | -3.3 | .0 |
| State & local | 1.2 | .2 | 1.3 | -4.0 | -2.8 | -.3 | -.2 | .3 | 1.1 | 1.5 |
| Change in priv. inventories[2] | 36 | -34 | -148 | 58 | 34 | 58 | 64 | 95 | 83 | 51 |
| *Previous Tealbook*[2] | 28 | -36 | -139 | 51 | 31 | 43 | 41 | 73 | 66 | |
| Nonfarm[2] | 37 | -35 | -146 | 66 | 40 | 69 | 44 | 82 | 81 | 48 |
| Farm[2] | -1 | 1 | -2 | -7 | -4 | -7 | 19 | 13 | 2 | 2 |

1. Previous Tealbook lines for nonresidential private fixed investment and equipment and intangibles reflect the values for business fixed investment and equipment and software, respectively, the most comparable series prior to the comprehensive revision.
2. Billions of chained (2009) dollars; Previous Tealbook lines in billions of chained (2005) dollars.

Greensheets

**Contributions to Changes in Real Gross Domestic Product**
(Percentage points, annual rate except as noted)

| Item | 2013 Q2 | 2013 Q3 | 2013 Q4 | 2014 Q1 | 2014 Q2 | 2014 Q3 | 2014 Q4 | 2015 Q1 | 2015 Q2 | 2015 Q3 | 2015 Q4 | 2013[1] | 2014[1] | 2015[1] | 2016[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Real GDP | 2.9 | 2.2 | 2.7 | 2.7 | 3.0 | 3.4 | 3.3 | 3.4 | 3.5 | 3.5 | 3.4 | 2.3 | 3.1 | 3.4 | 3.2 |
| *Previous Tealbook* | 1.1 | 2.3 | 3.3 | 3.2 | 3.3 | 3.3 | 3.4 | 3.7 | 3.5 | 3.6 | 3.5 | 2.1 | 3.3 | 3.6 | 3.0 |
| Final sales | 2.4 | 1.9 | 2.5 | 2.4 | 3.0 | 3.4 | 3.5 | 3.6 | 3.5 | 3.8 | 3.7 | 1.7 | 3.1 | 3.6 | 3.5 |
| *Previous Tealbook* | 1.1 | 2.1 | 2.7 | 2.9 | 3.1 | 3.3 | 3.5 | 3.6 | 3.6 | 3.9 | 3.8 | 1.8 | 3.2 | 3.7 | |
| Priv. dom. final purch. | 2.4 | 1.9 | 3.1 | 3.1 | 3.5 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.7 | 2.2 | 3.5 | 3.8 | 3.1 |
| *Previous Tealbook* | 2.1 | 2.4 | 3.3 | 3.5 | 3.7 | 3.8 | 3.8 | 3.9 | 3.9 | 3.9 | 3.9 | 2.5 | 3.7 | 3.9 | |
| Personal cons. expend. | 1.5 | 1.4 | 2.1 | 2.3 | 2.4 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.5 | 1.6 | 2.5 | 2.6 | 2.1 |
| *Previous Tealbook* | 1.1 | 1.9 | 2.5 | 2.6 | 2.6 | 2.6 | 2.7 | 2.8 | 2.8 | 2.8 | 2.8 | 1.8 | 2.6 | 2.8 | |
| Durables | .5 | .5 | .6 | .6 | .7 | .7 | .7 | .7 | .7 | .7 | .7 | .5 | .7 | .7 | .5 |
| Nondurables | .3 | .5 | .4 | .4 | .4 | .5 | .5 | .5 | .5 | .5 | .4 | .4 | .4 | .5 | .4 |
| Services | .7 | .4 | 1.1 | 1.2 | 1.3 | 1.4 | 1.4 | 1.5 | 1.5 | 1.4 | 1.4 | .7 | 1.3 | 1.4 | 1.2 |
| Residential investment | .4 | .1 | .4 | .4 | .5 | .5 | .5 | .6 | .5 | .5 | .5 | .3 | .5 | .5 | .4 |
| *Previous Tealbook* | .3 | .1 | .5 | .5 | .6 | .6 | .5 | .6 | .6 | .5 | .5 | .3 | .6 | .5 | |
| Nonres. priv. fixed invest. | .5 | .5 | .6 | .4 | .6 | .7 | .6 | .6 | .6 | .6 | .7 | .3 | .6 | .6 | .6 |
| *Previous Tealbook*[2] | .7 | .4 | .4 | .3 | .5 | .6 | .6 | .6 | .6 | .6 | .6 | .4 | .5 | .6 | |
| Equipment & intangibles | .1 | .3 | .5 | .3 | .5 | .6 | .6 | .5 | .6 | .6 | .6 | .3 | .5 | .6 | .6 |
| *Previous Tealbook*[2] | .5 | .3 | .3 | .3 | .4 | .5 | .5 | .5 | .5 | .5 | .5 | .4 | .4 | .5 | |
| Nonres. structures | .4 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .0 | .1 | .1 | .1 |
| *Previous Tealbook* | .2 | .1 | .1 | .0 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .0 | .1 | .1 | |
| Net exports | .0 | .4 | -.1 | -.2 | -.1 | -.1 | .0 | .0 | -.2 | .1 | .0 | .0 | -.1 | .0 | .2 |
| *Previous Tealbook* | -.2 | .4 | -.2 | -.3 | -.1 | -.1 | .1 | -.1 | -.1 | .1 | .0 | .0 | -.1 | .0 | |
| Exports | 1.0 | .7 | .4 | .5 | .5 | .6 | .7 | .8 | .8 | .8 | .8 | .5 | .6 | .8 | .9 |
| Imports | -1.0 | -.3 | -.4 | -.8 | -.6 | -.7 | -.7 | -.8 | -1.0 | -.7 | -.8 | -.5 | -.7 | -.8 | -.7 |
| Gov't. cons. & invest. | -.1 | -.5 | -.5 | -.4 | -.4 | -.3 | -.3 | -.2 | -.1 | -.1 | -.1 | -.5 | -.4 | -.1 | .2 |
| *Previous Tealbook* | -.7 | -.6 | -.4 | -.3 | -.5 | -.4 | -.3 | -.2 | -.2 | .0 | .0 | -.7 | -.4 | -.1 | |
| Federal | -.1 | -.5 | -.5 | -.5 | -.4 | -.4 | -.3 | -.3 | -.3 | -.2 | -.2 | -.5 | -.4 | -.2 | .0 |
| Defense | .0 | -.3 | -.4 | -.3 | -.3 | -.2 | -.2 | -.2 | -.2 | -.2 | -.1 | -.3 | -.3 | -.2 | .0 |
| Nondefense | -.1 | -.1 | -.1 | -.1 | -.1 | -.1 | -.1 | -.1 | -.1 | -.1 | -.1 | -.1 | -.1 | -.1 | .0 |
| State & local | .1 | .0 | .0 | .0 | .0 | .0 | .0 | .1 | .1 | .1 | .1 | .0 | .0 | .1 | .2 |
| Change in priv. inventories | .6 | .4 | .2 | .3 | .0 | .0 | -.1 | -.2 | .0 | -.2 | -.3 | .5 | .0 | -.2 | -.2 |
| *Previous Tealbook* | -.1 | .2 | .6 | .3 | .3 | .0 | -.1 | .1 | -.1 | -.3 | -.3 | .3 | .1 | -.2 | |
| Nonfarm | .5 | .4 | .2 | .5 | .1 | .0 | -.1 | .2 | .0 | -.2 | -.3 | .3 | .1 | -.1 | -.2 |
| Farm | .1 | -.1 | .0 | -.2 | -.1 | .0 | .0 | -.4 | .0 | .0 | .0 | .2 | -.1 | -.1 | .0 |

1. Change from fourth quarter of previous year to fourth quarter of year indicated.
2. Previous Tealbook lines for nonresidential private fixed investment and equipment and intangibles reflect the values for business fixed investment and equipment and software, respectively, the most comparable series prior to the comprehensive revision.

**Changes in Prices and Costs**
(Percent, annual rate except as noted)

| Item | 2013 Q2 | 2013 Q3 | 2013 Q4 | 2014 Q1 | 2014 Q2 | 2014 Q3 | 2014 Q4 | 2015 Q1 | 2015 Q2 | 2015 Q3 | 2015 Q4 | 2013[1] | 2014[1] | 2015[1] | 2016[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP chain-wt. price index | .8 | 1.9 | 1.3 | 1.4 | 1.5 | 1.4 | 1.4 | 1.6 | 1.6 | 1.6 | 1.6 | 1.4 | 1.4 | 1.6 | 1.7 |
| *Previous Tealbook* | .0 | 2.0 | 1.1 | 1.6 | 1.6 | 1.5 | 1.5 | 1.6 | 1.6 | 1.6 | 1.6 | 1.1 | 1.5 | 1.6 | |
| PCE chain-wt. price index | .0 | 1.9 | 1.3 | 1.0 | 1.2 | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 | 1.5 | 1.1 | 1.2 | 1.4 | 1.6 |
| *Previous Tealbook* | -.1 | 1.8 | 1.0 | 1.3 | 1.3 | 1.3 | 1.3 | 1.5 | 1.5 | 1.5 | 1.5 | .9 | 1.3 | 1.5 | 1.7 |
| Energy | -11.9 | 10.6 | 1.5 | -5.4 | -3.1 | -2.1 | -1.7 | -1.3 | -1.7 | -1.5 | -1.1 | -1.1 | -3.1 | -1.4 | -.7 |
| *Previous Tealbook* | -13.1 | 6.6 | -4.7 | -2.7 | -2.5 | -2.2 | -2.0 | -1.6 | -1.7 | -1.7 | -1.5 | -4.0 | -2.4 | -1.6 | |
| Food | .5 | 1.2 | .8 | .6 | .6 | .7 | .8 | 1.1 | 1.3 | 1.3 | 1.4 | .9 | .7 | 1.3 | 1.4 |
| *Previous Tealbook* | .4 | 1.3 | .9 | .7 | .8 | .8 | 1.0 | 1.2 | 1.4 | 1.4 | 1.4 | 1.0 | .8 | 1.3 | |
| Ex. food & energy | .8 | 1.5 | 1.3 | 1.5 | 1.5 | 1.5 | 1.5 | 1.6 | 1.6 | 1.6 | 1.6 | 1.2 | 1.5 | 1.6 | 1.7 |
| *Previous Tealbook* | .8 | 1.5 | 1.4 | 1.6 | 1.6 | 1.6 | 1.6 | 1.7 | 1.7 | 1.7 | 1.7 | 1.3 | 1.6 | 1.7 | 1.8 |
| Ex. food & energy, market based | .6 | 1.5 | 1.2 | 1.5 | 1.5 | 1.5 | 1.5 | 1.6 | 1.6 | 1.6 | 1.6 | 1.2 | 1.5 | 1.6 | 1.7 |
| *Previous Tealbook* | .6 | 1.4 | 1.3 | 1.5 | 1.5 | 1.5 | 1.4 | 1.6 | 1.6 | 1.6 | 1.6 | 1.2 | 1.5 | 1.6 | |
| CPI | .0 | 2.5 | 1.5 | 1.0 | 1.3 | 1.4 | 1.4 | 1.6 | 1.6 | 1.6 | 1.5 | 1.4 | 1.3 | 1.6 | 1.7 |
| *Previous Tealbook* | .0 | 2.2 | 1.1 | 1.3 | 1.3 | 1.4 | 1.4 | 1.6 | 1.6 | 1.6 | 1.5 | 1.2 | 1.4 | 1.6 | |
| Ex. food & energy | 1.4 | 1.8 | 1.6 | 1.8 | 1.8 | 1.8 | 1.9 | 2.0 | 1.9 | 1.9 | 1.8 | 1.7 | 1.8 | 1.9 | 1.9 |
| *Previous Tealbook* | 1.4 | 1.8 | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 | 2.0 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.9 | |
| ECI, hourly compensation[2] | 2.4 | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.6 | 2.7 | 2.7 | 2.7 | 2.7 | 2.2 | 2.5 | 2.7 | 3.0 |
| *Previous Tealbook*[2] | 2.4 | 2.5 | 2.5 | 2.6 | 2.6 | 2.7 | 2.7 | 2.9 | 2.9 | 2.9 | 2.9 | 2.3 | 2.6 | 2.9 | |
| Nonfarm business sector | | | | | | | | | | | | | | | |
| Output per hour | 2.5 | 2.7 | 1.1 | 1.1 | 1.3 | 1.6 | 1.5 | 1.4 | 1.6 | 1.7 | 1.5 | 1.1 | 1.4 | 1.5 | 1.8 |
| *Previous Tealbook* | -1.1 | 1.2 | 1.5 | 1.7 | 1.8 | 1.6 | 1.6 | 1.8 | 1.6 | 1.6 | 1.6 | .3 | 1.6 | 1.7 | |
| Compensation per hour | 2.3 | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 | 2.9 | 3.0 | 3.1 | 3.1 | 3.2 | .5 | 2.7 | 3.1 | 3.4 |
| *Previous Tealbook* | 2.0 | 2.4 | 2.7 | 2.7 | 2.7 | 2.9 | 2.9 | 3.3 | 3.3 | 3.3 | 3.3 | .8 | 2.8 | 3.3 | |
| Unit labor costs | -.1 | -.1 | 1.5 | 1.6 | 1.3 | 1.2 | 1.4 | 1.6 | 1.5 | 1.4 | 1.7 | -.6 | 1.4 | 1.6 | 1.5 |
| *Previous Tealbook* | 3.1 | 1.1 | 1.2 | 1.0 | .9 | 1.3 | 1.3 | 1.4 | 1.6 | 1.6 | 1.7 | .4 | 1.1 | 1.6 | |
| Core goods imports chain-wt. price index[3] | -2.5 | -2.3 | .2 | 1.1 | 1.5 | 1.8 | 1.5 | 1.6 | 1.5 | 1.5 | 1.5 | -1.0 | 1.5 | 1.5 | 1.6 |
| *Previous Tealbook*[3] | -2.0 | -.3 | .6 | 1.2 | 1.4 | 1.7 | 1.5 | 1.5 | 1.5 | 1.5 | 1.4 | -.4 | 1.4 | 1.5 | |

1. Change from fourth quarter of previous year to fourth quarter of year indicated.
2. Private-industry workers.
3. Core goods imports exclude computers, semiconductors, oil, and natural gas.

## Greensheets

**Changes in Prices and Costs**

(Change from fourth quarter of previous year to fourth quarter of year indicated, unless otherwise noted)

| Item | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|
| GDP chain-wt. price index | 2.5 | 1.9 | .4 | 1.8 | 1.8 | 1.8 | 1.4 | 1.4 | 1.6 | 1.7 |
| *Previous Tealbook* | 2.6 | 2.1 | .5 | 1.8 | 2.0 | 1.8 | 1.1 | 1.5 | 1.6 | |
| PCE chain-wt. price index | 3.3 | 1.5 | 1.2 | 1.3 | 2.6 | 1.7 | 1.1 | 1.2 | 1.4 | 1.6 |
| *Previous Tealbook* | 3.5 | 1.7 | 1.4 | 1.5 | 2.5 | 1.6 | .9 | 1.3 | 1.5 | 1.7 |
| Energy | 19.1 | -8.2 | 2.3 | 6.4 | 11.7 | 2.1 | -1.1 | -3.1 | -1.4 | -.7 |
| *Previous Tealbook* | 19.3 | -8.8 | 2.7 | 6.5 | 11.9 | 3.2 | -4.0 | -2.4 | -1.6 | |
| Food | 4.9 | 6.9 | -1.8 | 1.3 | 5.1 | 1.2 | .9 | .7 | 1.3 | 1.4 |
| *Previous Tealbook* | 4.7 | 7.0 | -1.7 | 1.3 | 5.1 | 1.1 | 1.0 | .8 | 1.3 | |
| Ex. food & energy | 2.2 | 1.6 | 1.4 | 1.0 | 1.8 | 1.7 | 1.2 | 1.5 | 1.6 | 1.7 |
| *Previous Tealbook* | 2.4 | 2.0 | 1.6 | 1.2 | 1.7 | 1.5 | 1.3 | 1.6 | 1.7 | 1.8 |
| Ex. food & energy, market based | 2.1 | 2.2 | 1.8 | .7 | 1.9 | 1.5 | 1.2 | 1.5 | 1.6 | 1.7 |
| *Previous Tealbook* | 2.1 | 2.2 | 1.7 | .7 | 1.9 | 1.6 | 1.2 | 1.5 | 1.6 | |
| CPI | 4.0 | 1.6 | 1.5 | 1.2 | 3.3 | 1.9 | 1.4 | 1.3 | 1.6 | 1.7 |
| *Previous Tealbook* | 4.0 | 1.6 | 1.5 | 1.2 | 3.3 | 1.9 | 1.2 | 1.4 | 1.6 | |
| Ex. food & energy | 2.3 | 2.0 | 1.7 | .6 | 2.2 | 1.9 | 1.7 | 1.8 | 1.9 | 1.9 |
| *Previous Tealbook* | 2.3 | 2.0 | 1.7 | .6 | 2.2 | 1.9 | 1.8 | 1.8 | 1.9 | |
| ECI, hourly compensation[1] | 3.0 | 2.4 | 1.2 | 2.1 | 2.2 | 1.8 | 2.2 | 2.5 | 2.7 | 3.0 |
| *Previous Tealbook*[1] | 3.0 | 2.4 | 1.2 | 2.1 | 2.2 | 1.8 | 2.3 | 2.6 | 2.9 | |
| Nonfarm business sector | | | | | | | | | | |
| Output per hour | 2.3 | -.2 | 5.4 | 1.9 | .4 | .9 | 1.1 | 1.4 | 1.5 | 1.8 |
| *Previous Tealbook* | 2.4 | -1.2 | 5.6 | 1.9 | .4 | .6 | .3 | 1.6 | 1.7 | |
| Compensation per hour | 3.9 | 3.0 | 1.2 | 1.6 | .9 | 5.3 | .5 | 2.7 | 3.1 | 3.4 |
| *Previous Tealbook* | 3.6 | 2.5 | 1.5 | 1.6 | 1.7 | 4.4 | .8 | 2.8 | 3.3 | |
| Unit labor costs | 1.6 | 3.2 | -4.0 | -.3 | .5 | 4.4 | -.6 | 1.4 | 1.6 | 1.5 |
| *Previous Tealbook* | 1.1 | 3.7 | -3.9 | -.2 | 1.3 | 3.8 | .4 | 1.1 | 1.6 | |
| Core goods imports chain-wt. price index[2] | 3.0 | 3.9 | -1.9 | 2.3 | 4.2 | .1 | -1.0 | 1.5 | 1.5 | 1.6 |
| *Previous Tealbook*[2] | 2.9 | 3.7 | -1.7 | 2.7 | 4.3 | .1 | -.4 | 1.4 | 1.5 | |

1. Private-industry workers.
2. Core goods imports exclude computers, semiconductors, oil, and natural gas.

## Other Macroeconomic Indicators

| Item | 2013 Q2 | 2013 Q3 | 2013 Q4 | 2014 Q1 | 2014 Q2 | 2014 Q3 | 2014 Q4 | 2015 Q1 | 2015 Q2 | 2015 Q3 | 2015 Q4 | 2013[1] | 2014[1] | 2015[1] | 2016[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Employment and production* | | | | | | | | | | | | | | | |
| Nonfarm payroll employment[2] | .6 | .4 | .5 | .5 | .6 | .6 | .6 | .6 | .7 | .8 | .7 | 2.2 | 2.3 | 2.9 | 2.4 |
| Unemployment rate[3] | 7.5 | 7.3 | 7.2 | 7.0 | 6.9 | 6.7 | 6.6 | 6.4 | 6.2 | 6.0 | 5.8 | 7.2 | 6.6 | 5.8 | 5.3 |
| *Previous Tealbook*[3] | 7.5 | 7.5 | 7.4 | 7.2 | 7.1 | 6.9 | 6.8 | 6.6 | 6.4 | 6.2 | 6.0 | 7.4 | 6.8 | 6.0 | 5.5 |
| Natural rate of unemployment[3] | 5.5 | 5.4 | 5.4 | 5.3 | 5.3 | 5.3 | 5.3 | 5.2 | 5.2 | 5.2 | 5.2 | 5.4 | 5.3 | 5.2 | 5.2 |
| *Previous Tealbook*[3] | 5.6 | 5.5 | 5.5 | 5.4 | 5.4 | 5.4 | 5.4 | 5.3 | 5.3 | 5.3 | 5.3 | 5.5 | 5.4 | 5.3 | |
| GDP gap[4] | -3.6 | -3.5 | -3.4 | -3.2 | -3.0 | -2.7 | -2.5 | -2.2 | -1.9 | -1.5 | -1.3 | -3.4 | -2.5 | -1.3 | -.2 |
| *Previous Tealbook*[4] | -4.2 | -4.1 | -3.8 | -3.5 | -3.2 | -2.9 | -2.6 | -2.2 | -1.9 | -1.5 | -1.2 | -3.8 | -2.6 | -1.2 | |
| Industrial production[5] | .4 | 2.5 | 5.6 | 5.9 | 5.0 | 4.0 | 3.4 | 4.3 | 4.1 | 3.7 | 3.8 | 3.1 | 4.6 | 4.0 | 3.5 |
| *Previous Tealbook*[5] | .6 | 4.4 | 4.4 | 5.3 | 5.1 | 4.4 | 3.4 | 4.5 | 4.8 | 4.3 | 3.2 | 3.4 | 4.6 | 4.2 | |
| Manufacturing industr. prod.[5] | -.7 | 2.2 | 4.0 | 4.5 | 3.9 | 3.5 | 3.6 | 4.1 | 4.5 | 3.9 | 4.1 | 2.6 | 3.9 | 4.2 | 3.7 |
| *Previous Tealbook*[5] | -.2 | 2.9 | 3.7 | 4.4 | 4.5 | 4.4 | 4.1 | 4.9 | 4.8 | 4.4 | 4.0 | 2.9 | 4.4 | 4.5 | |
| Capacity utilization rate - mfg.[3] | 75.9 | 76.0 | 76.5 | 77.0 | 77.4 | 77.7 | 78.1 | 78.5 | 78.9 | 79.3 | 79.7 | 76.5 | 78.1 | 79.7 | 80.8 |
| *Previous Tealbook*[3] | 76.0 | 76.3 | 76.7 | 77.2 | 77.7 | 78.2 | 78.6 | 79.2 | 79.7 | 80.1 | 80.5 | 76.7 | 78.6 | 80.5 | |
| Housing starts[6] | .9 | .9 | 1.1 | 1.1 | 1.2 | 1.3 | 1.3 | 1.4 | 1.5 | 1.5 | 1.6 | 1.0 | 1.2 | 1.5 | 1.7 |
| Light motor vehicle sales[6] | 15.5 | 15.8 | 15.8 | 15.9 | 15.9 | 16.0 | 16.0 | 16.1 | 16.2 | 16.3 | 16.5 | 15.6 | 15.9 | 16.3 | 16.5 |
| *Income and saving* | | | | | | | | | | | | | | | |
| Nominal GDP[5] | 3.7 | 4.2 | 4.1 | 4.2 | 4.5 | 4.8 | 4.8 | 5.0 | 5.1 | 5.2 | 5.0 | 3.7 | 4.6 | 5.1 | 5.0 |
| Real disposable pers. income[5] | 3.4 | 1.3 | 1.0 | 3.6 | 2.8 | 3.1 | 3.1 | 4.0 | 3.3 | 3.2 | 3.2 | -.7 | 3.1 | 3.4 | 3.2 |
| *Previous Tealbook*[5] | 4.6 | 2.2 | 2.3 | 3.9 | 3.2 | 3.3 | 3.5 | 3.6 | 3.5 | 3.4 | 3.3 | .0 | 3.5 | 3.5 | |
| Personal saving rate[3] | 4.5 | 4.3 | 3.8 | 3.9 | 3.7 | 3.6 | 3.4 | 3.5 | 3.3 | 3.2 | 3.1 | 3.8 | 3.4 | 3.1 | 3.2 |
| *Previous Tealbook*[3] | 3.2 | 3.1 | 2.8 | 2.9 | 2.8 | 2.7 | 2.6 | 2.6 | 2.4 | 2.3 | 2.2 | 2.8 | 2.6 | 2.2 | |
| Corporate profits[7] | 16.4 | 1.3 | 3.5 | .1 | 4.3 | 6.5 | 6.9 | 3.3 | 6.4 | 6.9 | 4.9 | 3.7 | 4.4 | 5.4 | 6.7 |
| Profit share of GNP[3] | 12.4 | 12.3 | 12.3 | 12.2 | 12.2 | 12.3 | 12.3 | 12.3 | 12.3 | 12.4 | 12.4 | 12.3 | 12.3 | 12.4 | 12.6 |
| Net federal saving[8] | -653 | -711 | -758 | -690 | -670 | -667 | -660 | -663 | -644 | -631 | -617 | -744 | -671 | -639 | -671 |
| Net state & local saving[8] | -197 | -206 | -205 | -200 | -179 | -167 | -154 | -148 | -130 | -124 | -114 | -210 | -175 | -129 | -100 |
| Gross national saving rate[3] | 17.6 | 17.6 | 17.7 | 17.7 | 17.8 | 17.9 | 18.0 | 18.0 | 18.1 | 18.2 | 18.3 | 17.7 | 18.0 | 18.3 | 18.6 |
| Net national saving rate[3] | 4.3 | 3.5 | 2.8 | 2.7 | 2.9 | 3.0 | 3.1 | 3.1 | 3.4 | 3.5 | 3.6 | 2.8 | 3.1 | 3.6 | 4.1 |

1. Change from fourth quarter of previous year to fourth quarter of year indicated, unless otherwise indicated.
2. Change, millions.
3. Percent; annual values are for the fourth quarter of the year indicated.
4. Percent difference between actual and potential GDP; a negative number indicates that the economy is operating below potential. Annual values are for the fourth quarter of the year indicated.
5. Percent change, annual rate.
6. Level, millions; annual values are annual averages.
7. Percent change, annual rate, with inventory valuation and capital consumption adjustments.
8. Billions of dollars; annual values are annual averages.

**Other Macroeconomic Indicators**
(Change from fourth quarter of previous year to fourth quarter of year indicated, unless otherwise noted)

| Item | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|
| *Employment and production* | | | | | | | | | | |
| Nonfarm payroll employment[1] | 1.2 | -2.8 | -5.6 | .8 | 2.0 | 2.2 | 2.2 | 2.3 | 2.9 | 2.4 |
| Unemployment rate[2] | 4.8 | 6.9 | 9.9 | 9.5 | 8.7 | 7.8 | 7.2 | 6.6 | 5.8 | 5.3 |
| *Previous Tealbook*[2] | 4.8 | 6.9 | 9.9 | 9.5 | 8.7 | 7.8 | 7.4 | 6.8 | 6.0 | 5.5 |
| Natural rate of unemployment[2] | 5.0 | 5.3 | 6.0 | 6.0 | 5.8 | 5.7 | 5.4 | 5.3 | 5.2 | 5.2 |
| *Previous Tealbook*[2] | 5.0 | 5.3 | 6.0 | 6.0 | 5.8 | 5.7 | 5.5 | 5.4 | 5.3 | |
| GDP gap[3] | .6 | -4.1 | -5.2 | -3.9 | -3.6 | -3.6 | -3.4 | -2.5 | -1.3 | -.2 |
| *Previous Tealbook*[3] | .9 | -4.3 | -5.2 | -4.0 | -3.6 | -3.9 | -3.8 | -2.6 | -1.2 | |
| | | | | | | | | | | |
| Industrial production[4] | 2.7 | -8.9 | -5.5 | 6.2 | 3.3 | 2.8 | 3.1 | 4.6 | 4.0 | 3.5 |
| *Previous Tealbook*[4] | 2.7 | -8.9 | -5.5 | 6.2 | 3.3 | 2.8 | 3.4 | 4.6 | 4.2 | |
| Manufacturing industr. prod.[4] | 2.9 | -11.6 | -6.1 | 6.4 | 3.3 | 2.8 | 2.6 | 3.9 | 4.2 | 3.7 |
| *Previous Tealbook*[4] | 2.9 | -11.6 | -6.1 | 6.4 | 3.3 | 2.8 | 2.9 | 4.4 | 4.5 | |
| Capacity utilization rate - mfg.[2] | 78.4 | 69.9 | 67.2 | 72.9 | 74.8 | 75.7 | 76.5 | 78.1 | 79.7 | 80.8 |
| *Previous Tealbook*[2] | 78.4 | 69.9 | 67.2 | 72.9 | 74.8 | 75.7 | 76.7 | 78.6 | 80.5 | |
| | | | | | | | | | | |
| Housing starts[5] | 1.4 | .9 | .6 | .6 | .6 | .8 | 1.0 | 1.2 | 1.5 | 1.7 |
| Light motor vehicle sales[5] | 16.1 | 13.1 | 10.4 | 11.5 | 12.7 | 14.4 | 15.6 | 15.9 | 16.3 | 16.5 |
| | | | | | | | | | | |
| *Income and saving* | | | | | | | | | | |
| Nominal GDP[4] | 4.4 | -1.0 | .1 | 4.6 | 3.9 | 3.8 | 3.7 | 4.6 | 5.1 | 5.0 |
| Real disposable pers. income[4] | 1.2 | 1.1 | -.6 | 2.5 | 1.4 | 3.6 | -.7 | 3.1 | 3.4 | 3.2 |
| *Previous Tealbook*[4] | 1.6 | 1.0 | -3.0 | 3.5 | .3 | 3.8 | .0 | 3.5 | 3.5 | |
| Personal saving rate[2] | 2.9 | 6.1 | 5.7 | 5.5 | 5.0 | 6.6 | 3.8 | 3.4 | 3.1 | 3.2 |
| *Previous Tealbook*[2] | 2.5 | 6.2 | 3.8 | 4.8 | 3.4 | 5.3 | 2.8 | 2.6 | 2.2 | |
| | | | | | | | | | | |
| Corporate profits[6] | -9.0 | -30.8 | 54.5 | 17.0 | 8.4 | 2.7 | 3.7 | 4.4 | 5.4 | 6.7 |
| Profit share of GNP[2] | 9.9 | 6.9 | 10.7 | 11.9 | 12.4 | 12.3 | 12.3 | 12.3 | 12.4 | 12.6 |
| | | | | | | | | | | |
| Net federal saving[7] | -267 | -635 | -1,250 | -1,330 | -1,248 | -1,110 | -744 | -671 | -639 | -671 |
| Net state & local saving[7] | -73 | -165 | -272 | -237 | -213 | -253 | -210 | -175 | -129 | -100 |
| | | | | | | | | | | |
| Gross national saving rate[2] | 16.3 | 15.0 | 14.7 | 15.2 | 15.8 | 16.9 | 17.7 | 18.0 | 18.3 | 18.6 |
| Net national saving rate[2] | 1.0 | -1.6 | -1.6 | -.4 | .5 | 1.7 | 2.8 | 3.1 | 3.6 | 4.1 |

1. Change, millions.
2. Percent; values are for the fourth quarter of the year indicated.
3. Percent difference between actual and potential GDP; a negative number indicates that the economy is operating below potential. Values are for the fourth quarter of the year indicated.
4. Percent change.
5. Level, millions; values are annual averages.
6. Percent change, with inventory valuation and capital consumption adjustments.
7. Billions of dollars; values are annual averages.

**Staff Projections of Federal Sector Accounts and Related Items**
(Billions of dollars except as noted)

| Item | Fiscal year | | | | 2013 | | | | 2014 | | | | 2015 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | Q1[a] | Q2[a] | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| **Unified budget** | | | | | Not seasonally adjusted | | | | | | | | | | | |
| Receipts[1] | 2,786 | 3,032 | 3,254 | 3,452 | 581 | 891 | 699 | 672 | 638 | 956 | 765 | 740 | 669 | 1,019 | 827 | 779 |
| Outlays[1] | 3,439 | 3,532 | 3,683 | 3,894 | 888 | 800 | 842 | 873 | 908 | 886 | 865 | 936 | 938 | 919 | 889 | 967 |
| Surplus/deficit[1] | -653 | -500 | -428 | -442 | -307 | 91 | -143 | -201 | -270 | 69 | -99 | -196 | -269 | 99 | -62 | -188 |
| *Previous Tealbook* | *-626* | *-507* | *-403* | | *-307* | *91* | *-116* | *-219* | *-274* | *76* | *-89* | *-176* | *-282* | *108* | *-53* | *-146* |
| On-budget | -695 | -533 | -446 | -444 | -303 | 36 | -117 | -228 | -255 | 18 | -68 | -219 | -250 | 51 | -28 | -205 |
| Off-budget | 42 | 33 | 18 | 2 | -4 | 55 | -25 | 27 | -15 | 52 | -31 | 23 | -19 | 49 | -35 | 18 |
| Means of financing: | | | | | | | | | | | | | | | | |
| Borrowing | 696 | 807 | 548 | 562 | 336 | -17 | 63 | 427 | 290 | -39 | 129 | 226 | 299 | -69 | 92 | 218 |
| Cash decrease | -4 | 19 | 0 | 0 | 14 | -56 | 46 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other[2] | -39 | -326 | -120 | -120 | -43 | -18 | 34 | -236 | -30 | -30 | -30 | -30 | -30 | -30 | -30 | -30 |
| Cash operating balance, end of period | 89 | 70 | 70 | 70 | 79 | 135 | 89 | 80 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| **NIPA federal sector** | | | | | Seasonally adjusted annual rates | | | | | | | | | | | |
| Receipts | 2,969 | 3,150 | 3,350 | 3,532 | 2,900 | 3,164 | 3,104 | 3,031 | 3,153 | 3,188 | 3,226 | 3,270 | 3,330 | 3,375 | 3,423 | 3,468 |
| Expenditures | 3,794 | 3,846 | 3,999 | 4,191 | 3,753 | 3,820 | 3,815 | 3,789 | 3,842 | 3,859 | 3,893 | 3,930 | 3,994 | 4,019 | 4,054 | 4,085 |
| Consumption expenditures | 978 | 937 | 908 | 899 | 982 | 976 | 961 | 951 | 941 | 932 | 923 | 916 | 911 | 905 | 900 | 895 |
| Defense | 618 | 592 | 575 | 568 | 620 | 616 | 606 | 601 | 594 | 589 | 584 | 580 | 577 | 573 | 571 | 569 |
| Nondefense | 360 | 345 | 333 | 331 | 363 | 360 | 355 | 351 | 347 | 343 | 339 | 336 | 334 | 332 | 329 | 327 |
| Other spending | 2,816 | 2,909 | 3,091 | 3,291 | 2,771 | 2,844 | 2,854 | 2,837 | 2,902 | 2,927 | 2,970 | 3,013 | 3,082 | 3,114 | 3,155 | 3,189 |
| Current account surplus | -825 | -696 | -650 | -659 | -853 | -656 | -711 | -758 | -690 | -670 | -667 | -660 | -663 | -644 | -631 | -617 |
| Gross investment | 277 | 261 | 248 | 242 | 273 | 277 | 276 | 268 | 263 | 259 | 255 | 252 | 249 | 247 | 245 | 243 |
| Gross saving less gross investment[3] | -835 | -686 | -620 | -618 | -860 | -666 | -718 | -756 | -681 | -657 | -648 | -636 | -636 | -612 | -596 | -579 |
| **Fiscal indicators[4]** | | | | | | | | | | | | | | | | |
| High-employment (HEB) surplus/deficit | -632.0 | -488.8 | -482.2 | -560.7 | -649.4 | -459.8 | -509.3 | -552.4 | -475.1 | -460.2 | -467.4 | -471.8 | -485.2 | -482.8 | -489.0 | -493.1 |
| Change in HEB, percent of potential GDP | -2.2 | -.9 | -.1 | .3 | -1.6 | -1.1 | .3 | .2 | -.5 | -.1 | .0 | .0 | .0 | .0 | .0 | .0 |
| Fiscal impetus (FI), percent of GDP | -1.2 | -.7 | -.4 | -.1 | -2.0 | -.7 | -1.1 | -1.0 | -1.0 | -.8 | -.6 | -.4 | -.6 | -.4 | -.2 | -.2 |
| *Previous Tealbook* | *-1.4* | *-.7* | *-.4* | | *-2.0* | *-1.4* | *-1.2* | *-.9* | *-.9* | *-.8* | *-.7* | *-.5* | *-.7* | *-.4* | *-.1* | *-.2* |

1. Budget receipts, outlays, and surplus/deficit include corresponding social security (OASDI) categories. The OASDI surplus and the Postal Service surplus are excluded from the on-budget surplus and shown separately as off-budget, as classified under current law.
2. Other means of financing are checks issued less checks paid, accrued items, and changes in other financial assets and liabilities.
3. Gross saving is the current account surplus plus consumption of fixed capital of the general government as well as government enterprises.
4. HEB is gross saving less gross investment (NIPA) of the federal government in current dollars, with cyclically sensitive receipts and outlays adjusted to the staff's measure of potential output and the natural rate of unemployment. The sign on Change in HEB, as a percent of nominal potential GDP, is reversed. FI is the weighted difference of discretionary changes in federal spending and taxes in chained (2005) dollars, scaled by real GDP. The FI estimates are calendar year contributions to Q4/Q4 real GDP growth. Also, for FI and the change in HEB, positive values indicate aggregate demand stimulus. Quarterly figures for change in HEB and FI are not at annual rates.
a Actual.

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**Foreign Real GDP and Consumer Prices: Selected Countries**
(Quarterly percent changes at an annual rate)

| | 2013 | | | | 2014 | | | | 2015 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ----Projected---- | | | | | | | | | | | |
| Measure and country | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| ***Real GDP***[1] | | | | | | | | | | | | |
| Total foreign | 1.8 | 2.1 | 2.7 | 3.0 | 3.2 | 2.9 | 3.2 | 3.3 | 3.4 | 3.4 | 3.5 | 3.3 |
| *Previous Tealbook* | *2.0* | *2.2* | *2.8* | *3.1* | *3.2* | *3.0* | *3.2* | *3.3* | *3.4* | *3.4* | *3.5* | *3.3* |
| Advanced foreign economies | 1.4 | 1.9 | 1.8 | 1.9 | 2.0 | 1.5 | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 | 2.1 |
| Canada | 2.2 | 1.7 | 2.5 | 2.2 | 2.3 | 2.4 | 2.6 | 2.6 | 2.6 | 2.6 | 2.7 | 2.6 |
| Japan | 4.1 | 3.8 | 2.5 | 3.1 | 3.8 | -2.5 | 1.1 | 1.1 | 1.3 | 1.5 | 2.3 | -1.0 |
| United Kingdom | 1.1 | 2.9 | 2.9 | 2.5 | 2.3 | 2.2 | 2.3 | 2.5 | 2.5 | 2.5 | 2.6 | 2.6 |
| Euro area | -.6 | 1.2 | .3 | .9 | 1.0 | 1.3 | 1.4 | 1.6 | 1.8 | 1.9 | 1.9 | 2.0 |
| Germany | .0 | 2.9 | 1.2 | 1.6 | 1.7 | 1.8 | 2.0 | 2.1 | 2.2 | 2.4 | 2.5 | 2.5 |
| Emerging market economies | 2.1 | 2.3 | 3.5 | 4.1 | 4.3 | 4.4 | 4.4 | 4.4 | 4.6 | 4.6 | 4.6 | 4.6 |
| Asia | 3.6 | 4.9 | 4.8 | 5.3 | 5.2 | 5.4 | 5.5 | 5.5 | 5.6 | 5.6 | 5.6 | 5.7 |
| Korea | 3.4 | 4.5 | 3.4 | 3.7 | 3.6 | 3.8 | 4.0 | 4.1 | 4.2 | 4.4 | 4.5 | 4.6 |
| China | 7.0 | 6.9 | 7.6 | 7.9 | 7.9 | 7.9 | 7.8 | 7.8 | 7.7 | 7.7 | 7.7 | 7.7 |
| Latin America | .6 | -.4 | 2.2 | 2.9 | 3.4 | 3.5 | 3.4 | 3.4 | 3.5 | 3.5 | 3.5 | 3.5 |
| Mexico | .1 | -2.9 | 2.4 | 3.1 | 3.7 | 3.7 | 3.5 | 3.5 | 3.6 | 3.6 | 3.6 | 3.6 |
| Brazil | 2.6 | 6.0 | .5 | 2.0 | 2.7 | 3.0 | 3.2 | 3.2 | 3.5 | 3.5 | 3.5 | 3.5 |
| ***Consumer prices***[2] | | | | | | | | | | | | |
| Total foreign | 2.2 | 1.9 | 2.6 | 2.6 | 2.4 | 3.1 | 2.5 | 2.5 | 2.5 | 2.5 | 2.6 | 3.0 |
| *Previous Tealbook* | *2.3* | *1.9* | *2.3* | *2.3* | *2.4* | *3.0* | *2.5* | *2.5* | *2.5* | *2.5* | *2.6* | *3.0* |
| Advanced foreign economies | .9 | .5 | 1.9 | 1.5 | 1.4 | 2.8 | 1.4 | 1.5 | 1.5 | 1.5 | 1.6 | 2.7 |
| Canada | 1.6 | .0 | 1.7 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 |
| Japan | -.4 | .8 | 3.0 | .6 | .6 | 8.7 | .7 | .9 | 1.0 | 1.1 | 1.2 | 6.7 |
| United Kingdom | 2.3 | 1.5 | 2.7 | 2.7 | 1.6 | 1.6 | 1.7 | 2.7 | 1.7 | 1.7 | 1.7 | 2.7 |
| Euro area | .7 | .6 | 1.7 | 1.5 | 1.4 | 1.4 | 1.4 | 1.4 | 1.5 | 1.5 | 1.6 | 1.6 |
| Germany | 1.4 | .7 | 1.9 | 1.8 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| Emerging market economies | 3.3 | 3.0 | 3.1 | 3.4 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Asia | 3.3 | 2.0 | 3.1 | 3.2 | 3.1 | 3.1 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| Korea | .6 | .3 | 1.8 | 2.8 | 3.0 | 3.0 | 3.0 | 3.1 | 3.2 | 3.2 | 3.2 | 3.1 |
| China | 3.2 | 2.1 | 2.8 | 2.9 | 2.9 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Latin America | 3.5 | 5.4 | 2.7 | 4.0 | 3.8 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| Mexico | 3.2 | 5.3 | 2.1 | 3.8 | 3.5 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| Brazil | 7.0 | 5.8 | 4.7 | 5.7 | 5.7 | 5.6 | 5.4 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 |

1. Foreign GDP aggregates calculated using shares of U.S. exports.
2. Foreign CPI aggregates calculated using shares of U.S. non-oil imports.

**Foreign Real GDP and Consumer Prices: Selected Countries**
(Percent change, Q4 to Q4)

| Measure and country | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 (Projected) | 2014 (Projected) | 2015 (Projected) | 2016 (Projected) |
|---|---|---|---|---|---|---|---|---|---|
| ***Real GDP***[1] | | | | | | | | | |
| Total foreign | -.7 | .9 | 4.6 | 3.0 | 2.2 | 2.4 | 3.1 | 3.4 | 3.5 |
| *Previous Tealbook* | *-.7* | *.8* | *4.6* | *3.0* | *2.2* | *2.5* | *3.2* | *3.4* | |
| Advanced foreign economies | -1.5 | -1.5 | 3.0 | 1.5 | .4 | 1.7 | 1.9 | 2.2 | 2.4 |
| Canada | .1 | -1.4 | 3.6 | 2.4 | 1.0 | 2.2 | 2.5 | 2.6 | 2.8 |
| Japan | -4.8 | -.5 | 3.5 | .1 | .3 | 3.4 | .8 | 1.0 | 1.2 |
| United Kingdom | -4.3 | -2.5 | 1.8 | 1.1 | .0 | 2.3 | 2.3 | 2.5 | 2.5 |
| Euro area | -2.1 | -2.2 | 2.2 | .7 | -1.0 | .4 | 1.3 | 1.9 | 2.1 |
| Germany | -1.8 | -2.2 | 4.2 | 2.2 | .3 | 1.4 | 1.9 | 2.4 | 2.5 |
| Emerging market economies | .3 | 3.9 | 6.3 | 4.5 | 4.2 | 3.0 | 4.4 | 4.6 | 4.6 |
| Asia | .8 | 8.0 | 7.8 | 4.9 | 5.3 | 4.6 | 5.4 | 5.6 | 5.6 |
| Korea | -3.2 | 6.3 | 5.0 | 3.4 | 1.4 | 3.8 | 3.9 | 4.4 | 4.4 |
| China | 7.6 | 11.3 | 9.7 | 8.7 | 7.8 | 7.4 | 7.8 | 7.7 | 7.5 |
| Latin America | -.4 | -.1 | 4.7 | 4.0 | 3.1 | 1.3 | 3.4 | 3.5 | 3.5 |
| Mexico | -1.3 | -1.2 | 4.4 | 4.1 | 3.2 | .6 | 3.6 | 3.6 | 3.5 |
| Brazil | .9 | 5.3 | 5.3 | 1.4 | 1.4 | 2.7 | 3.0 | 3.5 | 3.7 |
| ***Consumer prices***[2] | | | | | | | | | |
| Total foreign | 3.3 | 1.2 | 3.2 | 3.4 | 2.3 | 2.3 | 2.6 | 2.7 | 2.6 |
| *Previous Tealbook* | *3.3* | *1.2* | *3.2* | *3.4* | *2.3* | *2.2* | *2.6* | *2.7* | |
| Advanced foreign economies | 2.0 | .2 | 1.7 | 2.2 | 1.3 | 1.2 | 1.8 | 1.8 | 1.8 |
| Canada | 1.8 | .8 | 2.2 | 2.7 | .9 | 1.3 | 1.8 | 1.8 | 2.1 |
| Japan | 1.1 | -2.0 | -.2 | -.3 | -.2 | 1.0 | 2.7 | 2.5 | 1.5 |
| United Kingdom | 3.9 | 2.2 | 3.4 | 4.6 | 2.6 | 2.3 | 1.9 | 1.9 | 1.8 |
| Euro area | 2.3 | .4 | 2.0 | 2.9 | 2.3 | 1.1 | 1.4 | 1.6 | 1.7 |
| Germany | 1.7 | .3 | 1.6 | 2.6 | 2.0 | 1.4 | 1.7 | 1.8 | 1.9 |
| Emerging market economies | 4.6 | 2.1 | 4.3 | 4.3 | 3.1 | 3.2 | 3.3 | 3.3 | 3.3 |
| Asia | 3.7 | 1.3 | 4.3 | 4.5 | 2.6 | 2.9 | 3.1 | 3.2 | 3.2 |
| Korea | 4.5 | 2.4 | 3.2 | 3.9 | 1.7 | 1.4 | 3.0 | 3.2 | 3.2 |
| China | 2.5 | .6 | 4.7 | 4.6 | 2.1 | 2.7 | 3.0 | 3.0 | 3.0 |
| Latin America | 6.6 | 3.9 | 4.4 | 4.0 | 4.3 | 3.9 | 3.7 | 3.7 | 3.7 |
| Mexico | 6.2 | 4.0 | 4.3 | 3.5 | 4.1 | 3.6 | 3.4 | 3.4 | 3.4 |
| Brazil | 6.2 | 4.2 | 5.6 | 6.7 | 5.6 | 5.8 | 5.5 | 5.3 | 5.3 |

[1] Foreign GDP aggregates calculated using shares of U.S. exports.
[2] Foreign CPI aggregates calculated using shares of U.S. non-oil imports.

## U.S. Current Account

### *Quarterly Data*

| | 2013 Q1 | 2013 Q2 (Projected) | 2013 Q3 (Projected) | 2013 Q4 (Projected) | 2014 Q1 (Projected) | 2014 Q2 (Projected) | 2014 Q3 (Projected) | 2014 Q4 (Projected) | 2015 Q1 (Projected) | 2015 Q2 (Projected) | 2015 Q3 (Projected) | 2015 Q4 (Projected) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Billions of dollars, s.a.a.r.* | | | | | | | | | | | |
| **U.S. current account balance** | **-420.5** | **-393.4** | **-406.9** | **-438.6** | **-473.3** | **-448.5** | **-474.9** | **-487.7** | **-514.3** | **-494.3** | **-505.9** | **-518.2** |
| *Previous Tealbook* | *-424.6* | *-429.7* | *-435.6* | *-471.7* | *-520.2* | *-499.7* | *-531.5* | *-547.9* | *-578.7* | *-554.8* | *-572.4* | *-587.8* |
| Current account as percent of GDP | -2.5 | -2.4 | -2.4 | -2.6 | -2.8 | -2.6 | -2.7 | -2.7 | -2.9 | -2.7 | -2.7 | -2.8 |
| *Previous Tealbook* | *-2.7* | *-2.7* | *-2.7* | *-2.9* | *-3.1* | *-3.0* | *-3.1* | *-3.2* | *-3.3* | *-3.1* | *-3.2* | *-3.3* |
| Net goods & services | -490.5 | -471.1 | -479.7 | -499.7 | -505.2 | -484.0 | -495.6 | -504.5 | -508.1 | -496.3 | -497.4 | -506.1 |
| Investment income, net | 215.7 | 226.2 | 227.0 | 206.8 | 194.4 | 180.9 | 169.8 | 162.5 | 156.2 | 147.5 | 140.5 | 133.6 |
| Direct, net | 281.9 | 281.5 | 289.4 | 289.3 | 287.9 | 284.0 | 281.9 | 283.3 | 287.6 | 291.0 | 296.1 | 302.8 |
| Portfolio, net | -66.2 | -55.3 | -62.4 | -82.5 | -93.6 | -103.0 | -112.0 | -120.8 | -131.4 | -143.4 | -155.6 | -169.1 |
| Other income and transfers, net | -145.7 | -148.4 | -154.2 | -145.7 | -162.5 | -145.5 | -149.1 | -145.7 | -162.5 | -145.5 | -149.1 | -145.7 |

### *Annual Data*

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 (Projected) | 2014 (Projected) | 2015 (Projected) | 2016 (Projected) |
|---|---|---|---|---|---|---|---|---|---|
| | *Billions of dollars* | | | | | | | | |
| **U.S. current account balance** | **-681.3** | **-381.6** | **-449.5** | **-457.7** | **-440.4** | **-414.8** | **-471.1** | **-508.2** | **-527.6** |
| *Previous Tealbook* | *-681.3* | *-381.6* | *-449.5* | *-457.7* | *-440.4* | *-440.4* | *-524.8* | *-573.4* | |
| Current account as percent of GDP | -4.6 | -2.6 | -3.0 | -2.9 | -2.7 | -2.5 | -2.7 | -2.8 | -2.7 |
| *Previous Tealbook* | *-4.8* | *-2.7* | *-3.1* | *-3.0* | *-2.8* | *-2.7* | *-3.1* | *-3.2* | |
| Net goods & services | -702.3 | -383.7 | -499.4 | -556.8 | -534.7 | -485.3 | -497.3 | -502.0 | -484.3 |
| Investment income, net | 157.8 | 132.3 | 185.7 | 240.7 | 232.3 | 218.9 | 176.9 | 144.5 | 107.3 |
| Direct, net | 284.3 | 257.7 | 288.0 | 310.6 | 293.5 | 285.5 | 284.3 | 294.4 | 315.4 |
| Portfolio, net | -126.5 | -125.4 | -102.3 | -69.8 | -61.2 | -66.6 | -107.4 | -149.9 | -208.1 |
| Other income and transfers, net | -136.9 | -130.2 | -135.8 | -141.6 | -138.0 | -148.5 | -150.7 | -150.7 | -150.7 |

# Abbreviations

| | |
|---|---|
| ABS | asset-backed securities |
| AFE | advanced foreign economy |
| BEA | Bureau of Economic Analysis |
| BOE | Bank of England |
| BOJ | Bank of Japan |
| BOM | Bank of Mexico |
| CDS | credit default swaps |
| C&I | commercial and industrial |
| CMBS | commercial mortgage-backed securities |
| CP | commercial paper |
| CPH | compensation per hour |
| CRE | commercial real estate |
| Desk | Open Market Desk |
| DI | depository institution |
| ECB | European Central Bank |
| E&I | equipment and intangibles |
| EME | emerging market economy |
| EU | European Union |
| FOMC | Federal Open Market Committee; also, the Committee |
| FRN | floating-rate note |
| GCF | general collateral finance |
| GDI | gross domestic income |
| GDP | gross domestic product |
| IMF | International Monetary Fund |
| JOLTS | Job Openings and Labor Turnover Survey |
| LIBOR | London interbank offered rate |
| LSAP | large-scale asset purchase |

| | |
|---|---|
| MBS | mortgage-backed securities |
| Michigan survey | Thomson Reuters/University of Michigan Surveys of Consumers |
| NIPA | national income and product accounts |
| OIS | overnight index swap |
| PCE | personal consumption expenditures |
| PMI | purchasing managers index |
| QS | quantitative surveillance |
| REIT | real estate investment trust |
| repo | repurchase agreement |
| SOMA | System Open Market Account |
| S&P | Standard & Poor’s |
| TBA | to be announced (for example, TBA market) |
| TDF | Term Deposit Facility |
| TIPS | Treasury inflation-protected securities |