

## Meeting of the Federal Open Market Committee October 28-29, 2008 Presentation Materials -- Text Version

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

Pages 160 to 206 of the Transcript

### Appendix 1: Materials used by Mr. Dudley

Class II FOMC - Restricted FR

#### Page 1

##### Top panel

(1)

**Title:** Assets in Prime Money Market Funds Decline Sharply

**Series:** Assets in Prime, Treasury, Treasury and Repo, and Treasury and Agency Money Market Funds

**Horizon:** January 1, 2008 - October 23, 2008

**Description:** Assets in prime money market funds decline sharply.

Source: iMoneyNet

##### Middle panel

(2)

**Title:** Treasury Bill Yields Decline After Lehman Brothers Holding Company Declares Bankruptcy

**Series:** One-, Three-, and Six-Month Treasury Bill Yields

**Horizon:** January 1, 2008 - October 24, 2008

**Description:** Treasury bill yields decline after Lehman Brothers Holding Company declares bankruptcy.

Source: Bloomberg

##### Bottom panel

(3)

**Title:** Fails in the Treasury Market Rise as Treasury GC Repo Rates Decline

**Series:** Fails Volume in the Treasury Market, Overnight GC Repo Rates

**Horizon:** January 1, 2008 - October 24, 2008

**Description:** Fails in the Treasury market increase as Treasury GC repo rates decline.

Source: Fixed Income Clearing Corporation, Federal Reserve Bank of New York

## Top panel

(4)

**Title:** Three-Month AA-Rated Commercial Paper Rates Begin to Decline from Elevated Levels

**Series:** Three-Month AA-Rated Financial, Non-Financial, and Asset Backed Commercial Paper Rates

**Horizon:** January 1, 2008 - October 24, 2008

**Description:** Three-month AA-rated financial and asset backed commercial paper rates begin to decline from elevated levels following the announcement of the Federal Reserve's Commercial Paper Funding Facility.

Source: Federal Reserve Board

## Middle panel

(5)

**Title:** Estimated Average Maturity of Outstanding AA-Rated Commercial Paper Declines

**Series:** Two-Week Moving Average of the Estimated Daily Weighted Average Maturity of AA-Rated Financial, Non-Financial, and Asset Backed Commercial Paper Outstanding

**Horizon:** January 1, 2008 - October 24, 2008

**Description:** Estimated weighted average maturity of outstanding AA-rated financial and asset backed commercial paper declines.

Source: Federal Reserve Board

## Page 3

## Top panel

(6)

**Title:** One-Month Libor-OIS Spreads at Exceptionally Wide Levels

**Series:** Spreads between One-Month Libor Rates and One-Month Overnight Index Swap Rates for U.S., U.K., and Euro Area

**Horizon:** July 1, 2007 - October 24, 2008

**Description:** The spreads between the one-month Libor rate and the one-month overnight index swap rate in the U.S., U.K., and Euro area are at exceptionally wide levels.

Source: Bloomberg

## Middle panel

(7)

**Title:** Three-Month Libor-OIS Spreads at Exceptionally Wide Levels

**Series:** Spreads between Three-Month Libor Rate and Three-Month Overnight Index Swap Rates for U.S., U.K., and Euro Area

**Horizon:** July 1, 2007 - October 24, 2008

**Description:** The spreads between the three-month Libor rate and the three-month overnight index swap rate in the U.S., U.K., and Euro area are at exceptionally wide levels.

Source: Bloomberg

## Page 4

**Top panel****(8) Term Auction Facility Auction Results**

December 20, 2007 - October 23, 2008

<b>Auction Settlement</b>	<b>Term</b>	<b>Amount</b>	<b>Minimum Bid Rate</b>	<b>Stop-out Rate</b>	<b>Propositions</b>	<b>Bid/Cover</b>	<b>Bidders</b>
12/20/2007	28 Days	\$20 b	4.17%	4.65%	\$61.6 b	3.08	93
12/27/2007	35 Days	\$20 b	4.15%	4.67%	\$57.7 b	2.88	73
1/17/2008	28 Days	\$30 b	3.88%	3.95%	\$55.5 b	1.85	56
1/31/2008	28 Days	\$30 b	3.10%	3.12%	\$37.5 b	1.25	52
2/14/2008	28 Days	\$30 b	2.86%	3.01%	\$58.4 b	1.95	66
2/28/2008	28 Days	\$30 b	2.81%	3.08%	\$68.0 b	2.27	72
3/13/2008	28 Days	\$50 b	2.39%	2.80%	\$92.6 b	1.85	82
3/27/2008	28 Days	\$50 b	2.19%	2.62%	\$88.9 b	1.78	88
4/10/2008	28 Days	\$50 b	2.11%	2.82%	\$91.6 b	1.83	79
4/24/2008	28 Days	\$50 b	2.05%	2.87%	\$88.9 b	1.77	89
5/8/2008	28 Days	\$75 b	2.00%	2.22%	\$96.8 b	1.29	71
5/22/2008	28 Days	\$75 b	1.99%	2.10%	\$84.4 b	1.13	75
6/5/2008	28 Days	\$75 b	2.00%	2.26%	\$95.9 b	1.28	73
6/19/2008	28 Days	\$75 b	2.05%	2.36%	\$89.4 b	1.19	76
7/3/2008	28 Days	\$75 b	2.01%	2.34%	\$90.9 b	1.21	77
7/17/2008	28 Days	\$75 b	2.01%	2.30%	\$93.3 b	1.24	82
7/31/2008	28 Days	\$75 b	2.01%	2.35%	\$90.6 b	1.21	70
8/14/2008	84 Days	\$25 b	2.04%	2.75%	\$54.8 b	2.19	64
8/14/2008	28 Days	\$50 b	2.01%	2.45%	\$75.5 b	1.51	65
8/28/2008	28 Days	\$75 b	2.01%	2.38%	\$84.2 b	1.12	66
9/11/2008	84 Days	\$25 b	2.02%	2.67%	\$31.6 b	1.27	38
9/11/2008	28 Days	\$25 b	2.01%	2.53%	\$46.2 b	1.85	53
9/25/2008	28 Days	\$75 b	1.94%	3.75%	\$133.6 b	1.78	85
10/9/2008	85 Days	\$150 b	1.39%	1.39%	\$138.1 b	0.92	71
10/23/2008	28 Days	\$150 b	1.11%	1.11%	\$113.3 b	0.76	74

Source: Federal Reserve Board

**Page 5****Top panel****(9) Outstanding FX Swap Lines**

As of October 22, 2008

\$ Billion

\$ Billion

ECB	280
BOE	80
BOJ	50
SNB	24
RBA	20
Denmark National Bank	10
Riksbank	10
Norges Bank	3

Source: Federal Reserve Bank of New York

### Bottom panel

(10)

**Title:** Total Outstanding FX Swap Draw-Downs

**Series:** Total Outstanding FX Swap Draw-Downs for the Swiss National Bank, Riksbank, Reserve Bank of Australia, European Central Bank, Norges Bank, Danmark National Banken, Bank of Japan, and Bank of England

**Horizon:** December 1, 2007 - October 22, 2008

**Description:** Total outstanding FX swap draw-downs increase.

Source: Federal Reserve Bank of New York

## Page 6

### Top panel

(11)

**Title:** Investment Bank CDS Spreads

**Series:** Credit Default Swap Spreads for Morgan Stanley and Goldman Sachs

**Horizon:** August 1, 2007 - October 24, 2008

**Description:** Credit default swap spreads for Morgan Stanley and Goldman Sachs narrow sharply.

Source: Markit

### Middle panel

(12)

**Title:** Commercial Bank CDS Spreads

**Series:** Credit Default Swap Spreads for Bank of America, Citigroup, JPMorgan Chase, and Wells Fargo

**Horizon:** August 1, 2007 - October 24, 2008

**Description:** Credit default swap spreads for Bank of America, Citigroup, JPMorgan Chase, and Wells Fargo narrow sharply.

Source: Markit

### Bottom panel

(13)

**Title:** Non-Bank Financial CDS Spreads at Elevated Levels

**Series:** Credit Default Swap Spreads for Hartford Financial Services Group, General Electric Capital Corporation, American Express Company, and Prudential Financial

**Horizon:** January 1, 2008 - October 24, 2008

**Description:** The credit default swap spreads for Hartford Financial Services Group, General Electric Capital Corporation, American Express Company, and Prudential Financial narrow, but to a lesser extent than the investment and commercial banks.

Source: Markit

## Page 7

### Top panel

(14)

**Title:** Fannie Mae Discount Note Rates Increase Relative to OIS

**Series:** Stop-Out Rate Spread to OIS for 3- and 6-Month Fannie Mae Discount Note Auctions

**Horizon:** January 1, 2008 - October 22, 2008

**Description:** The stop-out rate spread to the overnight index swap rate in the 3- and 6-month Fannie Mae discount note auctions increases.

Source: Fannie Mae

### Middle panel

(15)

**Title:** Freddie Mac Discount Note Rates Increase Relative to OIS

**Series:** Stop-Out Rate Spread to OIS for 3- and 6-Month Freddie Mac Discount Note Auctions

**Horizon:** January 1, 2008 - October 20, 2008

**Description:** The stop-out rate spread to the overnight index swap rate in the 3- and 6-month Freddie Mac discount note auctions increases.

Source: Freddie Mac

### Bottom panel

(16)

**Title:** Agency Debt Spreads Widen After the FDIC Announces Guarantee of Bank Debt

**Series:** Fannie Mae 5- and 10-Year Debt Spreads and Freddie Mac 5- and 10-Year Debt Spreads

**Horizon:** January 1, 2008 - October 24, 2008

**Description:** Agency debt spreads widen after the FDIC announces the guarantee of bank debt.

Source: Bloomberg

## Page 8

### Top panel

(17)

**Title:** Federal Reserve Balance Sheet

**Series:** The Composition of the Federal Reserve Balance Sheet

**Horizon:** August 2007 - December 2008

**Description:** The Federal Reserve balance sheet expands.

Source: Federal Reserve Bank of New York

**Middle panel**  
**(18)**

**Title:** Fed Funds Rate Trades Below the Target  
**Series:** Fed Funds Target Rate, Fed Funds Effective Rate, Interest Rate Paid on Excess Reserve Balances, Fed Funds Low Rate  
**Horizon:** August 1, 2008 - October 24, 2008  
**Description:** Fed funds effective rate nears the rate paid on excess reserve balances after the Federal Reserve begins to pay interest on reserve balances.

Source: Federal Reserve Bank of New York

**Bottom panel**  
**(19)**

**Title:** Intraday Fed Funds Trading  
**Series:** Fed Funds Target Rate, Fed Funds Effective Rate, Interest Rate Paid on Excess Reserve Balances, Intraday Fed Funds Trading  
**Horizon:** October 2, 2008 - October 23, 2008  
**Description:** The intraday trading range in the fed funds market progressively narrows.

Source: Federal Reserve Bank of New York

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**Top panel**  
**(20)**

**Title:** Hedge Fund Performance Declines Sharply  
**Series:** Three-Month Moving Average Rate of Return for the Credit Suisse/Tremont Hedge Fund Index  
**Horizon:** January 1, 2008 - October 1, 2008  
**Description:** Hedge fund returns decline sharply.

Source: Credit Suisse/Tremont

**Bottom panel**  
**(21) Haircuts Paid by Hedge Funds Increase for All Collateral Types**

**July 30, 2008 - October 21, 2008**

		Maturity								
		Overnight			1-Month			3-Month		
COLLATERAL	Date	Average	High	Low	Average	High	Low	Average	High	Low
Treasury	21-Oct	1.5%	3.0%	0.0%	1.5%	3.0%	0.0%	1.5%	3.0%	0.0%
	26-Sep	0.9%	2.0%	0.0%	0.9%	2.0%	0.0%	1.1%	2.0%	0.0%
	17-Sep	0.6%	2.0%	0.0%	0.6%	2.0%	0.0%	0.7%	2.0%	0.0%

		Maturity								
		Overnight			1-Month			3-Month		
COLLATERAL	Date	Average	High	Low	Average	High	Low	Average	High	Low
	30-Jul	0.6%	2.0%	0.0%	0.6%	2.0%	0.0%	0.7%	2.0%	0.0%
Agency Debt	21-Oct	3.1%	5.0%	1.5%	3.3%	5.0%	1.5%	3.0%	5.0%	1.5%
	26-Sep	2.3%	5.0%	0.0%	2.3%	5.0%	0.0%	2.0%	5.0%	0.0%
	17-Sep	1.6%	3.5%	0.0%	1.7%	3.5%	0.0%	2.6%	5.0%	0.0%
	30-Jul	1.4%	3.0%	0.0%	2.3%	7.5%	0.0%	2.1%	5.0%	0.0%
Agency MBS	21-Oct	6%	10%	5%	7%	10%	5%	6%	10%	5%
	26-Sep	5%	6%	4%	5%	6%	4%	5%	6%	4%
	17-Sep	5%	6%	4%	5%	6%	5%	6%	6%	6%
	30-Jul	4%	6%	4%	5%	8%	4%	5%	7%	4%
Non-agency MBS										
Prime	21-Oct				29%	33%	25%			
	26-Sep				35%	45%	28%			
	17-Sep				23%	23%	23%			
	30-Jul				26%	45%	20%			
Alt-A	21-Oct									
	26-Sep									
	17-Sep				30%	30%	30%			
	30-Jul				29%	30%	28%			
Corporate Debt										
High Grade	21-Oct	21%	25%	15%	19%	23%	15%			
	26-Sep	20%	28%	13%	20%	28%	13%			
	17-Sep	8%	9%	8%	8%	9%	8%	8%	9%	8%
	12-May	13%	25%	6%	14%	25%	8%	14%	25%	9%
High Yield	21-Oct	40%	60%	25%	38%	60%	25%			
	26-Sep	41%	60%	18%	41%	60%	18%			
	17-Sep	20%	23%	18%	20%	23%	18%	20%	23%	18%
	12-May	28%	70%	13%	30%	70%	13%	32%	70%	14%

Source: Survey of 11 Hedge Funds

**Horizon:** August 4, 2008 - October 24, 2008

**Description:** The fed funds futures curve has shifted lower since the September FOMC meeting.

Source: Bloomberg

### **Middle panel**

**(23)**

**Title:** Eurodollar Futures Curve Shifts Lower

**Series:** Eurodollar futures curve as of 8/4/2008, 9/15/2008, and 10/24/2008

**Horizon:** August 4, 2008 - October 24, 2008

**Description:** The Eurodollar futures curve has shifted lower since the September FOMC meeting.

Source: Bloomberg

## **Page 11**

### **Top panel**

**(24)**

**Title:** Distribution of Expected Policy Target Rate Among Primary Dealers Prior to October 29 FOMC Meeting

**Series:** Dealer expectations for policy target rate by quarter, average forecast for policy target by quarter, and market rate for policy expectation by quarter as of 10/20/2008

**Horizon:** 2008:Q4 - 2009:Q4

**Description:** On average, primary dealer economists are forecasting a slower rate of increase in the policy target rate over the next five quarters than what is currently priced into Eurodollar futures.

Source: Dealer Policy Survey

### **Middle panel**

**(25)**

**Title:** Distribution of Expected Policy Target Rate Among Primary Dealers Prior to September 16 FOMC Meeting

**Series:** Dealer expectations for policy target rate by quarter, average forecast for policy target by quarter, and market rate for policy expectation by quarter as of 9/8/2008

**Horizon:** 2008:Q3 - 2009:Q4

**Description:** On average, primary dealer economists' policy rate expectations are similar to what is currently priced into Eurodollar futures.

Source: Dealer Policy Survey

## **Page 12**

### **Top panel**

**(26)**

**Title:** Spread Between Nominal and Inflation Protected Treasury Yields Narrows Sharply

**Series:** Five- and Ten-Year Spreads between Nominal and Inflation Protected Treasury Yields

**Horizon:** January 1, 2008 - October 24, 2008

**Description:** The spreads between 5- and 10-year nominal and inflation-protected Treasury yields



have narrowed sharply.

Source: Bloomberg

### **Middle panel**

(27)

**Title:** TIPS Implied Average Rate of Inflation: 5-10 Year Horizon

**Series:** Federal Reserve Board's 5-10 Year Horizon TIPS Inflation Compensation and Barclays' 5-10 Year Horizon TIPS Inflation Compensation

**Horizon:** January 1, 2008 - October 24, 2008

**Description:** TIPS implied average rate of inflation over a 5-10 year horizon as measured by the Federal Reserve Board has diverged from the implied average rate of inflation measured by Barclays.

Source: Federal Reserve Board, Barclays Capital

### **Bottom panel**

(28)

**Title:** Expectations for Average Annual CPI Inflation Rate from 2013-2018

**Series:** Primary Dealer Expectations for Average Annual CPI Inflation Rate from 2013-2018

**Horizon:** 2013-2018

**Description:** The Federal Reserve Bank of New York's October 2008 survey of primary dealers shows that, on average, expectation for the average annual CPI inflation rate between 2013 and 2018 has shifted lower since the September survey.

Source: Federal Reserve Bank of New York

## **Appendix 2: Materials used by Mr. Bassett**

Material for **Staff Presentation on Financial Developments**

October 28, 2008

**Class II FOMC - Restricted (FR)**

### **Exhibit 1**

#### **Market Functioning**

##### **Top-left panel**

##### **Median CDS spreads of financial institutions**

A line chart shows three curves, "Bank holding companies", "Regional banks", and "Insurance companies", from July 2007 through October 27, 2008. Data are daily; unit is basis points.

The median CDS spread for bank holding companies starts off just below 20 basis points in July 2007, gains to about 70 on net through January 2008, peaks at more than 200 in March 2008, then falls back to below 100 by late April 2008. The spread climbs steadily to just above 150 basis points in July 2008, where it fluctuates until spiking to nearly 300 in mid-September. Then it falls to near 150 in late September, before spiking again to about 275 in early October, before falling to about 125 and ending above 150 by October 27.

The median spread for regional banks starts off at below 20 basis points in July 2007, climbs steadily

to 100 by March 2008, and hovers there until June 2008. The spread jumps to above 150 in late June, then remains steady until spiking to about 300 by mid-September, dropping in mid-October to about 205, then recovering to just under 225 by October 27.

The median spread for insurance companies starts in July 2007 at around 30 basis points and climbs on net to 100 by February 2008. It fluctuates around that level until climbing to just under 200 basis points by October 27, 2008.

Note: Median spreads for 6 bank holding companies; 6 regional banks; and 59 insurance companies.

Source: Markit.

### **Top-right panel**

#### **Average range of CDS dealer contributions**

A line chart shows one curve, "Investment-grade financial companies", from July 2007 through October 27, 2008. Data are daily; unit is basis points.

The range for investment-grade financial companies starts near 0 basis points in July 2007, then climbs steadily to about 24 in early March 2008, and then drops to just under 10 in May 2008. The spread jumps to 30 in July 2008, falls to about 14 by early September 2008, and then jumps to 40 in mid-September before peaking above 50 in October. It then generally decreases to about 38 by October 27, 2008.

Source: Markit.

### **Middle-left panel**

#### **Median bid-asked spreads on corporate bonds**

A line chart shows two curves, "Investment-grade" and "High-yield", from July 2007 through October 27, 2008. Data are a 5-day moving average; unit is percent of price.

The median bid-asked spread for investment-grade corporate bonds starts in July 2007 at about 0.6 percent, and fluctuates between that level and 1 through August 2008. It spikes to about 1.6 in mid-September 2008, before decreasing on net to about 1.2 by October 27.

The median bid-asked spread for high-yield corporate bonds starts at about 1.2 percent, oscillates between about 1 and 1.8 until spiking to about 2.2 in July 2008, then falls back to range between about 1.3 and 1.7 between August and mid-September. It spikes to about 4.2 in early October before falling to about 2.4 by October 27, 2008.

Source: Calculated using data from Merrill Lynch.

### **Middle-right panel**

#### **Secondary market pricing for syndicated loans**

A line chart shows two curves, "Bid-asked spread" (basis points) and "Bid price" (percent of par), from July 2007 through October 27, 2008. Data are daily.

The bid-asked spread starts in July 2007 at about 60 basis points and rises by early August 2007 to about 150 before falling to just under 115 by October 2007. It rises again to about 225 by February 2008, falls on net to about 170 by June 2008, and holds at about that level until mid-September, before peaking at around 380 in October 2008. It then falls slightly to about 360 by October 27.

The bid price starts in July 2007 at about 100 percent of par, drops to about 95 by the end of July, and remains at about that level through November. The price falls further on net to about 86 by

mid-February 2008, and then fluctuates between about 85 and 90 until mid-September 2008. The price then falls steeply to about 70 percent of par by October 27, 2008.

Source: LSTA/LPC Mark-to-Market Pricing.

**Bottom-left panel**  
**Municipal bond yields**

A line chart shows two curves, "7-day SIFMA\* Swap Index" and "20-year general obligation", from May through October 2008. Data are weekly; unit is percent.

The 7-day SIFMA Swap Index starts in May 2008 at about 2.1 percent, then falls on net to about 1.5 by early July, rises to about 2.1 in late July, then falls to about 1.7 by mid-August. It remains at that level until it spikes to just under 8 by late September, before plunging to about 2.1 by October 22.

The 20-year general obligation yield starts at about 4.5 percent in May 2008, remaining at about that level until September, before rising steadily to just under 6 by mid-October and then falling back to about 5.25 by October 23, 2008.

\* Securities Industry and Financial Markets Association. [Return to text](#)

Source: Bloomberg; The Bond Buyer.

**Bottom-right panel**  
**Municipal bond issuance**

A stacked bar chart shows short-term and long-term municipal bond issuance at a monthly rate for May 2008 through October 23, 2008. Unit is billions of dollars. As shown in the chart, approximate values are as follows:

**Monthly rate**  
\$ Billions

Period	Short-term	Long-term	Sum
May	1.9	20.0	21.9
June	12.2	26.5	38.7
July	5.4	20.7	26.1
August	9.5	17.4	26.9
September 1-15	6.1	18.0	24.1
September 16-30	2.4	5.4	7.8
October 1-15	3.0	5.7	8.7
October 16-23	23.5	12.0	35.5

Source: Securities Data Company; The Bond Buyer.

**Exhibit 2**  
**Financial Intermediation**

**Top-left panel**  
**Net flows of taxable money market funds**

A line and stacked bar chart shows net flows of prime funds and government funds from September

12, 2008 to October 24, 2008. Data are daily; unit is billions of dollars.

Net outflows of prime funds begin at about 0 on September 12, are about \$130 billion dollars on September 17 and 18, then diminish to about 25 on September 19 and fluctuate between 0 and 25 until September 29. After September, the flows turn mostly positive and climb on net to just under 10 by October 14, then remain close to zero through October 24.

Inflows to government funds start just below 0 on September 12, rise to about \$60 billion by September 18, fall to about 25 by September 22, remain at about that level through October 2, fall to about 15 on October 3 and remain at that level until October 10, fall to about 0 on October 13, rise to about 10 on October 14, then fall on net to about -5 by October 24.

The total of these two flows is shown by a black line. The line starts at about negative \$5 billion on September 12, falls to about -60 on September 16, rises to about 0 on September 17, falls to about negative 75 on September 18, then rises on net to around 25 on September 24, falling on net to about -5 on September 30, rising on balance to about 20 by October 15, then falling on balance to about -5 by October 24.

Source: iMoneyNet.

### **Top-right panel**

#### **Commercial paper outstanding in the U.S. market**

A line chart shows three curves, "Financial", "Asset backed", and "Nonfinancial", from August 2007 through October 27, 2008. Data are daily (n.s.a.); unit is billions of dollars.

Financial commercial paper outstanding started at about \$745 billion in August 2007, rising on balance to just under 890 by May 2008, falling on balance to about 805 by mid-September 2008, then falling more precipitously to just under 575 by October 27, 2008.

Asset-backed commercial paper outstanding started in August 2007 at just under \$1.2 trillion, dropped sharply to about \$950 billion by mid-September 2007, and then fell at a more or less continuous rate to just over 680 by October 27, 2008.

Nonfinancial commercial paper outstanding began at just under \$200 billion, oscillating between about 170 and just over 210 through mid-September 2008, then dropping from just over 200 to about 175 in late September, before recovering to just over 190 by October 27, 2008.

Source: Depository Trust Corporation.

### **Middle-left panel**

#### **Stock price indexes**

A line chart shows two curves, "S&P 500" and "S&P Financials", from July 2007 through October 27, 2008. Data are daily; index, December 31, 2007 = 100.

The S&P 500 series started in July 2007 at about 105, fell on net to about 85 by March 2008, increased to about 95 by May, then fell again to about 80 by July and remained fairly steady until mid-September when it fell sharply to under 60 by October 27, 2008.

The S&P Financials series started in July 2007 at about 125, fell on net to about 80 by March 2008, increased to just over 90 by May, fell to under 70 by July, rose on balance to just above 70 by late September, then dropped to about 45 by October 27, 2008.

Source: Bloomberg.

**Middle-right panel**  
**Net flows into bond and stock mutual funds**

A stacked bar chart shows net flows into bond funds and equity and hybrid mutual funds at a monthly rate for 2007 through September 2008. Unit is billions of dollars.

Flows into equity and hybrid mutual funds were at a monthly rate of nearly \$17 billion for the first half of 2007, about 2 for the second half of 2007, -14 in the first quarter of 2008, just under 10 for the second quarter, about -30 in July, about -20 in August, then about -63 (estimated) in September 2008.

Flows into bond mutual funds were at a monthly rate of nearly \$15 billion for the first half of 2007, about 3.5 for the second half of 2007, nearly 16 for the first quarter of 2008, nearly 13 for the second quarter of 2008, about 2 for July, just under 8 for August, and nearly -2 (estimated) in September 2008.

Source: Investment Company Institute.

**Bottom-left panel**  
**Growth in selected components of M2 in 2008**

Percent (s.a.a.r.)

	H1	Q3	Sept.	Oct. <sup>e</sup>
1. Total M2	7.2	3.6	15.6	17.1
2. Liquid deposits	7.4	3.7	20.1	1.0
3. Retail money funds	22.4	-5.5	-0.5	44.6
4. Small time	-1.4	9.3	17.6	52.8
5. Currency	0.9	6.8	6.7	20.5

e Estimated. [Return to table](#)

Source: Federal Reserve.

**Bottom-right panel**  
**Commercial bank lending to businesses**

A line chart shows two curves, "C&I loans" and "Other loans"<sup>\*</sup>, from July 2007 through October 15, 2008. Data are weekly, seasonally adjusted; unit is billions of dollars.

C&I loans started at about \$1.275 trillion in July 2007, rose steadily to about \$1.51 trillion by mid-September 2008, then increased more rapidly to just under \$1.6 trillion by October 15, 2008.

Other loans began in July 2007 at about \$475 billion, rose to about 575 by March 2008, declined to about 525 by mid-April, and fluctuated around that level until mid-September. It then rose on balance to just over \$590 billion by October 15, 2008.

<sup>\*</sup> Includes fed funds and RPs with entities other than banks and dealers and loans n.e.c.; the latter includes loans to nonbank financial institutions, banks abroad, and foreign governments. [Return to text](#)

Source: Calculated using data from Federal Reserve's H.8 release.

## **Top-left panel**

### **Changes in standards and terms for C&I loans**

A line chart shows two curves, Standards (black line) and Spreads (red line), on a quarterly basis from 1990:Q2 through October 2008. Unit is net percentage tightening.

The Standards curve shows the net percentage of banks that tightened lending standards. On net, over 50 percent of banks tightened standards on C&I loans in 1990. Smaller fractions of banks continued to tighten standards until about 1993, when the net fraction that tightened standards reached zero. Between 10 and 25 percent of banks, on net, eased standards every quarter from 1993 to the fourth quarter of 1995, and from the first quarter of 1996 to mid-1998 the net fraction of banks tightening standards hovered around 0. Standards tightened in the fourth quarter of 1998 for about 40 percent of banks, but the fraction dropped to about 10 percent of banks during the four quarters of 1999. The fraction rose considerably over the year 2000 and peaked at more than 50 percent early in 2001. It fluctuated around 50 percent until 2002, and standards continued to tighten, on net, but at a lower rate, until the end of 2003 when standards began to ease. In 2004 and 2005 about 20 percent of banks, on net, eased standards, and they continued to loosen standards at a lower rate until 2007. Beginning in the fourth quarter of 2007, large fractions of banks began to tighten standards on net; the fraction rose steeply through 2008 and reached above 80 percent of banks by October 2008.

The Spreads curve shows the net percentage of banks that widened spreads. In the second quarter of 1990, about 10 percent of banks had widened their spreads, on net. The net percentage of banks that reported wider spreads continued to increase until the first quarter of 1991 when about 50 percent of banks widened their spreads. The net percentage of banks that reported wider spreads declined more or less steadily until early 1993 when the net fraction reached zero. Banks began lowering spreads, such that over 50 percent of banks, on net, were lowering spreads by 1994. The net fraction of banks that lowered spreads declined gradually until late 1998, when about 25 percent were doing so. In the fourth quarter of 1998, about 50 percent of banks widened spreads. The net fraction widening spreads dropped to about 10 percent during the first quarter of 1999, but then began rising sharply, and it fluctuated between about 25 percent and about 50 percent from 2000 to 2002. Over the first half of 2003 the net percentage of banks widening spreads declined, and starting in the second half of the year an increasing fraction of banks began lowering spreads on net. The net fraction of banks lowering spreads reached 75 percent in 2005 and fluctuated between 25 percent and 70 percent until late 2007. Starting in the fourth quarter of 2007, the net fraction of banks that widened spreads began to increase substantially, with the fraction reaching almost 100 percent by October 2008.

As shown in the figure, shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research (NBER): 1990:Q3-1991:Q1 and 2001:Q1-2001:Q4.

## **Top-right panel**

### **Reasons for tightening credit conditions**

- Nearly all banks tightened in response to a less favorable economic outlook and a reduced tolerance for risk.
- About 40 percent of domestic banks tightened because of concerns about capital or liquidity.

## **Middle-left panel**

### **Changes in standards for CRE loans**

A line chart shows one curve, the net percentage of banks tightening lending standards on commercial real estate (CRE) loans, on a quarterly basis from 1990:Q2 through October 2008.

More than 50 percent of banks tightened lending standards on CRE loans in the second quarter of

1990. The net percentage of banks tightening standards on CRE loans diminished steadily until 1993 when no banks on net were tightening standards. Very few banks were changing their standards on net, between 1993 and the third quarter of 1998. In the fourth quarter of 1998, almost 50 percent of banks tightened on net. The fraction declined to about 10 percent in the first quarter of 1999 and then increased more or less steadily until it reached nearly 50 percent again in 2001. The net fraction tightening standards then declined steadily over 2002 until it reached 0 in the fourth quarter of 2003. Banks then began to ease standards, on net: The net fraction easing standards reached 25 percent in late 2004, and then smaller fractions eased standards until the fraction easing standards reached zero in late 2005. About 25 percent of banks, on net, tightened standards in most surveys conducted in 2006 and early 2007; the fraction spiked to about 75 percent late in 2007 and increased a little more through 2008.

As shown in the figure, shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research (NBER): 1990:Q3-1991:Q1 and 2001:Q1-2001:Q4.

### **Middle-right panel**

#### **Changes in standards for residential mortgages**

A line chart shows three curves, All (black line), Prime (red line), and Nontraditional (blue line), on a quarterly basis from 1990:Q2 through October 2008.

The All curve represents changes in standards on all residential mortgages and runs from 1990:Q2 to 2007:Q1. Starting in 1990:Q2, about 10 percent of banks tightened standards on net; the fraction increased to about 25 percent in the first quarter of 1991 and then declined to about 0 percent in the middle of 1992. After 1992, standards did not change for more than 10 percent of banks, on net, until the first quarter of 2007. Then in the first quarter of 2007, standards increased on all mortgages for about 10 percent of banks, on net.

Beginning in 2007:Q2, the data splits as banks were asked separately about prime mortgage customers and nontraditional mortgage customers. The Prime curve shows that about 10 percent of banks tightened standards on prime mortgages in 2007:Q2, and that the net fraction increased steeply over the rest of the period, reaching about 70 percent over the second half of 2008. The Nontraditional curve shows nontraditional mortgages: It increased more or less steadily from about 40 percent in 2007:Q2 to about 90 percent in 2008:Q4.

As shown in the figure, shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research (NBER): 1990:Q3-1991:Q1 and 2001:Q1-2001:Q4.

### **Bottom-left panel**

#### **Changes in standards for consumer loans**

A line chart shows three curves, "Credit card" (blue line), "Other consumer" (red line), and "Home equity" (black line), on a quarterly basis from 1996:Q2 through October 2008.

As shown in the figure, in 1996:Q2 about 25 percent of banks tightened standards on credit card loans. Between 1996:Q3 and 1997:Q3, standards on credit card loans tightened for about 40 percent of banks. Then the net fraction tightening standards fell consistently until it reached 0 percent in 2000, and it remained between 0 percent and 15 percent until 2003. Between 2004 and 2007, small net fractions of banks eased standards on credit card loans in most surveys. In late 2007, standards tightened for 10 percent of all banks, and the number of banks tightening standards on credit cards increased considerably in the first quarter before settling at around 50 percent to 65 percent of respondents in the final three quarters of 2008.

The net fraction of banks that tightened standards on other consumer loans fluctuated between 0

percent and about 10 percent between 1996 and the last quarter of 2003. From the beginning of 2004 to 2006, small net fractions of banks eased standards on other consumer loans. Toward the end of 2007, the net percentage of banks tightening standards on other loans began to increase sharply and it reached about 60 percent by the end of 2008.

In 2008:Q2, standards on home equity loans tightened for over 50 percent of banks. The percentage of banks tightening loans on net increased to about 75 percent in 2008:Q3 and 2008:Q4.

As shown in the figure, the shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research (NBER): 2001:Q1-2001:Q4.

**Bottom-right panel**  
**Reductions in existing credit card limits**

- 25 percent reported reducing limits for prime customers.
- 60 percent reported cutting limits for nonprime borrowers.
- Most important reasons were the less favorable economic outlook, reduced tolerance for risk, and the credit quality of individual customers.

**Exhibit 4**  
**Business Finance**

**Top-left panel**  
**Spreads on BBB-rated corporate bonds**

A line chart shows two curves, Financial and Nonfinancial, from July 2007 through October 27, 2008. Data are daily; unit is basis points.

As shown in the figure, spreads on BBB-rated bonds of financial corporations were at 200 basis points in July 2007. They rose steadily to about 400 basis points by early September then fell back to 300 basis points in mid-September through late-October. They then rose steadily to about 500 basis points by December 2007 and stayed at about that level until early March 2008. They climbed to almost 700 basis points in mid-March before declining to about 500 basis points in June. In July, they began to climb steadily, and they peaked at around 1000 basis points in mid-October, before declining to about 900 basis points by October 27, 2008.

Spreads on bonds of nonfinancial corporations were at about 100 basis points in July 2007 and rose slowly, on balance, to about 300 basis points by early March 2008. Spreads remained at that level through April, and they fell to just above 200 basis points in June 2008, followed by a slow rise to 300 basis points by mid-September. After the September FOMC meeting, spreads on nonfinancial bonds rose sharply, reaching more than 600 basis points by October 27, 2008.

Source: Merrill Lynch.

**Top-right panel**  
**Gross issuance of corporate bonds**

(Billions of dollars, monthly rate)

Nonfinancial			Financial
Date	Investment Grade	High Yield	



Date	Nonfinancial		Financial
	Investment Grade	High Yield	
1. 2007	17.5	7.5	151.7
2. 2008H1	24.9	3.1	66.0
3. 2008Q3	10.5	0.7	16.9
4. Oct. <sup>p</sup>	13.3	0.0	2.1

p Preliminary: Issuance through October 23. [Return to table](#)

Source: Securities Data Company.

## Middle-left panel

### 10-year AAA CMBS spreads over swaps

A line chart shows one curve, 10-year AAA CMBS spreads over swaps, from July 2007 through October 24, 2008. Data are weekly; unit is basis points.

As shown in the figure, spreads over swaps were at about 100 basis points in July 2007 and stayed around 100 basis points until October 2007 when they rose to 200 basis points. Spreads over swaps stayed around 200 basis points until mid-January 2008, but climbed steeply through February 2008 and rose to 400 basis points by mid-March. Over the time from March through May, spreads over swaps fell to about 200 basis points. Spreads over swaps rose fairly steadily beginning in late June and reached 400 basis points in late September. They jumped up to over 650 basis points on October 10, before decreasing to about 600 basis points on October 24.

Source: JPMorgan.

## Middle-right panel

### 2008Q3 corporate earnings

- S&P 500 earnings are expected to come in about 10 percent below year-ago levels.
- BHCs reported substantial writedowns and loss provisions necessitated by a widespread deterioration in credit quality.
- Earnings of nonfinancial companies are projected to rise about 12 percent.

## Bottom-left panel

### Revisions to analysts' earnings expectations for S&P 500

A line chart shows two curves, Financial (black line) and Nonfinancial (red line), on a monthly basis from January 2002 through October 2008. Unit is percent.

Revisions to expected earnings for financial firms in the S&P 500 declined from about zero at the beginning of 2002 to about negative 2 percent by the end of 2002 and then gradually increased to 0 percent by the end of 2003. Revisions stayed around 0 percent until August 2007. Revisions became deeply negative in late-2007, with expected earnings reduced by about 7.5 percent per month over the final months of 2007 and the first months of 2008. Revisions moved down further and averaged negative 12 percent over the third quarter of 2008.

The Nonfinancial curve shows year-ahead revisions to analysts' estimates for nonfinancial firms in the S&P 500. Revisions declined from about zero at the beginning of 2002 to about negative 4 percent by the end of 2002 and then gradually increased to 0 percent by the end of 2003. Revisions fluctuated around 0 percent until late 2008. They became negative 1 percent in September and

negative 6 percent in October 2008.

Note: Index is a weighted average of the percent change in the consensus forecasts of current-year and following-year EPS for a fixed sample.

Source: Thomson Financial.

### **Bottom-right panel**

#### **Equity premium**

A line chart shows one curve, equity premium, on a monthly basis from January 1984 to October 2008. Unit is percentage points.

As shown in the figure, the equity premium was nearly 6 percentage points in 1984 and trended down more or less steadily to around zero percent in 1999. The equity premium was negative, but nearly zero, for much of 1999, and the equity premium rose more or less steadily from that point to nearly four percentage points by the end of 2003. The premium fell to 2 percentage points by the end of 2004, but then began to rise again, reaching nearly 4 percent by the end of 2005. The equity premium stayed just below 4 percentage points until 2007 when it increased to about 5 percent. Then between September and October 2008 it jumped above 8 percentage points.

Note: The ratio of trend earnings to price for S&P 500 firms less the real perpetuity Treasury yield.

As shown in the figure, shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research (NBER): 1990:Q3-1991:Q1 and 2001:Q1-2001:Q4.

## **Exhibit 5 -Last Exhibit**

### **Household Finance**

#### **Top-left panel**

##### **Rate on conforming residential mortgages**

A line chart shows one curve, rate on conforming residential mortgages, on a weekly basis from July 2007 through October 22, 2008. Unit is percent.

As shown in the figure, the mortgage rate started at above 6.5 percent in July 2007 and declined more or less steadily until December 2007 to a bit less than 6.0 percent. In January 2008 the rate dropped for a time to below 5.5 percent before rising again in February to about 6.25 percent. The rate then declined some in March back below 6 percent and remained steady in April. Beginning in May the rate trended higher and reached 6.5 percent in August. From early August until late September the rate declined again to about 5.75 percent, and then rose again in October to almost 6.5 percent. The rate declined to about 6 percent on October 22, 2008.

Source: Freddie Mac.

#### **Top-right panel**

##### **Change in house prices and mortgage debt**

A line chart shows two curves, "Mortgage debt" (red line) and "OFHEO house prices" (black line), on a quarterly basis (seasonally adjusted annual rate) from 2000:Q1 through 2010:Q4. Unit is percent.

As shown in the figure, growth of mortgage debt runs between 8 and 15 percent from early 2000 to early 2006. In the fourth quarter of 2006, growth declines to 7½ percent and weakens further on balance through 2007. Mortgage debt decelerates to 2½ percent in the first quarter of 2008 and to

zero percent in the second quarter. Data beyond the second quarter of 2008 is projected, and it is denoted by a dotted line. In the third and fourth quarters of 2008, changes in mortgage debt are projected to be approximately zero. Mortgage debt for 2009 dips to around negative 1 percent and stays around that rate until the first quarter of 2010, after which it begins to increase gradually, reaching 3 percent in the fourth quarter.

Change in OFHEO house prices starts at around 7 percent in the first quarter of 2000. Price increases generally accelerate to around 9 percent by the fourth quarter of 2005, and then decelerate sharply. In the first quarter of 2006, the price increase slows to 7 percent, ebbs further to 4 percent in the second quarter, and then to between 2 percent and 3 percent from the third quarter of 2006 until the third quarter of 2007. Home prices drop 5 percent to 7 percent per quarter between the fourth quarter of 2007 and the third quarter of 2008. Data beyond the second quarter of 2008 is projected and is denoted by a dotted line. The forecast assumes that home prices continue to decline rapidly in 2009, bottoming at negative 9 percent over the first half of the year. Home prices decline further thorough 2010, but at a reduced rate.

Source: Flow of Funds Accounts and staff projections.

As shown in the figure, a shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research (NBER): 2001:Q1-2001:Q4.

### **Middle-left panel**

#### **Spreads on auto and credit card ABS**

A line chart shows two curves, "Credit cards" (black line) and "Autos" (red line), on a weekly basis from July 2007 through October 17, 2008. Unit is basis points.

As shown in the figure, spreads on asset backed securities for credit cards begins at around zero basis points for July 2007. Spreads increase to 25 basis points in late August, where they hover until mid November when they increase to about 50 basis points. Spreads stay at around 50 basis points until mid-February when they begin trending up steadily, reaching 110 basis points by the end of April. Spreads drop down to 65 basis points by the end of May, and they remain there until the end of June when they drop to around 50 basis points. Spreads stay at 50 basis points until the end of July when they begin increasing again and reach 160 basis points by the end of September. In mid-October 2008, spreads jump to 275 basis points.

Spreads on asset backed securities for autos begins in July 2007 at around zero basis points. Spreads increase to 25 basis points in August and stay at around 25 basis points until mid-November when they spike up to 75 basis points. Spreads stay at 75 basis points until mid-February 2008 when they begin rising steadily and reach 150 basis points in April 2008. Spreads on auto ABS decrease to 125 basis points in May and drop to 75 basis points in June, but begin increasing steeply at the end of July. Spreads increase to 170 basis points by the end of August, 250 basis points by the end of September, and 325 basis points in mid-October 2008.

Note: Spread of the interest rate on AAA-rated 2-year ABS over the 2-year swap rate.

Source: Citigroup Global Markets.

### **Middle-right panel**

#### **ABS issuance**

A stacked bar chart shows two series, ABS issuance for autos and credit cards at a monthly rate, for 2007:Q1 through 2008:Q3 and October 2008<sup>P</sup>. Unit is billions of dollars.

As shown in the figure, ABS issuance for autos was \$5.2 billion in 2007:Q1, \$8.8 billion in 2007:Q2,

\$6 billion in 2007:Q3, \$5.25 billion in 2007:Q4, \$3.5 billion in 2008:Q1, \$6.75 billion in 2008:Q2, \$2.5 billion in 2008:Q3, and \$0.2 billion in October 2008.

ABS issuance for credit cards was \$8.2 billion in 2007:Q1, \$7.5 billion in 2007:Q2, \$8.25 billion in 2007:Q3, \$7.9 billion in 2007:Q4, \$10 billion in 2008:Q1, \$7.1 billion in 2008:Q2, \$3.3 billion in 2008:Q3, and \$0 billion in October 2008.

p Preliminary: Issuance through October 17. [Return to text](#)

Source: Citigroup Global Markets.

### **Bottom-left panel**

#### **Change in consumer credit**

A line chart shows one curve, change in consumer credit, on a quarterly basis (seasonally adjusted annual rate) from 2000:Q1 to 2010:Q4. Unit is percent.

Growth in consumer credit starts at about 8¼ percent in the first quarter of 2000, and increases over the year to 13 percent in the fourth quarter. Over the four quarters of 2001, consumer credit decelerates sharply to about 4 percent in the third quarter, but bounces back above 10 percent by the end of the year. From 2002 through mid-2007, growth of consumer credit fluctuates between about 3 percent and about 7 percent. Consumer credit decelerates sharply to between about 4 and about 5 percent in late 2007 and early 2008. Data beyond the second quarter of 2008 is projected and is denoted by a dotted line. In the third quarter of 2008, consumer credit is projected to be about flat and it is expected to decrease about 1 percent in the fourth quarter. Consumer credit contracts at a 1½ percent rate in the first quarter of 2009, and a 1 percent rate in the second quarter, then holds flat in the third quarter. Growth increases over the remaining forecast period to about 4 percent in the fourth quarter of 2010.

Source: Flow of Funds Accounts and staff projections.

As shown in the figure, a shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research (NBER): 2001:Q1-2001:Q4.

### **Bottom-right panel**

#### **Summary**

- Despite modest improvement recently, pressures on financial firms and markets have increased.
- Those pressures led to concerns about the economic outlook and reduced tolerance for risk.
- The fall in asset prices and tightening of credit conditions have had substantial adverse effects.

## **Appendix 3: Materials used by Mr. Morin**

October 28, 2008

**Class II FOMC - Restricted (FR)**

### **Exhibit 1**

#### **The Near-term Projection**

### **Top-left panel**

#### **Real GDP**

Percent change, annual rate

Period	Current	September GB	Current Forecast	September GB Forecast
2008:H1	1.84	2.16	<a href="#">ND</a>	ND
2008:Q3	ND	ND	-1.04	0.59
2008:Q4	ND	ND	-1.29	1.08

Note. Semiannual figures are Q2/Q4 percent changes at an annual rate.

ND No data [Return to table](#)

**Top-right panel**  
**Initial Claims for Unemployment Insurance**

Thousands, four-week moving average

Period	Published	Staff adjusted <sup>1</sup>
8 January 2000	284.8	ND
15 January 2000	285.4	ND
22 January 2000	289.5	ND
29 January 2000	289.3	ND
5 February 2000	292.8	ND
12 February 2000	295.5	ND
19 February 2000	295.2	ND
26 February 2000	293.9	ND
4 March 2000	287.3	ND
11 March 2000	279.8	ND
18 March 2000	276.6	ND
25 March 2000	274.6	ND
1 April 2000	269.7	ND
8 April 2000	269.2	ND
15 April 2000	266.3	ND
22 April 2000	266.6	ND
29 April 2000	272.9	ND
6 May 2000	279.1	ND
13 May 2000	283.3	ND
20 May 2000	284.8	ND
27 May 2000	282.1	ND
3 June 2000	281.3	ND
10 June 2000	283.4	ND
17 June 2000	287.0	ND
24 June 2000	291.0	ND
1 July 2000	288.9	ND

<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
8 July 2000	291.1	ND
15 July 2000	293.5	ND
22 July 2000	294.5	ND
29 July 2000	298.7	ND
5 August 2000	301.9	ND
12 August 2000	304.9	ND
19 August 2000	309.2	ND
26 August 2000	312.6	ND
2 September 2000	311.5	ND
9 September 2000	309.9	ND
16 September 2000	308.3	ND
23 September 2000	302.4	ND
30 September 2000	300.2	ND
7 October 2000	300.0	ND
14 October 2000	297.2	ND
21 October 2000	298.9	ND
28 October 2000	301.1	ND
4 November 2000	306.7	ND
11 November 2000	311.4	ND
18 November 2000	320.5	ND
25 November 2000	334.4	ND
2 December 2000	336.0	ND
9 December 2000	336.8	ND
16 December 2000	342.3	ND
23 December 2000	344.1	ND
30 December 2000	348.0	ND
6 January 2001	352.0	ND
13 January 2001	343.1	ND
20 January 2001	337.9	ND
27 January 2001	340.2	ND
3 February 2001	349.8	ND
10 February 2001	361.5	ND
17 February 2001	365.3	ND
24 February 2001	371.2	ND
3 March 2001	373.3	ND
10 March 2001	380.0	ND
17 March 2001	388.7	ND

<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
24 March 2001	386.7	ND
31 March 2001	387.9	ND
7 April 2001	389.3	ND
14 April 2001	386.9	ND
21 April 2001	392.5	ND
28 April 2001	396.9	ND
5 May 2001	392.7	ND
12 May 2001	394.3	ND
19 May 2001	394.8	ND
26 May 2001	394.7	ND
2 June 2001	401.0	ND
9 June 2001	406.2	ND
16 June 2001	404.2	ND
23 June 2001	398.0	ND
30 June 2001	395.0	ND
7 July 2001	392.7	ND
14 July 2001	395.4	ND
21 July 2001	399.8	ND
28 July 2001	398.1	ND
4 August 2001	397.9	ND
11 August 2001	395.1	ND
18 August 2001	396.0	ND
25 August 2001	397.8	ND
1 September 2001	398.2	ND
8 September 2001	401.7	ND
15 September 2001	399.9	ND
22 September 2001	414.4	ND
29 September 2001	443.0	ND
6 October 2001	460.0	ND
13 October 2001	481.9	ND
20 October 2001	489.1	ND
27 October 2001	480.8	ND
3 November 2001	471.7	ND
10 November 2001	458.1	ND
17 November 2001	445.6	ND
24 November 2001	447.7	ND
1 December 2001	453.9	ND

<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
8 December 2001	445.3	ND
15 December 2001	434.7	ND
22 December 2001	415.8	ND
29 December 2001	404.9	ND
5 January 2002	405.9	ND
12 January 2002	413.0	ND
19 January 2002	410.2	ND
26 January 2002	408.6	ND
2 February 2002	410.3	ND
9 February 2002	405.2	ND
16 February 2002	403.3	ND
23 February 2002	399.2	ND
2 March 2002	396.1	ND
9 March 2002	396.5	ND
16 March 2002	395.1	ND
23 March 2002	399.3	ND
30 March 2002	421.0	ND
6 April 2002	432.5	ND
13 April 2002	445.0	ND
20 April 2002	445.3	ND
27 April 2002	429.0	ND
4 May 2002	420.2	ND
11 May 2002	413.1	ND
18 May 2002	411.9	ND
25 May 2002	409.3	ND
1 June 2002	401.4	ND
8 June 2002	394.9	ND
15 June 2002	391.0	ND
22 June 2002	387.2	ND
29 June 2002	389.2	ND
6 July 2002	390.2	ND
13 July 2002	387.3	ND
20 July 2002	385.1	ND
27 July 2002	386.2	ND
3 August 2002	385.3	ND
10 August 2002	386.5	ND
17 August 2002	391.6	ND



<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
24 August 2002	393.5	ND
31 August 2002	395.2	ND
7 September 2002	401.9	ND
14 September 2002	405.1	ND
21 September 2002	405.7	ND
28 September 2002	409.4	ND
5 October 2002	406.5	ND
12 October 2002	404.6	ND
19 October 2002	407.4	ND
26 October 2002	407.4	ND
2 November 2002	407.5	ND
9 November 2002	406.3	ND
16 November 2002	400.7	ND
23 November 2002	395.9	ND
30 November 2002	389.1	ND
7 December 2002	395.4	ND
14 December 2002	405.4	ND
21 December 2002	406.4	ND
28 December 2002	414.4	ND
4 January 2003	406.4	ND
11 January 2003	393.6	ND
18 January 2003	395.6	ND
25 January 2003	394.9	ND
1 February 2003	400.0	ND
8 February 2003	403.0	ND
15 February 2003	407.5	ND
22 February 2003	411.1	ND
1 March 2003	416.7	ND
8 March 2003	425.2	ND
15 March 2003	427.7	ND
22 March 2003	425.1	ND
29 March 2003	425.1	ND
5 April 2003	423.4	ND
12 April 2003	424.3	ND
19 April 2003	434.0	ND
26 April 2003	436.1	ND
3 May 2003	438.7	ND

<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
10 May 2003	434.5	ND
17 May 2003	428.5	ND
24 May 2003	422.1	ND
31 May 2003	422.9	ND
7 June 2003	426.0	ND
14 June 2003	425.0	ND
21 June 2003	422.4	ND
28 June 2003	421.8	ND
5 July 2003	422.7	ND
12 July 2003	420.5	ND
19 July 2003	419.2	ND
26 July 2003	411.4	ND
2 August 2003	403.5	ND
9 August 2003	401.4	ND
16 August 2003	400.1	ND
23 August 2003	398.4	ND
30 August 2003	399.8	ND
6 September 2003	404.2	ND
13 September 2003	403.4	ND
20 September 2003	400.4	ND
27 September 2003	395.4	ND
4 October 2003	386.6	ND
11 October 2003	382.0	ND
18 October 2003	384.0	ND
25 October 2003	382.0	ND
1 November 2003	376.1	ND
8 November 2003	374.9	ND
15 November 2003	370.5	ND
22 November 2003	364.3	ND
29 November 2003	363.0	ND
6 December 2003	362.1	ND
13 December 2003	360.4	ND
20 December 2003	360.5	ND
27 December 2003	358.5	ND
3 January 2004	355.0	ND
10 January 2004	352.4	ND
17 January 2004	354.8	ND

<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
24 January 2004	355.8	ND
31 January 2004	361.6	ND
7 February 2004	368.9	ND
14 February 2004	367.0	ND
21 February 2004	369.0	ND
28 February 2004	361.9	ND
6 March 2004	352.6	ND
13 March 2004	348.7	ND
20 March 2004	345.3	ND
27 March 2004	344.1	ND
3 April 2004	342.0	ND
10 April 2004	345.7	ND
17 April 2004	349.6	ND
24 April 2004	348.7	ND
1 May 2004	345.8	ND
8 May 2004	339.4	ND
15 May 2004	335.7	ND
22 May 2004	336.3	ND
29 May 2004	338.9	ND
5 June 2004	345.1	ND
12 June 2004	342.6	ND
19 June 2004	345.4	ND
26 June 2004	348.8	ND
3 July 2004	341.2	ND
10 July 2004	341.9	ND
17 July 2004	341.7	ND
24 July 2004	341.6	ND
31 July 2004	346.3	ND
7 August 2004	345.2	ND
14 August 2004	340.0	ND
21 August 2004	338.3	ND
28 August 2004	340.5	ND
4 September 2004	337.8	ND
11 September 2004	337.5	ND
18 September 2004	337.8	ND
25 September 2004	338.2	ND
2 October 2004	340.8	ND

<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
9 October 2004	342.5	ND
16 October 2004	338.5	ND
23 October 2004	334.6	ND
30 October 2004	333.5	ND
6 November 2004	331.6	ND
13 November 2004	334.4	ND
20 November 2004	328.5	ND
27 November 2004	329.4	ND
4 December 2004	333.1	ND
11 December 2004	327.8	ND
18 December 2004	330.3	ND
25 December 2004	326.2	ND
1 January 2005	327.4	ND
8 January 2005	337.9	ND
15 January 2005	340.4	ND
22 January 2005	343.3	ND
29 January 2005	338.7	ND
5 February 2005	326.4	ND
12 February 2005	319.9	ND
19 February 2005	317.8	ND
26 February 2005	314.1	ND
5 March 2005	320.5	ND
12 March 2005	325.2	ND
19 March 2005	328.2	ND
26 March 2005	335.5	ND
2 April 2005	337.2	ND
9 April 2005	336.2	ND
16 April 2005	330.4	ND
23 April 2005	323.4	ND
30 April 2005	322.0	ND
7 May 2005	323.1	ND
14 May 2005	326.3	ND
21 May 2005	327.1	ND
28 May 2005	327.9	ND
4 June 2005	330.5	ND
11 June 2005	332.9	ND
18 June 2005	333.2	ND

<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
25 June 2005	326.2	ND
2 July 2005	323.1	ND
9 July 2005	322.5	ND
16 July 2005	321.9	ND
23 July 2005	323.8	ND
30 July 2005	322.1	ND
6 August 2005	317.8	ND
13 August 2005	317.8	ND
20 August 2005	316.9	ND
27 August 2005	316.7	ND
3 September 2005	320.4	ND
10 September 2005	345.9	ND
17 September 2005	373.3	ND
24 September 2005	384.3	ND
1 October 2005	399.0	ND
8 October 2005	388.9	ND
15 October 2005	369.3	ND
22 October 2005	359.7	ND
29 October 2005	343.5	ND
5 November 2005	329.3	ND
12 November 2005	320.1	ND
19 November 2005	320.2	ND
26 November 2005	316.7	ND
3 December 2005	315.9	ND
10 December 2005	320.1	ND
17 December 2005	317.4	ND
24 December 2005	319.8	ND
31 December 2005	314.3	ND
7 January 2006	311.0	ND
14 January 2006	303.9	ND
21 January 2006	297.0	ND
28 January 2006	292.7	ND
4 February 2006	286.8	ND
11 February 2006	289.7	ND
18 February 2006	289.0	ND
25 February 2006	292.2	ND
4 March 2006	295.4	ND

<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
11 March 2006	298.3	ND
18 March 2006	303.4	ND
25 March 2006	304.3	ND
1 April 2006	303.4	ND
8 April 2006	300.8	ND
15 April 2006	299.2	ND
22 April 2006	300.8	ND
29 April 2006	307.0	ND
6 May 2006	318.5	ND
13 May 2006	327.8	ND
20 May 2006	331.5	ND
27 May 2006	332.6	ND
3 June 2006	323.0	ND
10 June 2006	313.0	ND
17 June 2006	310.6	ND
24 June 2006	306.1	ND
1 July 2006	308.6	ND
8 July 2006	316.3	ND
15 July 2006	317.1	ND
22 July 2006	316.0	ND
29 July 2006	316.2	ND
5 August 2006	314.4	ND
12 August 2006	314.8	ND
19 August 2006	317.8	ND
26 August 2006	317.4	ND
2 September 2006	316.6	ND
9 September 2006	316.4	ND
16 September 2006	318.6	ND
23 September 2006	320.7	ND
30 September 2006	319.4	ND
7 October 2006	319.9	ND
14 October 2006	314.8	ND
21 October 2006	311.9	ND
28 October 2006	316.1	ND
4 November 2006	316.5	ND
11 November 2006	318.9	ND
18 November 2006	322.1	ND

<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
25 November 2006	326.0	ND
2 December 2006	328.1	ND
9 December 2006	327.6	ND
16 December 2006	326.0	ND
23 December 2006	319.8	ND
30 December 2006	320.7	ND
6 January 2007	321.1	ND
13 January 2007	315.7	ND
20 January 2007	320.2	ND
27 January 2007	314.9	ND
3 February 2007	313.5	ND
10 February 2007	322.4	ND
17 February 2007	318.9	ND
24 February 2007	322.4	ND
3 March 2007	324.8	ND
10 March 2007	318.4	ND
17 March 2007	315.8	ND
24 March 2007	311.5	ND
31 March 2007	311.3	ND
7 April 2007	316.3	ND
14 April 2007	321.1	ND
21 April 2007	323.7	ND
28 April 2007	321.3	ND
5 May 2007	313.7	ND
12 May 2007	306.0	ND
19 May 2007	304.6	ND
26 May 2007	304.9	ND
2 June 2007	308.5	ND
9 June 2007	311.5	ND
16 June 2007	314.9	ND
23 June 2007	316.0	ND
30 June 2007	318.5	ND
7 July 2007	316.2	ND
14 July 2007	312.4	ND
21 July 2007	310.7	ND
28 July 2007	308.6	ND
4 August 2007	312.1	ND

<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
11 August 2007	315.6	ND
18 August 2007	320.1	ND
25 August 2007	324.9	ND
1 September 2007	325.3	ND
8 September 2007	325.0	ND
15 September 2007	323.2	ND
22 September 2007	317.3	ND
29 September 2007	318.4	ND
6 October 2007	317.0	ND
13 October 2007	321.8	ND
20 October 2007	327.9	ND
27 October 2007	330.0	ND
3 November 2007	331.9	ND
10 November 2007	332.0	ND
17 November 2007	331.9	ND
24 November 2007	336.1	ND
1 December 2007	340.1	ND
8 December 2007	339.8	ND
15 December 2007	343.8	ND
22 December 2007	344.9	ND
29 December 2007	344.6	ND
5 January 2008	342.8	ND
12 January 2008	334.5	ND
19 January 2008	327.1	ND
26 January 2008	333.9	ND
2 February 2008	339.2	ND
9 February 2008	345.0	ND
16 February 2008	349.6	ND
23 February 2008	347.8	ND
1 March 2008	346.0	ND
8 March 2008	348.2	ND
15 March 2008	356.4	ND
22 March 2008	359.3	ND
29 March 2008	374.7	ND
5 April 2008	376.6	ND
12 April 2008	376.6	ND
19 April 2008	370.1	ND



<b>Period</b>	<b>Published</b>	<b>Staff adjusted<sup>1</sup></b>
26 April 2008	364.3	ND
3 May 2008	367.3	ND
10 May 2008	367.2	ND
17 May 2008	372.9	ND
24 May 2008	371.2	ND
31 May 2008	369.0	ND
7 June 2008	372.0	ND
14 June 2008	376.1	ND
21 June 2008	379.3	ND
28 June 2008	390.5	ND
5 July 2008	381.1	380.0
12 July 2008	377.9	ND
19 July 2008	381.7	ND
26 July 2008	393.0	ND
2 August 2008	420.1	ND
9 August 2008	438.1	440.0
16 August 2008	446.3	ND
23 August 2008	441.4	ND
30 August 2008	439.9	ND
6 September 2008	440.1	ND
13 September 2008	445.6	436.2
20 September 2008	462.3	433.5
27 September 2008	474.3	441.6
4 October 2008	483.2	461.5
11 October 2008	484.6	451.0
18 October 2008	480.1	463.8

**Change in  
Private Payroll Emp.<sup>2</sup>**

	<b>Sept.</b>	<b>Oct.</b>
Current	-168	-227
<i>Sept. GB</i>	<i>(-147)</i>	<i>(-83)</i>

1. Adjusted for hurricanes and EUC effects. [Return to table](#)

2. Thousands of employees. [Return to table](#)

**Middle-left panel  
Sales of Light Vehicles**

Millions of units, annual rate

Period	Sales
January 2006	17.54
February 2006	16.48
March 2006	16.53
April 2006	16.68
May 2006	16.26
June 2006	16.29
July 2006	17.04
August 2006	16.11
September 2006	16.49
October 2006	16.20
November 2006	15.98
December 2006	16.71
January 2007	16.32
February 2007	16.46
March 2007	16.20
April 2007	16.27
May 2007	16.28
June 2007	15.69
July 2007	15.42
August 2007	16.21
September 2007	16.11
October 2007	15.97
November 2007	16.01
December 2007	15.94
January 2008	15.30
February 2008	15.29
March 2008	15.04
April 2008	14.46
May 2008	14.21
June 2008	13.63
July 2008	12.51
August 2008	13.69
September 2008	12.46

Millions of units, annual rate

Period      Quarterly averages      Staff forecast

Period	Quarterly averages	Staff forecast
2006:Q1	16.85	ND
2006:Q2	16.41	ND
2006:Q3	16.55	ND
2006:Q4	16.30	ND
2007:Q1	16.33	ND
2007:Q2	16.08	ND
2007:Q3	15.92	ND
2007:Q4	15.97	ND
2008:Q1	15.21	ND
2008:Q2	14.10	ND
2008:Q3	12.89	ND
2008:Q4	ND	12.17

### Middle-right panel

#### Real PCE Ex. Motor Vehicles

Three-month percent change, annual rate

Period	Current	September GB
July 2007	2.77	ND
August 2007	2.95	ND
September 2007	1.65	ND
October 2007	-0.13	ND
November 2007	1.61	ND
December 2007	1.64	ND
January 2008	2.85	ND
February 2008	-0.17	ND
March 2008	1.60	1.60
April 2008	1.66	1.80
May 2008	3.62	4.06
June 2008	1.42	2.43
July 2008	-0.53	0.43
August 2008	-2.86	-0.47
September 2008 <sup>1</sup>	-2.94	-0.43

Total Real PCE

2008 <sup>2</sup>

Q3    Q4

2008 2

**Q3      Q4**

Current	-3.3	-2.4
<i>Sept. GB</i>	<i>(-.5)</i>	<i>(-1.6)</i>

1. Sept. is based on retail sales for September and the staff forecast for PCE services. [Return to table](#)

2. Percent changes, annual rate. [Return to table](#)

## Bottom-left panel

### Single-Family Housing Starts

Millions of units, annual rate

Period	Starts
July 2001	1.298
August 2001	1.286
September 2001	1.243
October 2001	1.240
November 2001	1.244
December 2001	1.285
January 2002	1.307
February 2002	1.491
March 2002	1.284
April 2002	1.275
May 2002	1.389
June 2002	1.359
July 2002	1.329
August 2002	1.249
September 2002	1.449
October 2002	1.366
November 2002	1.403
December 2002	1.462
January 2003	1.537
February 2003	1.301
March 2003	1.399
April 2003	1.374
May 2003	1.391
June 2003	1.513
July 2003	1.535
August 2003	1.484

Period	Starts
September 2003	1.555
October 2003	1.631
November 2003	1.694
December 2003	1.647
January 2004	1.560
February 2004	1.481
March 2004	1.632
April 2004	1.646
May 2004	1.652
June 2004	1.526
July 2004	1.675
August 2004	1.691
September 2004	1.555
October 2004	1.660
November 2004	1.458
December 2004	1.714
January 2005	1.739
February 2005	1.792
March 2005	1.583
April 2005	1.658
May 2005	1.714
June 2005	1.719
July 2005	1.724
August 2005	1.728
September 2005	1.789
October 2005	1.740
November 2005	1.808
December 2005	1.628
January 2006	1.823
February 2006	1.804
March 2006	1.601
April 2006	1.511
May 2006	1.570
June 2006	1.451
July 2006	1.424
August 2006	1.364
September 2006	1.384

Period	Starts
October 2006	1.212
November 2006	1.290
December 2006	1.249
January 2007	1.106
February 2007	1.188
March 2007	1.196
April 2007	1.198
May 2007	1.146
June 2007	1.136
July 2007	1.055
August 2007	0.968
September 2007	0.936
October 2007	0.884
November 2007	0.816
December 2007	0.779
January 2008	0.750
February 2008	0.722
March 2008	0.711
April 2008	0.681
May 2008	0.682
June 2008	0.663
July 2008	0.644
August 2008	0.618
September 2008	0.544

## Bottom-right panel

### Business Activity

Diffusion index

Period	New York Fed	Philadelphia Fed
July 2001	-13.14	-12.5
August 2001	-8.86	-18.0
September 2001	-9.66	-7.9
October 2001	-18.38	-23.2
November 2001	-19.56	-17.5
December 2001	-4.37	-10.7
January 2002	6.91	9.5
February 2002	15.09	11.0

<b>Period</b>	<b>New York Fed</b>	<b>Philadelphia Fed</b>
March 2002	6.54	12.0
April 2002	17.21	12.3
May 2002	9.53	10.2
June 2002	10.76	20.3
July 2002	-1.71	6.0
August 2002	7.41	-0.8
September 2002	7.91	4.8
October 2002	-5.99	-7.1
November 2002	5.18	7.5
December 2002	6.53	8.0
January 2003	13.21	3.6
February 2003	-2.68	-1.6
March 2003	-0.46	-4.3
April 2003	-16.47	-7.3
May 2003	12.74	-0.5
June 2003	26.74	3.7
July 2003	19.45	7.7
August 2003	15.36	21.6
September 2003	21.24	21.3
October 2003	36.76	28.9
November 2003	34.43	27.1
December 2003	30.93	27.7
January 2004	36.85	33.5
February 2004	37.16	28.0
March 2004	26.43	29.0
April 2004	37.54	31.1
May 2004	34.61	29.1
June 2004	27.65	30.7
July 2004	35.02	34.6
August 2004	15.98	27.4
September 2004	29.14	20.0
October 2004	24.61	28.0
November 2004	15.44	19.7
December 2004	24.30	27.5
January 2005	19.53	9.7
February 2005	15.95	20.8
March 2005	19.03	13.8

<b>Period</b>	<b>New York Fed</b>	<b>Philadelphia Fed</b>
April 2005	8.37	23.3
May 2005	-6.11	9.2
June 2005	7.54	-1.1
July 2005	23.71	8.2
August 2005	24.65	15.2
September 2005	18.29	7.6
October 2005	12.40	6.0
November 2005	17.78	10.7
December 2005	25.18	15.3
January 2006	20.62	1.7
February 2006	18.70	13.5
March 2006	29.21	12.7
April 2006	20.03	11.2
May 2006	18.04	13.5
June 2006	25.85	11.9
July 2006	16.10	4.3
August 2006	14.24	17.9
September 2006	16.45	0.6
October 2006	19.73	3.5
November 2006	22.07	5.0
December 2006	21.85	1.4
January 2007	10.25	3.6
February 2007	21.30	0.3
March 2007	6.63	0.2
April 2007	7.00	-0.8
May 2007	10.10	4.1
June 2007	23.48	17.7
July 2007	25.73	6.9
August 2007	25.18	5.7
September 2007	15.88	9.2
October 2007	27.33	8.4
November 2007	24.05	7.5
December 2007	9.80	-1.6
January 2008	9.03	-20.9
February 2008	-11.72	-24.0
March 2008	-22.23	-17.4
April 2008	0.63	-24.9



Period	New York Fed	Philadelphia Fed
May 2008	-3.23	-15.6
June 2008	-8.68	-17.1
July 2008	-4.92	-16.3
August 2008	2.77	-12.7
September 2008	-7.41	3.8
October 2008	-24.62	-37.5

## Exhibit 2

### Conventional Background Factors

#### Top-left panel

#### Wilshire 5000

Index, ratio scale

Period	Current	September GB	Forecast
2005:Q1	11638	ND	ND
2005:Q2	11877	ND	ND
2005:Q3	12289	ND	ND
2005:Q4	12518	ND	ND
2006:Q1	13155	ND	ND
2006:Q2	12849	ND	ND
2006:Q3	13346	ND	ND
2006:Q4	14258	ND	ND
2007:Q1	14409	ND	ND
2007:Q2	15211	ND	ND
2007:Q3	15362	ND	ND
2007:Q4	14820	ND	ND
2008:Q1	13332	ND	ND
2008:Q2	13074	13074	ND
2008:Q3	11875	12535	ND
2008:Q4	9790	12780	ND
2009:Q1	ND	13145	10025
2009:Q2	ND	13610	10265
2009:Q3	ND	14095	10605
2009:Q4	ND	14595	10960
2010:Q1	ND	15015	11325
2010:Q2	ND	15445	11700
2010:Q3	ND	15745	11980

Period	Current	September GB	Forecast
2010:Q4	ND	16050	12270

Top-right panel

Wealth-to-Income Ratio

Ratio

Period	Current	September GB	Forecast
2005:Q1	5.466	ND	ND
2005:Q2	5.507	ND	ND
2005:Q3	5.596	ND	ND
2005:Q4	5.580	ND	ND
2006:Q1	5.648	ND	ND
2006:Q2	5.600	ND	ND
2006:Q3	5.619	ND	ND
2006:Q4	5.694	ND	ND
2007:Q1	5.669	ND	ND
2007:Q2	5.754	ND	ND
2007:Q3	5.746	ND	ND
2007:Q4	5.613	ND	ND
2008:Q1	5.410	ND	ND
2008:Q2	5.176	5.175	ND
2008:Q3	5.060	5.131	ND
2008:Q4	4.822	5.136	ND
2009:Q1	ND	5.059	4.755
2009:Q2	ND	5.031	4.716
2009:Q3	ND	5.015	4.698
2009:Q4	ND	4.998	4.671
2010:Q1	ND	4.968	4.648
2010:Q2	ND	4.965	4.650
2010:Q3	ND	4.936	4.628
2010:Q4	ND	4.917	4.615

Middle-left panel

Baa Corporate Bond Rate

Percent

Period	Current	September GB	Forecast
2005:Q1	5.97	ND	ND
2005:Q2	5.97	ND	ND

Period	Current	September GB	Forecast
2005:Q3	5.98	ND	ND
2005:Q4	6.34	ND	ND
2006:Q1	6.31	ND	ND
2006:Q2	6.74	ND	ND
2006:Q3	6.59	ND	ND
2006:Q4	6.28	ND	ND
2007:Q1	6.30	ND	ND
2007:Q2	6.49	ND	ND
2007:Q3	6.63	ND	ND
2007:Q4	6.51	ND	ND
2008:Q1	6.75	ND	ND
2008:Q2	6.99	6.99	ND
2008:Q3	7.21	7.10	ND
2008:Q4	9.05	6.95	ND
2009:Q1	ND	6.90	8.65
2009:Q2	ND	6.80	8.25
2009:Q3	ND	6.65	7.95
2009:Q4	ND	6.45	7.65
2010:Q1	ND	6.40	7.40
2010:Q2	ND	6.30	7.20
2010:Q3	ND	6.25	7.00
2010:Q4	ND	6.15	6.80

**Middle-right panel**  
**Broad Real Dollar Index**

Index

Period	Current	September GB	Forecast
2005:Q1	91.84	ND	ND
2005:Q2	93.01	ND	ND
2005:Q3	94.00	ND	ND
2005:Q4	95.06	ND	ND
2006:Q1	93.63	ND	ND
2006:Q2	92.48	ND	ND
2006:Q3	92.40	ND	ND
2006:Q4	91.05	ND	ND
2007:Q1	91.01	ND	ND
2007:Q2	89.19	ND	ND

Period	Current	September GB	Forecast
2007:Q3	87.36	ND	ND
2007:Q4	84.47	ND	ND
2008:Q1	82.70	ND	ND
2008:Q2	81.28	81.29	ND
2008:Q3	83.44	83.52	ND
2008:Q4	89.94	84.77	ND
2009:Q1	ND	84.27	89.45
2009:Q2	ND	83.86	88.79
2009:Q3	ND	83.43	88.13
2009:Q4	ND	82.95	87.47
2010:Q1	ND	82.42	86.69
2010:Q2	ND	81.86	85.86
2010:Q3	ND	81.28	85.00
2010:Q4	ND	80.69	84.12

**Bottom-left panel**  
**West Texas Intermediate Spot Price**

Dollars per barrel

Period	Current	September GB	Forecast
January 2005	46.84	ND	ND
February 2005	47.97	ND	ND
March 2005	54.22	ND	ND
April 2005	53.04	ND	ND
May 2005	49.83	ND	ND
June 2005	56.40	ND	ND
July 2005	58.70	ND	ND
August 2005	64.97	ND	ND
September 2005	65.57	ND	ND
October 2005	62.36	ND	ND
November 2005	58.30	ND	ND
December 2005	59.43	ND	ND
January 2006	65.51	ND	ND
February 2006	61.63	ND	ND
March 2006	62.87	ND	ND
April 2006	69.69	ND	ND
May 2006	70.94	ND	ND
June 2006	70.96	ND	ND

<b>Period</b>	<b>Current</b>	<b>September GB</b>	<b>Forecast</b>
July 2006	74.41	ND	ND
August 2006	73.05	ND	ND
September 2006	63.87	ND	ND
October 2006	58.89	ND	ND
November 2006	59.15	ND	ND
December 2006	62.06	ND	ND
January 2007	54.23	ND	ND
February 2007	59.26	ND	ND
March 2007	60.56	ND	ND
April 2007	63.96	ND	ND
May 2007	63.46	ND	ND
June 2007	67.48	ND	ND
July 2007	74.12	ND	ND
August 2007	72.39	ND	ND
September 2007	79.93	ND	ND
October 2007	85.93	ND	ND
November 2007	94.62	ND	ND
December 2007	91.70	ND	ND
January 2008	92.95	ND	ND
February 2008	95.36	ND	ND
March 2008	105.42	ND	ND
April 2008	112.33	ND	ND
May 2008	125.39	ND	ND
June 2008	133.93	ND	ND
July 2008	133.44	ND	ND
August 2008	116.70	116.70	ND
September 2008	103.88	104.39	ND
October 2008	78.40	103.26	ND
November 2008	70.89	103.36	ND
December 2008	ND	103.74	72.30
January 2009	ND	104.15	72.64
February 2009	ND	104.56	73.13
March 2009	ND	104.96	73.61
April 2009	ND	105.32	74.13
May 2009	ND	105.62	74.66
June 2009	ND	105.88	75.19
July 2009	ND	106.09	75.70

Period	Current	September GB	Forecast
August 2009	ND	106.26	76.21
September 2009	ND	106.39	76.74
October 2009	ND	106.49	77.28
November 2009	ND	106.57	77.83
December 2009	ND	106.64	78.38
January 2010	ND	106.70	78.91
February 2010	ND	106.76	79.42
March 2010	ND	106.80	79.93
April 2010	ND	106.82	80.40
May 2010	ND	106.83	80.85
June 2010	ND	106.84	81.27
July 2010	ND	106.85	81.68
August 2010	ND	106.86	82.08
September 2010	ND	106.87	82.48
October 2010	ND	106.88	82.83
November 2010	ND	106.89	83.16
December 2010	ND	106.90	83.46

### Bottom-right panel

#### Summary

- These background factors exert a considerable drag on activity through conventional wealth, cost-of-capital, and terms-of-trade channels
- These effects likely understate the fallout on real activity from financial turmoil
- We use supplementary analyses to try to account for credit-channel effects

## Exhibit 3

### Judgmental Effects of Financial Market Turmoil

#### Top-left panel

#### Nine-Variable Financial Stress Index

1994 = 100

Period	Financial Stress Index
January 1990	104.97
February 1990	104.45
March 1990	103.54
April 1990	103.31
May 1990	102.47

Period	Financial Stress Index
June 1990	102.49
July 1990	103.75
August 1990	106.78
September 1990	106.74
October 1990	107.87
November 1990	106.77
December 1990	107.58
January 1991	108.84
February 1991	104.83
March 1991	102.67
April 1991	102.64
May 1991	103.39
June 1991	103.00
July 1991	101.29
August 1991	101.00
September 1991	101.32
October 1991	102.49
November 1991	103.25
December 1991	104.16
January 1992	103.78
February 1992	102.13
March 1992	100.48
April 1992	100.46
May 1992	100.17
June 1992	100.01
July 1992	101.08
August 1992	102.87
September 1992	103.93
October 1992	105.38
November 1992	102.40
December 1992	100.21
January 1993	101.29
February 1993	102.35
March 1993	102.90
April 1993	102.40
May 1993	100.86
June 1993	99.52

Period	Financial Stress Index
July 1993	99.20
August 1993	100.23
September 1993	101.40
October 1993	100.92
November 1993	100.48
December 1993	99.00
January 1994	99.62
February 1994	100.18
March 1994	101.62
April 1994	102.76
May 1994	101.97
June 1994	101.74
July 1994	101.61
August 1994	100.59
September 1994	100.53
October 1994	99.96
November 1994	100.19
December 1994	100.91
January 1995	100.50
February 1995	100.09
March 1995	100.76
April 1995	100.78
May 1995	101.94
June 1995	104.27
July 1995	104.04
August 1995	102.96
September 1995	102.98
October 1995	103.32
November 1995	103.56
December 1995	103.05
January 1996	103.54
February 1996	103.42
March 1996	103.77
April 1996	103.07
May 1996	101.42
June 1996	101.29
July 1996	101.50



Period	Financial Stress Index
August 1996	100.98
September 1996	101.22
October 1996	101.67
November 1996	101.18
December 1996	101.17
January 1997	101.37
February 1997	101.11
March 1997	100.79
April 1997	100.55
May 1997	99.53
June 1997	100.12
July 1997	100.62
August 1997	101.35
September 1997	101.05
October 1997	102.65
November 1997	103.65
December 1997	102.29
January 1998	103.55
February 1998	102.68
March 1998	101.92
April 1998	102.10
May 1998	101.80
June 1998	101.91
July 1998	101.87
August 1998	104.09
September 1998	110.26
October 1998	115.66
November 1998	110.31
December 1998	109.19
January 1999	109.43
February 1999	107.41
March 1999	106.31
April 1999	105.27
May 1999	104.67
June 1999	104.38
July 1999	104.80
August 1999	106.28

Period	Financial Stress Index
September 1999	106.76
October 1999	107.46
November 1999	105.52
December 1999	104.67
January 2000	103.94
February 2000	104.46
March 2000	105.13
April 2000	106.69
May 2000	106.39
June 2000	107.05
July 2000	107.03
August 2000	106.31
September 2000	106.48
October 2000	107.46
November 2000	106.78
December 2000	109.19
January 2001	109.59
February 2001	108.47
March 2001	109.63
April 2001	107.91
May 2001	106.86
June 2001	107.16
July 2001	106.82
August 2001	106.94
September 2001	109.99
October 2001	108.83
November 2001	107.94
December 2001	108.32
January 2002	107.23
February 2002	106.30
March 2002	105.14
April 2002	105.23
May 2002	105.15
June 2002	106.68
July 2002	109.94
August 2002	112.53
September 2002	113.81

Period	Financial Stress Index
October 2002	115.41
November 2002	112.28
December 2002	110.86
January 2003	109.98
February 2003	110.20
March 2003	110.03
April 2003	107.82
May 2003	105.97
June 2003	106.21
July 2003	106.57
August 2003	108.24
September 2003	107.14
October 2003	107.47
November 2003	106.11
December 2003	105.29
January 2004	105.03
February 2004	104.32
March 2004	104.26
April 2004	105.17
May 2004	105.10
June 2004	102.96
July 2004	103.11
August 2004	103.54
September 2004	102.23
October 2004	102.22
November 2004	101.52
December 2004	101.12
January 2005	100.90
February 2005	100.12
March 2005	100.33
April 2005	101.02
May 2005	101.06
June 2005	100.67
July 2005	101.16
August 2005	100.90
September 2005	101.32
October 2005	102.18

<b>Period</b>	<b>Financial Stress Index</b>
November 2005	101.96
December 2005	101.34
January 2006	101.16
February 2006	100.76
March 2006	101.09
April 2006	101.04
May 2006	101.47
June 2006	101.65
July 2006	101.74
August 2006	100.98
September 2006	100.90
October 2006	100.42
November 2006	100.12
December 2006	100.26
January 2007	100.10
February 2007	100.12
March 2007	102.38
April 2007	101.38
May 2007	100.37
June 2007	101.85
July 2007	103.41
August 2007	107.78
September 2007	107.32
October 2007	105.44
November 2007	109.81
December 2007	111.29
January 2008	113.11
February 2008	114.97
March 2008	117.62
April 2008	112.74
May 2008	111.12
June 2008	112.86
July 2008	113.99
August 2008	113.05
September 2008	118.55
October 2008	129.43

Note. Index constructed using risk spreads, volatility measures, and liquidity measures.

Top-right panel

Index of Change in Bank Credit Standards

Period	Net percent of loans
1990:Q2	21.05
1990:Q3	54.76
1990:Q4	45.48
1991:Q1	32.02
1991:Q2	29.70
1991:Q3	14.05
1991:Q4	0.20
1992:Q1	-0.05
1992:Q2	6.51
1992:Q3	-0.52
1992:Q4	1.54
1993:Q1	-7.80
1993:Q2	-21.67
1993:Q3	-14.75
1993:Q4	-13.99
1994:Q1	-13.52
1994:Q2	-6.10
1994:Q3	-16.91
1994:Q4	-10.06
1995:Q1	-15.97
1995:Q2	-5.24
1995:Q3	2.59
1995:Q4	1.19
1996:Q1	3.69
1996:Q2	10.53
1996:Q3	11.33
1996:Q4	3.09
1997:Q1	-1.09
1997:Q2	-1.21
1997:Q3	0.45
1997:Q4	1.60
1998:Q1	-5.99
1998:Q2	3.96
1998:Q3	34.18
1998:Q4	8.79

Period	Net percent of loans
1999:Q1	8.54
1999:Q2	3.78
1999:Q3	4.94
1999:Q4	3.92
2000:Q1	7.12
2000:Q2	20.94
2000:Q3	32.74
2000:Q4	42.40
2001:Q1	31.01
2001:Q2	25.71
2001:Q3	42.11
2001:Q4	31.34
2002:Q1	16.28
2002:Q2	18.21
2002:Q3	16.73
2002:Q4	15.85
2003:Q1	9.12
2003:Q2	0.66
2003:Q3	-3.69
2003:Q4	-11.44
2004:Q1	-14.16
2004:Q2	-16.53
2004:Q3	-15.50
2004:Q4	-19.94
2005:Q1	-19.90
2005:Q2	-12.21
2005:Q3	-12.17
2005:Q4	-6.06
2006:Q1	-16.60
2006:Q2	-19.91
2006:Q3	-0.48
2006:Q4	8.56
2007:Q1	5.48
2007:Q2	22.86
2007:Q3	57.13
2007:Q4	65.60
2008:Q1	76.70

Period	Net percent of loans
2008:Q2	80.49
2008:Q3 (Oct.)	87.95

Note. Derived from the Senior Loan Officer Opinion Survey.

### Middle-left panel

### Financial Turmoil: Cumulative Effect on the Level of Real GDP

Percent

Year	Staff judgment	September GB	Lower end of range of model-based estimates (Oct. GB)	Upper end of range of model-based estimates (Oct. GB)
2007	-0.3	-0.3	-0.4	0.0
2008	-2.8	-1.8	-2.9	-0.8
2009	-3.8	-2.0	-4.3	-3.0
2010	-2.5	-1.3	-6.2	-2.2

Note. Percent deviation from Q4 baseline level.

### Middle-right panel

### Federal Funds Rate

Percent

Period	Current	September GB	Forecast
2005:Q1	2.45	ND	ND
2005:Q2	2.94	ND	ND
2005:Q3	3.40	ND	ND
2005:Q4	3.95	ND	ND
2006:Q1	4.42	ND	ND
2006:Q2	4.90	ND	ND
2006:Q3	5.25	ND	ND
2006:Q4	5.25	ND	ND
2007:Q1	5.25	ND	ND
2007:Q2	5.25	ND	ND
2007:Q3	5.20	ND	ND
2007:Q4	4.50	ND	ND
2008:Q1	3.17	ND	ND
2008:Q2	2.10	ND	ND
2008:Q3	2.00	2.00	ND
2008:Q4	ND	2.00	1.15
2009:Q1	ND	2.00	0.60
2009:Q2	ND	2.00	0.50

Period	Current	September GB	Forecast
2009:Q3	ND	2.25	0.50
2009:Q4	ND	2.50	0.50
2010:Q1	ND	2.75	0.50
2010:Q2	ND	2.75	0.50
2010:Q3	ND	3.00	0.75
2010:Q4	ND	3.00	1.00

## Bottom panel

### Summary of the Medium-term Projection

(Percent change)

		2008		2009		2010
		H1	H2	H1	H2	
1.	Real GDP	1.8	-1.2	-.9	.7	2.3
2.	(September GB)	(2.2)	(.8)	(1.9)	(2.3)	(2.7)
Selected contributions (percentage points):						
3.	Personal consumption	.7	-2.0	.3	1.1	1.7
4.	Residential investment	-.8	-.8	-.7	-.3	.3
5.	Business fixed investment	.3	-.5	-1.3	-1.0	.4
6.	Net exports	1.8	.8	.5	-.1	-.2

Note. Annual data are Q4/Q4 percent changes; semiannual data are Q2/Q4 or Q4/Q2 percent changes at an annual rate.

## Exhibit 4

### Inflation Outlook

## Top-left panel

### Unemployment Rate

Percent

Period	Current	September GB	Forecast	NAIRU*	NAIRU Forecast
2004:Q1	5.68	ND	ND	4.88	ND
2004:Q2	5.59	ND	ND	4.89	ND
2004:Q3	5.44	ND	ND	4.86	ND
2004:Q4	5.39	ND	ND	4.87	ND
2005:Q1	5.27	ND	ND	4.85	ND
2005:Q2	5.11	ND	ND	4.84	ND
2005:Q3	4.98	ND	ND	4.85	ND
2005:Q4	4.94	ND	ND	4.83	ND
2006:Q1	4.71	ND	ND	4.82	ND



Period	Current	September GB	Forecast	NAIRU*	NAIRU Forecast
2006:Q2	4.67	ND	ND	4.83	ND
2006:Q3	4.66	ND	ND	4.81	ND
2006:Q4	4.44	ND	ND	4.82	ND
2007:Q1	4.50	ND	ND	4.83	ND
2007:Q2	4.51	ND	ND	4.80	ND
2007:Q3	4.68	ND	ND	4.78	ND
2007:Q4	4.80	ND	ND	4.78	ND
2008:Q1	4.94	ND	ND	4.77	ND
2008:Q2	5.32	ND	ND	4.76	ND
2008:Q3	5.95	5.96	ND	4.78	ND
2008:Q4	ND	6.17	6.29	ND	4.78
2009:Q1	ND	6.20	6.60	ND	4.78
2009:Q2	ND	6.20	6.90	ND	4.78
2009:Q3	ND	6.20	7.10	ND	4.78
2009:Q4	ND	6.20	7.20	ND	4.78
2010:Q1	ND	6.10	7.30	ND	4.78
2010:Q2	ND	6.00	7.30	ND	4.78
2010:Q3	ND	5.90	7.30	ND	4.78
2010:Q4	ND	5.90	7.20	ND	4.78

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

**Top-right panel**  
**Manufacturing Capacity Utilization**

Percent

Period	Current	September GB	Forecast
January 2004	75.00	ND	ND
February 2004	75.48	ND	ND
March 2004	75.37	ND	ND
April 2004	75.75	ND	ND
May 2004	76.26	ND	ND
June 2004	75.68	ND	ND
July 2004	76.31	ND	ND
August 2004	76.79	ND	ND
September 2004	76.61	ND	ND
October 2004	77.34	ND	ND
November 2004	77.36	ND	ND
December 2004	77.68	ND	ND

Period	Current	September GB	Forecast
January 2005	78.15	ND	ND
February 2005	78.60	ND	ND
March 2005	78.31	ND	ND
April 2005	78.25	ND	ND
May 2005	78.59	ND	ND
June 2005	78.66	ND	ND
July 2005	78.58	ND	ND
August 2005	78.73	ND	ND
September 2005	77.84	ND	ND
October 2005	78.92	ND	ND
November 2005	79.42	ND	ND
December 2005	79.27	ND	ND
January 2006	79.74	ND	ND
February 2006	79.32	ND	ND
March 2006	79.24	ND	ND
April 2006	79.57	ND	ND
May 2006	79.28	ND	ND
June 2006	79.50	ND	ND
July 2006	79.49	ND	ND
August 2006	79.66	ND	ND
September 2006	79.42	ND	ND
October 2006	78.93	ND	ND
November 2006	78.74	ND	ND
December 2006	79.40	ND	ND
January 2007	78.81	ND	ND
February 2007	78.78	ND	ND
March 2007	79.19	ND	ND
April 2007	79.37	ND	ND
May 2007	79.36	ND	ND
June 2007	79.64	ND	ND
July 2007	80.10	ND	ND
August 2007	79.62	ND	ND
September 2007	79.75	ND	ND
October 2007	79.28	ND	ND
November 2007	79.33	ND	ND
December 2007	79.23	ND	ND
January 2008	79.11	ND	ND

<b>Period</b>	<b>Current</b>	<b>September GB</b>	<b>Forecast</b>
February 2008	78.50	78.50	ND
March 2008	78.48	78.45	ND
April 2008	77.69	77.61	ND
May 2008	77.63	77.54	ND
June 2008	77.48	77.51	ND
July 2008	77.35	77.69	ND
August 2008	76.57	76.74	ND
September 2008	74.52	76.07	ND
October 2008	ND	76.72	74.83
November 2008	ND	76.83	75.21
December 2008	ND	76.83	74.77
January 2009	ND	76.92	74.53
February 2009	ND	76.95	74.24
March 2009	ND	77.02	74.19
April 2009	ND	77.09	74.16
May 2009	ND	77.11	74.09
June 2009	ND	77.20	74.08
July 2009	ND	77.31	74.10
August 2009	ND	77.44	74.14
September 2009	ND	77.55	74.21
October 2009	ND	77.68	74.29
November 2009	ND	77.82	74.37
December 2009	ND	78.01	74.44
January 2010	ND	78.17	74.52
February 2010	ND	78.39	74.65
March 2010	ND	78.60	74.81
April 2010	ND	78.81	74.97
May 2010	ND	79.02	75.14
June 2010	ND	79.20	75.32
July 2010	ND	79.37	75.49
August 2010	ND	79.54	75.68
September 2010	ND	79.71	75.89
October 2010	ND	79.89	76.10
November 2010	ND	80.06	76.31
December 2010	ND	80.22	76.52

Note. The 1972-2007 average equals 79.7 percent.

**Middle-left panel**  
**PCE Energy Prices**

Four-quarter percent change

Period	Current	Forecast
2004:Q1	3.53	ND
2004:Q2	13.08	ND
2004:Q3	11.02	ND
2004:Q4	18.27	ND
2005:Q1	13.06	ND
2005:Q2	9.03	ND
2005:Q3	23.72	ND
2005:Q4	23.10	ND
2006:Q1	20.40	ND
2006:Q2	21.71	ND
2006:Q3	9.81	ND
2006:Q4	-3.98	ND
2007:Q1	0.47	ND
2007:Q2	4.05	ND
2007:Q3	1.23	ND
2007:Q4	19.08	ND
2008:Q1	20.05	ND
2008:Q2	19.69	ND
2008:Q3	27.46	ND
2008:Q4	ND	-1.02
2009:Q1	ND	-9.70
2009:Q2	ND	-14.29
2009:Q3	ND	-19.30
2009:Q4	ND	-2.25
2010:Q1	ND	3.55
2010:Q2	ND	3.59
2010:Q3	ND	3.51
2010:Q4	ND	3.34

As shown in the figure, the September Greenbook curve begins just under 20 percent in 2008:Q2, and increases to about 28 by Q3. Entering the current forecast period, the curve decreases to about 11 by 2008:Q4, and again to about -6 by 2009:Q3. It then increases to about 2 by 2010:Q1, and ends at about 1 percent in 2010:Q4.

**Middle-right panel**  
**Core Goods Import Prices**

Four-quarter percent change

Period	Current	Forecast
2004:Q1	2.36	ND
2004:Q2	3.17	ND
2004:Q3	3.40	ND
2004:Q4	3.58	ND
2005:Q1	3.49	ND
2005:Q2	2.88	ND
2005:Q3	2.24	ND
2005:Q4	2.22	ND
2006:Q1	1.30	ND
2006:Q2	1.69	ND
2006:Q3	2.75	ND
2006:Q4	2.37	ND
2007:Q1	2.79	ND
2007:Q2	2.91	ND
2007:Q3	2.71	ND
2007:Q4	3.40	ND
2008:Q1	4.78	ND
2008:Q2	6.49	ND
2008:Q3	7.37	ND
2008:Q4	ND	5.55
2009:Q1	ND	2.25
2009:Q2	ND	-0.26
2009:Q3	ND	-1.65
2009:Q4	ND	-0.54
2010:Q1	ND	1.00
2010:Q2	ND	1.35
2010:Q3	ND	1.55
2010:Q4	ND	1.53

As shown in the figure, the September Greenbook curve begins at about 6.5 percent in 2008:Q2, and increases to about 7.5 by Q3. Entering the current forecast period, the curve decreases to about 1 by 2009:Q4, and ends at about 1.25 percent in 2010:Q4.

Note. Core goods imports exclude computers, semiconductors, oil, and natural gas.

**Bottom-left panel**  
**Median Expected Inflation: Reuters/Michigan**

Percent

Period	Next twelve months	Next five to ten years
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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
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

Period	Next twelve months	Next five to ten years
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 (p)	4.5	2.8

## Bottom-right panel

### PCE Prices

(Percent change, annual rate)

		2008 H2	2009	2010
1.	PCE price index	1.6	1.4	1.4
2.	(Sept. GB)	(3.0)	(2.2)	(1.9)
3.	Energy	-20.4	-2.3	3.3
4.	(Sept. GB)	(-.4)	(1.2)	(.8)
5.	Food	6.8	2.2	1.4
6.	(Sept. GB)	(6.5)	(3.2)	(2.1)
7.	<b>Core PCE</b>	<b>2.7</b>	<b>1.5</b>	<b>1.3</b>
8.	(Sept. GB)	(2.7)	(2.1)	(1.9)

Note. Annual figures are Q4/Q4 percent changes and semiannual figures are Q4/Q2 percent changes at an annual rate.

Exhibit 5 - Last Exhibit

Financial Stress and Macroeconomic Risks

Top-left panel

More Financial Fallout

- Financial turmoil intensifies further
- Risk premiums jump a further 50 basis points
- House prices fall an additional 10 percent relative to the baseline
- Credit-channel and other non-conventional effects are more restrictive than in the baseline

Top-right panel

More Rapid Financial Recovery

- The financial stress lifts much more quickly than in the baseline
- Risk spreads recede by early next year to Sept. Greenbook levels
- Equities reverse most of their recent losses by the middle of next year
- Judgmental adjustments cut back to Sept. Greenbook levels

Middle-left panel

Real GDP Growth

Four-quarter percent change

Period	Baseline	More fallout	More rapid recovery
2008:Q1	2.54	ND	ND
2008:Q2	2.05	ND	ND
2008:Q3	0.61	0.61	0.61
2008:Q4	0.33	0.12	0.49
2009:Q1	-0.24	-0.84	0.20
2009:Q2	-1.04	-2.15	-0.17
2009:Q3	-0.69	-2.28	0.71
2009:Q4	-0.12	-2.00	1.81
2010:Q1	0.61	-1.29	2.91
2010:Q2	1.22	-0.55	3.73
2010:Q3	1.75	0.16	4.27
2010:Q4	2.26	0.93	4.43

Middle-right panel

Unemployment Rate

Percent

Period	Baseline	More fallout	More rapid recovery
2008:Q1	4.94	ND	ND
2008:Q2	5.32	ND	ND
2008:Q3	5.95	5.95	5.95



Period	Baseline	More fallout	More rapid recovery
2008:Q4	6.29	6.33	6.26
2009:Q1	6.62	6.75	6.52
2009:Q2	6.92	7.19	6.70
2009:Q3	7.14	7.58	6.76
2009:Q4	7.23	7.85	6.64
2010:Q1	7.30	8.09	6.48
2010:Q2	7.31	8.25	6.25
2010:Q3	7.28	8.35	6.00
2010:Q4	7.22	8.39	5.77

**Bottom-left panel**  
**Core PCE Prices**

Four-quarter percent change

Period	Baseline	More fallout	More rapid recovery
2008:Q1	2.18	ND	ND
2008:Q2	2.26	ND	ND
2008:Q3	2.50	2.50	2.50
2008:Q4	2.44	2.45	2.39
2009:Q1	2.34	2.35	2.35
2009:Q2	2.19	2.17	2.28
2009:Q3	1.76	1.71	1.96
2009:Q4	1.53	1.40	1.92
2010:Q1	1.41	1.18	1.85
2010:Q2	1.36	1.04	1.82
2010:Q3	1.33	0.92	1.81
2010:Q4	1.31	0.81	1.78

**Bottom-right panel**  
**Federal Funds Rate**

Percent

Period	Baseline	More fallout	More rapid recovery
2008:Q1	3.18	ND	ND
2008:Q2	2.09	ND	ND
2008:Q3	2.00	2.00	2.00
2008:Q4	1.15	1.01	1.39
2009:Q1	0.60	0.49	1.07
2009:Q2	0.50	0.49	1.00

Period	Baseline	More fallout	More rapid recovery
2009:Q3	0.50	0.49	1.13
2009:Q4	0.50	0.49	1.43
2010:Q1	0.50	0.49	1.82
2010:Q2	0.50	0.49	2.26
2010:Q3	0.75	0.49	2.73
2010:Q4	1.00	0.49	3.19

## Appendix 4: Materials used by Ms. Kole

Material for **Staff Presentation on The International Outlook**  
October 28, 2008

### Class II FOMC - Restricted (FR)

#### Exhibit 1 Global Financial Developments

(Weekly Data)

#### Equity Prices

##### Top-left panel Advanced Economies

A line chart describes the movement in equity prices for Europe (DJ Euro Stoxx), the United Kingdom (FTSE 350), the United States (S&P 500), and Japan (Nikkei) with the data indexed to January 5, 2007. The y-axis is the index ranging from 40 to 160, and the x-axis is weekly showing data from Friday -- the x-axis ranges from 2007 to 2008. All of the equity indexes shown were steadily declining starting in mid-2007. However, starting in late 2008 the equity prices fell sharply.

##### Top-right panel Emerging Markets

A line chart describes the movement in the emerging market equity prices, specifically the Latin American MSCI and the Emerging Asia MSCI with the data indexed to January 5, 2007. The y-axis is the index ranging from 40 to 160, and the x-axis is weekly showing data from Friday -- the x-axis ranges from 2007 to 2008. Over the last two years the Emerging Asia MSCI and the Latin American MSCI series were steadily increasing relative to the index date, but, starting in mid-2008 the equity prices in the emerging markets fell sharply.

#### Credit Spreads

##### Middle-left panel 10-year BBB Corporate

A line chart describes the movement in credit spreads of 10-year BBB corporate bonds in the US, Japan, euro area, and the UK. The y-axis is in basis points ranging from 0 to 600, and the x-axis ranges from 2007 to 2008. The credit spreads between industrial countries' risky corporates and

government bonds started increasing in late 2007 in the euro area, the United States, and the United Kingdom. However, Japan's credit spreads have been relatively stable throughout this entire period. Starting around the time of the last FOMC meeting the credit spreads soared, especially in the euro area and the United States.

#### **Middle-right panel** **Credit Default Swaps**

A line chart describes the movement in credit default swaps in Hungary, Korea, Mexico, Brazil, and Russia. The y-axis is in basis points ranging from 0 to 1200, and the x-axis ranges from June 2008 to October 2008. The credit default swap premiums on sovereign debt in the displayed emerging market economies were stable from June 2008 until mid-September 2008 when they started to skyrocket.

#### **Exchange Rates**

##### **Bottom-left panel** **Dollar**

A line chart describes the movement in the exchange rate for the bilateral exchange rate with the yen, the USD "major currencies index" and the exchange rate with "other important trading partners". The bilateral exchange rate with the yen is shown on the left y-axis, and it is shown as yen/USD; the left y-axis scale ranges from 90 to 140. The dollar indexes are plotted against the right y-axis, and it is shown as an index where January 5, 2007 equals 100; the right y-axis scale ranges from 85 to 105. The x-axis ranges from 2007 to 2008. An increase indicates a rise in the value of the dollar. The widespread pullback from risk led to safe-haven flows into dollar assets; the dollar appreciated nearly 11 percent against the major currencies despite 9 percent depreciation against the yen as carry trades were unwound. The dollar strengthened 9 percent against the currencies of the other important trading partners.

##### **Bottom-right panel** **Nominal Effective**

A line chart describes the movement in nominal effective exchange rates for Hungary, Brazil, Korea, Mexico, and Russia. The exchange rates are shown as an index where January 5, 2007 equals 100, and the y-axis scale ranges from 60 to 140. The x-axis ranges from 2007 to 2008. An increase indicates a rise in the foreign currency against the dollar and other currencies. The effective exchange values of the currencies of Brazil, Mexico and Korea were particularly hard-hit, falling by roughly 20 percent since the last FOMC meeting.

## **Exhibit 2**

### **Financial Turmoil and Policy Measures for Countering It**

#### **Top-left panel** **Flows into Global Emerging Market Funds**

A line chart describes the cumulative flow in the global emerging market equity funds from April 1, 2008. The y-axis is in billions of US dollars, and it ranges from -250 to 100. The x-axis ranges from April 2008 to October 2008. The flows turned negative in July 2008, and have continued to fall to approximately -200 billion US dollars in mid-October. This shows the extent to which investors fleeing risk have been liquidating emerging market equity funds.

#### **Top-right panel**

## Foreign Reserves

A line chart describes the movement in foreign reserves held by Mexico, Brazil, Korea, and Russia. The y-axis is split into two scales. The foreign reserves held by Russia are shown on the left y-axis ranging from 150 to 600 billion US dollars. The foreign reserves for Mexico, Brazil, and Korea are shown on the right y-axis ranging from \$0 to \$300 billion. The x-axis ranges from January 2006 through 2008. Several foreign governments, notably Russia's, have fought related currency pressures by drawing down their reserves to roughly 250, down from the peak of nearly \$300 billion in mid-2008. Since the peso fell sharply against the dollar in early October, the Bank of Mexico has deployed 15 percent of its reserves to shore up its value. Korea's reserves increased steadily starting in 2006 with the peak of roughly \$250 billion in early 2008; they have been tapering off over the remainder of the year. Brazil's reserves have doubled over the past two years, and in October 2008 they stand at roughly \$200 billion.

## Middle panel

### Banking System Support and Financial Stability Measures

- Some central banks have injected massive amounts of liquidity and many have cut rates and/or reserve requirements including:
  - US, ECB, UK, Canada, Switzerland, Sweden, Norway, Australia, New Zealand, China, Hong Kong, Taiwan, Korea, Singapore, India, and Brazil.
- Governments have guaranteed bank deposits and new debt.
- Public capital injections into banks.
- Swap lines have been expanded and new ones are being negotiated.
- Hungary, Ukraine, Iceland, and Pakistan have approached the IMF for a loan.

## Bottom-left panel

### CDS Premiums - Banks

A line chart describes the movement in Markit's median credit default swap premiums for banks in the US, the UK, and Europe excluding the UK. The y-axis ranges from 60 to 300 basis points, and the x-axis ranges from September 2008 to October 2008. There was a marked increase in the spreads around the time of the last FOMC meeting in all of the countries shown. However, they all started experiencing declines in the beginning of October. This suggests that the announcement of the banking system support and financial stability measures by central banks improved confidence in banks' safety, even if they have not restored confidence in broader economic prospects.

Source: Markit.

## Bottom-center panel

### Implied OIS Forward Rates

A line chart describes the movement in implied OIS forward rates (allowing for term premiums) for the euro area and the UK with vintages from the September FOMC and the October FOMC. The y-axis ranges from 2.0 percent to 5.0 percent, and the x-axis ranges from September 2008 to Dec 2009. The implied OIS forward rates for the UK and the euro area from the October FOMC vintage are down by about 1 percent when compared to the implied OIS forward rates from the September FOMC vintage. The market participants expect considerably more monetary policy easing in Europe than they did at the time of the last FOMC meeting.

## Bottom-right panel

### Policy Rates

A line chart describes the expected movement in policy rates for the UK, euro area, Canada, and Japan. The y-axis ranges from 0 to 7 percent, and the x-axis ranges from 2006 to 2010, which includes a forecast period starting in October 2008. With the exception of Japan, the countries shown have cut their rates at least once within the past couple of months. We assume that further cuts in official rates will be forthcoming (excluding Japan which assumes a constant policy rate over the forecast horizon). Rates will start tightening again in late 2009/early 2010 for Canada, euro area, and the United Kingdom.

Note: Shading represents beginning of staff forecast.

## Exhibit 3

### The Foreign Outlook

#### Top panel

#### Real GDP Outlook\*

Percent change, a.r.\*\*

		2007	2008				2009p	2010p
			H1	Q3	Q4			
1.	<b>Total</b>	<b>4.2</b>	<b>1.7</b>	<b>0.5</b>	<b>0.5</b>	<b>1.3</b>	<b>2.9</b>	
2.	<i>September Greenbook</i>	<i>4.2</i>	<i>1.7</i>	<i>1.8</i>	<i>2.0</i>	<i>3.0</i>	<i>3.5</i>	
3.	<b>Advanced Foreign Economies</b>	<b>2.5</b>	<b>0.3</b>	<b>-0.4</b>	<b>-0.7</b>	<b>0.3</b>	<b>1.8</b>	
4.	United Kingdom	2.9	0.6	-2.1	-1.5	0.3	2.3	
5.	Euro Area	2.1	1.0	-0.3	-0.9	-0.0	1.6	
6.	Japan	1.4	-0.1	-0.2	-0.9	0.4	1.3	
7.	Canada	2.8	-0.2	-0.3	-0.5	0.3	1.8	
8.	<b>Emerging Market Economies</b>	<b>6.4</b>	<b>3.5</b>	<b>1.6</b>	<b>2.1</b>	<b>2.7</b>	<b>4.3</b>	
9.	Emerging Asia	7.8	5.6	2.3	3.7	4.4	5.9	
10.	China	11.3	10.8	4.3	8.9	8.3	9.0	
11.	Latin America	4.9	1.1	0.5	0.1	0.7	2.6	
12.	Mexico	4.2	0.1	-0.5	-0.6	-0.1	2.2	

\* GDP aggregates weighted by shares of U.S. merchandise exports. [Return to text](#)

\*\* Annualized percent change from final quarter of preceding period to final quarter of period indicated. [Return to table](#)

#### Middle-left panel

#### Export Value

A line chart describes the movement in the export value for the European Union, China, Korea, Singapore, and Mexico. The y-axis ranges from \$20 billion to \$200 billion, and the x-axis ranges from 2007 to 2008. In August, exports fell in many of our largest trading partners, though they still chugged along in China through September.

#### Middle-center panel

#### Export Volume

A line chart describes the movement in the export volume for Japan, Germany, and Canada. The frequency of the data is monthly, and the data is indexed to 100 for January 2007. The y-axis is scaled by the index values and it ranges from 90 to 120; the x-axis ranges from 2007 to 2008. The volume of exports from Canada has been falling for some time, but exports had held up in Japan and Germany until the third quarter, when they fell.

#### **Middle-right panel**

##### **Industrial Production**

A line chart describes the movement in industrial production in the euro area, United Kingdom, and Japan. The frequency of the data is monthly, and the y-axis shows the 12-month percent change ranging from -6 percent to 6 percent; the x-axis ranges from 2007 to 2008. Industrial production in Japan has fallen nearly 5 percent below its year-ago level, and industrial production has also fallen below zero over the past year in the United Kingdom and the euro area.

#### **Bottom-left panel**

##### **Commodity Prices**

A line chart describes the movement in the WTI oil price and the IMF non-fuel commodity index over the forecast horizon. The frequency of the data is monthly. The y-axis is split into two scales. The IMF non-fuel commodity price index refers to the left y-axis, and it shows the data indexed to 100 for January 2007; the left y-axis ranges from 100 to 180. The WTI oil price refers to the right y-axis, and it shows dollars per barrel; the right y-axis ranges from \$40 to \$140 per barrel. The x-axis ranges from 2007 through 2010. Both the WTI oil price and the IMF non-fuel commodity index started increasing in 2007, and then they peak in mid-2008 with a decline carrying over into the forecast period. As global demand has slumped, oil prices have plummeted, and non-fuel commodity prices have fallen as well. For the remainder of the forecast period, the WTI oil price and the IMF non-fuel commodity index increase gradually.

#### **Bottom-right panel**

##### **Headline CPI**

A line chart describes the expected movement in headline CPI for aggregates of the advanced foreign economies, Latin America, and emerging Asia. The percent change from the year earlier is shown. The y-axis ranges from 0 percent to 10 percent, and the x-axis ranges from 2007 to 2010 with the forecast period starting in the fourth quarter of 2008. The decline in commodity prices along with slackening economic activity is projected to help bring down inflation in all of the regions shown. The forecast shows inflation continuing to decline in all regions shown through mid-to-late 2009.

## **Exhibit 4**

### **Europe**

#### **Top-left panel**

##### **Use of ECB Standing Facilities**

A line chart describes the use of ECB Standing Facilities. The frequency of the data is daily and the x-axis ranges from August 2008 to October 2008 to highlight the changes since the last FOMC meeting. The y-axis is in billions of euros and it ranges from -20 billion euros to 260 billion euros. The deposit facility experienced a drastic increase starting in late September 2008, and peaked at approximately 250 billion euros in mid-October. Banks remain leery of lending to each other, as

evidenced by the growing amount of funds parked at the ECB's deposit facility. The marginal lending facility also experienced an increase in late September, and in October fluctuated within the range of about 8 to 25 billion euros.

### **Top-right panel**

#### **Bank of England Credit Conditions Survey**

A bar chart describes the movement in Bank of England credit conditions survey. The y-axis shows a percent balance of opinions (with a positive response indicating reduced credit availability), and it ranges from -10 to 60. The frequency of the data is quarterly and the x-axis ranges from 2007:Q2 to 2008:Q4, where the fourth quarter expectations formed in early September. The latest BOE bank lending survey pointed to further tightening of U.K. household and corporate lending standards in the third quarter and suggested that banks expected to tighten them somewhat further in the fourth quarter. Notably, this survey was taken before Lehman failed. A confidential conversation with a contact at the BOE who had talked with a few bankers more recently suggested that the latest survey considerably underestimated the recent tightening of standards.

### **Middle-left panel**

#### **United Kingdom Loans**

A line chart describes the movement in United Kingdom loans to nonfinancial corporations and households. The frequency of the data is quarterly, and the x-axis shows 2006:Q1 through 2008:Q3 (staff estimate). The y-axis shows the annualized quarter-over-quarter percent change, and it ranges from 0 percent to 25 percent. The quarterly growth of U.K. loans to nonfinancial corporations fell from double-digit paces for the past two years to 5 percent in the third quarter. Credit expansion to households declined as well.

### **Middle-center panel**

#### **Euro Area Loans**

A line chart describes the movement in euro area loans to nonfinancial corporations and households. The y-axis shows the annualized quarter-over-quarter percent change, and the range goes from 0 percent to 25 percent. The x-axis shows 2006:Q1 through 2008:Q3. Loan growth to households and nonfinancial corporations in the euro area slowed.

### **Middle-right panel**

#### **House Prices**

A line chart describes the movement in house prices in the UK, France, Spain, and Ireland. The y-axis shows the percent change from the year earlier, and the range goes from -15 percent to 20 percent. The x-axis shows 2006 through 2008. The plotted curves show that house prices have fallen over the past year in the United Kingdom and Ireland and have also slowed in other European locales, such as France and Spain.

### **Bottom-left panel**

#### **Business Climate Surveys**

A line chart describes the movement in business climate surveys in the UK, Germany, and euro area. The y-axis is split into two scales. The UK survey is shown as a percent balance on the left y-axis, and the range goes from -40 to 30. The German and euro area survey data is shown as an index equal to 100 for January 2006, and the range goes from 80 to 115. Business confidence in all three countries has disintegrated.

### **Bottom-center panel**

#### **Total Economy PMIs**

A line chart describes the movement in total economy purchasing managers index (PMIs) in the euro area and the UK, with an October 2008 flash estimate for the euro area. The frequency of the data is monthly and the x-axis ranges from 2006 to 2008. The y-axis is a diffusion index where a value above 50 represents expansionary territory, and below 50 represents contractionary territory -- the y-axis ranges from 40 to 65. Total economy PMIs are in the contractionary range in both the United Kingdom and the euro area; both measures have been declining since late 2007. The October 2008 flash estimate for the euro area is slightly less than 45.

### **Bottom-right panel**

#### **Unemployment Rate**

A line chart describes the movement in unemployment rates in Spain, Ireland, euro area, France, and the UK. The y-axis ranges from 4 percent to 12 percent and the x-axis ranges from 2006 to 2008. Unemployment rates have increased in all countries shown, especially in France and Spain, where construction activity has slowed sharply.

## **Exhibit 5**

### **The Rest of the World**

#### **Top-left panel**

##### **Japan**

A line chart describes the movement of the Tankan survey, job offers/applicants, and shipments in Japan. The frequency of the data is monthly, and the x-axis ranges from 2006 to 2008. The y-axis is split into two scales. The Tankan survey, a business confidence index forecast for all industries, is shown against the left y-axis as a percent ranging from -20 percent to 10 percent. The job offers/applicants and shipments are shown against the right y-axis as an index set equal to 100 in January 2006. The right y-axis ranges from 80 to 110. In Japan, business confidence has plunged, partly because lending terms faced by firms, particularly small and medium-sized enterprises, have become more restrictive. Shipments (the black line) and exports have declined. The labor market has deteriorated, with the job offers/applicants ratio falling to its lowest level in the past four years.

#### **Top-right panel**

##### **China**

A line chart describes the movement in nominal investment in fixed assets and nominal retail sales in China. The frequency of the data is monthly, and the x-axis ranges from 2006 to 2008. The y-axis shows a 12-month percent change, and ranges from 0 percent to 40 percent. Investment spending continued to be strong through September and retail sales accelerated.

#### **Middle-left panel**

##### **Industrial Production**

A line chart describes the movement in industrial production in China, Korea, and Taiwan. The frequency of the data is monthly, and the x-axis ranges from 2006 to 2008. The y-axis shows 12-month percent change, and it ranges from -10 percent to 30 percent. Industrial production slowed this summer in China, partly because of efforts to reduce pollution in Beijing during the August Olympics but also owing to declining steel production, suggesting further slowing. Industrial



production has also slowed in Korea and Taiwan.

Middle-right panel  
Export Orders

A line chart describes the movement in export orders in Singapore, and purchasing managers' index in Brazil and China. The frequency of the data is monthly, and the x-axis ranges from 2006 to 2008. The y-axis is a diffusion index where a value above 50 represents expansionary territory, and below 50 represents contractionary territory; the y-axis ranges from 45 to 60. Export orders are falling in China, Brazil and Singapore, and they have been dipping in and out of contractionary territory over the last 6 months.

Bottom-left panel  
Mexico

A line chart describes the movement of industrial production, auto exports, and remittances in Mexico. The frequency of the data is monthly and the x-axis ranges from 2006 to 2008. The y-axis shows 12-month percent change, and ranges from -50 percent to 50 percent. Mexico has suffered a steep fall in remittances, flattening industrial production, and declining auto exports.

Bottom-right panel  
Global PMI

A line chart describes the movement in Markit's Global PMI sub-indexes for new orders and output. The frequency of the data is monthly, and the x-axis ranges from 2006 to 2008. The y-axis is a diffusion index where a value above 50 represents expansionary territory, and below 50 represents contractionary territory; the y-axis ranges from 45 to 60. The global PMI and new orders indexes, which aggregate data for 26 major countries, both are in contractionary territory, but have not yet reached their depths at the trough of the 2001 recession.

Source: Markit.

Exhibit 6 (Last)  
U.S. External Outlook

Top panel  
Trade in Real Goods and Services\*

		2007	2008			2009p	2010p
			H1	Q3e	Q4p		
Contribution to Real GDP Growth (Percentage points, a.r.)							
1.	Net Exports	0.8	1.8	1.2	0.4	0.2	-0.2
2.	September Greenbook	0.8	1.9	0.7	1.0	0.3	-0.1
Growth Rates (Percent, a.r.)							
3.	Exports	8.9	8.6	8.0	2.6	2.8	3.9
4.	September Greenbook	8.9	9.1	4.0	7.2	5.6	5.1
5.	Imports	1.1	-4.1	-1.0	-0.3	0.9	4.3
6.	September Greenbook	1.1	-4.2	-0.8	-0.3	2.8	4.9

\* Years are Q4/Q4. Half year is Q2/Q4. [Return to text](#)

### **Middle-left panel**

#### **Real GDP**

A line chart describes the movement in real GDP for "total foreign," emerging markets, advanced foreign economies, and the U.S. The frequency of the data is quarterly, and the x-axis ranges from 2000 to 2010, with the forecast period starting in the fourth quarter of 2008. The y-axis shows 4-quarter percent change ranging from -4 percent to 10 percent. The aggregate series are weighted by shares of U.S. exports. Total foreign growth is now projected to dip down about as much as U.S. growth.

### **Middle-right panel**

#### **Broad Real Exchange Value of the U.S. Dollar**

A line chart describes the movement in broad real exchange value of the U.S. dollar relative to the September Greenbook. The x-axis ranges from 2000 to 2010 with the forecast period starting in the fourth quarter of 2008. The y-axis shows an index where the average of the year 2000 is set to equal 100, and ranges from 75 to 115. The dollar is well above the level projected in the September Greenbook.

### **Bottom panel**

#### **U.S. Trade and Current Account Balances**

A line chart describes the movement in U.S. trade and current account balances, and it gives a longer perspective on U.S. external deficits. The x-axis ranges from 1980 to 2010, with the forecast period starting in the fourth quarter of 2008. The y-axis shows the percent of GDP, and it ranges from -8 percent to 4 percent. The non-oil trade deficit and current account deficit have continued to narrow over the past year and a half although oil imports have remained large. The current account deficit/GDP ratio is forecast to fall below 3 percent in 2010, a level last reached in 1998.

## **Appendix 5: Materials used by Mr. Madigan**

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

Brian Madigan

October 29, 2008

### **Class I FOMC - Restricted Controlled (FR)**

#### **Exhibit 1**

#### **Economic Projections of Federal Reserve Governors and Reserve Bank Presidents for 2008**

##### **Top panel**

##### **Real GDP Growth**

	2008	2008:H2
<b>Central Tendency</b>	0.0 to 0.3	-1.8 to -1.2
<i>June projections</i>	<i>1.0 to 1.6</i>	<i>0.6 to 2.1</i>

	2008	2008:H2
<b>Range</b>	-0.3 to 0.5	-2.4 to -0.8
<i>June projections</i>	<i>0.9 to 1.8</i>	<i>0.4 to 2.2</i>
<b>Memo: Greenbook</b>	0.3	-1.2
<i>June Greenbook</i>	<i>1.0</i>	<i>0.7</i>

## Middle-top panel Unemployment Rate

	2008
<b>Central Tendency</b>	6.3 to 6.5
<i>June projections</i>	<i>5.5 to 5.7</i>
<b>Range</b>	6.3 to 6.6
<i>June projections</i>	<i>5.5 to 5.8</i>
<b>Memo: Greenbook</b>	6.3
<i>June Greenbook</i>	<i>5.6</i>

## Middle-bottom panel PCE Inflation

	2008	2008:H2
<b>Central Tendency</b>	2.8 to 3.1	1.6 to 2.3
<i>June projections</i>	<i>3.8 to 4.2</i>	<i>3.6 to 4.6</i>
<b>Range</b>	2.7 to 3.6	1.4 to 3.3
<i>June projections</i>	<i>3.4 to 4.6</i>	<i>3.2 to 4.8</i>
<b>Memo: Greenbook</b>	2.8	1.6
<i>June Greenbook</i>	<i>4.2</i>	<i>4.5</i>

## Bottom panel Core PCE Inflation

	2008	2008:H2
<b>Central Tendency</b>	2.3 to 2.5	2.4 to 2.8
<i>June projections</i>	<i>2.2 to 2.4</i>	<i>2.3 to 2.5</i>
<b>Range</b>	2.1 to 2.5	2.0 to 2.8
<i>June projections</i>	<i>2.0 to 2.5</i>	<i>2.0 to 2.6</i>
<b>Memo: Greenbook</b>	2.4	2.6
<i>June Greenbook</i>	<i>2.3</i>	<i>2.5</i>

## Exhibit 2 Economic Projections of Federal Reserve Governors and Reserve Bank Presidents for

## 2009-2011

### Top panel Real GDP Growth

	2009	2010	2011
<b>Central Tendency</b>	-0.2 to 1.1	2.3 to 3.2	2.8 to 3.6
<i>June projections</i>	<i>2.0 to 2.8</i>	<i>2.5 to 3.0</i>	----
<b>Range</b>	-1.0 to 1.8	1.0 to 4.5	2.0 to 5.0
<i>June projections</i>	<i>1.9 to 3.0</i>	<i>2.0 to 3.5</i>	----
<b>Memo: Greenbook</b>	-0.1	2.3	4.5
<i>June Greenbook</i>	<i>2.4</i>	<i>3.1</i>	----

### Middle-top panel Unemployment Rate

	2009	2010	2011
<b>Central Tendency</b>	7.1 to 7.6	6.5 to 7.3	5.5 to 6.6
<i>June projections</i>	<i>5.3 to 5.8</i>	<i>5.0 to 5.6</i>	----
<b>Range</b>	6.6 to 8.0	5.5 to 8.2	4.9 to 7.4
<i>June projections</i>	<i>5.2 to 6.1</i>	<i>5.0 to 5.8</i>	----
<b>Memo: Greenbook</b>	7.2	7.2	6.4
<i>June Greenbook</i>	<i>5.6</i>	<i>5.4</i>	----

### Middle-bottom panel PCE Inflation

	2009	2010	2011
<b>Central Tendency</b>	1.3 to 2.0	1.4 to 1.8	1.4 to 1.7
<i>June projections</i>	<i>2.0 to 2.3</i>	<i>1.8 to 2.0</i>	----
<b>Range</b>	1.0 to 2.2	1.1 to 1.9	0.8 to 1.8
<i>June projections</i>	<i>1.7 to 3.0</i>	<i>1.6 to 2.1</i>	----
<b>Memo: Greenbook</b>	1.4	1.4	1.1
<i>June Greenbook</i>	<i>2.1</i>	<i>1.9</i>	----

### Bottom panel Core PCE Inflation

	2009	2010	2011
<b>Central Tendency</b>	1.5 to 2.0	1.3 to 1.8	1.3 to 1.7
<i>June projections</i>	<i>2.0 to 2.2</i>	<i>1.8 to 2.0</i>	----
<b>Range</b>	1.3 to 2.1	1.1 to 1.9	0.8 to 1.8
<i>June projections</i>	<i>1.8 to 2.3</i>	<i>1.5 to 2.0</i>	----

	2009	2010	2011
<b>Memo: Greenbook</b>	1.5	1.3	1.1
<i>June Greenbook</i>	2.2	2.0	----

### Exhibit 3

#### Risks and Uncertainty in Economic Projections

##### Top-left panel

##### Uncertainty about GDP Growth

	Lower	Similar	Higher
June	0	4	13
October	0	0	17

##### Top-right panel

##### Risks to GDP Growth

	Downside	Balanced	Upside
June	14	3	0
October	15	2	0

##### Bottom-left panel

##### Uncertainty about PCE Inflation

	Lower	Similar	Higher
June	0	4	13
October	2	2	13

##### Bottom-right panel

##### Risks to PCE Inflation

	Downside	Balanced	Upside
June	0	4	13
October	6	10	1

### Exhibit 4

#### Trial Run of Longer-Term Economic Projections

##### Top panel

	Central Tendency	Range
<b>Real GDP Growth</b>	2.5 to 2.7	2.0 to 2.9

	Central Tendency	Range
Unemployment Rate	4.8 to 5.0	4.5 to 5.8
PCE Inflation	1.7 to 1.8	1.5 to 2.0
<i>Memo: Oct. 2007 projections for 2010</i>		
<i>Real GDP Growth</i>	<i>2.5 to 2.6</i>	<i>2.2 to 2.7</i>
<i>Unemployment Rate</i>	<i>4.7 to 4.9</i>	<i>4.6 to 5.0</i>
<i>PCE Inflation</i>	<i>1.6 to 1.9</i>	<i>1.5 to 2.0</i>

## Appendix 6: Materials used by Mr. Stockton

### Page 1

#### Top panel

#### Orders and Shipments of Durable Goods

(Percent change from comparable previous period, seasonally adjusted)

Category	2008			2008		
	Q1	Q2	Q3	July	Aug. <sup>f</sup>	Sept. <sup>a</sup>
	Annual rate			Monthly rate		
<i>Nondefense capital goods</i>						
Orders	-5.6	-6.8	-11.6	3.5	-7.7	.8
Aircraft	-46.7	-72.0	-66.0	39.2	-52.2	38.3
Excluding aircraft	4.7	10.2	-2.4	.3	-2.2	-1.4
Computers and peripherals	-1.7	-5.3	-36.9	-13.1	.7	-2.8
Communications equipment	.6	.2	21.6	12.4	1.7	-16.5
All other	5.7	12.9	-.5	.6	-2.8	.3
Shipments	-.1	3.4	-.3	1.2	-3.3	1.5
Aircraft	4.4	-24.2	-5.2	14.7	-17.4	-5.1
Excluding aircraft	-.4	5.9	.1	.3	-2.1	2.0
Computers and peripherals	-5.8	-19.0	-26.7	-4.8	-3.7	.8
Communications equipment	2.6	5.8	-9.2	-3.0	-7.6	2.0
All other	-.1	8.8	4.0	1.1	-1.4	2.1
<i>Supplementary orders series</i>						
Durable goods	-5.8	-1.0	-7.0	.7	-5.5	.8
Real adjusted durable goods	-1.5	.3	-13.2	-.3	-4.6	-2.4
Capital goods	-4.0	-1.4	-8.7	.4	-6.0	3.2
Nondefense	-5.6	-6.8	-11.6	3.5	-7.7	.8

Category	2008			2008		
	Q1	Q2	Q3	July	Aug. <sup>r</sup>	Sept. <sup>a</sup>
	Annual rate			Monthly rate		
Defense	10.2	53.9	14.7	-19.6	8.4	19.6

r Revised. [Return to table](#)

a Advance. [Return to table](#)

Source: Census Bureau.

## Bottom-left panel

### Computers and Peripherals

Billions of dollars, ratio scale

Period	Orders	Shipments
January 2000	8.19	8.79
February 2000	8.78	8.84
March 2000	8.80	9.07
April 2000	8.55	9.13
May 2000	9.98	9.57
June 2000	8.67	9.15
July 2000	8.53	8.98
August 2000	10.10	9.27
September 2000	8.83	9.57
October 2000	9.00	9.26
November 2000	9.17	8.96
December 2000	8.45	9.05
January 2001	8.56	8.87
February 2001	8.67	8.29
March 2001	8.46	8.42
April 2001	7.50	7.62
May 2001	7.68	7.36
June 2001	7.38	7.32
July 2001	6.93	7.17
August 2001	7.14	6.81
September 2001	6.01	6.99
October 2001	6.95	6.71
November 2001	7.51	6.95
December 2001	6.42	7.01
January 2002	6.70	6.82
February 2002	7.49	7.06

Period	Orders	Shipments
March 2002	6.57	6.78
April 2002	5.92	6.34
May 2002	6.93	6.60
June 2002	5.81	6.23
July 2002	5.43	5.89
August 2002	6.10	6.14
September 2002	6.25	5.96
October 2002	5.78	5.77
November 2002	5.89	5.56
December 2002	6.14	5.56
January 2003	5.93	6.32
February 2003	5.47	5.58
March 2003	5.32	5.29
April 2003	5.41	5.73
May 2003	6.29	5.55
June 2003	5.61	5.64
July 2003	5.36	6.08
August 2003	5.90	5.57
September 2003	5.83	5.96
October 2003	6.05	6.40
November 2003	5.77	5.66
December 2003	5.27	5.46
January 2004	4.85	5.50
February 2004	5.13	5.16
March 2004	4.92	5.24
April 2004	4.65	5.23
May 2004	5.51	5.12
June 2004	5.22	5.03
July 2004	4.72	5.23
August 2004	4.94	5.13
September 2004	5.49	5.15
October 2004	5.39	5.94
November 2004	5.35	5.28
December 2004	5.32	5.07
January 2005	5.12	5.51
February 2005	5.42	5.42
March 2005	4.82	5.39



Period	Orders	Shipments
April 2005	5.53	5.56
May 2005	5.41	5.46
June 2005	5.54	5.39
July 2005	4.77	5.11
August 2005	5.45	5.32
September 2005	5.25	5.18
October 2005	5.01	5.31
November 2005	5.41	5.45
December 2005	5.67	5.64
January 2006	5.37	5.57
February 2006	5.73	5.74
March 2006	6.04	6.00
April 2006	5.67	5.72
May 2006	5.67	5.67
June 2006	5.72	5.62
July 2006	6.14	6.02
August 2006	5.72	5.97
September 2006	5.56	5.43
October 2006	4.60	4.53
November 2006	5.75	5.64
December 2006	5.59	5.53
January 2007	5.19	5.25
February 2007	5.76	5.84
March 2007	5.41	5.20
April 2007	4.95	5.13
May 2007	5.78	5.78
June 2007	5.70	5.60
July 2007	5.18	4.90
August 2007	5.76	5.53
September 2007	5.75	5.66
October 2007	5.02	5.62
November 2007	5.62	5.55
December 2007	5.76	5.61
January 2008	5.02	5.60
February 2008	5.67	5.51
March 2008	5.64	5.42
April 2008	5.05	5.17

Period	Orders	Shipments
May 2008	5.52	5.32
June 2008	5.54	5.19
July 2008	4.81	4.95
August 2008	4.85	4.76
September 2008	4.71	4.80

Source: Census Bureau.

**Bottom-center panel**  
**Communications Equipment**

Billions of dollars, ratio scale

Period	Orders	Shipments
January 2000	10.01	8.89
February 2000	7.97	8.66
March 2000	9.81	9.27
April 2000	10.80	9.31
May 2000	9.11	9.80
June 2000	14.22	9.43
July 2000	10.37	9.63
August 2000	9.79	9.81
September 2000	10.78	10.15
October 2000	9.93	9.95
November 2000	10.42	9.94
December 2000	9.93	10.11
January 2001	9.20	9.90
February 2001	9.09	9.62
March 2001	8.88	9.67
April 2001	7.78	8.78
May 2001	8.34	8.53
June 2001	7.72	8.53
July 2001	7.47	8.13
August 2001	7.59	7.85
September 2001	5.91	7.25
October 2001	6.28	7.04
November 2001	6.67	6.56
December 2001	7.49	6.92
January 2002	3.58	5.67
February 2002	4.82	5.94

Period	Orders	Shipments
March 2002	3.60	5.39
April 2002	4.78	5.55
May 2002	4.91	5.38
June 2002	4.33	5.19
July 2002	4.36	5.00
August 2002	4.29	4.86
September 2002	2.09	4.93
October 2002	3.37	4.35
November 2002	4.30	4.97
December 2002	3.67	4.51
January 2003	4.79	4.60
February 2003	4.67	4.61
March 2003	5.21	4.62
April 2003	4.76	4.29
May 2003	4.44	4.27
June 2003	4.43	4.95
July 2003	5.07	4.90
August 2003	4.70	4.73
September 2003	5.12	4.78
October 2003	5.89	4.96
November 2003	4.37	4.95
December 2003	3.79	5.02
January 2004	4.31	4.97
February 2004	4.64	4.80
March 2004	4.80	4.71
April 2004	5.31	5.10
May 2004	4.60	4.95
June 2004	4.02	4.59
July 2004	4.35	4.81
August 2004	4.53	4.99
September 2004	4.22	4.51
October 2004	4.28	4.50
November 2004	4.33	4.66
December 2004	4.15	4.30
January 2005	5.02	4.67
February 2005	4.48	4.38
March 2005	4.57	4.73

Period	Orders	Shipments
April 2005	3.90	3.98
May 2005	4.11	4.52
June 2005	4.73	4.56
July 2005	4.57	4.61
August 2005	4.55	4.62
September 2005	3.81	4.53
October 2005	4.65	4.69
November 2005	4.31	4.38
December 2005	4.03	4.50
January 2006	5.37	5.41
February 2006	6.03	5.52
March 2006	6.64	5.46
April 2006	4.86	5.46
May 2006	5.36	5.45
June 2006	6.18	5.58
July 2006	5.40	5.11
August 2006	6.01	5.30
September 2006	6.34	5.40
October 2006	5.26	5.42
November 2006	5.37	5.41
December 2006	5.37	4.54
January 2007	5.14	5.05
February 2007	5.26	5.40
March 2007	4.57	5.10
April 2007	5.21	5.18
May 2007	6.08	5.17
June 2007	4.88	5.17
July 2007	5.30	5.25
August 2007	5.36	5.27
September 2007	5.81	5.32
October 2007	4.81	4.97
November 2007	4.70	5.08
December 2007	5.43	5.14
January 2008	4.82	5.13
February 2008	5.15	5.05
March 2008	4.99	5.11
April 2008	5.01	4.91

Period	Orders	Shipments
May 2008	5.09	5.15
June 2008	4.88	5.44
July 2008	5.49	5.28
August 2008	5.58	4.88
September 2008	4.66	4.98

Source: Census Bureau.

**Bottom-right panel**  
**Other (non-high-tech, nontransportation)**

Billions of dollars, ratio scale

Period	Orders	Shipments
January 2000	46.17	44.22
February 2000	41.70	41.97
March 2000	44.83	43.95
April 2000	44.96	44.82
May 2000	44.82	43.80
June 2000	45.74	44.92
July 2000	45.18	44.49
August 2000	44.72	44.36
September 2000	46.41	44.96
October 2000	44.57	44.55
November 2000	43.32	44.37
December 2000	43.33	44.58
January 2001	44.67	43.82
February 2001	43.20	43.86
March 2001	41.30	42.96
April 2001	40.40	41.74
May 2001	42.05	42.16
June 2001	40.72	41.46
July 2001	39.81	40.20
August 2001	40.43	40.68
September 2001	38.76	38.98
October 2001	37.04	39.24
November 2001	38.21	38.00
December 2001	38.33	38.41
January 2002	36.32	37.96
February 2002	37.17	38.36

Period	Orders	Shipments
March 2002	36.74	39.07
April 2002	38.20	38.53
May 2002	39.23	40.12
June 2002	38.01	40.03
July 2002	39.38	39.89
August 2002	40.03	40.61
September 2002	39.23	40.44
October 2002	39.69	40.25
November 2002	38.79	40.13
December 2002	38.31	39.55
January 2003	38.37	38.47
February 2003	38.74	38.83
March 2003	41.47	39.77
April 2003	39.07	39.18
May 2003	40.20	39.84
June 2003	40.30	39.66
July 2003	39.30	39.33
August 2003	39.46	38.88
September 2003	40.85	40.32
October 2003	40.06	39.76
November 2003	42.11	40.40
December 2003	43.98	40.59
January 2004	39.50	39.53
February 2004	39.87	39.58
March 2004	44.79	41.80
April 2004	41.21	41.49
May 2004	41.28	40.90
June 2004	43.09	42.86
July 2004	43.49	42.64
August 2004	41.70	42.60
September 2004	45.68	43.80
October 2004	43.22	43.55
November 2004	44.36	43.44
December 2004	45.76	45.26
January 2005	47.46	45.95
February 2005	47.31	45.96
March 2005	47.17	45.52

Period	Orders	Shipments
April 2005	47.58	46.14
May 2005	47.47	46.89
June 2005	49.05	47.00
July 2005	48.08	46.82
August 2005	49.70	47.57
September 2005	50.30	48.37
October 2005	50.07	48.40
November 2005	50.57	49.43
December 2005	51.25	49.97
January 2006	52.03	49.56
February 2006	51.29	49.97
March 2006	52.77	50.66
April 2006	52.83	50.88
May 2006	53.51	51.66
June 2006	53.13	51.21
July 2006	53.30	51.37
August 2006	53.02	51.95
September 2006	55.91	51.56
October 2006	55.39	51.65
November 2006	54.34	51.66
December 2006	53.88	52.35
January 2007	51.04	48.92
February 2007	50.07	49.59
March 2007	53.17	50.74
April 2007	54.19	51.12
May 2007	51.58	51.19
June 2007	52.01	50.76
July 2007	53.08	51.05
August 2007	52.62	51.48
September 2007	52.04	52.05
October 2007	52.35	51.46
November 2007	51.88	51.78
December 2007	53.80	52.35
January 2008	54.61	52.11
February 2008	53.04	51.46
March 2008	52.59	51.98
April 2008	55.12	53.04

Period	Orders	Shipments
May 2008	54.39	52.79
June 2008	55.65	53.03
July 2008	56.00	53.63
August 2008	54.41	52.86
September 2008	54.55	53.96

Source: Census Bureau.

Appendix 7: Materials used by Mr. Madigan

Material for FOMC Briefing on Monetary Policy Alternatives

Brian Madigan

October 29, 2008

Class I FOMC - Restricted Controlled (FR)

Table 1:  
Alternative Language for the October 29 FOMC Announcement

October 27, 2008

[Note: In Appendix 7, Table 1, strong emphasis (bold) has been added to indicate underlined red text in the original document. Emphasis (italic) indicates underlined blue text in the original document.]

	October 8 Statement	Alternative A	Alternative B	Alternative C
Policy Decision	1. The Federal Open Market Committee has decided to lower its target for the federal funds rate 50 basis points to 1½ percent.	The Federal Open Market Committee decided <b>today</b> to lower its target for the federal funds rate 50 basis points to <b>1</b> percent.	The Federal Open Market Committee decided <b>today</b> to lower its target for the federal funds rate <b>25</b> basis points to <b>1¼</b> percent.	The Federal Open Market Committee decided <b>today</b> to <b>keep</b> its target for the federal funds rate <b>at</b> 1½ percent.
Rationale	2. The Committee took this action in light of evidence pointing to a weakening of economic activity and a reduction in inflationary pressures. Incoming economic data suggest that the pace of economic activity has slowed markedly in recent months. Moreover, the intensification of financial market turmoil is likely to exert additional restraint on spending, partly by further reducing the ability of households and businesses to obtain credit.	<i>The pace of economic activity appears to have slowed markedly, owing importantly to a decline in consumer expenditures. Business equipment spending and industrial production have weakened in recent months, and slowing economic activity in many foreign economies is damping the prospects for U.S. exports.</i> Moreover, the intensification of financial market turmoil is likely to exert additional restraint on spending, partly by further reducing the ability of households and businesses to obtain credit.	<b>The pace of economic activity appears to have slowed markedly, owing importantly to a decline in consumer expenditures.</b> Moreover, the intensification of financial market turmoil is likely to exert additional restraint on spending, partly by further reducing the ability of households and businesses to obtain credit.	<b>Reflecting in part the intensification of financial market turmoil, the outlook for economic activity has weakened. Consumer spending and industrial production have declined in recent months. However, policy actions taken in recent weeks, including coordinated interest rate cuts by central banks, extraordinary liquidity measures, and official steps to strengthen financial systems, should help over time to improve credit conditions and promote a return to moderate economic growth.</b>



	October 8 Statement	Alternative A	Alternative B	Alternative C
	3. Inflation has been high, but the Committee believes that the decline in energy and other commodity prices and the weaker prospects for economic activity have reduced the upside risks to inflation.	<b>In light of the declines in the prices of energy and other commodities and the weaker prospects for economic activity, the Committee expects inflation to moderate in coming quarters to levels consistent with price stability.</b>	<b>In light of the declines in the prices of energy and other commodities and the weaker prospects for economic activity, the Committee expects inflation to moderate in coming quarters to levels consistent with price stability.</b>	Inflation has been high, but the Committee believes that the declines in <b>the prices of energy and other commodities</b> and the weaker prospects for economic activity have reduced the upside risks to inflation.
Assessment of Risk	4. The Committee will monitor economic and financial developments carefully and will act as needed to promote sustainable economic growth and price stability.	<i>Recent policy actions, including today's rate reduction, coordinated interest rate cuts by central banks, extraordinary liquidity measures, and official steps to strengthen financial systems, should help over time to improve credit conditions and promote a return to moderate economic growth. Nevertheless, downside risks to growth remain.</i> The Committee will monitor economic and financial developments carefully and will act as needed to promote sustainable economic growth and price stability.	<b>Policy actions taken in recent weeks, including coordinated interest rate cuts by central banks, extraordinary liquidity measures, and official steps to strengthen financial systems, should help over time to improve credit conditions and promote a return to moderate economic growth. Nevertheless, the predominant concern of the Committee is the downside risks to growth.</b> The Committee will monitor economic and financial developments carefully and will act as needed to promote sustainable economic growth and price stability.	<b>In these circumstances, the Committee's primary concern is the downside risks to growth.</b> The Committee will monitor economic and financial developments carefully <b>in light of the recent policy actions and</b> will act as needed to promote sustainable economic growth and price stability.

Appendix 8: Materials used by Mr. Bullard

Page 1

Top panel  
Two Steady States

A line chart shows two axes and two curves. The horizontal axis is labeled " $\pi, \pi^e$ " and is positioned at the bottom of the chart. The vertical axis is labeled "R" and is positioned near the middle of the chart. A line labeled "Fisher:  $R = r + \pi^e$ " begins on the horizontal axis at point  $(-r, 0)$  and has a moderate positive slope. The other curve is labeled "Policy" and consists of two line segments. Policy begins as a horizontal line on the left side of the chart with a low, constant positive value of  $R^*$ , and intersects the Fisher line at point  $(\pi^{**}, R^*)$ , which is labeled "Steady state with low nominal interest rate and deflation." The Policy curve continues at a constant value until it is to the right of the R axis, and then begins to rise with a steep positive slope. Policy intersects Fisher again at point  $(\pi^*, R^*)$ , which is labeled "Steady state with inflation at target."

J. Benhabib, S. Schmitt-Grohe, M. Uribe, 2001, *J. Econ. Thy.*

