

Accessible Version

Meeting of the Federal Open Market Committee June 21-22, 2011 Presentation Materials

[Presentation Materials \(PDF\)](#)

Pages 224 to 282 of the Transcript

Appendix 1: Materials used by Mr. Dotsey

Material for
FOMC Briefing on DSGE Models

Michael Dotsey
June 21, 2011

DSGE Project

Exhibit 1 Overview of Models

- DSGE = Dynamic Stochastic General Equilibrium
 - Small to medium size models (smaller than FRB/US, larger than your typical VAR)
 - Models include households, firms, fiscal policy and monetary policy
 - Private agents optimize and are forward-looking
 - Expectations are endogenous
 - General Equilibrium -
 - Prices, wages and interest rates adjust to clear markets
 - Models include economic disturbances (productivity, aggregate demand, policy, etc)
 - Models are estimated
 - Can characterize uncertainty

Exhibit 2 Structure

Firms

- Employ workers and rent capital
- Set prices and prices adjust slowly
 - Pricing behavior produces a Phillips Curve
- Shocks
 - Productivity
 - Price mark-up

Household Sector

- Own firms and capital
- Supply labor
- Make consumption and saving decisions
- Wages adjust slowly
- Shocks
 - Efficiency of investment shocks
 - Labor supply shocks
 - Intertemporal Preference Shocks (affect consumption relative to saving)

Policy

- Fiscal Policy
- Monetary Policy
- Shocks
 - Government spending shocks
 - Monetary policy shocks

Exhibit 3

Implementation and Uses

- Estimation
 - Incorporate priors based on microdata
 - Characterize uncertainty
- Uses
 - Forecasting
 - Variables used in estimating the model
 - Variables not in the model
 - Nowcasting
 - Identification
 - Identify economic disturbances
 - Alternative policies
 - Structural nature of models lets one analyze alternative policies

Pitfalls

- Models are relatively small
- Models are approximations
- Models lack features important for some applications
- Some parameters are more policy invariant than others

Exhibit 4

Great Recession - Key Variables

Top-left panel *Year-over-Year Growth*

Percent Year-over-Year

Period	GDP	Consumption	Bus Fix Inv
2007:Q1	1.34	2.77	-3.30
2007:Q2	1.79	2.61	-1.95
2007:Q3	2.33	2.41	-0.99
2007:Q4	2.32	1.75	-0.84
2008:Q1	1.91	0.96	-2.17
2008:Q2	1.25	0.60	-4.19
2008:Q3	-0.34	-0.71	-6.89
2008:Q4	-2.77	-1.88	-12.26
2009:Q1	-3.80	-1.82	-20.09
2009:Q2	-4.11	-2.24	-21.28
2009:Q3	-2.74	-0.89	-18.61
2009:Q4	0.19	0.18	-12.85
2010:Q1	2.39	0.78	-1.98

Top-right panel *Year-over-Year Hours*

Period	Percent Year-over-Year
2007:Q1	1.00
2007:Q2	1.16
2007:Q3	0.32
2007:Q4	-0.26
2008:Q1	-0.56
2008:Q2	-1.32
2008:Q3	-2.13
2008:Q4	-4.32
2009:Q1	-6.47
2009:Q2	-8.12
2009:Q3	-8.18
2009:Q4	-5.81
2010:Q1	-3.25

Middle-left panel *Core PCE Inflation*

Period	Percent Log Annualized
2007:Q1	2.90
2007:Q2	1.69
2007:Q3	2.13
2007:Q4	2.78

Period	Percent Log Annualized
2008:Q1	2.52
2008:Q2	2.61
2008:Q3	2.13
2008:Q4	0.62
2009:Q1	0.88
2009:Q2	2.25
2009:Q3	1.50
2009:Q4	2.05
2010:Q1	1.22

Middle-right panel
Spread of Baa to 10yr CMT

Period	Percent
2007:Q1	1.62
2007:Q2	1.65
2007:Q3	1.90
2007:Q4	2.25
2008:Q1	3.09
2008:Q2	3.10
2008:Q3	3.34
2008:Q4	5.60
2009:Q1	5.48
2009:Q2	4.67
2009:Q3	3.14
2009:Q4	2.87
2010:Q1	2.57

Note: The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research: December 2007-June 2009.

Bottom panel
Great Recession

- Important for its severity and its lingering effect on current forecasts
- Above figure displays some key variables
 - Sharpest 4 quarter decline in GDP since Great Depression
 - Decline in BFI especially severe
 - Large and persistent job losses
 - Only a subdued decline in inflation
- Challenge for models because only New York includes a fully developed financial sector
- Nevertheless models reach broadly similar conclusions
 - New York model indicates the disturbance was associated with an increase in spreads
 - EDO attributes much of what occurred to an increase in risk premia
 - Chicago and Philadelphia find that investment efficiency shocks and discount rate shocks are the prime drivers
 - These shocks reduce aggregate demand and have a financial interpretation

- Zero lower bound on interest rates also played a significant role in some of the models

Exhibit 5 Summary Table

Federal Reserve Bank	Output Growth (Q4/Q4)			Inflation (Q4/Q4)			Federal Funds Rate (Q4)		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Philadelphia	3.3 (1.4,6.4)	5.1 (0.9,8.7)	4.7 (0.1,8.3)	1.3 (0.4,2.1)	1.1 (-0.3,2.7)	1.3 (-0.2,3.0)	0.2 (0.0,1.2)	0.6 (0.0,2.4)	1.4 (0.0,3.9)
New York	2.1 (0.7,3.2)	2.0 (-1.3,4.6)	1.9 (-1.2,5.2)	1.4 (1.0,1.7)	1.1 (0.3,1.8)	1.5 (0.6,2.3)	0.3 (0.3,1.1)	0.9 (0.3,2.1)	1.8 (0.5,3.3)
Chicago	3.1 (..)	4.5 (..)	4.4 (..)	1.4 (..)	0.6 (..)	0.3 (..)	0.1 (..)	1.0 (..)	2.6 (..)
Board of Governors	2.8 (1.8,3.5)	2.6 (1.1,3.8)	2.5 (1.1,3.9)	1.5 (1.3,1.7)	1.4 (0.8,1.9)	1.4 (0.8,2.0)	0.4 (0.2,1.4)	1.6 (0.6,2.9)	2.4 (1.1,3.8)
Median Forecast*	2.9	3.5	3.4	1.4	1.1	1.3	0.2	0.9	2.1

For each individual forecast, the numbers in parentheses represent 68% bands.

* The median forecast is calculated as the median of the Q4/Q4 projections from the forecasters. [Return to table](#)

Exhibit 6 GDP

Top panel

- Economy is in recovery with 3 models forecasting above trend output growth
 - Philadelphia and Chicago foresee a strong recovery
 - Due to the internal dynamics of models as effects of negative demand shocks dissipate
 - EDO envisions approximately trend growth
 - New York expects slightly below trend growth
 - Financial headwinds have lingering effects in the latter two models

Bottom panel

Real GDP Growth

[Series coincide until 2011:Q2]
Percentage Points (SAAR)

Period	Chicago	New York	Philadelphia	Board
2007:Q1	0.88	0.88	0.88	0.88
2007:Q2	3.24	3.24	3.24	3.24
2007:Q3	2.27	2.27	2.27	2.27
2007:Q4	2.89	2.89	2.89	2.89
2008:Q1	-0.73	-0.73	-0.73	-0.73
2008:Q2	0.60	0.60	0.60	0.60
2008:Q3	-4.00	-4.00	-4.00	-4.00
2008:Q4	-6.77	-6.77	-6.77	-6.77
2009:Q1	-4.87	-4.87	-4.87	-4.87

Period	Chicago	New York	Philadelphia	Board
2009:Q2	-0.70	-0.70	-0.70	-0.70
2009:Q3	1.60	1.60	1.60	1.60
2009:Q4	5.01	5.01	5.01	5.01
2010:Q1	3.73	3.73	3.73	3.73
2010:Q2	1.72	1.72	1.72	1.72
2010:Q3	2.56	2.56	2.56	2.56
2010:Q4	3.11	3.11	3.11	3.11
2011:Q1	1.84	1.84	1.84	1.84
2011:Q2	2.40	2.24	2.43	2.32
2011:Q3	3.79	2.20	4.16	3.51
2011:Q4	4.26	2.31	4.64	3.17
2012:Q1	4.50	2.18	4.91	2.87
2012:Q2	4.54	2.05	5.01	2.63
2012:Q3	4.49	1.94	5.00	2.49
2012:Q4	4.43	1.91	4.94	2.42
2013:Q1	4.41	1.91	4.84	2.41
2013:Q2	4.41	1.96	4.72	2.43
2013:Q3	4.42	2.00	4.58	2.46
2013:Q4	4.42	2.03	4.44	2.50

Exhibit 7 Inflation

Top panel

- Inflation remains subdued over the forecast horizon
 - New York forecasts 1.5% inflation by the end of 2013
 - EDO and Philadelphia expect inflation to be between 1.3% and 1.4% at the end of the forecast horizon
 - In EDO this is a result of labor market slack
 - Chicago projects a sharp decline in inflation

Bottom panel

Core PCE Inflation

[Series coincide until 2011:Q2]
Percentage Points (SAAR)

Period	Chicago	New York	Philadelphia	Board
2007:Q1	2.94	2.94	2.94	2.94
2007:Q2	1.70	1.70	1.70	1.70
2007:Q3	2.15	2.15	2.15	2.15
2007:Q4	2.82	2.82	2.82	2.82
2008:Q1	2.55	2.55	2.55	2.55
2008:Q2	2.65	2.65	2.65	2.65
2008:Q3	2.15	2.15	2.15	2.15

Period	Chicago	New York	Philadelphia	Board
2008:Q4	0.62	0.62	0.62	0.62
2009:Q1	0.89	0.89	0.89	0.89
2009:Q2	2.28	2.28	2.28	2.28
2009:Q3	1.51	1.51	1.51	1.51
2009:Q4	2.07	2.07	2.07	2.07
2010:Q1	1.23	1.23	1.23	1.23
2010:Q2	1.04	1.04	1.04	1.04
2010:Q3	0.53	0.53	0.53	0.53
2010:Q4	0.43	0.43	0.43	0.43
2011:Q1	1.43	1.43	1.43	1.43
2011:Q2	1.60	1.82	1.68	1.83
2011:Q3	1.52	1.24	1.13	1.32
2011:Q4	1.23	1.07	1.06	1.27
2012:Q1	0.93	1.05	1.07	1.31
2012:Q2	0.68	1.09	1.11	1.34
2012:Q3	0.49	1.19	1.14	1.37
2012:Q4	0.35	1.28	1.18	1.38
2013:Q1	0.27	1.36	1.22	1.39
2013:Q2	0.24	1.44	1.25	1.39
2013:Q3	0.24	1.51	1.28	1.38
2013:Q4	0.28	1.59	1.32	1.37

Exhibit 8 Monetary Policy

Top panel

- Paths for monetary policy are somewhat different but none of the models project significant tightening
 - Philadelphia, NY, and Chicago impose an "extended period" of zero interest rates until mid 2012.
 - By the end of 2012 the models expect the funds rate to be 0.6% (Philadelphia), 0.9% (NY), 1.0% (Chicago), and 1.6% (EDO)
 - The modest to measured policy response is largely due to the benign projections for inflation

Bottom panel

Federal Funds Rate

[Series coincide until 2011:Q2]
Percentage Points

Period	Chicago	New York	Philadelphia	Board
2007:Q1	5.26	5.26	5.26	5.26
2007:Q2	5.25	5.25	5.25	5.25
2007:Q3	5.09	5.09	5.09	5.09
2007:Q4	4.49	4.49	4.49	4.49
2008:Q1	3.18	3.18	3.18	3.18

Period	Chicago	New York	Philadelphia	Board
2008:Q2	2.09	2.09	2.09	2.09
2008:Q3	1.96	1.96	1.96	1.96
2008:Q4	0.53	0.53	0.53	0.53
2009:Q1	0.19	0.19	0.19	0.19
2009:Q2	0.18	0.18	0.18	0.18
2009:Q3	0.15	0.15	0.15	0.15
2009:Q4	0.12	0.12	0.12	0.12
2010:Q1	0.13	0.13	0.13	0.13
2010:Q2	0.19	0.19	0.19	0.19
2010:Q3	0.19	0.19	0.19	0.19
2010:Q4	0.19	0.19	0.19	0.19
2011:Q1	0.16	0.16	0.16	0.16
2011:Q2	0.10	0.09	0.16	0.10
2011:Q3	0.09	0.25	0.19	0.16
2011:Q4	0.10	0.25	0.19	0.36
2012:Q1	0.13	0.25	0.19	0.66
2012:Q2	0.17	0.24	0.19	0.98
2012:Q3	0.23	0.60	0.41	1.30
2012:Q4	0.98	0.87	0.62	1.59
2013:Q1	1.55	1.11	0.82	1.84
2013:Q2	1.98	1.34	1.02	2.07
2013:Q3	2.32	1.55	1.21	2.26
2013:Q4	2.60	1.75	1.39	2.42

Appendix 2: Materials used by Chairman Bernanke

Material for FOMC Discussion of Exit Strategy Principles

June 21, 2011

Exit Strategy Principles

In light of discussions at the April and June FOMC meetings, the Committee has reached broad agreement on the key elements of the strategy that it expects to follow in normalizing the stance and conduct of monetary policy:

1. The Committee will determine the timing and pace of policy normalization to promote its statutory mandate of maximum employment and price stability.
2. To begin the process of policy normalization, the Committee will likely first cease reinvesting some or all payments of principal on the securities holdings in the System Open Market Account (SOMA).
3. At the same time or relatively soon thereafter, the Committee will modify its forward guidance on the path of the federal funds rate and will initiate temporary reserve-draining operations aimed at supporting the implementation of increases in the federal funds rate when appropriate.
4. When economic conditions warrant, the Committee's next step in the process of policy normalization will be to begin raising its target for the federal funds rate. **[The Committee currently anticipates that the first increase will be three to six months after the modification of the forward guidance.]** ~~and~~ From that point on, changing the level or range of the federal funds rate target will be the primary means of adjusting the stance of monetary policy. **During the normalization process,**

adjustments to the interest rate on excess reserves and to the level of reserves in the banking system will be used to bring the funds rate toward its target.

5. Sales of agency securities from the SOMA will likely commence sometime after the first increase in the target for the federal funds rate, probably within a few months. The timing and pace of sales will be communicated to the public in advance; that pace is anticipated to be relatively gradual and steady, but it could be adjusted in response to material changes in the economic outlook or financial conditions.
6. The pace of sales is expected to be aimed at eliminating our holdings of agency securities over a period of four to five years, thereby minimizing the extent to which the SOMA portfolio might affect the allocation of credit across sectors of the economy. Sales at this pace would be expected to normalize the size of the SOMA securities portfolio over a period of about three years. In particular, the size of the securities portfolio and the associated quantity of bank reserves are expected to be reduced to levels that would be consistent with the implementation of monetary policy through the use of conventional open market operations to keep the federal funds rate [near its target | **within a corridor defined below by the interest rate paid on excess reserves and above by the primary credit rate**].
7. The Committee is prepared to make adjustments to its exit strategy if necessary in light of economic and financial developments.

Appendix 3: Materials used by Mr. Sack

Material for **FOMC Presentation**:

Financial Market Developments and Desk Operations

Brian Sack
June 21, 2011

Exhibit 1

Top-left panel

(1)

Title: Implied Federal Funds Rate Path

Series: Future federal funds rates implied by Eurodollar and federal funds futures contracts

Horizon: 4/26/11, 6/17/11

Description: The implied federal funds rate path moved down during the intermeeting period.

Source: Federal Reserve Bank of New York

Top-right panel

(2)

Title: Probability Distribution of First Increase in Federal Funds Target Rate

Series: April and June Policy Survey

Horizon: 2011:Q2 to 2013:Q1 and later

Description: Survey respondents pushed back their expectations for an increase in the Federal Funds target rate.

Average response from dealer survey.

Source: Federal Reserve Bank of New York Policy Survey

Middle-left panel

(3)

Title: Economic News Index

Series: Citigroup economic surprise index

Horizon: August 3, 2009 - June 17, 2011

Description: During the intermeeting period the economic surprise index fell drastically.

Positive readings correspond to stronger than expected economic releases.

Source: Citigroup

Middle-right panel

(4)

Title: Treasury Yields

Series: 2-year, 5-year, and 10-year Treasury yields

Horizon: August 3, 2009 - June 17, 2011

Description: Treasury yields ended the period lower than their levels at the time of the last FOMC meeting.

Source: Bloomberg

Bottom-left panel

(5)

Title: Breakeven Inflation Rates

Series: 5-year spot and 5-year, 5-year forward rates

Horizon: January 1, 2010 - June 17, 2011

Description: Breakeven inflation rates fell during the intermeeting period.

Source: Federal Reserve Board of Governors

Bottom-right panel

(6)

Title: Implied Probability of Deflation over Next Several Years

Series: Deflation probability informed by model based on yields on TIPS maturing in April 2014

Horizon: January 1, 2010 - June 13, 2011

Description: The implied probability of deflation has stayed relatively flat since the last FOMC meeting.

Markets Group deflation probability model based on TIPS security maturing in April 2014.

Source: Barclays Capital, Federal Reserve Bank of New York

Exhibit 2

Top-left panel

(7)

Title: Equities and High Yield Spread

Series: S&P 500 price (indexed to 08/03/09) and Bank of America Merrill Lynch US High Yield Master II Option-Adjusted Spread

Horizon: August 3, 2009 - June 17, 2011

Description: Equity prices dropped sharply since the previous FOMC meeting, concurrent with a rise in the spread between the high-yield debt yield curve and the Treasury curve.

Source: Bloomberg, Bank of America

Top-right panel

(8)

Title: Non-Agency RMBS Price

Series: 07-01 AAA ABX index

Horizon: August 3, 2009 - June 17, 2011

Description: Credit default swap prices for non-agency residential mortgage-backed securities have declined since the previous meeting.

Source: JPMorgan Chase

Middle-left panel
(9)

Title: U.S. Bank Index
Series: KBW bank index
Horizon: August 3, 2009 - June 17, 2011
Description: The index's decline shows perceived weakness in bank stocks.

Source: Bloomberg

Middle-right panel
(10)

Title: Broad Dollar Index
Series: Broad Dollar Index
Horizon: August 3, 2009 - June 17, 2011
Description: The broad dollar appreciated slightly in the intermeeting period.

Source: Federal Reserve Board of Governors

Bottom-left panel
(11)

Title: Euro Area Sovereign Debt Spreads
Series: Spreads on 2-year Greek bonds & Spanish bonds as compared to Germany
Horizon: August 3, 2009 - June 17, 2011
Description: The spread on Greek debt rose sharply in the latter portion of the intermeeting period, while the spread on Spanish debt increased only slightly.

Source: Bloomberg

Bottom-right panel
(12)

Title: Libor Spread over OIS (Three-month Rate)
Series: Three-month forward Libor-OIS spread and spot Libor-OIS spread
Horizon: August 3, 2009 - June 17, 2011
Description: The spot spread between the Libor rate and the overnight index swap rate dropped slightly but largely remained steady at roughly 10 basis points, while the three-month forward spread increased sharply in the last few days of the intermeeting period.

Source: Bloomberg

Exhibit 3

Top-left panel
(13)

Title: Treasury Debt Outstanding
Series: Past and forecast Treasury debt outstanding, and current debt limit
Horizon: October 1, 2010 - October 1, 2011
Description: Treasury reached the current debt limit, and the amount of debt outstanding has flattened accordingly. The current limit will be exceeded after August 2nd.

Source: Federal Reserve Board of Governors

Top-right panel
(14)

Title: Treasury Principal and Interest Payments Due after August 2nd

Series: Marketable Treasury principal and interest payments due

Horizon: August 2, 2011 - August 31, 2011

Description: Treasury has debt payments on the order of hundreds of billions of dollars due in August 2011, most of which is comprised by principal payments.

Source: Federal Reserve Bank of New York

Middle-left panel
(15)

Title: Treasury Bill Curve

Series: Treasury bill curve

Horizon: June 15, 2011 - December 15, 2011

Description: The Treasury bill term structure is relatively normal, with the market apparently not exhibiting any sharp price increase in bills maturing after the possible debt default date of August 2nd.

Source: Bloomberg

Middle-right panel
(16)

Title: Implied Volatility of Ten-Year Yield (Over Next Three Months)

Series: Implied volatility of ten-year yield over the next three months, derived from swaption prices

Horizon: August 3, 2009 - June 17, 2011

Description: The volatility of ten-year Treasury yields implied by swaption prices has held steady for the last few months, with a slight uptick in recent weeks.

Source: Barclays Capital

Bottom-left panel
(17) *Operational Challenges for SOMA*

- Outright purchases of Treasury securities
- Rollover of maturing Treasury securities
- Securities lending activity
- Ability to conduct repurchase agreements
- Accounting and reporting of SOMA

Source: Federal Reserve Bank of New York

Bottom-right panel
(18)

Title: Short-Term Funding Rates

Series: 5-day moving average of Treasury GC repo, 1-month Treasury bill, and Federal Funds rate

Horizon: August 3, 2009 - June 17, 2011

Description: While the Federal Funds rate and 1-month Treasury bill rate have remained steady since the previous FOMC meeting (with a rise and subsequent fall in the Treasury bill rate), the haircut on Treasury general collateral used in repurchase agreements has increased.

Source: Federal Reserve Bank of New York

Exhibit 4

Top-left panel (19)

Title: SOMA Purchases of Treasury Securities

Series: Past and projected SOMA purchases of Treasury securities through LSAP 2 and reinvestments

Horizon: June 2010 - December 2011

Description: The SOMA purchase schedule continues as planned, with LSAP 2 purchases complete at the end of June and reinvestments from principal repayment continuing after this date.

*Projection reflects assumption that reinvestments continue through year end.

Source: Federal Reserve Bank of New York

Top-right panel (20) *Proposed Distribution of Reinvestments Compared to LSAP 2*

LSAP 2		Reinvestments	
Maturity	Allocation	Maturity	Allocation
1.5 to 2.5	5%	1.5 to 2.5	5%
2.5 to 4	20%	2.5 to 4	20%
4 to 5.5	20%	4 to 5.5	20%
5.5 to 7	23%	5.5 to 7	23%
7 to 10	23%	7 to 10	23%
10 to 17	2%	10 to 30	6%
17 to 30	4%		
TIPS	3%	TIPS	3%

Source: Federal Reserve Bank of New York.

Middle-left panel (21)

Title: SOMA Holdings as a Percent of Outstanding

Series: Past and current SOMA holdings as a percent of outstanding Treasury debt

Horizon: January 3, 2007 - June 17, 2011

Description: SOMA holdings as a percentage of outstanding Treasury debt have ticked up significantly in recent months given the continuation of the LSAP program.

Source: Federal Reserve Bank of New York, U.S. Department of Treasury

Middle-right panel (22)

Title: 10-Year Treasury Bid-Ask Spread

Series: Bid-ask spread for on-the-run 10-year Treasury

Horizon: June 23, 2009 - June 17, 2011

Description: Aside from a momentary spike early in the LSAP 2 period, the bid-ask spread has remained relatively constant since the announcement of the purchase program in November, indicating that these purchases have not had noticeably detrimental effects in the liquidity or functioning of the market for Treasuries.

Source: BrokerTec

Bottom-left panel (23)

Title: Probability of Asset Purchases and Sales over 2-Year Horizon

Series: Probability of Treasury and MBS purchases and sales: June survey median, June survey interquartile range, and March survey median

Horizon: March 2011, June 2011

Description: Surveyed market participants believe there is a low probability of any new policy initiative to purchase more MBS or Treasuries, while their assessments of the probability of Treasury and MBS sales have increased since March (especially for MBS).

Source: Federal Reserve Bank of New York Policy Survey

Bottom-right panel

(24)

Title: Expected Size of Domestic Assets in SOMA

Series: Estimates of size of SOMA from Tealbook, June survey median, and June survey interquartile range

Horizon: End-of-year 2009 - End-of-year 2015

Description: Tealbook estimates and June policy survey estimates track quite closely over the coming years, and there is broad agreement that the end of 2011 will mark the balance sheet's high point for the near future.

Source: Federal Reserve Bank of New York Policy Survey

Appendix 4: Materials used by Mr. Slifman, Ms. Wilson, Mr. Reeve, and Mr. Covitz

Material for *Staff Presentation on the Economic Outlook*

June 21-22, 2011

Exhibit 1 Recent Indicators

Top-left panel

Change in Private Payroll Employment

Period	Thousands of employees	Three-month moving average
January 2007	190	ND
February 2007	58	ND
March 2007	200	149.33
April 2007	57	105.00
May 2007	111	122.67
June 2007	50	72.67
July 2007	17	59.33
August 2007	-95	-9.33
September 2007	5	-24.33
October 2007	74	-5.33
November 2007	98	59.00
December 2007	38	70.00
January 2008	4	46.67
February 2008	-128	-28.67
March 2008	-87	-70.33

Period	Thousands of employees	Three-month moving average
April 2008	-186	-133.67
May 2008	-240	-171.00
June 2008	-217	-214.33
July 2008	-265	-240.67
August 2008	-317	-266.33
September 2008	-434	-338.67
October 2008	-491	-414.00
November 2008	-787	-570.67
December 2008	-636	-638.00
January 2009	-841	-754.67
February 2009	-721	-732.67
March 2009	-787	-783.00
April 2009	-773	-760.33
May 2009	-326	-628.67
June 2009	-438	-512.33
July 2009	-287	-350.33
August 2009	-215	-313.33
September 2009	-213	-238.33
October 2009	-250	-226.00
November 2009	-34	-165.67
December 2009	-102	-128.67
January 2010	-42	-59.33
February 2010	-21	-55.00
March 2010	144	27.00
April 2010	229	117.33
May 2010	48	140.33
June 2010	65	114.00
July 2010	93	68.67
August 2010	110	89.33
September 2010	109	104.00
October 2010	143	120.67
November 2010	128	126.67
December 2010	167	146.00
January 2011	94	129.67
February 2011	261	174.00
March 2011	219	191.33
April 2011	251	243.67
May 2011	83	184.33

Top-right panel
Manufacturing IP

Percent change, annual rate

Period	April Tealbook	June Tealbook
2010:Q3	ND	5.1
2010:Q4	ND	3.4

Period	April Tealbook	June Tealbook
2011:Q1	9.1	6.5
<i>Forecast</i>		
2011:Q2	5.0	1.4

Middle-left panel
Consumer Spending

- News for consumer outlays disappointing.
- Revised down level of real DPI nearly \$70 billion in Q1.
- Consumer sentiment remains low.
- Real PCE up at only a 1½ percent rate in Q2.

Middle-right panel
Business Conditions Index

Diffusion index

Period	ISM-PMI	Empire State	Philadelphia
January 2007	49.9	56.02	52.45
February 2007	52.0	61.13	51.85
March 2007	51.3	54.04	52.70
April 2007	52.6	53.68	52.75
May 2007	52.3	55.72	54.20
June 2007	52.4	59.15	57.25
July 2007	51.7	60.96	53.90
August 2007	50.2	60.43	51.10
September 2007	50.0	55.62	55.25
October 2007	50.9	60.65	51.85
November 2007	51.5	61.23	52.40
December 2007	49.0	55.32	54.85
January 2008	51.1	50.88	44.30
February 2008	48.9	48.11	45.90
March 2008	49.0	48.94	48.10
April 2008	48.8	50.28	43.00
May 2008	48.8	50.48	48.75
June 2008	49.0	48.07	40.80
July 2008	49.6	51.43	42.50
August 2008	48.0	47.93	41.45
September 2008	43.8	49.80	51.55
October 2008	38.4	38.93	35.10
November 2008	36.9	39.40	33.85
December 2008	33.3	38.40	35.55
January 2009	35.7	38.43	39.85
February 2009	36.0	38.73	35.50
March 2009	36.6	28.11	32.45
April 2009	39.9	47.58	38.95
May 2009	41.9	45.82	38.80
June 2009	44.7	45.93	44.20

Period	ISM-PMI	Empire State	Philadelphia
July 2009	49.0	51.98	47.45
August 2009	51.4	56.26	51.05
September 2009	53.2	58.48	51.30
October 2009	55.8	64.19	54.00
November 2009	54.7	58.36	55.50
December 2009	56.4	51.12	52.35
January 2010	58.3	60.16	54.00
February 2010	57.1	56.71	61.15
March 2010	60.4	62.09	56.20
April 2010	59.6	64.05	57.00
May 2010	57.8	57.49	53.25
June 2010	55.3	58.78	52.90
July 2010	55.1	54.65	47.75
August 2010	55.2	49.60	46.25
September 2010	55.3	51.94	46.30
October 2010	56.9	55.01	48.35
November 2010	58.2	38.10	54.00
December 2010	58.5	51.02	55.30
January 2011	60.8	56.20	61.80
February 2011	61.4	55.90	61.85
March 2011	61.2	52.91	70.15
April 2011	60.4	61.17	59.40
May 2011	53.5	58.60	52.70
June 2011	ND	46.11	46.15

Bottom-left panel

Transitory Influences on GDP Growth Rate

- Effects of the disasters in Japan on U.S. production of motor vehicles and parts.
- Higher price of imported oil.
- Temporary drop in defense purchases.

Bottom-right panel

GDP Projection

(Percent change, annual rate)

		2011		
		Q1	Q2	Q3
1.	Real GDP	2.1	1.9	3.9
2.	Apr. TB	1.7	3.1	4.1
<i>Excluding earthquake effects</i>				
3.	Real GDP		2.7	2.9
4.	Apr. TB		3.4	3.6

Exhibit 2

Sluggish Recovery

Top-left panel *Real GDP*

Peak = 100

Quarter, from NBER peak	Peak 1973:Q4	Peak 1981:Q3	Peak 2007:Q4, Jan. 2010 TB	Peak 2007:Q4, Current
0	100.00	100.00	100.00	100.00
1	99.12	98.75	99.82	99.82
2	99.38	97.13	99.97	99.97
3	98.39	97.66	98.95	98.95
4	98.01	97.28	97.23	97.23
5	96.81	97.36	96.03	96.03
6	97.55	98.57	95.86	95.86
7	99.20	100.79	96.24	96.24
8	100.49	102.77	97.42	97.42
			<i>Forecast</i>	
9	102.78	104.90	98.09	98.32
10	103.55	106.93	99.02	98.74
11	104.06	108.78	99.96	99.36
12	104.81	109.84	100.94	100.13
13	106.03	110.73	102.00	100.59
				<i>Forecast</i>
14	108.14	111.78	103.19	101.13
15	110.07	112.72	104.43	102.11
16	110.05	114.48	105.71	102.84

Top-right panel *Real PCE*

Peak = 100

Quarter, from NBER peak	Peak 1973:Q4	Peak 1981:Q3	Peak 2007:Q4, Jan. 2010 TB	Peak 2007:Q4, Current
0	100.00	100.00	100.00	100.00
1	99.12	99.24	99.81	99.81
2	99.47	99.89	99.83	99.83
3	99.88	100.24	98.94	98.94
4	98.42	101.01	98.12	98.12
5	99.24	102.85	97.99	97.99
6	100.90	103.86	97.59	97.59
7	102.33	105.93	98.07	98.07
8	103.42	107.80	98.29	98.29
			<i>Forecast</i>	
9	105.49	109.51	98.96	98.75
10	106.45	110.44	99.63	99.29
11	107.58	112.02	100.35	99.88

Quarter, from NBER peak	Peak 1973:Q4	Peak 1981:Q3	Peak 2007:Q4, Jan. 2010 TB	Peak 2007:Q4, Current
12	108.98	112.89	101.05	100.86
13	110.23	114.38	101.87	101.41
				<i>Forecast</i>
14	110.84	116.32	102.78	101.81
15	111.89	117.38	103.77	102.46
16	113.58	119.61	104.80	103.08

Middle-left panel
Real Residential Construction

Peak = 100

Quarter, from NBER peak	Peak 1973:Q4	Peak 1981:Q3	Peak 2007:Q4, Jan. 2010 TB	Peak 2007:Q4, Current
0	100.00	100.00	100.00	100.00
1	92.67	89.76	92.15	92.15
2	88.63	84.58	88.75	88.75
3	85.70	81.91	83.24	83.24
4	74.43	81.65	75.43	75.43
5	69.83	87.63	67.40	67.40
6	71.33	102.57	63.81	63.81
7	76.30	114.72	65.43	65.43
8	79.64	126.08	65.30	65.30
			<i>Forecast</i>	
9	87.78	131.41	65.51	63.19
10	90.30	135.06	67.56	66.90
11	88.83	137.56	66.87	61.78
12	100.15	136.24	68.83	62.28
13	103.17	136.38	71.92	61.82
				<i>Forecast</i>
14	114.98	135.96	76.56	62.21
15	114.61	137.05	81.41	62.84
16	113.10	138.78	85.92	62.95

Middle-right panel
Real Equipment and Software

Peak = 100

Quarter, from NBER peak	Peak 1973:Q4	Peak 1981:Q3	Peak 2007:Q4, Jan. 2010 TB	Peak 2007:Q4, Current
0	100.00	100.00	100.00	100.00
1	100.17	99.11	100.74	100.74
2	100.06	97.37	99.19	99.19
3	100.74	93.67	96.30	96.30
4	97.04	91.96	88.24	88.24
5	90.54	90.29	80.26	80.26
6	88.74	89.98	80.29	80.29
7	89.72	94.60	81.12	81.12

Quarter, from NBER peak	Peak 1973:Q4	Peak 1981:Q3	Peak 2007:Q4, Jan. 2010 TB	Peak 2007:Q4, Current
8	90.96	100.11	83.93	83.93
			<i>Forecast</i>	
9	92.17	108.71	85.63	87.92
10	94.04	110.82	88.31	92.92
11	96.67	116.29	91.60	96.31
12	99.44	120.20	94.72	98.12
13	105.43	124.04	98.16	100.51
				<i>Forecast</i>
14	108.04	123.32	101.51	102.23
15	110.61	126.17	104.95	105.46
16	115.74	124.63	108.38	107.89

Bottom-left panel

Why is Consumer Spending So Sluggish?

- One-fourth of mortgage borrowers underwater.
- Few resources available to smooth consumption.
- Reduced income expectations; higher precautionary saving.

Bottom-right panel

Median Expected Change in Family Income

Period	Three-month moving average
January 1985	3.33
February 1985	3.00
March 1985	2.67
April 1985	2.63
May 1985	2.57
June 1985	2.90
July 1985	2.87
August 1985	3.03
September 1985	2.83
October 1985	2.83
November 1985	2.77
December 1985	2.93
January 1986	3.10
February 1986	3.17
March 1986	2.97
April 1986	3.10
May 1986	3.10
June 1986	3.17
July 1986	3.20
August 1986	3.27
September 1986	3.23
October 1986	3.23
November 1986	3.23

Period	Three-month moving average
December 1986	3.23
January 1987	3.13
February 1987	2.93
March 1987	2.57
April 1987	2.50
May 1987	2.47
June 1987	2.77
July 1987	2.67
August 1987	2.93
September 1987	2.77
October 1987	2.93
November 1987	3.10
December 1987	3.27
January 1988	3.17
February 1988	3.17
March 1988	3.37
April 1988	3.13
May 1988	2.73
June 1988	2.53
July 1988	2.90
August 1988	3.40
September 1988	3.67
October 1988	3.53
November 1988	3.50
December 1988	3.40
January 1989	3.47
February 1989	3.33
March 1989	3.17
April 1989	3.27
May 1989	3.10
June 1989	3.07
July 1989	2.77
August 1989	2.87
September 1989	2.93
October 1989	3.30
November 1989	3.50
December 1989	3.70
January 1990	3.60
February 1990	3.20
March 1990	3.10
April 1990	3.37
May 1990	3.50
June 1990	3.47
July 1990	3.40
August 1990	3.30

Period	Three-month moving average
September 1990	3.17
October 1990	2.70
November 1990	2.60
December 1990	2.57
January 1991	2.67
February 1991	2.60
March 1991	2.73
April 1991	2.70
May 1991	2.33
June 1991	2.33
July 1991	2.30
August 1991	2.40
September 1991	2.30
October 1991	2.40
November 1991	2.80
December 1991	2.73
January 1992	2.33
February 1992	2.00
March 1992	1.80
April 1992	2.20
May 1992	2.37
June 1992	2.67
July 1992	2.20
August 1992	2.07
September 1992	2.10
October 1992	2.47
November 1992	2.80
December 1992	2.93
January 1993	3.03
February 1993	2.93
March 1993	2.40
April 1993	2.10
May 1993	2.03
June 1993	2.30
July 1993	2.33
August 1993	2.10
September 1993	2.27
October 1993	2.43
November 1993	2.83
December 1993	2.63
January 1994	2.37
February 1994	2.23
March 1994	2.13
April 1994	2.47
May 1994	2.43

Period	Three-month moving average
June 1994	2.50
July 1994	2.17
August 1994	2.03
September 1994	2.17
October 1994	2.43
November 1994	2.60
December 1994	2.63
January 1995	2.70
February 1995	2.67
March 1995	2.53
April 1995	2.33
May 1995	2.37
June 1995	2.47
July 1995	2.60
August 1995	2.63
September 1995	2.43
October 1995	2.43
November 1995	2.37
December 1995	2.40
January 1996	2.43
February 1996	2.37
March 1996	2.63
April 1996	2.53
May 1996	2.50
June 1996	2.23
July 1996	2.30
August 1996	2.47
September 1996	2.73
October 1996	2.80
November 1996	2.77
December 1996	2.63
January 1997	2.63
February 1997	2.77
March 1997	2.77
April 1997	2.73
May 1997	2.67
June 1997	2.70
July 1997	2.70
August 1997	2.60
September 1997	2.43
October 1997	2.47
November 1997	2.57
December 1997	2.73
January 1998	2.70
February 1998	2.83

Period	Three-month moving average
March 1998	2.70
April 1998	2.70
May 1998	2.47
June 1998	2.57
July 1998	2.60
August 1998	2.73
September 1998	2.87
October 1998	2.77
November 1998	2.70
December 1998	2.67
January 1999	2.73
February 1999	2.77
March 1999	2.77
April 1999	2.73
May 1999	2.77
June 1999	2.90
July 1999	3.03
August 1999	3.17
September 1999	3.13
October 1999	3.13
November 1999	3.03
December 1999	2.90
January 2000	2.97
February 2000	3.00
March 2000	3.17
April 2000	3.10
May 2000	3.07
June 2000	3.00
July 2000	3.00
August 2000	3.00
September 2000	3.10
October 2000	3.07
November 2000	3.13
December 2000	3.00
January 2001	2.97
February 2001	2.93
March 2001	3.00
April 2001	2.90
May 2001	2.87
June 2001	2.63
July 2001	2.53
August 2001	2.47
September 2001	2.27
October 2001	2.10
November 2001	1.90

Period	Three-month moving average
December 2001	2.27
January 2002	2.57
February 2002	2.87
March 2002	2.67
April 2002	2.70
May 2002	2.57
June 2002	2.73
July 2002	2.87
August 2002	2.83
September 2002	2.80
October 2002	2.60
November 2002	2.57
December 2002	2.60
January 2003	2.53
February 2003	2.40
March 2003	2.33
April 2003	2.37
May 2003	2.53
June 2003	2.53
July 2003	2.80
August 2003	2.73
September 2003	2.67
October 2003	2.27
November 2003	2.33
December 2003	2.43
January 2004	2.67
February 2004	2.67
March 2004	2.67
April 2004	2.47
May 2004	2.43
June 2004	2.43
July 2004	2.57
August 2004	2.63
September 2004	2.53
October 2004	2.43
November 2004	2.43
December 2004	2.57
January 2005	2.80
February 2005	2.77
March 2005	2.63
April 2005	2.33
May 2005	2.23
June 2005	2.03
July 2005	2.27
August 2005	2.20

Period	Three-month moving average
September 2005	2.33
October 2005	2.27
November 2005	2.33
December 2005	2.57
January 2006	2.50
February 2006	2.47
March 2006	2.17
April 2006	2.23
May 2006	2.13
June 2006	2.23
July 2006	2.13
August 2006	2.27
September 2006	2.13
October 2006	2.37
November 2006	2.50
December 2006	2.77
January 2007	2.70
February 2007	2.67
March 2007	2.67
April 2007	2.63
May 2007	2.50
June 2007	2.37
July 2007	2.37
August 2007	2.47
September 2007	2.40
October 2007	2.30
November 2007	2.33
December 2007	2.40
January 2008	2.40
February 2008	2.17
March 2008	2.23
April 2008	1.80
May 2008	1.83
June 2008	1.60
July 2008	1.93
August 2008	2.00
September 2008	2.20
October 2008	1.93
November 2008	1.67
December 2008	1.07
January 2009	0.83
February 2009	0.50
March 2009	0.37
April 2009	0.30
May 2009	0.23

Period	Three-month moving average
June 2009	0.30
July 2009	0.27
August 2009	0.33
September 2009	0.27
October 2009	0.30
November 2009	0.27
December 2009	0.37
January 2010	0.37
February 2010	0.33
March 2010	0.27
April 2010	0.27
May 2010	0.30
June 2010	0.30
July 2010	0.27
August 2010	0.27
September 2010	0.30
October 2010	0.33
November 2010	0.37
December 2010	0.37
January 2011	0.33
February 2011	0.27
March 2011	0.20
April 2011	0.23
May 2011	0.27

Note: Expected family income change during the next 12 months. The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research: July 1990-March 1991, March 2001-November 2001, and December 2007-June 2009.

Source: Thompson Reuters/University of Michigan Surveys of Consumers.

Exhibit 3 Medium-term Forecast

Top-left panel *Real GDP*

Percent change, annual rate

Period	April Tealbook	June Tealbook
2011:H1*	2.6	2.4
2011:H2*	3.8	3.0
2012	4.2	3.5

* Excluding earthquake effects. [Return to table](#)

Top-right panel *Unemployment Rate*

Percent

Period	April Tealbook	Current
2007:Q1	ND	4.50
2007:Q2	ND	4.50
2007:Q3	ND	4.70
2007:Q4	ND	4.80
2008:Q1	ND	5.00
2008:Q2	ND	5.30
2008:Q3	ND	6.00
2008:Q4	ND	6.90
2009:Q1	ND	8.20
2009:Q2	ND	9.30
2009:Q3	ND	9.70
2009:Q4	ND	10.00
2010:Q1	ND	9.70
2010:Q2	ND	9.60
2010:Q3	ND	9.60
2010:Q4	ND	9.60
2011:Q1	8.93	8.93
<i>Forecast</i>		
2011:Q2	8.85	9.02
2011:Q3	8.78	9.00
2011:Q4	8.68	8.86
2012:Q1	8.45	8.79
2012:Q2	8.19	8.63
2012:Q3	7.93	8.42
2012:Q4	7.66	8.13

Middle-left panel

Factors Influencing Contour of the Forecast

Positives

- Accommodative monetary policy, lower dollar, increasing credit availability, waning effects of earlier wealth declines.
- Household and business confidence recuperate.

But...

- Impetus may be smaller than previously thought.

Middle-right panel

Equipment and Software Capital Stock

Period	Percent change, Q4/Q4
1960	2.90
1961	2.21
1962	3.47
1963	4.04
1964	5.28

Period	Percent change, Q4/Q4
1965	7.25
1966	8.60
1967	6.64
1968	6.48
1969	6.74
1970	5.17
1971	4.28
1972	5.35
1973	7.30
1974	6.30
1975	3.44
1976	3.67
1977	5.08
1978	6.44
1979	6.60
1980	4.48
1981	4.18
1982	2.14
1983	2.22
1984	4.28
1985	3.99
1986	3.16
1987	2.46
1988	2.95
1989	3.19
1990	2.40
1991	1.48
1992	1.90
1993	3.24
1994	4.24
1995	5.05
1996	5.49
1997	6.17
1998	6.91
1999	7.41
2000	7.39
2001	4.42
2002	2.57
2003	2.25
2004	2.85
2005	3.48
2006	4.14
2007	3.87
2008	2.40
2009	-0.83

Period	Percent change, Q4/Q4
2010	1.41
<i>Forecast</i>	
2011	2.75
2012	3.48

Bottom-left panel
Real PCE

Percent change, annual rate

Period	April Tealbook	June Tealbook
2009	ND	0.18
2010	ND	2.61
<i>Forecast</i>		
2011	2.92	2.20
2012	3.73	2.79

Bottom-right panel
Single-family Housing Starts

Millions

Period	April Tealbook	Current
2007:Q1	ND	1.17
2007:Q2	ND	1.15
2007:Q3	ND	0.98
2007:Q4	ND	0.84
2008:Q1	ND	0.74
2008:Q2	ND	0.67
2008:Q3	ND	0.59
2008:Q4	ND	0.47
2009:Q1	ND	0.36
2009:Q2	ND	0.43
2009:Q3	ND	0.50
2009:Q4	ND	0.49
2010:Q1	ND	0.52
2010:Q2	ND	0.49
2010:Q3	ND	0.43
2010:Q4	ND	0.44
2011:Q1	0.41	0.41
<i>Forecast</i>		
2011:Q2	0.42	0.41
2011:Q3	0.44	0.42
2011:Q4	0.45	0.42
2012:Q1	0.47	0.43
2012:Q2	0.48	0.44
2012:Q3	0.52	0.47
2012:Q4	0.56	0.50

Exhibit 4 Inflation Projection

Top-left panel

Reserve Bank Inquiries of Their District Business Contacts

Question	Percent
Plan to increase employment	45
Skill shortages restraining hiring	21
Raise starting pay for recruiting	6
Expected wage change less than 2.5 percent*	56

* Includes underchanged and decrease. [Return to table](#)

Top-right panel

*Compensation per Hour**

Period	Percent change, Q4/Q4
2005-07	3.87
2008	2.30
2009	2.80
2010	1.36
<i>Forecast</i>	
2011	2.11
2012	2.49

* Nonfarm business sector. [Return to text](#)

Middle-left panel

PCE Price Projection

(Percent change, Q4/Q4)

	2011		2012
	H1	H2	
1. PCE price index	3.6	1.1	1.5
2. <i>Apr. TB</i>	3.3	1.2	1.2
3. Food	6.5	2.5	1.4
4. Energy	28.9	-6.1	1.0
5. Core PCE	1.8	1.6	1.5
6. <i>Apr. TB</i>	1.5	1.3	1.4

Middle-right panel

Retail Price of Gasoline

Date	Dollars per gallon
10 January 2011	3.14
17 January 2011	3.12
24 January 2011	3.13
31 January 2011	3.14
7 February 2011	3.18

Date	Dollars per gallon
14 February 2011	3.21
21 February 2011	3.26
28 February 2011	3.44
7 March 2011	3.57
14 March 2011	3.60
21 March 2011	3.59
28 March 2011	3.63
4 April 2011	3.73
11 April 2011	3.84
18 April 2011	3.89
25 April 2011	3.89
2 May 2011	3.93
9 May 2011	3.89
16 May 2011	3.84
23 May 2011	3.71
30 May 2011	3.66
6 June 2011	3.65
13 June 2011	3.58

Note: Seasonally adjusted price of regular unleaded gasoline.

Bottom-left panel
Unemployment Rate

Percent

Period	Unemployment rate	NAIRU*	NAIRU with EEB**
2007:Q1	4.51	5.00	ND
2007:Q2	4.49	5.00	ND
2007:Q3	4.67	5.00	ND
2007:Q4	4.81	5.00	ND
2008:Q1	4.96	5.00	5.00
2008:Q2	5.32	5.00	5.00
2008:Q3	6.04	5.17	5.30
2008:Q4	6.91	5.33	5.48
2009:Q1	8.21	5.49	5.76
2009:Q2	9.27	5.66	6.03
2009:Q3	9.67	5.82	6.35
2009:Q4	9.99	5.99	6.60
2010:Q1	9.69	5.99	6.74
2010:Q2	9.65	5.99	6.64
2010:Q3	9.58	5.99	6.64
2010:Q4	9.62	5.99	6.59
2011:Q1	8.93	6.00	6.55
<i>Forecast</i>			
2011:Q2	9.02	6.00	6.57
2011:Q3	9.00	6.00	6.55
2011:Q4	8.86	6.00	6.54

Period	Unemployment rate	NAIRU*	NAIRU with EEB**
2012:Q1	8.79	6.00	6.48
2012:Q2	8.63	6.00	6.37
2012:Q3	8.42	6.00	6.26
2012:Q4	8.13	6.00	6.15

As shown in the chart, when unemployment rate is above NAIRU with EEB, the region between them is shaded light tan and is labeled "Labor market slack." When unemployment rate is below NAIRU, the region between them is shaded light gray.

* Staff estimate. [Return to table](#)

** Emergency unemployment compensation and state-federal extended benefits programs. [Return to table](#)

Bottom-right panel

Inflation Expectations

Percent

Period	Next twelve months	Next five to ten years
January 2004	2.7	2.8
February 2004	2.6	2.9
March 2004	2.9	2.9
April 2004	3.2	2.7
May 2004	3.3	2.8
June 2004	3.3	2.9
July 2004	3.0	2.8
August 2004	2.8	2.7
September 2004	2.8	2.8
October 2004	3.1	2.8
November 2004	2.8	2.7
December 2004	3.0	2.8
January 2005	2.9	2.7
February 2005	2.9	2.8
March 2005	3.2	2.9
April 2005	3.3	3.0
May 2005	3.2	2.9
June 2005	3.2	2.8
July 2005	3.0	2.9
August 2005	3.1	2.8
September 2005	4.3	3.1
October 2005	4.6	3.2
November 2005	3.3	3.0
December 2005	3.1	3.1
January 2006	3.0	2.9
February 2006	3.0	2.9
March 2006	3.0	2.9
April 2006	3.3	3.1
May 2006	4.0	3.2
June 2006	3.3	2.9
July 2006	3.2	2.9
August 2006	3.8	3.2

Period	Next twelve months	Next five to ten years
September 2006	3.1	3.0
October 2006	3.1	3.1
November 2006	3.0	3.0
December 2006	2.9	3.0
January 2007	3.0	3.0
February 2007	3.0	2.9
March 2007	3.0	2.9
April 2007	3.3	3.1
May 2007	3.3	3.1
June 2007	3.4	2.9
July 2007	3.4	3.1
August 2007	3.2	2.9
September 2007	3.1	2.9
October 2007	3.1	2.8
November 2007	3.4	2.9
December 2007	3.4	3.1
January 2008	3.4	3.0
February 2008	3.6	3.0
March 2008	4.3	2.9
April 2008	4.8	3.2
May 2008	5.2	3.4
June 2008	5.1	3.4
July 2008	5.1	3.2
August 2008	4.8	3.2
September 2008	4.3	3.0
October 2008	3.9	2.9
November 2008	2.9	2.9
December 2008	1.7	2.6
January 2009	2.2	2.9
February 2009	1.9	3.1
March 2009	2.0	2.6
April 2009	2.8	2.8
May 2009	2.8	2.9
June 2009	3.1	3.0
July 2009	2.9	3.0
August 2009	2.8	2.8
September 2009	2.2	2.8
October 2009	2.9	2.9
November 2009	2.7	3.0
December 2009	2.5	2.7
January 2010	2.8	2.9
February 2010	2.7	2.7
March 2010	2.7	2.7
April 2010	2.9	2.7
May 2010	3.2	2.9

Period	Next twelve months	Next five to ten years
June 2010	2.8	2.8
July 2010	2.7	2.9
August 2010	2.7	2.8
September 2010	2.2	2.7
October 2010	2.7	2.8
November 2010	3.0	2.8
December 2010	3.0	2.8
January 2011	3.4	2.9
February 2011	3.4	2.9
March 2011	4.6	3.2
April 2011	4.6	2.9
May 2011	4.1	2.9
June 2011	4.0	3.0

Source: Thomson Reuters/University of Michigan Surveys of Consumers.

Exhibit 5 Europe

Top-left panel

*10-year Sovereign Bonds Spreads**

Basis points

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
1 October 2008	89.3	58.7	67.8	55.5	83.7	59.4
2 October 2008	89.8	58.2	66.7	55.6	82.6	59.6
3 October 2008	86.7	58.4	64.5	55.1	80.0	56.7
6 October 2008	89.2	58.9	65.8	55.3	82.3	56.5
7 October 2008	90.9	59.4	66.0	56.0	82.9	56.3
8 October 2008	94.4	59.4	69.4	60.0	85.6	56.2
9 October 2008	97.0	60.6	70.0	60.8	86.1	57.1
10 October 2008	99.2	63.3	70.5	64.0	87.3	60.3
13 October 2008	93.5	65.4	66.3	62.0	80.6	58.6
14 October 2008	86.1	61.6	56.9	56.0	74.0	53.9
15 October 2008	83.6	59.9	49.4	47.2	68.7	46.7
16 October 2008	85.4	60.3	50.8	47.5	70.5	47.1
17 October 2008	88.2	60.2	53.1	49.1	72.9	47.5
20 October 2008	89.2	60.5	52.0	49.2	72.0	47.5
21 October 2008	92.1	60.3	53.8	48.3	75.3	47.3
22 October 2008	100.6	65.5	58.1	52.1	82.2	51.1
23 October 2008	108.3	70.5	63.4	56.4	87.7	54.8
24 October 2008	115.5	74.3	68.9	61.8	92.3	57.6
27 October 2008	119.9	79.7	72.2	61.8	96.2	57.8
28 October 2008	122.1	83.2	72.7	61.6	100.1	60.9
29 October 2008	149.0	87.0	81.7	63.7	111.6	64.9

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
30 October 2008	157.8	89.6	88.1	67.7	121.3	69.7
31 October 2008	161.2	96.0	92.4	70.7	124.8	73.0
3 November 2008	164.6	101.5	93.3	71.5	119.6	74.7
4 November 2008	154.6	102.2	93.6	72.6	106.9	75.8
5 November 2008	150.4	98.5	90.3	68.2	101.6	73.9
6 November 2008	151.0	97.2	86.3	62.8	96.8	73.4
7 November 2008	140.1	92.9	77.0	56.2	92.8	69.5
10 November 2008	136.8	83.3	75.6	56.0	91.5	68.2
11 November 2008	139.3	84.1	75.1	55.3	94.9	67.4
12 November 2008	146.6	85.8	78.1	55.1	103.3	65.5
13 November 2008	151.1	85.3	78.5	55.8	105.1	65.8
14 November 2008	138.5	78.0	70.0	46.2	94.7	57.4
17 November 2008	146.7	79.1	72.3	49.6	102.0	58.6
18 November 2008	142.7	79.3	71.0	49.1	100.5	60.8
19 November 2008	143.8	79.3	71.8	49.8	101.0	61.8
20 November 2008	146.2	82.5	71.6	47.9	104.0	64.1
21 November 2008	150.4	83.8	73.5	49.8	107.1	68.1
24 November 2008	149.2	87.3	74.4	52.6	105.9	71.5
25 November 2008	154.8	87.5	75.0	55.1	108.9	71.6
26 November 2008	157.9	88.9	75.0	58.9	111.7	71.5
27 November 2008	161.1	88.1	75.9	60.5	116.5	71.6
28 November 2008	158.1	90.8	77.0	63.2	120.4	72.9
1 December 2008	166.2	94.4	80.8	70.4	125.6	78.0
2 December 2008	164.3	101.6	80.4	71.6	126.4	78.5
3 December 2008	163.1	103.4	79.4	71.2	125.8	76.7
4 December 2008	167.0	103.4	85.8	76.0	133.0	78.7
5 December 2008	168.5	113.5	91.4	78.0	140.7	81.0
8 December 2008	169.1	116.9	93.3	79.9	137.9	82.7
9 December 2008	167.9	117.9	91.6	78.6	130.7	83.5
10 December 2008	169.7	118.3	92.5	78.4	126.9	82.8
11 December 2008	191.1	118.8	90.7	77.0	127.7	80.0
12 December 2008	206.5	121.4	93.2	77.6	132.2	80.0
15 December 2008	220.6	130.6	99.1	81.3	137.4	83.2
16 December 2008	219.2	127.2	97.4	82.8	132.5	83.6
17 December 2008	223.9	127.7	96.1	84.3	134.1	83.6
18 December 2008	228.2	130.0	96.1	84.5	134.8	83.0
19 December 2008	225.9	129.9	96.3	83.8	135.8	82.6
22 December 2008	230.7	131.2	100.5	85.1	137.1	83.4
23 December 2008	228.0	131.6	100.8	85.5	134.6	82.8
24 December 2008	226.5	132.8	101.2	85.4	134.8	82.9
25 December 2008	226.6	133.5	100.7	85.5	134.9	82.9
26 December 2008	227.1	133.5	100.7	85.5	134.9	82.9
29 December 2008	228.9	132.1	102.4	85.1	141.4	82.3
30 December 2008	227.8	130.9	102.6	86.6	142.6	83.0
31 December 2008	227.4	131.5	102.2	86.0	143.1	82.4

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
1 January 2009	227.5	131.6	103.2	86.1	143.1	82.6
2 January 2009	223.1	128.7	100.7	83.7	135.9	79.0
5 January 2009	214.7	127.5	99.9	83.4	130.7	79.2
6 January 2009	215.0	139.3	101.5	83.4	130.3	80.4
7 January 2009	211.0	138.3	96.6	79.8	124.6	79.7
8 January 2009	212.1	138.8	98.3	79.3	125.8	81.7
9 January 2009	225.6	142.7	99.2	82.5	131.4	86.3
12 January 2009	234.6	155.3	107.2	90.9	138.6	89.3
13 January 2009	239.1	156.7	112.9	98.5	140.7	94.7
14 January 2009	244.6	163.7	116.7	100.9	146.3	96.1
15 January 2009	253.8	173.5	129.8	114.7	151.9	99.5
16 January 2009	251.9	185.0	127.3	118.8	146.9	117.2
19 January 2009	251.7	207.2	125.5	115.6	142.5	118.4
20 January 2009	268.4	226.5	137.7	117.9	149.5	121.2
21 January 2009	278.4	264.6	146.2	123.3	156.8	130.8
22 January 2009	291.4	272.5	159.1	121.3	154.5	137.7
23 January 2009	296.8	271.7	151.4	118.2	155.2	134.3
26 January 2009	285.2	269.8	141.9	115.0	151.0	131.3
27 January 2009	276.7	254.0	140.0	113.7	158.6	125.6
28 January 2009	266.1	234.2	133.5	113.1	153.4	119.1
29 January 2009	247.2	221.8	125.4	109.5	142.4	112.5
30 January 2009	251.9	222.0	129.2	109.8	141.8	110.6
2 February 2009	251.4	215.6	127.9	110.2	134.2	111.1
3 February 2009	244.8	214.8	123.7	105.5	127.3	108.0
4 February 2009	232.6	208.3	110.5	94.8	116.8	94.7
5 February 2009	236.3	200.5	110.7	92.4	122.8	95.3
6 February 2009	233.5	199.4	108.9	110.4	119.7	95.2
9 February 2009	222.5	194.0	103.2	100.1	114.2	93.8
10 February 2009	229.0	192.5	105.2	99.9	118.7	93.1
11 February 2009	247.4	202.9	120.5	103.6	132.5	99.7
12 February 2009	264.2	223.2	129.8	116.6	140.8	106.0
13 February 2009	274.6	234.9	137.8	116.9	147.1	107.7
16 February 2009	291.4	247.8	155.7	125.4	154.7	120.1
17 February 2009	299.0	253.6	163.0	128.0	157.5	124.8
18 February 2009	291.2	252.2	158.8	121.7	150.7	119.3
19 February 2009	268.0	242.5	146.1	119.5	140.2	116.6
20 February 2009	250.5	237.0	143.1	115.0	142.1	116.1
23 February 2009	239.6	233.7	147.7	112.9	143.1	110.7
24 February 2009	248.3	239.3	154.5	117.6	151.6	112.7
25 February 2009	245.9	241.5	147.2	117.7	157.2	111.3
26 February 2009	245.5	237.5	147.7	118.0	154.6	109.4
27 February 2009	256.6	239.3	146.7	117.2	156.9	108.7
2 March 2009	258.7	245.7	149.7	118.1	156.7	109.5
3 March 2009	267.0	248.0	146.9	116.0	156.0	108.4
4 March 2009	269.3	254.3	142.5	109.2	149.8	104.6

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
5 March 2009	272.4	255.6	140.2	104.7	149.4	104.6
6 March 2009	280.6	267.4	150.0	110.2	156.1	108.5
9 March 2009	275.8	269.3	150.8	106.3	152.4	108.0
10 March 2009	275.1	266.3	149.6	104.1	149.4	105.8
11 March 2009	269.0	274.2	145.2	100.1	145.5	102.6
12 March 2009	300.3	277.8	149.8	102.5	151.6	101.1
13 March 2009	297.9	277.3	164.9	100.4	145.8	98.5
16 March 2009	294.1	274.3	155.7	98.2	137.1	91.1
17 March 2009	281.3	274.4	153.1	99.1	133.3	91.1
18 March 2009	275.3	275.8	153.3	99.5	131.1	90.0
19 March 2009	275.9	283.5	157.7	104.8	134.3	91.8
20 March 2009	265.9	275.8	152.3	104.7	128.8	89.0
23 March 2009	261.7	272.6	152.8	102.4	131.9	88.1
24 March 2009	260.2	248.0	150.2	100.8	130.1	87.9
25 March 2009	249.3	234.7	145.5	98.5	124.8	86.7
26 March 2009	251.9	224.6	141.8	95.1	125.1	86.4
27 March 2009	256.8	228.8	145.9	96.3	128.1	87.3
30 March 2009	271.8	237.7	151.7	103.0	140.1	92.7
31 March 2009	274.6	246.9	155.9	105.7	140.0	94.9
1 April 2009	271.2	238.9	155.1	106.2	134.4	96.3
2 April 2009	260.2	226.2	148.5	100.6	127.5	91.3
3 April 2009	248.7	208.6	139.0	94.0	118.3	83.9
6 April 2009	241.4	201.7	134.1	87.9	118.1	76.9
7 April 2009	243.8	204.2	137.9	91.6	122.6	79.4
8 April 2009	238.8	213.2	138.8	93.5	122.6	77.9
9 April 2009	230.4	214.6	135.3	90.8	118.3	75.7
10 April 2009	230.2	215.3	136.7	89.6	117.6	75.5
13 April 2009	229.9	214.7	137.6	89.1	117.4	75.7
14 April 2009	231.8	216.0	136.9	90.2	119.3	75.2
15 April 2009	232.7	221.1	138.7	92.2	118.9	75.2
16 April 2009	227.2	209.1	136.4	89.0	114.5	74.1
17 April 2009	221.7	208.6	131.9	86.0	109.5	71.7
20 April 2009	222.9	208.8	132.8	86.2	115.7	72.8
21 April 2009	232.3	210.8	136.7	86.9	119.7	74.0
22 April 2009	221.1	209.9	132.9	82.4	115.7	71.3
23 April 2009	211.0	197.4	121.2	78.6	108.7	67.0
24 April 2009	212.1	198.0	123.6	81.6	111.9	69.8
27 April 2009	214.5	203.7	123.8	82.0	113.5	70.2
28 April 2009	215.3	205.8	123.5	81.5	115.3	70.6
29 April 2009	218.6	205.1	120.3	77.4	114.3	70.4
30 April 2009	214.0	202.1	114.7	74.8	109.9	69.0
1 May 2009	214.6	203.4	114.6	74.9	110.6	69.1
4 May 2009	209.0	198.2	103.8	71.6	101.0	66.1
5 May 2009	201.2	189.7	99.4	69.8	98.4	63.7
6 May 2009	198.5	186.6	94.0	68.8	96.2	62.8

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
7 May 2009	174.0	170.1	84.8	64.7	85.1	59.1
8 May 2009	162.5	163.8	80.5	59.4	80.5	56.3
11 May 2009	169.0	166.9	79.8	59.3	84.0	57.4
12 May 2009	179.5	172.6	79.6	61.5	91.1	61.3
13 May 2009	186.7	175.8	89.3	62.9	96.7	64.3
14 May 2009	192.8	185.4	95.8	69.1	101.6	69.8
15 May 2009	179.5	180.7	83.3	67.5	92.9	66.9
18 May 2009	178.5	180.9	82.7	67.4	93.3	66.8
19 May 2009	170.0	177.2	78.0	67.4	88.0	63.7
20 May 2009	167.8	176.6	79.3	66.6	86.9	62.3
21 May 2009	176.5	182.8	88.2	74.2	93.8	65.9
22 May 2009	168.2	172.4	78.5	65.8	82.1	55.8
25 May 2009	166.8	170.7	74.9	67.3	80.0	56.7
26 May 2009	171.2	171.0	77.7	67.2	82.7	56.1
27 May 2009	173.4	175.8	75.8	65.5	83.5	55.3
28 May 2009	182.5	177.0	77.8	67.0	88.4	56.7
29 May 2009	185.7	186.6	82.5	69.6	89.4	59.2
1 June 2009	183.5	184.5	78.5	68.9	82.5	57.9
2 June 2009	183.0	184.2	78.9	75.5	85.0	55.5
3 June 2009	187.3	192.9	85.5	76.3	90.2	56.4
4 June 2009	192.8	201.3	94.0	81.2	94.0	59.8
5 June 2009	186.2	199.4	91.0	74.2	89.6	57.2
8 June 2009	185.7	201.7	91.8	73.0	101.0	56.5
9 June 2009	189.0	206.0	94.6	73.4	105.2	56.6
10 June 2009	183.9	202.8	91.2	73.4	104.8	56.2
11 June 2009	177.3	199.9	90.1	73.1	104.2	56.9
12 June 2009	171.9	194.1	92.2	74.9	105.3	57.4
15 June 2009	171.2	196.7	94.6	77.9	108.0	58.9
16 June 2009	172.1	195.9	96.0	79.7	109.8	58.8
17 June 2009	176.3	195.7	97.3	82.3	111.0	59.3
18 June 2009	176.2	196.9	96.4	79.4	108.0	58.5
19 June 2009	175.0	220.1	96.0	77.1	108.0	57.3
22 June 2009	182.0	223.6	99.0	79.0	113.0	57.6
23 June 2009	186.2	229.6	102.3	78.0	114.9	58.6
24 June 2009	180.1	241.7	100.9	75.4	111.7	58.6
25 June 2009	176.2	244.6	101.6	74.1	111.6	57.7
26 June 2009	175.7	244.8	102.6	75.2	111.7	59.0
29 June 2009	168.0	239.1	102.1	74.8	106.3	58.6
30 June 2009	165.5	234.4	100.9	74.5	104.8	57.6
1 July 2009	162.7	229.7	99.0	73.7	102.7	56.8
2 July 2009	160.2	229.1	101.3	72.9	105.6	58.0
3 July 2009	ND	ND	ND	ND	ND	ND
6 July 2009	157.8	219.2	103.3	73.6	108.6	59.6
7 July 2009	159.6	217.1	100.9	73.8	110.7	58.2
8 July 2009	173.0	222.5	106.7	78.3	115.6	61.1

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
9 July 2009	169.9	222.8	101.3	78.4	116.3	61.4
10 July 2009	174.1	222.4	100.9	78.7	118.8	62.3
13 July 2009	174.2	222.4	103.3	80.1	118.9	62.4
14 July 2009	171.0	219.6	101.4	78.9	116.3	61.6
15 July 2009	162.6	210.1	96.1	75.3	109.1	57.9
16 July 2009	158.7	210.4	96.0	74.8	107.6	57.4
17 July 2009	154.9	211.4	91.8	73.8	101.0	56.1
20 July 2009	142.9	201.7	84.4	65.9	95.1	53.7
21 July 2009	140.3	200.7	83.4	64.0	94.9	54.1
22 July 2009	139.8	196.9	80.1	62.5	93.5	51.4
23 July 2009	132.5	181.4	74.7	58.3	89.4	48.2
24 July 2009	138.5	176.4	70.6	57.5	90.2	47.8
27 July 2009	135.9	174.9	66.8	57.0	85.9	45.9
28 July 2009	130.8	173.4	67.9	57.3	85.6	45.4
29 July 2009	124.2	168.0	61.8	56.7	84.0	45.2
30 July 2009	119.1	164.0	59.3	54.6	82.3	44.0
31 July 2009	122.0	166.4	62.8	54.6	86.0	43.4
3 August 2009	119.9	166.1	62.0	54.8	82.8	43.7
4 August 2009	119.9	162.1	61.3	55.1	81.7	44.3
5 August 2009	116.6	161.1	59.4	56.4	80.8	44.8
6 August 2009	114.7	160.2	60.4	55.3	78.9	45.0
7 August 2009	110.2	151.6	54.4	49.2	70.3	40.8
10 August 2009	107.9	142.5	52.1	44.6	66.9	35.2
11 August 2009	109.1	144.5	52.9	44.8	71.5	36.6
12 August 2009	113.3	150.2	58.7	47.4	73.6	38.3
13 August 2009	116.3	150.2	59.5	46.9	77.2	40.2
14 August 2009	120.7	154.3	63.6	51.4	82.4	45.6
17 August 2009	126.2	155.0	65.0	53.6	83.8	47.9
18 August 2009	123.7	154.9	62.9	51.6	81.8	48.4
19 August 2009	130.1	158.0	65.7	53.7	85.8	50.3
20 August 2009	128.2	157.2	64.1	52.0	82.8	47.7
21 August 2009	120.8	151.5	61.3	50.0	76.9	44.5
24 August 2009	121.6	150.5	60.3	49.7	80.7	44.2
25 August 2009	118.0	147.3	59.3	49.4	79.3	44.0
26 August 2009	119.5	154.8	61.5	49.3	80.5	44.4
27 August 2009	118.8	153.4	60.4	49.6	78.9	43.5
28 August 2009	118.1	154.4	63.1	50.5	80.4	43.6
31 August 2009	123.5	159.0	63.6	51.8	81.9	45.0
1 September 2009	130.5	164.4	68.2	57.8	84.9	47.6
2 September 2009	134.4	166.9	71.4	60.3	87.5	49.3
3 September 2009	142.8	169.1	74.9	64.5	89.9	51.5
4 September 2009	142.3	168.5	75.0	63.1	89.7	49.7
7 September 2009	146.3	170.6	75.7	66.8	91.7	50.1
8 September 2009	140.9	170.1	71.2	65.3	88.7	49.3
9 September 2009	132.3	165.3	64.2	59.7	80.6	44.6

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
10 September 2009	134.0	163.7	62.9	55.9	81.0	42.7
11 September 2009	130.2	162.0	63.5	55.0	80.2	41.9
14 September 2009	129.2	164.3	62.2	57.8	80.3	42.6
15 September 2009	123.9	159.8	60.0	55.2	76.8	40.1
16 September 2009	118.4	154.8	57.9	53.8	72.5	38.4
17 September 2009	117.1	150.2	58.4	52.1	71.4	37.4
18 September 2009	115.4	146.7	56.4	52.5	69.9	38.1
21 September 2009	117.9	148.4	58.2	53.1	71.1	40.0
22 September 2009	115.9	145.0	56.7	50.7	70.6	39.3
23 September 2009	116.4	142.1	56.5	49.5	73.2	39.0
24 September 2009	115.6	142.9	56.0	48.9	73.3	38.5
25 September 2009	121.1	143.3	57.3	51.2	74.4	39.5
28 September 2009	122.0	144.2	57.7	52.6	75.5	40.6
29 September 2009	123.1	141.4	60.0	55.1	76.9	41.7
30 September 2009	130.0	145.4	63.1	58.8	79.5	44.4
1 October 2009	138.0	159.7	71.2	63.7	95.7	50.6
2 October 2009	134.5	163.8	70.1	64.0	93.8	50.0
5 October 2009	130.4	167.2	66.8	62.8	92.4	49.6
6 October 2009	131.0	161.4	63.8	62.2	90.4	49.2
7 October 2009	131.8	158.0	64.6	62.4	90.0	48.8
8 October 2009	130.1	155.7	64.5	61.2	88.7	48.7
9 October 2009	126.1	153.9	62.3	59.1	85.8	47.6
12 October 2009	127.1	154.1	62.8	59.6	87.1	47.6
13 October 2009	131.5	157.0	65.7	63.4	91.4	51.0
14 October 2009	130.5	156.0	63.1	61.5	90.1	48.8
15 October 2009	132.4	154.0	62.4	60.5	90.5	47.7
16 October 2009	136.9	153.4	60.3	58.6	88.4	46.0
19 October 2009	135.3	153.6	59.4	56.6	85.7	43.8
20 October 2009	134.6	151.3	58.8	56.8	85.5	42.8
21 October 2009	131.2	146.3	53.2	53.7	83.8	38.9
22 October 2009	131.3	146.9	53.2	52.9	83.8	37.9
23 October 2009	134.2	147.2	54.5	52.5	84.2	36.8
26 October 2009	133.5	144.9	54.1	51.3	82.7	36.0
27 October 2009	136.9	145.6	55.2	53.1	82.7	37.6
28 October 2009	136.3	145.9	54.2	52.9	82.4	37.1
29 October 2009	138.2	145.3	54.6	54.6	82.3	39.0
30 October 2009	142.3	146.8	56.2	55.7	84.3	40.2
2 November 2009	139.5	147.1	53.1	54.7	82.6	39.7
3 November 2009	139.1	145.5	51.7	55.3	82.0	39.3
4 November 2009	138.2	143.9	49.8	53.8	79.3	37.7
5 November 2009	137.6	140.9	49.0	53.5	77.6	37.3
6 November 2009	138.2	140.3	49.9	53.1	76.8	36.9
9 November 2009	137.5	140.1	49.6	53.2	76.8	36.8
10 November 2009	138.7	142.8	49.5	53.0	76.2	36.6
11 November 2009	132.2	136.7	42.1	46.4	69.4	30.7

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
12 November 2009	132.0	136.2	42.0	46.4	69.0	30.4
13 November 2009	140.0	139.9	43.6	49.2	71.7	32.5
16 November 2009	153.9	148.3	48.1	52.5	74.7	35.8
17 November 2009	147.7	139.8	47.6	50.3	74.0	33.7
18 November 2009	156.0	142.9	49.0	52.3	75.1	33.6
19 November 2009	169.7	149.2	53.0	55.3	78.9	36.4
20 November 2009	172.3	153.2	55.3	57.2	80.7	38.7
23 November 2009	166.2	149.8	54.0	56.6	78.8	38.1
24 November 2009	173.6	152.0	53.6	56.3	79.3	38.2
25 November 2009	179.4	155.3	54.5	55.6	79.5	37.4
26 November 2009	201.6	168.5	62.0	59.5	88.8	42.0
27 November 2009	194.2	170.6	62.3	60.8	87.1	42.5
30 November 2009	183.6	168.5	59.5	58.8	85.8	40.8
1 December 2009	172.9	164.4	57.5	58.1	83.5	40.6
2 December 2009	168.7	162.8	56.9	58.3	82.0	40.3
3 December 2009	171.3	160.9	56.0	57.3	81.1	40.3
4 December 2009	176.5	159.8	52.8	54.3	76.1	37.7
7 December 2009	195.2	163.5	58.0	55.9	76.7	38.6
8 December 2009	221.0	170.5	65.5	60.7	82.8	41.1
9 December 2009	246.8	189.7	77.4	69.5	87.5	45.4
10 December 2009	227.0	178.5	74.4	68.6	85.4	45.0
11 December 2009	208.4	165.9	68.8	62.6	81.9	41.6
14 December 2009	228.8	164.2	67.4	61.2	82.3	39.9
15 December 2009	249.8	162.4	67.8	61.1	79.9	40.0
16 December 2009	231.8	153.7	66.6	59.1	79.9	36.5
17 December 2009	253.2	158.7	71.7	64.6	82.5	38.3
18 December 2009	265.9	160.5	78.6	70.5	84.0	41.6
21 December 2009	276.9	159.1	81.5	73.7	84.4	41.4
22 December 2009	248.3	151.8	72.8	65.9	76.3	37.8
23 December 2009	242.3	147.7	69.5	63.3	72.7	35.3
24 December 2009	241.7	147.7	68.6	62.1	72.6	34.5
25 December 2009	242.4	148.2	69.4	62.6	73.1	34.9
28 December 2009	238.0	147.4	68.8	60.6	71.2	33.7
29 December 2009	236.6	146.2	67.5	58.7	73.5	29.4
30 December 2009	238.7	144.7	68.8	58.8	75.4	32.5
31 December 2009	238.7	145.2	68.2	59.1	75.5	32.2
1 January 2010	238.7	145.1	69.0	59.1	75.5	32.2
4 January 2010	233.1	138.0	67.3	57.9	71.7	32.1
5 January 2010	227.9	141.8	67.6	59.2	72.8	33.9
6 January 2010	227.1	151.2	69.1	62.2	73.9	35.3
7 January 2010	227.3	144.8	67.3	61.3	72.4	33.7
8 January 2010	220.0	140.2	61.2	57.0	69.3	31.0
11 January 2010	217.5	140.6	65.8	61.6	71.0	31.8
12 January 2010	234.5	144.2	69.4	63.5	74.2	33.2
13 January 2010	257.7	151.5	76.4	65.9	78.6	34.5

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
14 January 2010	277.6	157.4	88.6	69.8	80.6	59.9
15 January 2010	273.4	156.7	92.9	70.4	81.1	59.6
18 January 2010	268.1	156.9	94.3	72.5	81.2	59.4
19 January 2010	264.3	147.4	92.3	73.1	78.6	57.9
20 January 2010	293.8	161.3	104.4	79.6	85.2	59.9
21 January 2010	288.1	156.7	104.4	80.2	86.8	59.4
22 January 2010	304.8	159.5	109.2	81.5	86.3	60.2
25 January 2010	297.7	149.7	98.0	74.0	82.9	54.9
26 January 2010	303.7	149.7	93.3	82.6	81.7	52.5
27 January 2010	355.6	155.8	105.5	90.3	88.6	54.9
28 January 2010	396.1	165.4	121.6	98.6	94.8	58.4
29 January 2010	365.8	165.1	121.4	92.4	91.9	57.0
1 February 2010	344.0	162.1	120.7	84.2	86.3	55.0
2 February 2010	353.6	160.8	129.1	86.1	86.1	55.3
3 February 2010	349.7	162.7	147.0	88.9	85.6	54.6
4 February 2010	352.7	166.4	159.2	96.7	90.1	57.8
5 February 2010	350.5	174.4	161.3	100.1	94.4	60.3
8 February 2010	362.5	178.7	162.7	99.9	95.0	59.9
9 February 2010	324.4	169.3	147.4	90.9	90.1	55.3
10 February 2010	282.8	156.0	135.2	79.0	82.4	52.3
11 February 2010	273.2	146.0	118.4	76.0	80.8	49.6
12 February 2010	296.1	149.3	123.9	79.6	86.3	52.5
15 February 2010	304.9	153.4	123.4	82.3	86.0	55.2
16 February 2010	320.4	154.7	125.0	81.0	85.5	55.3
17 February 2010	318.4	154.6	118.4	80.2	85.2	54.5
18 February 2010	329.3	151.2	117.5	77.8	81.7	52.3
19 February 2010	317.5	147.5	112.1	75.1	80.8	49.7
22 February 2010	315.6	144.8	110.0	72.6	82.0	49.7
23 February 2010	332.0	146.6	111.7	74.4	86.2	51.7
24 February 2010	338.9	150.7	114.6	75.6	88.8	53.6
25 February 2010	355.1	155.7	117.4	79.6	93.6	56.6
26 February 2010	326.1	150.9	111.4	76.0	89.5	55.8
1 March 2010	316.0	143.3	98.6	71.3	86.9	53.9
2 March 2010	304.7	140.9	94.4	73.8	85.3	51.8
3 March 2010	285.8	139.4	91.6	73.2	83.0	51.0
4 March 2010	297.0	139.5	93.5	75.1	83.6	52.5
5 March 2010	291.1	135.5	91.0	70.9	79.9	51.5
8 March 2010	306.0	133.7	89.3	68.4	78.9	50.2
9 March 2010	313.2	134.6	93.4	71.0	80.3	52.2
10 March 2010	309.3	129.6	88.1	68.8	78.0	51.0
11 March 2010	314.8	128.5	106.0	69.3	77.9	49.7
12 March 2010	305.9	127.9	106.8	69.9	79.1	50.1
15 March 2010	305.5	129.8	110.4	71.9	79.7	50.1
16 March 2010	299.9	129.3	111.1	71.7	79.5	49.5
17 March 2010	299.7	135.0	114.7	73.6	80.5	51.1

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
18 March 2010	313.7	137.9	116.2	75.8	81.9	51.1
19 March 2010	323.9	141.3	120.6	77.6	84.5	51.7
22 March 2010	337.3	144.9	125.8	78.4	86.4	52.3
23 March 2010	324.9	142.7	123.9	76.8	85.4	50.9
24 March 2010	328.2	149.6	125.9	75.4	84.1	49.9
25 March 2010	312.8	143.2	123.8	71.7	78.4	47.0
26 March 2010	305.2	139.9	114.4	68.5	77.2	46.9
29 March 2010	316.1	138.5	114.2	69.5	78.6	46.3
30 March 2010	333.1	138.7	116.0	70.9	78.7	45.7
31 March 2010	343.7	138.3	112.7	72.4	88.9	44.9
1 April 2010	345.5	134.8	108.7	71.7	86.4	44.8
2 April 2010	345.7	134.2	108.1	71.3	86.0	44.9
5 April 2010	345.2	134.3	107.9	71.6	85.8	45.1
6 April 2010	383.9	135.7	110.2	73.6	87.0	46.0
7 April 2010	405.0	137.1	116.2	75.6	88.5	46.2
8 April 2010	426.8	139.7	127.8	76.4	89.1	45.2
9 April 2010	398.5	135.3	119.9	71.5	83.3	40.7
12 April 2010	349.5	131.4	116.7	66.7	80.9	38.7
13 April 2010	366.5	134.3	120.4	70.4	83.4	39.9
14 April 2010	394.0	138.5	129.2	72.0	84.8	41.5
15 April 2010	400.6	141.6	126.3	71.6	84.1	40.5
16 April 2010	430.3	147.4	139.4	74.8	86.5	41.8
19 April 2010	453.5	152.5	151.8	76.5	87.2	41.7
20 April 2010	478.3	146.6	154.8	76.5	86.4	40.8
21 April 2010	501.4	152.4	169.3	79.1	89.5	43.5
22 April 2010	578.7	172.4	190.6	88.8	94.7	49.9
23 April 2010	559.5	171.4	191.0	92.0	94.8	49.4
26 April 2010	651.5	186.7	218.2	100.5	97.7	52.1
27 April 2010	675.1	216.9	277.0	112.5	110.9	65.2
28 April 2010	693.4	224.7	277.2	108.2	107.7	57.5
29 April 2010	597.4	210.6	241.5	99.1	100.7	51.1
30 April 2010	594.5	210.0	212.2	101.3	99.8	47.0
3 May 2010	543.6	204.8	207.0	97.1	93.7	44.1
4 May 2010	644.8	233.8	252.0	115.6	105.8	49.4
5 May 2010	731.1	270.4	294.5	131.7	120.5	53.0
6 May 2010	851.6	300.2	334.7	162.9	148.9	68.6
7 May 2010	965.2	305.9	348.8	164.2	147.1	72.4
10 May 2010	481.1	176.8	169.6	97.2	101.4	47.0
11 May 2010	450.6	164.9	158.9	99.0	101.6	48.5
12 May 2010	430.1	163.1	164.0	97.2	99.1	45.5
13 May 2010	441.6	163.7	162.8	99.0	92.7	43.5
14 May 2010	485.4	174.2	179.0	108.4	104.3	44.9
17 May 2010	519.2	183.5	183.9	112.4	103.6	44.9
18 May 2010	473.4	179.3	179.2	116.9	106.7	40.1
19 May 2010	505.6	182.2	182.7	125.8	112.7	40.2

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
20 May 2010	509.6	196.3	193.3	138.6	127.4	43.9
21 May 2010	515.8	200.5	197.5	138.6	126.8	45.2
24 May 2010	513.3	201.0	197.0	140.5	125.4	45.9
25 May 2010	514.8	215.3	204.4	155.7	138.0	50.8
26 May 2010	505.2	216.6	205.5	155.2	137.4	51.7
27 May 2010	500.0	214.2	200.6	152.4	139.5	48.7
28 May 2010	498.5	214.6	202.3	153.0	145.3	48.8
31 May 2010	504.7	214.7	202.1	159.8	148.4	49.0
1 June 2010	517.5	223.0	211.0	165.2	149.8	57.1
2 June 2010	536.9	229.2	225.2	176.7	159.7	65.9
3 June 2010	540.4	233.1	235.6	184.2	161.5	75.7
4 June 2010	555.7	252.5	254.6	194.4	167.0	92.3
7 June 2010	556.0	258.6	263.7	203.8	176.8	102.3
8 June 2010	560.7	258.3	271.6	208.2	178.1	104.6
9 June 2010	558.5	253.5	266.7	200.4	157.2	97.1
10 June 2010	553.1	248.8	255.2	186.5	141.1	84.7
11 June 2010	561.6	254.3	253.4	189.6	146.2	79.4
14 June 2010	570.1	263.6	258.8	204.2	144.2	83.0
15 June 2010	640.8	281.0	277.7	206.4	136.7	80.0
16 June 2010	667.0	289.3	293.9	221.1	138.0	81.7
17 June 2010	667.6	290.0	292.4	211.1	136.1	82.0
18 June 2010	669.2	281.1	287.5	186.3	124.7	74.7
21 June 2010	672.1	269.6	285.7	169.8	121.4	67.0
22 June 2010	710.6	271.7	293.1	182.5	132.6	75.4
23 June 2010	772.1	281.0	307.7	189.3	140.5	85.7
24 June 2010	780.8	285.8	309.6	185.0	143.1	88.1
25 June 2010	780.7	291.0	312.6	185.3	146.8	94.6
28 June 2010	800.2	295.5	313.5	195.1	153.9	91.5
29 June 2010	789.3	295.1	316.4	205.0	157.1	91.0
30 June 2010	784.9	292.3	312.2	198.4	151.7	86.7
1 July 2010	770.9	290.5	301.4	200.9	151.2	82.5
2 July 2010	762.8	273.7	278.7	194.0	143.9	72.7
5 July 2010	766.0	272.7	277.1	206.6	146.8	69.2
6 July 2010	755.9	269.2	280.0	208.3	147.6	68.7
7 July 2010	756.0	269.7	283.8	205.7	148.5	69.0
8 July 2010	764.4	262.6	278.2	201.8	141.9	64.9
9 July 2010	763.7	261.9	274.9	205.9	138.9	61.0
12 July 2010	764.3	267.0	280.4	207.3	144.2	61.5
13 July 2010	755.5	266.3	284.6	200.5	142.3	58.2
14 July 2010	760.7	282.3	291.2	207.2	146.8	60.2
15 July 2010	766.9	284.6	287.3	197.1	147.7	62.8
16 July 2010	764.3	282.6	285.5	185.6	147.3	65.3
19 July 2010	778.0	283.9	282.9	175.7	140.2	66.3
20 July 2010	782.7	276.6	282.9	169.1	136.5	67.3
21 July 2010	785.8	275.8	281.8	167.9	137.4	68.1

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
22 July 2010	774.1	276.9	287.4	169.6	135.7	69.1
23 July 2010	767.4	271.5	284.3	164.9	131.8	65.5
26 July 2010	761.0	259.1	274.3	148.2	123.5	61.2
27 July 2010	749.9	238.8	242.9	137.4	120.4	55.6
28 July 2010	747.3	223.0	233.3	147.6	123.3	57.3
29 July 2010	750.3	232.4	238.7	152.1	125.6	59.2
30 July 2010	762.8	236.1	252.4	154.2	128.5	63.2
2 August 2010	749.2	227.5	246.3	146.2	122.2	62.2
3 August 2010	748.1	230.2	250.1	152.0	126.6	63.3
4 August 2010	762.4	229.3	251.2	154.0	125.3	61.0
5 August 2010	763.4	239.2	251.4	155.2	127.1	59.2
6 August 2010	762.8	236.7	249.2	152.5	126.5	56.6
9 August 2010	764.4	250.0	247.5	150.7	125.3	54.6
10 August 2010	777.9	267.0	254.2	164.3	131.7	57.8
11 August 2010	793.2	289.7	272.7	167.9	137.9	60.7
12 August 2010	797.4	287.6	271.9	175.9	141.8	61.1
13 August 2010	809.0	293.1	283.7	185.8	147.9	65.7
16 August 2010	836.5	299.2	287.3	186.7	152.3	68.1
17 August 2010	832.6	291.8	281.2	174.0	146.2	66.4
18 August 2010	824.2	288.3	278.0	168.0	140.4	63.0
19 August 2010	833.5	293.1	286.7	173.3	146.0	64.3
20 August 2010	848.1	303.3	294.4	178.9	151.4	68.2
23 August 2010	862.1	305.1	297.1	178.0	149.1	66.2
24 August 2010	885.0	318.1	306.6	184.0	157.2	68.0
25 August 2010	926.1	343.6	324.0	184.4	161.1	70.1
26 August 2010	925.8	345.5	325.8	185.8	161.0	70.0
27 August 2010	924.6	352.0	329.5	185.8	157.5	70.0
30 August 2010	927.1	352.6	331.8	192.6	165.9	69.7
31 August 2010	923.2	356.4	333.0	193.2	171.0	71.5
1 September 2010	910.2	347.5	326.0	180.9	157.5	68.6
2 September 2010	900.9	342.3	324.6	172.7	151.9	64.6
3 September 2010	896.8	340.3	324.8	167.1	145.4	63.7
6 September 2010	914.3	342.6	333.4	174.1	147.8	68.8
7 September 2010	941.9	372.8	354.0	180.6	154.2	74.1
8 September 2010	951.9	371.2	350.7	174.1	149.5	70.9
9 September 2010	936.7	354.0	342.1	172.0	145.4	70.2
10 September 2010	933.2	341.3	337.3	171.4	143.7	72.9
13 September 2010	894.4	339.1	330.4	172.6	145.4	74.0
14 September 2010	899.9	348.6	334.4	178.6	150.0	80.0
15 September 2010	907.8	350.1	336.6	175.7	147.8	80.3
16 September 2010	907.2	355.9	348.0	172.5	143.4	81.7
17 September 2010	913.3	386.6	365.8	177.3	150.6	86.0
20 September 2010	909.3	401.5	392.7	176.2	151.3	88.1
21 September 2010	884.1	383.2	385.1	175.0	148.1	82.8
22 September 2010	869.0	394.4	379.4	178.5	153.5	82.4

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
23 September 2010	874.9	418.4	401.7	183.7	161.2	88.9
24 September 2010	870.5	412.8	404.9	180.6	158.3	90.2
27 September 2010	862.9	429.9	414.8	186.8	163.7	85.6
28 September 2010	856.1	449.3	426.6	193.4	169.1	88.4
29 September 2010	840.5	446.0	423.3	195.7	169.7	89.1
30 September 2010	817.4	429.5	402.5	184.5	160.1	85.8
1 October 2010	786.0	402.3	384.1	180.7	157.6	81.5
4 October 2010	776.7	402.4	382.7	179.9	157.3	87.3
5 October 2010	773.8	410.3	393.0	178.0	154.2	86.9
6 October 2010	765.8	422.0	400.6	177.6	153.8	88.6
7 October 2010	755.2	422.8	401.5	176.8	152.7	90.4
8 October 2010	751.7	421.6	398.1	173.7	149.0	88.7
11 October 2010	699.7	417.6	389.6	171.0	145.7	85.2
12 October 2010	678.7	421.9	398.1	175.0	148.7	85.9
13 October 2010	650.2	413.9	390.3	174.5	146.9	87.2
14 October 2010	659.1	387.4	376.0	170.1	144.9	85.8
15 October 2010	652.3	374.9	336.9	161.7	138.8	82.5
18 October 2010	649.4	361.6	314.4	161.6	137.7	83.2
19 October 2010	660.1	383.2	318.5	163.1	138.1	84.7
20 October 2010	660.9	387.5	329.2	161.8	135.7	87.5
21 October 2010	681.2	403.0	338.0	166.9	137.9	87.1
22 October 2010	688.3	404.7	338.8	166.1	137.7	87.4
25 October 2010	691.0	398.8	323.7	161.6	134.6	83.8
26 October 2010	715.9	392.9	312.9	156.7	131.6	78.3
27 October 2010	782.6	420.6	329.1	161.2	136.7	80.7
28 October 2010	784.1	424.4	337.5	162.7	136.9	80.1
29 October 2010	804.3	440.0	343.4	169.3	142.4	80.4
1 November 2010	822.3	461.9	362.1	176.3	145.5	81.3
2 November 2010	832.0	482.6	376.9	181.9	149.2	84.4
3 November 2010	843.6	502.6	387.9	187.0	152.4	84.0
4 November 2010	881.6	526.0	421.1	194.4	156.6	86.8
5 November 2010	904.1	520.6	409.8	194.7	155.9	88.5
8 November 2010	901.7	546.9	438.6	201.6	164.4	93.9
9 November 2010	891.1	553.2	435.6	198.6	162.6	92.8
10 November 2010	911.0	619.5	459.5	206.0	166.1	94.8
11 November 2010	916.0	646.1	460.0	220.0	179.7	98.7
12 November 2010	887.7	562.9	423.2	201.9	164.6	92.2
15 November 2010	885.7	540.0	417.6	195.8	158.6	87.8
16 November 2010	899.7	562.0	414.3	198.5	160.2	89.2
17 November 2010	903.3	554.4	410.6	202.0	161.2	88.9
18 November 2010	889.5	541.4	405.6	201.3	159.4	89.5
19 November 2010	886.1	541.5	404.4	201.9	154.8	88.1
22 November 2010	918.3	544.1	407.1	208.8	156.1	89.8
23 November 2010	932.9	586.3	435.4	234.5	171.4	97.9
24 November 2010	921.0	615.3	430.5	235.3	163.2	89.9

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
25 November 2010	922.2	632.9	431.1	246.3	168.2	94.4
26 November 2010	903.9	646.2	425.3	244.4	168.3	94.4
29 November 2010	902.8	649.3	427.6	267.0	188.1	112.2
30 November 2010	918.7	668.5	430.4	283.3	199.7	132.7
1 December 2010	902.9	616.3	386.5	250.9	173.0	119.5
2 December 2010	883.3	568.2	332.2	225.9	158.3	109.7
3 December 2010	870.6	528.9	307.4	219.4	157.6	105.5
6 December 2010	877.0	531.6	309.2	230.4	164.7	110.4
7 December 2010	871.1	507.8	303.3	225.6	157.1	107.1
8 December 2010	867.6	501.7	306.5	222.0	153.4	98.9
9 December 2010	874.1	503.3	313.8	234.0	159.2	99.1
10 December 2010	872.9	513.0	330.2	245.2	160.3	101.2
13 December 2010	870.6	514.3	332.7	247.6	161.0	99.9
14 December 2010	871.4	521.8	335.2	248.8	159.0	101.7
15 December 2010	882.9	519.1	339.6	242.2	153.0	100.5
16 December 2010	885.6	521.4	339.0	245.1	156.0	91.9
17 December 2010	887.4	540.3	342.9	248.9	161.3	95.6
20 December 2010	893.4	565.3	349.3	252.8	165.7	99.3
21 December 2010	897.9	589.7	353.9	252.9	167.1	95.9
22 December 2010	906.2	601.3	361.1	251.8	171.4	99.6
23 December 2010	922.7	602.4	363.7	248.8	171.8	102.0
24 December 2010	920.4	602.6	364.5	248.9	171.4	101.4
27 December 2010	925.2	602.1	363.6	243.1	168.8	101.3
28 December 2010	931.3	606.2	362.4	249.8	177.6	102.3
29 December 2010	947.1	606.6	362.9	243.5	182.2	100.7
30 December 2010	952.5	608.8	364.9	249.1	186.2	100.5
31 December 2010	950.9	609.5	363.8	249.0	185.2	100.7
3 January 2011	959.9	609.3	369.8	248.9	181.0	102.6
4 January 2011	970.0	609.6	372.6	242.6	173.9	100.2
5 January 2011	967.9	607.6	371.2	237.1	170.7	100.2
6 January 2011	972.5	612.9	404.4	254.7	185.4	115.2
7 January 2011	973.6	620.1	423.5	263.8	192.8	125.9
10 January 2011	942.3	604.0	410.9	267.5	197.6	135.0
11 January 2011	875.8	566.4	397.5	255.9	187.3	134.5
12 January 2011	817.3	530.9	373.7	240.2	173.5	111.7
13 January 2011	811.4	525.2	370.5	230.5	166.1	100.3
14 January 2011	808.1	548.9	378.8	230.4	162.7	104.1
17 January 2011	801.2	553.4	378.0	239.5	168.2	108.2
18 January 2011	832.9	576.8	395.5	236.3	166.9	108.9
19 January 2011	838.7	581.6	395.6	227.1	162.3	115.3
20 January 2011	820.8	565.1	366.9	218.1	161.6	111.6
21 January 2011	812.7	561.6	370.7	202.6	153.5	102.7
24 January 2011	807.2	572.9	378.4	208.7	152.3	104.0
25 January 2011	819.6	570.4	391.0	220.0	159.5	106.7
26 January 2011	826.9	575.7	394.5	225.1	161.2	110.0

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
27 January 2011	829.7	591.4	390.2	229.4	161.7	112.9
28 January 2011	831.2	601.0	392.4	231.0	163.2	114.2
31 January 2011	818.3	599.7	389.3	221.3	156.8	111.4
1 February 2011	782.7	580.4	371.1	199.1	142.4	100.0
2 February 2011	754.5	556.4	364.2	183.8	127.7	88.8
3 February 2011	767.3	564.7	377.3	197.3	140.7	94.4
4 February 2011	768.4	562.1	379.4	189.2	134.7	90.0
7 February 2011	779.9	564.5	391.2	199.6	143.8	94.7
8 February 2011	794.1	566.6	398.1	205.8	149.8	97.3
9 February 2011	795.5	569.3	405.5	201.0	145.4	93.7
10 February 2011	810.9	578.1	399.5	202.9	146.8	95.2
11 February 2011	822.2	579.8	401.8	208.4	148.6	99.3
14 February 2011	828.8	585.2	412.6	215.9	153.1	100.9
15 February 2011	852.1	594.8	412.8	213.4	151.8	99.3
16 February 2011	862.2	594.5	416.3	210.0	149.4	99.3
17 February 2011	861.2	597.2	427.0	218.0	155.6	102.7
18 February 2011	846.7	594.1	424.3	212.1	154.1	98.7
21 February 2011	852.8	595.8	426.7	217.6	161.4	103.8
22 February 2011	861.7	593.5	430.6	221.6	166.6	105.4
23 February 2011	861.4	600.9	432.5	221.8	168.7	108.9
24 February 2011	873.0	618.6	437.2	224.1	170.8	111.6
25 February 2011	872.8	619.6	439.3	225.3	170.1	113.3
28 February 2011	876.8	617.1	433.9	222.0	167.2	109.9
1 March 2011	886.3	613.4	427.1	218.0	163.9	107.6
2 March 2011	888.3	618.9	426.8	213.0	160.7	106.1
3 March 2011	875.7	608.2	419.6	207.8	158.1	101.4
4 March 2011	897.6	611.1	420.2	211.5	161.2	101.3
7 March 2011	905.8	614.3	428.5	210.8	162.0	100.6
8 March 2011	953.5	626.7	432.1	217.2	165.2	104.2
9 March 2011	961.0	626.0	433.9	222.1	170.0	108.9
10 March 2011	950.6	625.1	424.8	225.9	172.2	108.9
11 March 2011	960.0	643.4	438.7	221.3	165.2	103.0
14 March 2011	920.7	626.3	421.3	204.3	155.8	91.8
15 March 2011	934.4	635.5	427.4	205.8	156.8	92.7
16 March 2011	923.6	642.7	441.4	208.4	160.0	90.0
17 March 2011	912.0	644.5	439.7	207.2	156.1	89.8
18 March 2011	910.0	632.9	418.2	197.8	149.5	88.3
21 March 2011	902.5	636.7	413.4	191.6	148.8	89.9
22 March 2011	925.7	657.7	423.7	193.3	151.3	95.1
23 March 2011	931.5	681.3	439.5	193.7	153.3	96.9
24 March 2011	932.6	675.5	441.6	192.4	151.2	95.8
25 March 2011	929.6	683.9	450.6	189.3	147.8	93.2
28 March 2011	933.8	676.9	463.5	188.7	148.2	93.9
29 March 2011	937.1	678.3	466.2	187.4	146.1	91.8
30 March 2011	942.4	676.3	476.2	186.8	144.2	92.2

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
31 March 2011	948.3	686.9	505.4	194.3	146.8	94.8
1 April 2011	937.5	660.6	514.2	194.2	143.1	92.3
4 April 2011	934.9	644.1	522.2	191.2	138.7	87.6
5 April 2011	929.2	629.1	537.5	190.3	136.7	87.4
6 April 2011	928.4	593.7	510.7	180.1	131.3	81.6
7 April 2011	939.5	584.1	517.7	182.0	132.2	81.8
8 April 2011	937.8	575.9	518.2	178.1	126.8	81.8
11 April 2011	936.8	566.5	513.3	175.0	122.1	78.7
12 April 2011	943.1	564.4	519.4	175.0	122.1	78.7
13 April 2011	948.4	565.2	530.8	179.7	125.5	80.9
14 April 2011	984.6	590.9	545.4	189.4	128.9	84.7
15 April 2011	1044.8	633.1	561.9	203.9	135.4	93.4
18 April 2011	1130.1	650.9	583.3	230.6	153.1	107.9
19 April 2011	1120.5	652.6	581.2	223.2	148.1	103.7
20 April 2011	1144.6	676.0	597.5	216.6	143.6	101.0
21 April 2011	1164.3	722.1	624.1	221.2	149.7	103.8
22 April 2011	1164.3	722.0	624.1	221.2	149.7	103.8
25 April 2011	1164.3	722.0	624.1	221.2	149.7	103.8
26 April 2011	1207.9	720.8	635.3	225.7	156.0	107.6
27 April 2011	1289.2	716.4	632.9	219.7	152.2	104.0
28 April 2011	1244.1	717.4	639.7	212.6	150.5	100.2
29 April 2011	1242.3	733.4	640.4	205.3	149.3	99.4
2 May 2011	1240.9	722.6	638.5	203.5	146.4	98.1
3 May 2011	1199.2	709.9	629.7	198.1	141.8	98.0
4 May 2011	1211.8	689.5	622.5	196.2	140.7	98.3
5 May 2011	1229.4	705.7	647.7	202.2	146.3	101.8
6 May 2011	1233.6	718.1	638.7	207.0	149.2	102.0
9 May 2011	1260.9	754.0	656.9	222.0	156.9	109.6
10 May 2011	1231.0	745.3	659.0	215.4	151.6	108.0
11 May 2011	1244.1	749.2	629.5	212.7	150.3	107.2
12 May 2011	1241.7	740.4	615.2	210.7	147.3	108.4
13 May 2011	1236.4	743.3	613.8	218.2	153.0	109.8
16 May 2011	1249.7	729.4	585.5	213.3	147.0	106.8
17 May 2011	1253.2	731.1	591.3	221.9	151.4	108.1
18 May 2011	1268.0	722.9	606.7	223.9	151.0	108.9
19 May 2011	1288.4	733.1	599.8	228.1	164.6	109.1
20 May 2011	1351.5	748.1	632.9	242.5	171.6	116.7
23 May 2011	1401.6	784.3	663.6	249.9	179.2	120.6
24 May 2011	1368.8	785.9	669.0	240.1	171.5	113.7
25 May 2011	1367.7	794.3	668.2	230.7	168.1	113.4
26 May 2011	1338.3	804.3	662.5	230.6	171.6	113.4
27 May 2011	1343.3	810.0	660.1	233.7	176.4	116.7
30 May 2011	1345.5	809.5	677.9	241.0	183.0	120.9
31 May 2011	1301.8	801.6	659.0	234.4	176.1	115.5
1 June 2011	1316.7	798.9	674.2	233.4	174.3	112.0

Date	Greece	Ireland	Portugal	Spain	Italy	Belgium
2 June 2011	1326.4	801.6	666.4	230.4	170.1	107.5
3 June 2011	1287.9	774.8	674.7	217.1	157.1	99.6
6 June 2011	1282.4	764.5	670.4	224.1	163.7	107.4
7 June 2011	1279.5	768.0	684.4	223.6	164.0	105.9
8 June 2011	1308.8	781.9	706.1	231.9	170.6	110.7
9 June 2011	1362.9	805.2	725.9	241.0	177.8	113.8
10 June 2011	1376.4	827.7	747.3	251.1	183.3	116.0
13 June 2011	1401.6	839.1	771.0	253.4	183.6	116.9
14 June 2011	1436.5	836.7	774.0	245.3	175.3	112.0
15 June 2011	1477.3	859.7	772.7	259.5	188.2	117.6
16 June 2011	1503.1	863.7	795.4	274.2	193.2	122.1
17 June 2011	1398.0	842.8	794.8	261.4	185.8	115.8
20 June 2011	1437.7	849.2	818.5	262.3	188.7	117.2
21 June 2011	1427.7	845.0	814.1	252.7	185.6	116.5

* Relative to Germany. [Return to text](#)

Top-right panel
*Projected Debt-to-GDP**

Percent

Period	Greece	Ireland	Portugal	Spain	Italy
2009	127	66	75	53	116
2010	143	97	92	62	117
2011	153	106	98	67	117
2012	165	112	103	69	116
2013	169	116	105	71	114
2014	168	115	104	71	112
2015	166	115	103	71	111
2016	170	114	103	70	109
2017	173	114	102	69	108
2018	177	113	102	68	106
2019	181	113	101	67	105
2020	186	112	101	66	103

* Assumes Greece, Ireland, and Portugal are able to access market financing on the timeline set out in their respective IMF programs. [Return to text](#)

Middle-left panel
Direct Credit Exposure of Banking Sector, December 2010

	Greece		Greece, Ireland, & Portugal		Spain		Core European Banks*	
	\$bil.	% Tier 1	\$bil.	% Tier 1	\$bil.	% Tier 1	\$bil.	% Tier 1
United States	7	1	64	7	47	5	560	64
Western Europe	134	6	705	31	630	28	--	--

* Core Europe defined as Belgium, France, Germany, the Netherlands, Switzerland, and the United Kingdom. [Return to table](#)

Source: U.S. Country Exposure Report, BIS, and ECB. Corrected for break in series and excluding exposure from derivatives contracts.

Middle-right panel
U.S. Direct Credit Exposure to Periphery

Billions of dollars

Period	Greece	Greece, Ireland, Portugal, and Spain
March 2010	14	141
December 2010	7	111

Bottom-left panel
Euro-Dollar Exchange Rate

Date	Euros per dollar (March 1, 2011 = 100)
1 March 2011	100.00
2 March 2011	99.60
3 March 2011	99.04
4 March 2011	98.78
7 March 2011	98.83
8 March 2011	99.29
9 March 2011	99.33
10 March 2011	99.93
11 March 2011	99.63
14 March 2011	98.84
15 March 2011	98.89
16 March 2011	99.22
17 March 2011	98.52
18 March 2011	97.68
21 March 2011	97.38
22 March 2011	97.19
23 March 2011	97.80
24 March 2011	97.27
25 March 2011	97.66
28 March 2011	97.94
29 March 2011	98.03
30 March 2011	98.00
31 March 2011	97.39
1 April 2011	97.17
4 April 2011	97.13
5 April 2011	97.07
6 April 2011	96.37
7 April 2011	96.68
8 April 2011	95.68
11 April 2011	95.57
12 April 2011	95.56
13 April 2011	95.41
14 April 2011	95.50
15 April 2011	95.64

Date	Euros per dollar (March 1, 2011 = 100)
18 April 2011	97.20
19 April 2011	96.47
20 April 2011	95.18
21 April 2011	94.71
22 April 2011	94.97
25 April 2011	94.77
26 April 2011	94.45
27 April 2011	94.23
28 April 2011	93.43
29 April 2011	93.20
2 May 2011	92.89
3 May 2011	92.86
4 May 2011	92.96
5 May 2011	94.72
6 May 2011	95.29
9 May 2011	96.59
10 May 2011	96.20
11 May 2011	96.80
12 May 2011	97.08
13 May 2011	97.68
16 May 2011	97.14
17 May 2011	97.58
18 May 2011	96.80
19 May 2011	96.91
20 May 2011	97.47
23 May 2011	98.56
24 May 2011	97.92
25 May 2011	97.95
26 May 2011	98.05
27 May 2011	96.68
30 May 2011	ND
31 May 2011	96.08
1 June 2011	95.72
2 June 2011	95.75
3 June 2011	94.58
6 June 2011	94.48
7 June 2011	94.13
8 June 2011	94.69
9 June 2011	95.04
10 June 2011	96.16
13 June 2011	96.14
14 June 2011	95.44
15 June 2011	97.13
16 June 2011	97.58
17 June 2011	96.42

Date	Euros per dollar (March 1, 2011 = 100)
20 June 2011	96.46

Bottom-right panel
Euro-area Stock Prices

March 1, 2011 = 100

Date	DJ Euro Stoxx	DJ Euro Stoxx Banks
1 March 2011	100.00	100.00
2 March 2011	99.25	99.13
3 March 2011	99.60	98.36
4 March 2011	99.00	97.15
7 March 2011	98.64	95.91
8 March 2011	99.03	96.66
9 March 2011	98.89	96.25
10 March 2011	97.91	95.26
11 March 2011	96.99	95.25
14 March 2011	96.06	97.06
15 March 2011	93.83	95.16
16 March 2011	92.01	92.29
17 March 2011	93.92	94.10
18 March 2011	94.26	94.26
21 March 2011	96.32	96.59
22 March 2011	95.99	96.37
23 March 2011	96.46	96.26
24 March 2011	97.89	97.73
25 March 2011	97.95	97.27
28 March 2011	98.08	97.46
29 March 2011	98.03	95.78
30 March 2011	98.90	95.53
31 March 2011	98.11	92.96
1 April 2011	99.65	94.92
4 April 2011	99.67	93.92
5 April 2011	99.56	93.29
6 April 2011	100.13	95.55
7 April 2011	99.71	96.65
8 April 2011	100.20	97.06
11 April 2011	99.84	96.57
12 April 2011	98.44	95.37
13 April 2011	99.13	95.47
14 April 2011	98.19	93.30
15 April 2011	98.26	92.31
18 April 2011	96.11	89.27
19 April 2011	96.54	89.40
20 April 2011	98.52	89.66
21 April 2011	98.93	91.05

Date	DJ Euro Stoxx	DJ Euro Stoxx Banks
22 April 2011	ND	ND
25 April 2011	ND	ND
26 April 2011	99.55	91.41
27 April 2011	100.17	92.52
28 April 2011	100.92	94.06
29 April 2011	101.16	94.39
2 May 2011	101.24	93.97
3 May 2011	100.83	93.62
4 May 2011	99.33	92.76
5 May 2011	98.73	91.43
6 May 2011	99.71	92.27
9 May 2011	98.55	89.92
10 May 2011	99.67	91.59
11 May 2011	99.82	91.68
12 May 2011	99.05	91.07
13 May 2011	98.56	90.12
16 May 2011	98.16	89.76
17 May 2011	96.99	89.17
18 May 2011	97.46	89.52
19 May 2011	98.23	89.99
20 May 2011	97.27	88.14
23 May 2011	95.27	85.95
24 May 2011	95.57	85.85
25 May 2011	96.01	87.77
26 May 2011	95.52	87.06
27 May 2011	96.15	88.09
30 May 2011	96.06	87.35
31 May 2011	97.50	89.38
1 June 2011	96.51	87.82
2 June 2011	95.13	86.79
3 June 2011	95.32	88.49
6 June 2011	94.70	86.65
7 June 2011	94.83	86.80
8 June 2011	93.87	85.51
9 June 2011	94.78	85.57
10 June 2011	93.31	84.24
13 June 2011	93.34	84.07
14 June 2011	94.69	85.87
15 June 2011	93.28	83.52
16 June 2011	92.91	83.21
17 June 2011	93.87	86.01
20 June 2011	93.12	84.99
21 June 2011	94.24	86.50

Exhibit 6 Global Outlook

Top-left panel *Real GDP**

Percent change, annual rate

	2011			2012 ^P
	Q1	Q2 ^P	H2 ^P	
1. Total Foreign GDP	4.1	2.8	3.6	3.5
<i>April Tealbook</i>	3.7	3.0	3.5	3.6
2. Advanced Foreign Economies	2.3	1.4	2.4	2.3
3. Euro area	3.4	1.6	1.4	1.8
4. Japan	-3.5	-3.8	4.4	2.8
5. Emerging Market Economies	6.2	4.4	5.1	4.9
6. China	8.7	8.1	8.5	8.3
7. Emerging Asia	8.8	5.4	5.9	5.9
8. Mexico	2.1	2.9	4.6	3.8

* GDP aggregates weighted by U.S. goods exports. [Return to text](#)

Top-right panel *First-Quarter Real GDP*

Percent change, a.r.

	April Tealbook	June Tealbook
AFE ex. Japan	2.80	3.06
Emerging Asia	5.92	8.81
South America	4.67	6.99
Japan	-0.10	-3.48

Middle-left panel *Foreign Mfg. PMI ex. Japan*

Period	Diffusion index
January 2008	53.66
February 2008	53.57
March 2008	53.02
April 2008	52.21
May 2008	51.87
June 2008	50.07
July 2008	49.25
August 2008	48.31
September 2008	46.12
October 2008	42.94
November 2008	37.59
December 2008	36.09
January 2009	37.97
February 2009	39.92

Period	Diffusion index
March 2009	42.05
April 2009	45.52
May 2009	48.12
June 2009	49.47
July 2009	51.54
August 2009	53.41
September 2009	53.25
October 2009	53.72
November 2009	54.60
December 2009	54.93
January 2010	56.07
February 2010	56.07
March 2010	56.38
April 2010	57.00
May 2010	55.22
June 2010	53.93
July 2010	53.41
August 2010	53.02
September 2010	52.22
October 2010	54.02
November 2010	54.60
December 2010	55.69
January 2011	56.14
February 2011	56.00
March 2011	54.70
April 2011	54.16
May 2011	53.04

Middle-center panel
China

12-month percent change

Period	Retail sales	Outstanding bank loans
January 2008	21.22	16.74
February 2008	19.12	15.73
March 2008	21.50	14.78
April 2008	22.02	14.72
May 2008	21.60	14.86
June 2008	23.00	14.12
July 2008	23.30	14.58
August 2008	23.20	14.29
September 2008	23.19	14.48
October 2008	22.02	14.58
November 2008	20.80	13.22
December 2008	19.00	15.94
January 2009	18.50	18.62

Period	Retail sales	Outstanding bank loans
February 2009	11.60	21.48
March 2009	14.70	27.11
April 2009	14.75	27.10
May 2009	15.22	28.02
June 2009	15.03	31.88
July 2009	15.16	31.42
August 2009	15.37	31.60
September 2009	15.52	31.68
October 2009	16.21	31.73
November 2009	15.81	33.86
December 2009	17.54	31.74
January 2010	18.24	29.31
February 2010	32.29	27.23
March 2010	21.51	21.81
April 2010	23.20	21.96
May 2010	24.20	21.50
June 2010	24.02	18.17
July 2010	23.31	18.43
August 2010	24.26	18.58
September 2010	24.04	18.55
October 2010	21.91	19.28
November 2010	22.68	19.83
December 2010	21.57	19.89
January 2011	19.90	16.88
February 2011	11.63	16.21
March 2011	20.02	16.19
April 2011	18.58	15.83
May 2011	18.00	15.38

Middle-right panel
Japan

Period	Suppliers' delivery times (Diffusion index)	Real consumption (January 2008 = 100)
January 2008	46.39	100.00
February 2008	47.16	101.95
March 2008	45.41	100.10
April 2008	47.89	99.49
May 2008	49.09	99.75
June 2008	47.98	99.87
July 2008	47.71	99.96
August 2008	49.51	99.13
September 2008	49.14	99.33
October 2008	50.90	99.30
November 2008	52.64	97.98
December 2008	53.95	97.44

Period	Suppliers' delivery times (Diffusion index)	Real consumption (January 2008 = 100)
January 2009	55.69	96.47
February 2009	56.15	95.41
March 2009	53.09	96.66
April 2009	52.35	97.27
May 2009	50.39	97.39
June 2009	50.24	97.76
July 2009	49.26	97.44
August 2009	49.51	97.55
September 2009	45.43	98.07
October 2009	47.11	98.38
November 2009	46.23	98.09
December 2009	45.74	99.12
January 2010	47.45	99.21
February 2010	44.57	99.00
March 2010	43.58	101.37
April 2010	44.55	100.34
May 2010	43.14	99.23
June 2010	45.01	99.70
July 2010	44.09	100.48
August 2010	45.78	101.13
September 2010	47.59	100.60
October 2010	50.18	98.75
November 2010	49.31	100.46
December 2010	48.97	99.74
January 2011	48.55	99.93
February 2011	47.16	100.95
March 2011	31.36	95.98
April 2011	23.14	98.34
May 2011	41.50	ND

Bottom-left panel
*Headline Consumer Prices**

Four-quarter percent change

Period	Emerging Asia	Latin America	Advanced foreign economies
2008:Q1	6.65	4.41	2.26
2008:Q2	7.14	5.46	2.73
2008:Q3	5.97	6.10	3.48
2008:Q4	3.59	6.65	1.99
2009:Q1	1.01	6.35	1.00
2009:Q2	-0.26	5.91	0.03
2009:Q3	-0.38	4.97	-0.77
2009:Q4	1.28	3.91	0.25
2010:Q1	2.80	4.64	1.06
2010:Q2	3.25	4.09	1.23

Period	Emerging Asia	Latin America	Advanced foreign economies
2010:Q3	3.53	3.88	1.38
2010:Q4	4.33	4.45	1.81
2011:Q1	4.80	3.81	2.15
<i>Forecast</i>			
2011:Q2	5.01	3.71	2.61
2011:Q3	4.88	3.93	2.64
2011:Q4	3.78	3.71	2.12
2012:Q1	3.12	3.63	1.63
2012:Q2	2.93	3.95	1.36
2012:Q3	2.86	4.00	1.39
2012:Q4	2.83	3.95	1.41

* Inflation aggregates weighted by U.S. non-oil goods imports. [Return to text](#)

Bottom-right panel
*Implied Forward OIS Rates**

Percent

Period	April 20		June 21	
	Euro area	United Kingdom	Euro Area	United Kingdom
April 2011	1.09	0.52	ND	ND
May 2011	1.14	0.53	ND	ND
June 2011	1.20	0.55	1.19	0.51
July 2011	1.31	0.57	1.25	0.51
August 2011	1.41	0.60	1.34	0.50
September 2011	1.49	0.64	1.40	0.51
October 2011	1.56	0.68	1.44	0.51
November 2011	1.62	0.72	1.45	0.51
December 2011	1.69	0.76	1.47	0.52
January 2012	1.75	0.79	1.49	0.52
February 2012	1.79	0.86	1.51	0.53
March 2012	1.93	0.98	1.52	0.56
April 2012	1.95	1.02	1.53	0.60
May 2012	1.96	1.06	1.53	0.67
June 2012	1.98	1.10	1.54	0.64
July 2012	2.01	1.16	1.55	0.61
August 2012	2.05	1.22	1.55	0.58
September 2012	2.08	1.29	1.56	0.61
October 2012	2.14	1.37	1.56	0.64
November 2012	2.19	1.45	1.57	0.68
December 2012	2.25	1.53	1.59	0.75

* OIS rates less one basis point per month term premium adjustment. [Return to text](#)

Exhibit 7
Outlook for U.S. External Sector

Top-left panel

Trade in Real Goods and Services

Percent change, a.r.

Period	Exports	Imports
2010:Q1	11.37	11.21
2010:Q2	9.12	33.46
2010:Q3	6.76	16.81
2010:Q4	8.60	-12.59
2011:Q1	7.84	5.46
<i>Forecast</i>		
2011:Q2	10.36	2.63
2011:Q3	10.31	10.64
2011:Q4	9.66	1.26
2012:Q1	9.51	1.70
2012:Q2	9.03	3.62
2012:Q3	8.74	5.74
2012:Q4	8.63	4.90

Top-right panel

Broad Real Dollar

2008:Q1 = 100

Period	Broad Real Dollar	April TB
2008:Q1	100.00	ND
2008:Q2	98.29	ND
2008:Q3	100.81	ND
2008:Q4	109.15	ND
2009:Q1	111.47	ND
2009:Q2	107.49	ND
2009:Q3	104.50	ND
2009:Q4	101.81	ND
2010:Q1	102.54	ND
2010:Q2	103.46	ND
2010:Q3	102.02	ND
2010:Q4	98.24	ND
2011:Q1	96.92	96.95
<i>Forecast</i>		
2011:Q2	94.68	95.05
2011:Q3	94.13	94.39
2011:Q4	93.57	93.74
2012:Q1	92.96	93.02
2012:Q2	92.28	92.24
2012:Q3	91.60	91.45
2012:Q4	90.91	90.67

Middle-left panel

Contribution to U.S. Real GDP Growth

Period	Percentage points, a.r.
2010	-0.56
2011:Q1	0.10
<i>Forecast</i>	
2011:Q2	0.89
2011:H2	0.37
2012	0.59

[Data are approximate.]

Bottom-left panel
U.S. Core Import Prices

Period	Percent change, a.r.
2008:Q1	8.35
2008:Q2	11.44
2008:Q3	4.99
2008:Q4	-9.41
2009:Q1	-10.00
2009:Q2	-2.36
2009:Q3	1.15
2009:Q4	4.32
2010:Q1	4.22
2010:Q2	3.06
2010:Q3	-0.82
2010:Q4	4.31
2011:Q1	8.08
<i>Forecast</i>	
2011:Q2	7.19
2011:Q3	3.50
2011:Q4	1.54
2012:Q1	1.38
2012:Q2	1.46
2012:Q3	1.49
2012:Q4	1.47

Contributions from:
Percent change, a.r.

Period	Exchange rates and foreign prices	Non-fuel primary commodity prices
2008:H1	3.96	1.65
2008:H2	-0.03	-2.20
2009:H1	-2.65	-2.90
2009:H2	2.96	1.81
2010:H1	1.31	2.59
2010:H2	1.63	1.84
<i>Forecast</i>		
2011:H1	3.76	2.68
2011:H2	1.77	0.51

Period	Exchange rates and foreign prices	Non-fuel primary commodity prices
2012:H1	1.42	-0.01
2012:H2	1.46	0.00

Bottom-right panel
Commodity Price Outlook

Period	WTI crude oil (Dollars per barrel)		Nonfuel (Index, 2008:Q1 = 100)	
	Current	April Tealbook	Current	April Tealbook
2008:Q1	97.95	ND	100.00	ND
2008:Q2	123.96	ND	103.21	ND
2008:Q3	118.01	ND	98.04	ND
2008:Q4	58.32	ND	72.68	ND
2009:Q1	42.96	ND	68.62	ND
2009:Q2	59.55	ND	73.98	ND
2009:Q3	68.20	ND	82.75	ND
2009:Q4	76.06	ND	88.73	ND
2010:Q1	78.69	ND	96.08	ND
2010:Q2	77.89	ND	99.88	ND
2010:Q3	76.13	ND	100.57	ND
2010:Q4	85.08	ND	114.17	ND
2011:Q1	94.13	94.13	127.91	127.98
2011:Q2	103.20	107.61	126.98	130.46
<i>Forecast</i>				
2011:Q3	97.83	108.37	125.29	130.31
2011:Q4	99.20	108.66	125.47	130.20
2012:Q1	100.09	108.40	125.84	130.23
2012:Q2	100.81	107.67	125.99	130.20
2012:Q3	101.23	106.65	125.89	129.91
2012:Q4	101.41	105.82	125.71	129.53

Exhibit 8
Forecasting Commodity Prices

Top-left panel
*WTI Crude Oil Futures**

Dollars per barrel

Futures in	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
2003	27.96	25.03	23.98	23.74	23.76	23.78	23.80	23.86	ND	ND	ND	ND	ND
2004	ND	34.38	31.86	29.61	28.66	28.31	27.95	27.75	27.96	ND	ND	ND	ND
2005	ND	ND	53.71	55.97	53.47	51.40	49.98	49.03	48.28	47.93	ND	ND	ND
2006	ND	ND	ND	68.74	71.92	71.07	69.52	68.45	67.47	66.62	65.97	ND	ND
2007	ND	ND	ND	ND	61.89	69.72	70.94	70.12	68.97	68.25	67.85	66.60	ND
2008	ND	ND	ND	ND	ND	111.76	107.39	102.96	101.15	100.43	100.23	100.28	100.55

Period	Actual historical	December 2003 futures forecast	December 2003 proposed forecast	March 2007 futures forecast	March 2007 proposed forecast	March 2009 futures forecast	March 2009 proposed forecast	January 2010 futures forecast	January 2010 proposed forecast	Current futures forecast	Current proposed forecast
2003:Q1	79.37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2003:Q2	77.66	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2003:Q3	78.80	78.80	78.80	ND	ND	ND	ND	ND	ND	ND	ND
2003:Q4	84.87	83.57	86.12	ND	ND	ND	ND	ND	ND	ND	ND
2004:Q1	92.39	85.20	88.59	ND	ND	ND	ND	ND	ND	ND	ND
2004:Q2	93.45	85.74	89.98	ND	ND	ND	ND	ND	ND	ND	ND
2004:Q3	92.35	85.06	90.07	ND	ND	ND	ND	ND	ND	ND	ND
2004:Q4	91.93	84.07	89.84	ND	ND	ND	ND	ND	ND	ND	ND
2005:Q1	98.34	84.30	90.90	ND	ND	ND	ND	ND	ND	ND	ND
2005:Q2	98.93	84.28	91.71	ND	ND	ND	ND	ND	ND	ND	ND
2005:Q3	99.75	84.01	92.26	ND	ND	ND	ND	ND	ND	ND	ND
2005:Q4	102.98	83.80	92.86	ND	ND	ND	ND	ND	ND	ND	ND
2006:Q1	112.80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2006:Q2	127.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2006:Q3	130.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2006:Q4	135.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2007:Q1	138.83	ND	ND	138.83	138.83	ND	ND	ND	ND	ND	ND
2007:Q2	149.33	ND	ND	142.05	141.35	ND	ND	ND	ND	ND	ND
2007:Q3	143.66	ND	ND	142.99	141.58	ND	ND	ND	ND	ND	ND
2007:Q4	143.44	ND	ND	143.04	140.93	ND	ND	ND	ND	ND	ND
2008:Q1	159.39	ND	ND	142.86	140.06	ND	ND	ND	ND	ND	ND
2008:Q2	164.50	ND	ND	142.16	138.69	ND	ND	ND	ND	ND	ND
2008:Q3	156.27	ND	ND	141.50	137.35	ND	ND	ND	ND	ND	ND
2008:Q4	115.84	ND	ND	140.87	136.07	ND	ND	ND	ND	ND	ND
2009:Q1	109.37	ND	ND	ND	ND	109.37	109.37	ND	ND	ND	ND
2009:Q2	117.92	ND	ND	ND	ND	105.66	98.37	ND	ND	ND	ND
2009:Q3	131.89	ND	ND	ND	ND	106.30	92.14	ND	ND	ND	ND
2009:Q4	141.43	ND	ND	ND	ND	107.05	86.39	141.43	141.43	ND	ND
2010:Q1	153.15	ND	ND	ND	ND	107.96	81.11	149.31	151.02	ND	ND
2010:Q2	159.19	ND	ND	ND	ND	108.68	76.02	149.97	153.42	ND	ND
2010:Q3	160.31	ND	ND	ND	ND	109.20	71.11	150.30	155.52	ND	ND
2010:Q4	181.97	ND	ND	ND	ND	109.65	66.48	150.38	157.39	ND	ND
2011:Q1	203.87	ND	ND	ND	ND	ND	ND	150.86	159.70	ND	ND
2011:Q2	202.39	ND	ND	ND	ND	ND	ND	151.16	161.85	202.39	202.39
2011:Q3	ND	ND	ND	ND	ND	ND	ND	151.39	163.95	199.70	200.15
2011:Q4	ND	ND	ND	ND	ND	ND	ND	151.64	166.10	199.99	200.90
2012:Q1	ND	ND	ND	ND	ND	ND	ND	ND	ND	200.57	201.93
2012:Q2	ND	ND	ND	ND	ND	ND	ND	ND	ND	200.82	202.63
2012:Q3	ND	ND	ND	ND	ND	ND	ND	ND	ND	200.66	202.93
2012:Q4	ND	ND	ND	ND	ND	ND	ND	ND	ND	200.36	203.09

Source: USIT model.

Exhibit 9 Forecasting Commodity Prices (Continued)

Top-left panel

Features of New Approach

- No improvement in forecasting accuracy.
- Improves consistency with Tealbook forecast.
- Provides simple framework for characterizing risks.

Top-right panel

*Forecasting Performance, One Year Ahead**

Root Mean Squared Errors

	Oil	Non-fuel
Random walk	41	22
Futures forecast	40	21
Proposed forecast	43	23

* From August 2002 to January 2010. [Return to text](#)

Alternative Scenarios for Oil Prices

Middle-left panel

World GDP Growth

Dollars per barrel

Period	June Tealbook	Proposed forecast	World growth ½ percentage point faster	World growth ½ percentage point slower
2010:Q1	78.69	ND	ND	ND
2010:Q2	77.89	ND	ND	ND
2010:Q3	76.13	ND	ND	ND
2010:Q4	85.08	ND	ND	ND
2011:Q1	94.13	ND	ND	ND
2011:Q2	103.50	103.50	103.50	103.50
<i>Forecast</i>				
2011:Q3	99.57	99.69	101.46	97.83
2011:Q4	100.94	101.20	104.81	97.44
2012:Q1	101.75	102.13	107.66	96.50
2012:Q2	102.32	102.83	110.32	95.35
2012:Q3	102.61	103.25	112.73	93.95
2012:Q4	102.55	103.33	114.81	92.25

Middle-right panel

Dollar

Dollars per barrel

Period	June Tealbook	Proposed forecast	Additional 5 percent dollar depreciation	Additional 5 percent dollar appreciation
2010:Q1	78.69	ND	ND	ND
2010:Q2	77.89	ND	ND	ND
2010:Q3	76.13	ND	ND	ND

Period	June Tealbook	Proposed forecast	Additional 5 percent dollar depreciation	Additional 5 percent dollar appreciation
2010:Q4	85.08	ND	ND	ND
2011:Q1	94.13	ND	ND	ND
2011:Q2	103.50	103.50	103.50	103.50
<i>Forecast</i>				
2011:Q3	99.57	99.69	100.91	98.43
2011:Q4	100.94	101.20	103.68	98.65
2012:Q1	101.75	102.13	105.92	98.29
2012:Q2	102.32	102.83	107.95	97.72
2012:Q3	102.61	103.25	109.72	96.87
2012:Q4	102.55	103.33	111.13	95.71

Alternative Scenarios for Non-fuel Commodity Prices

Bottom-left panel

World GDP Growth

2010:Q1 = 100

Period	June Tealbook	Proposed forecast	World growth ½ percentage point faster	World growth ½ percentage point slower
2010:Q1	100.00	ND	ND	ND
2010:Q2	103.94	ND	ND	ND
2010:Q3	104.68	ND	ND	ND
2010:Q4	118.82	ND	ND	ND
2011:Q1	133.12	ND	ND	ND
2011:Q2	134.04	134.04	134.04	134.04
<i>Forecast</i>				
2011:Q3	133.74	134.04	135.84	132.16
2011:Q4	133.99	134.60	138.24	130.86
2012:Q1	134.31	135.22	140.74	129.62
2012:Q2	134.39	135.61	143.04	128.18
2012:Q3	134.22	135.74	145.10	126.50
2012:Q4	133.92	135.74	147.05	124.73

Bottom-right panel

Dollar

2010:Q1 = 100

Period	June Tealbook	Proposed forecast	Additional 5 percent dollar depreciation	Additional 5 percent dollar appreciation
2010:Q1	100.00	ND	ND	ND
2010:Q2	103.94	ND	ND	ND
2010:Q3	104.68	ND	ND	ND
2010:Q4	118.82	ND	ND	ND
2011:Q1	133.12	ND	ND	ND
2011:Q2	134.04	134.04	134.04	134.04
<i>Forecast</i>				
2011:Q3	133.74	134.04	135.67	132.35
2011:Q4	133.99	134.60	137.89	131.22

Period	June Tealbook	Proposed forecast	Additional 5 percent dollar depreciation	Additional 5 percent dollar appreciation
2012:Q1	134.31	135.22	140.22	130.16
2012:Q2	134.39	135.61	142.32	128.89
2012:Q3	134.22	135.74	144.20	127.38
2012:Q4	133.92	135.74	145.95	125.77

Exhibit 10 Financial Stability

Top-left panel Financial Market Stress

Period	Index
8 June 2001	0.19
15 June 2001	0.24
22 June 2001	0.15
29 June 2001	0.09
6 July 2001	0.07
13 July 2001	0.16
20 July 2001	0.17
27 July 2001	0.15
3 August 2001	0.10
10 August 2001	0.13
17 August 2001	0.25
24 August 2001	0.29
31 August 2001	0.26
7 September 2001	0.29
14 September 2001	0.64
21 September 2001	0.93
28 September 2001	0.83
5 October 2001	0.67
12 October 2001	0.58
19 October 2001	0.67
26 October 2001	0.66
2 November 2001	0.74
9 November 2001	0.59
16 November 2001	0.38
23 November 2001	0.32
30 November 2001	0.40
7 December 2001	0.36
14 December 2001	0.38
21 December 2001	0.43
28 December 2001	0.37
4 January 2002	0.36
11 January 2002	0.22

Period	Index
18 January 2002	0.22
25 January 2002	0.19
1 February 2002	0.13
8 February 2002	0.21
15 February 2002	0.16
22 February 2002	0.16
1 March 2002	0.12
8 March 2002	0.12
15 March 2002	0.11
22 March 2002	0.11
29 March 2002	0.14
5 April 2002	0.14
12 April 2002	0.14
19 April 2002	0.14
26 April 2002	0.18
3 May 2002	0.19
10 May 2002	0.20
17 May 2002	0.14
24 May 2002	0.10
31 May 2002	0.10
7 June 2002	0.12
14 June 2002	0.16
21 June 2002	0.20
28 June 2002	0.27
5 July 2002	0.26
12 July 2002	0.32
19 July 2002	0.48
26 July 2002	0.85
2 August 2002	0.77
9 August 2002	0.88
16 August 2002	0.87
23 August 2002	0.85
30 August 2002	0.74
6 September 2002	0.77
13 September 2002	0.73
20 September 2002	0.79
27 September 2002	0.90
4 October 2002	0.92
11 October 2002	0.89
18 October 2002	0.90
25 October 2002	0.86
1 November 2002	0.85
8 November 2002	0.72
15 November 2002	0.58
22 November 2002	0.46

Period	Index
29 November 2002	0.41
6 December 2002	0.39
13 December 2002	0.37
20 December 2002	0.35
27 December 2002	0.31
3 January 2003	0.38
10 January 2003	0.22
17 January 2003	0.21
24 January 2003	0.31
31 January 2003	0.42
7 February 2003	0.36
14 February 2003	0.43
21 February 2003	0.37
28 February 2003	0.31
7 March 2003	0.35
14 March 2003	0.50
21 March 2003	0.48
28 March 2003	0.37
4 April 2003	0.37
11 April 2003	0.23
18 April 2003	0.14
25 April 2003	0.15
2 May 2003	0.11
9 May 2003	0.05
16 May 2003	0.05
23 May 2003	0.08
30 May 2003	0.07
6 June 2003	0.09
13 June 2003	0.08
20 June 2003	0.09
27 June 2003	0.07
4 July 2003	0.06
11 July 2003	0.05
18 July 2003	0.06
25 July 2003	0.06
1 August 2003	0.15
8 August 2003	0.21
15 August 2003	0.20
22 August 2003	0.17
29 August 2003	0.15
5 September 2003	0.11
12 September 2003	0.11
19 September 2003	0.07
26 September 2003	0.08
3 October 2003	0.08

Period	Index
10 October 2003	0.06
17 October 2003	0.09
24 October 2003	0.11
31 October 2003	0.11
7 November 2003	0.09
14 November 2003	0.07
21 November 2003	0.08
28 November 2003	0.05
5 December 2003	0.07
12 December 2003	0.05
19 December 2003	0.04
26 December 2003	0.07
2 January 2004	0.06
9 January 2004	0.04
16 January 2004	0.03
23 January 2004	0.05
30 January 2004	0.05
6 February 2004	0.08
13 February 2004	0.06
20 February 2004	0.04
27 February 2004	0.04
5 March 2004	0.04
12 March 2004	0.05
19 March 2004	0.06
26 March 2004	0.06
2 April 2004	0.11
9 April 2004	0.14
16 April 2004	0.12
23 April 2004	0.13
30 April 2004	0.17
7 May 2004	0.18
14 May 2004	0.14
21 May 2004	0.16
28 May 2004	0.13
4 June 2004	0.09
11 June 2004	0.04
18 June 2004	0.03
25 June 2004	0.03
2 July 2004	0.03
9 July 2004	0.04
16 July 2004	0.03
23 July 2004	0.03
30 July 2004	0.03
6 August 2004	0.05
13 August 2004	0.06

Period	Index
20 August 2004	0.07
27 August 2004	0.06
3 September 2004	0.05
10 September 2004	0.02
17 September 2004	0.02
24 September 2004	0.02
1 October 2004	0.01
8 October 2004	0.01
15 October 2004	0.01
22 October 2004	0.01
29 October 2004	0.01
5 November 2004	0.01
12 November 2004	0.01
19 November 2004	0.01
26 November 2004	0.01
3 December 2004	0.01
10 December 2004	0.01
17 December 2004	0.01
24 December 2004	0.01
31 December 2004	0.01
7 January 2005	0.01
14 January 2005	0.00
21 January 2005	0.01
28 January 2005	0.00
4 February 2005	0.00
11 February 2005	0.00
18 February 2005	0.00
25 February 2005	0.00
4 March 2005	0.00
11 March 2005	0.00
18 March 2005	0.00
25 March 2005	0.00
1 April 2005	0.00
8 April 2005	0.01
15 April 2005	0.01
22 April 2005	0.01
29 April 2005	0.01
6 May 2005	0.01
13 May 2005	0.01
20 May 2005	0.01
27 May 2005	0.01
3 June 2005	0.01
10 June 2005	0.01
17 June 2005	0.01
24 June 2005	0.01

Period	Index
1 July 2005	0.01
8 July 2005	0.02
15 July 2005	0.01
22 July 2005	0.01
29 July 2005	0.01
5 August 2005	0.01
12 August 2005	0.01
19 August 2005	0.02
26 August 2005	0.02
2 September 2005	0.02
9 September 2005	0.02
16 September 2005	0.02
23 September 2005	0.02
30 September 2005	0.02
7 October 2005	0.03
14 October 2005	0.03
21 October 2005	0.02
28 October 2005	0.02
4 November 2005	0.01
11 November 2005	0.02
18 November 2005	0.02
25 November 2005	0.01
2 December 2005	0.01
9 December 2005	0.01
16 December 2005	0.01
23 December 2005	0.01
30 December 2005	0.01
6 January 2006	0.01
13 January 2006	0.00
20 January 2006	0.01
27 January 2006	0.01
3 February 2006	0.01
10 February 2006	0.01
17 February 2006	0.01
24 February 2006	0.01
3 March 2006	0.00
10 March 2006	0.01
17 March 2006	0.01
24 March 2006	0.00
31 March 2006	0.01
7 April 2006	0.01
14 April 2006	0.00
21 April 2006	0.01
28 April 2006	0.00
5 May 2006	0.00

Period	Index
12 May 2006	0.01
19 May 2006	0.01
26 May 2006	0.02
2 June 2006	0.02
9 June 2006	0.01
16 June 2006	0.01
23 June 2006	0.01
30 June 2006	0.01
7 July 2006	0.01
14 July 2006	0.01
21 July 2006	0.01
28 July 2006	0.01
4 August 2006	0.01
11 August 2006	0.01
18 August 2006	0.01
25 August 2006	0.00
1 September 2006	0.00
8 September 2006	0.00
15 September 2006	0.00
22 September 2006	0.00
29 September 2006	0.00
6 October 2006	0.00
13 October 2006	0.00
20 October 2006	0.00
27 October 2006	0.00
3 November 2006	0.00
10 November 2006	0.00
17 November 2006	0.00
24 November 2006	0.00
1 December 2006	0.00
8 December 2006	0.01
15 December 2006	0.01
22 December 2006	0.01
29 December 2006	0.01
5 January 2007	0.01
12 January 2007	0.01
19 January 2007	0.01
26 January 2007	0.00
2 February 2007	0.01
9 February 2007	0.01
16 February 2007	0.01
23 February 2007	0.01
2 March 2007	0.10
9 March 2007	0.15
16 March 2007	0.14

Period	Index
23 March 2007	0.10
30 March 2007	0.12
6 April 2007	0.09
13 April 2007	0.06
20 April 2007	0.06
27 April 2007	0.05
4 May 2007	0.05
11 May 2007	0.04
18 May 2007	0.04
25 May 2007	0.03
1 June 2007	0.03
8 June 2007	0.03
15 June 2007	0.04
22 June 2007	0.04
29 June 2007	0.07
6 July 2007	0.05
13 July 2007	0.05
20 July 2007	0.06
27 July 2007	0.25
3 August 2007	0.55
10 August 2007	0.64
17 August 2007	0.91
24 August 2007	0.82
31 August 2007	0.76
7 September 2007	0.78
14 September 2007	0.83
21 September 2007	0.60
28 September 2007	0.45
5 October 2007	0.29
12 October 2007	0.15
19 October 2007	0.25
26 October 2007	0.43
2 November 2007	0.37
9 November 2007	0.62
16 November 2007	0.75
23 November 2007	0.93
30 November 2007	0.92
7 December 2007	0.93
14 December 2007	0.91
21 December 2007	0.91
28 December 2007	0.86
4 January 2008	0.90
11 January 2008	0.85
18 January 2008	0.89
25 January 2008	0.94

Period	Index
1 February 2008	0.89
8 February 2008	0.93
15 February 2008	0.93
22 February 2008	0.95
29 February 2008	0.92
7 March 2008	0.98
14 March 2008	0.98
21 March 2008	0.96
28 March 2008	0.92
4 April 2008	0.78
11 April 2008	0.59
18 April 2008	0.60
25 April 2008	0.45
2 May 2008	0.25
9 May 2008	0.22
16 May 2008	0.28
23 May 2008	0.34
30 May 2008	0.51
6 June 2008	0.67
13 June 2008	0.79
20 June 2008	0.68
27 June 2008	0.75
4 July 2008	0.74
11 July 2008	0.83
18 July 2008	0.84
25 July 2008	0.73
1 August 2008	0.69
8 August 2008	0.56
15 August 2008	0.60
22 August 2008	0.70
29 August 2008	0.76
5 September 2008	0.58
12 September 2008	0.68
19 September 2008	1.00
26 September 2008	1.00
3 October 2008	1.00
10 October 2008	1.00
17 October 2008	1.00
24 October 2008	1.00
31 October 2008	1.00
7 November 2008	1.00
14 November 2008	1.00
21 November 2008	1.00
28 November 2008	1.00
5 December 2008	1.00

Period	Index
12 December 2008	1.00
19 December 2008	1.00
26 December 2008	1.00
2 January 2009	1.00
9 January 2009	1.00
16 January 2009	1.00
23 January 2009	1.00
30 January 2009	1.00
6 February 2009	1.00
13 February 2009	1.00
20 February 2009	1.00
27 February 2009	1.00
6 March 2009	1.00
13 March 2009	1.00
20 March 2009	1.00
27 March 2009	0.99
3 April 2009	0.99
10 April 2009	0.97
17 April 2009	0.92
24 April 2009	0.91
1 May 2009	0.90
8 May 2009	0.83
15 May 2009	0.81
22 May 2009	0.87
29 May 2009	0.92
5 June 2009	0.84
12 June 2009	0.85
19 June 2009	0.81
26 June 2009	0.77
3 July 2009	0.72
10 July 2009	0.87
17 July 2009	0.90
24 July 2009	0.78
31 July 2009	0.68
7 August 2009	0.77
14 August 2009	0.76
21 August 2009	0.78
28 August 2009	0.69
4 September 2009	0.68
11 September 2009	0.58
18 September 2009	0.59
25 September 2009	0.60
2 October 2009	0.59
9 October 2009	0.54
16 October 2009	0.59

Period	Index
23 October 2009	0.57
30 October 2009	0.62
6 November 2009	0.64
13 November 2009	0.46
20 November 2009	0.38
27 November 2009	0.40
4 December 2009	0.41
11 December 2009	0.32
18 December 2009	0.21
25 December 2009	0.24
1 January 2010	0.21
8 January 2010	0.23
15 January 2010	0.15
22 January 2010	0.18
29 January 2010	0.25
5 February 2010	0.22
12 February 2010	0.30
19 February 2010	0.20
26 February 2010	0.12
5 March 2010	0.08
12 March 2010	0.06
19 March 2010	0.04
26 March 2010	0.05
2 April 2010	0.04
9 April 2010	0.04
16 April 2010	0.02
23 April 2010	0.03
30 April 2010	0.05
7 May 2010	0.47
14 May 2010	0.51
21 May 2010	0.76
28 May 2010	0.83
4 June 2010	0.78
11 June 2010	0.84
18 June 2010	0.61
25 June 2010	0.48
2 July 2010	0.48
9 July 2010	0.42
16 July 2010	0.28
23 July 2010	0.23
30 July 2010	0.17
6 August 2010	0.19
13 August 2010	0.26
20 August 2010	0.41
27 August 2010	0.63

Period	Index
3 September 2010	0.68
10 September 2010	0.67
17 September 2010	0.60
24 September 2010	0.51
1 October 2010	0.51
8 October 2010	0.42
15 October 2010	0.39
22 October 2010	0.36
29 October 2010	0.30
5 November 2010	0.15
12 November 2010	0.18
19 November 2010	0.17
26 November 2010	0.17
3 December 2010	0.29
10 December 2010	0.23
17 December 2010	0.21
24 December 2010	0.11
31 December 2010	0.10
7 January 2011	0.11
14 January 2011	0.06
21 January 2011	0.05
28 January 2011	0.04
4 February 2011	0.04
11 February 2011	0.03
18 February 2011	0.03
25 February 2011	0.05
4 March 2011	0.05
11 March 2011	0.06
18 March 2011	0.14
25 March 2011	0.09
1 April 2011	0.07
8 April 2011	0.06
15 April 2011	0.07
22 April 2011	0.06
29 April 2011	0.06
6 May 2011	0.07
13 May 2011	0.07
20 May 2011	0.09
27 May 2011	0.10
3 June 2011	0.12
10 June 2011	0.18
17 June 2011	0.34

Note: Shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research: March 2001-November 2001, and December 2007-June 2009.

Source: Staff calculations.

Top-right panel
Nonfinancial Debt

Ratio to GDP

Period	Federal government	State and local governments	Private	Sum
2001:Q1	0.34	0.12	1.36	1.82
2001:Q2	0.32	0.12	1.37	1.81
2001:Q3	0.32	0.12	1.39	1.83
2001:Q4	0.33	0.13	1.41	1.87
2002:Q1	0.33	0.13	1.41	1.87
2002:Q2	0.33	0.13	1.42	1.88
2002:Q3	0.33	0.13	1.43	1.89
2002:Q4	0.34	0.13	1.45	1.92
2003:Q1	0.34	0.14	1.46	1.94
2003:Q2	0.35	0.14	1.47	1.96
2003:Q3	0.35	0.14	1.47	1.96
2003:Q4	0.35	0.14	1.48	1.97
2004:Q1	0.36	0.14	1.48	1.98
2004:Q2	0.36	0.14	1.49	1.99
2004:Q3	0.36	0.14	1.50	2.00
2004:Q4	0.36	0.14	1.51	2.01
2005:Q1	0.37	0.14	1.51	2.02
2005:Q2	0.36	0.14	1.53	2.03
2005:Q3	0.36	0.14	1.55	2.05
2005:Q4	0.36	0.14	1.57	2.07
2006:Q1	0.37	0.14	1.57	2.08
2006:Q2	0.36	0.14	1.60	2.10
2006:Q3	0.36	0.14	1.62	2.12
2006:Q4	0.36	0.15	1.64	2.15
2007:Q1	0.37	0.15	1.65	2.17
2007:Q2	0.35	0.15	1.66	2.16
2007:Q3	0.36	0.15	1.69	2.20
2007:Q4	0.36	0.15	1.71	2.22
2008:Q1	0.37	0.16	1.72	2.25
2008:Q2	0.36	0.15	1.72	2.23
2008:Q3	0.40	0.15	1.73	2.28
2008:Q4	0.45	0.16	1.76	2.37
2009:Q1	0.49	0.16	1.77	2.42
2009:Q2	0.51	0.16	1.77	2.44
2009:Q3	0.53	0.16	1.74	2.43
2009:Q4	0.55	0.17	1.71	2.43
2010:Q1	0.57	0.17	1.68	2.42
2010:Q2	0.59	0.16	1.66	2.41
2010:Q3	0.61	0.16	1.64	2.41
2010:Q4	0.63	0.17	1.63	2.43
2011:Q1	0.64	0.16	1.62	2.42

Middle-left panel

Commercial Bank Assets Funded by Non-deposit Short-term Debt

Period	Percent of assets
2001:Q1	31.19
2001:Q2	31.04
2001:Q3	30.72
2001:Q4	28.63
2002:Q1	28.44
2002:Q2	28.46
2002:Q3	28.00
2002:Q4	27.95
2003:Q1	27.52
2003:Q2	27.80
2003:Q3	27.84
2003:Q4	27.82
2004:Q1	28.33
2004:Q2	29.11
2004:Q3	28.64
2004:Q4	27.98
2005:Q1	28.67
2005:Q2	28.83
2005:Q3	29.36
2005:Q4	29.48
2006:Q1	30.27
2006:Q2	31.47
2006:Q3	32.51
2006:Q4	31.81
2007:Q1	31.46
2007:Q2	32.39
2007:Q3	33.06
2007:Q4	33.19
2008:Q1	33.02
2008:Q2	33.30
2008:Q3	33.06
2008:Q4	31.42
2009:Q1	30.32
2009:Q2	29.51
2009:Q3	28.84
2009:Q4	27.02
2010:Q1	26.80
2010:Q2	25.89
2010:Q3	25.82
2010:Q4	24.90
2011:Q1	24.62

Note: Shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research: March 2001-November 2001, and December 2007-June 2009.

*Middle-right panel**Nonfinancial Sector Liabilities Funded by Non-deposit Short-term Debt*

Period	Percent of total liabilities
2001:Q1	19.58
2001:Q2	19.37
2001:Q3	19.78
2001:Q4	18.95
2002:Q1	18.61
2002:Q2	18.45
2002:Q3	18.41
2002:Q4	18.47
2003:Q1	18.63
2003:Q2	18.60
2003:Q3	18.48
2003:Q4	18.16
2004:Q1	17.96
2004:Q2	17.89
2004:Q3	18.10
2004:Q4	17.67
2005:Q1	17.91
2005:Q2	17.72
2005:Q3	17.89
2005:Q4	18.02
2006:Q1	18.43
2006:Q2	18.87
2006:Q3	19.40
2006:Q4	19.29
2007:Q1	19.17
2007:Q2	19.28
2007:Q3	20.20
2007:Q4	20.52
2008:Q1	21.37
2008:Q2	21.31
2008:Q3	21.46
2008:Q4	21.51
2009:Q1	20.36
2009:Q2	19.63
2009:Q3	18.24
2009:Q4	17.00
2010:Q1	15.86
2010:Q2	15.19
2010:Q3	14.72
2010:Q4	14.21

Note: Shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research: March 2001-November 2001, and December 2007-June 2009.

Source: Staff calculations

Bottom-left panel

*U.S. MMF European Exposures**

Percent of MMF assets

Period	Spain	Italy	Ireland	Other Europe
19 May 2010	3.34	2.14	0.35	49.53
2 June 2010	2.72	1.67	0.39	49.12
16 June 2010	2.57	1.48	0.43	51.26
30 June 2010	2.67	1.74	0.49	49.75
14 July 2010	2.58	1.53	0.50	54.29
28 July 2010	2.45	1.51	0.50	55.96
11 August 2010	2.85	2.20	0.48	55.94
25 August 2010	2.73	2.12	0.48	57.15
8 September 2010	2.80	2.30	0.22	56.70
22 September 2010	2.81	2.06	0.20	56.29
6 October 2010	2.90	2.13	0.04	56.27
20 October 2010	2.95	1.90	0.00	55.57
3 November 2010	2.90	1.82	0.00	57.15
17 November 2010	2.25	1.72	0.00	57.73
1 December 2010	1.80	1.52	0.00	57.04
15 December 2010	1.15	1.22	0.00	55.77
29 December 2010	1.15	1.25	0.00	55.26
12 January 2011	1.16	1.19	0.00	53.92
26 January 2011	1.11	1.55	0.00	54.37
9 February 2011	1.10	1.37	0.00	54.64
23 February 2011	0.84	1.02	0.00	54.48
9 March 2011	0.91	1.06	0.00	54.91
23 March 2011	0.89	1.05	0.00	55.50
6 April 2011	0.95	1.03	0.00	55.57
20 April 2011	1.05	0.94	0.00	54.91
4 May 2011	1.04	1.12	0.00	55.41
18 May 2011	0.84	1.02	0.00	56.13
1 June 2011	0.75	0.93	0.00	56.29

* Unsecured debt, ABCP, and repurchase agreements. [Return to text](#)

Source: Investment Company Institute.

Bottom-right panel

Distribution of U.S. MMF Exposures to Spain

Percent of fund assets	Number of funds
0 - 0.5	188
0.5 - 3 *	46
3 - 5 *	23
5+ *	5

* Exposures large enough such that defaults on Spanish paper could cause MMFs to "break the buck" [Return to table](#)

Source: SEC form N-MFP filings.

Exhibit 11

LISCC Firm Market Indicators

Top-left panel

Stock Prices

End of week
April 26, 2011 = 100

Period	Bank of America	Citigroup	Other*
7 May 2010	131.91	88.69	98.17
14 May 2010	133.22	88.25	98.04
21 May 2010	130.36	83.14	94.93
28 May 2010	128.31	87.80	93.48
4 June 2010	125.20	84.03	90.00
11 June 2010	127.25	86.03	90.03
18 June 2010	129.05	88.91	90.71
25 June 2010	125.78	87.36	89.04
2 July 2010	112.85	84.03	82.31
9 July 2011	123.24	89.58	89.11
16 July 2010	113.99	86.47	89.24
23 July 2010	112.03	89.13	92.81
30 July 2010	114.48	90.91	92.88
6 August 2011	113.83	90.02	94.28
13 August 2010	107.94	86.03	89.02
20 August 2010	104.99	83.14	87.98
27 August 2010	103.11	83.37	85.58
3 September 2010	110.23	86.69	91.05
10 September 2010	110.64	86.69	91.56
17 September 2010	109.41	87.58	91.49
24 September 2010	111.05	86.47	90.33
1 October 2010	108.59	90.69	90.01
8 October 2010	107.61	92.90	91.54
15 October 2010	97.79	87.58	88.94
22 October 2010	93.37	91.13	90.84
29 October 2010	93.45	92.46	91.76
5 November 2010	100.90	99.56	100.56
12 November 2010	98.94	95.12	96.48
19 November 2010	95.17	94.68	96.50
26 November 2010	90.75	91.13	93.58
3 December 2010	96.89	98.67	98.00
10 December 2010	104.58	105.77	101.51
17 December 2010	102.70	104.21	99.83
24 December 2010	ND	ND	ND

Period	Bank of America	Citigroup	Other*
31 December 2010	109.00	104.88	103.30
7 January 2011	116.45	109.54	105.38
14 January 2011	124.63	113.75	109.67
21 January 2011	116.45	108.43	108.52
28 January 2011	111.13	104.66	105.50
4 February 2011	116.78	106.88	106.96
11 February 2011	120.70	108.21	109.56
18 February 2011	120.54	108.87	109.55
25 February 2011	116.04	104.21	106.80
4 March 2011	115.47	100.67	104.08
11 March 2011	117.59	101.33	103.53
18 March 2011	114.81	99.78	102.86
25 March 2011	109.08	98.89	102.78
1 April 2011	109.33	98.67	104.34
8 April 2011	110.23	101.11	104.52
15 April 2011	104.83	98.00	101.47
22 April 2011	ND	ND	ND
29 April 2011	100.41	101.77	100.31
11 May 2011	100.65	100.22	98.69
13 May 2011	97.55	92.08	95.49
20 May 2011	94.68	90.95	95.16
27 May 2011	95.58	90.86	94.85
3 June 2011	92.31	88.38	91.60
10 June 2011	88.38	84.10	90.22
17 June 2011	87.40	84.94	91.17

* Composed of Morgan Stanley, Goldman Sachs, JP Morgan, State Street, Wells Fargo, and BONY. [Return to table](#)

Source: Bloomberg.

Top-right panel *5-year CDS Spreads*

End of week
Percent

Period	Bank of America	Citigroup	Other*
7 May 2010	1.75	2.16	1.69
14 May 2010	1.46	1.77	1.40
21 May 2010	1.62	1.97	1.64
28 May 2010	1.54	1.75	1.56
4 June 2010	1.61	1.91	1.63
11 June 2010	1.69	2.10	1.94
18 June 2010	1.41	1.70	1.56
25 June 2010	1.54	1.82	1.73
2 July 2010	1.62	1.87	1.74
9 July 2010	1.43	1.70	1.54
16 July 2010	1.50	1.78	1.51
23 July 2010	1.44	1.69	1.40

Period	Bank of America	Citigroup	Other*
30 July 2010	1.48	1.64	1.38
6 August 2010	1.46	1.62	1.33
13 August 2010	1.53	1.74	1.43
20 August 2010	1.64	1.78	1.46
27 August 2010	1.88	1.90	1.44
3 September 2010	1.70	1.75	1.27
10 September 2010	1.63	1.71	1.21
17 September 2010	1.60	1.74	1.21
24 September 2010	1.68	1.75	1.21
1 October 2010	1.65	1.72	ND
8 October 2010	1.59	1.57	ND
15 October 2010	2.07	1.76	1.26
22 October 2010	2.05	1.59	1.23
29 October 2010	1.89	1.50	1.22
5 November 2010	1.77	1.39	1.11
12 November 2010	1.85	1.60	ND
19 November 2010	1.83	1.52	1.17
26 November 2010	1.98	1.64	1.25
3 December 2010	1.94	1.58	1.18
10 December 2010	1.90	1.45	1.15
17 December 2010	1.77	1.40	1.14
24 December 2010	1.84	1.50	1.14
31 December 2010	1.82	1.49	1.16
7 January 2011	1.78	1.58	1.19
14 January 2011	1.67	1.48	1.13
21 January 2011	1.61	1.43	1.12
28 January 2011	1.66	1.43	1.11
4 February 2011	1.45	1.27	1.09
11 February 2011	1.39	1.28	ND
18 February 2011	1.33	1.25	ND
25 February 2011	1.42	1.36	ND
4 March 2011	1.40	1.26	ND
11 March 2011	1.45	1.33	ND
18 March 2011	1.41	1.33	ND
25 March 2011	1.35	1.25	ND
1 April 2011	1.32	1.23	ND
8 April 2011	1.31	1.21	1.01
15 April 2011	1.34	1.24	1.05
22 April 2011	1.35	1.24	1.05
29 April 2011	1.33	1.23	1.06
11 May 2011	1.31	1.24	1.07
13 May 2011	1.36	1.25	1.10
20 May 2011	1.39	1.26	1.11
27 May 2011	1.45	1.27	1.13
3 June 2011	1.52	1.36	1.18

Period	Bank of America	Citigroup	Other*
10 June 2011	1.72	1.52	1.23
17 June 2011	1.72	1.51	1.22

* Composed of Morgan Stanley, Goldman Sachs, JP Morgan, State Street, Wells Fargo, and BONY. [Return to table](#)

Source: Markit.

Middle-left panel

Heat Map of Market Indicator Levels

	CDS Spreads	CDS Relative ¹ Spreads	EDFs	Relative ¹ EDFs	Market Equity Ratio
Bank of America	yellow	orange	red	red	yellow
Morgan Stanley		orange		yellow	yellow
Goldman Sachs	yellow	yellow	yellow		
Citigroup		yellow			
JP Morgan					
State Street					
Wells Fargo					
BONY			yellow		red

Note: Yellow denotes current values from the 75th to 90th percentiles of the measure's distribution over the past 5 years, while orange denotes values between the 90th and 95th percentiles, and red denotes greater than the 95th percentile.

¹ "Relative" implies a comparison to A-rated financial firms. [Return to table](#)

Source: For CDS Spreads and Market equity ratio, Bloomberg; for EDFs, Moody's.

Middle-right panel

Downside Risks to LISCC Firms

- Downgrade of short-term ratings of Bank of America or Citigroup.
- Housing market deteriorates further.
- Risk from peripheral Europe through core European firms.

Bottom-left panel

Conditional Value at Risk (CoVaR)

- CoVaR is an estimate of the downside risk to the financial sector, conditional on a stress event for a firm.

Bottom-right panel

CoVar

Period	Billions of dollars
January 2007	23.84
February 2007	22.35
March 2007	38.32
April 2007	30.06
May 2007	31.43
June 2007	34.22
July 2007	41.52
August 2007	67.39

Period	Billions of dollars
September 2007	56.89
October 2007	43.46
November 2007	68.52
December 2007	57.14
January 2008	68.20
February 2008	72.30
March 2008	77.95
April 2008	53.78
May 2008	45.97
June 2008	57.87
July 2008	66.34
August 2008	51.01
September 2008	79.38
October 2008	200.74
November 2008	190.61
December 2008	159.19
January 2009	132.44
February 2009	143.71
March 2009	142.49
April 2009	113.63
May 2009	96.73
June 2009	84.95
July 2009	78.73
August 2009	70.52
September 2009	77.78
October 2009	78.86
November 2009	76.47
December 2009	59.31
January 2010	64.04
February 2010	72.77
March 2010	47.59
April 2010	45.68
May 2010	105.83
June 2010	98.43
July 2010	80.35
August 2010	80.57
September 2010	68.49
October 2010	66.59
November 2010	61.35
December 2010	51.89
January 2011	53.91
February 2011	51.36
March 2011	66.08
April 2011	50.13
May 2011	55.24

Note: The line represents the sum of the CoVar ratings for Bank of America, Morgan Stanley, Goldman Sachs, Citigroup, JP Morgan, State Street, Wells Fargo, and BONY.

Exhibit 12 (Last)

Emerging Risks: Asset Valuations and New Products

Top-left panel

Forward Spreads on High-yield Corporate Bonds

Percent

Period	Near-term*	Far-term**
January 2001	8.24	4.97
February 2001	7.35	4.47
March 2001	7.58	4.54
April 2001	8.46	4.34
May 2001	7.72	3.87
June 2001	7.80	3.96
July 2001	7.99	3.97
August 2001	8.13	3.64
September 2001	9.24	3.37
October 2001	10.10	3.51
November 2001	10.00	3.02
December 2001	8.60	2.86
January 2002	8.28	3.03
February 2002	7.87	3.22
March 2002	7.18	2.73
April 2002	6.90	2.87
May 2002	7.09	3.13
June 2002	7.33	3.97
July 2002	7.89	4.06
August 2002	8.69	4.57
September 2002	8.45	4.81
October 2002	9.50	5.18
November 2002	8.32	4.66
December 2002	7.55	4.51
January 2003	7.47	3.68
February 2003	7.65	3.91
March 2003	7.50	3.77
April 2003	7.09	3.05
May 2003	7.20	2.98
June 2003	7.10	2.91
July 2003	6.26	2.33
August 2003	6.55	2.13
September 2003	6.24	1.99
October 2003	6.07	1.73
November 2003	5.86	1.76

Period	Near-term*	Far-term**
December 2003	5.57	1.55
January 2004	5.44	1.28
February 2004	5.79	1.50
March 2004	6.04	1.73
April 2004	5.38	1.51
May 2004	5.43	1.84
June 2004	5.30	1.95
July 2004	5.32	2.01
August 2004	5.38	2.10
September 2004	5.29	2.04
October 2004	5.17	1.98
November 2004	4.62	1.80
December 2004	4.44	1.73
January 2005	4.43	1.91
February 2005	4.23	1.92
March 2005	4.01	1.81
April 2005	4.75	2.24
May 2005	5.16	3.01
June 2005	4.79	3.06
July 2005	4.37	2.87
August 2005	4.17	2.89
September 2005	4.55	2.94
October 2005	4.42	3.11
November 2005	4.21	3.29
December 2005	4.09	3.43
January 2006	3.99	3.41
February 2006	3.88	3.32
March 2006	3.90	3.04
April 2006	3.73	2.75
May 2006	3.85	2.66
June 2006	4.10	3.01
July 2006	4.30	3.21
August 2006	4.29	3.31
September 2006	4.29	3.37
October 2006	4.14	3.28
November 2006	4.00	3.36
December 2006	3.87	3.41
January 2007	3.49	3.31
February 2007	3.36	3.18
March 2007	3.72	3.25
April 2007	3.65	2.97
May 2007	3.44	2.84
June 2007	3.28	2.76
July 2007	4.20	3.16
August 2007	5.16	3.30

Period	Near-term*	Far-term**
September 2007	5.31	3.09
October 2007	5.04	2.96
November 2007	5.94	3.39
December 2007	6.39	3.37
January 2008	7.42	3.83
February 2008	8.01	3.62
March 2008	8.42	3.87
April 2008	7.53	4.00
May 2008	7.00	4.02
June 2008	7.00	4.08
July 2008	7.45	4.32
August 2008	7.17	4.50
September 2008	7.17	5.17
October 2008	11.16	7.21
November 2008	14.96	9.48
December 2008	16.10	11.68
January 2009	13.00	9.30
February 2009	12.60	8.76
March 2009	13.56	10.67
April 2009	11.35	8.33
May 2009	10.17	7.38
June 2009	9.34	6.18
July 2009	9.13	5.69
August 2009	8.18	5.01
September 2009	8.11	4.56
October 2009	7.42	4.06
November 2009	7.61	3.66
December 2009	7.11	3.43
January 2010	6.98	2.51
February 2010	7.50	2.53
March 2010	7.08	2.45
April 2010	6.95	2.20
May 2010	7.88	2.77
June 2010	8.52	3.08
July 2010	8.44	2.91
August 2010	8.44	2.93
September 2010	8.22	2.76
October 2010	8.04	2.08
November 2010	7.77	1.75
December 2010	7.24	1.74
January 2011	6.89	1.49
February 2011	6.26	1.41
March 2011	6.52	1.50
April 2011	6.36	1.36
May 2011	6.71	1.42

Period	Near-term*	Far-term**
17 June 2011	7.44	1.39

* Near-term forward spreads between years two and three. [Return to table](#)

** Far-term forward spreads between years nine and ten. [Return to table](#)

Top-right panel

*Gross Issuance of Junk Bonds**

Monthly rate

Period	Billions of dollars
2005	6.66
2006	10.52
2007	9.76
2008	2.58
2009	10.34
2010	17.51
2011:Q1	17.67
2011:Q2 ^e	23.73

* Includes public, 144a, euro, and MTN issues. [Return to text](#)

e. Estimate based on data through June 16, 2011. [Return to table](#)

Middle-left panel

Institutional Leveraged-loan Issuance

Billions of dollars, monthly rate

Period	New money	Refinancings	Sum
2005	11.69	8.39	20.08
2006	22.84	7.67	30.51
2007	26.26	9.23	35.49
2008	4.96	0.84	5.80
2009	2.03	2.67	4.70
2010	8.69	8.53	17.22
2011:Q1	12.81	14.32	27.13
2011:Q2 ^e	ND	ND	32.46

e. Estimate based on data through May 2011 (approximate). [Return to table](#)

Middle-right panel

Other Valuation Pressures

- Real house prices in Taiwan and Hong Kong continue to rise rapidly despite actions taken by authorities to restrain increases.
- Some equity markets in Latin America have elevated PE ratios, and in emerging Asia may reflect overly optimistic earnings outlooks.
- In domestic markets, valuations for small capitalization stocks elevated relative to larger firms. Farm land valuations also high.

Bottom-left panel

Use of Leverage by Most Favored Hedge Funds

	Percent of respondents
At or below trough	0.00
Near trough	5.88
Moderately above trough	11.76
Middle	64.71
Moderately below peak	17.65
Near peak	0.00
At or above peak	0.00

Sources: Senior Credit Officer Opinion Survey on Dealer Financing Terms.

Bottom-right panel

New Products

- Respond to new liquidity regulations inducing banks to lengthen liabilities, and new MMF rules further restricting investments in longer-term securities.
- Putable CDs allow banks to issue long-maturity securities, while investors have the option to shorten.
- Extendible repurchase agreements allow banks to issue short-maturity securities, but have the option to lengthen maturities.

Appendix 5: Materials used by Mr. Carpenter

Material for Briefing on **FOMC Participants' Economic Projections**

Seth Carpenter
June 21, 2011

Exhibit 1. Central tendencies and ranges of economic projections, 2011-13 and over the longer run

Actual values for years 2006 through 2010.

Change in real GDP Percent

	2006	2007	2008	2009	2010	2011	2012	2013	Longer run
Actual	2.4	2.3	-2.8	0.2	2.8	-	-	-	-
Upper End of Range	-	-	-	-	-	3.0	4.0	4.5	3.0
Upper End of Central Tendency	-	-	-	-	-	2.9	3.7	4.2	2.8
Lower End of Central Tendency	-	-	-	-	-	2.7	3.3	3.5	2.5
Lower End of Range	-	-	-	-	-	2.5	2.2	3.0	2.4

Unemployment rate Percent

	2006	2007	2008	2009	2010	2011	2012	2013	Longer run
Actual	4.5	4.8	6.9	10.0	9.6	-	-	-	-
Upper End of Range	-	-	-	-	-	9.1	8.7	8.3	6.0
Upper End of Central Tendency	-	-	-	-	-	8.9	8.2	7.5	5.6
Lower End of Central Tendency	-	-	-	-	-	8.6	7.8	7.0	5.2
Lower End of Range	-	-	-	-	-	8.4	7.5	6.5	5.0

PCE inflation

Percent

	2006	2007	2008	2009	2010	2011	2012	2013	Longer run
Actual	1.9	3.5	1.7	1.5	1.1	-	-	-	-
Upper End of Range	-	-	-	-	-	3.5	2.8	2.5	2.0
Upper End of Central Tendency	-	-	-	-	-	2.5	2.0	2.0	2.0
Lower End of Central Tendency	-	-	-	-	-	2.3	1.5	1.5	1.7
Lower End of Range	-	-	-	-	-	2.1	1.2	1.3	1.5

Core PCE inflation

Percent

	2006	2007	2008	2009	2010	2011	2012	2013
Actual	2.3	2.4	2.0	1.7	0.8	-	-	-
Upper End of Range	-	-	-	-	-	2.3	2.5	2.5
Upper End of Central Tendency	-	-	-	-	-	1.8	2.0	2.0
Lower End of Central Tendency	-	-	-	-	-	1.5	1.4	1.4
Lower End of Range	-	-	-	-	-	1.5	1.2	1.3

Exhibit 2. Economic projections for 2011-2013 and over the longer run (percent)**Change in real GDP**

	2011	2012	2013	Longer run
Central Tendency	2.7 to 2.9	3.3 to 3.7	3.5 to 4.2	2.5 to 2.8
<i>April projections</i>	3.1 to 3.3	3.5 to 4.2	3.5 to 4.3	2.5 to 2.8
Range	2.5 to 3.0	2.2 to 4.0	3.0 to 4.5	2.4 to 3.0
<i>April projections</i>	2.9 to 3.7	2.9 to 4.4	3.0 to 5.0	2.4 to 3.0
Memo: Tealbook	2.7	3.5	4.2	2½
<i>April Tealbook</i>	3.2	4.2	4.3	2½

Unemployment rate

	2011	2012	2013	Longer run
Central Tendency	8.6 to 8.9	7.8 to 8.2	7.0 to 7.5	5.2 to 5.6
<i>April projections</i>	8.4 to 8.7	7.6 to 7.9	6.8 to 7.2	5.2 to 5.6
Range	8.4 to 9.1	7.5 to 8.7	6.5 to 8.3	5.0 to 6.0
<i>April projections</i>	8.1 to 8.9	7.1 to 8.4	6.0 to 8.4	5.0 to 6.0
Memo: Tealbook	8.9	8.1	7.1	5¼
<i>April Tealbook</i>	8.7	7.7	7.0	5¼

PCE inflation

	2011	2012	2013	Longer run
Central Tendency	2.3 to 2.5	1.5 to 2.0	1.5 to 2.0	1.7 to 2.0
<i>April projections</i>	2.1 to 2.8	1.2 to 2.0	1.4 to 2.0	1.7 to 2.0
Range	2.1 to 3.5	1.2 to 2.8	1.3 to 2.5	1.5 to 2.0
<i>April projections</i>	2.0 to 3.6	1.0 to 2.8	1.2 to 2.5	1.5 to 2.0
Memo: Tealbook	2.3	1.5	1.5	2
<i>April Tealbook</i>	2.2	1.2	1.5	2

Core PCE inflation

	2011	2012	2013

Central Tendency	1.5 to 1.8	1.4 to 2.0	1.4 to 2.0
<i>April projections</i>	1.3 to 1.6	1.3 to 1.8	1.4 to 2.0
Range	1.5 to 2.3	1.2 to 2.5	1.3 to 2.5
<i>April projections</i>	1.1 to 2.0	1.1 to 2.0	1.2 to 2.0
Memo: Tealbook	1.7	1.5	1.5
<i>April Tealbook</i>	1.4	1.4	1.5

Note: The changes in real GDP and inflation are measured Q4/Q4

Exhibit 3. Risks and uncertainty in economic projections

Top-left panel

Uncertainty about GDP growth

Number of participants

	Lower	Similar	Higher
June projections	0	4	13
April projections	1	5	11

Top-right panel

Risks to GDP growth

Number of participants

	Downside	Balanced	Upside
June projections	11	6	0
April projections	5	9	3

Bottom-left panel

Uncertainty about PCE inflation

Number of participants

	Lower	Similar	Higher
June projections	1	2	14
April projections	1	3	13

Bottom-right panel

Risks to PCE inflation

Number of participants

	Downside	Balanced	Upside
June projections	1	10	6
April projections	1	7	9

Exhibit 4. Central tendencies and ranges of economic projections, 2011-13 and over the longer run

Actual values for years 2006 through 2010.

[Note: Appendix 5, Exhibit 4 shows fan-chart versions of the first three charts in Appendix 5, Exhibit 1.]

Change in real GDP

Percent

	2006	2007	2008	2009	2010	2011	2012	2013	Longer run
Actual	2.4	2.3	-2.8	0.2	2.8	-	-	-	-
Upper End of Range	-	-	-	-	-	3.0	4.0	4.5	3.0
Upper End of Central Tendency	-	-	-	-	-	2.9	3.7	4.2	2.8
Lower End of Central Tendency	-	-	-	-	-	2.7	3.3	3.5	2.5
Lower End of Range	-	-	-	-	-	2.5	2.2	3.0	2.4

Unemployment rate

Percent

	2006	2007	2008	2009	2010	2011	2012	2013	Longer run
Actual	4.5	4.8	6.9	10.0	9.6	-	-	-	-
Upper End of Range	-	-	-	-	-	9.1	8.7	8.3	6.0
Upper End of Central Tendency	-	-	-	-	-	8.9	8.2	7.5	5.6
Lower End of Central Tendency	-	-	-	-	-	8.6	7.8	7.0	5.2
Lower End of Range	-	-	-	-	-	8.4	7.5	6.5	5.0

PCE inflation

Percent

	2006	2007	2008	2009	2010	2011	2012	2013	Longer run
Actual	1.9	3.5	1.7	1.5	1.1	-	-	-	-
Upper End of Range	-	-	-	-	-	3.5	2.8	2.5	2.0
Upper End of Central Tendency	-	-	-	-	-	2.5	2.0	2.0	2.0
Lower End of Central Tendency	-	-	-	-	-	2.3	1.5	1.5	1.7
Lower End of Range	-	-	-	-	-	2.1	1.2	1.3	1.5

Appendix 6: Materials used by Mr. English

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

Bill English
June 22, 2011

April FOMC Statement

1. Information received since the Federal Open Market Committee met in March indicates that the economic recovery is proceeding at a moderate pace and overall conditions in the labor market are improving gradually. Household spending and business investment in equipment and software continue to expand. However, investment in nonresidential structures is still weak, and the housing sector continues to be depressed. Commodity prices have risen significantly since last summer, and concerns about global supplies of crude oil have contributed to a further increase in oil prices since the Committee met in March. Inflation has picked up in recent months, but longer-term inflation expectations have remained stable and measures of underlying inflation are still subdued.
2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The unemployment rate remains elevated, and measures of underlying inflation continue to be somewhat low, relative to levels that the Committee judges to be consistent, over the longer run, with its dual mandate. Increases in the prices of energy and other commodities have pushed up inflation in recent months. The Committee expects these effects to be transitory, but it will pay close

attention to the evolution of inflation and inflation expectations. The Committee continues to anticipate a gradual return to higher levels of resource utilization in a context of price stability.

3. To promote a stronger pace of economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate, the Committee decided today to continue expanding its holdings of securities as announced in November. In particular, the Committee is maintaining its existing policy of reinvesting principal payments from its securities holdings and will complete purchases of \$600 billion of longer-term Treasury securities by the end of the current quarter. The Committee will regularly review the size and composition of its securities holdings in light of incoming information and is prepared to adjust those holdings as needed to best foster maximum employment and price stability.
4. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels for the federal funds rate for an extended period.
5. The Committee will continue to monitor the economic outlook and financial developments and will employ its policy tools as necessary to support the economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate.

[Note: In the June FOMC Statement Alternatives, emphasis (strike-through) indicates strike-through text in the original document, and strong emphasis (bold) indicates bold red underlined text in the original document.]

June FOMC Statement--Alternative A

1. Information received since the Federal Open Market Committee met in **April suggests** that the economic recovery is **continuing** at a moderate pace, **though more slowly than the Committee had expected. Moreover, a number of indicators suggest a loss of momentum in the labor market. The slower pace of the recovery reflects in part some factors that are likely to be temporary, including the damping effect of higher food and energy prices on consumer purchasing power and spending as well as supply chain disruptions associated with the tragic events in Japan.** Household spending and business investment in equipment and software continue to expand. However, investment in nonresidential structures is still weak, and the housing sector continues to be depressed. Inflation has picked up in recent months, **mainly reflecting higher prices for some commodities and imported goods, as well as the recent supply chain disruptions. Although firms are facing cost pressures from high commodity prices, the pass-through into the prices of non-energy consumer goods and services has been relatively limited, and** longer-term inflation expectations have remained stable.
2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The unemployment rate remains elevated; **however, the Committee expects the pace of recovery to pick up over coming quarters and the unemployment rate to resume its gradual decline toward** levels that the Committee judges to be consistent with its dual mandate. **The Committee perceives that the downside risks to the economic outlook have increased somewhat. Inflation has moved up recently, but the Committee anticipates that inflation will subside to levels at or below those consistent with the Committee's dual mandate as the effects on inflation of past energy and other commodity price increases dissipate.**
3. To promote **the ongoing** economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate, the Committee **is keeping** the target range for the federal funds rate at 0 to ¼ percent and **now** anticipates that economic conditions—including low rates of resource utilization and a subdued **outlook for inflation over the medium run**--are likely to warrant exceptionally low levels for the federal funds rate **at least through the end of 2012.** The Committee **likewise anticipates that economic conditions will warrant the maintenance of** its existing policy of reinvesting principal payments from its securities holdings **at least through mid-2012.** The Committee will complete **its** purchases of \$600 billion of longer-term Treasury securities by the end of **this month.** The Committee will regularly review the size and composition of its securities holdings and is prepared to **expand** those holdings **if needed.**
4. The Committee will monitor the economic outlook and financial developments **and will act** as needed to best foster maximum employment and price stability.

June FOMC Statement--Alternative B

1. Information received since the Federal Open Market Committee met in **April** indicates that the economic recovery is **continuing** at a moderate pace, **though somewhat more slowly than the**

Committee had expected. Some indicators also suggest a loss of momentum in the labor market. The slower pace of the recovery reflects in part ~~some~~ factors that are likely to be temporary, including the damping effect of higher food and energy prices on consumer purchasing power and spending as well as supply chain disruptions associated with the tragic events in Japan. Household spending and business investment in equipment and software continue to expand. However, investment in nonresidential structures is still weak, and the housing sector continues to be depressed. Inflation has picked up in recent months, **mainly reflecting higher prices for some commodities and imported goods, as well as the recent supply chain disruptions.** However, longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The unemployment rate remains elevated; **however, the Committee expects the pace of recovery to pick up over coming quarters and the unemployment rate to resume its gradual decline toward** levels that the Committee judges to be consistent with its dual mandate. Inflation **has moved up recently, but** the Committee anticipates **that inflation will subside to levels at or below those consistent with the Committee's dual mandate as the effects ~~on inflation~~ of past energy and other commodity price increases dissipate.** However, the Committee will continue to pay close attention to the evolution of inflation and inflation expectations.
3. To promote **the ongoing** economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate, the Committee decided today to **maintain the current degree of monetary policy accommodation.** In particular, the Committee will **keep** the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that economic conditions—including low rates of resource utilization and a subdued **outlook for inflation over the medium run**—are likely to warrant exceptionally low levels for the federal funds rate for an extended period. The Committee will complete **its** purchases of \$600 billion of longer-term Treasury securities by the end of **this month** and will maintain its existing policy of reinvesting principal payments from its securities holdings. The Committee will regularly review the size and composition of its securities holdings and is prepared to adjust those holdings as **appropriate.**
4. The Committee will monitor the economic outlook and financial developments **and will act** as needed to best foster maximum employment and price stability.

June FOMC Statement--Alternative C

1. Information received since the Federal Open Market Committee met in **April** indicates that the economic recovery is **continuing** at a moderate pace, **though somewhat more slowly than the Committee had expected. Some indicators also suggest a loss of momentum in the labor market. The slower pace of the recovery reflects in part ~~some~~ factors that are likely to be temporary, including the damping effect of higher food and energy prices on consumer purchasing power and spending as well as supply chain disruptions associated with the tragic events in Japan.** Household spending and business investment in equipment and software continue to expand. However, investment in nonresidential structures is still weak, and the housing sector continues to be depressed. Inflation has picked up in recent months, **as firms are facing cost pressures from increased commodity prices and import prices have risen.** Longer-term inflation expectations have remained stable.
2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The unemployment rate remains elevated; **however, the Committee expects the pace of recovery to pick up over coming quarters and the unemployment rate to resume its gradual decline toward** levels that the Committee judges to be consistent with its dual mandate. Inflation **has moved up recently, but** the Committee anticipates **that inflation will subside to levels at or below those consistent with the Committee's dual mandate as the effects ~~on inflation~~ of past energy and other commodity price increases dissipate.** However, **the upside risks to inflation have increased somewhat,** and the Committee will **continue to** pay close attention to the evolution of inflation and inflation expectations.
3. **In order** to help ensure that **economic activity and** inflation, over time, **are** at levels consistent with its mandate, the Committee decided today to **keep** the target range for the federal funds rate at 0 to ¼ percent and anticipates that economic conditions—including low rates of resource utilization and a subdued **outlook for inflation over the medium run**—are likely to warrant exceptionally low levels for the federal funds rate **for some time.** The Committee will complete **its** purchases of \$600 billion of longer-term Treasury securities by the end of **this month.** **In July, the Committee will begin a gradual reduction in the current extraordinary degree of policy accommodation by discontinuing its** policy of reinvesting principal payments from its **holdings of agency securities and Treasury securities.** The Committee will regularly review the size and composition of its securities holdings and is prepared to adjust those holdings as **appropriate.**

4. The Committee will monitor the economic outlook and financial developments **and will act** as needed to best foster maximum employment and price stability.

April 2011 FOMC Directive

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to execute purchases of longer-term Treasury securities in order to increase the total face value of domestic securities held in the System Open Market Account to approximately \$2.6 trillion by the end of June 2011. The Committee also directs the Desk to reinvest principal payments from agency debt and agency mortgage-backed securities in longer-term Treasury securities. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

[Note: In the June 2011 FOMC Directive Alternatives, emphasis (strike-through) indicates strike-through text in the original document, and strong emphasis (bold) indicates bold red underlined text in the original document.]

June 2011 FOMC Directive -- Alternative A

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to ~~execute~~ **complete** purchases of **\$600 billion of** longer-term Treasury securities ~~in order to increase the total face value of domestic securities held in the System Open Market Account to approximately \$2.6 trillion~~ by the end of ~~June 2011~~ **this month**. The Committee also directs the Desk to ~~maintain its existing policy of reinvesting principal payments from agency debt and agency mortgage-backed~~ **on all domestic securities in the System Open Market Account** in longer-term Treasury securities **in order to maintain the total face value of domestic securities at approximately \$2.6 trillion**. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

June 2011 FOMC Directive -- Alternative B

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to ~~execute~~ **complete** purchases of **\$600 billion of** longer-term Treasury securities ~~in order to increase the total face value of domestic securities held in the System Open Market Account to approximately \$2.6 trillion~~ by the end of ~~June 2011~~ **this month**. The Committee also directs the Desk to ~~maintain its existing policy of reinvesting principal payments from agency debt and agency mortgage-backed~~ **on all domestic securities in the System Open Market Account** in longer-term Treasury securities **in order to maintain the total face value of domestic securities at approximately \$2.6 trillion**. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

June 2011 FOMC Directive -- Alternative C

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to ~~execute~~ **complete** purchases of **\$600 billion of** longer-term Treasury securities ~~in order to increase the total face value of domestic securities held in the System Open Market Account to approximately \$2.6 trillion~~ by the end of ~~June 2011~~ **this month**. The Committee also directs the Desk to ~~cease all reinvestment of principal payments from agency debt and agency mortgage-backed securities in longer-term Treasury~~ **on domestic securities in the System Open Market Account from the beginning of July 2011**. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

Appendix 7: Materials used by Ms. Yellen

FOMC Policy on External Communications of Federal Reserve System Staff¹

Preamble

In the course of making monetary policy decisions, the Federal Open Market Committee (FOMC) makes extensive use of background materials prepared by the staff of the Federal Reserve System, and senior staff give regular briefings at FOMC meetings. In addition, staff are directly involved in the implementation and communication of the Committee's policy decisions.

Federal Reserve System staff have contacts with members of the public in the process of gathering information about current economic and financial conditions. In addition, staff synthesize that information using a variety of analytical methods and statistical tools, and the continual refinement of these methods and tools is facilitated by ongoing interactions with academic researchers, staff at foreign central banks, and other outside analysts. Finally, staff play a significant role in helping the public understand the rationale for FOMC decisions.

To reinforce the public's confidence in the transparency and integrity of the monetary policy process, the FOMC has established the following principles to govern the public contacts of Federal Reserve System staff who have access to confidential FOMC information.² The FOMC maintains responsibility for ensuring that all System staff abide by these principles. Specifically, the President of each Federal Reserve Bank is responsible for ensuring the confidentiality of FOMC information at that Bank and for the conduct and discretion of that Bank's staff with regard to the use of that information, and the Chairman fulfills this role for Board staff.

General Principles

1. Federal Reserve staff play a significant role in enhancing public understanding of the FOMC's actions, thereby promoting the effectiveness of monetary policy. In all communications with the public regarding monetary policy issues, members of the official staff should refrain from publicly expressing their own personal views regarding prospective monetary policy decisions and should never speculate about future monetary policy decisions or actions that have not been announced by the Committee. In explaining the rationale for announced FOMC decisions, staff should draw on Committee communications, the Chairman's press conference remarks, and other published materials as appropriate. Whenever staff make public comments on monetary policy, they should clearly indicate that those comments are solely their own responsibility and should not be interpreted as representing the views of the FOMC, its principals, or any other person associated with the Federal Reserve System.
2. To foster the ongoing frank exchange of views at FOMC meetings, staff will refrain from characterizing such discussions--apart from what has been published in the minutes of each FOMC meeting--in any contact with an individual, firm, or organization outside of the Federal Reserve System.
3. To protect the independence of the FOMC's decision-making process from short-term political pressures, members of the official staff will strive to avoid any appearance of political partisanship in their contacts with the public.
4. Staff will carefully safeguard all confidential FOMC information.³ No confidential information may be released except pursuant to Committee instructions or with written authorization from the Chairman and prompt notification to the Committee.
5. To ensure that no member of the public is able to profit financially from acquiring nonpublic information about economic and financial conditions or about the methods and tools that are currently being used to assess those conditions, staff will not provide such information to any individual, firm, or organization outside of the Federal Reserve System unless the information has been cleared for publication and is made widely available to the public.
6. Staff will strive to ensure that their contacts with members of the public do not provide any profit-making person or organization with a prestige advantage over its competitors. They will consider this principle carefully and rigorously in considering invitations to speak at meetings sponsored by profit-

making organizations and in scheduling meetings with anyone who might benefit financially from apparently-exclusive contacts with Federal Reserve staff.

7. To facilitate the effectiveness of the Committee's policy deliberations and the clarity of its communications, staff observe the blackout period on monetary policy communication that begins on the Tuesday morning of the week prior to each regularly-scheduled FOMC meeting and ends at midnight Eastern Time on the Thursday following the meeting. During each blackout period, staff refrain from providing information to members of the public about macroeconomic or financial developments or about current or prospective monetary policy issues unless that information has already been cleared for publication and made widely available to the public prior to the blackout period.

Practical Examples

To assist Federal Reserve System staff in understanding the application of these principles, the FOMC has considered how the principles should be applied to some common requests for public contact. For example, the following contacts would generally be consistent with the Committee's policy on external communications, as long as the staff member carefully adheres to all of the principles listed above during the contact itself:

1. A presentation at a widely-attended meeting, where the event is organized by a non-profit entity and does not involve fundraising. Such a meeting might be sponsored by an academic institution, non-profit organization, or civic or trade association (such as a chamber of commerce or a state or national bankers' association).
2. A private meeting with members of the public--such as bankers, community representatives, industry representatives, or labor representatives--to collect information about current economic and financial conditions, without disseminating any information that is not widely available to the public. Whenever practical, at least two Federal Reserve staff should be present at such a meeting.

In contrast, the following contacts would *not* be consistent with the principles set out above:

1. Disclosure of confidential FOMC information.
2. Disclosure or characterization of the views expressed at an FOMC meeting.
3. Disclosure of an FOMC participant's personal views on monetary policy that have not previously been communicated to the public.
4. Public communications in which a Federal Reserve officer expresses personal opinions about prospective monetary policy decisions.
5. A prediction to members of the public about Committee action prior to the Committee's announcement of such decisions.
6. A private meeting with selected clients of a regulated entity or financial firm to discuss monetary policy.

Of course, the foregoing examples are not intended to serve as an exhaustive list, and hence good judgment will be essential in applying these principles. Moreover, whenever staff are unsure about whether specific contacts with the public would be appropriate, they should consult in advance with the appropriate staff person or with the head of their respective institution--namely, the Chairman in the case of staff at the Board of Governors, and the President in the case of staff at a Federal Reserve Bank.

¹ This document complements the FOMC policy regarding the external communications of Committee participants, which is set forth in a separate document. [Return to text](#)

² This policy is fully consistent with and complements the rules for ethical conduct prescribed for the staff of the Board of Governors and for staff at each Federal Reserve Bank. [Return to text](#)

³ The Committee's regulations concerning the designation and handling of confidential FOMC information are set forth in a separate document, "*Program for Security of FOMC Information.*" [Return to text](#)

FOMC Policy on External Communications of Committee Participants¹

Preamble

The Federal Open Market Committee (FOMC) is committed to providing clear and timely information to the public about the Committee's monetary policy actions and the rationale for those decisions. Indeed, considerable evidence indicates that central bank transparency increases the effectiveness of monetary policy and enables households and businesses to make better-informed decisions.

Two-way communication with the public is a crucial element in the FOMC's monetary policy process. Committee participants have regular contacts with members of the public as part of the process of gathering the information the Committee needs to understand current economic and financial conditions. In addition, the FOMC's public accountability is strengthened by open discussion of Committee participants' views about the economic outlook as well as their judgments about the appropriate course of monetary policy.

Therefore, to reinforce the public's confidence in the transparency and integrity of the monetary policy process, the FOMC has established the following principles to govern Committee participants' contacts with members of the public. The FOMC itself maintains responsibility for ensuring that all Committee participants—that is, the members of the Federal Reserve Board and the presidents of the Federal Reserve Banks—abide by these principles.²

General Principles

1. Committee participants will endeavor to enhance the public's understanding of monetary policy. They are free to explain their individual views but are expected to do so in a spirit of collegiality and to refrain from characterizing the views of other individuals on the Committee. In explaining the rationale for announced FOMC decisions, participants will draw on Committee communications and the Chairman's press conference remarks as appropriate.
2. To foster the ongoing frank exchange of views at FOMC meetings, Committee participants will refrain from publicly characterizing such discussions beyond what has been published in the minutes of each FOMC meeting.
3. To protect the independence of the FOMC's decision-making process from short-term political pressures, participants will strive to avoid any appearance of political partisanship and will be prudent in selecting venues for their speaking engagements.
4. FOMC participants will carefully safeguard all confidential information.³ No confidential FOMC information may be released except pursuant to Committee instructions or with written authorization from the Chairman and prompt notification to the FOMC.
5. To the fullest extent possible, Committee participants will refrain from describing their personal views about monetary policy in any meeting or conversation with any individual, firm, or organization who could profit financially from acquiring that information unless those views have already been expressed in their public communications.
6. Committee participants will strive to ensure that their contacts with members of the public do not provide any profit-making person or organization with a prestige advantage over its competitors. They will consider this principle carefully and rigorously in scheduling meetings with anyone who might benefit financially from apparently exclusive contacts with Federal Reserve officials and in considering invitations to speak at meetings that are sponsored by profit-making organizations or that are closed to the public and the media.
7. To facilitate the effectiveness of the Committee's policy deliberations and the clarity of its communications, participants observe a blackout period on monetary policy communication that begins on the Tuesday morning of the week prior to each regularly-scheduled FOMC meeting and ends at midnight Eastern Time on the Thursday following the meeting. During each blackout period, participants refrain from expressing their views about macroeconomic developments or monetary policy issues in meetings or conversations with members of the public.

Practical Examples

To assist FOMC participants in understanding the application of these principles, the Committee has considered how the principles should be applied to some common requests for public contact. For example, the following contacts would generally be consistent with the Committee's policy on external communications, as long as the participant carefully adheres to all of the principles listed above during the contact itself:

1. A speech on a monetary policy topic at a widely-attended event with press in attendance, where the event is organized by a non-profit entity and does not involve fundraising. Such a speech might be given at an academic institution, a conference sponsored by a non-profit organization, or a meeting

sponsored by a civic or trade association (such as a chamber of commerce or a state or national bankers' association).

2. An interview with the press regarding the participant's personal views on monetary policy issues.
3. A private meeting with members of the public—such as bankers, community representatives, industry representatives, or labor representatives—to collect information about the economy without disseminating any information about the participant's personal views on monetary policy unless those views have already been expressed in their public communications. Whenever practical, a public information officer or other Federal Reserve staff should be present at such a meeting.

In contrast, the following contacts would *not* be consistent with the principles set out above:

1. Disclosure in any setting of confidential FOMC information.
2. Disclosure or characterization in any setting of the views that others expressed at an FOMC meeting.
3. A prediction about Committee action in advance of the Committee announcement of its decision.
4. A private meeting with selected clients of a regulated entity or financial firm to discuss monetary policy.

Of course, the foregoing examples are not intended to serve as an exhaustive list, and hence good judgment will be essential in applying these principles.

¹ The Committee's policy governing the external communications of Federal Reserve System staff is set forth in a separate document. [Return to text](#)

² This policy is fully consistent with and complements the more general policies for ethical conduct published in the *Federal Reserve Administrative Manual* (FRAM) section 2-026.1 ("Ethics--Voluntary Guide to Conduct for Senior Officials"). That section recognizes the overarching principle that senior Federal Reserve officials "have a special responsibility for maintaining the integrity, dignity, and reputation of the System" and "should scrupulously avoid conduct that might in any way tend to embarrass the System or impair the effectiveness of its operations." The policy in this document focuses specifically on external communications and is binding on all FOMC participants. [Return to text](#)

³ The Committee's regulations concerning the designation and handling of confidential FOMC information are set forth in a separate document, "*Program for Security of FOMC Information.*" [Return to text](#)

Appendix 8: Materials used by Chairman Bernanke

Exit Strategy Principles

In light of discussions at the April and June FOMC meetings, the Committee has reached broad agreement on the key elements of the strategy that it expects to follow in normalizing the stance and conduct of monetary policy:

1. The Committee will determine the timing and pace of policy normalization to promote its statutory mandate of maximum employment and price stability.
2. To begin the process of policy normalization, the Committee will likely first cease reinvesting some or all payments of principal on the securities holdings in the System Open Market Account (SOMA).
3. At the same time or **sometime** ~~relatively soon~~ thereafter, the Committee will modify its forward guidance on the path of the federal funds rate and will initiate temporary reserve-draining operations aimed at supporting the implementation of increases in the federal funds rate when appropriate.
4. When economic conditions warrant, the Committee's next step in the process of policy normalization will be to begin raising its target for the federal funds rate, and from that point on, changing the level or range of the federal funds rate target will be the primary means of adjusting the stance of monetary policy. During the normalization process, adjustments to the interest rate on excess reserves and to the level of reserves in the banking system will be used to bring the funds rate toward its target.
5. Sales of agency securities from the SOMA will likely commence sometime after the first increase in the target for the federal funds rate, ~~probably within a few months~~. The timing and pace of sales will be communicated to the public in advance; that pace is anticipated to be relatively gradual and steady, but it could be adjusted **up or down** in response to material changes in the economic outlook or financial conditions.

6. The pace of sales is expected to be aimed at eliminating our holdings of agency securities over a period of [**three** | four] to five years, thereby minimizing the extent to which the SOMA portfolio might affect the allocation of credit across sectors of the economy. Sales at this pace would be expected to normalize the size of the SOMA securities portfolio over a period of [**two to three** | about three] years. In particular, the size of the securities portfolio and the associated quantity of bank reserves are expected to be reduced to **the smallest** levels that would be consistent with the **efficient** implementation of monetary policy ~~through the use of conventional open market operations to keep the federal funds rate near its target.~~
7. The Committee is prepared to make adjustments to its exit strategy if necessary in light of economic and financial developments.

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