The Federal Reserve Board

Meeting of the Federal Open Market Committee December 12, 2006 Presentation Materials -- Text Version

Presentation Materials (PDF)

Pages 122 to 134 of the Transcript

Appendix 1: Materials used by Mr. Kos

Page 1

Top panel

Title: Eurodollar Futures Curves
Series: Eurodollar futures curves, including the quarterly Eurodollar futures contracts from December 2006 through March 2010
Horizon: Two curves shown for the dates of 10/25/2006 and 12/8/2006
Description: The more recent curve from 12/8/2006 shows that U.S. interest rate expectations have come down since 10/25/2006.

Labels represent movements in basis points. Dec-06: 2.2; Mar-07: 11.5; Jun-07: 17.0; Sep-07: 22.0; Dec-07: 25.5; Mar-08: 29.0; Jun-08: 32.0; Sep-08: 33.5; Dec-08: 34.0; Mar-09: 33.5; Jun-09: 32.5; Sep-09: 32.0; Dec-09: 31.0; Mar-10: 30.5.

Middle panel

Title: 2- and 10-Year Treasury Yields and Target Fed Funds Rate
Series: 10-year Treasury yield, 2-year Treasury yield, and target federal funds
Horizon: January 2, 2006 to December 8, 2006
Description: Two- and 10-year Treasury yields rose as the target federal funds rate increased, until late June when yields began to decline. Yields decreased dramatically around the September 20 FOMC meeting (labeled with a tripwire), but rebounded and had risen until they again decreased after the October 25, 2006 FOMC meeting (labeled with a tripwire). Yields have now begun to increase since early December 2006.

Bottom panel

Title: U.S. Breakeven Inflation Rates
Series: 5-year, 10-year, and 5-year 5-year forward breakeven inflation rates
Horizon: January 2, 2006 to December 8, 2006
Description: All three breakeven inflation rates have fluctuated over the period shown. However, on net, the 5-year 5-year forward breakeven inflation rate has risen, whereas 5-year and 10-year breakeven inflation rates have slightly fallen.

Source: Barclays

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Top panel

Title: Eurodollar March 2008-2007 Calendar Spread
Series: Eurodollar March 2008-2007 Calendar Spread
Horizon: May 1, 2006 to December 8, 2006
Description: The calendar spread gradually declined throughout the duration of the period shown until it started to slightly pick up in early December 2006. The FOMC meetings on May 10, 2006 and June 30, 2006 are also shown with tripwires.

Middle panel

Title: Eurodollar March 2002-2001 Calendar Spread
Series: Eurodollar March 2002-2001 Calendar Spread
Horizon: April 1, 2000 to February 28, 2001
Description: The calendar spread began decreasing and continued for the majority of the period shown after the FOMC meeting on May 16, 2000. The spread then significantly picked up after the FOMC meetings on January 3, 2001 and January 31, 2001, where rates were cut. All FOMC meetings shown are labeled with tripwires.

Bottom panel

Title: Eurodollar September 1996-1995 Calendar Spread
Series: Eurodollar September 1996-1995 Calendar Spread
Horizon: October 3, 1994 to July 31, 1995
Description: The calendar spread went through two series of declining periods after the FOMC meetings on November 15, 1994 and February 1, 1995. The spread then began to pick up after the FOMC meeting on July 6, 1995. All FOMC meetings shown are labeled with tripwires.

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Top-left panel

Title: Dow Jones Industrial Average
Series: Dow Jones Industrial Average Index
Horizon: July 3, 2006 to December 8, 2006
Description: The Dow Jones Industrial Average increased substantially since the beginning of August 2006 to the end of the period shown.

Top-right panel

Title: S&P 500 and NASDAQ
Series: S&P 500 Index and NASDAQ Index
Horizon: July 3, 2006 to December 8, 2006
Description: Both the S&P 500 and NASDAQ Indexes have significantly increased in levels since the beginning of August 2006 to the end of the period shown.

Middle-left panel

Title: Dollar - Euro

Series: Euro currency performance in dollars/euro
Horizon: July 3, 2006 to December 8, 2006
Description: The dollar has significantly depreciated against the euro since early October 2006.

Middle-right panel

Title: Dollar - Pound
Series: Great Britain pound currency performance in dollars/pound
Horizon: July 3, 2006 to December 8, 2006
Description: The dollar has significantly depreciated against the pound since mid-July 2006.

Bottom-left panel

Title: Yen - Dollar
Series: Japanese yen currency performance in yen/dollar
Horizon: July 3, 2006 to December 8, 2006
Description: The dollar had significantly appreciated against the yen from July to October 2006, but has since come back down to have only slightly appreciated against the yen over the period shown.

Bottom-right panel

Title: 1-Month Risk Reversals
Series: Dollar-euro and dollar-yen 1-month risk reversals
Horizon: July 3, 2006 to December 8, 2006
Description: Dollar puts have been the majority trade in terms of dollar-euro and dollar-yen since mid-October 2006.

Source: UBS

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Top panel

Title: Foreign Exchange Implied Volatility
Series: 1-month euro-dollar and dollar-yen implied volatility
Horizon: January 2, 1995 to December 8, 2006
Description: Although implied volatility began to pick up in December 2006, it has been declining since 2004 and is at historical low levels dating back to 1995.

Source: Goldman Sachs (1995-1996), Bloomberg (1997-present). *Euro: 1990-1999 = USD/DM, 2000-present = USD/Euro

Middle panel

Title: Implied Volatility on the S&P 100
Series: VIX Index
Horizon: January 2, 1995 to December 8, 2006
Description: Although the index began to pick up in December 2006, it has been declining significantly since mid-2002 and is at historical low levels dating back to 1995.

Source: Bloomberg

Bottom panel

Title: Treasury Yield Implied Volatility
Series: Merrill Lynch Move Index
Horizon: January 2, 1995 to December 8, 2006
Description: Although the index began to pick up in December 2006, it has been declining significantly since mid-2003 and is at historical low levels dating back to 1995.

Source: Merrill Lynch

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Title: Leveraged Buyout Activity
Series: Billions of dollars annually in leveraged buyout activity
Horizon: 1992 through 2006
Description: Total LBO deal volumes have increased from only $23 billion in 2001 to approximately $275 billion in 2006.

Source: S&P

Middle panel

Title: High Yield Use of Proceeds
Series: M&A and LBOs, dividend/share repurchases, capex/corporate, and refinancing activities as a percentage of the total high yield use of proceeds on an annual basis
Horizon: 1992 through Q3 2006
Description: Since 2002, an increasing portion of the proceeds from high yield bond issuance has been redirected from refinancing to M&A/LBO, dividends/share repurchases or capex/corporate expenses.

Source: Merrill Lynch

Bottom panel

Title: Leveraged Loan Volumes vs. HY Bond Issuance
Series: Billions of dollars in loans distributed to non-bank investors, loans retained by banks, and high yield bond issuance
Horizon: 1998 through September 2006
Description: In the current low-risk low-return environment, investors have been willing to fund ever larger amounts of high-yielding speculative loans. According to S&P, $258 billion in non-bank institutional loans have already been granted this year, with an additional $92 billion in the near-term pipeline.

Source: S&P LCD

Appendix 2: Materials used by Mr. Madigan

Material for **FOMC Briefing on Monetary Policy Alternatives**
Brian Madigan

December 12, 2006

Class I FOMC - Restricted Controlled FR

Exhibit 1
Financial Market Developments

The top third of this exhibit consists of three separate charts displaying the ten-year Treasury yield, the exchange value of the dollar, and the Wilshire 5000 stock market index. The middle third of the exhibit consists of a chart showing the evolution of the two-year Treasury yield over the intermeeting period and a table showing changes in measures of inflation compensation. The bottom third of the exhibit consists of a chart showing changes in Treasury forward rates over the intermeeting period and a table showing revisions in private sector forecasts for GDP.

Top panels

Developments shown in these line charts suggest that financial conditions had eased over the intermeeting period, providing support to spending and economic activity.

Top-left panel
Ten-Year Treasury Yield

Over the period since the last FOMC meeting, ten-year Treasury yields declined about 20 basis points.

Top-center panel
Exchange Value of Dollar*

Over the period since the last FOMC meeting, the dollar depreciated about 2 percent.

* Broad index. Return to text

Top-right panel
Wilshire 5000

Over the period since the last FOMC meeting, stock prices climbed about 3 percent.

Middle-left panel
Two-Year Treasury Yield

A line chart showing the evolution of the two-year Treasury yield indicates that a substantial portion of the overall decline in yields over the intermeeting period occurred following economic reports that were weaker than markets had expected--particularly the GDP report for the third quarter of 2006 and the ISM manufacturing report for the month of November.

Middle-right panel
Inflation Compensation

Percent/basis points

	Level	Change from Oct. 24
Five-year*	2.26	0
Five-year five years ahead	2.54	-7

* Adjusted for the carry effect. Return to table

Bottom-left panel
Change in Implied One-Year Forward Treasury Rates since Last FOMC Meeting*

A bar chart shows that forward rates from two to ten years ahead all dropped by about 30 basis points over the period. Thus the change in longer-term interest rates seemed to reflect changes in investors' sense of the economic outlook at rather long horizons.

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

Bottom-right panel
Revisions to GDP Forecasts

Percentage points

Oct. to Dec. revision	2006:Q3-2007:Q4
Primary Dealers	-.3
Blue Chip	-.2
Greenbook*	0
Most recent revision	**Long-term**
Blue Chip (2008-17)	0
Primary Dealers (potential GDP)	0

* Adjusted for motor vehicle anomaly. Return to table

Exhibit 2
Financial Market Developments

Exhibit 2 provides more information regarding the behavior of long-term yields over the intermeeting period and also information about market expectations for the upcoming FOMC meeting. The top third of this exhibit consists of a bar chart and a line chart; the first shows a decomposition of ten-year Treasury yields using a three-factor term structure model. The second chart shows the time-series behavior of two common measures of interest rate uncertainty. The middle third of the exhibit consists of a chart and a table providing information about market expectations for upcoming FOMC meetings. The bottom third of the exhibit shows a chart with information about market measures of uncertainty about policy derived from options, and a set of bullet points describing dealer expectations for the announcement following the current FOMC meeting.

Top-left panel
Estimated Decomposition of Ten-Year Treasury Zero-Coupon Yield

A bar chart. This model-based decomposition of long-term Treasury yields suggests that most of the decline in long-term yields over the intermeeting period can be attributed to a drop in term premiums, which represent the extra return that investors require as compensation for bearing interest rate risk.

Oct 24 expected nominal: 4.60 percent; risk premium: .31 percent. Dec 11 expected nominal: 4.51 percent; risk premium: .12 percent. Based on three-factor affine term structure model.

Top-right panel
Implied Volatilities

This line chart, however, shows that standard measures of interest rate uncertainty moved up over the intermeeting period, thus casting some doubt on the model-based estimates of the term premium.

Ten-Year Treasury, and Six-Month Eurodollar (width of a 90 percent confidence interval computed from the term structures for the expected federal funds rate and implied volatility)

Middle-left panel
Dealers' Average Subjective Uncertainty: Fed Funds Rate Third Meeting Ahead

A bar chart shows that primary dealers' sense of uncertainty about outcomes at upcoming FOMC meetings had been edging up since the summer.

Source: Trading desk's survey of primary dealers. Uncertainty: mean standard deviation of each dealer's subjective distribution.

Middle-right panel
Expected Target Funds Rate

Percent

	Primary Dealers	Fed Funds Futures
2007:Q1	5.16	5.16
2007:Q2	4.98	4.99
2007:Q3	4.85	4.73
2007:Q4	4.82	4.54

Source: Federal funds futures quotes and trading desk's survey of primary dealers.

Bottom-left panel
Implied Distribution of Federal Funds Rate About 6 Months Ahead*

A bar chart shows a probability distribution for the target federal funds rate about six months ahead derived from options on Eurodollar futures. The chart indicates that the mode of this distribution was unchanged at 5¼ percent over the intermeeting period. However, the lower tail of the distribution now puts considerably more weight on lower rates than at the time of the last FOMC meeting.

* Based on the distribution of the three-month Eurodollar rate five months ahead (adjusted for a risk premium), as implied by options on Eurodollar futures contracts. Return to text

Bottom-right panel
Dealer Expectations For Today's Announcement

- Dealers expect no change to stance of policy.
- Most expect little change to wording:
  - only updates of characterization of economy
- A minority anticipate a more significant softening of words

Source: Trading desk's survey of primary dealers.

Exhibit 3

Monetary Policy Alternatives

Exhibit 3 provides information bearing on the monetary policy alternatives discussed in the Bluebook. The top third of the exhibit consists of two sets of bullet points. The bottom two thirds of the exhibit provides information bearing on Alternative B -- the case for an unchanged funds rate along with upside risks to inflation noted in the statement. There are two charts and one list of bullet points.

Top-left panel
Case for Alternative A

Unchanged funds rate, balanced risks

- Still concerned about inflation risks
- But see greater downside risks
    - slight weakening of near-term projection
    - possible nonlinear effects as growth slows
    - financial markets may be signalling weakness
- Consistent with estimated policy rules

Top-right panel
Case for Alternative C

+25 b.p., upside risks

- Financial conditions have become more stimulative…
- As labor markets have tightened further.
- Core inflation does not appear to be on a noticeable downward trend.
- The Committee may be dissatisfied with projected decline in inflation.

Case for Alternative B
Unchanged Funds Rate, Inflation Risks

Middle-left panel
Equilibrium Real Federal Funds Rate: Short-Run Estimates with Confidence Intervals

A line chart displays the current level of the real federal funds rate relative to a range of estimates of the equilibrium real funds rate. The chart suggests that the current level of the real funds rate is toward the high end of the range of empirical estimates of the equilibrium real funds rate.

Middle-right panel
Optimal Control Simulation, Two Percent Inflation Objective: Federal Funds Rate

A line chart displays the optimal funds rate path using the FRB/US model and assuming that policymakers wish to minimize an objective function that includes squared deviations of inflation from a target level and squared deviations of unemployment from the NAIRU and also wish to keep the funds rate path as smooth as possible. The optimal path derived in this way is fairly flat over the next year and then gradually edges lower as inflation falls. Moreover, the optimal path had changed very little since the last round, suggesting that policymakers might wish to retain the same policy stance and risk assessment as at the last FOMC meeting.

Bottom panel
Inflation risks apparently still predominant

- Unemployment rate below most estimates of NAIRU
- Inflation above some participants' preferred ranges

Exhibit 4
Bluebook Version of Table 1

Table 1: Alternative Language for the December FOMC Announcement

[Note: In Appendix 2, Exhibit 4, emphasis (italic) has been added to indicate normal red text in the original document.]

	October FOMC	Alternative A	Alternative B	Alternative C
Policy Decision	1. The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.	The Federal Open Market Committee decided today to *raise* its target for the federal funds rate *by 25 basis points to 5½* percent.
Rationale	2. Economic growth has slowed over the course of the year, partly reflecting a cooling of the housing market. Going forward, the economy seems likely to expand at a moderate pace.	Economic growth has slowed over the course of the year, partly reflecting a *substantial* cooling of the housing market. *Although that adjustment is ongoing and could have a more pronounced effect on growth in coming quarters than anticipated*, the economy seems likely to expand at a moderate pace.	Economic growth has slowed over the course of the year, partly reflecting a *substantial* cooling of the housing market. *Although the recent pace of growth appears to have been somewhat more subdued than anticipated*, the economy seems likely to expand at a moderate pace *on balance over coming quarters*.	Economic growth has slowed over the course of the year, partly reflecting a *substantial* cooling of the housing market. The economy seems likely to expand at a moderate pace *on balance over coming quarters*.
	3. Readings on core inflation have been elevated, and the high level of resource utilization has the potential to sustain inflation pressures. However, inflation pressures seem likely to moderate over time, reflecting reduced impetus from energy prices, contained inflation expectations, and the cumulative effects of monetary policy actions and other factors restraining aggregate demand.	Readings on core inflation have *improved modestly since the spring but remain* elevated. *T*he high level of resource utilization has the potential to sustain inflation pressures. However, inflation pressures seem likely to moderate over time, reflecting reduced impetus from energy prices, contained inflation expectations, and the cumulative effects of monetary policy actions and other factors restraining aggregate demand.	[Unchanged]	Readings on core inflation have been elevated, and the high level of resource utilization has the potential to sustain inflation pressures. Inflation pressures seem likely to moderate over time, *but the extent and speed of that moderation are uncertain. In these circumstances, the Committee believed that an additional firming of policy was appropriate to foster the achievement of price stability.*
Assessment of Risk	4. Nonetheless, 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 implied by incoming information.	*In these circumstances, future policy adjustments* will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.	[Unchanged]	*Although the Committee both seeks and expects a gradual reduction in inflation, it continues to view the risks to that outcome as to the upside.* 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 implied by

	October FOMC	Alternative A	Alternative B	Alternative C
				incoming information.

Exhibit 5
Possible Substitute Language

Table 1: Alternative Language for the December FOMC Announcement

[Note: The table in Appendix 2, Exhibit 5 is identical to the table in Appendix 2, Exhibit 4, except the first table cell of Rationale under Alternative B. As in Exhibit 4, emphasis (italic) has been added to indicate normal red text in the original document. Strong emphasis (bold) has been added to indicate bold green text in the original document.]

	October FOMC	Alternative A	Alternative B	Alternative C
Policy Decision	1. The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.	The Federal Open Market Committee decided today to *raise* its target for the federal funds rate *by 25 basis points to 5½* percent.
Rationale	2. Economic growth has slowed over the course of the year, partly reflecting a cooling of the housing market. Going forward, the economy seems likely to expand at a moderate pace.	Economic growth has slowed over the course of the year, partly reflecting a *substantial* cooling of the housing market. *Although that adjustment is ongoing and could have a more pronounced effect on growth in coming quarters than anticipated,* the economy seems likely to expand at a moderate pace.	Economic growth has slowed over the course of the year, partly reflecting a *substantial* cooling of the housing market. **Although some recent indicators of production and spending have been slightly weaker than anticipated,** the economy seems likely to expand at a moderate pace *on balance over coming quarters*.	Economic growth has slowed over the course of the year, partly reflecting a *substantial* cooling of the housing market. The economy seems likely to expand at a moderate pace *on balance over coming quarters*.
	3. Readings on core inflation have been elevated, and the high level of resource utilization has the potential to sustain inflation pressures. However, inflation pressures seem likely to moderate over time, reflecting reduced impetus from energy prices, contained inflation expectations, and the cumulative effects of monetary policy actions and other factors restraining aggregate demand.	Readings on core inflation have *improved modestly since the spring but remain* elevated. *T*he high level of resource utilization has the potential to sustain inflation pressures. However, inflation pressures seem likely to moderate over time, reflecting reduced impetus from energy prices, contained inflation expectations, and the cumulative effects of monetary policy actions and other factors restraining aggregate demand.	[Unchanged]	Readings on core inflation have been elevated, and the high level of resource utilization has the potential to sustain inflation pressures. Inflation pressures seem likely to moderate over time, *but the extent and speed of that moderation are uncertain. In these circumstances, the Committee believed that an additional firming of policy was appropriate to foster the achievement of price stability.*
Assessment of Risk	4. Nonetheless, 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	*In these circumstances, future policy adjustments* will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.	[Unchanged]	*Although the Committee both seeks and expects a gradual reduction in inflation, it continues to view the risks to that outcome as to the upside.* The extent and timing of any additional firming that may be needed to address these risks will depend on the

October FOMC	Alternative A	Alternative B	Alternative C
growth, as implied by incoming information.			evolution of the outlook for both inflation and economic growth, as implied by incoming information.

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