Appendix 1: Materials used by Mr. Kos
**MSCI Equity Indices**
May 1, 2004 – June 27, 2006

**Realized Volatility of MSCI Equity Indices**
January 2, 2006 – June 27, 2006

**S&P 500: Periods with Greater than 10% Price Declines**
(Since January 2, 1942)
Select International Equity Performance

Select Foreign Currency Performance vs. U.S. Dollar

Select Metals Prices
January 2, 2006 – June 27, 2006

Index: 1/2/06 = 100
Implied Volatility on the S&P 100

Treasury Yield Implied Volatility

Investment Grade Credit Spread

High Yield Credit Spread

EMBI+ Spread to Comparable Treasuries
Current 3-Month Deposit Rates and Rates Implied by Traded Forward Rate Agreements
April 1, 2006 to June 27, 2006

Bank of Japan Current Account Balances and Overnight Call Rate
January 2, 2006 – June 27, 2006

Japanese Sovereign Yield Curve

Trillions of Yen

Percent

U.S.

Libor Fixing

3M Forward

6M Forward

9M Forward

Japan

€

Libor Fixing

3M Forward

6M Forward

9M Forward

BoJ Current Account Balances (LHS)

Uncollateralized Overnight Call Rate (RHS)

Percent

Percent

6/27/06

6/28/05
Sunday Float Levels and Forecasts
(the Tuesday after a Monday holiday is replaced with Wednesday)

Rate Volatility and Float Forecast Errors on Tuesdays

std. dev. in basis points

"High" volatility
"Low" volatility

forecast error in $ billions

$ Billions


$ Billions


$ Billions

Forecast

Actual

June 28-29, 2006

Authorized for Public Release
Appendix 2: Materials used by Messrs. Slifman, Wilcox, and Kamin
Material for

Staff Presentation on the Economic Outlook

June 28, 2006

*Downgraded to Class II upon release of the July 2006 Monetary Policy Report.
Recent Indicators

Real GDP

Percent change, annual rate

- History
- May Greenbook
- Current Forecast

Real Personal Consumption Expenditures

Trillions of 2000 dollars, annual rate

- Quarterly average
- Staff estimate

Percent change, a.r.

2005:Q4 0.9
2006:Q1 5.2
2006:Q2(p) 2.2

* May is a staff estimate based on published retail sales, light motor vehicle sales and CPI data.

Single-Family Housing Starts

Millions of units, annual rate

- Starts
- Adjusted permits*

Orders and Shipments of Nondefense Capital Goods*

- Three-month moving average
- Orders
- Shipments

* Excluding aircraft.

Initial Claims for Unemployment Insurance

Thousands

New Orders Indexes

Diffusion index

- ISM
- Philadelphia
- Empire State
- June
- May
Exhibit 2

Longer-Run Projection and Key Background Factors

Real GDP

Percent change* 6

Change in Wage and Salary Disbursements

Percent change, annual rate 7

Federal Funds Rate

Wilshire 5000

House Prices

Crude Oil Prices

* Annual figures are Q4/Q4. Half-year figures are Q4/Q2 or Q2/Q4.

* All transactions index.
**Business Fixed Investment**

**E&S Spending excluding Transportation**

- High Tech (contribution)
- Other (contribution)

**Source:** Gartner, FRB Seasonals.

**U.S. Personal Computer and Server Sales**

- PCs
- Servers

**Real Nonresidential Structures**

<table>
<thead>
<tr>
<th>Percent change, Q4/Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>2005</td>
</tr>
<tr>
<td>2006*</td>
</tr>
<tr>
<td>2007*</td>
</tr>
</tbody>
</table>

| 1. Total Nonres. | 1.5 | 10.3 | 4.6 |
| 2. Drilling and mining | 16.7 | 11.7 | 7.4 |
| 3. Nonres ex. | -2.8 | 9.5 | 3.3 |

* - staff projection

**Drilling Rigs in Operation**

**Office Vacancy Rate and Rent per Square Foot**

*Source:* Baker Hughes Tool Company.

**Household Sector**

**Real PCE and DPI**

- DPI* (Dark Blue)
- PCE (Red)

Percent change*:

- 2005: 0%
- H1: 1%
- H2: 2%
- 2006: 3%
- 2007: 4%

Notes:

- * Excluding December 2004 Microsoft Dividend. Annual figures are Q4/Q4. Half-year figures are Q4/Q2 or Q2/Q4.

**Sales of Single-family Homes**

- Millions, annual rate

- Existing homes
- New homes

**Unsold Homes***

- Millions, annual rate

- Existing homes
- New homes

**Real Residential Investment**

- Billions of 2000 dollars

**Saving Rate and Wealth-to-Income Ratio**

- Percent
- Ratio

- Personal saving rate (Red)
- Wealth-to-income ratio (Black)

Note: Excluding December 2004 Microsoft dividend.

**Investor and Second-Home Mortgage Originations**

- Source: LoanPerformance.
**Household Financial Conditions**

**Homeowners’ Financial Obligation Ratio**

- Percent of homeowner disposable income
- Chart showing trends from 1981 to 2006.

**Mortgage Payment Resets**

<table>
<thead>
<tr>
<th></th>
<th>Percent*</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
<td>2007</td>
<td>2008 and beyond</td>
</tr>
<tr>
<td>ARM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. First rate reset</td>
<td>27</td>
<td>25</td>
<td>48</td>
</tr>
<tr>
<td>IOs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. First rate reset</td>
<td>11</td>
<td>24</td>
<td>65</td>
</tr>
<tr>
<td>3. End of IO term</td>
<td>4</td>
<td>10</td>
<td>86</td>
</tr>
</tbody>
</table>

*Percent of mortgages in category experiencing indicated type of payment change relative to all mortgages in the category that have yet to face first payment change.

**Delinquency Rates**

- Subprime: 2003 to April 2006
- Prime: 2003 to April 2006

**Delinquency Rates for Subprime Mortgages**

- Variable rate: 2003 to April 2006
- Fixed rate: 2003 to April 2006

**Implications**

- Baseline projection for the household sector incorporates these developments.
- The greater stress among the most financially vulnerable segment of households presents a risk to the forecast.
Exhibit 6

The Outlook for Compensation

### Compensation Per Hour

<table>
<thead>
<tr>
<th></th>
<th>P&amp;C</th>
<th>ECI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005: Q1</td>
<td>5.6</td>
<td>3.8</td>
</tr>
<tr>
<td>Q2</td>
<td>1.3</td>
<td>2.5</td>
</tr>
<tr>
<td>Q3</td>
<td>5.5</td>
<td>2.9</td>
</tr>
<tr>
<td>Q4</td>
<td>-0.9</td>
<td>2.8</td>
</tr>
<tr>
<td>2006: Q1</td>
<td>5.1</td>
<td>2.4</td>
</tr>
</tbody>
</table>

### Selected Differences Between the ECI and P&C Comp per Hour

- **Measurement objectives**: The cost of employing a fixed market-basket of labor versus the current workforce.
- **Source data**: A survey of firms versus administrative records covering the universe of firms.
- **Technical issues**: For example, the handling of stock options and pension-related costs.

### Unemployment Rate

- NAIRU

### Real Compensation and Productivity Growth*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth</td>
<td>4.0</td>
<td>3.5</td>
<td>3.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

*Nonfarm business sector. Compensation is deflated by the price index for NFB output.

### Price Markup for the Nonfarm Business Sector

Average 1973:Q1 to 2006:Q1

### Compensation per Hour

Percent change from year earlier
The Outlook for Price Inflation

PCE Prices

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Core</th>
<th>Market-Based Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>.5</td>
<td>.15</td>
<td>.09</td>
</tr>
<tr>
<td>Feb.</td>
<td>.1</td>
<td>.15</td>
<td>.11</td>
</tr>
<tr>
<td>Mar.</td>
<td>.4</td>
<td>.34</td>
<td>.32</td>
</tr>
<tr>
<td>Apr.</td>
<td>.5</td>
<td>.25</td>
<td>.21</td>
</tr>
<tr>
<td>May (f)</td>
<td>.4</td>
<td>.25</td>
<td>.26</td>
</tr>
<tr>
<td>Q1</td>
<td>2.0</td>
<td>2.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Q2 (f)</td>
<td>4.3</td>
<td>3.1</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Note: Quarterly figures are at annual rates.

PCE Energy Prices

Expected Inflation

* Estimates of inflation compensation based on smoothed nominal and inflation-indexed Treasury yield curves.

PCE Prices

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PCE price index</td>
<td>3.0</td>
<td>3.1</td>
<td>1.8</td>
<td>2.2</td>
</tr>
<tr>
<td>2. (May GB)</td>
<td>(3.0)</td>
<td>(3.0)</td>
<td>(2.1)</td>
<td>(2.0)</td>
</tr>
<tr>
<td>3. Energy</td>
<td>21.8</td>
<td>14.0</td>
<td>-5.0</td>
<td>1.4</td>
</tr>
<tr>
<td>4. (May GB)</td>
<td>(21.8)</td>
<td>(13.9)</td>
<td>(1.3)</td>
<td>(1.5)</td>
</tr>
<tr>
<td>5. Core PCE</td>
<td>2.0</td>
<td>2.5</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>6. (May GB)</td>
<td>(2.0)</td>
<td>(2.3)</td>
<td>(2.1)</td>
<td>(2.0)</td>
</tr>
</tbody>
</table>

* Annual figures are Q4/Q4. Half-yearly figures are Q4/Q2 or Q2/Q4.
Have Inflation Models Been Moving off Track Recently?

Two Models Among Many

- A **backward-looking model** proxies for underlying or expected inflation using lagged inflation only.
- A **partly forward-looking model** uses a weighted average of lagged inflation and expected inflation as measured in the Survey of Professional Forecasters.
- Neither model has been substantially and consistently surprised by the performance of inflation over the last several years.

### The Backward-Looking Model

**Core PCE Prices**

[Graph showing Core PCE Prices with actual and simulated lines for 1999 to 2006, with a note that the Q2 figure for 2006 is a staff forecast.]

**Kalman Filter Estimates of the NAIRU**

[Graph showing Kalman Filter Estimates with two-sided and one-sided estimates, shaded area with 90% confidence region for two-sided estimates from 1990 to 2006.]

### The Partly Forward-Looking Model

**Core PCE Prices**

[Graph showing Core PCE Prices with actual and simulated lines for 1999 to 2006, with a note that the Q2 figure for 2006 is a staff forecast.]

**Kalman Filter Estimates of the NAIRU**

[Graph showing Kalman Filter Estimates with two-sided and one-sided estimates, shaded area with 90% confidence region for two-sided estimates from 1990 to 2006.]

* The shaded area denotes the 90 percent confidence region for the two-sided estimates.


**The Pass-Through of Energy Prices**

Energy Prices and a PPI for Energy-Intensive Industries

Note: The PPI for energy-intensive industries is a staff-calculated aggregation of price indexes for industries having an energy cost share greater than 5 percent, based on the 1997 input-output table.

**Estimated Pass-through into Core PCE price inflation**

* The vertical axis measures the estimated response of core PCE price inflation after eight quarters to a permanent 10-percent increase in the relative price of energy. The results are based on 15-year rolling estimation periods. Dates on the horizontal axis denote the end of the estimation window.

**Judgmental Assumptions about Energy-Price Pass-Through**

- We assume that a permanent ten-percent increase in the relative price of energy would boost core inflation about 0.2 percentage point after eight quarters.

- Models that are forced to assume zero energy-price pass-through have been a little surprised by how high inflation has been in the last few quarters.

- Models that assume a larger pass-through than the one we use judgmentally have been a little surprised by how low inflation has been.
Housing Prices in the CPI and PCE Price Index

Two Approaches to Measuring the Price of Owner-Occupied Housing Services

- The *user-cost* approach:

\[
\text{Price of housing services} = P_t \left( i_t + \delta - E_t \pi_{t+1}^h \right)
\]

= imputed interest expense + depreciation – expected capital gain

- The *rental-equivalence* approach:

\[
\text{Price of housing services} = \text{Rent}
\]

- In a perfect world, the two approaches would give the same answer, implying:

\[
\text{Rent} = P_t \left( i_t + \delta - E_t \pi_{t+1}^h \right)
\]

- OER is a theoretically appropriate element of a cost-of-living index.

- Whether the FOMC should define its objectives relative to such an index depends on what costs you are seeking to minimize.

---

Housing Affordability and the Rental Vacancy Rate*

- Housing affordability is defined as the ratio of median family income to the amount required to qualify for a mortgage on the median-priced existing single-family home.

Tenants' Rent and OER

Four-quarter percent change
### Outlook for Foreign Growth

**Euro Area**
- Manufacturing orders
- Retail sales

**Japan**
- Machinery orders

**Mexico**
- Exports

### Foreign Real GDP*

<table>
<thead>
<tr>
<th></th>
<th>2005:H2</th>
<th>Q1</th>
<th>2006</th>
<th>Q2p</th>
<th>H2p</th>
<th>2007p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total Foreign</td>
<td>4.1</td>
<td>4.5</td>
<td>3.5</td>
<td>3.3</td>
<td>3.3</td>
<td></td>
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<tr>
<td>2. Industrial Countries</td>
<td>2.6</td>
<td>3.1</td>
<td>2.7</td>
<td>2.4</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Japan</td>
<td>2.8</td>
<td>3.1</td>
<td>3.0</td>
<td>2.0</td>
<td>1.8</td>
<td></td>
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<tr>
<td>4. Euro Area</td>
<td>1.9</td>
<td>2.4</td>
<td>2.7</td>
<td>2.0</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>5. United Kingdom</td>
<td>2.2</td>
<td>2.3</td>
<td>2.5</td>
<td>2.6</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>6. Canada</td>
<td>2.9</td>
<td>3.8</td>
<td>2.5</td>
<td>2.6</td>
<td>2.9</td>
<td></td>
</tr>
<tr>
<td>7. Emerging Economies</td>
<td>6.4</td>
<td>6.6</td>
<td>4.6</td>
<td>4.6</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. China</td>
<td>10.2</td>
<td>13.3</td>
<td>8.0</td>
<td>7.6</td>
<td>8.1</td>
<td></td>
</tr>
<tr>
<td>9. Emerging Asia ex. China</td>
<td>7.2</td>
<td>5.0</td>
<td>4.7</td>
<td>4.8</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>10. Mexico</td>
<td>5.5</td>
<td>6.3</td>
<td>3.2</td>
<td>3.4</td>
<td>3.4</td>
<td></td>
</tr>
</tbody>
</table>

* Aggregates weighted by shares of U.S. exports.

** Stock Prices and EMBI Spreads **
- **EMBI+**
- **Industrial countries**

* Source: MSCI.
Commodity Prices and Global Growth

Consumer Price Inflation

Emerging economies
Industrial economies

Percent*
Quarterly percent changes at an annual rate.

Primary Commodity Prices

Index, 2004:Q1 = 100

Copper
Non-energy commodity prices
Metals

Weekly Spot Prices

Index, January 7, 2005 = 100

Spot Prices

Copper
Zinc

Real Commodity Prices

World GDP**

Real commodity prices
Real WTI

China's Contribution to Growth

2003 2004 2005
1. World GDP growth (%) 4.1 5.3 4.8
2. Contribution of China 1.4 1.5 1.5
3. Increase in world oil consumption (Mb/d) 1.6 3.2 1.1
4. Increase in Chinese oil consumption (Mb/d) 0.6 0.9 0.2

China Inflation Indicators

Annual steel production
Annual steel capacity*

Millions of tons Twelve-month percent change

CPI excluding food

*No data available for 2004.
Global Inflation Indicators

Industrial Country Resource Utilization
Output gap, percent*  Manuf. capacity util., percent**

Developing Country Resource Utilization
Manuf. capacity util., percent*

Euro Area
Percent*
2003 2004 2005 2006
*12-month change.

Canada
Percent*
2003 2004 2005 2006
*12-month change.

Mexico**
Percent*
2003 2004 2005 2006
*12-month change.
**Wages are for manufacturing only. 3-month moving average of 12-month percent changes.

Unit Labor Costs
Four-quarter percent change
2003 2004 2005 2006

10-Year Inflation Expectations
Industrial economies ex. Japan*  Percent
2003 2004 2005 2006
*Canada, Euro Area, Sweden, and U.K., weighted by trade shares.
External Imbalances and the Dollar

Current Account/World GDP

- United States
- Emerging Asia
- Oil exporters
- Japan

Nominal Trade Balance

- Monthly
- Non-oil
- Total

Nominal Dollar Indexes

- Daily
- Major currencies**
- Other important trading partners***
- Broad*

Ten-Year Government Bond Yields

- Daily
- U.S. Treasury
- Weighted-average foreign*

U.S. Financial Flows

<table>
<thead>
<tr>
<th>2005:Q4</th>
<th>2006:Q1</th>
<th>March</th>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Current account balance</td>
<td>-223</td>
<td>-209</td>
<td>...</td>
</tr>
<tr>
<td>2. Official capital, net inflow</td>
<td>77</td>
<td>76</td>
<td>17</td>
</tr>
<tr>
<td>3. Private capital, net inflow</td>
<td>166</td>
<td>82</td>
<td>...</td>
</tr>
<tr>
<td><strong>Of which:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Foreign purchases of U.S. securities</td>
<td>193</td>
<td>181</td>
<td>74</td>
</tr>
<tr>
<td>5. U.S. purchases of foreign securities</td>
<td>-48</td>
<td>-53</td>
<td>-21</td>
</tr>
<tr>
<td>6. Net banking flows</td>
<td>56</td>
<td>11</td>
<td>5</td>
</tr>
</tbody>
</table>
Alternative Scenarios for the Dollar

**Broad Real Dollar**

Index, 2003:Q1 = 100

**Nominal Trade Balance**

Percent of GDP

**Contribution of Real Net Exports to U.S. GDP Growth**

Percentage points, a.r.

**Core Import Prices**

Percent change, a.r.

*Excludes fuels, computers, and semiconductors.

**Core PCE Prices**

Percent change, a.r.

**Federal Funds Rate**

Percent

**U.S. Real GDP Growth**

Percent, a.r.

**Foreign Real GDP Growth**

Percent, a.r.
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></td>
<td>Percentage change, Q4 to Q4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal GDP</td>
<td>5½ to 6½</td>
<td>6 to 6¼</td>
<td>6.1</td>
</tr>
<tr>
<td>February 2006</td>
<td>(5¼ to 6½)</td>
<td>(5¼ to 6)</td>
<td>(6.0)</td>
</tr>
<tr>
<td>Real GDP</td>
<td>3 to 3¼</td>
<td>3¼ to 3½</td>
<td>3.3</td>
</tr>
<tr>
<td>February 2006</td>
<td>(3¼ to 4)</td>
<td>(About 3½)</td>
<td>(3.7)</td>
</tr>
<tr>
<td>Core PCE Prices</td>
<td>2¼ to 3</td>
<td>2¼ to 2½</td>
<td>2.4</td>
</tr>
<tr>
<td>February 2006</td>
<td>(1¼ to 2½)</td>
<td>(About 2)</td>
<td>(2.2)</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>4½ to 5</td>
<td>4¼ to 5</td>
<td>4.9</td>
</tr>
<tr>
<td>February 2006</td>
<td>(4½ to 5)</td>
<td>(4½ to 5)</td>
<td>(5.0)</td>
</tr>
</tbody>
</table>

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

ECONOMIC PROJECTIONS FOR 2007

<table>
<thead>
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<th>Range</th>
<th>Central Tendency</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Percentage change, Q4 to Q4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal GDP</td>
<td>4¾ to 6</td>
<td>5 to 5½</td>
<td>5.0</td>
</tr>
<tr>
<td>February 2006</td>
<td>(5 to 6)</td>
<td>(5 to 5½)</td>
<td>(5.0)</td>
</tr>
<tr>
<td>Real GDP</td>
<td>2½ to 3¼</td>
<td>3 to 3¼</td>
<td>2.7</td>
</tr>
<tr>
<td>February 2006</td>
<td>(3 to 4)</td>
<td>(3 to 3½)</td>
<td>(3.0)</td>
</tr>
<tr>
<td>Core PCE Prices</td>
<td>2 to 2½</td>
<td>2 to 2½</td>
<td>2.2</td>
</tr>
<tr>
<td>February 2006</td>
<td>(1½ to 2)</td>
<td>(1½ to 2)</td>
<td>(1.8)</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>4¼ to 5½</td>
<td>4¼ to 5</td>
<td>5.2</td>
</tr>
<tr>
<td>February 2006</td>
<td>(4½ to 5)</td>
<td>(4½ to 5)</td>
<td>(5.1)</td>
</tr>
</tbody>
</table>
Appendix 3: Materials used by Mr. Reinhart
Material for
FOMC Briefing on Monetary Policy Alternatives

Vincent R. Reinhart
June 29, 2006
Exhibit 1: Policy Expectations and Asset Prices

Federal Funds and Eurodollar Futures

Expected Federal Funds Rates*

Reasons for Inversion of Futures Curve

- Optimal response to inflation bulge
- Nonlinearity in the housing market
- Policy mistake

Selected Financial Market Quotes*

Change in Implied One-Year Forward Rates Since the May FOMC

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

** Carry-adjusted

Note. Forward rates are the one-year rates maturing at the end of the year shown on the horizontal axis as implied by smoothed yield curves fitted to nominal and indexed Treasury securities.
Case for Alternative A

- Weak data on spending
- Concern about housing slump
- Cumulative tightening that has already occurred may be sufficient, given lags in policy.
- Consistent with a number of policy rules

Housing Market Surveys

- Michigan homebuying attitudes
- Builders' ratings of current new home sales

Note. Builders' ratings are seasonally adjusted by Board staff. Sources: Michigan Survey (Homebuying attitudes); National Association of Home Builders (Builders' ratings).

Estimated Policy Rules

- Actual and Greenbook assumption
- Outcome-based rule
- 70 percent confidence interval
- 90 percent confidence interval
- Forecast-based rule

Optimal Policy with 2 Percent Inflation Goal

- Federal Funds Rate
- Unemployment Rate
- Core PCE Inflation
Exhibit 3: The Case for Tightening

Evolution of Staff Forecast

- **Unemployment rate**
  - 2005: 5.6%
  - 2006: 5.4%
  - 2007: 5.2%
  - 2008: 5.0%
  - 2009: 4.8%

- **Change in Core PCE Prices**
  - 2005: 2.5%
  - 2006: 2.0%
  - 2007: 1.5%

Optimal Policy Implications of Recent Changes in the Staff Outlook (Inflation Target: 1.5 Percent)

- **Federal Funds Rate**
  - June 2006: 5.5%
  - January 2007: 5.0%

- **Unemployment Rate**
  - June 2006: 5.0%
  - January 2007: 4.5%

- **Core PCE Inflation**
  - June 2006: 2.5%
  - January 2007: 2.0%

Inflation Compensation

- **Daily**
- **Five-year**
- **Five-year, five years ahead**

Correlation between policy expectations and forward inflation compensation:
- Far-forward inflation compensation declined and policy expectations firmed following official statements.
- Data releases led to increases in policy expectations and inflation compensation.
Exhibit 4: More Tightening to Come?

Range of Estimated Equilibrium Real Rates
- Range of model-based estimates
- 70 percent confidence band
- 90 percent confidence band
- Actual real federal funds rate
- Greenbook-consistent measure

Placing Greater Weights on the Inflation Objective (Inflation Target: 1.5 Percent)

Federal Funds Rate
- Equal Weights
- More Weight on Inflation Objective

Civilian Unemployment Rate

Core PCE Inflation

Probabilities of Alternative Policy Paths over June and August FOMC meetings*

- No Change in June or August
- No Change in June, Hike in August
- Hike in June, No Change in August
- Hike in June and August

*Calculated from federal funds futures and options prices, with term premium and other adjustments

Markets have become convinced of a quarter-point rate hike today.

Odds of a further rate hike in August have moved up to about 70 percent.
<table>
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<tr>
<th>Policy Decision</th>
<th>May FOMC</th>
<th>Alternative A</th>
<th>Alternative B</th>
<th>Alternative C</th>
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<tr>
<td>1. Policy Decision</td>
<td>The Federal Open Market Committee decided today to raise its target for the federal funds rate by 25 basis points to 5 percent.</td>
<td>The Federal Open Market Committee decided today to leave its target for the federal funds rate unchanged at 5 percent.</td>
<td>The Federal Open Market Committee decided today to raise its target for the federal funds rate by 25 basis points to 5 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 5 1/2 percent.</td>
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<td>Rationale</td>
<td>2. Economic growth has been quite strong so far this year. The Committee sees growth as likely to moderate to a more sustainable pace, partly reflecting a gradual cooling of the housing market and the lagged effects of increases in interest rates and energy prices. Recent indicators suggest that economic growth is moderating noticeably from its quite strong pace earlier this year, partly reflecting a cooling of the housing market and the lagged effects of increases in interest rates and energy prices. Recent indicators suggest that economic growth is moderating from its quite strong pace earlier this year, partly reflecting a gradual cooling of the housing market and the lagged effects of increases in interest rates and energy prices. Recent indicators suggest that economic growth is moderating from its quite strong pace earlier this year, but the level of resource utilization remains relatively high.</td>
<td>The Committee views the pickup in core inflation this spring as unwelcome but likely to be transitory. Ongoing productivity gains, anchored inflation expectations, and moderate economic growth should reduce inflation in coming quarters.</td>
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<td>Recent indicators suggest that economic growth is moderating from its quite strong pace earlier this year, but the level of resource utilization remains relatively high. Ongoing productivity gains and contained inflation expectations should restrain inflation going forward. However, recent readings on core inflation have been elevated, which the Committee views as unwelcome.</td>
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<tr>
<td>Assessment of Risk</td>
<td>3. As yet, the run-up in the prices of energy and other commodities appears to have had only a modest effect on core inflation, ongoing productivity gains have helped to hold the growth of unit labor costs in check, and inflation expectations remain contained. Still, possible increases in resource utilization, in combination with the elevated prices of energy and other commodities, have the potential to add to inflation pressures. 4. The Committee judges that some further policy firming may yet be needed to address inflation risks but emphasizes that the extent and timing of any such firming will depend importantly on the evolution of the economic outlook as implied by incoming information. The Committee judges that the risks to the attainment of price stability remain tilted to the upside but recognizes that the moderation in the growth of aggregate demand, along with other forces, should work to contain inflation going forward. While the Committee judges that some further policy firming may yet be needed to address inflation risks, considerable uncertainty attends the outlook, making it prudent to await the accumulation of additional information.</td>
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<td>The Committee judges that the risks to the attainment of price stability remain tilted to the upside but recognizes that the moderation in the growth of aggregate demand should help to limit inflation pressures over time, the Committee judges that some inflation risks remain. The extent and timing of any additional firming that may be needed to address these risks will depend on the evolution of the outlook for both inflation and economic growth, as determined by incoming information. The Committee judges that some further policy firming may yet be needed to accomplish this outcome. The extent and timing of any such firming will depend importantly on the evolution of the economic outlook as implied by incoming information.</td>
<td>In order to foster price stability and sustainable economic growth, the Committee seeks a medium-term decline in core inflation from its recent elevated levels. The Committee judges that some further policy firming may yet be needed to accomplish this outcome. The extent and timing of any such firming will depend importantly on the evolution of the economic outlook as implied by incoming information.</td>
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<td>Assessment of Risk</td>
<td>5. In any event, the Committee will respond to changes in economic prospects as needed to support the attainment of its objectives.</td>
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