Economic Outlook, Monetary Policy, and Sustained Low Yields

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* The opinions in this presentation are the presenter’s and do not reflect positions of the Federal Reserve Bank of Chicago or the Federal Reserve System.
GDP Growth and Consensus Projections

Real GDP Growth
(percent change, annual rate)

*Midpoint of the FOMC participants’ forecasts on March 20, 2013.*
Bright Spots: Household Demand Moving Up

**Housing starts**
(millions, SAAR)

<table>
<thead>
<tr>
<th>Year</th>
<th>Single Family</th>
<th>Multi-Family</th>
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<tbody>
<tr>
<td>'04</td>
<td>2.0</td>
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<td>'05</td>
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<td>'12</td>
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<tr>
<td>'13</td>
<td>2.7</td>
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</table>

**Light Vehicle Sales**
(millions of autos and light trucks, SAAR)

<table>
<thead>
<tr>
<th>Year</th>
<th>Feb-2013</th>
<th>Mar-2013</th>
</tr>
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<tbody>
<tr>
<td>'04</td>
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Bright Spots: Household Demand Moving Up

Total PCE
(percent change, annual rate)

Recent PCE Growth
Q4  Nov  Dec  Jan  Feb
1.8  0.5  0.2  0.3  0.3

Tax Increases in 2013:Q1

- End Payroll Tax Holiday -- $130 billion
- Marginal rates, phase outs -- $38 billion
- Affordable Care Act taxes -- $24 billion
- Estimated Impact:
  - Roughly -½ percentage point GDP
  - Mostly in PCE
Recent Inflation Below Target

**PCE Price Index**
(12-month percent change)

<table>
<thead>
<tr>
<th></th>
<th>Feb 2012</th>
<th>Jan to Feb 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.0</td>
<td>0.4</td>
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<tr>
<td>Core</td>
<td>0.2</td>
<td>0.1</td>
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*Median of the forecasts made by the FOMC participants*
Labor Market

Private Nonfarm Payroll Employment
(change, thousands)

Unemployment Rate
(percent)

Monthly change
3-month average
Mar-2013

Mar-2013
Long-Term Unemployment

(number unemployed for 27 weeks or more as a percent of total unemployed)

Mar-2013
Monetary Policy: Interest Rates

Fed Funds Rate and 10-year Treasury Rate (percent)

Dashed lines are estimates of market expectations
Monetary Policy: Asset Purchases

Federal Reserve Asset Holdings
(Bils. $)

Total Purchases: $2,940.190 bil.
Central Bank Balance Sheets

(Percent of GDP)

US
ECB
UK
Japan

Q4-2012
Setting Interest Rates to Clear Markets

- If rates set too high,
  - households and firms save too much, relative to the demand for capital investment
  - cash on firms’ balance sheets not transformed into the capital spending needed to create jobs
  - Unemployment rate is too high
  - wasted resources
Current Market Clearing Rates Are Negative

- “Liquidity Trap”

- Households save large amounts even at zero interest
  - Rebuilding shattered net worth
  - Fear of low incomes in the future
  - Precautionary saving – fear of the next shock

- Businesses don’t expect increased sales to justify expanded capacity
Actual Monetary Policy vs. Taylor Rule

Federal Funds Rate (percent)

Mar-2013

History
Market Expectations
Taylor Rule
Household Wealth and Income

Ratio of Household Net Worth to DPI (hundreds of percent)

Personal Savings Rate (percent)

Q4-2012
Expected Real Income Growth

Onset of Recession

Quarters Since Peak

Great Recession 2007:Q4

Percentage Change

1980:Q1
1981:Q3
1990:Q3
2001:Q1
Cash on Nonfinancial Corp Balance Sheets

Checkable Deposits and Currency
(NSA, Bil. $)
Monetary Policy in a Liquidity Trap

- Keep short rate $\approx 0$

- Evans Rule: Federal Funds rate remains at zero at least as long as:
  - The unemployment rate exceeds 6½%, and
  - Inflation between one and two years ahead is projected to be no more than 2½%

- Long term Treasury purchases reduce term premium

- RMBS purchases reduce mortgage premium
Inflation Expectations

University of Michigan Median Inflation (percent)

Survey of Professional Forecasters (percent)

5 yr ahead

Mar-2013

10-yr

Q1-2013
Inflation Expectations

TIPS-based Inflation Compensation
(percent)

5-10yr ahead

01-Apr-2013
Reach For Yield

- When interest rates are very low, some institutions may have an incentive to take on additional risk

- Particular concern: institutions with fixed nominal liabilities
  - Life insurers
  - Pension funds

- In part, monetary policy works by inducing investors to reach for yield by taking on additional risk
  - But these additional risks may be opaque to regulators
  - Could generate financial instability
Impact of Low Interest Rate Environment on Life Insurance Companies

(percent)

- Net Investment Yield
- Required Rate
- Spread

Yearly data from 2002 to 2012 is shown.