Appendix 1: Materials used by Messrs. Gallin, Lehnert, Peach, Rudebusch, and Williams
Material for

Special Staff Presentations on Housing Valuations and Monetary Policy

June 29, 2005
Is Housing Overvalued?
Joshua Gallin
Board of Governors of the Federal Reserve System
Exhibit 1

Is Housing Overvalued?

Changes in Real House Prices: The United States

Real Price Changes: Western Cities

Real Price Changes: Eastern Cities

Anecdotes from the Housing Market

- Increased speculation.
- Rosy assessments of future appreciation.
- Increased reliance on novel financing without full recognition of the associated risks.

Valuing Housing

- Is housing affordable for the typical household?
  - Are prices too high relative to incomes?
  - Are required mortgage payments affordable?
- Are prices too high relative to rents?
A Framework for Valuing Housing

- Rental payments in the housing market are analogous to dividends in the stock market.
- High prices can be justified by high rents or low carrying costs.
- Carrying costs include interest payments, net taxes, and depreciation.

The Data

- Repeat-transactions price indexes from OFHEO and Freddie Mac.
- Tenants' rent index from the CPI.
- Several adjustments address shortcomings of the data.

Price-Rent Ratio and Real Carrying Costs

Real carrying cost <left scale>
(interest payments, net taxes, depreciation)

Price-rent ratio <right scale>

Note. The price-rent ratio is the repeat-transactions house-price index divided by CPI tenants' rent, adjusted by Board staff. The real carrying cost includes effective after-tax mortgage rates, local property taxes, and depreciation relative to ten-year inflation expectations from the Philadelphia Fed survey.

Price-Rent Ratios and Subsequent Changes in Real Prices

Cumulative percent change, real prices, subsequent three years
Price-Rent Ratios and Subsequent Changes in Real Prices: Selected Cities

<table>
<thead>
<tr>
<th>Year</th>
<th>City</th>
<th>Percent deviation from long-run level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979:Q2</td>
<td>San Francisco</td>
<td>7</td>
</tr>
<tr>
<td>1989:Q4</td>
<td>New York</td>
<td>-4</td>
</tr>
<tr>
<td>2005:Q1</td>
<td>Chicago</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Miami</td>
<td>4</td>
</tr>
</tbody>
</table>

Real Price Change, subsequent three years (cumulative)

-5 -12 2 -16 -20 1 3 -5 (cumulative)

Two Models of House Price Changes

Variables in the basic model
- Recent house prices
- Real income, real carrying costs, and the unemployment rate

Extra variables in error-correction model
- Lagged price-rent ratio
- Lagged level of carrying costs

Projection of Real Price Changes

Four-quarter percent change

Conclusions

- The price-rent ratio is very high by historical standards, suggesting that housing might be overvalued by as much as 20 percent.
- Historical experience suggests that the change in real house prices going forward will be slower than in recent years.
- The evidence cannot rule out either further rapid gains in house prices for a time or a rapid correction back toward fundamentals.
House Prices and Mortgage Finance
Andreas Lehnert
Board of Governors of the Federal Reserve System
Exhibit 1

Household Sector Vulnerability to House Price Declines

Estimated Loan-to-Value Distribution of Outstanding Mortgages

Percent of borrowers

<table>
<thead>
<tr>
<th>Less than 70</th>
<th>70-79</th>
<th>80-89</th>
<th>90+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept. 2003</td>
<td>56</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>March 2005</td>
<td>64</td>
<td>14</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: LoanPerformance Corp. (LPC) servicer data, flow of funds accounts (FFA), OFHEO

Sensitivity of Household Sector to Price Declines

Percent of borrowers with negative equity

LTV at Origination Against Price Change

Average LTV at origination, 2004

By state

<table>
<thead>
<tr>
<th>Annualized price change, 1999-2003 (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

Conclusions

- Average LTV has decreased over the past 18 months
- Most borrowers have substantial equity in their homes
- Rapidly rising house prices have kept mortgage delinquencies and losses low
- Some households are very highly leveraged
Exhibit 2

Characteristics of Interest-Only (IO) Mortgages in RMBS Pools

Components of Home Mortgage Debt

<table>
<thead>
<tr>
<th></th>
<th>2003:Q1</th>
<th>2005:Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. RMBS pools</td>
<td>591</td>
<td>1,191</td>
</tr>
<tr>
<td>2. IO RMBS pools</td>
<td>54</td>
<td>296</td>
</tr>
<tr>
<td>3. Total home</td>
<td>6,491</td>
<td>8,282</td>
</tr>
<tr>
<td>mortgage debt</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Memo:
4. IO RMBS share of home mortgages (percent) 0.8 3.6

Source. LPC RMBS data, FFA

Loan-to-Value Ratios of Interest-Only Mortgages at Origination

Credit Scores of Interest-Only Mortgages

Note. Data are for IO RMBS pools only; observations are weighted by mortgage size. 

Percent of interest-only mortgage debt

Note. Data are for IO RMBS pools only; observations are weighted by mortgage size.
Exhibit 3

Financial Institution Risk Exposure

Credit Risk Exposure

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Mortgage Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Housing GSEs</td>
<td>Conforming, mostly fixed-rate</td>
</tr>
<tr>
<td>2. Private Mortgage Insurers</td>
<td>High LTV</td>
</tr>
<tr>
<td>3. RMBS Pools</td>
<td>Wide variety</td>
</tr>
<tr>
<td>4. Banks and Thrifts</td>
<td>Wide variety</td>
</tr>
</tbody>
</table>

Housing GSEs

1. Average LTV at origination 70
2. Estimated average current LTV 57
3. Average credit score (FICO) 723
4. Percent of guaranteed mortgages with credit enhancement 19

Note. Data are from Freddie Mac only
Source. Freddie Mac 2004 Annual Report

Private Mortgage Insurers

Risks in RMBS Pools

- RMBS pools contain relatively risky mortgages
- Pools are structured to allow investors to choose risk exposure
- Pools are exceptionally transparent
- Pricing depends on loss modeling

Mortgage Share of Assets, Banks and Thrifts

<table>
<thead>
<tr>
<th>Mortgage Share Quartile</th>
<th>Percent of total assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom</td>
<td>0.9</td>
</tr>
<tr>
<td>Second</td>
<td>0.8</td>
</tr>
<tr>
<td>Third</td>
<td>1.4</td>
</tr>
<tr>
<td>Top</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Note. Not weighted by assets

Assets and Capital Ratios

<table>
<thead>
<tr>
<th>Mortgage Share Quartile</th>
<th>Average Assets (billions)</th>
<th>Average Tier 1 Capital Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bottom</td>
<td>0.9</td>
<td>16.5</td>
</tr>
<tr>
<td>2. Second</td>
<td>0.8</td>
<td>10.3</td>
</tr>
<tr>
<td>3. Third</td>
<td>1.4</td>
<td>10.1</td>
</tr>
<tr>
<td>4. Top</td>
<td>1.4</td>
<td>10.4</td>
</tr>
</tbody>
</table>

Source. Mortgage Insurance Companies of America

1. Average LTV at origination
2. Estimated average current LTV
3. Average credit score (FICO)
4. Percent of guaranteed mortgages with credit enhancement

Note. Data are from Freddie Mac only
Source. Freddie Mac 2004 Annual Report
Measuring House Prices
Richard Peach
Federal Reserve Bank of New York
The OFHEO Home Price Index

- An index of the average price of single-family homes purchased (refinanced) with conforming, conventional mortgages
  - Excludes cash sales and sales financed with FHA, VA, and jumbo loans.
- A "repeat-sales" index
  - Measures sales prices or appraised values of properties at same address at different points in time.
- A transactions-based price index.
The Constant-Quality New Home Price Index

- Based on a sample of new homes sold, regardless of how the sale was financed.
- Hedonic methods are used to hold physical and locational characteristics constant over time.
  - Sales prices regressed on numerous characteristics such as lot size, square footage of structure, presence of air conditioning, fire places, etc.
Nominal Home Price Appreciation

% Change - Year to Year

Source: Census Bureau and Office of Federal Housing Enterprise Oversight

Note: Shading represents NBER recessions.
Ratio of Home Price Over Median Family Income

Source: Office of Federal Housing Enterprise Oversight and Bureau of Economic Analysis

*Both indices have been converted to dollars using the median price of existing homes in 1979Q1.
Note: Shading represents NBER recessions.
Distribution of Single-Family Homes by Value: 2003

# of Single-Family Units

Source: American Housing Survey
<table>
<thead>
<tr>
<th>Percentile</th>
<th>25th</th>
<th>50th</th>
<th>75th</th>
<th>80th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appreciation Rate (1997 - 2003)</td>
<td>4.5%</td>
<td>5.6%</td>
<td>7.5%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Turnover Rate (average 1997 - 2003)</td>
<td>5.9%</td>
<td>7.5%</td>
<td>8.6%</td>
<td>7.4%</td>
</tr>
</tbody>
</table>

Source: American Housing Survey
OFHEO Index and Home Improvements

Index, 1977 = 1

Ratio of OFHEO to Constant-Quality Index

Real Property Improvements Per Housing Unit Per Year

Source: Census Bureau, Office of Federal Housing Enterprise Oversight, and Bureau of Economic Analysis

Note: Shading represents NBER recessions.
Ratios of Median Home Value to Median Family Income by Percentile* of Home Value

Source: American Housing Survey

*Home value percentile groups are defined by 3-percentile ranges centered around the cited percentile point.
**Implicit Land Price Increases Derived from Constant-Quality New Home Price Indices**

(compound annual rate, 1998-2004)

<table>
<thead>
<tr>
<th>Region</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>5.5%</td>
</tr>
<tr>
<td>Northeast</td>
<td>7.3%</td>
</tr>
<tr>
<td>Midwest</td>
<td>2.9%</td>
</tr>
<tr>
<td>South</td>
<td>2.8%</td>
</tr>
<tr>
<td>West</td>
<td>10.0%</td>
</tr>
</tbody>
</table>

*Based on the assumption that land represents 50 percent of the value of the property.*
Single-Family Investment Properties
(renter-occupied plus vacant for rent)

Thousands of Housing Units

<table>
<thead>
<tr>
<th>Year</th>
<th>Renter-Occupied</th>
<th>Vacant for Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>12,019 (16.0%)</td>
<td>11,165 (14.9%)</td>
</tr>
<tr>
<td>1999</td>
<td>12,280 (15.7%)</td>
<td>11,530 (14.7%)</td>
</tr>
<tr>
<td>2001</td>
<td>12,333 (15.1%)</td>
<td>11,473 (14.0%)</td>
</tr>
<tr>
<td>2003</td>
<td>11,631 (14.2%)</td>
<td>10,704 (13.0%)</td>
</tr>
</tbody>
</table>

Source: American Housing Survey
Monetary Policy Responses to Asset Price Movements

Glenn D. Rudebusch
Federal Reserve Bank of San Francisco
Monetary Policy and Asset Prices: The Basics

1. Asset price decomposition:
   Assume an asset price \( (A_P_t) \) consists of a component determined by its fundamentals \( (F_t) \) and a bubble component \( (B_t) \):
   \[
   A_P_t = F_t + B_t.
   \]

2. Two proposals for the appropriate monetary policy reaction to an asset price:

   **Standard Policy (SP):**
   - Widespread agreement that the SP is a minimum appropriate reaction.
   - Respond to an asset price insofar as it conveys information about the future evolution of output and inflation—the goal variables of monetary policy.
   - In following the SP, it still may be useful—if possible—to identify \( F_t \) and \( B_t \).

   **Bubble Policy (BP):**
   - Respond to relevant information as in the SP and also try to influence the asset price directly in order to contain or reduce the bubble and limit costs associated with movements in \( B_t \).

3. A best-case scenario for Standard and Bubble Policies:
   Example: Consider the *ideal* theoretical conditions where the decomposition of an asset price \( (A_P_t) \) into its fundamentals \( (F_t) \) and a bubble \( (B_t) \) is known.

   ![Graph showing time (t) vs. \( A_P_t \) and its decomposition into \( F_t \) and \( B_t \)]

   The Standard Policy (SP) would:
   - Try to offset the effects of \( A_P_t \) with higher rates than recommended by the fundamentals before the crash and lower rates afterward.

   The Bubble Policy (BP) would:
   - Respond to information as in the SP, but also try to reduce the bubble fluctuations and achieve, ideally, the \( A_P_t' \) path. This would likely require higher rates than the SP before the crash and lower rates afterward.
Should Monetary Policy Try to Reduce an Asset Price Bubble?

Decision tree for Standard and Bubble Policies

Q1. Can a bubble—or asset price misalignment—be identified?  

No: The asset price is arguably aligned with fundamentals.

Follow Standard Policy

Yes: Asset price appears misaligned.

Q2. Do bubble fluctuations result in large macroeconomic consequences that monetary policy cannot readily offset?  

No: Macroeconomic consequences from asset price boom and bust are minor or they occur with a lag, so monetary policy can effectively offset them.

Follow Standard Policy

Yes: Fallout may include a severe financial crisis, imbalances, or misallocations that cannot be well offset by monetary policy.

Q3. Is monetary policy a good way to deflate the bubble?  

No: Interest rate effects on bubble are uncertain or costly, especially relative to alternative deflation strategies.

Follow Standard Policy

Yes: Relative to the cost of alternatives the dislocations associated with monetary policy actions are small.

Follow Bubble Policy
Two Episodes of Possible Asset Price Bubbles

Real-time answers to decision-tree questions

1. Equity prices in 1999-2000:
   Q1: A bubble could be identified in certain sectors and perhaps in overall market.
   Q2: Serious capital misallocation appeared likely during boom and severe fallout from financial instability was possible during bust. Both hard to rectify.
   Q3: It appeared unlikely that any bubble could be deflated by monetary policy.

2. Bond prices in 1994:
   Q1: A bubble or bond price misalignment appeared likely. Termed an "inflation scare" or "credibility gap."
   Q2: Possible fallout from propagation of high-inflation expectations.
   Q3: It appeared likely monetary policy could guide prices back to fundamentals.
Monetary Policy Implications of a House Price Bubble

John C. Williams
Federal Reserve Bank of San Francisco
A Tale of Two Bubbles

- House prices today: a 20% decline would
  - reduce household wealth by $3.6 trillion (30% of current GDP)
  - raise saving rate by nearly 1-1/2 percentage points in the long-run
  - lower the long-run equilibrium real funds rate \( (r^*) \) by 40 basis points.

- Stock prices in early 2000: twice as a large a potential problem as house price overvaluation today.
  - Stock market overvalued by 60% in March 2000; correction implied a $6.7 trillion reduction in wealth (70% of GDP at the time).
  - In the event, stock market wealth fell by $4.6 trillion from March 2000 to March 2001, and at trough was down $8.5 trillion.

- Cautionary note: policy cushion today is noticeably smaller than in early 2000.

Monetary Policy Implications of a Bursting Housing Bubble

- Three scenarios:
  1. 20% decline in house prices relative to path in June Greenbook
  2. Scenario 1 + spillover effects on demand
  3. Scenario 2 + rise in bond premiums.

- Two policies: Optimal policy and Taylor rule
  - Optimal perfect foresight policy: assumes equal weights on unemployment and inflation deviations from targets of 5 and 1.5 percent, respectively, and small penalty on interest rate changes.
  - Taylor Rule: coefficient of 1 on output gap and ½ on inflation gap; \( r^* \) adjusts to changes in housing wealth and bond premiums.
1. Effects of 20 Percent Decline in House Prices

- House prices decline 20% relative to June Greenbook path by end of 2007.
- Demand shock: no significant tradeoff of goals.
- Macroeconomic effects build gradually: Under Taylor Rule, policy can respond to them as they develop.
2. Scenario 1 + Demand Spillovers

House price declines rattle consumer confidence and dry up equity extraction from mortgage refinancing, crimping household spending.

- Optimal policy: funds rate declines to 2-1/4% by middle of 2006.
- Taylor Rule fails to act in anticipation of spillover effects and responds too gradually once they occur.
3. Scenario 2 + Falling Bond Prices

- House prices decline 20% as before, with demand spillovers.
- Term premiums on long-term bonds increase 75 basis points by year-end.
- Optimal policy drives funds rate below 1 percent by middle of 2006.
- Optimal policy able to forestall significant rise in unemployment rate; under Taylor Rule, unemployment rate reaches 6 percent.
Using Monetary Policy to Preempt a Worsening House Price Misalignment

- Pro: House price misalignment may
  - contribute to conditions that lead to a sharp contraction in economic activity that is difficult for policy to counteract
  - misallocate resources toward housing-related activities.

- Con: Effectiveness of such policies is open to question
  - uncertain empirical relationship between housing prices, interest rates, and other factors
  - difficulties in assessing existence and magnitude of misalignment.
House Prices and Rents in Selected Metropolitan Areas

San Francisco

Four-quarter percent change

Percent deviation from long-run level

Sources: OFHEO, BEA, and BLS.
House Prices and Rents in Selected Metropolitan Areas

Boston

Four-quarter percent change

Real price
Real rent

Percent deviation from long-run level

Price-rent ratio

New York

Four-quarter percent change

Real price
Real rent

Percent deviation from long-run level

Price-rent ratio

Miami

Four-quarter percent change

Real price
Real rent

Percent deviation from long-run level

Price-rent ratio

Sources: OFHEO, BEA, and BLS.
Measures of Prices, Rents, and Costs in the Housing Market

Changes in Real House Prices and Rents

- Repeat-Transactions Price Index (adjusted)
- Constant-Quality Price Index for New Homes
- Rent Index (adjusted)

Levels of Real House Prices and Construction Costs

- Repeat-Transactions Price Index (adjusted)
- Constant-Quality Price Index for New Homes
- Construction Costs

Sources: OFHEO, Freddie Mac, BLS, Census, BEA, and Engineering News Record.
Appendix 2: Materials used by Mr. Kos
**Current U.S. 3-Month Deposit Rates and Rates Implied by Traded Forward Rate Agreements**

March 1, 2005 – June 28, 2005

- **LIBOR Fixing**
- **3M Forward**
- **9M Forward**

---

**Spread Between 2- and 10-Year Treasury Yields**

January 1980 – June 2005

- Average since 1980

---

**TIPS Breakevens and Crude Oil Futures**

January 13, 2005 – June 28, 2005

- 5-Year TIPS Breakeven Rate
- Front Month Crude Oil Futures (RHS)
- 10-Year TIPS Breakeven Rate
High Yield and Auto Debt Spreads
January 3, 2005 – June 28, 2005

Dow Jones CDX 5-Year Investment Grade Credit Default Swaps Index
April 1, 2005 – June 28, 2005

Select Hedge Fund Index Returns
December 31, 2004 – June 24, 2005
Euro-Area 3-Month Deposit Rates and Rates Implied by Traded Forward Rate Agreements
March 1, 2005 – June 28, 2005

Euro-Dollar
January 3, 2004 – June 28, 2005

Interest Rate Differentials
June 28, 2004 – June 28, 2005

Euro-Dollar Risk Reversals
February 1, 2000 – June 28, 2005

IMM Net Non-Commercial Euro Positions

Premium for Euro Puts
Class II FOMC -- Restricted FR

Global 10-Year Sovereign Debt Yields
March 15, 2005 – June 28, 2005

Percent


Percent

UK
Germany
US
Australia
Canada

Global 10-Year Sovereign Debt Yields
March 15, 2005 – June 28, 2005

Percent

Japanese Government Bond Yield Curve

Percent

Year-To-Date Global Equity Performance

Percent

Local Currency Return
USD Return

U.S. S&P500
Mexico Bolsa
Brazil Bovespa
U.K. FTSE
French CAC
German DAX
Italy MIB Index
Japan Nikkei
Appendix 3: Materials used by Messrs. Oliner, Wilcox, and Leahy
Material for

Staff Presentation on the Economic Outlook

June 30, 2005

*Downgraded to Class II upon release of the July 2005 Monetary Policy Report.
Exhibit 1

Recent Indicators

Real Personal Consumption Expenditures
Trillions of 2000 dollars, annual rate
- Quarterly average
- Staff estimate

Sales of Single-family Homes
Millions, annual rate
- Monthly
- May
- Existing homes
- New homes

Orders and Shipments of Nondefense Capital Goods*
Billions of dollars
- Monthly
- Orders
- Shipments

Reserve Bank Queries on Capital Spending Plans
Over Next 6-12 Months

<table>
<thead>
<tr>
<th>Jan. 2005</th>
<th>June 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expect spending will:</td>
<td></td>
</tr>
<tr>
<td>- Increase</td>
<td>47</td>
</tr>
<tr>
<td>- Decrease</td>
<td>13</td>
</tr>
<tr>
<td>- Be about unchanged</td>
<td>39</td>
</tr>
</tbody>
</table>

Note: Figures for Jan. 2005 do not sum to 100 because of rounding.

Initial Claims
Thousands
- Weekly
- Four-week moving average

Four-week moving average
June 25

Core PCE Prices
Twelve-month percent change
- Monthly
- May

Percent change
Mar. 0.3
Apr. 0.1
May 0.3
Published 0.2
Exhibit 2

Key Background Factors

Interest Rates

Fiscal Impetus

Equity Prices

House Prices

Crude Oil Prices

Broad Real Dollar
Exhibit 3

Forecast Summary

Real GDP

Four-quarter percent change

Real GDP (Percent change, Q4 to Q4)

<table>
<thead>
<tr>
<th></th>
<th>Jan.</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB</td>
<td>GB</td>
<td>GB</td>
</tr>
<tr>
<td>2004</td>
<td>3.8</td>
<td>3.9</td>
</tr>
<tr>
<td>2005</td>
<td>3.9</td>
<td>3.6</td>
</tr>
<tr>
<td>2006</td>
<td>3.6</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Unemployment Rate

Percent

Unemployment Rate (Percent, Q4)

<table>
<thead>
<tr>
<th></th>
<th>Jan.</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB</td>
<td>GB</td>
<td>GB</td>
</tr>
<tr>
<td>2004</td>
<td>5.4</td>
<td>5.4</td>
</tr>
<tr>
<td>2005</td>
<td>5.3</td>
<td>5.1</td>
</tr>
<tr>
<td>2006</td>
<td>5.1</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Core PCE Prices

Four-quarter percent change

Core PCE Prices (Percent change, Q4 to Q4)

<table>
<thead>
<tr>
<th></th>
<th>Jan.</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB</td>
<td>GB</td>
<td>GB</td>
</tr>
<tr>
<td>2004</td>
<td>1.5</td>
<td>1.6</td>
</tr>
<tr>
<td>2005</td>
<td>1.6</td>
<td>2.1</td>
</tr>
<tr>
<td>2006</td>
<td>1.4</td>
<td>1.9</td>
</tr>
</tbody>
</table>
Exhibit 4

Does Any Slack Remain In The Labor Market?

Unemployment Rate

Labor Force Participation Rate

Total Hours Worked

Jobs Plentiful Versus Hard to Get

Jobs Hard to Fill

Persons Working Part-Time for Economic Reasons

Note. 2005:Q2 is the April-May average.
Source: National Federation of Independent Business.
Is Compensation Growth Feeding Price Inflation?

### P&C Compensation Per Hour

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2004: Q1</td>
<td>2.1</td>
</tr>
<tr>
<td>Q2</td>
<td>6.0</td>
</tr>
<tr>
<td>Q3</td>
<td>5.5</td>
</tr>
<tr>
<td>Q4</td>
<td>10.2</td>
</tr>
<tr>
<td>2005: Q1</td>
<td>6.3</td>
</tr>
</tbody>
</table>

### Hourly Compensation and Core PCE Prices

#### Why The Bulge in CPH Likely Reflects
Stock Option Exercises

- Option exercises included in CPH but not in ECI.
- Industry composition of revision to CPH in 2004:Q4 looks suggestive.
- Exercises by senior executives stepped up in 2004.

#### Compensation Per Hour

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. P&amp;C comp per hour</td>
<td>5.9</td>
<td>4.0</td>
<td>5.0</td>
</tr>
<tr>
<td>2. ECI total comp</td>
<td>3.8</td>
<td>4.0</td>
<td>4.8</td>
</tr>
<tr>
<td>3. Wage and salaries</td>
<td>2.4</td>
<td>3.5</td>
<td>4.4</td>
</tr>
<tr>
<td>4. Benefit costs</td>
<td>6.9</td>
<td>5.4</td>
<td>5.5</td>
</tr>
</tbody>
</table>

### Alternative Scenario:

**Stronger Compensation Pressures**

- Hourly compensation increases 1 percentage point per year faster than in the baseline.
- Firms protect their profit margins. By the end of the scenario, markup is back at baseline.

### Core PCE Prices

#### Four-quarter percent change

- **Stronger compensation pressures**
- **90% confidence interval**
- **70% confidence interval**
Exhibit 6

Why Has Core Inflation Sped Up?

Evolution of the Greenbook Forecast For Core PCE Prices

<table>
<thead>
<tr>
<th>Percent change, Q4/Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec03</td>
</tr>
<tr>
<td>0.5</td>
</tr>
</tbody>
</table>

Forecast for 2004
Forecast for 2005
Forecast for 2006

Price of Imported Oil

<table>
<thead>
<tr>
<th>Dollars per barrel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
</tr>
<tr>
<td>15</td>
</tr>
</tbody>
</table>

Note. Price is BOP unit value of crude oil and refined product imports.

Core PPI Intermediate Materials Prices

<table>
<thead>
<tr>
<th>Index, 2000=100, ratio scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
</tr>
<tr>
<td>98</td>
</tr>
</tbody>
</table>

Core Nonfuel Import Prices

<table>
<thead>
<tr>
<th>Index, 2000=100, ratio scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
</tr>
<tr>
<td>100</td>
</tr>
</tbody>
</table>

Revisions to Staff Projections of Core PCE Inflation (Percentage points)

<table>
<thead>
<tr>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Contribution of:

1. Revision since Dec. 2003 Greenbook .5 1.0
2. Energy prices .2 .5
3. Import and commodity prices .3 .4
4. Other factors .0 .1

PCE Prices (Percent change, Q4/Q4)

<table>
<thead>
<tr>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.6</td>
<td>2.5</td>
<td>1.7</td>
</tr>
</tbody>
</table>

1. Total
2. Energy 18.5 9.9 -1.4
3. Food 2.9 2.2 2.2
4. Core 1.6 2.1 1.9
Exhibit 7

Why Hasn’t Real GDP Growth Been Marked Down More?

Evolution of the Greenbook Forecast for Real GDP
Percent change, Q4/Q4

Contribution of Oil Prices to Real GDP Growth*
Percentage points

*Relative to prices in the December 2003 Greenbook.

Revisions to Staff Projections of Real GDP Growth (Percentage points)

<table>
<thead>
<tr>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Revision since Dec. 2003 Greenbook</td>
<td>-1.4</td>
</tr>
</tbody>
</table>

Contribution of:

2. Oil prices | -0.5 | -0.9 |
3. Fiscal Impetus | -0.2 | 0.7 |
4. Other factors | -0.7 | 0.0 |

Real GDP and Selected Components
(Percent change, Q4/Q4)

<table>
<thead>
<tr>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Real GDP</td>
<td>3.9</td>
<td>3.6</td>
</tr>
<tr>
<td>2. (January GB)</td>
<td>(3.8)</td>
<td>(3.9)</td>
</tr>
</tbody>
</table>

Contributions to real GDP growth (percentage points):
| 2. (January GB) | (4.2) | (4.0) | (4.0) |
| 5. Net exports | -0.8 | -0.1 | -0.4 |
| 6. Inventory investment | .4 | -0.1 | 0.0 |

Memo:
| 7. Output gap (Q4 levels) | 1.1 | .7 | .7 |
Exhibit 8

Have Markets Built in Sufficient Allowance for Risk?

Equity Valuation

12-month forward trend E/P ratio for S&P 500

*Yield on synthetic Treasury perpetuity minus Philadelphia Fed 10-year expected inflation.

Decomposition of High-Yield Spread

Commercial Real Estate Prices and Net Operating Income

Index, 1978=100, ratio scale

Commercial Real Estate Valuation

Office Vacancy Rate and Rent per Square Foot

Source: NCREIF.
Exhibit 9

Is Corporate Credit Quality Starting to Slip?

**Bond Default and C&I Loan Delinquency Rates**
- Percent of outstandings
- C&I loan delinquency rate
- Bond default rate*
- Q1
- *Six-month moving average.

**Financial Ratios***
- Percent
- Cash to assets
- Interest expense to cash flow
- Q1
- *Nonfinancial corporations. Source: Compustat.

**Payouts to Shareholders***
- Billions of dollars, annual rate
- Cash mergers
- Share repurchases
- Dividends
- Q1
- *Nonfinancial corporations.

**High-Yield Bond Issuance as a Share of Total Bond Issuance***
- Percent
- *Nonfinancial corporations.

**Share of High-Yield Bond Proceeds Used to Refinance Existing Debt**
- Percent
- *Domestic nonfinancial corporations’ ratio of economic profits before tax to sector GDP.

**Profit Share***
- Quarterly
- *Domestic nonfinancial corporations’ ratio of economic profits before tax to sector GDP.
Exhibit 10

Are Households Facing Significant Financial Stress?

Delinquency Rates

<table>
<thead>
<tr>
<th>Year</th>
<th>Securitized credit card loans</th>
<th>Auto loans at finance companies</th>
<th>Home mortgages at banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td></td>
<td></td>
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<td>1998</td>
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<td>2002</td>
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<td></td>
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<tr>
<td>2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Bank Lending Standards for Consumer Loans*

<table>
<thead>
<tr>
<th>Year</th>
<th>Tighter</th>
<th>Easier</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
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<td>2002</td>
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<tr>
<td>2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Average for credit cards and other consumer loans. Source: Senior Loan Officer Survey.

2004 Survey of Consumer Finances

- Results are preliminary.
- Subject to revision as SCF staff continues to process the data.
- Results are confidential until public release of 2004 data next January.

Households With Any Payments 60 Days Past Due

<table>
<thead>
<tr>
<th>Year</th>
<th>Share of households</th>
<th>Share of debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Survey of Consumer Finances.

Assets, Debt, and Net Worth, Change from 2001 to 2004

- Substantial rise in assets. Driven by appreciation in house prices. Fairly widespread across income groups.
- Rapid debt growth throughout the income distribution.
- For median-income households, little change in net worth. But net worth rose for high-income households.

Household Net Worth to DPI

<table>
<thead>
<tr>
<th>Year</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
</tr>
</tbody>
</table>

Source: Survey of Consumer Finances.
Exhibit 11

Foreign Outlook and Financial Market Indicators

U.S. and Foreign GDP

Percent change, a.r.**

Stock Prices*

Ratio scale, Jan. 3, 2003=100

EMBI+ Spreads

Percentage points

Ten-Year Government Bond Yields

Percent

*Weighted by shares of U.S. merchandise exports.
**Years are Q4/Q4. Half-years are Q2/Q4 or Q4/Q2.

* Source: MSCI.

* Average of rates for Australia, Canada, euro area, Japan, Sweden, Switzerland, and United Kingdom, weighted by trade shares.
Exhibit 12

Long-Term Interest Rates and Monetary Policy
(Weekly data, percent)

**Ten-Year Government Bond Yields**

United States

Germany

**Long-Term Nominal and Inflation-Indexed Yields**

Euro

Canadian dollar

Sterling

Yen

**Monetary Policy Indicators**

Euro-area refinance rate

U.S. target federal funds rate

Canada

United Kingdom

Japan

Balances at BOJ
Exhibit 13

Euro Area and Japan

Earnings per Share*
Index, 1990=100

Yearly

Euro area
Japan


*Operating earnings per share in local currency for MSCI indexes; forecasts are from I/B/E/S surveys in mid-June 2005.

Euro Area and Japan

BBB Corporate Bond Spreads
Basis points

Weekly

2002 2003 2004 2005

Euro
Yen

Real Effective Exchange Rates
Index, Jan. 2004=100

Monthly

2004 2005 2006

Euro
Yen

*Percent of respondents reporting an increase minus percent of respondents reporting a decrease.

Euro-Area Confidence Indicators
Diffusion index*

Monthly

2002 2003 2004 2005

Industrial
Consumer

Euro-Area Real GDP
Percent change, a.r.*

2004 2005 2006

*Half-years are Q2/Q4 or Q4/Q2.

Japanese Real GDP
Percent change, a.r.*

2004 2005 2006

*Half-years are Q2/Q4 or Q4/Q2.
Exhibit 14

China: Why is Import Growth Slowing?

Merchandise Trade Balance

Twelve-month moving sum

Billions of dollars

1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005

-20 0 20 40 60 80

Merchandise Trade

Billions of dollars

Monthly

Exports
Imports

2003 2004 2005

-20 0 20 40 60 80

Exports to China

Twelve-month percent change

Taiwan

Korea

Japan

2003 2004 2005

-20 0 20 40 60

Real GDP

Percent change, a.r.

2004 2005 2006

0 3 6 9 12 15

Exports by Category

Billions of dollars

Twelve-month moving sum

Iron and steel
Road vehicles

1995 1997 1999 2001 2003 2005

0 5 10 15

Consumer Prices

Twelve-month percent change

Overall
Excluding food

2003 2004 2005

0 1 2 3 4 5 6
Exhibit 15

Outlook for Commodity Prices and U.S. External Accounts

Primary Commodity Prices

Index, Jan. 2002=100

2002 2003 2004 2005 2006

*IMF indexes.

**Weighted by U.S. import shares.

Broad Real Dollar

Index, Jan. 2002=100

2002 2003 2004 2005 2006

WTI

Monthly

Dollars per barrel

2002 2003 2004 2005 2006

Current Account Balance

Billions of dollars, a.r.

Percent

2002 2003 2004 2005 2006

Balance of Payments

Billions of dollars, a.r.

<table>
<thead>
<tr>
<th>Trade Balance</th>
<th>Net Invest. Income</th>
<th>Current Account</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005 Q1</td>
<td>-687</td>
<td>21</td>
</tr>
<tr>
<td>Q2</td>
<td>-701</td>
<td>18</td>
</tr>
<tr>
<td>H2</td>
<td>-747</td>
<td>5</td>
</tr>
<tr>
<td>2006 H1</td>
<td>-776</td>
<td>-20</td>
</tr>
<tr>
<td>Q3</td>
<td>-783</td>
<td>-42</td>
</tr>
<tr>
<td>Q4</td>
<td>-800</td>
<td>-58</td>
</tr>
<tr>
<td>Change from 2005Q1 to 2006Q4</td>
<td>-113</td>
<td>-79</td>
</tr>
</tbody>
</table>
### ECONOMIC PROJECTIONS FOR 2005

<table>
<thead>
<tr>
<th>FOMC</th>
<th>Range</th>
<th>Central Tendency</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal GDP</td>
<td>5 to 6¼</td>
<td>5½ to 5¾</td>
<td>5.9</td>
</tr>
<tr>
<td>February 2005</td>
<td>(5 to 6)</td>
<td>(5½ to 5¾)</td>
<td>(5.4)</td>
</tr>
<tr>
<td>Real GDP</td>
<td>3 to 3¾</td>
<td>3¼ to 3½</td>
<td>3.6</td>
</tr>
<tr>
<td>February 2005</td>
<td>(3¼ to 4)</td>
<td>(3¼ to 3½)</td>
<td>(3.9)</td>
</tr>
<tr>
<td>Core PCE Prices</td>
<td>1½ to 2½</td>
<td>1¾ to 2</td>
<td>2.1</td>
</tr>
<tr>
<td>February 2005</td>
<td>(1½ to 2)</td>
<td>(1½ to 1¾)</td>
<td>(1.6)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal GDP</td>
<td>5 to 5¼</td>
<td>5</td>
</tr>
<tr>
<td>February 2005</td>
<td>(5 to 5¼)</td>
<td>(5)</td>
</tr>
</tbody>
</table>

Central tendencies calculated by dropping high and low three from ranges.

### ECONOMIC PROJECTIONS FOR 2006

<table>
<thead>
<tr>
<th>FOMC</th>
<th>Range</th>
<th>Central Tendency</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal GDP</td>
<td>5 to 6</td>
<td>5¼ to 5½</td>
<td>5.4</td>
</tr>
<tr>
<td>February 2005</td>
<td>(5 to 5¾)</td>
<td>(5½ to 5½)</td>
<td>(5.3)</td>
</tr>
<tr>
<td>Real GDP</td>
<td>3¼ to 3¾</td>
<td>3¼ to 3½</td>
<td>3.4</td>
</tr>
<tr>
<td>February 2005</td>
<td>(3¼ to 3½)</td>
<td>(3½)</td>
<td>(3.6)</td>
</tr>
<tr>
<td>Core PCE Prices</td>
<td>1½ to 2½</td>
<td>1¾ to 2</td>
<td>1.9</td>
</tr>
<tr>
<td>February 2005</td>
<td>(1½ to 2)</td>
<td>(1½ to 1¾)</td>
<td>(1.4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal GDP</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>February 2005</td>
<td>(5 to 5¼)</td>
<td>(5½ to 5¼)</td>
</tr>
</tbody>
</table>
Appendix 4: Materials used by Mr. Reinhart
Exhibit 1

Expected Federal Funds Rates*

<table>
<thead>
<tr>
<th>Expected Federal Funds Rates*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
</tr>
<tr>
<td>June 29, 2005</td>
</tr>
<tr>
<td>May 2, 2005</td>
</tr>
</tbody>
</table>

Nominal Treasury Yields*

<table>
<thead>
<tr>
<th>Nominal Treasury Yields*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
</tr>
<tr>
<td>Daily</td>
</tr>
<tr>
<td>FOMC</td>
</tr>
<tr>
<td>June 2004</td>
</tr>
<tr>
<td>Ten-Year</td>
</tr>
<tr>
<td>Two-Year</td>
</tr>
</tbody>
</table>

Change In Ten-Year Yields Since June 29, 2004

<table>
<thead>
<tr>
<th>Change In Ten-Year Yields Since June 29, 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis points</td>
</tr>
<tr>
<td>Nominal Treasury</td>
</tr>
<tr>
<td>TIPS</td>
</tr>
<tr>
<td>Inflation Compensation</td>
</tr>
<tr>
<td>One-Year Forward*</td>
</tr>
<tr>
<td>AA Corporate</td>
</tr>
<tr>
<td>Euro Swap Rate</td>
</tr>
</tbody>
</table>

Actual and Expected Treasury One-year Forward Rates*

<table>
<thead>
<tr>
<th>Actual and Expected Treasury One-year Forward Rates*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
</tr>
<tr>
<td>6/29/2005</td>
</tr>
<tr>
<td>Day before FOMC meeting 6/30/2004</td>
</tr>
</tbody>
</table>

*Estimates from federal funds and eurodollar futures, with an allowance for term premia and other adjustments.

*Par yields from an estimated off-the-run Treasury yield curve.

*One-year nominal forward rate maturing ten years ahead.

*Forward rates are the one-year nominal rates maturing at the end of the year shown on the horizontal axis that are implied by the smoothed Treasury yield curve.
Exhibit 2

Slope of Yield Curve*

Factors Encouraging the Demand for Relative to the Supply of Long Duration Securities

- Reduced macro volatility
- Increased demand for duration
- Reduced supply of duration
- Increased global saving

Factors Damping Growth Prospects

- Higher oil prices
- Potential increase in domestic saving rate
- Large and sustained trade deficits

Term Premium of One-Year Forward Nominal Rate Maturing Ten Years Ahead*

Four-Quarter-Ahead Real GDP Growth Forecast

* Derived from three-factor arbitrage-free term structure model.
Exhibit 3

Values from Policy Rules and Futures Markets

- Actual federal funds rate and Greenbook assumption
- Market expectations estimated from futures quotes

See explanatory note in Chart 8 of the Bluebook.

What can go wrong?

- Stop too soon
  -- Allowing inflation expectations to become unanchored
- Stop too late
  -- Allowing slack to persist

Inflation Compensation

Five-to-Ten-Years Ahead
Next Five Years

Intended Federal Funds Rate*

Risk Spreads*

*Red shading indicates periods of sustained tightening. Blue shading indicates periods of sustained easing.

*Measured relative to an estimated off-the-run Treasury yield curve.
## Monetary Policy Alternatives

<table>
<thead>
<tr>
<th>Yield Curve Signal</th>
<th>Decline in Term Premium</th>
<th>Economic Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stopping Too Soon</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Stopping Too Late</td>
<td></td>
<td>A</td>
</tr>
</tbody>
</table>

## Statement Challenges

- "...the stance of monetary policy remains accommodative"

- "...coupled with robust underlying growth in productivity"

- "...with appropriate monetary policy action, the upside and downside risks to the attainment of both sustainable growth and price stability should be kept roughly equal."

- "...that policy accommodation can be removed at a pace that is likely to be measured."
<table>
<thead>
<tr>
<th>Policy Decision</th>
<th>Alternative A</th>
<th>Alternative B</th>
<th>Alternative C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The Federal Open Market Committee decided today to raise its target for the federal funds rate by 25 basis points to 3 percent.</td>
<td>The Federal Open Market Committee decided today to raise its target for the federal funds rate by 25 basis points to 3-1/4 percent.</td>
<td>The Federal Open Market Committee decided today to raise its target for the federal funds rate by 25 basis points to 3 percent.</td>
<td></td>
</tr>
<tr>
<td>2. The Committee believes that, even after this action, the stance of monetary policy remains accommodative and, coupled with robust underlying growth in productivity, is providing ongoing support to economic activity.</td>
<td>&quot;The Committee believes that, even after this action, the stance of monetary policy remains accommodative accommodation has been substantially reduced, and, coupled with Robust underlying growth in productivity, is providing ongoing continues to provide support to economic activity.&quot;</td>
<td>[no change]</td>
<td></td>
</tr>
<tr>
<td>3. Recent data suggest that the solid pace of spending growth has slowed somewhat, partly in response to the earlier increases in energy prices. Labor market conditions, however, apparently continue to improve gradually.</td>
<td>Recent data suggest that the solid pace of spending growth has Nonetheless, growth in spending slowed somewhat in the spring, partly in response to the earlier increases in elevated energy prices. Labor market conditions, however, apparently continue to improve gradually.</td>
<td>Although energy prices have risen further, Recent data suggest that the solid pace of spending growth has slowed somewhat, partly in response to the earlier increases in energy prices the expansion remains firm and labor market conditions, however, apparently continue to improve gradually.</td>
<td></td>
</tr>
<tr>
<td>4. Pressures on inflation have picked up in recent months and pricing power is more evident. Longer-term inflation expectations remain well contained.</td>
<td>Pressures have picked up been subdued in recent months, and pricing power is more evident. Longer-term inflation expectations remain well contained.</td>
<td>Pressures on inflation have picked up further in recent months, and pricing power is more evident. Although measures of longer-term inflation expectations remain well contained.</td>
<td></td>
</tr>
<tr>
<td>5. The Committee perceives that, with appropriate monetary policy action, the upside and downside risks to the attainment of both sustainable growth and price stability should be kept roughly equal.</td>
<td>The Committee perceives that, with appropriate monetary policy action, the upside and downside risks to the attainment of both sustainable growth and price stability should be kept roughly equal.</td>
<td>[no change]</td>
<td></td>
</tr>
<tr>
<td>6. With underlying inflation expected to be contained, the Committee believes that policy accommodation can be removed at a pace that is likely to be measured. Nonetheless, the Committee will respond to changes in economic prospects as needed to fulfill its obligation to maintain price stability.</td>
<td>With underlying inflation expected to be contained, the Committee believes that remaining policy accommodation can be removed at a pace that is likely to be measured. Nonetheless, the Committee will respond to changes in economic prospects as needed to fulfill its obligation to maintain price stability.</td>
<td>[no change]</td>
<td></td>
</tr>
</tbody>
</table>

**Table 1: Alternative Language for the June FOMC Announcement**

*Table columns include Policy Decision, Rationale, and Assessment of Risk.*