## 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.

## Part 1

## CURRENT ECONOMIC AND FINANCIAL CONDITIONS

## Summary and Outlook

## Summary and Outlook

## Class II FOMC—Restricted (FR)

## Domestic Developments

On balance, the information received since the time of the March Greenbook has supported our view that the economic recovery is proceeding at a moderate pace and that the deterioration in the labor market has likely ended. Consumer spending has continued to post solid gains in recent months, and equipment investment appears on track to register another double-digit increase in the first quarter. In addition, manufacturing output has continued to advance at a rapid clip, and the gains have become more broadly based across industries. Partly offsetting these favorable developments, construction of nonresidential buildings remains on a steep downtrend, the state and local sector has retrenched further, and home sales and starts are still in the doldrums. In all, the incoming data appear consistent with real GDP increasing at an annual rate of about 3 percent in the first quarter, $3 / 4$ percentage point more than our projection in the March Greenbook. Our forecast for real GDP growth in the second quarter remains at a $31 / 2$ percent rate.

The trajectory of our medium-term forecast is similar to those in recent Greenbooks. We continue to project that the accommodative stance of monetary policy, accompanied by a further attenuation of financial stress, the waning of adverse effects of earlier declines in wealth, and improving household and business confidence, will lead to a moderate recovery in economic activity over the projection period. Specifically, we expect real GDP to accelerate to an annual rate of $33 / 4$ percent in the second half of this year and to increase $41 / 2$ percent in 2011. Given the relatively modest pace of the projected recovery in activity this year, we expect the unemployment rate to edge down to $91 / 4$ percent at year-end. In 2011, the faster projected pace of output growth pushes the unemployment rate down to about $81 / 4$ percent by the end of the year.

Incoming data on core consumer prices have been somewhat lower than we had anticipated in the March Greenbook, and we have marked down our forecast for core PCE inflation a touch in response. In particular, we project that core PCE prices will rise a little less than 1 percent both this year and next, as the downward pressure on inflation from the substantial amount of slack in our forecast is tempered by the stability in inflation expectations. We expect headline inflation to increase about $1 \frac{1}{4}$ percent this year, similar to the increase over 2009. With energy price increases expected to slow next year, total PCE inflation is then expected to fall back into line with core inflation.

[^0]
## Key Background Factors

As before, we assume that the FOMC will hold the target federal funds rate in the current range of 0 to $1 / 4$ percent through the end of next year, with liftoff occurring in early 2012. Our assumptions for nontraditional policy actions are little changed from those that were embedded in the March Greenbook. We assume that the System's total holdings of agency debt, agency mortgage-backed securities (MBS), and Treasury securities purchased under the large-scale asset purchase (LSAP) program will decline gradually, from slightly more than $\$ 1.5$ trillion at present to about $\$ 1.4$ trillion at the end of 2011. This decline results from the passive runoff of agency debt and MBS and does not involve any asset sales or Treasury redemptions from the System's portfolio.

The yield on 10-year Treasury securities has ticked up slightly since the March Greenbook. We continue to assume that the 10 -year rate will rise roughly $1 / 2$ percentage point over the forecast period. This projected rise reflects three influences: the upward pressure on rates from the movement of the 10-year valuation window through the period of near-zero short-term rates, the expectation of further large increases in Treasury debt in coming years, and the gradual decline in the share of outstanding government securities held by the Federal Reserve. These factors more than offset the downward pressure on long-term yields that we assume will result as market participants revise down their expectations for the federal funds rate toward the path incorporated in our baseline forecast.

The average interest rate on conforming 30-year fixed-rate mortgages has edged up about in line with Treasury yields since the close of the March Greenbook. We had conditioned the March Greenbook on the assumption that the end of the System's MBS purchase program would put some upward pressure on the spread of the fixed mortgage rate over the 10-year Treasury rate; thus far, however, no widening has occurred. Therefore, although we still assume that the mortgage spread will widen somewhat from its current level, we have trimmed the amount of the increase relative to the March Greenbook. Specifically, we assume that the spread between the conforming mortgage rate and the 10-year Treasury yield will increase 20 basis points by this summer and then flatten out at that level over the medium term; previously, we had assumed the end of Federal Reserve purchases would add 35 basis points to the spread. Folding in the projected rise in the 10-year Treasury yield, we now expect the mortgage rate to increase to about $53 / 4$ percent by the end of 2011 .

## Key Background Factors Underlying the Baseline Staff Projection

Federal Funds Rate


## Equity Prices



## Crude Oil Prices



Long-Term Interest Rates


House Prices


## Broad Real Dollar



Note: In each panel, shading represents the projection period, which begins in 2010:Q2, except where noted. In the upper-left panel that reports the federal funds rate, the black dotted line is not apparent because the paths of the federal funds rate in the March and the current Greenbooks are the same.

The yield on BBB-rated corporate bonds is about unchanged since the close of the March Greenbook, leaving its spread over the 10 -year Treasury yield down slightly. We continue to expect this spread to decline a bit further over the forecast period as the economic expansion becomes more firmly established. The combination of this modest narrowing of the spread and the assumed rise in Treasury yields implies a slight upward drift in the BBB yield through the end of 2011.

Equity prices currently stand about $41 / 2$ percent above the level assumed in the March Greenbook, and we have raised the starting point for the projected path of stock prices by this amount. Given the sizable cumulative increase in stock prices in recent months, we estimate that the amount of price appreciation needed through 2011 to reduce the stillhigh equity premium to a more normal level is a bit less than in the last Greenbook. Accordingly, in this projection we assume that equity prices will rise at an annual rate of about 13 percent through the end of next year, compared with the nearly 15 percent pace assumed in the March Greenbook.

The recent readings on house prices have been about in line with our expectations. We continue to assume that house prices, as measured by the LoanPerformance index, will fall 3 percent this year, reflecting downward pressure from the heavy supply of distressed properties, before edging up next year as demand for housing improves.

We have made one small change to our fiscal policy assumptions. ${ }^{1}$ Given heightened concerns about the federal budget deficit, we now project that the Congress will approve only $\$ 35$ billion of additional grants-in-aid to state and local governments, rather than the $\$ 75$ billion in grants that were included in the March Greenbook. Our assumptions regarding other policies, such as the extension of emergency unemployment benefits, have not changed since the previous Greenbook. As a result, we continue to estimate that federal fiscal policy will provide an impetus to real GDP growth (on an annual-average basis) of about 1 percentage point this year and then will be a largely neutral influence on GDP growth in 2011.

Our forecast for the unified budget is roughly the same as in the March Greenbook, with the deficit expected to be about $\$ 1.4$ trillion ( 9 percent of GDP) in fiscal 2010 and $\$ 1.3$ trillion ( $81 / 2$ percent of GDP) in fiscal 2011. The slight narrowing of the deficit next

[^1]year primarily reflects the budgetary effects of the economic recovery and the winding down of some stimulus-related spending.

The foreign exchange value of the dollar has declined roughly 1 percent since the time of the March Greenbook, and we have revised down the path for the dollar over the medium term. In particular, we assume that the dollar moves down $23 / 4$ percent over the remainder of this year and then falls about $31 / 2$ percent in 2011. The incoming data on foreign economies suggest that foreign real GDP expanded at an annual rate of $4 \frac{1}{2}$ percent in the first quarter, a good bit faster than we had projected in the March Greenbook. That said, we still expect foreign real GDP to record gains at an annual rate of about $33 / 4$ percent over the remainder of the forecast period.

The spot price of West Texas Intermediate (WTI) crude oil has risen slightly, on net, since the March Greenbook, and prices of futures contracts for delivery in late 2011 have moved up about $\$ 4$ per barrel. This modest run-up has coincided with increased market optimism regarding the strength of the global recovery. Based on the path for futures prices, we project that the spot price of WTI will rise to $\$ 88$ per barrel by the end of this year and to about $\$ 90$ per barrel by the end of 2011.

## Recent Developments and the Near-Term Outlook

We currently estimate that real GDP increased at an annual rate of about 3 percent in the first quarter, as final sales strengthened a bit further and nonfarm inventory liquidation diminished substantially. In the current quarter, we expect real GDP growth to step up to an annual rate of $31 / 2$ percent, led by further solid gains in equipment and software investment, a rebound in federal defense spending, and a transitory jump in real estate commissions associated with the expiration of the homebuyer tax credit.

The labor market appears to have bottomed out. Private nonfarm payroll employment posted a small increase in the first quarter and, while initial claims have backed up in recent weeks, we have downweighted the signal from the latest readings on the view that they may have been distorted by difficulties with seasonal adjustment. In addition, measures of job vacancies turned up, on net, in the first quarter, and hiring plans from the NFIB survey brightened a bit in March. As a result, we continue to expect job gains to step up this quarter, with private payrolls increasing at an average monthly pace of 175,000 . Folding in the anticipated rise in government payrolls from census hiring, total

| Summary of the Near-Term Outlook (Percent change at annual rate except as noted) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Measure | 2010:Q1 |  | 2010:Q2 |  |
|  | March Greenbook | April Greenbook | March Greenbook | April <br> Greenbook |
| Real GDP | 2.2 | 2.9 | 3.6 | 3.5 |
| Private domestic final purchases | 2.0 | 3.4 | 3.8 | 3.6 |
| Personal consumption expenditures | 2.4 | 3.6 | 2.4 | 2.1 |
| Residential investment | -17.4 | -15.7 | 18.3 | 22.3 |
| Nonresidential structures | -8.6 | -10.6 | -4.6 | . 4 |
| Equipment and software | 11.8 | 17.0 | 18.5 | 15.8 |
| Government outlays for consumption and investment | . 2 | -2.2 | 3.9 | 3.0 |
|  | Contribution to growth (percentage points) |  |  |  |
| Inventory investment | . 6 | . 7 | -. 3 | -. 2 |
| Net exports | -. 1 | -. 2 | . 0 | . 1 |

payroll employment is expected to average monthly gains of $230,000 .{ }^{2}$ We project that the unemployment rate will edge down to $91 / 2$ percent in June, similar to our forecast in the March Greenbook.

Manufacturing output continued to increase at a robust annual rate of almost 7 percent in the first quarter, with gains widespread across industries. Looking ahead, the indicators of manufacturing activity suggest further solid increases in production in coming months. Motor vehicle production, however, is expected to level off this quarter after climbing noticeably in the preceding three quarters. On balance, we project that manufacturing output will increase at an annual rate of about 6 percent in the second quarter; these projected gains should push the factory operating rate up to 71 percent by June, $51 / 2$ percentage points above the low recorded in the first half of 2009 , but still roughly 8 percentage points below its long-run average.

Despite ongoing weakness in many of the underlying determinants of consumer demand, consumer spending has picked up noticeably in recent months. Real outlays for goods

[^2]other than motor vehicles averaged a brisk monthly gain of $3 / 4$ percent in the first quarter, well ahead of the already solid increases recorded over the previous six months. Spending on services also increased at a robust rate in January and February, although some of that strength reflected a string of outsized gains in outlays for energy services, a pattern that will likely be reversed in the next few months. Meanwhile, consumer purchases of motor vehicles edged down for the first quarter as a whole. All told, we estimate that real PCE rose at an annual rate of $31 / 2$ percent in the first quarter, the largest quarterly gain in three years and about $1 \frac{1}{4}$ percentage points stronger than we had projected in the March Greenbook. However, given the continued headwinds from weak labor income, prior wealth declines, and dour sentiment, we do not anticipate that gains in consumer spending in coming months will be sustained at the first-quarter pace. Specifically, we project that real PCE growth will slow to an annual rate of about 2 percent in the second quarter, $1 / 4$ percentage point below our projection in the March Greenbook.

Incoming data continue to suggest that the recovery in housing activity remains in a lull. Sales of both new and existing homes dropped off sharply in the first quarter, largely reflecting a payback for sales that were pulled forward in anticipation of the originally scheduled expiration of the homebuyer tax credit last fall. Data on pending home sales suggest some strengthening of existing home sales this quarter in advance of the nowscheduled expiration of the homebuyer tax credit. ${ }^{3}$ This expected strengthening in sales should provide a noticeable-albeit temporary-boost to the commissions component of residential investment this quarter. Meanwhile, single-family housing starts have only edged up, on net, over the past three months, and we expect starts to remain at a subdued level this quarter in light of weak demand, ongoing difficulties that builders face in obtaining credit, and reports that some builders are having trouble covering their construction costs.

Investment in equipment and software (E\&S) remains on a solid uptrend. In the first quarter, we estimate that business purchases of motor vehicles increased further and spending on high-tech goods posted another double-digit gain. Moreover, the available data suggest that business spending for capital goods outside of high-tech and transportation rose for the first time in more than a year, with the gains broadly based. Indicators for the current quarter suggest more of the same: Orders for capital goods have continued to rise, on net, and the various surveys of business conditions have

[^3]remained positive; in addition, market analysts have revised up their forecasts for secondquarter earnings of capital goods producers. As a result, we project that real E\&S spending will rise at an annual rate of about 16 percent in the second quarter, roughly the same as the increase in the first quarter.

We estimate that real outlays for nonresidential structures fell at an annual rate of 11 percent in the first quarter, as an apparent jump in spending on drilling and mining structures was more than offset by another large decline in the construction of buildings. Given the substantial rebound in oil prices last year, outlays for drilling and mining structures are likely to post another sizable gain this quarter, but we expect construction of nonresidential buildings to fall further, reflecting tight credit conditions, high vacancy rates, and depressed property prices. On balance, we project that outlays for nonresidential structures will be about unchanged in the second quarter.

The sharp inventory correction appears to have run its course. Based on the available data, we estimate that total nonfarm inventories were roughly unchanged in the first quarter as firms responded cautiously to the pickup in final demand. We expect this prudence to continue and look for inventory stocks to hold fairly steady in the current quarter as well.

In the government sector, we estimate that total real federal expenditures for consumption and gross investment edged up at an annual rate of 1 percent in the first quarter, but we expect federal purchases to jump at an $81 / 2$ percent pace in the second quarter. Information from the Monthly Treasury Statements for February and March indicate that real defense purchases declined last quarter, but given appropriations, we expect defense outlays to move back up this quarter. In addition, nondefense expenditures, which rose at an 8 percent rate in the fourth quarter of last year, should continue to rise at a similar pace during the first half of this year, bolstered by stimulus-related spending and by hiring for the decennial census. Meanwhile, the incoming data for state and local hiring and construction spending have been substantially weaker than expected, as ongoing budget pressures appear to be restraining state and local purchases by more than we had previously anticipated. After decreasing at an annual rate of more than 2 percent in the fourth quarter, total real state and local expenditures are estimated to have dropped at an annual rate of $4 \frac{1}{4}$ percent in the first quarter, nearly 3 percentage points faster than we had projected in the March Greenbook. We have trimmed our forecast for real state and local purchases in the second quarter as well.

The available data suggest that real exports and imports increased at solid rates in the first quarter after surging in the second half of last year. The trade flows in January and February point to a small negative contribution of net exports to the change in firstquarter real GDP, similar to what we projected in the March Greenbook. We expect imports to rise at a more moderate rate in the second quarter, while exports are anticipated to rise at about the same pace as in the first quarter. As a result, net exports are projected to have a roughly neutral effect on real GDP growth this quarter.

The incoming data on core consumer prices have been a bit below our expectations. Core PCE prices were about unchanged in January and February, and based on the CPI, likely edged up 0.1 percent in March. As a result, we marked down our estimate for core PCE inflation in the first quarter to an annual rate of $1 / 2$ percent, and we are now projecting that core prices will rise at an annual rate of just under 1 percent in the second quarter; both figures are about $1 / 4$ percentage point below our forecast in the March Greenbook. In contrast, the first-quarter jump in consumer energy prices was somewhat larger than we had anticipated, and on net, our current estimate of total PCE price inflation last quarter is close to our projection in the March Greenbook. However, we expect total PCE inflation to be only $3 / 4$ percent in the second quarter as the recent decline in spot prices for natural gas feeds through to the retail level.

## The Medium-Term Outlook

Our projection calls for real GDP to rise $31 / 2$ percent this year and $41 / 2$ percent in 2011. As in recent Greenbooks, the projected acceleration in activity over the forecast period reflects the accommodative stance of monetary policy, a gradual improvement in credit availability, a lessening drag from the prior declines in household wealth, and increased household and business confidence. With output projected to increase faster than its potential rate, economic slack diminishes slowly over the next two years, and the projected level of real GDP at the end of 2011 remains $41 / 2$ percent below the level of potential output.

Household sector. Apart from the effects of the surprising strength in the recent spending data on the near-term outlook, our projection for the growth in consumer spending is similar to that in the March Greenbook. In particular, we anticipate that real PCE will increase at an annual rate of $23 / 4$ percent over the second half of this year and then expand $31 / 2$ percent in 2011 as income accelerates, the drag on spending from the earlier wealth declines wanes, and employment prospects, credit conditions, and

## Projections of Real GDP

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

| Measure | 2010 |  | 2011 |
| :---: | ---: | ---: | ---: |
|  |  |  |  |
|  | H 1 |  | H 2 |
|  |  |  |  |
| Real GDP | 3.2 | 3.7 | 4.4 |
| Previous Greenbook | 2.9 | 3.7 | 4.4 |
| Final sales | 3.0 | 3.1 | 4.1 |
| Previous Greenbook | 2.8 | 3.0 | 4.0 |
| Personal consumption |  |  |  |
| expenditures | 2.8 | 2.8 | 3.5 |
| Previous Greenbook | 2.4 | 2.8 | 3.5 |
| Residential investment | 1.5 | 3.1 | 19.8 |
| Previous Greenbook | -1.1 | 3.9 | 20.4 |
| Nonresidential structures | -5.3 | .3 | 1.1 |
| Previous Greenbook | -6.6 | 1.3 | .1 |
| Equipment and software | 16.4 | 13.9 | 13.2 |
| Previous Greenbook | 15.1 | 12.8 | 13.7 |
| Government purchases | .4 | 1.3 | .7 |
| Previous Greenbook | 2.0 | 1.1 | .9 |
| Exports | 8.7 | 9.4 | 9.1 |
| Previous Greenbook | 9.2 | 9.0 | 8.7 |
| Imports | 7.0 | 8.5 | 7.4 |
| Previous Greenbook | 7.5 | 8.5 | 7.7 |
|  | Contribution to growth |  |  |
| (percentage points) |  |  |  |
| Inventory change | .3 | .7 | .3 |
| Previous Greenbook | .1 | .7 | .4 |
| Net exports | -.0 | -.2 | -.0 |
| Previous Greenbook | -.0 | -.2 | -.1 |

confidence improve. Because we have taken on board the higher level of consumer spending suggested by the recent data and because the level of equity wealth is higher in this projection, the saving rate-at roughly $3^{11 / 2}$ percent both this year and next-is about $1 / 4$ percentage point lower than in the March Greenbook.

Despite the lackluster tone of the recent data, we still expect a modest recovery in housing activity to take hold over the projection period. Housing remains quite affordable by historical standards, and we expect that the improving labor market, coupled with a growing realization by potential buyers that house prices are bottoming out, will eventually bring about a sustained pickup in housing demand. And, with inventories of new homes at a low level, we expect increases in new home sales to show through fairly promptly to starts. As a result, our forecast calls for single-family starts to step up from a recent pace of about 500,000 units at an annual rate to a pace of more than 900,000 units by the end of next year. Factoring in the usual lags between starts and construction expenditures, we anticipate that real residential investment will be little changed this year but increase 20 percent in 2011.

Business investment. We expect the recent momentum in real outlays for equipment and software to persist throughout the forecast period, with gains averaging about 13 percent at an annual rate over the next six quarters. Investment in high-tech equipment should continue to be buoyed by the replacement of aging PCs, construction of new data centers, and further expansion of wireless networks. Meanwhile, outlays for other types of capital equipment are projected to rise at a brisk pace in coming quarters in response to improved sales prospects, the low user cost of capital, and a further easing in credit conditions.

Outlays for nonresidential structures are projected to be roughly flat over the forecast period, extending the pattern in our near-term outlook for the sector. In particular, investment in drilling and mining structures, which has soared recently, is expected to continue to be boosted by the projected upward drift in oil prices. By contrast, although we expect construction outlays for nonresidential buildings to level off in coming quarters as the recovery solidifies further, the current weakness in demand fundamentals, tight credit conditions, and the substantial planning and implementation lags for these projects suggest that a meaningful recovery in this sector will be slow to materialize.

We project that businesses will begin replenishing their inventories in the second half of this year in order to keep stocks in line with the expansion of final sales. Inventory accumulation should then pick up further over the course of 2011 as the pace of final sales strengthens. The projection for inventory investment contributes a little less than $1 / 2$ percentage point, on average, to real GDP growth in 2010 and 2011.

Government spending. We continue to project that real federal purchases will rise about $31 / 2$ percent in 2010, reflecting solid increases in both defense and nondefense spending. In 2011, we expect growth in total federal purchases to slow to less than 1 percent as defense spending levels out. Meanwhile, we have marked down our forecast for state and local spending a little over the projection period, reflecting a larger bite from ongoing fiscal pressures and the smaller amount of additional federal grants-in-aid that we have assumed in this Greenbook. In particular, we now expect real state and local spending to decrease 1 percent in 2010 and then edge up $3 / 4$ percent in 2011.

Net exports. Real exports are expected to rise at an annual rate of 9 percent both this year and next. Although movements in the exchange value of the dollar pushed down our forecast for imports, the general picture is little changed, with real imports projected to rise steadily as domestic demand expands. On balance, we expect net exports to be a slight drag on real GDP growth in 2010 and a roughly neutral factor in 2011.
(The "International Developments" section provides more detail on the outlook for the external sector.)

## Aggregate Supply, the Labor Market, and Inflation

We have made no changes to our estimates of structural labor productivity or potential GDP in this projection. In particular, we assume that structural productivity will grow $13 / 4$ percent this year and a touch above 2 percent in 2011, and that potential GDP will rise $21 / 4$ percent this year and $21 / 2$ percent next year. The step-up in structural productivity and potential output growth in 2011 reflects the increase in capital deepening brought about by the projected recovery in business investment. With actual GDP projected to rise more quickly than potential GDP throughout the forecast period, the projected GDP gap shrinks from $7 \frac{1}{4}$ percent at the end of 2009 to $41 / 2$ percent at the end of 2011; the gap at the end of next year is $1 / 4$ percentage point narrower than in the March Greenbook, reflecting the slightly faster pace of recovery in the current projection. We continue to assume that the NAIRU will remain at $51 / 4$ percent through $2011 .{ }^{4}$

[^4]
## Decomposition of Structural Labor Productivity

Nonfarm Business Sector
(Percent change, Q4 to Q4, except as noted)

| Measure | $1974-$ <br> 95 | $1996-$ <br> 2000 | $2001-$ <br> 07 | 2008 | 2009 | 2010 | 2011 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Structural labor productivity | $\mathbf{1 . 5}$ | $\mathbf{2 . 5}$ | $\mathbf{2 . 7}$ | $\mathbf{2 . 3}$ | $\mathbf{2 . 6}$ | $\mathbf{1 . 8}$ | $\mathbf{2 . 1}$ |
| $\quad$ Previous Greenbook | 1.5 | 2.5 | 2.7 | 2.3 | 2.6 | 1.8 | 2.1 |
| Contributions $^{1}$ |  |  |  |  |  |  |  |
| Capital deepening $^{\text {Previous Greenbook }}$ | .7 | 1.5 | .7 | .5 | .0 | .2 | .6 |
| Multifactor productivity | .7 | 1.5 | .7 | .5 | .0 | .2 | .6 |
| $\quad$ Previous Greenbook | .5 | .7 | 1.7 | 1.6 | 2.4 | 1.5 | 1.4 |
| Labor composition | .5 | .7 | 1.7 | 1.6 | 2.4 | 1.5 | 1.4 |
| MEMO | .3 | .3 | .3 | .2 | .2 | .1 | .1 |
| Potential GDP |  |  |  |  |  |  |  |
| $\quad$ Previous Greenbook | 3.0 | 3.4 | 2.7 | 2.7 | 2.7 | 2.3 | 2.5 |

[^5]> The Outlook for the Labor Market
> (Percent change, Q4 to Q4, except as noted)

| Measure | 2008 | 2009 | 2010 | 2011 |
| :--- | ---: | ---: | ---: | ---: |
| Output per hour, nonfarm business | 1.4 | 5.6 | 1.3 | .8 |
| $\quad$ Previous Greenbook | 1.4 | 5.7 | .8 | 1.2 |
| Nonfarm private payroll employment | -2.7 | -4.7 | 1.9 | 3.6 |
| $\quad$ Previous Greenbook | -2.7 | -4.7 | 2.1 | 3.3 |
| Household survey employment | -1.5 | -4.0 | 1.4 | 2.2 |
| $\quad$ Previous Greenbook | -1.5 | -4.0 | 1.4 | 2.1 |
| Labor force participation rate $^{1}$ | 65.9 | 64.9 | 64.7 | 64.7 |
| $\quad$ Previous Greenbook | 65.9 | 64.9 | 64.7 | 64.6 |
| Civilian unemployment rate $^{1}$ | 6.9 | 10.0 | 9.3 | 8.2 |
| $\quad$ Previous Greenbook | 6.9 | 10.0 | 9.4 | 8.3 |
| MEMO |  |  |  |  |
| GDP gap $^{2}$ | -4.9 | -7.3 | -6.3 | -4.5 |
| Previous Greenbook | -4.9 | -7.3 | -6.4 | -4.7 |

1. Percent, average for the fourth quarter.
2. Actual less potential GDP in the fourth quarter of the year indicated as a percent of potential GDP. A negative number thus indicates that the economy is operating below potential.

Productivity and the labor market. After rising at an outsized pace last year, labor productivity appears to have decelerated sharply in the first quarter, as the pace of layoffs tapered off and hours worked edged up. Over the forecast period, we expect productivity gains to slow further, as firms become more confident about the durability of the recovery and thus are more willing to expand their payrolls to ease the strains on their existing work forces. Specifically, gains in private payroll employment are projected to step up considerably in the period ahead, from an average of 175,000 per month in the second quarter, to 300,000 per month by year-end, and to almost 350,000 per month at the end of 2011. This projected pace of job growth results in a gradual reduction in the unemployment rate from $91 / 2$ percent in the second quarter to about $81 / 4$ percent by the end of next year.

Wages and prices. As in recent Greenbooks, we continue to anticipate that low levels of resource utilization will put downward pressure on core PCE inflation over the projection period, but that this disinflationary force will be checked by ongoing stability in inflation expectations. However, in light of the low readings on core inflation in recent months, we have nudged down our projection for core PCE prices this year and next. In particular, we now project that core inflation will hold steady at an annual rate of just under 1 percent in 2010 and 2011, about 0.1 percentage point lower in each year than in the March Greenbook. We project that headline PCE prices will decelerate from 1.3 percent in 2010 to 1 percent in 2011, reflecting a slowing in energy price inflation.

We continue to project that labor costs will be restrained over the medium term by high unemployment rates and low price inflation. Compensation per hour in the nonfarm business sector is projected to rise $2 \frac{1}{4}$ percent this year and $21 / 2$ percent next year. Similarly, we expect the employment cost index to rise at an annual rate of about 2 percent over the forecast period.

## Financial Flows and Conditions

We project that total domestic nonfinancial debt will expand at an annual rate of about $61 / 2$ percent this quarter, reflecting another large increase in government debt and a small increase in private-sector debt. Over the rest of the projection period, we anticipate that total nonfinancial debt will rise at an annual rate of about $51 / 2$ percent; this forecast reflects further substantial increases in federal government debt-though at a pace below that in the current quarter-and limited borrowing by households and businesses.

## Inflation Projections

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

| Measure | 2008 | 2009 | 2010 | 2011 |
| :---: | ---: | ---: | ---: | ---: |
| PCE chain-weighted price index | 1.7 | 1.2 | 1.3 | 1.0 |
| Previous Greenbook | 1.7 | 1.2 | 1.3 | 1.0 |
| Food and beverages | 6.8 | -1.7 | 1.7 | .7 |
| Previous Greenbook | 6.8 | -1.7 | 1.5 | .7 |
| Energy | -9.1 | 1.1 | 7.6 | 2.4 |
| Previous Greenbook | -9.1 | 1.1 | 6.6 | 1.5 |
| Excluding food and energy | 2.0 | 1.5 | .9 | .9 |
| Previous Greenbook | 2.0 | 1.5 | 1.0 | 1.0 |
| Consumer price index | 1.6 | 1.5 | 1.3 | 1.1 |
| Previous Greenbook | 1.6 | 1.5 | 1.5 | 1.1 |
| Excluding food and energy | 2.0 | 1.7 | .6 | .9 |
| $\quad$ Previous Greenbook | 2.0 | 1.7 | .9 | 1.0 |
| GDP chain-weighted price index | 1.9 | .7 | 1.1 | .9 |
| Previous Greenbook | 1.9 | .7 | 1.2 | .9 |
| ECI for compensation of private |  |  |  |  |
| industry workers |  |  |  |  |

1. December to December.
2. Core goods imports exclude computers, semiconductors, oil, and natural gas.

Household debt is expected to edge up this quarter, as it did in the first quarter, after having contracted in 2009. We anticipate that household debt will expand slowly through 2011 because of roughly flat house prices, ongoing household deleveraging, and elevated charge-off rates. Although mortgage borrowing is projected to remain weak because of the continuing softness in housing markets, we anticipate that increasing demand for consumer durables and an easing of lending standards will generate a noticeable pickup in consumer credit toward the end of the forecast period.

We estimate that nonfinancial business debt expanded slightly last quarter, as robust bond and commercial paper issuance more than offset contractions in commercial mortgage
debt and C\&I loans. We anticipate that business debt will increase at only a moderate rate in the current quarter and over the rest of the forecast period despite a projected pickup in investment outlays, as large cash balances and solid growth in profits limit the demand for external funds. Corporate bond issuance is expected to remain the main vehicle for business borrowing. C\&I loans are projected to begin expanding later this year, consistent with indications from the April 2010 Senior Loan Officer Opinion Survey that the tightening of lending standards has ended. By contrast, commercial mortgage debt is expected to decline through 2011 because of continuing weakness in commercial real estate conditions.

Federal government debt is expected to continue to rise rapidly over the forecast period, with projected federal borrowing of nearly $\$ 1.6$ trillion in 2010 and about $\$ 1.2$ trillion in 2011. In the state and local government sector, we anticipate the pace of borrowing to remain moderate over the projection period, as fiscal pressures restrain demand for capital projects.

M2 edged down in the first quarter as a result of the lagged effect of slow income growth and the reallocation of household funds toward higher yielding assets. As these effects wane, we project that the growth of M2 will move toward that of nominal GDP over the forecast period.

## The Long-Term Outlook

We have extended the staff forecast to 2014 using the FRB/US model and staff assessments of long-run supply-side conditions, fiscal policy, and other factors. The contour of the long-run outlook depends on the following key assumptions:

- Monetary policy aims to stabilize PCE inflation at 2 percent in the long run, consistent with the majority of longer-term inflation projections provided by FOMC participants at the January meeting.
- The Federal Reserve does not engage in asset sales in order to run off the long-term assets acquired over the past year and a half. Instead, it allows its balance sheet to shrink gradually as these securities are prepaid or mature.
- Risk premiums on corporate bonds and equity, which are expected to be near historically normal levels at the end of 2011, remain about flat thereafter. Banks ease their lending terms and standards somewhat further beyond 2011.
- Fiscal stimulus policies continue to boost the level of government purchases through 2012. The federal government budget deficit narrows to about 5 percent of GDP by the end of 2014. This improvement reflects the net effects of the economic recovery on tax receipts and transfer payments, as well as further policy actions after 2011 aimed at reducing the deficit. The effects of the recently enacted health-care legislation are highly uncertain; we have assumed that the legislation is roughly deficit-neutral over the extension period.
- From 2012 to 2014, the foreign exchange value of the dollar is assumed to depreciate $11 / 2$ percent per year in real terms. The price of WTI crude oil rises gradually to $\$ 93$ per barrel by the end of 2014, consistent with futures prices. Under these assumptions, movements in the prices of energy and imports have only minor implications for domestic inflation. Foreign real GDP expands about $31 / 4$ percent per year, on average in the 2012-14 period, as foreign output gaps continue to narrow.
- With emergency and extended unemployment benefit programs assumed to wind down over 2012, the "effective" NAIRU falls from a little below 6 percent at the end of 2011 to $5 \frac{1}{4}$ percent by the end of 2012 and then remains at that level through 2014. Potential GDP is assumed to expand $2 \frac{1}{2}$ percent per year, on average, from 2012 to 2014.

The unemployment rate enters 2012 still at a very high level, and inflation is well below the assumed long-run target. Under the assumptions used to construct the extension, the federal funds rate climbs steadily after 2011, reaching $11 / 2$ percent by the end of 2012 and

The Long-Term Outlook
(Percent change, Q4 to Q4, except as noted)

| Measure | 2010 | 2011 | 2012 | 2013 | 2014 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Real GDP | 3.5 | 4.4 | 4.7 | 4.5 | 3.4 |
| Civilian unemployment rate $^{1}$ | 9.3 | 8.2 | 6.7 | 5.6 | 5.2 |
| PCE prices, total | 1.3 | 1.0 | 1.1 | 1.3 | 1.6 |
| Core PCE prices | .9 | .9 | 1.1 | 1.3 | 1.5 |
| Federal funds rate $^{1}$ | .1 | .1 | 1.4 | 2.9 | 3.6 |

1. Percent, average for the final quarter of the period.
$31 / 2$ percent in 2014. ${ }^{5}$ Real GDP continues to increase faster than potential, and then decelerates gradually as pent-up demand is satisfied and interest rates rise. The unemployment rate falls to near the NAIRU by 2014. Core PCE inflation moves up modestly after 2011 as economic activity recovers and long-run inflation expectations are assumed to remain well anchored.

## Alternative Scenarios

In this section, we consider alternatives to the baseline projection using simulations of the FRB/US model. We begin with two scenarios featuring opposing risks to aggregate demand. In the first scenario, credit availability and financial conditions improve more rapidly than in the baseline, spurring larger increases in household and firm spending. The second scenario features unexpectedly weak consumer spending, as the recent pickup in outlays turns out to be largely a one-time bounceback from unusually depressed levels rather than the start of a sustained acceleration in demand. We then turn to supply-side risks. The third scenario explores a jobless recovery marked by larger gains in output per hour than in the baseline, the fourth scenario considers the risk that we may be overestimating the level of economic slack currently, and the final scenario investigates the possibility that we have substantially underestimated disinflationary pressures. In each of these scenarios, the federal funds rate is assumed to follow the prescriptions of the simple policy rule detailed in the long-run outlook section, subject to an effective lower bound of $121 / 2$ basis points, and nontraditional policy is assumed to follow the baseline path.

Stronger recovery. In the Greenbook projection, credit availability acts as a drag on household and business expenditures that abates only gradually. But the pace at which credit conditions will improve is uncertain, and in this scenario, lending standards and terms ease more rapidly than is implicit in the baseline. In this environment, other financial conditions also improve more quickly, bringing the equity premium and bond spreads to normal levels by the second half of the year; as a result, by the summer the stock market is up about 20 percent, relative to baseline and the corporate bond spread is

[^6]Alternative Scenarios

| Measure and scenario | 2010 |  | 2011 | 2012 | $\begin{gathered} 2013- \\ 14 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | H1 | H2 |  |  |  |
| Real GDP |  |  |  |  |  |
| Extended Greenbook baseline | 3.2 | 3.7 | 4.4 | 4.7 | 3.9 |
| Stronger recovery | 3.9 | 5.9 | 6.1 | 4.0 | 2.9 |
| Weaker consumption | 2.9 | 2.2 | 3.2 | 5.1 | 4.7 |
| Jobless recovery | 3.1 | 3.8 | 4.3 | 5.4 | 5.9 |
| Lower potential | 3.0 | 3.1 | 3.4 | 3.2 | 2.8 |
| Greater disinflation | 3.2 | 3.8 | 4.4 | 4.9 | 4.8 |
| Unemployment rate ${ }^{1}$ |  |  |  |  |  |
| Extended Greenbook baseline | 9.5 | 9.3 | 8.2 | 6.7 | 5.2 |
| Stronger recovery | 9.4 | 8.9 | 7.1 | 5.8 | 5.2 |
| Weaker consumption | 9.5 | 9.5 | 9.0 | 7.4 | 5.2 |
| Jobless recovery | 9.7 | 9.8 | 9.6 | 8.3 | 4.4 |
| Lower potential | 9.5 | 9.5 | 8.9 | 8.0 | 7.4 |
| Greater disinflation | 9.5 | 9.3 | 8.2 | 6.6 | 4.5 |
| Core PCE inflation |  |  |  |  |  |
| Extended Greenbook baseline | . 7 | 1.0 | . 9 | 1.1 | 1.4 |
| Stronger recovery | . 7 | 1.0 | 1.0 | 1.2 | 1.6 |
| Weaker consumption | . 7 | 1.0 | . 7 | . 9 | 1.2 |
| Jobless recovery | . 7 | . 9 | . 5 | . 3 | . 7 |
| Lower potential | . 8 | 1.5 | 1.7 | 2.2 | 2.5 |
| Greater disinflation | . 6 | . 6 | . 1 | -. 2 | -. 1 |
| Federal funds rate ${ }^{1}$ |  |  |  |  |  |
| Extended Greenbook baseline | . 1 | . 1 | . 1 | 1.4 | 3.6 |
| Stronger recovery | . 1 | . 1 | 1.5 | 2.5 | 3.9 |
| Weaker consumption | . 1 | . 1 | . 1 | . 3 | 3.5 |
| Jobless recovery | . 1 | . 1 | . 1 | . 1 | 3.6 |
| Lower potential | . 1 | 1 | 1.6 | 2.9 | 4.8 |
| Greater disinflation | . 1 | . 1 | . 1 | . 1 | 2.2 |

1. Percent, average for the final quarter of the period.
about 20 basis points below baseline. In response, real GDP expands at about a 6 percent annual rate, on average, through the end of 2011, pushing the unemployment rate below 9 percent by the fourth quarter of this year and to the NAIRU by mid-2013, more than a year sooner than in the baseline. With less slack, there is slightly higher inflation. Under these conditions, the federal funds rate begins to rise in early 2011 and remains above baseline thereafter.

Weaker consumption. Consumer spending has picked up noticeably over the past few months, but we may have underestimated the extent to which this reflects a one-time bounceback from unusually depressed levels rather than a harbinger of a medium-term acceleration in demand as is the case in our baseline forecast. In this scenario, limited credit availability and impaired household balance sheets restrain consumer outlays more than in the baseline. The slower recovery in activity, in turn, feeds back adversely on financial markets, further restraining household spending. All told, the personal saving rate rises to $53 / 4$ percent by the end of 2011, 2 percentage points above baseline; equity prices climb more modestly, and by late 2011 are some 15 percentage points below baseline. As a consequence, the improvement in the labor market is delayed, and the unemployment rate declines to only 9 percent at the end of 2011, $3 / 4$ percentage point higher than baseline; the additional slack pushes inflation down to $3 / 4$ percent next year. Lower inflation and weaker real activity call for more accommodative monetary policy, so the federal funds rate remains near zero until late 2012. This additional monetary stimulus, together with an assumed gradual return of spending to long-run fundamentals, causes real GDP to expand more rapidly than in the baseline starting in 2012.

Jobless recovery. The baseline forecast assumes that as the economic recovery continues, firms boost payroll employment and labor productivity decelerates. In this scenario, we assume that labor productivity expands at a rate of $31 / 4$ percent per year through 2011, close to the pace of the last two years. Relative to baseline, the trajectory for productivity in this scenario resembles the pattern seen during the 2002-03 "jobless" recovery; consistent with our interpretation of that period, we assume gains are driven by a mixture of permanent shocks to structural productivity and other, more transitory fluctuations, perhaps associated with continued efforts by firms to sustain lean levels of employment until they are sure of a recovery in demand. The caution of firms in hiring is also accompanied by greater restraint in business investment; moreover, consumers are less confident than in the baseline because of the continued labor market weakness. As a result, the higher level of productivity does not boost aggregate demand, but rather leaves real GDP close to its baseline path through early 2012. In this environment, the
unemployment rate is little different from current levels through the end of 2011—putting it nearly $1 \frac{1}{2}$ percentage points above baseline at that point. Recognition by households and firms of the more favorable long-run conditions associated with higher structural productivity, combined with growing confidence, eventually leads to increases in aggregage demand, relative to baseline, so that by 2012 real GDP accelerates significantly. Lower unit labor costs and lower levels of resource utilization drive inflation down to $1 / 4$ percent in 2012. As a consequence, the federal funds rate lifts off from the effective lower bound in mid-2013, more than a year later than in the baseline.

Lower potential. The NAIRU and potential output are difficult to measure, and we could be misjudging the degree of slack in the economy. In particular, the long-run implications for the labor market of the sharp increases in unemployment in general, and in long-term unemployment in particular, could be more adverse than in the baseline. Moreover, the impairment of the financial system and its repercussions for the broader economy have been both larger in magnitude and different in nature from what has typically occurred in previous downturns. Reflecting these risks, in this scenario we assume that the current level of potential output is lower than the staff assumes due to both a higher NAIRU and a lower level of structural productivity, so that output is currently $31 / 2$ percent below potential, instead of 7 percent as in the baseline. We also assume that, unlike the public, monetary policymakers are slow to recognize the full extent of this error, with the result that their perception of slack does not converge to the true value until the end of 2013. Because of the misperceived output gap, the federal funds rate remains near zero for longer than would otherwise be called for under the simple policy rule, exacerbating the upward pressure on prices that comes from lessfavorable supply-side conditions. Moreover, the public interprets the FOMC's failure to tighten promptly as a sign that its inflation objective is higher than previously thought. In the end, long-run inflation expectations increase to $2 \frac{1}{2}$ percent by late 2011 , or about $3 / 4$ percentage point above baseline, which in turn boosts inflation to $21 / 2$ percent in 2013-14, 1 percentage point above baseline.

Greater disinflation. In the baseline, the rate of inflation remains relatively stable at a low level in 2010 and 2011, reflecting a balancing of the drag from resource utilization and the anchoring associated with stable inflation expectations. But inflation expectations could be less well anchored than assumed. In this scenario, we assume that both inflation expectations and actual inflation fall more significantly in response to economic slack, by magnitudes that are roughly in line with the predictions of many reduced-form forecasting equations. Inflation runs substantially below baseline-and
below zero from 2012 until the end of 2014 —and the federal funds rate remains near zero until 2013. Relative to baseline, the more accommodative monetary policy stimulates aggregate demand, and real GDP expands noticeably faster than baseline after 2011.

## Assessment of Forecast Uncertainty

The economy is clearly expanding, but for many reasons, the pace of the recovery going forward is uncertain. We cannot be sure about the speed at which credit availability will improve given the unusual situation from which the financial system is emerging. We do not know whether we face another jobless recovery, a boom in hiring as increasingly confident firms quickly normalize their staffing, or something in between (the baseline projection). And given the present combination of both considerable excess capacity and extremely low levels of investment, we are uncertain about the pace at which capital spending by businesses and households will expand in coming quarters. For all these reasons, we continue to judge the risks associated with the staff projection to be elevated relative both to the experience of the past 20 years (the benchmark used by the Committee) and to the more volatile post-1968 sample period used by the staff for stochastic simulations. As in January, we see the risks to real activity as roughly balanced.

We also continue to view the risks to the price outlook as roughly balanced. On the downside, most of our forecasting models-responding to the extremely elevated levels of our measures of economic slack-point to more disinflation than we have built into the projection. We have discounted these projections because of the surprising stability of inflation expectations, but expectations might yet begin to slip as unemployment remains stubbornly high and monetary policy remains constrained by the zero lower bound. (Our concerns in this direction have been heightened somewhat by the surprising softness of the recent price data.) On the upside, our estimates of slack are higher than what some others have generated, suggesting a risk of less downward pressure on prices going forward. In addition, some observers have questioned the FOMC's ability or willingness to ensure long-run price stability in light of the unsustainable fiscal outlook and the unprecedented size of the Federal Reserve's balance sheet, and these fears could translate into rising inflation expectations. Many of these various upside and downside risks also suggest that the inflation outlook is more uncertain than usual because those risks stem from extremely unusual conditions.

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

| Measure | 2010 | 2011 | 2012 | 2013 | 2014 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Real GDP <br> (percent change, Q4 to Q4) |  |  |  |  |  |
| Projection | 3.5 | 4.4 | 4.7 | 4.5 | 3.4 |
| Confidence interval |  |  |  |  |  |
| Greenbook forecast errors | 2.2-4.8 | 2.6-6.2 | ... |  |  |
| FRB/US stochastic simulations | 2.4-4.7 | 2.6-6.3 | 2.5-6.5 | 2.3-6.6 | 1.2-5.9 |
| Civilian unemployment rate (percent, Q4) |  |  |  |  |  |
| Projection | 9.3 | 8.2 | 6.7 | 5.6 | 5.2 |
| Confidence interval |  |  |  |  |  |
| Greenbook forecast errors | 8.8-9.8 | 7.5-9.0 |  |  |  |
| FRB/US stochastic simulations | 8.8-9.8 | 7.3-9.1 | 5.7-7.8 | 4.5-6.8 | 4.1-6.4 |
| PCE prices, total (percent change, Q4 to Q4) |  |  |  |  |  |
| Projection | 1.3 | 1.0 | 1.1 | 1.3 | 1.6 |
| Confidence interval |  |  |  |  |  |
| Greenbook forecast errors | .6-2.0 | -.2-2.2 |  |  |  |
| FRB/US stochastic simulations | .6-2.1 | .0-2.1 | .1-2.3 | .2-2.6 | .5-2.7 |
| PCE prices excluding food and energy |  |  |  |  |  |
| (percent change, Q4 to Q4) Projection | . 9 | 9 | 1.1 | 1.3 | 1.5 |
| Confidence interval |  |  |  |  |  |
| Greenbook forecast errors | .4-1.3 | .2-1.7 |  |  |  |
| FRB/US stochastic simulations | .4-1.3 | .2-1.7 | .3-2.0 | .5-2.2 | .7-2.5 |
| Federal funds rate (percent, Q4) |  |  |  |  |  |
| Projection | . 1 | . 1 | 1.4 | 2.9 | 3.6 |
| Confidence interval <br> FRB/US stochastic simulations | .1-. 3 | .1-1.9 | .1-3.2 | 1.2-4.7 | 2.0-5.4 |

Notes: Shocks underlying FRB/US stochastic simulations are randomly drawn from the 1969-2009 set of model equation residuals.
Intervals derived from Greenbook forecast errors are based on projections made from 1979-2009, except for PCE prices excluding food and energy, where the sample is 1981-2009.
. . . Not applicable. The Greenbook forecast horizon has typically extended about two years.

Forecast Confidence Intervals and Alternative Scenarios
Confidence Intervals Based on FRB/US Stochastic Simulations

| $\square$ Extended Greenbook baseline | $\square$ Weaker consumption | $\square$ Lower potential |
| :--- | :--- | :--- |
| $\square$ Stronger recovery | $\square$ Jobless recovery | $\square$ Greater disinflation |

Real GDP


PCE Prices excluding Food and Energy
4-quarter percent change


Unemployment Rate


Federal Funds Rate


## Evolution of the Staff Forecast

Change in Real GDP


Unemployment Rate
Percent, fourth quarter


Change in PCE Prices excluding Food and Energy*

*Because the core PCE price index was redefined as part of the comprehensive revisions to the NIPA, projections prior to the August 2009 Greenbook are not strictly comparable with more recent projections.
Class II FOMC
Restricted (FR)
Class II FOMC
Restricted (FR)


[^7]Class II FOMC
Restricted（FR）

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[^8]| Item | 2009 |  |  |  | 2010 |  |  |  | 2011 |  |  |  | $2009^{1}$ | $2010^{1}$ | $2011^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |  |  |  |
| Real GDP | -6.4 | -. 7 | 2.2 | 5.6 | 2.9 | 3.5 | 3.6 | 3.8 | 4.0 | 4.3 | 4.6 | 4.7 | . 1 | 3.5 | 4.4 |
| Previous Greenbook | -6.4 | -. 7 | 2.2 | 5.6 | 2.2 | 3.6 | 3.5 | 3.8 | 4.0 | 4.3 | 4.6 | 4.7 | . 1 | 3.3 | 4.4 |
| Final sales | -4.1 | . 7 | 1.5 | 1.8 | 2.2 | 3.7 | 2.8 | 3.4 | 3.6 | 4.1 | 4.1 | 4.5 | -. 1 | 3.0 | 4.1 |
| Previous Greenbook | -4.1 | . 7 | 1.5 | 1.8 | 1.6 | 3.9 | 2.6 | 3.4 | 3.5 | 4.1 | 4.0 | 4.4 | -. 1 | 2.9 | 4.0 |
| Priv. dom. final purch. | -6.1 | -2.3 | 1.8 | 1.8 | 2.8 | 3.0 | 2.7 | 3.2 | 3.5 | 3.9 | 4.1 | 4.2 | -1.3 | 2.9 | 3.9 |
| Previous Greenbook | -6.1 | -2.3 | 1.8 | 1.8 | 1.7 | 3.1 | 2.6 | 3.3 | 3.5 | 3.9 | 4.0 | 4.2 | -1.3 | 2.7 | 3.9 |
| Personal cons. expend. | . 4 | -. 6 | 2.0 | 1.2 | 2.5 | 1.5 | 1.9 | 2.0 | 2.2 | 2.5 | 2.6 | 2.7 | . 7 | 2.0 | 2.5 |
| Previous Greenbook | . 4 | -. 6 | 2.0 | 1.3 | 1.7 | 1.7 | 1.9 | 2.1 | 2.2 | 2.5 | 2.5 | 2.7 | . 7 | 1.8 | 2.5 |
| Durables | . 3 | -. 4 | 1.4 | . 0 | . 7 | 1.0 | . 7 | . 7 | . 7 | . 8 | . 8 | . 9 | . 3 | . 8 | . 8 |
| Nondurables | . 3 | -. 3 | . 2 | . 6 | . 7 | . 5 | . 4 | . 4 | . 5 | . 5 | . 6 | . 6 | . 2 | . 5 | . 5 |
| Services | -. 1 | . 1 | . 4 | . 5 | 1.1 | . 0 | . 8 | . 9 | 1.1 | 1.2 | 1.2 | 1.3 | . 2 | . 7 | 1.2 |
| Residential investment | -1.3 | -. 7 | . 4 | . 1 | -. 4 | . 5 | -. 1 | . 2 | . 3 | . 5 | . 6 | . 6 | -. 4 | . 1 | . 5 |
| Previous Greenbook | -1.3 | -. 7 | . 4 | . 1 | -. 5 | . 4 | -. 1 | . 3 | . 3 | . 5 | . 6 | . 6 | -. 4 | . 0 | . 5 |
| Business fixed invest. | -5.3 | -1.0 | -. 6 | . 5 | . 7 | 1.0 | . 8 | 1.0 | 1.0 | . 9 | . 9 | . 9 | -1.6 | . 9 | . 9 |
| Previous Greenbook | -5.3 | -1.0 | -. 6 | . 5 | . 5 | 1.0 | . 8 | 1.0 | 1.0 | . 9 | . 9 | . 9 | -1.6 | . 8 | . 9 |
| Equipment \& software | -3.0 | -. 3 | . 1 | 1.1 | 1.0 | 1.0 | . 8 | 1.0 | 1.0 | . 9 | . 9 | . 9 | -. 5 | 1.0 | . 9 |
| Previous Greenbook | -3.0 | -. 3 | . 1 | 1.1 | . 7 | 1.1 | . 7 | . 9 | . 9 | . 9 | . 9 | . 9 | -. 5 | . 9 | . 9 |
| Nonres. structures | -2.3 | -. 7 | -. 7 | -. 6 | -. 3 | . 0 | . 0 | . 0 | . 1 | . 0 | . 0 | . 0 | -1.1 | -. 1 | . 0 |
| Previous Greenbook | -2.3 | -. 7 | -. 7 | -. 6 | -. 3 | -. 1 | . 0 | . 0 | . 0 | . 0 | . 0 | . 0 | -1.1 | -. 1 | . 0 |
| Net exports | 2.6 | 1.7 | -. 8 | . 3 | -. 2 | . 1 | -. 3 | . 0 | -. 1 | . 1 | -. 2 | . 1 | 1.0 | -. 1 | . 0 |
| Previous Greenbook | 2.6 | 1.7 | -. 8 | . 2 | -. 1 | . 0 | -. 3 | -. 1 | -. 1 | . 0 | -. 3 | . 0 | 1.0 | -. 1 | -. 1 |
| Exports | -4.0 | -. 5 | 1.8 | 2.4 | 1.0 | 1.0 | 1.1 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 | -. 1 | 1.1 | 1.1 |
| Imports | 6.6 | 2.1 | -2.6 | -2.1 | -1.1 | -. 9 | -1.4 | -1.2 | -1.2 | -1.1 | -1.3 | -1.0 | 1.0 | -1.2 | -1.2 |
| Gov't. cons. \& invest. | -. 5 | 1.3 | . 6 | -. 3 | -. 4 | . 6 | . 4 | . 1 | . 1 | . 2 | . 2 | . 2 | . 3 | . 2 | . 1 |
| Previous Greenbook | -. 5 | 1.3 | . 6 | -. 3 | . 0 | . 8 | . 3 | . 2 | . 2 | . 2 | . 2 | . 2 | . 3 | . 3 | . 2 |
| Federal | -. 3 | . 9 | . 6 | . 0 | . 1 | . 7 | . 4 | . 1 | . 1 | . 1 | . 1 | . 1 | . 3 | . 3 | . 1 |
| Defense | -. 3 | . 7 | . 5 | -. 2 | -. 1 | . 5 | . 4 | . 1 | . 0 | . 0 | . 0 | . 0 | . 2 | . 2 | . 0 |
| Nondefense | -. 1 | . 2 | . 2 | . 2 | . 2 | . 2 | -. 1 | . 0 | . 1 | . 1 | . 1 | . 1 | . 1 | . 1 | . 1 |
| State \& local | -. 2 | . 5 | -. 1 | -. 3 | -. 5 | -. 1 | . 0 | . 1 | . 1 | . 1 | . 1 | . 1 | . 0 | -. 1 | . 1 |
| Change in bus. inventories | -2.4 | -1.4 | . 7 | 3.8 | . 7 | -. 2 | . 8 | . 5 | . 4 | . 2 | . 6 | . 3 | . 1 | . 5 | . 3 |
| Previous Greenbook | -2.4 | -1.4 | . 7 | 3.8 | . 6 | -. 3 | . 9 | . 4 | . 5 | . 2 | . 6 | . 3 | . 1 | . 4 | . 4 |
| Nonfarm | -2.4 | -1.5 | . 7 | 4.0 | . 4 | -. 2 | . 8 | . 5 | . 4 | . 1 | . 6 | . 3 | . 2 | . 4 | . 3 |
| Farm | . 1 | . 1 | . 0 | -. 2 | . 4 | . 0 | . 0 | . 0 | . 0 | . 0 | . 0 | . 0 | . 0 | . 1 | . 0 |

[^9]Class II FOMC
Restricted (FR)
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| Item | 2009 |  |  |  | 2010 |  |  |  | 2011 |  |  |  | $2009{ }^{1}$ | $2010^{1}$ | $2011^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |  |  |  |
| GDP chain-wt. price index | 1.9 | . 0 | . 4 | . 5 | 1.1 | 1.0 | 1.3 | 1.0 | 1.0 | . 9 | . 9 | . 8 | . 7 | 1.1 | . 9 |
| Previous Greenbook | 1.9 | . 0 | . 4 | . 4 | 2.0 | . 8 | 1.2 | . 9 | 1.0 | . 9 | . 9 | . 9 | . 7 | 1.2 | . 9 |
| PCE chain-wt. price index | -1.5 | 1.4 | 2.6 | 2.5 | 1.5 | . 7 | 1.7 | 1.3 | 1.1 | 1.0 | 1.0 | 1.0 | 1.2 | 1.3 | 1.0 |
| Previous Greenbook | -1.5 | 1.4 | 2.6 | 2.3 | 1.5 | 1.3 | 1.4 | 1.1 | 1.0 | 1.0 | 1.0 | . 9 | 1.2 | 1.3 | 1.0 |
| Energy | -36.7 | -2.0 | 40.6 | 19.9 | 15.9 | -3.7 | 12.5 | 6.8 | 3.5 | 2.7 | 1.8 | 1.7 | 1.1 | 7.6 | 2.4 |
| Previous Greenbook | -36.7 | -2.0 | 40.6 | 19.9 | 14.0 | 4.1 | 5.8 | 2.7 | 2.0 | 1.8 | 1.5 | . 8 | 1.1 | 6.6 | 1.5 |
| Food | -1.1 | -3.6 | -2.1 | -. 1 | 1.9 | 2.0 | 1.7 | 1.1 | . 7 | . 7 | . 7 | . 7 | -1.7 | 1.7 | . 7 |
| Previous Greenbook | -1.1 | -3.6 | -2.1 | -. 1 | 1.8 | 1.4 | 1.7 | 1.1 | . 8 | . 7 | . 7 | . 7 | -1.7 | 1.5 | . 7 |
| Ex. food \& energy | 1.1 | 2.0 | 1.2 | 1.8 | . 5 | . 9 | 1.0 | 1.0 | 1.0 | . 9 | . 9 | . 9 | 1.5 | . 9 | . 9 |
| Previous Greenbook | 1.1 | 2.0 | 1.2 | 1.6 | . 8 | 1.1 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 | 1.0 | 1.0 |
| CPI | -2.2 | 1.9 | 3.7 | 2.6 | 1.5 | . 4 | 1.9 | 1.4 | 1.2 | 1.1 | 1.0 | 1.0 | 1.5 | 1.3 | 1.1 |
| Previous Greenbook | -2.2 | 1.9 | 3.7 | 2.6 | 1.6 | 1.4 | 1.6 | 1.2 | 1.1 | 1.1 | 1.1 | 1.0 | 1.5 | 1.5 | 1.1 |
| Ex. food \& energy | 1.6 | 2.3 | 1.5 | 1.5 | . 0 | . 6 | . 9 | . 9 | . 9 | . 9 | . 9 | . 9 | 1.7 | . 6 | . 9 |
| Previous Greenbook | 1.6 | 2.3 | 1.5 | 1.5 | . 2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 1.0 | 1.0 | 1.7 | . 9 | 1.0 |
| ECI, hourly compensation ${ }^{2}$ | . 7 | . 7 | 1.8 | 1.5 | 2.2 | 2.1 | 2.1 | 2.1 | 2.2 | 2.1 | 2.1 | 2.1 | 1.2 | 2.1 | 2.1 |
| Previous Greenbook ${ }^{2}$ | . 7 | . 7 | 1.8 | 1.5 | 2.2 | 2.1 | 2.1 | 2.1 | 2.2 | 2.1 | 2.1 | 2.1 | 1.2 | 2.1 | 2.1 |
| Nonfarm business sector |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Output per hour | . 9 | 7.6 | 7.8 | 6.3 | 2.7 |  | . 8 | . 4 | . 4 | . 6 | 1.1 | 1.2 | 5.6 | 1.3 | . 8 |
| Previous Greenbook | . 9 | 7.6 | 7.8 | 6.5 | 1.7 | . 9 | . 3 | . 5 | . 6 | 1.1 | 1.4 | 1.6 | 5.7 | . 8 | 1.2 |
| Compensation per hour | -4.2 | 7.7 | -. 4 | . 5 | 2.9 | . 9 | 2.4 | 2.4 | 3.3 | 2.4 | 2.2 | 2.2 | . 8 | 2.2 | 2.5 |
| Previous Greenbook | -4.2 | 7.7 | -. 4 | . 4 | 2.1 | 1.8 | 2.4 | 2.4 | 3.3 | 2.4 | 2.2 | 2.2 | . 8 | 2.2 | 2.5 |
| Unit labor costs | -5.0 | . 1 | -7.6 | -5.5 | . 2 | -. 2 | 1.6 | 2.0 | 2.9 | 1.7 | 1.1 | 1.0 | -4.6 | . 9 | 1.7 |
| Previous Greenbook | -5.0 | . 1 | -7.6 | -5.7 | . 4 | . 9 | 2.1 | 1.9 | 2.7 | 1.3 | . 8 | . 6 | -4.6 | 1.3 | 1.3 |
| Core goods imports chain-wt. price index ${ }^{3}$ | -9.4 | -2.3 | 1.3 | 4.7 | 4.0 | 2.9 | 2.3 | 1.6 | 1.4 | 1.2 | 1.1 | 1.1 | -1.6 | 2.7 | 1.2 |
| Previous Greenbook ${ }^{3}$ | -9.4 | -2.3 | 1.3 | 4.7 | 4.2 | 2.2 | 1.7 | 1.3 | 1.1 | 1.1 | 1.1 | 1.1 | -1.6 | 2.4 | 1.1 |

1. Change from fourth quarter of previous year to fourth quarter of year indicated.
2. Core goods imports exclude computers, semiconductors, oil, and natural gas.
Class II FOMC
Restricted（FR）
April 21， 2010

| $\stackrel{\rightharpoonup}{\text { ® }}$ | $\bigcirc \bigcirc$ |  | $\# \# 90$ | $\vec{i} \vec{i}$ |  | $\stackrel{\text { NT }}{\sim}$ |
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| $\stackrel{\text { on }}{\substack{\circ}}$ | $\bigcirc$ |  | $\mathfrak{n} \because$ | $\underset{\sim}{~ Y ~ Y ~}$ | $\underset{\operatorname{rin}}{\bullet} \underset{\sim}{\infty} \underset{+}{+} \underset{+}{\bullet}$ | $\underset{1}{0} \underset{\hdashline}{0}$ |
| $\stackrel{\infty}{\circ}$ | $90$ |  | $\underset{-1}{0} \underset{\sim}{0} 0$ | $\stackrel{\rightharpoonup}{i} \underset{\sim}{\top}$ | $\underset{\sim}{*}$ | $\underset{\sim}{\infty} \underset{\sim}{\infty}$ |
| $\stackrel{\hat{O}}{\hat{O}}$ | $\hat{i} \hat{i}$ |  | $\stackrel{\circ}{\circ} \underset{\sim}{n} \stackrel{n}{i}$ | $0.0$ | $00 \bullet \bullet$ ．．． Nivin | $n i n$ |
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[^10]Class II FOMC
Restricted (FR)
April 21, 2010

1. Change from fourth quarter of previous year to fourth quarter of year indicated, unless otherwise indicated.
. Percent difference between actual and potential GDP; a negative number indicates that the economy is operating below potential. 4. Annual values are for the fourth quarter of the year indicated
2. Percent change, annual rate.
3. Percent change, annual rate, with inventory valuation and capital consumption adjustments.
Class II FOMC
Restricted (FR)
April 21, 2010

| Item | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Employment and production |  |  |  |  |  |  |  |  |  |
| Nonfarm payroll employment ${ }^{1}$ | -. 1 | 2.0 | 2.4 | 2.1 | 1.2 | -2.8 | -5.4 | 1.9 | 4.1 |
| Unemployment rate ${ }^{2}$ | 5.8 | 5.4 | 5.0 | 4.5 | 4.8 | 6.9 | 10.0 | 9.3 | 8.2 |
| Previous Greenbook ${ }^{2}$ | 5.8 | 5.4 | 5.0 | 4.5 | 4.8 | 6.9 | 10.0 | 9.4 | 8.3 |
| GDP gap ${ }^{3}$ | -1.7 | -. 8 | -. 4 | -. 4 | -. 4 | -4.9 | -7.3 | -6.3 | -4.5 |
| Previous Greenbook ${ }^{3}$ | -1.7 | -. 8 | -. 4 | -. 4 | -. 4 | -4.9 | -7.3 | -6.4 | -4.7 |
| Industrial production ${ }^{4}$ | 1.6 | 3.0 | 2.6 | 1.8 | 1.8 | -6.7 | -4.7 | 5.9 | 5.7 |
| Previous Greenbook ${ }^{4}$ | 1.6 | 3.0 | 2.6 | 1.8 | 1.8 | -6.7 | -4.7 | 5.1 | 5.8 |
| Manufacturing industr. prod. ${ }^{4}$ | 1.8 | 3.6 | 3.8 | 1.2 | 1.9 | -8.7 | -5.0 | 6.1 | 6.6 |
| Previous Greenbook ${ }^{4}$ | 1.8 | 3.6 | 3.8 | 1.2 | 1.9 | -8.7 | -5.0 | 5.3 | 6.7 |
| Capacity utilization rate - mfg. ${ }^{2}$ | 74.6 | 77.3 | 79.2 | 79.0 | 78.7 | 70.9 | 68.2 | 73.1 | 77.8 |
| Previous Greenbook ${ }^{2}$ | 74.6 | 77.3 | 79.2 | 79.0 | 78.7 | 70.9 | 68.2 | 72.5 | 77.3 |
| Housing starts ${ }^{5}$ | 1.8 | 2.0 | 2.1 | 1.8 | 1.4 | . 9 | . 6 | . 7 | 1.0 |
| Light motor vehicle sales ${ }^{5}$ | 16.6 | 16.8 | 16.9 | 16.5 | 16.1 | 13.1 | 10.3 | 11.8 | 14.4 |
| Income and saving Nominal GDP4 | 6.0 | 6.4 | 6.3 | 5.4 | 5.3 | . 1 | . 7 | 4.6 | 5.3 |
| Real disposable pers. income ${ }^{4}$ | 3.9 | 3.5 | . 6 | 4.6 | 1.0 | . 3 | . 9 | 2.4 | 3.6 |
| Previous Greenbook ${ }^{4}$ | 3.9 | 3.5 | . 6 | 4.6 | 1.0 | . 3 | 1.1 | 2.3 | 3.4 |
| Personal saving rate ${ }^{2}$ | 3.6 | 3.6 | 1.5 | 2.5 | 1.5 | 3.8 | 3.9 | 3.7 | 3.7 |
| Previous Greenbook ${ }^{2}$ | 3.6 | 3.6 | 1.5 | 2.5 | 1.5 | 3.8 | 4.1 | 4.0 | 4.0 |
| Corporate profits ${ }^{6}$ | 12.2 | 21.9 | 19.6 | 3.7 | -5.7 | -25.1 | 30.6 | 10.2 | 4.9 |
| Profit share of GNP ${ }^{2}$ | 9.1 | 10.5 | 11.8 | 11.6 | 10.3 | 7.8 | 10.1 | 10.6 | 10.6 |
| Net federal saving ${ }^{7}$ | -376 | -379 | -283 | -204 | -236 | -643 | -1225 | -1378 | -1266 |
| Net state \& local saving ${ }^{7}$ | -39 | -8 | 26 | 51 | 22 | -40 | -19 | 62 | 42 |
| Gross national saving rate ${ }^{2}$ | 14.3 | 14.3 | 15.5 | 16.3 | 13.8 | 12.2 | 10.3 | 10.9 | 12.3 |
| Net national saving rate ${ }^{2}$ | 2.5 | 2.7 | 3.5 | 4.2 | 1.6 | -. 7 | -2.8 | -1.8 | -. 4 |

[^11]| Item | Fiscal year |  |  |  | 2009 |  |  |  | 2010 |  |  |  | 2011 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2008 ${ }^{\text {a }}$ | $2009{ }^{\text {a }}$ | 2010 | 2011 | Q1 ${ }^{\text {a }}$ | Q2 ${ }^{\text {a }}$ | Q3 ${ }^{\text {a }}$ | Q4 ${ }^{\text {a }}$ | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Unified budget |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Receipts ${ }^{1}$ | 2524 | 2104 | 2146 | 2445 | 442 | 599 | 516 | 488 | 466 | 636 | 557 | 536 | 522 | 748 | 638 | 608 |
| Outlays ${ }^{1}$ | 2983 | 3520 | 3505 | 3758 | 891 | 904 | 845 | 876 | 795 | 928 | 906 | 948 | 961 | 931 | 918 | 931 |
| Surplus/deficit ${ }^{1}$ | -458 | -1416 | -1359 | -1314 | -449 | -305 | -329 | -388 | -329 | -292 | -349 | -412 | -439 | -182 | -280 | -323 |
| Previous Greenbook | -459 | -1415 | -1395 | -1295 | -449 | -305 | -329 | -388 | -474 | -271 | -263 | -411 | -427 | -170 | -287 | -331 |
| On-budget | -642 | -1553 | -1449 | -1419 | -468 | -382 | -318 | -394 | -359 | -360 | -337 | -454 | -439 | -253 | -273 | -370 |
| Off-budget | 183 | 137 | 91 | 105 | 19 | 77 | -11 | 6 | 30 | 67 | -13 | 42 | -1 | 71 | -7 | 47 |
| Means of financing |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Borrowing | 768 | 1743 | 1494 | 1298 | 465 | 338 | 379 | 261 | 478 | 339 | 416 | 367 | 429 | 207 | 295 | 313 |
| Cash decrease | -296 | 96 | -10 | 35 | 98 | -49 | 43 | 82 | -25 | -62 | -5 | 50 | 15 | -20 | -10 | 15 |
| Other ${ }^{2}$ | -13 | -424 | -125 | -20 | -114 | 16 | -92 | 45 | -124 | 15 | -61 | -5 | -5 | -5 | -5 | -5 |
| Cash operating balance, end of period | 372 | 275 | 285 | 250 | 269 | 318 | 275 | 194 | 219 | 280 | 285 | 235 | 220 | 240 | 250 | 235 |
| NIPA federal sector |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Receipts | 2534 | 2281 | 2334 | 2541 | 2251 | 2237 | 2189 | 2230 | 2356 | 2361 | 2390 | 2417 | 2544 | 2582 | 2623 | 2667 |
| Expenditures | 3074 | 3348 | 3684 | 3855 | 3220 | 3506 | 3542 | 3537 | 3682 | 3719 | 3799 | 3837 | 3857 | 3857 | 3866 | 3901 |
| Consumption expenditures | 914 | 972 | 1040 | 1088 | 954 | 979 | 1001 | 1011 | 1031 | 1053 | 1066 | 1072 | 1087 | 1094 | 1100 | 1107 |
| Defense | 620 | 658 | 698 | 731 | 643 | 663 | 679 | 682 | 688 | 703 | 717 | 723 | 731 | 733 | 736 | 739 |
| Nondefense | 294 | 314 | 343 | 357 | 311 | 316 | 322 | 329 | 343 | 350 | 349 | 349 | 356 | 360 | 364 | 368 |
| Other spending | 2160 | 2375 | 2644 | 2766 | 2266 | 2527 | 2541 | 2526 | 2650 | 2666 | 2732 | 2766 | 2771 | 2763 | 2766 | 2795 |
| Current account surplus | -540 | -1066 | -1350 | -1313 | -969 | -1269 | -1354 | -1307 | -1326 | -1357 | -1408 | -1421 | -1314 | -1275 | -1243 | -1234 |
| Gross investment | 141 | 158 | 161 | 166 | 152 | 159 | 163 | 159 | 157 | 162 | 166 | 166 | 166 | 165 | 165 | 165 |
| Gross saving less gross investment ${ }^{3}$ | -563 | -1101 | -1376 | -1334 | -999 | -1304 | -1391 | -1336 | -1350 | -1383 | -1436 | -1447 | -1336 | -1295 | -1260 | -1247 |
| Fiscal indicators ${ }^{4}$ <br> High-employment (HEB) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| surplus/deficit | -496 | -761 | -961 | -985 | -681 | -911 | -967 | -907 | -925 | -973 | -1038 | -1063 | -975 | -955 | -946 | -960 |
| Change in HEB, percent of potential GDP | 1.9 | 1.6 | 1.1 | -0.1 | 1.2 | 1.5 | 0.3 | -0.4 | 0.1 | 0.3 | 0.4 | 0.1 | -0.6 | -0.2 | -0.1 | 0.0 |
| Fiscal impetus (FI), percent of GDP | 0.8 | 1.0 | 0.9 | -0.0 | 0.0 | 0.7 | 0.3 | 0.1 | 0.1 | 0.3 | 0.2 | 0.1 | -0.2 | -0.0 | -0.1 | -0.2 |
| Previous Greenbook | 0.8 | 1.0 | 0.9 | -0.0 | 0.0 | 0.7 | 0.3 | 0.1 | 0.2 | 0.3 | 0.2 | 0.1 | -0.2 | -0.0 | -0.1 | -0.1 | 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 item
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
 aggregate demand stimulus.
a--Actual

| Class II FOMC Restricted (FR) |  | Change in Debt of the Domestic Nonfinancial Sectors <br> (Percent) |  |  |  |  | April 21, 2010 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Households |  |  |  |  |  |
| Period ${ }^{1}$ | Total | Total | Home mortgages | Consumer credit | Business | State and local governments | Federal government | Nominal GDP |
| Year |  |  |  |  |  |  |  |  |
| 2004 | 8.9 | 11.0 | 13.4 | 5.6 | 6.3 | 7.3 | 9.0 | 6.4 |
| 2005 | 9.5 | 11.1 | 13.2 | 4.5 | 8.8 | 10.2 | 7.0 | 6.3 |
| 2006 | 9.0 | 10.0 | 11.0 | 4.1 | 10.7 | 8.3 | 3.9 | 5.4 |
| 2007 | 8.7 | 6.7 | 6.7 | 5.8 | 13.2 | 9.5 | 4.9 | 5.3 |
| 2008 | 6.0 | . 1 | -. 6 | 1.5 | 5.5 | 2.5 | 24.2 | . 1 |
| 2009 | 3.0 | -1.8 | -1.6 | -4.4 | -2.7 | 4.8 | 22.7 | . 7 |
| 2010 | 5.7 | . 4 | -. 1 | 1.1 | 1.9 | 4.0 | 20.5 | 4.6 |
| 2011 | 5.3 | 2.1 | . 7 | 6.7 | 3.1 | 3.5 | 13.2 | 5.3 |
| Quarter |  |  |  |  |  |  |  |  |
| 2008:1 | 5.6 | 3.1 | 2.6 | 4.6 | 8.1 | 3.9 | 8.1 | 1.0 |
| 2 | 3.3 | -. 0 | -. 6 | 3.5 | 6.6 | 1.8 | 5.9 | 3.5 |
| 3 | 8.3 | -. 6 | -2.5 | . 7 | 5.6 | 3.9 | 39.2 | 1.4 |
| 4 | 6.2 | -1.9 | -1.9 | -2.7 | 1.2 | . 2 | 37.0 | -5.4 |
| 2009:1 | 3.8 | -1.3 | -. 2 | -3.9 | -. 7 | 4.7 | 22.6 | -4.6 |
| 2 | 4.1 | -1.7 | -1.7 | -4.8 | -3.2 | 4.1 | 28.2 | -. 8 |
| 3 | 2.6 | -2.7 | -3.6 | -3.1 | -3.3 | 5.5 | 20.6 | 2.6 |
| 4 | 1.4 | -1.4 | -1.0 | -6.2 | -3.6 | 4.7 | 12.6 | 6.1 |
| 2010:1 | 5.1 | . 4 | . 5 | -1.5 | 1.6 | 3.6 | 18.5 | 4.0 |
| 2 | 6.7 | . 6 | . 2 | 1.0 | 2.0 | 4.1 | 23.8 | 4.6 |
| 3 | 5.5 | . 2 | -. 5 | 1.8 | 1.7 | 4.1 | 18.9 | 5.0 |
| 4 | 5.0 | . 5 | -. 5 | 3.3 | 2.4 | 4.0 | 15.2 | 4.9 |
| 2011:1 | 5.0 | 1.2 | . 0 | 4.6 | 2.8 | 3.5 | 13.3 | 5.1 |
| 2 | 5.7 | 2.0 | . 8 | 5.9 | 2.8 | 3.5 | 14.5 | 5.2 |
| 3 | 5.1 | 2.3 | . 8 | 7.3 | 3.1 | 3.4 | 11.4 | 5.5 |
| 4 | 5.3 | 2.7 | 1.0 | 8.3 | 3.5 | 3.4 | 11.2 | 5.6 |

[^12]1. Data after 2009:Q4 are staff projections. Changes are measured from end of the preceding period to end of period indicated except for annual nominal
GDP growth, which is calculated from Q 4 to Q 4 . 2.6.3 FOF
Class II FOMC
Flow of Funds Projections: Highlights

| Class II FOMC <br> Restricted (FR) | Flow of Funds Projections: Highlights <br> (Billions of dollars at seasonally adjusted annual rates except as noted) |  |  |  |  |  |  |  |  |  | April 21, 2010 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Category | 2008 | 2009 | 2010 | 2011 | 2009 |  | 2010 |  |  |  | 2011 |  |  |  |
|  |  |  |  |  | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Domestic nonfinancial sectors Net funds raised |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total | 1562.5 | 939.8 | 1786.3 | 1777.0 | 940.3 | 146.7 | 1577.0 | 2159.4 | 1772.3 | 1636.3 | 1633.9 | 1916.1 | 1724.5 | 1833.6 |
| Net equity issuance | -336.0 | -68.1 | -179.5 | -180.0 | 65.5 | -331.3 | -178.0 | -180.0 | -180.0 | -180.0 | -180.0 | -180.0 | -180.0 | -180.0 |
| Net debt issuance | 1898.5 | 1007.9 | 1965.8 | 1957.0 | 874.9 | 478.0 | 1755.0 | 2339.4 | 1952.3 | 1816.3 | 1813.9 | 2096.1 | 1904.5 | 2013.6 |
| Borrowing indicators |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Debt (percent of GDP) ${ }^{1}$ | 226.2 | 239.4 | 239.8 | 240.7 | 241.6 | 239.2 | 238.8 | 239.6 | 240.3 | 240.5 | 240.6 | 240.7 | 240.7 | 240.5 |
| Borrowing (percent of GDP) | 13.1 | 7.1 | 13.2 | 12.5 | 6.1 | 3.3 | 12.0 | 15.8 | 13.1 | 12.0 | 11.8 | 13.5 | 12.1 | 12.6 |
| Households |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net borrowing ${ }^{2}$ | 20.2 | -243.1 | 60.1 | 280.3 | -366.1 | -193.1 | 51.0 | 83.3 | 33.0 | 72.8 | 158.8 | 277.1 | 317.1 | 368.2 |
| Home mortgages | -62.2 | -168.2 | -7.7 | 66.8 | -376.8 | -100.7 | 51.3 | 20.5 | -51.4 | -51.3 | 0.0 | 82.0 | 82.2 | 102.9 |
| Consumer credit | 38.8 | -115.3 | 28.3 | 167.0 | -79.5 | -155.5 | -36.7 | 24.4 | 44.1 | 81.4 | 114.6 | 148.9 | 187.3 | 217.2 |
| Debt/DPI (percent) ${ }^{3}$ | 127.3 | 125.0 | 120.6 | 117.1 | 124.6 | 122.9 | 122.2 | 121.4 | 120.1 | 118.8 | 118.4 | 117.4 | 116.5 | 115.6 |
| Business |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Financing gap ${ }^{4}$ | 232.4 | -113.6 | -66.1 | 6.0 | -204.6 | -58.9 | -69.1 | -91.3 | -59.6 | -44.6 | -18.5 | -10.3 | 19.3 | 33.7 |
| Net equity issuance | -336.0 | -68.1 | -179.5 | -180.0 | 65.5 | -331.3 | -178.0 | -180.0 | -180.0 | -180.0 | -180.0 | -180.0 | -180.0 | -180.0 |
| Credit market borrowing | 584.8 | -301.5 | 211.9 | 346.6 | -371.6 | -393.5 | 173.1 | 217.4 | 190.0 | 266.9 | 316.2 | 319.6 | 354.2 | 396.5 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net borrowing | 54.3 | 108.7 | 94.3 | 85.7 | 127.8 | 108.7 | 83.9 | 97.7 | 97.7 | 97.7 | 85.7 | 85.7 | 85.7 | 85.7 |
| Current surplus ${ }^{5}$ | 212.7 | 243.8 | 281.4 | 264.2 | 258.0 | 261.2 | 261.4 | 269.3 | 293.4 | 301.4 | 287.5 | 275.9 | 245.4 | 248.2 |
| Federal government |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net borrowing | 1239.2 | 1443.9 | 1599.6 | 1244.4 | 1484.9 | 955.8 | 1447.0 | 1941.0 | 1631.5 | 1378.9 | 1253.2 | 1413.6 | 1147.4 | 1163.2 |
| Net borrowing (n.s.a.) | 1239.2 | 1443.9 | 1599.6 | 1244.4 | 378.7 | 261.4 | 477.7 | 339.2 | 415.9 | 366.7 | 429.3 | 207.4 | 294.9 | 312.8 |
| Unified deficit (n.s.a.) | 680.5 | 1471.3 | 1382.9 | 1224.4 | 329.4 | 388.1 | 328.9 | 292.5 | 349.5 | 412.0 | 439.3 | 182.4 | 279.9 | 322.8 |
| Depository institutions |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Funds supplied | 407.6 | -643.4 | 750.6 | 270.7 | -1001.3 | -550.8 | 1649.7 | 1157.1 | 86.0 | 109.4 | 419.5 | 197.9 | 266.9 | 198.3 |

[^13]
## Class II FOMC-Restricted (FR)

## International Developments

Average foreign GDP growth appears to have been stronger in the first quarter than we had anticipated, largely reflecting robust growth in several emerging Asian economies. Going forward, the foreign growth projection is little changed on balance, as greater momentum in emerging Asia is offset by the drag from deepening fiscal concerns in Europe. Debt sustainability issues in Greece and some other euro-area countries continue to represent notable downside risks to the outlook.

Our projection for foreign inflation is little changed, on net, as a somewhat higher path for prices of oil and other commodities has been accompanied by indications of lower core inflation. We continue to project that inflation abroad will ease from current elevated rates to about 2 percent by the second half of this year, as the boosts from energy and food price increases moderate.

## Summary of Staff Projections

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

| Indicator | 2009 |  | Projection |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | H1 | H2 | 2010 |  |  | 2011 |
|  |  |  | Q1 | Q2 | H2 |  |
| Foreign output | -3.7 | 4.4 | 4.5 | 3.7 | 3.8 | 3.8 |
| Previous Greenbook | -3.6 | 4.4 | 3.6 | 3.7 | 3.7 | 3.9 |
| Foreign consumer prices | . 2 | 2.3 | 3.4 | 2.5 | 2.1 | 2.1 |
| Previous Greenbook | . 1 | 2.2 | 3.4 | 2.5 | 2.0 | 2.1 |
|  | Contribution to growth (percentage points) |  |  |  |  |  |
| U.S. net exports | 2.1 | -. 3 | -. 2 | . 1 | -. 2 | . 0 |
| Previous Greenbook | 2.1 | -. 3 | -. 1 | . 0 | -. 2 | -. 1 |

Note: Change for year measured as Q4/Q4; half-years are Q2/Q4 or Q4/Q2.
We estimate that the contribution of net exports to U.S. real GDP growth was slightly negative in the first quarter as imports expanded at about the same pace as exports but imports grew off a larger base. In the current quarter, net exports make a slight positive contribution as imports are held back by a decline in oil imports. Thereafter, we expect the contribution to be roughly neutral, as export growth slightly outpaces import growth.

Overall, our net export projection is a shade higher than in the previous Greenbook, reflecting a slightly lower path of the dollar in this forecast.

## International Financial Markets

Asset price movements in most foreign financial markets appeared to reflect growing confidence that the global recovery is gaining momentum, particularly in emerging market economies. Equity indexes rose in most countries, implied volatilities remained low, and emerging-market risk spreads generally declined. However, Greek sovereign debt came under further pressure despite the announcement by the European Union (EU) that it was negotiating a substantial package of financial assistance for Greece.

The trade-weighted value of the dollar, as measured by the staff's broad nominal index, has declined about $3 / 4$ percent, on net, since the March Greenbook, as gains against the euro and yen were outweighed by declines against the Canadian dollar and most emerging market currencies. The dollar appreciated about 1 percent versus the euro, which was buffeted daily by news about the fiscal situation in Greece, and nearly 4 percent against the yen as Japanese investors reportedly sought to invest in higheryielding foreign assets. In contrast, the dollar depreciated 2 percent or more against the Canadian dollar, the Mexican peso, and the Brazilian real. Chinese authorities still have not allowed the renminbi spot exchange rate to fluctuate meaningfully against the dollar, but there have been widespread expectations among market participants that China would soon let the renminbi appreciate, particularly in light of China's strong GDP data for the first quarter. We continue to assume that the Chinese authorities will begin to allow a gradual appreciation starting this quarter, with the pace rising to 6 percent by the end of this year.

The broad real dollar is now about 1 percent lower than in the March Greenbook. We project that the broad real dollar will depreciate at an average annual pace of about $31 / 2$ percent over the forecast period, slightly faster than we had projected in March, as we have increased the dollar's expected rate of depreciation against Asian currencies other than the Chinese renminbi, in line with the continued strong recoveries of those economies.

Despite continued efforts by euro-area countries to marshal financial support for Greece, spreads of Greek sovereign debt over German debt began to rise again in the second half of March. In early April, ten-year spreads rose above 400 basis points. These spreads then fell after the EU's announcement on April 11 that it was working on a potential
assistance package of up to $€ 45$ billion to be funded by bilateral loans from euro-area countries and the IMF. Subsequently, however, as it became clear that parliamentary approval for the aid would be required in several potential donor countries, spreads on Greek sovereign debt rose again, breaching 500 basis points today. On net over the period, ten-year Greek sovereign spreads increased 210 basis points. The debt spreads of most other "peripheral" euro-area countries showed only a modest response to gyrations in Greek debt, with the exception of Portuguese debt spreads, which rose 80 basis points over the period.

EMBI spreads declined moderately in all regions, as the Greek situation did not lead to a widespread pullback from risk. Ten-year sovereign yields in Germany and other "core" euro-area countries were little changed on balance, as were U.K. and Japanese yields.

Recent data on international financial transactions show that acquisitions of U.S. Treasury securities by foreign official institutions remained strong during the first quarter and that foreign official purchases continued to account for the major share of net financial inflows. However, private foreign investors continued to sell U.S. corporate bonds, on net, and their purchases of other U.S. assets were mixed.

## Advanced Foreign Economies

We estimate that economic growth in the advanced foreign economies (AFEs) slowed a touch to $2 \frac{1}{2}$ percent in the first quarter. February export data suggest that the rebound in global trade has remained an important driver of the recovery in all the major AFEs. By contrast, indicators of domestic demand were mixed across economies. In Canada, household spending rebounded forcefully, with robust real retail sales and near-record residential investment growth. In Japan, business confidence continued to improve, but other indicators, such as housing starts, suggest that the recovery remains fragile. In the euro area, industrial production moved up strongly, but indicators of household demand remained weak.

Going forward, continued improvement in PMIs and industrial production point to further recovery across the AFEs, and we project GDP growth in those countries to rise gradually toward 3 percent by 2011. On balance, this forecast is marginally lower than in the previous Greenbook, as a more positive outlook for Canada is offset by weaker euroarea growth, owing to the intensification of financial turmoil in Greece. We expect that the continued turmoil will weigh on financial conditions and confidence in the euro area and will force Greece, Portugal, and Spain to intensify their fiscal consolidation efforts.

## Credit Exposure of European Banking Systems to Greece

The European banking system has sizable credit exposure to residents of Greece. The accompanying table reports the total of balance-sheet and contingent credit exposure of banks in selected European countries to residents of Greece and several other southern European countries as of end-December 2009. Of the $\$ 238$ billion in total exposure of Western European banks to Greece, the French banking system has claims of almost $\$ 100$ billion, suggesting that it could be weakened significantly in the event of a Greek sovereign default that is accompanied by a sharp economic downturn and widespread defaults by private Greek borrowers.

Under a worst-case scenario in which the Greek government and all other Greek counterparties default on their debts and recoveries are zero, the French banking system as a whole would suffer from a loss of onethird of its aggregate Tier 1 capital, and some banks could be somewhat undercapitalized. (However, such losses would amount to only 4 percent of French GDP.) European banking systems in aggregate have total exposure amounting to 11 percent of their aggregate Tier 1 capital. Nevertheless, most of their exposure is to the Greek non-bank private sector. Assuming that only the Greek sovereign were to default, the maximum losses to European banks would average 4 percent of total Tier 1 capital, and losses to French banks would be limited to 10 percent of Tier 1 capital.

One avenue for contagion from a Greek default is capital flight from countries in similar situations, which could then induce liquidity problems and defaults in these other countries as well. If the sovereigns and private borrowers of Portugal and Spain were to follow Greece into default, then many major European banking systems would be severely affected, including banks in Germany and the Netherlands. On the other hand, if losses were incurred on only the sovereign debt of these three countries, then the aggregate Tier 1 capital of European banks would at most decline only 7 percent.

Another avenue for contagion from a Greek default is uncertainty about the distribution of large European banks' exposure to Greece. Data on individual banks' exposure to all Greek residents and on individual banking system's exposures to the Greek public sector are generally unavailable. Thus, a default by Greece has the potential to cause liquidity problems at some major European banks-especially those that are more reliant on market funding-as a Greek default may cause investors to shy away from lending to European banks more generally.

| Banking System Credit Exposure to Greece, Portugal, Spain, and Italy (as of end-December 2009, in billions of U.S. dollars and percent of Tier 1 capital) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Banking <br> Systems of: | Greece |  | Portugal |  | Spain |  | Total |  | Memo: Italy |  |
|  |  | Percent of Tier 1 |  | Percent of Tier |  | Percent of Tier 1 |  | Percent of Tier 1 |  | Percent of Tier 1 |
| France | 98 | 33 | 51 | 17 | 248 | 83 | 398 | 133 | 580 | 194 |
| Germany | 45 | 13 | 47 | 14 | 238 | 71 | 330 | 98 | 190 | 56 |
| Netherlands | 13 | 8 | 15 | 10 | 127 | 81 | 155 | 99 | 77 | 49 |
| Spain | 1 | 1 | 110 | 38 | -- | -- | 111 | 39 | 58 | 20 |
| Switzerland | 20 | 19 | 5 | 5 | 31 | 30 | 57 | 55 | 39 | 37 |
| United Kingdom | 20 | 5 | 32 | 8 | 139 | 35 | 190 | 48 | 104 | 26 |
| Western Europe | 238 | 11 | 285 | 13 | 935 | 43 | 1,457 | 67 | 1,165 | 54 |
| Memo: |  |  |  |  |  |  |  |  |  |  |
| United States | 44 | 5 | 38 | 4 | 177 | 18 | 259 | 26 | 278 | 28 |

Note: Credit exposure is total balance sheet and contingent credit exposures to residents of selected southern European countries of banks headquartered in countries that compile the BIS consolidated banking statistics. Specifically, credit exposure consists of cross-border claims, foreign-office claims on local residents, counterparty credit exposure from derivatives contracts, the notional value of credit derivatives sold on foreign reference entities, and undrawn credit commitments. Balance sheet exposures are adjusted for third-party guarantees and liquid collateral. For Germany and some other countries included in the Western Europe total, derivatives exposures, credit derivatives sold, and unused credit commitments are not included because the data are unavailable.
Bank capital is Tier 1 capital of domestic banks. Tier 1 capital is estimated for Spain from capital and reserves. For Germany, Tier 1 capital of all banks is used.
Source: BIS consolidated banking statistics.

All told, we think the crisis in Greece and its spillovers will hold down output growth in the euro area by roughly $1 / 2$ percentage point this year and next. At this point, we assume that the transportation and trade disruptions caused by the Icelandic volcano will have only a minimal impact on European GDP.

The effect on consumer prices of the recent run-up in oil and commodity prices has been larger than previously anticipated. This surprise, however, has been partly offset by weak readings on core inflation in the euro area and Japan. All told, for the first quarter, we estimate that consumer prices in the AFEs rose at a 2 percent annual pace, only a bit above the projection in the March Greenbook. Going forward, with energy prices leveling off, we forecast a decline in headline inflation, as persistently large output gaps keep core inflation subdued. AFE inflation falls to $1 \frac{1}{4}$ percent in the second quarter and stays near 1 percent for the remainder of the forecast period.

We assume that all major central banks, except the Bank of Japan (BOJ), will begin tightening monetary policy this year or next. We now forecast that the Bank of Canada (BOC) will begin to tighten in the third quarter, one quarter earlier than assumed in March. At its April meeting, the BOC removed its conditional commitment, introduced a year ago, to keep its policy rate at 0.25 percent through the end of this quarter. In response, market participants increased the odds they place on a near-term rate hike. We continue to expect the Bank of England to start raising its policy rate at the beginning of 2011 and the European Central Bank (ECB) to move in the third quarter of next year, after allowing the overnight interbank rate to rise gradually toward its 1 percent policy rate. We expect the BOJ to maintain its target rate near zero for this year and next. Despite persistent pressure on the BOJ from the Japanese government, we have not built in a significant step-up in the central bank's purchases of Japanese government securities nor have we included any major augmentation of other accommodative policies.

We assume that governments in the AFEs will begin to implement their fiscal consolidation plans over the forecast period. Accordingly, we anticipate that fiscal measures, after having contributed an estimated $41 / 2$ percentage points to GDP growth in 2009 (including automatic stabilizers), will add only about $1 / 2$ percentage point to AFE growth in 2010 and then subtract $11 / 4$ percentage points in 2011.

## Staff Projections for Foreign GDP Growth by Region

(Percent change from end of previous period, annual rate)

| Indicator | 2009 |  | Projection |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | H1 | H2 | 2010 |  |  | 2011 |
|  |  |  | Q1 | Q2 | H2 |  |
| Advanced foreign economies | -4.8 | 1.9 | 2.6 | 2.5 | 2.6 | 2.9 |
| Previous Greenbook | -4.8 | 2.0 | 2.4 | 2.5 | 2.8 | 3.0 |
| Emerging market economies | -2.2 | 7.7 | 6.9 | 5.1 | 5.2 | 5.0 |
| Previous Greenbook | -2.0 | 7.7 | 5.3 | 5.1 | 5.0 | 5.0 |

Note: Change for year measured as Q4/Q4; half-years are Q2/Q4 or Q4/Q2.

## Emerging Market Economies

We estimate that first-quarter real GDP growth in the emerging market economies (EMEs) continued at its fourth-quarter pace of about 7 percent, as an estimated step-up in emerging Asian growth was offset by slower growth in Latin America. The growth estimate for the first quarter is $13 / 4$ percentage points above that in the March Greenbook, reflecting in large part surprisingly strong growth in Singapore and China. We still project EME growth to slow in the current quarter and to average about 5 percent for the remainder of the forecast period. The growth outlook for the rest of this year is a bit higher than our forecast in March, primarily reflecting greater momentum in Asia.

The Chinese economy continued to grow rapidly. The recent GDP release points to growth of $11 \frac{1}{4}$ percent at an annual rate in the first quarter, the fourth consecutive quarter of double-digit growth. Exports expanded rapidly, but robust domestic demand fueled an even greater increase in imports, resulting in a reduction of the trade surplus in the first quarter to its lowest level since 2005. With more underlying momentum than we had expected, Chinese growth for the rest of this year is now seen to be $3 / 4$ percentage point higher than in the March Greenbook. However, we still anticipate that, as a result of policy tightening measures, growth will slow to $81 / 2$ percent in 2011.

We estimate that activity boomed in the rest of emerging Asia as well in the first quarter. In India, various indicators suggest that real GDP rose sharply following a droughtinduced decline in the fourth quarter. A rebound in the volatile biomedical industry boosted Singapore's GDP growth to a jaw-dropping annual rate of 32 percent in the first

## The Bank of Japan's Exit from Quantitative Easing

This box and the charts on the next page review the experience of the Bank of Japan (BOJ) as it exited from its quantitative easing policy (QEP) in 2006. The BOJ drained reserves from the banking system before raising its policy rate target, reducing the size of its balance sheet to pre-QEP levels within a year. This was primarily achieved by ceasing to purchase short-term bills and letting previously acquired securities mature.

The Bank of Japan officially began QEP in March 2001, although the several years of very low interest rates preceding QEP were also associated with large balance sheet increases. (See top left panel.) The expansion of the BOJ's balance sheet during QEP was achieved through increased holdings of government securities (top right panel), purchases of private short-term bills from financial institutions (bottom left panel), and, to a much lesser extent, purchases of equities (bottom right panel).

At the end of QEP, Governor Fukui expressed concerns over the size of the Bank's balance sheet and also that QEP had impaired the money market, shutting down the activity of many money-market brokers and dealers.

Starting in March 2006, the BOJ decided to exit QEP and subsequently reduced the size of its balance sheet. By March 2007, total assets held by the BOJ had fallen by just over 20 percent, reaching their pre-QEP level of March 2001, with most of the decline occurring by July 2006, before increases in the policy rate had begun. The decline was split roughly evenly between holdings of government bonds and of financing bills purchased from banks; it was achieved by
allowing both types of assets to mature and roll off the balance sheet rather than through outright sales.

The size of the BOJ's balance sheet has not fallen further since 2007. One reason has been the fairly fragile recovery in the post-QEP era, during which deflation never fully abated. Accordingly, the BOJ continued to maintain a low-interest-rate policy, leading money demand to remain elevated. In particular, the long period of low interest rates may have induced households and businesses to adopt more cash-intensive practices.

As previously purchased bonds matured, the BOJ's holdings of longer-term securities shrank through the end of 2008, but the decline in holdings was slowed by continued sizable monthly purchases of government bonds, purchases that continue up through the present.

The exit from QEP in March 2006 had, at most, a modest effect on interest rates and equity prices. The BOJ did not raise its policy rate until July 2006, in a move from 0 to $1 / 4$ percent, after it substantively lowered bank reserves. Ten-year bond rates (top right panel), after falling to 1.2 percent in late 2005, subsequently began to rise, either in anticipation of the end of QEP or in response to positive economic news, but by March 2006 they topped out at just 1.5 percent. The threemonth Treasury bill rate (middle right panel) also began to increase early in 2006, as markets began to expect an increase in the policy rate.

## Bank of Japan Assets


quarter, which, if the advance release is confirmed, would be the highest quarterly growth rate on record. Indicators, such as March PMI readings, suggest that activity in other Asian countries also remained robust, boosted by demand for exports, particularly in the high-tech industry, and by improving domestic demand. All told, we estimate that real GDP growth in emerging Asian economies excluding China was $101 / 4$ percent in the first quarter; we see it moving down to about 5 percent over the rest of the forecast period, as Singapore's growth falls back, the cyclical rebound wanes, and governments in the region withdraw policy support.

In Latin America, Mexican real GDP growth is estimated to have moderated to an annual rate of $41 / 2$ percent in the first quarter from the rapid pace of the fourth quarter, largely reflecting slower growth in manufacturing. In the second half of this year, we expect Mexican growth to step down a bit further, to about 4 percent, consistent with the contour for U.S. industrial production. The Brazilian economy continued to expand at a robust clip in the first quarter, with industrial production and employment climbing steadily, boosted by rapid credit growth. We anticipate a slowing to a more sustainable pace over the forecast period.

Headline inflation in the EMEs increased in the first quarter to an annual rate of $43 / 4$ percent, in line with the March Greenbook projection. The increase was driven primarily by a popup in Mexican inflation, which reflected, in part, sharp tax increases. Inflationary pressures remained strong in Brazil as well. In contrast, average inflation in Asia slowed in the first quarter. We continue to expect that EME inflation will step down to about 3 percent by the end of the year and stay at that rate next year.

## Commodity Prices

Oil prices have edged higher since the time of the March Greenbook. The spot price of West Texas Intermediate (WTI) crude oil closed on April 20 at $\$ 83$ per barrel, up about $\$ 1.50$ from the time of the March Greenbook. Prices of futures contracts dated for delivery through the end of next year have moved up by more, although the far-dated futures price is largely unchanged at about $\$ 96$ per barrel. The upward movement in oil prices broadly mirrors gains in global equity markets and appears to reflect the view that the global recovery is on firmer footing. Indeed, recent data show that oil demand in emerging market economies, particularly China, has exceeded earlier expectations. Consistent with futures prices, we project that the spot price of WTI will rise to over $\$ 90$ per barrel by the end of 2011, about $\$ 4$ higher than in the March Greenbook.

Sharp price increases for lumber and metals have led us to revise up our forecast for nonfuel commodity price inflation in the second quarter. Lumber prices rose as builders reportedly began to restock inventories, which had been low, against a backdrop of substantially reduced output from North American mills. Prices for metals also increased in response to strong demand. Inventory levels as tracked by the London Metals Exchange dropped for several important metals, including copper and nickel. By contrast, food prices changed relatively little in recent months. Consistent with quotes from futures markets, we project nonfuel commodity prices to show only modest growth of $11 / 2$ percent, on average, through the remainder of the forecast period.

## Prices of Internationally Traded Goods

Core import prices are estimated to have risen at an annual rate of 4 percent in the first quarter of 2010 , boosted by rising commodity prices. We project that core import prices will decelerate to 2 percent later this year and to $1 \frac{1}{4}$ percent by 2011, as commodity prices level off and the dollar depreciates only moderately. This represents a modestly higher path of core price inflation than in the March Greenbook.

After increasing at an estimated $63 / 4$ percent pace in the first quarter, core export prices are projected to increase 4 percent in the current quarter. The slowdown, in part, reflects the recent flattening out of agricultural prices. Thereafter, as commodity prices stabilize, we expect export price inflation to fall to about $1 \frac{1}{2}$ percent in 2011. Because of higher prices for nonfuel intermediate inputs, the projection for the current quarter is 1 percentage point higher than in the previous Greenbook.

Staff Projections of Selected Trade Prices
(Percent change from end of previous period, annual rate, except as noted)

| Trade category | 2009 |  | Projection |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | H1 | H2 | 2010 |  |  | 2011 |
|  |  |  | Q1 | Q2 | H2 |  |
| Imports |  |  |  |  |  |  |
| Core goods | -5.9 | 2.9 | 4.0 | 2.9 | 2.0 | 1.2 |
| Previous Greenbook | -5.9 | 3.0 | 4.2 | 2.2 | 1.5 | 1.1 |
| Oil (dollars per barrel) | 53.71 | 71.92 | 75.77 | 80.26 | 83.19 | 85.60 |
| Previous Greenbook | 53.71 | 71.94 | 75.86 | 79.62 | 80.55 | 81.85 |
| Exports |  |  |  |  |  |  |
| Core goods | -5.3 | 5.4 | 6.7 | 4.0 | 2.7 | 1.4 |
| Previous Greenbook | -5.3 | 5.4 | 8.6 | 3.1 | 2.0 | 1.3 |

Note: Prices for core exports exclude computers and semiconductors. Prices for core imports exclude computers, semiconductors, oil, and natural gas. Both prices are on a national income and product account chain-weighted basis.

The price of imported oil for multi-quarter periods is the price for the final quarter of the period. Imported oil includes both crude oil and refined.

## Trade in Goods and Services

After exceptional growth in the second half of 2009, imports and exports declined in January and then bounced back in February, leaving their levels little changed from December. Nonetheless, we estimate that real exports grew at an annual rate of $83 / 4$ percent in the first quarter, boosted by the quarterly arithmetic of a sharp December gain. Exports are expected to expand at a robust 9 percent pace in the remainder of 2010 and 2011, supported by solid foreign growth and prior declines in the dollar. We revised export growth down in the first quarter to reflect the weak monthly trade data but up in the remainder of 2010 and 2011 because of the lower path of the dollar.

Real imports are estimated to have grown at an annual rate of 8 percent in the first quarter, also reflecting a steep increase in December, and are expected to expand at an average rate of about $71 / 2$ percent for the remainder of this year and in 2011. As with exports, the cyclical rebound in imports plays an ongoing though diminishing role over the remainder of the forecast period. Thus, projected growth in imports does not pick up in line with the projected rise in U.S. GDP growth. We marked down our forecast for the first quarter in response to weak data, but the projection thereafter is little changed as the lower dollar balances stronger U.S. growth.

## Staff Projections for Trade in Goods and Services

(Percent change from end of previous period, annual rate)

| Measure | 2009 |  | Projection |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | H1 | H2 | 2010 |  |  |  |
|  |  |  | Q1 | Q2 | H2 |  |
| Real exports | -18.1 | 20.3 | 8.7 | 8.8 | 9.4 | 9.1 |
| $\quad$ Previous Greenbook | -18.1 | 20.1 | 9.9 | 8.4 | 9.0 | 8.7 |
| Real imports | -26.3 | 18.5 | 7.9 | 6.2 | 8.5 | 7.4 |
| $\quad$ Previous Greenbook | -26.3 | 18.2 | 8.6 | 6.5 | 8.5 | 7.7 |

Note: Change for year measured as Q4/Q4; half-years are Q2/Q4 or Q4/Q2.

## Alternative Scenarios

We used the SIGMA model to examine the effects on the United States of a scenario in which fiscal stress in Greece and other vulnerable euro-area countries precipitates broader financial turmoil in Europe. ${ }^{1}$ In this scenario, the level of European GDP falls about 2 percentage points below baseline by the end of 2010 and $31 / 2$ percentage points by the end of 2011, as a result of shocks to aggregate demand and sharp increases in government and corporate financing spreads. ${ }^{2}$ Such developments would likely trigger safe-haven flows toward the dollar. Accordingly, our simulation also incorporates a shock to the exchange-rate risk premium, so that the broad real dollar appreciates about 9 percent by the end of 2010 before gradually returning to baseline.

In response to these shocks, U.S. real GDP growth falls 1.3 percentage points below baseline in 2010:H2 and 0.7 percentage point in 2011, as the higher dollar reduces foreign demand for U.S. exports and boosts imports. The effects on the U.S. economy of these combined shocks are amplified because they extend by 3 quarters the period during which the federal funds rate remains at zero. Expected inflation declines in this scenario, which raises real interest rates relative to baseline and causes domestic demand to contract. U.S. core PCE inflation falls 0.9 percentage point below baseline in 2010:H2 and 0.4 percentage point in 2011. The nominal trade balance as a percent of GDP deteriorates 1 percentage point in 2011 in response to the stronger dollar and weaker European activity.

[^14]Such a severe European downturn could significantly weaken confidence in the strength of the global recovery and cause larger negative spillover effects on other economies than those incorporated above. Accordingly, we analyze a second scenario in which the financial distress in Europe is accompanied by negative demand shocks in our other foreign trading partners. In this second scenario, the level of foreign GDP falls about 1 percent more relative to baseline by end-2011 than in the first scenario. Because the federal funds rate is pinned at zero, the additional foreign shocks have significantly larger effects on the U.S. economy than under normal conditions. U.S. real GDP growth falls 1.7 percentage points below baseline in 2010:H2 and 1 percentage point in 2011. U.S. core PCE inflation falls 1.1 percentage points below baseline in 2010:H2 and 0.5 percentage point in 2011.

## Alternative Scenarios: <br> Financial Distress in Europe

(Percent change from previous period, annual rate, except as noted)

| Indicator and simulation | 2010 |  | 2011 |  | 2012 | 2013-14 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | H1 | H2 | H1 | H2 |  |  |
| U.S. real GDP |  |  |  |  |  |  |
| Baseline | 3.2 | 3.7 | 4.1 | 4.7 | 4.7 | 3.9 |
| Financial Distress in Europe | 2.9 | 2.4 | 3.1 | 4.4 | 4.8 | 4.0 |
| With Additional Spillover Abroad | 2.9 | 2.0 | 2.7 | 4.2 | 4.8 | 4.1 |
| U.S. PCE prices excluding food and energy |  |  |  |  |  |  |
| Baseline | . 7 | 1.0 | 1.0 | . 9 | 1.1 | 1.4 |
| Financial Distress in Europe | . 2 | . 1 | . 5 | . 6 | . 9 | 1.2 |
| With Additional Spillover Abroad | . 1 | -. 1 | . 4 | . 5 | . 8 | 1.2 |
| U.S federal funds rate (percent) |  |  |  |  |  |  |
| Baseline | . 1 | . 1 | . 1 | . 1 | 1.4 | 3.6 |
| Financial Distress in Europe | . 1 | . 1 | . 1 | . 1 | . 4 | 3.0 |
| With Additional Spillover Abroad | . 1 | . 1 | . 1 | . 1 | . 3 | 2.8 |
| U.S. trade balance (percent share of GDP) |  |  |  |  |  |  |
| Baseline | -3.2 | -3.2 | -3.2 | -3.1 | -3.0 | -2.7 |
| Financial Distress in Europe | -3.7 | -4.4 | -4.3 | -4.1 | -3.8 | -3.2 |
| With Additional Spillover Abroad | -3.7 | -4.5 | -4.5 | -4.3 | -4.0 | -3.2 |

Note: H1 is Q2/Q4; H2 is Q4/Q2. U.S. real GDP and U.S. PCE prices are the average rates over the period. The federal funds rate and the trade balance are the values for the final quarter of the period.

## Evolution of the Staff Forecast

## Current Account Balance



Foreign Real GDP


Core Import Prices*

*Prices for merchandise imports excluding computers, semiconductors, oil, and natural gas.


[^15]Class II FOMC
Restricted (FR)

| Total Foreign | 2.8 | 3.8 | 4.1 | 3.9 | 4.2 | -0.9 | 0.3 | 3.9 | 3.8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Advanced Foreign Economies of which: | 1.7 | 2.6 | 2.8 | 2.5 | 2.5 | -1.7 | -1. 5 | 2.6 | 2.9 |
| Canada | 1.5 | 3.7 | 3.1 | 1.9 | 2.8 | -1.0 | -1.2 | 3.6 | 3.8 |
| Japan | 2.4 | 1.1 | 2.9 | 2.0 | 1.7 | -4.3 | -1.4 | 2.1 | 1.9 |
| United Kingdom | 3.2 | 2.4 | 2.4 | 2.8 | 2.4 | -2.1 | -3.1 | 2.3 | 2.8 |
| Euro Area (2) | 1.2 | 1.8 | 2.1 | 3.4 | 2.2 | -1.9 | -2.2 | 1.5 | 1.9 |
| Germany | 0.1 | 0.2 | 1.6 | 4.3 | 1.6 | -1.8 | -2.4 | 1.6 | 2.2 |
| Emerging Market Economies | 4.4 | 5.6 | 5.9 | 5.8 | 6.5 | 0.1 | 2.6 | 5.6 | 5.0 |
| Asia | 6.9 | 6.0 | 7.7 | 7.2 | 8.3 | 0.4 | 6.9 | 7.2 | 6.1 |
| Korea | 3.6 | 2.7 | 5.2 | 4.6 | 5.7 | -3.2 | 6.1 | 4.1 | 4.3 |
| China | 10.3 | 9.9 | 10.3 | 10.9 | 12.4 | 7.0 | 10.8 | 9.7 | 8.6 |
| Latin America | 1.7 | 5.1 | 4.0 | 4.6 | 4.6 | -0.4 | -1.0 | 4.2 | 3.9 |
| Mexico | 1.2 | 4.6 | 3.5 | 3.8 | 3.8 | -1.2 | -2.4 | 4.4 | 3.9 |
| Brazil | 0.8 | 5.1 | 3.5 | 4.8 | 6.7 | 0.8 | 4.3 | 5.4 | 4.2 |
| CONSUMER PRICES (3) |  |  |  |  |  |  |  |  |  |
| Total Foreign | 2.1 | 2.8 | 2.3 | 2.1 | 3.7 | 3.4 | 1. 2 | 2.5 | 2.1 |
| Advanced Foreign Economies of which: | 1.3 | 1.8 | 1.6 | 1.4 | 2.2 | 2.0 | 0.2 | 1.4 | 1.2 |
| Canada | 1.7 | 2.3 | 2.3 | 1.4 | 2.5 | 1.9 | 0.8 | 2.2 | 2.0 |
| Japan | -0.3 | 0.5 | -1.0 | 0.3 | 0.6 | 1.0 | -2.0 | -1.0 | -0.8 |
| United Kingdom (4) | 1.3 | 1.4 | 2.1 | 2.7 | 2.1 | 3.9 | 2.1 | 2.9 | 1.8 |
| Euro Area (2) | 2.0 | 2.3 | 2.3 | 1.8 | 2.9 | 2.3 | 0.4 | 1.3 | 1.2 |
| Germany | 1.1 | 2.1 | 2.2 | 1.3 | 3.1 | 1.7 | 0.3 | 1.1 | 1.1 |
| Emerging Market Economies | 3.1 | 3.9 | 3.0 | 2.9 | 5.1 | 4.6 | 2.2 | 3.7 | 3.1 |
| Asia | 2.3 | 3.1 | 2.6 | 2.3 | 5.5 | 3.7 | 1.3 | 3.0 | 2.6 |
| Korea | 3.5 | 3.4 | 2.5 | 2.1 | 3.4 | 4.5 | 2.4 | 2.6 | 2.4 |
| China | 2.7 | 3.2 | 1.4 | 2.1 | 6.6 | 2.6 | 0.6 | 2.8 | 2.5 |
| Latin America | 4.9 | 5.6 | 3.7 | 4.1 | 4.2 | 6.6 | 4.0 | 5.5 | 4.1 |
| Mexico | 3.9 | 5.3 | 3.1 | 4.1 | 3.8 | 6.2 | 4.0 | 5.3 | 3.7 |
| Brazil | 11.5 | 7.2 | 6.1 | 3.2 | 4.3 | 6.2 | 4.2 | 5.4 | 4.5 |


Class II FOMC
Restricted (FR)
OUTLOOK FOR U.S. INTERNATIONAL TRANSACTIONS

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | $2009$ | $\begin{array}{r} \text { Projec } \\ 2010 \end{array}$ | ------ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NIPA REAL EXPORTS and IMPORTS |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Net Goods \& Services | -0.1 | -0.9 | -0.2 | 0.4 | 1.0 | 0.7 | 1.0 | -0.1 | -0.0 |
| Exports of G\&S | 0.6 | 0.7 | 0.7 | 1.1 | 1.2 | -0.4 | -0.1 | 1. 1 | 1. 1 |
| Imports of $G \& S$ | -0.7 | -1.6 | -0.8 | -0.7 | -0.2 | 1.2 | 1.0 | -1.2 | -1.2 |
| Percentage change, Q4/Q4 |  |  |  |  |  |  |  |  |  |
| Exports of G\&S | 6.2 | 7.1 | 6.7 | 10.2 | 10.2 | -3. 4 | -0.7 | 9.1 | 9.1 |
| Services | 4.3 | 9.1 | 3.6 | 12.0 | 13.0 | -3.5 | -1.6 | 6.2 | 7.3 |
| Computers | 11.3 | 5.8 | 14.2 | 8.4 | 1.3 | -2.4 | 6.6 | 17.0 | 9.5 |
| Semiconductors | 38.3 | -6.0 | 17.6 | 2.1 | 29.1 | -12.7 | 21.7 | 13.1 | 11.0 |
| Core Goods 1/ | 4.8 | 7.2 | 7.2 | 9.9 | 8.4 | -3.1 | -1.3 | 10.1 | 9.9 |
| Imports of G\&S | 5.1 | 10.9 | 5.2 | 4.1 | 0.9 | -6. 8 | -6.6 | 7.8 | 7.4 |
| Services | 3.3 | 8.8 | 2.3 | 7.1 | 2.0 | 0.2 | -3.7 | 6.0 | 6.1 |
| Oil | 1. 3 | 10.7 | 1.3 | -8.2 | 0.0 | 0.3 | -16.8 | -2.2 | 0.1 |
| Natural Gas | 1.3 | 4.9 | 13.7 | -10.1 | 13.4 | -24.0 | -8.3 | 13.0 | 1.7 |
| Computers | 17.1 | 23.2 | 12.5 | 14.3 | 8.8 | -11.3 | 35.4 | 16.2 | 15.5 |
| Semiconductors | -0.1 | 9.8 | 7.5 | -0.8 | 3.6 | -9.7 | 5.6 | 5.8 | 5.0 |
| Core Goods 2 / | 5.3 | 10.9 | 5.8 | 5.8 | 0.2 | -9.8 | -7.8 | 10.1 | 8.9 |
| Billions of Chained 2005 Dollars |  |  |  |  |  |  |  |  |  |
| Net Goods \& Services | -603.9 | -688.0 | -722.7 | -729.2 | -647.7 | -494.3 | -355.6 | -352. 5 | -354.6 |
| Exports of G\&S | 1116.8 | 1222.8 | 1305.1 | 1422.0 | 1546.1 | 1629.3 | 1472.4 | 1642.5 | 1794.4 |
| Imports of G\&S | 1720.7 | 1910.8 | 2027.8 | 2151.2 | 2193.8 | 2123.5 | 1828.0 | 1995.0 | 2149.0 |
| Billions of dollars |  |  |  |  |  |  |  |  |  |
| US CURRENT ACCOUNT BALANCE | -521.5 | -631.1 | -748.7 | -803.5 | -726.6 | -706.1 | -419.9 | -489.1 | -498.1 |
| Current Acct as Percent of GDP | -4.7 | -5.3 | -5.9 | -6.0 | -5.2 | -4.9 | -2.9 | -3.3 | -3.2 |
| Net Goods \& Services (BOP) | -495.0 | -610.0 | -715.3 | -760.4 | -701.4 | -695.9 | -378.6 | -462.3 | -480.7 |
| Investment Income, Net | 51.0 | 73.4 | 78.8 | 54.7 | 97.9 | 125.5 | 96.1 | 108.1 | 113.6 |
| Direct, Net | 112.7 | 150.9 | 173.2 | 174.0 | 236.7 | 249.9 | 206.8 | 210.0 | 232.7 |
| Portfolio, Net | -61.7 | -77.5 | -94.4 | -119.4 | -138.8 | -124.3 | -110.7 | -101.9 | -119.1 |
| Other Income \& Transfers, Net | -77.5 | -94.5 | -112.2 | -97.9 | -123.1 | -135.7 | -137.3 | -134.9 | -130.9 |

[^16]NIPA REAL EXPORTS and IMPORTS

|  | 2006 |  |  |  | 2007 |  |  |  | 2008 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| NIPA REAL EXPORTS and IMPORTS Percentage point contribution to GDP growth |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net Goods \& Services Exports of $G \& S$ Imports of $G \& S$ | 0.4 | 0.0 | -0.7 | 1.9 | -0.3 | 0.7 | 1.4 | 2.2 | 0.4 | 2.4 | -0.1 | 0.5 |
|  | 1.6 | 0.7 | 0.1 | 1.8 | -0.4 | 0.6 | 2.0 | 1.6 | $-0.0$ | 1.5 | -0.5 |  |
|  | -1.2 | -0.7 | -0.8 | 0.1 | -0.7 | 0.1 | -0.6 | 0.6 | 0.4 | 0.9 | 0.4 | 3.1 |
|  |  | Perce | tage ch | ange fro | previo | us perio | , s.a.a |  |  |  |  |  |
| Exports of $G \& S$ | 16.5 | 6.9 | 0.6 | 17.8 | 3.5 | 5.2 | 18.5 | 14.5 | -0.1 | 12.1 | -3.6 | -19.5 |
| Services | 13.6 | 5.6 | 1.5 | 29.1 | 4.7 |  | 27.2 | 19.2 | -9.0 | 7.8 | -7.7 | -4.3 |
| Computers | 18.1 | 8.9 | -9.6 | 19.0 | 11.6 | -15.4 | 11.5 | 0.0 | 8.7 | 33.5 | 1.3 | -38.3 |
| Semiconductors | 22.1 | 19.5 | -14.2 | -13.3 | 23.7 | 26.3 | 4.7 | 69.9 | 15.0 | -3.8 | 6.5 | -50.7 |
| Core Goods 1/ | 17.6 | 6.7 | 1.6 | 14.5 | 1.5 | 6.4 | 15.4 | 10.8 | 3.5 | 14.3 | -2.2 | -23.7 |
|  | 7.8 | 4.5 | 4.9 | -0.5 | 4.3 | -0.5 | 3.7 | -3.6 | -2.5 | -5.0 | -2.2 | -16.7 |
| Imports of G\&SServicesOilNatural Gas | 16.1 | 1.8 | 1.3 | 10.0 | 0.4 | 2.1 | 8.6 | -2.9 | 3.0 | -7. 1 | 6.1 | -0.9 |
|  | -20.8 | 5.0 | 22.1 | -30.1 | 0.8 | 14.7 | -3.4 | -10.4 | -1.5 | -9.3 | 2.7 | 10.3 |
| Oil ${ }_{\text {Natural }}$ Gas | -50.2 | 80.0 | 26.1 | -42.2 | 52.8 | 54.0 | 36.5 | -48.5 | -5.0 | -38.2 | 12.2 | -49.5 |
| Computers | 24.8 | 13.0 | 17.3 | 3.1 | 39.0 | -15.4 | -2.2 | 21.6 | 12.7 | 8.6 | -15.9 | -39.9 |
|  | 2.4 | -2.8 | 17.4 | -17.3 | 7.3 | 2.6 | -0.4 | 4.9 | 5.6 | 8.9 | -6.3 | -38.2 |
| Semiconductors | 14.0 | 3.1 | 0.6 | 5.8 | 3.1 | -3.6 | 4.1 | -2.5 | -5.1 | -3.2 | -5.1 | -24.2 |
| Billions of Chained 2005 Dollars, s.a.a.r. |  |  |  |  |  |  |  |  |  |  |  |  |
| Net Goods \& Services | -732.6 | -732.8 | -756.5 | -694.9 | -705.0 | -683.4 | -638.4 | -564.0 | -550.9 | -476.0 | -479.2 | -470.9 |
|  | 1388.8 | 1412.1 | 1414.1 | 1473.2 | 1485.9 | 1504.8 | 1569.9 | 1624.0 | 1623.4 | 1670.4 | 1655.2 | 1568.0 |
|  | 2121.3 | 2144.9 | 2170.5 | 2168.1 | 2190.8 | 2188.1 | 2208.3 | 2188.0 | 2174.3 | 2146.5 | 2134.4 | 2038.9 |


| US CURRENT ACCOUNT BALANCE | -794.6 | -808.3 | -859.2 | -752.1 | -796.4 | -762.1 | -686.5 | -661.3 | -717.2 | -750.9 | -736.7 | -619.5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Current Account as \% of GDP | -6.0 | -6.1 | -6. 4 | -5.5 | -5.8 | -5.4 | -4.8 | -4.6 | -5.0 | -5.2 | -5.1 | -4.3 |
| Net Goods \& Services (BOP) | -766.5 | -764.7 | -797.2 | -713.1 | -712.2 | -710.2 | -685.9 | -697.4 | -730.6 | -731.4 | -743.8 | -578.0 |
| Investment Income, Net | 62.4 | 57.7 | 44.0 | 54.6 | 45.8 | 58.2 | 120.7 | 167.0 | 154.0 | 112.3 | 143.7 | 92.1 |
| Direct, Net | 173.9 | 175.2 | 163.1 | 183.9 | 186.7 | 204.4 | 252.7 | 303.0 | 284.6 | 241.9 | 268.0 | 205.1 |
| Portfolio, Net | -111.5 | -117.5 | -119.1 | -129.3 | -140.9 | -146.2 | -132.0 | -136.0 | -130.6 | -129.6 | -124.2 | -113.0 |
| Other Inc. \& Transfers, Net | -90.5 | -101.3 | -106.0 | -93.6 | -130.0 | -110.1 | -121.3 | -130.9 | -140.6 | -131.8 | -136.7 | -133.6 |

[^17]

[^18](Page I-58 is intentionally blank.)

Abbreviations

| AFE | advanced foreign economy |
| :--- | :--- |
| BOJ | Bank of Japan |
| C\&I | commercial and industrial |
| CPI | consumer price index |
| EEB | extended and emergency unemployment benefits |
| EME | emerging market economy |
| E\&S | equipment and software |
| FOMC | Federal Open Market Committee; also, the Committee |
| GDP | gross domestic product |
| IMF | International Monetary Fund |
| LSAP | large-scale asset purchase |
| MBS | mortgage-backed securities |
| NAIRU | non-accelerating inflation rate of unemployment |
| PC | personal computer |
| PCE | personal consumption expenditures |
| PMI | purchasing managers index |
| QEP | quantitative easing policy |
| WTI | West Texas Intermediate |


[^0]:    Note: A list of abbreviations is available at the end of Part 1.

[^1]:    ${ }^{1}$ The major provisions of the new health-care legislation, which was enacted after the close of the March Greenbook, do not begin to take effect until 2013 or later, and accordingly, do not affect our medium-term projection.

[^2]:    ${ }^{2}$ Based on information from the Department of Commerce, we currently expect the peak effect of census hiring to occur in May, when the number of temporary census-related jobs included in the payroll figures balloons to about 500,000 . Thereafter, the effect on the level of employment shrinks and is largely gone by September.

[^3]:    ${ }^{3}$ To be eligible for the current tax credit, applicants must sign a contract by April 30 and close the contract by June 30 .

[^4]:    ${ }^{4}$ The $51 / 4$ percent figure for the NAIRU does not include the effects of extended and emergency unemployment benefits (EEB). EEB programs add to the unemployment rate by inducing individuals who would otherwise have dropped out of the labor force to report themselves as unemployed in order to receive these benefits, and by enabling jobseekers to be more deliberate in their search. We estimate that these programs are currently boosting the unemployment rate by close to 1 percentage point, and we anticipate that this effect will only diminish a bit through next year. As a result, the amount of unemployment not representative of slack in resource utilization-which could be thought of as an "effective" NAIRU—is currently around $61 / 4$ percent and will edge down to only a little below 6 percent by the end of next year.

[^5]:    Note: Components may not sum to totals because of rounding. 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.
[^6]:    ${ }^{5}$ In the long-run outlook, the federal funds rate $(R)$ follows the prescriptions of a Taylor-type rule of the form $R=2.5+\pi-1.1\left(u-u^{*}\right)+0.5(\pi-2)$, subject to the zero lower bound constraint. In this expression, $\pi$ denotes the four-quarter rate of core PCE inflation, $u$ is the civilian unemployment rate, and $u^{*}$ is the staff estimate of the NAIRU (with an adjustment for the temporary effects on unemployment of the extended and emergency unemployment benefit programs). In essence, this is just the traditional Taylor rule, rewritten in terms of the unemployment gap, with the coefficient on resource utilization appropriately rescaled. The same policy rule is used to set the federal funds rate in the alternative scenarios discussed later.

[^7]:    1. Change from fourth quarter of previous year to fourth quarter of year indicated.
    2. Billions of chained (2005) dollars.
[^8]:    1．Billions of chained（2005）dollars．

[^9]:    

[^10]:    1．Private－industry workers．
    2．Core goods imports exclude computers，semiconductors，oil and natural gas．

[^11]:    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. 4. Percent chare 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.
[^12]:    Note. Quarterly data are at seasonally adjusted annual rates.

[^13]:    Note. Data after 2009:Q4 are staff projections.

    1. Average debt levels in the period (computed as the average of period-end debt positions) divided by nominal GDP.
    2. Includes change in liabilities not shown in home mortgages and consumer credit.
    3. Average debt levels in the period (computed as the average of period-end debt positions) divided by disposable personal income.
    4. For corporations, excess of capital expenditures over U.S. internal funds.
    5. NIPA state and local government saving plus consumption of fixed capita
    6. NIPA state and local government saving plus consumption of fixed capital and net capital transfers
    n.s.a. Not seasonally adjusted.
    2.6.4 FOF
[^14]:    ${ }^{1}$ We used the SIGMA model with three country blocs: the United States, Europe, and the rest of the world. The United States and Europe have zero lower bound constraints, but the rest of the world does not.
    ${ }^{2}$ Specifically, the term premium on European 10-year government bonds rises about 50 basis points relative to baseline, and the spread between European corporate bonds and government bonds rises about 100 basis points relative to baseline. The shocks begin in 2010:Q2.

[^15]:    1. Foreign GDP aggregates calculated using shares of U.S. exports.
    2. Foreign CPI aggregates calculated using shares of u.S. non-oil imports.
    3. CPI excluding mortgage interest payments, which is the targeted inflation rate.
[^16]:    2. Merchandise imports excluding oil, natural gas, computers, and semiconductors
[^17]:    1. Merchandise exports excluding computers and semiconductors.
    2. Merchandise imports excluding oil, natural gas, computers, and semiconductors.
[^18]:    1. Merchandise exports excluding computers and semiconductors.

    2

