The Federal Reserve Board

Meeting of the Federal Open Market Committee
June 29-30, 2004 Presentation Materials -- Text Version

Presentation Materials (3.66 MB PDF)

Pages 156 to 203 of the Transcript

Appendix 1: Materials used by Ms. Johnson and Mr. Gagnon

Material for the FOMC presentation on ***U.S. External Adjustment***
Karen Johnson and Joseph Gagnon
Exhibits by James Chavez
June 29, 2004

STRICTLY CONFIDENTIAL (FR) CLASS II FOMC

Exhibit 1
External Adjustment: Alternative Perspectives

06-28-04

Top panel
External Balances

A line graph shows three series over the period of 1980 to 2004 on an annual basis. The Current Account and Trade Balance series follow the right y-axis, which scales from -600 to 100 and is in billions of US dollars. The Broad Real Dollar series follows the left y-axis, which scales from 70 to 120, index: 2002:Q1=100. The Broad Real Dollar roughly increases from 1980 to 1985. It goes from a level of about 80 to about 116. From there it decreases until about 1995 to the level of about 75. The series turns up again to peak around 2002 (to around 100) and then declines through 2003 (to around 85) and finally peaks up again in 2004 (to a bit over 90). The Current Account 1980 level is about 0. It declines to -100 by about 1987. It then ticks up and peaks at around 50 in 1991. It then declines to about -600 at the end of the series. The Trade Balance roughly traces the Current Account throughout the entire period.

Middle-left panel
Dollar Exchange Rates

A line graph shows three series over the period of 1990 to 2004. The y-axis ticks 25 to a bit over 105, index: 2002:Q1=100. The Broad Real Index is either flat or increasing from the periods of 1990 to roughly 2002. It is roughly flat with a value in the mid 70s from 1990 to 1997. It increases to a little over 95 in 2002 and then decreases to around 90 in 2004. The Major Nominal Currencies Index roughly follows that of the Broad Real Index. However, around 2002 when the two start to decline, the Major Nominal has a more negative slope and ends up at a value of about 78. The Major Nominal also has a slight tick up at the end of the series, while the Broad Real Index is roughly flat for the last period. The OITP Nominal Currencies Index is roughly increasing throughout the time

period. It begins at a level of about 30 in 1990 and ends with a level of about 105 in 2004.

Middle-right panel
Net International Investment Position

A line graph shows two series that both span 1990 to 2004. The first series is the level of the net international investment position, which ticks along the right y-axis in billions of dollars from -3500 to 0. In the 1990s, the series declines from about -250 to -750, in a subtle and fairly flat fashion. In the early 2000s, the series drastically declines to almost -3000 by 2004. The second series is the percent of GDP for the net international investment position. From 1990 until about the early 2000s, the series goes from -5% to about -8 % and tracks the level of GDP series. The steep decline in the early 2000s of course also applies to the percent of GDP series, with the series hitting a low point in 2004 of about -25%.

Bottom-left panel
Financial Flows

$ billions, s.a.a.r.

	2003	2004Q1
1. Current account	**-531**	**-580**
2. Foreign official	249	501
3. Pvt. foreign purchases of U.S. securities	364	515
4. Pvt. U.S. purchases of foreign securities (-)	-72	-61
5. Net direct investment	-134	-157
6. Other*	124	-218

* Primarily net flows reported by banking and non-banking concerns, acquisition of U.S. currency, and the statistical discrepancy. Return to table

Bottom-right panel
U.S. Saving and Investment

A line graph spans 1990 to 2004. The y-axis ranges from 0 to 1000 and is in billions of US dollars. There are two series. The first series is Net Domestic Investment. It declines from about 1990 to 1992, hitting a low level of a bit over 200 billion dollars. Then the series increases to peak in the early 2000s at around 1 trillion dollars. The series then declines to a level of about 700 billion dollars in 2004. The second series is Net Savings. It declines from the beginning of the series until about 1994, hitting a low of about 200 billion dollars. It increases until the late 1990s to a level of about 600 billion. It remains roughly flat through the beginning of the 2000s and then declines to hit a new low of a little under 200 billion.

Exhibit 2
Financing

06-28-04

Top panel
Nominal Goods and Services

A line graph shows three series over the period of 1980 to 2010, with all values after 2004 being

projected. The y-axis ticks in billions of US dollars from -400 to 2800. Both Imports and Exports roughly increase over the whole period with exports below imports. Both series begin at about 400 billion dollars. Exports end at about 1.6 trillion, while imports end at about 2.8 trillion. There is also a series showing the change in the balance which is negative for most of the forecast since imports are usually above exports.

Middle panel
Financial Flows

A line graph shows four series over the period of 1980 to 2010, with all values after 2004 being projected. The y-axis ticks from -15 to 15 and represents the percent of GDP for each graph. One series is U.S. Private Financial Outflows. It roughly declines from 1980 to 2010. It starts at about -2% of GDP and ends at around -13%. The second series is the Current Account Deficit. It also roughly declines (or is roughly flat) throughout the period. It begins at about 0% of GDP and ends at about -9% of GDP. The third series is Net Official Flows and the fourth series is Foreign Private Financial Inflows. The two series roughly follow one another. They both begin at about 3% of GDP and end at about 12% (Net Official Flows) and 14% (Foreign Private Financial Inflows) respectively.

Bottom-left panel
Foreign Official Holdings in the United States

$ billions, end of period

	2001	April 2004e	Change
1. Total	1074	1630	556
2. Treasury	*728*	*1092*	*364*
3. Selected Asia*	476	972	496
4. Treasury	*381*	*784*	*403*
5. Other	598	658	60
6. Treasury	*347*	*308*	*-39*

* Selected Asia includes Japan, China, Taiwan, Korea, and Hong Kong. Return to table

Bottom-right panel
Foreign Private Holdings in the United States

$ billions, end of period

	1995	2004Q1e
1. Treasury Securities	330	715
2. Agency Securities	129	485
3. U.S. Corporate Debt	361	1553
4. U.S. Equities	550	1655
5. FDI in U.S.	799	1621

Exhibit 3
Orderly Adjustment

06-28-04

Top-left panel
Characteristics

- Financial markets function normally.
- More likely if returns improve abroad.
- Net financial inflows into U.S. economy continue.
- Dollar depreciation almost certainly required.

Top-right panel
Share of U.S. Assets Held by Foreigners

Percent, 2004Q1 end of period

	Share of Total Outstanding
Treasury Securities	47.6
Official	*30.9*
Agency Securities	11.1
Official	*3.2*
U.S. Corporate Debt	24.8
U.S. Equities	12.0

Bottom-left panel
Foreign Portfolios of Bonds and Equities

Percent, December 2002

Share of Portfolio in:		
	Domestic Securities (1)	**U.S. Securities (2)**
1. Euro Area	85.4	5.4
2. Switzerland	43.5	9.7
3. United Kingdom	61.4	9.2
4. Canada	84.2	8.6
5. Japan	81.6	6.8
6. Hong Kong	58.3	9.2
7. Korea	82.0	7.1
8. Singapore	45.0	13.9
9. Australia	80.5	9.6

Bottom-right panel
U.S. Merchandise Exports

Percent

	Share of Exports 2003	Share of Change 2002Q1 to 2004Q1
1. Canada	23	22
2. Western Europe	23	17
3. Mexico	13	11
4. Other Asia*	8	8
5. Japan	7	2
6. Other Latin America	7	8
7. China and Hong Kong	6	16
8. Korea	3	4
9. Middle East**	2	3
10. Australia	2	1

* Includes Singapore, Taiwan, Indonesia, Philippines, Thailand, and Malaysia. Return to table

** Includes Israel, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and UAE. Return to table

Exhibit 4

06-28-04

Top-left panel
Starting Adjustment: Growth & Depreciation

A graph. The y-axis ticks -13 to 0 and is the rate of change in the real exchange rate, expressed as a percent. The x-axis runs from -2 to 2 and is the foreign minus U.S. real GDP growth rate, expressed in percentage points. There is a diagonal line through the center of the graph. To the left of it expresses that the trade deficit is widening and to the right expresses that the trade deficit is narrowing. The graph shows the point of 2003 at roughly (-1.5, -8.5) which means the trade deficit was widening during this year.

Top-right panel
Implications for U.S. Economy

- Demand here and abroad shifts to U.S.-made goods.
- U.S. domestic demand is reduced relative to U.S. production.
- Fiscal contraction could contribute to domestic demand constraint.
- Monetary policy maintains full utilization of resources.
- Sectoral shifts in production may entail adjustment costs.

Disorderly Adjustment

Middle panel

-- Abrupt adjustment entails asset price changes.
-- Other U.S. asset prices could be affected.
-- Exchange rate depreciation at center. Magnitude and pace.
-- Implications for global asset prices.

Bottom-left panel
U.S. Corporate Debt Outstanding

$ billions, end 2003

Total	12,202
Foreign currency	517
Euro	351
Pound	71
Yen	60
Other	36
Foreign currency share	*4%*

Bottom-right panel
Foreign Holdings of U.S. Assets*

End 2003

	Dollar billions	Percent of own GDP
1. Total Foreign	8053	32
2. Europe	4434	37
3. United Kingdom	*1102*	*61*
4. Canada	487	56
5. Japan	1305	30
6. China	351	25
7. Other Asia	830	35

* Bank positions netted; Caribbean and unknown holdings distributed to other countries pro rata. Return to text

Exhibit 5
Disorderly Adjustment Scenarios

06-28-04

Top-left panel

Scenario 1: 30 percent dollar depreciation absent responses in interest rates. U.S. and foreign policy interest rates follow Taylor rule.
Scenario 2: Scenario 1 plus 250 b.p. increase in U.S. equity and bond premiums. Smaller financial shock in foreign economies.
Scenario 3: Scenario 2 with no zero bound on policy interest rates (quantitative easing).

Top-right panel
Real Exchange Value of Dollar

A line graph with subtitle "Deviation from baseline" displays three series, for Scenarios 1 , 2, and 3, respectively. The y-axis ticks from -40 to 0 and represents a percent. The x-axis runs from 2004 through 2006. All three scenarios are on top of one another for 2004 and diverge afterwards. All three scenarios are at about -28% at the start of 2005. All three scenarios show an increase,

percentage wise, from the 2005 beginning value. Scenario 3 ends at about -20%, while Scenarios 1 and 2 end at about -23% and -25%, respectively.

Middle panel
U.S. Output and Price Responses

Deviation from baseline, percent

	Scenario 1		Scenario 2		Scenario 3	
	2005Q4 (1)	2006Q4 (2)	2005Q4 (3)	2006Q4 (4)	2005Q4 (5)	2006Q4 (6)
1. GDP	1.9	1.8	-0.8	-1.9	-0.7	-1.9
2. Domestic Demand*	-0.5	-1.2	-3.3	-5.2	-3.2	-5.0
3. Net Exports*	2.4	3.0	2.5	3.3	2.5	3.1
4. Core PCE Prices	0.9	1.4	0.8	1.0	0.7	0.8
5. Non-oil Import Prices	8.9	9.2	9.2	9.8	7.6	7.0

* Percent of GDP. Return to table

Bottom-left panel
Foreign GDP*

A line graph with subtitle "Deviation from baseline" displays three series, for Scenarios 1 , 2, and 3, respectively. The y-axis is measured as a percent and ticks from -7 to 3. The x-axis runs from 2004 through 2006. The three series diverge towards the end of 2004. All three scenarios decline over the period. Scenario 1 ends at about -2.5%, while Scenarios 3 and 2 end at about -4% and -6.5% respectively.

* U.S. export weights. Return to text

Bottom-right panel
Trade Balance

A line graph with subtitle "Deviation from baseline" displays three series, for Scenarios 1 , 2, and 3, respectively. The y-axis is measured as a percent of GDP and ticks from -2 to 3. The x-axis runs from 2004 through 2006. By the end of 2004, the series all have the same value at about -1% of GDP. All three scenarios increase over the period. Scenario 1 ends at a value of about 1.5%, while Scenarios 2 and 3 both end at roughly 2% of GDP.

Exhibit 6
Is Adjustment Under Way?

06-28-04

Top-left panel
Broad Real Dollar Index

A line graph shows two series. One is the measure of the broad real dollar from January 1979 to December 1990. The other shows the same index but measured over the period of January 1996 to 2004. The y-axis ticks from 85 to a bit over 135, index: March 1973=100. The first series, which

shows 1979-1990, starts at 85 and peaks around 1985 at about 130. It then declines to about 88. The second series, which shows 1996-2004, starts at about 90 and jumps around over the time period. It peaks at about 112 in 2002 and ends at a bit over 100.

Top-right panel
Balance on Goods and Services

A line graph shows two series. One shows the balance on goods and services from 1979:Q1 to 1990:Q4, the other from 1996:Q1 to 2004. The y-axis is a percent of GDP (four-quarter moving average) and ticks from -5 to 1. The first series, 1979-1990, peaks in the early 1980s at around -0.5% and then declines to about -3% during the late 1980s. It then goes back up to finish at around -1.5%. The second series, 1996-2004, declines from about -1% at the beginning of the period to finish at around -4.5%.

Middle panel
Real Import and Export Growth Rates

A line graph shows two series, Exports and Imports, respectively. The y-axis is a four-quarter percent change. It ticks from -20 to a bit over 30. The x-axis runs from 1979 to 2003. Exports start around 18% and decline to a low of about -10% in the early 1980s. Exports peak at around 20% in the late 80s and then stay between 20% and 0% until around 2000. The series hits its low of -10% again around the early 2000s and ends at around 10%. Imports start at a bit over 0% and hit a high of over 30% around the mid 1980s. Imports then decline to about 10% a few years later and stay roughly between 10% and 0% for most of the series. In the early 2000s, imports drop to about -5% and end the series at the same point as exports at about 10%.

Bottom-left panel
Foreign minus U.S. Growth

A line graph shows two series, foreign minus U.S. growth, measured as the difference in four-quarter percent changes. The y-axis ticks from -5 to 5. One series runs from 1979:Q1 through 1990:Q4. The series starts at about -2% and jumps up to hit a high of about 4% in the early 1980s. It then has a steep decline to about -1.5% over the next few years. It then jumps up again to about 3.5% only to bottom out at about
-3.5% in the mid 1980s. It then roughly increases over the rest of the period to end at about 2%. The second series runs from 1996:Q1 to 2004. The series starts at a little over 0% and declines to hit a low of about -3% in the very late 1990s. It then climbs to eventually hit 2% in the early 2000s and then declines to about -2% in 2003. It grows a bit at the end of the period in 2004 to about -1%.

Bottom-right panel
Net Securities Flows

A line graph shows two series, Private and Official, from 1996 through 2004. The y-axis is percent of GDP measured on a four-quarter moving average, and ticks from -2 to a bit over 4. The Private series starts at a bit under 0% of GDP and increases for a few years. It then declines into 2000 only to grow again to hit a peak of about 4% around 2002. It then declines for a bit to a little under 3% and ticks back up at the end to a bit over 3%. The Official series starts at a little under 2% and hits a low of about -1% in the late 1990s. It then roughly grows over the remainder of the timeline to a little under 3%.

Exhibit 7

06-28-04

Top-left panel
Import Prices*

A line graph shows two series. One series shows import prices from 1979:Q1 to 1990:Q4, the other from 1996:Q1 to 2004. The y-axis ticks from -6 to a bit over 15 and is a four-quarter percent change. The first series, 1979-1990, starts at about 12% and peaks around 1980 at about 15%. Then there is a steep decline over a few years to a low of about -3%. The series then climbs to about 10% in the mid 1980s. The series then declines to about 0% in 1989, and then peaks back up at the end to about 3%. The second series, 1996-2004, starts at about 1.5%. It does not move about too much through the period but hits a low of about -3% in 1998 and around 2002. It ends the period at a high of a bit over 3%.

* Excluding natural gas, oil, computers, and semiconductors. Return to text

Top-right panel
PCE Prices*

A line graph shows two series. One series shows PCE prices from 1979:Q1 to 1990:Q4, the other from 1996:Q1 to 2004. The y-axis ticks from -6 to a bit over 15 and is a four-quarter percent change. The first series, 1979-1990, begins at a value of about 6% and then peaks around 1982 at about 10%. It then decline to about 4% in the mid 1980s where it remains fairly flat for the rest of the period. The second series, 1996-2004, remains fairly flat throughout the period at about 2.5%.

* Excluding food and energy. Return to text

Bottom panel
Conclusions

- U.S. external deficits are not sustainable.
- Depreciation in 2002 and 2003 helped slow the widening trade deficit, but no evidence that adjustment has begun.
- Substantial further dollar depreciation is required.
- Orderly adjustment of 1980s associated with acceleration of foreign activity and brighter investment prospects abroad.
- Disorderly adjustment more likely with loss of confidence in U.S. policies and prospects.
  - -- Contractionary effects could be greater for foreign economies.
  - -- Asset price declines depress output at home and abroad.
  - -- Dollar depreciation boosts U.S. production and damps foreign production.
- Effect on U.S. inflation is modest.

Appendix 2: Materials used by Ms. Goldberg

EXHIBIT 1
International Trade Exposure of High-Trade-Oriented U.S. Industries

A bar graph. The y-axis ticks from 0 to 90 and is measured as a percent. Approximate values are as follows.

Percent

	Chemicals	Leather	Computers	Electrical	Transportation	Machinery	Miscellaneous
Exports as a share of shipments	20	40	40	20	30	30	25
Imports as a share of consumption	20	85	50	35	30	30	40
(Share of Manufacturing Employment)	(6.1)	(0.3)	(9.8)	(3.3)	(12.0)	(8.0)	(4.5)

Imported inputs as a share of costs: For leather, about 20%; for other categories, 5 to 15%.

EXHIBIT 2
Trade Partner Shares of Total U.S. Exports and Imports, 2003

Left panel
Destinations of U.S. Exports

Destination	Percent
Euro Area	16
Canada	23
Mexico	14
China	4
Korea	3
Japan	7
U.K.	5
South America/Central America	7
Asia NIE exc. Korea	7
Rest of the World	14

Right panel
Sources of U.S. Imports

Source	Percent
Euro Area	15
Canada	18
Mexico	11
China	13
Korea	3
Japan	10

Source	Percent
U.K.	3
South America/Central America	7
Asia NIE exc. Korea	5
Rest of the World	15

EXHIBIT 3
Export Destinations and Import Sources of High-Trade-Oriented U.S. Industries

Industries (NAICs)	Destinations of U.S. Exports (Percentage of Industry Exports)			Sources of U.S. Imports (Percentage of Industry Imports)		
	Euro Area	Japan	China	Euro Area	Japan	China
Chemicals	25	7	4	42	8	3
Leather and allied products	11	14	6	12	0	61
Machinery, except electrical	15	6	4	26	23	11
Computer and electronics	17	7	5	8	12	21
Transportation equipment	16	6	3	17	22	1
Electrical equipment, appliances	12	4	2	11	7	28
Miscellaneous manufacturing	27	12	1	15	4	35
Total U.S. exports or imports	16	7	4	15	10	13

EXHIBIT 4
U.S. Manufacturing Employment in Industries with Different Degrees of Penetration by Chinese Products

Made in China, As a share of U.S. Consumption by Industry	Industry Share in Total U.S. Manufacturing Employment (Percent, 2003)
Less than 5 percent	69.3
Between 5 and 10 percent	22.6
Between 10 and 20 percent	6.2
More than 20 percent	1.9

EXHIBIT 5
Real Dollar Exchange Rates

A line graph shows five currencies, Yen, Peso, Yuan, Canadian Dollar and Euro, from January 2000 through June 2004. The y-axis ticks from 70 to 140, index: January 2000=100. The Yen mostly climbs until the beginning of 2002 where it peaks around 135. It then mostly declines to finish at a value of about 115. The Euro climbs from 100 to 115 until the beginning of 2002, although has some

dips during this period. It then mostly declines through the rest of the period hitting about 85 at the end. The Canadian dollar moves between 100 and 110 until about the end of 2002 when it starts to decline. It finishes at a bit over 90. The Yuan moves between 100 and 110 throughout the graph and finishes at a little under 110. The Peso mostly declines until the middle of 2002, when it bottoms out at a little below 90. It then mostly climbs for the rest of the timeframe and finishes at about 110, very close to the Yuan.

EXHIBIT 6
Dollar Depreciation Experienced by High-Trade-Oriented U.S. Industries

2/1/02 to 6/25/04
(In Percent)

Industries (NAICs)	Export-Partner Weighted*	Import-Partner Weighted*
Chemicals	15.8	26.6
Leather and allied products	7.0	3.8
Machinery, except electrical	13.5	18.0
Computer and electronics	9.8	5.2
Transportation equipment	16.6	15.3
Electrical equipment, appliances	10.4	5.5
Miscellaneous manufacturing	18.4	7.4

* Constructed using real bilateral exchange rates and respective trade weights. Return to table

EXHIBIT 7
Import Price Elasticity to Exchange Rate Movements

Industry Weight (%)	Industry (SITC)	Data included in Analysis	
		Late 1970s/Early 1980s-2004:Q2#	1990:Q1-2004:Q2#
	All commodities	**0.54**	**0.75**
	All commodities except fuels	**0.46**	**0.27**
(0.9)	Beverages and tobacco	**0.19**	0.01
(2.1)	Crude materials, inedible, except fuels	**0.74**	**0.82**
(13.9)	Mineral fuels, lubricants, and related	0.29	1.73
(7.7)	Chemicals and related products	**0.39**	**0.37**
(12.2)	Manufactured goods (classified)	**0.72**	**0.69**
(41.8)	Machinery and transport equipment	**0.41**	**0.17**
(17.1)	Miscellaneous manufactured articles	**0.40**	0.16

Indicated in bold are data significantly different from zero.

2004:Q2 data use April and May 2004 import prices and consensus forecast for GDP. Return to table

EXHIBIT 8
Industry Contribution to Total U.S. Exports and Imports, 2003

Left panel
U.S. Exports

Industry	Percent
Transportation	19
Electrical	3
Computers	18
Machinery	11
Chemicals	14
Leather	0
Apparel	1
Textiles	1
Miscellaneous	3
Other Industries	30

Right panel
U.S. Imports

Industry	Percent
Transportation	18
Electrical	3
Computers	17
Machinery	6
Chemicals	8
Leather	2
Apparel	5
Textiles	1
Miscellaneous	5
Other Industries	34

Appendix 3: Materials used by Mr. Kos

Page 1

Top panel

Title: Current U.S. 3-Month Deposit Rates and Rates Implied by Traded Forward Rate Agreements
Series: 3-month USD Libor, USD 3-month forward rate agreement, USD 6-month forward rate agreement, USD 9-month forward rate agreement

Horizon: March 15, 2004 - June 28, 2004
Description: Forward rate agreements increase.

Middle panel

Title: Target Federal Funds Rate and Treasury 2-Year Note
Series: Yield for 2-year Treasury note and Target Federal Funds rate
Horizon: January 1, 2002 - June 28, 2004
Description: Yield on 2-year Treasury note increases.

Bottom panel

Title: Yield Spread between 2- and 10-Year Notes
Series: Spread between Treasury 2- and 10-year notes
Horizon: March 15, 2004 - June 28, 2004
Description: Treasury yield curve flattens.

Page 2

Top panel

Title: TIPS Breakeven Inflation Rates
Series: 10-year and 5-year TIPS breakeven rates
Horizon: February 1, 2004 - June 28, 2004
Description: TIPS breakeven rates begin to decline modestly.

Middle panel

Title: Primary Dealers Net Outright Positions in TIPS
Series: Primary dealers net position in TIPS and Average net position January 1998 - June 2004
Horizon: February 1, 2004 - June 23, 2004
Description: Primary dealer net outright positions in TIPS begin to increase in late June, though still below historical average.

Bottom panel

Title: 1-Year Inflation Forward Rates Derived from CPI Swaps
Series: 1-year inflation forward rates for June 28, 2004, May 4, 2004, and April 1, 2004
Horizon: N/A
Description: Inflation forward rates increase in June.

Page 3

Top panel

Title: Primary Dealer Net Outright Positions
Series: Primary dealer net outright positions in corporate, MBS, agencies (excluding discount notes), and Treasuries (excluding TIPS and bills)
Horizon: May 5, 2003 - June 23, 2004
Description: Primary dealer outright positions in Treasuries decrease.

Source: FR2004

Middle panel

Title: Net Non-Commercial Positions in 10-Year Treasury Futures
Series: Net non-commercial positions in 10-year Treasury futures
Horizon: May 1, 2003 - June 22, 2004
Description: Net non-commercial positions in 10-year Treasury futures decline.

Source: CFTC

Bottom-left panel

Title: MBS and Corporate Debt Spreads
Series: Investment grade corporate debt index OAS and 30-year conventional MBS index OAS
Horizon: January 1, 2004 - June 28, 2004
Description: MBS and corporate debt spreads widen slightly.

Source: Lehman Brothers

Bottom-right panel

Title: High Yield and EMBI+ Spreads
Series: High yield corporate debt index OAS and EMBI Plus spread
Horizon: January 1, 2004 - June 28, 2004
Description: High yield and EMBI+ spreads narrow.

Source: Merrill Lynch, JP Morgan

Page 4

Top panel

Title: Select Foreign Currencies Versus U.S. Dollar
Series: Spot foreign exchange rates versus the U.S. Dollar for Canadian Dollar, British Pound, Swiss Franc, Japanese Yen, and European Euro
Horizon: April 1, 2004 - June 28, 2004
Description: U.S. Dollar depreciates.

Middle-left panel

Title: Yield on the 10-Year Japanese Government Bond
Series: Yield on the 10-year Japanese government bond
Horizon: April 1, 2004 - June 28, 2004
Description: Yield on the 10-year Japanese government bond increases sharply.

Middle-right panel

Title: Japanese 3-Month to 30-Year Government Bond Yield Curve
Series: Japanese 3-month to 30-year government bond yield curve
Horizon: N/A
Description: Japanese government bond yield curve steepens.

Bottom panel

Title: 2-Year U.S. and German Government Debt Yields
Series: 2-Year U.S. Treasury yield and 2-Year German government bond yield
Horizon: March 15, 2004 - June 28, 2004
Description: U.S and German government debt yields increase.

Page 5

Top panel

Title: Daily Intra-Day Standard Deviations of the Federal Funds Rate
Series: Annual averages and annual medians of daily values of federal funds rate standard deviation
Horizon: 1987 - 2004
Description: Standard deviations of the federal funds rate decline.

Bottom panel

Title: Daily Intra-Day Standard Deviations of the Fed Funds Rate - medians of rolling 10-day periods
Series: Medians of rolling 10-day periods of daily intra-day standard deviations of the federal funds rate
Horizon: January 2, 1987 - January 2, 2004
Description: Daily standard deviations of federal funds rate decline.

Page 6

Top panel

Title: Absolute Deviations of Daily Effective Federal Funds Rate from Target
Series: Annual averages and annual medians of daily values of effective federal funds rate deviations from target federal funds rate
Horizon: 1987 - 2004
Description: Absolute deviations of daily effective federal funds rate from target decline.

Bottom panel

Title: Daily Effective Fed Funds Rate less Target Rate - medians of rolling 10-day periods
Series: Medians of rolling 10-day periods of daily effective federal funds rate less target federal funds rate
Horizon: January 2, 1987 - January 2, 2004
Description: Less variance appears in daily effective funds rate less target rate.

Page 7

Top panel

Title: High-Low Range, Effective Rate, & Primary Credit Rate, minus the Target Rate

Series: High-low range, effective rate and primary credit rate less the target federal funds rate
Horizon: June 2001 - May 2004
Description: Primary credit rate less the target federal funds rate is above the high-low rate and effective rate less the target federal funds rate.

Ranges are truncated at 4 percentage points above/below the target rate

Reference Chart

Top panel

Title: Requirements (Total and Clearing Balances) and Federal Funds Target
Series: Total requirements, clearing balance requirements and federal funds target rate
Horizon: 1987 - 2004
Description: Total requirements and clearing balance requirements decrease while federal funds target rate decreases.

Bottom panel
Chronology of Select Events Influencing Funds Rate Volatility

late 1990 - deteriorating financial position of banking sector amid recession
Dec 1990 - reserve requirements eliminated on non-transaction and eurodollar deposits
Apr 1992 - reserve requirement ratio on transaction deposits reduced from 12 to 10 percent
Feb 1994 - FOMC begins to publicly indicate policy changes
1996 to 1998 - period of most rapid growth in bank sweep account programs
Aug 1998 - shift to lagged reserve accounting
Q4 1998 - fallout from financial turmoil in emerging markets
1999 - preparations ahead of Y2K
Sep 2001 - extra liquidity provided in the wake of 9/11 attacks
Jan 2003 - introduction of the primary credit facility
Jun 2003 - Federal funds rate target reaches historic low

Appendix 4: Materials used by Messrs. Oliner, Wilcox, and Sheets

Material for Staff Presentation on the Economic Outlook
June 30, 2004

STRICTLY CONFIDENTIAL (FR) CLASS I-FOMC*
*Downgraded to Class II upon release of the July 2004 Monetary Policy Report.

Chart 1
Recent Data

Top-left panel
Private Payroll Employment

Horizon: 2000 to 2004:Q2, where 2004:Q2 is the average for April and May
Description: Data are represented as bars and expressed as thousands of employees, presented at an

average monthly change over the quarter. A horizontal line is drawn at zero. There are 18 bars, which indicate the following approximate values:

- 200,000, 2000:Q1
- 100,000, 2000:Q2-2000:Q3
- just below 100,000, 2000:Q4

- just below zero, 2001:Q1
- negative 200,000, 2001:Q2
- just below negative 200,000, 2001:Q3
- negative 350,000, 2001:Q4

- negative 100,000, 2002:Q1
- negative 50,000, 2002:Q2
- a bit below negative 50,000, 2002:Q3-2002:Q4

- a bit below negative 50,000, 2003:Q1
- just below zero, 2003:Q2
- just above zero, 2003:Q3
- 50,000, 2003:Q4

- 200,000, 2004:Q1
- 300,000, 2004:Q2

Top-right panel
Manufacturing Industrial Production

Period	Percent change, annual rate
2000:Q1	5.07
2000:Q2	6.69
2000:Q3	-0.72
2000:Q4	-2.84
2001:Q1	-7.37
2001:Q2	-4.91
2001:Q3	-5.68
2001:Q4	-4.35
2002:Q1	2.10
2002:Q2	3.40
2002:Q3	1.68
2002:Q4	-2.92
2003:Q1	1.01
2003:Q2	-3.17
2003:Q3	3.70
2003:Q4	6.12
2004:Q1	6.35
2004 April-May average	8.9

Middle-left panel
Inventories Relative to Shipments and Sales

Horizon: 2000 to April 2004
Description: Data are plotted on two curves. One curve represents manufacturing, and the other curve represents retail and wholesale trade, excluding motor vehicles and parts. Data are expressed as a ratio, presented monthly at book value. The manufacturing curve begins at about 1.31 at the start of 2000, then fluctuates upward through 2001, reaching about 1.45. The curve then generally decreases to end at about 1.23 in April 2004. The retail curve begins at about 1.39 in 2000 and remains at about that level through year-end. It increases to about 1.4 through 2001, then falls through 2002:Q2 to approximately 1.31. The curve fluctuates between about 1.3 and 1.33 through 2003, then decreases to end at about 1.21 in April 2004.

Middle-right panel
Single-family Home Sales and Starts

Horizon: 1997 to May 2004
Description: The data are presented monthly and are expressed in millions of units at an annual rate. Data are plotted on two curves. One curve represents starts, and the other curve represents sales. The starts curve begins at about 1.1 in 1997, then fluctuates upward to approximately 1.4 by year-end 1998. The curve decreases to about 1.2 at the start of 1999 and increases to just below 1.4 by the end of the year. It drops to about 1.1 by midyear 2000, then generally fluctuates upward to end just above 1.6 in May 2004. The sales curve starts a bit above 0.8 in 1997, then continues upward to reach about 1.0 by year-end 1998. The curve fluctuates between about 0.8 and 0.9 through mid-2000; it then increases to about 1.0 at the beginning of 2001, followed by a decrease to just above 0.8 by year-end. The curve increases through 2002 to reach about 1.1. It drops to about 0.9 at the start of 2003, increases to about 1.2 by midyear, then decreases to about 1.1 by year-end. The curve continues generally upward to end just below 1.4 in May 2004.

Bottom-left panel
Real Personal Consumption Expenditures

Period	Trillions of chained (2000) dollars
January 2001	6.84
February 2001	6.83
March 2001	6.83
April 2001	6.86
May 2001	6.89
June 2001	6.87
July 2001	6.90
August 2001	6.94
September 2001	6.87
October 2001	7.02
November 2001	7.00
December 2001	7.01
January 2002	7.04
February 2002	7.09

Period	Trillions of chained (2000) dollars
March 2002	7.10
April 2002	7.13
May 2002	7.11
June 2002	7.14
July 2002	7.18
August 2002	7.17
September 2002	7.13
October 2002	7.16
November 2002	7.20
December 2002	7.24
January 2003	7.25
February 2003	7.23
March 2003	7.26
April 2003	7.26
May 2003	7.31
June 2003	7.34
July 2003	7.40
August 2003	7.45
September 2003	7.43
October 2003	7.44
November 2003	7.49
December 2003	7.53
January 2004	7.54
February 2004	7.55
March 2004	7.58
April 2004	7.58
May 2004	7.61

Quarterly Averages and Staff Estimate

Period	Quarterly average	Staff estimate
2001:Q1	6.83	ND
2001:Q2	6.87	ND
2001:Q3	6.90	ND
2001:Q4	7.01	ND
2002:Q1	7.08	ND
2002:Q2	7.12	ND
2002:Q3	7.16	ND
2002:Q4	7.20	ND

Period	Quarterly average	Staff estimate
2003:Q1	7.24	ND
2003:Q2	7.30	ND
2003:Q3	7.43	ND
2003:Q4	7.49	ND
2004:Q1	7.56	ND
2004:Q2	ND	7.60

Bottom-right panel
Orders and Shipments of Nondefense Capital Goods

Horizon: 2001 to May 2004
Description: The figure shows the orders and shipments of nondefense capital goods, excluding aircraft. Data are plotted on two curves and are expressed in billions of dollars, presented monthly. One curve is for orders, and the other curve is for shipments. The orders curve starts at about 64 in 2001, then falls through 2001:Q4 to just below 51. The curve then starts to increase, reaching about 54 at the start of 2002, after which it drops to about 49 by the end of the quarter. The curve fluctuates between just below 51 and 53 until year-end 2002; it then generally increases through 2003:Q4 to about 59 and drops to a bit above 55 by the end of the year. The curve increases through 2004:Q2 to just below 63, then decreases to end a bit above 59 in May 2004. The shipments curve starts at about 62 at the beginning of 2001, then falls to about 52 by year-end. The curve fluctuates between about 51 and 54 through the first quarter of 2003, then continues generally upward through 2004:Q2 to reach about 60. It then decreases to end just below 59 in May 2004.

Chart 2
Forecast Summary and Key Background Factors

Top panel

	2004			2004	2005
	Q1	Q2	H2	Q4/Q4	Q4/Q4
		projection			
1. Real GDP*	3.9	4.2	4.8	4.4	3.6
2. (June GB)	*(4.4)*	*(4.7)*	*(5.0)*	*(4.8)*	*(3.6)*
3. Unemployment rate**	5.6	5.6	5.4	5.4	5.3
4. (June GB)		*(5.6)*	*(5.3)*	*(5.3)*	*(5.2)*
5. Core PCE price index*	2.0	2.3	1.8	2.0	1.6
6. (June GB)	*(1.7)*	*(1.6)*	*(1.7)*	*(1.7)*	*(1.5)*

* Percent change, annual rate. H2 calculated as Q4/Q2. Return to table

** Percent, average for final quarter of half-yearly and annual periods. Return to table

Middle-left panel
Interest Rates

Horizon: 2001 to 2005
Description: Data are expressed as a percent, presented as a quarterly average, and are plotted on

two curves. One curve represents the 10-year Treasury rate, and the other curve represents the federal funds rate. The 10-year Treasury rate curve begins at just above 5 at the start of 2001, drops to about 4.9 by year-end, then increases to just above 5 in 2002. The curve decreases through mid-2003 to about 3.5, then increases to about 4.25 by the end of the year. It dips to about 4 in 2004, then increases to end at about 4.5 in 2005. A forecast for the curve from the April 2004 Greenbook starts at about 4 in mid-2004, then increases through 2005 to end at about 4.5. The federal funds curve begins at approximately 5.5 in 2001; it then falls through the start of 2002 to about 1.75 and remains at about that level until the third quarter. The curve decreases through 2004 to about 1, then increases through 2005 to end at about 3. A forecast for the curve from the April 2004 Greenbook starts at about 1 in mid-2004 and increases through 2005 to end at about 2.25.

Middle-right panel
Fiscal Impetus

	Percent of GDP	Forecast
1998	-0.03	ND
1999	0.32	ND
2000	0.12	ND
2001	0.47	ND
2002	1.04	ND
2003	1.15	ND
2004	ND	0.95
2005	ND	-0.21

Bottom-left panel
Crude Oil Prices

Horizon: 2001 to 2005
Description: Data are plotted on a curve and show the quarterly average of West Texas Intermediate crude oil prices in dollars per barrel. The curve begins in 2001 at about 28, then decreases to about 18 by year-end. The curve moves generally upward to reach about 32 at the start of 2003, then drops to about 28 by midyear. The curve generally increases through mid-2004, climbing to about 39; it then decreases, ending at about 34 in 2005. A forecast for the curve from the April 2004 Greenbook starts a bit above 34 in mid-2004, then decreases through 2005, ending at about 30.

Bottom-right panel
Equity Prices

Horizon: 2001 to 2005
Description: Data for the Wilshire 5000 are plotted on a curve, expressed as index values, and are shown on a quarter-end basis. The curve starts at about 10,800 at the beginning of 2001, increases to a bit above 11,200, drops to just below 9,800 by midyear, then increases to about 10,800 by the end of 2001. The curve decreases through 2002:Q3 to about 8,000, then increases to about 8,400 toward the end of the year. The curve dips to about 8,200 at the start of 2003, then continues generally upward through 2005 to end at about 12,500. A forecast for the curve from the April 2004 Greenbook starts at about 11,200 in mid-2004, then increases through 2005 to end just below 12,600.

Chart 3

Asset Valuations

Top-left panel
Equity Valuation

Horizon: 1990 to 2004:Q2
Description: Data are plotted on two curves, expressed as a percent, and presented quarterly. One curve represents the 12-month forward E/P ratio for S&P 500, and the other curve represents long-run real Treasury yield; note that the Treasury yield is the yield on the synthetic Treasury perpetuity minus Philadelphia Fed 10-year expected inflation. The 12-month forward curve begins a bit above 8 in 1990, then decreases through 1994 to reach about 6.25. It climbs to about 8 in 1995, followed by a decrease through 2000 to about 4. The curve starts to increase through 2003 to about 6.25, dips to about 5.75 at the start of 2004, then increases to end at about 6 in 2004:Q2. The long-run real Treasury yield curve starts at about 4 in 1990 and stays at about that level until year-end 1992. The curve dips to about 3.75 in 1993 and increases to about 5 in 1994. It decreases to about 3.75 in 1995, remains at about 4.25 through 1997, then decreases through 1998 to about 3.5. The curve increases to just above 4 in 1999, then generally decreases through 2004:Q2 to end at about 3.75.

Top-right panel
High-Yield Spread and Risk-Neutral Component

Horizon: 1990 to 2004:Q2
Description: Data are plotted on two curves, expressed as percentage points, and presented quarterly. One curve represents high-yield spread, and the other curve represents risk-neutral component; note that the risk-neutral component data are a staff estimate of spread necessary to compensate for the expected cost of default. The high-yield curve begins in 1990 at about 6.5, then increases to about 10 in 1991. The curve generally trends downward though 1994 to about 3, then increases through 1996 to reach about 4.25; it dips to about 3 through mid-1998, followed by an increase to about 6 by the end of the year. The curve decreases through 2000 to approximately 4.25. It moves upward through the start of 2001 to about 8.5, dips to just below 8, then climbs to about 9.75 by the end of the year. It drops to about 6.5 in 2002, followed by an increase to just above 10 by year-end. The curve decreases through 2004:Q2 to end at about 4.25. The risk-neutral component curve begins at about 4 in 1990, increases to about 4.25 in 1991, then fluctuates generally downward through 1994 to about 2. The curve increases to about 4 through 1996, drops to about 2 in 1997, then increases to a bit above 4 by year-end 1998. The curve slips to about 3 in 1999, then continues upward through 2001 to about 5. It drops to about 3 in 2002, increases to a bit above 3 in 2003, then decreases to end at about 2.25 in 2004:Q2.

Middle-left panel
House Prices and Rents*

Q4/Q4 percent change

	Prices	Rents
2000	7.6	4.0
2001	7.5	4.7
2002	7.6	3.3
2003	8.2	2.7

* OFHEO repeat-sales price index and CPI tenants' rent. Return to text

Middle-right panel
Housing Valuation

Horizon: 1982 to 2004:Q1
Description: Data are plotted on two curves. One curve represents rent/price ratio, and the data are indexed to 1982:Q1=100; note that the rent/price ratio is adjusted for biases in the trends of both rents and prices. The other curve represents long-run real Treasury yield, and the data are expressed in percent. The rent/price ratio curve begins at about 100 in 1982, then increases through 1986 to reach about 108. It decreases through 1989 to about 100, increases through 1995 to approximately 111, then decreases through 2004:Q1 to end at about 92. The long-run real Treasury yield starts in 1982 at about 6.25, increases to about 7 by midyear, then decreases to about 5 by year-end. The curve continues generally upward through 1985 to reach about 7.5, then falls to about 3.75 in 1986. It increases through 1988 to reach about 5.25, then drops to about 3.75 in 1989. The curve then increases, remaining at about 5 through 1992, after which it drops to about 3 in 1993. The curve increases to about 5 in 1994, decreases to a bit above 3 in 1995, then increases through 1997 to about 4.5. The curve decreases to just above 3 in 1998, followed by an increase to a bit above 4 in 1999. The curve then continues generally downward through 2004:Q1 to end at just above 3.

Bottom-left panel
Commercial Real Estate Prices and Net Operating Income*

Q4/Q4 percent change

	Prices	NOI
2000	6.2	11.7
2001	1.6	2.2
2002	1.5	-4.2
2003	3.9	-5.6

* Staff calculations from NCREIF data. Return to text

Bottom-right panel
Commercial Real Estate Valuation

Horizon: 1982 to 2004:Q1
Description: Data are plotted on two curves. One curve represents net operating income (NOI)/price ratio, and the data are indexed to 1982:Q1=100. The other curve represents long-run real Treasury yield, and the data are expressed in percent. The NOI curve begins at about 100 at the start of 1982 and increases to about 105 in 1983; it then decreases, fluctuating between about 91 and 96 through 1984. The curve increases to a bit above 100 in 1985; it trends generally downward through mid-1990 to about 75, followed by an increase to about 85 by year-end. The curve generally moves upward through 1998 to about 108; it then decreases, fluctuating between about 100 and 102 in 1999. The curve increases through 2001 to about 109 and decreases through 2004:Q1 to end at about 89. The long-run real Treasury yield curve is described above on the middle-right panel, Housing Valuation.

Chart 4
Household Sector

Top-left panel

Household Net Worth to DPI

Horizon: 1998 to 2005
Description: Data are plotted on a curve and expressed as a ratio. The curve begins at about 5.7 in 1998, followed by a drop to about 5.4 toward the end of the year. The curve continues upward to reach approximately 6.0 in 1999, then dips to about 5.8 toward year-end. It increases to about 6.2 in 2000, then generally trends downward through the start of 2003 to about 4.8. The curve increases through mid-2003 to end at about 5.3. The household curve then shows a forecast from mid-2004 through 2005, where it decreases to end at about 5.1.

Top-right panel
Real Consumer Spending and Income

Percent change, Q4/Q4

	Real DPI	DPI Forecast	Real PCE	PCE Forecast
2002	3.52	ND	2.72	ND
2003	3.81	ND	3.99	ND
2004	ND	4.30	ND	3.80
2005	ND	4.18	ND	3.84

Middle-left panel
Real Residential Investment

	Percent change, Q4/Q4	Forecast
2002	7.10	ND
2003	9.50	ND
2004	ND	4.10
2005	ND	-2.40

Middle-right panel
Mortgage Rates

Horizon: 1998 to 2005
Description: Data are plotted on two curves, expressed as a percent, and presented quarterly. One curve represents the average on stock of fixed-rate mortgages, for which an asterisk denotes weighted-average coupon on securitized home mortgages. The other curve represents the 30-year fixed rate. The average curve begins just below 8 in 1998. It then decreases, remaining at about 7.5 through the start of 2001. The curve decreases through mid-2004, ending at about 6. The average curve then shows a forecast from mid-2004 through 2005, where it increases to just above 6. The 30-year fixed-rate curve begins at about 7 in 1998, followed by a decrease to about 6.75 in 1999. The curve increases through 2000 to about 8.5; it then continues generally downward through the start of 2003 to about 5.5, after which it increases to about 6 by midyear. The curve dips to about 5.5 at the start of 2004, then increases, ending at about 6.25 in mid-2004. The 30-year fixed-rate curve then shows a forecast from mid-2004 through 2005, where it remains at about 6.25 throughout the period.

Bottom-left panel
Financial Obligations Ratio

Horizon: 1998 to 2005
Description: Data are plotted on a curve and are expressed as a percent of DPI. The curve begins in

1998 at about 17.5, increases to about 18.0 in 1999, then dips to about 17.7 in 2000. The curve climbs to about 18.6 in mid-2001, drops to about 18.3, then increases to about 18.8 by year-end. The curve dips to about 18.6 at the start of 2002 and increases to about 18.7 by the end of the year. It decreases through mid-2003 to about 18.2 and then increases, reaching about 18.3 by year-end. The curve decreases through mid-2004 to end at about 18.1. The curve then shows a forecast from mid-2004 through 2005, where it remains at about 18.1.

Bottom-right panel
Credit Card ABS Spread over Swap Rate

Horizon: 2000 to June 25, 2004
Description: The figure shows the four-week moving average for the BBB, five-year. Data are plotted on a curve and expressed in basis points. The curve starts in mid-2000 at about 100, then dips to about 75 toward the end of the year. The curve moves generally upward through mid-2001 to about 110, dips to about 100, then increases to about 130 by year-end. It decreases through mid-2002 to a bit below 100, followed by an increase to about 150 by the end of the year. The curve falls through mid-2004 to about 50, then increases to end just above 60 on June 25, 2004.

Chart 5
Business Sector

Top-left panel
Financial Ratios

Horizon: 1990 to 2004:Q1
Description: Data are plotted on two curves and are expressed in percent, on an annual basis. One curve represents the interest expense to cash flow, and the other curve represents debt to assets. The interest curve begins at just above 23 in 1990, then increases to about 25 in 1991. The curve falls through 1997 to about 15, increases through 2001 to about 20, then decreases through 2003 to end at about 15. The curve then shows a forecast through 2004:Q1, where it decreases to about 14. The debt to assets curve begins at about 32 in 1990, then falls through 1994 to about 28. It increases to about 28.5 in 1995 and decreases to about 28 in 1996. The curve increases through 1999 to almost 31, dips to about 30 in 2000, then increases to just above 30 through 2002. The curve drops in 2003 to end at about 27.25. The debt curve then shows a forecast through 2004:Q1, where it remains at about 27.25.

Source: Compustat, nonfinancial corporations.

Top-right panel
Bond Default and Loan Delinquency Rates

Horizon: C&I loan delinquency rate, 1990 to 2004:Q1; bond default rate, 1990 to May 2004
Description: Data are plotted on two curves and are expressed as a percent of outstandings. One curve represents the C&I loan delinquency rate. The other curve represents the bond default rate, for which the six-month moving average is from Moody's Investors Service. The C&I curve begins in 1990 at just below 5, followed by an increase to about 6 in 1991. The curve falls through 1999 to approximately 1.75, then continues upward through 2002 to reach about 4. The curve decreases through 2004:Q1, ending at about 2.5. The bond default curve begins at about 1.5 in 1990 and increases to about 3.25 in 1991. The curve then generally trends downward, remaining at about 0.75 through 1998, then increases to about 1.25 in 1999. The curve dips to about 1 in 2000, then continues generally upward through year-end 2002 to almost 4. The curve then decreases, ending at about 0.25

in May 2004.

Middle-left panel
Interest Rates

Series: Average rate on new debt and Average rate on stock of debt
Horizon: 1993 to 2004:Q1
Description: Data are shown as curves. Data are quarterly. Units are percent. For the average rate on new debt (weighted average of corporate bond yields and bank loan rates), the series started at a little more than 7 percent in 1993, rose to about 8.5 percent in about early 1995, and fell to close to 7 percent in approximately early 1996. The series remained generally at that level until about 1999; then the series increased to about 8.6 percent by about year-end 2000, decreased to near 6 percent sometime in the last quarter of 2002, and fell to a little more than 4 percent in 2004:Q1.

For the average rate on stock of debt (source: Compustat, nonfinancial corporations; weighted average for investment-grade, speculative-grade, and unrated firms), the series started at a little under 8 percent in about early 1993 and generally declined a bit until about year-end 2000, when the series increased to about 7.6 percent. Afterward, the series fell to a little more than 6 percent in 2002 and generally remained at that level until 2004:Q1.

The curves intersect in about the middle of 1994, generally intersect again from about the middle of 1995 through about early 1999, and intersect near year-end 2001.

Middle-right panel
Profit Share*

	Percent	Forecast
1975:Q1	6.75	ND
1975:Q2	7.40	ND
1975:Q3	8.47	ND
1975:Q4	8.59	ND
1976:Q1	9.01	ND
1976:Q2	8.56	ND
1976:Q3	8.43	ND
1976:Q4	8.20	ND
1977:Q1	8.41	ND
1977:Q2	9.17	ND
1977:Q3	9.63	ND
1977:Q4	9.10	ND
1978:Q1	8.51	ND
1978:Q2	9.21	ND
1978:Q3	9.12	ND
1978:Q4	9.20	ND
1979:Q1	8.64	ND
1979:Q2	8.44	ND
1979:Q3	8.12	ND
1979:Q4	7.79	ND

	Percent	Forecast
1980:Q1	7.42	ND
1980:Q2	6.27	ND
1980:Q3	6.42	ND
1980:Q4	6.71	ND
1981:Q1	6.82	ND
1981:Q2	6.57	ND
1981:Q3	6.97	ND
1981:Q4	6.43	ND
1982:Q1	5.77	ND
1982:Q2	6.05	ND
1982:Q3	6.02	ND
1982:Q4	5.79	ND
1983:Q1	6.33	ND
1983:Q2	7.01	ND
1983:Q3	7.24	ND
1983:Q4	7.32	ND
1984:Q1	7.76	ND
1984:Q2	7.81	ND
1984:Q3	7.41	ND
1984:Q4	7.47	ND
1985:Q1	7.39	ND
1985:Q2	7.37	ND
1985:Q3	7.63	ND
1985:Q4	7.19	ND
1986:Q1	7.05	ND
1986:Q2	6.87	ND
1986:Q3	6.61	ND
1986:Q4	6.61	ND
1987:Q1	6.76	ND
1987:Q2	7.39	ND
1987:Q3	7.76	ND
1987:Q4	7.75	ND
1988:Q1	7.86	ND
1988:Q2	8.07	ND
1988:Q3	8.09	ND
1988:Q4	8.34	ND
1989:Q1	7.74	ND
1989:Q2	7.44	ND
1989:Q3	7.22	ND

	Percent	Forecast
1989:Q4	7.12	ND
1990:Q1	7.19	ND
1990:Q2	7.49	ND
1990:Q3	6.94	ND
1990:Q4	6.92	ND
1991:Q1	7.34	ND
1991:Q2	7.16	ND
1991:Q3	7.06	ND
1991:Q4	7.05	ND
1992:Q1	7.61	ND
1992:Q2	7.54	ND
1992:Q3	6.42	ND
1992:Q4	7.44	ND
1993:Q1	7.43	ND
1993:Q2	7.83	ND
1993:Q3	7.80	ND
1993:Q4	8.37	ND
1994:Q1	7.35	ND
1994:Q2	8.22	ND
1994:Q3	8.50	ND
1994:Q4	8.71	ND
1995:Q1	8.66	ND
1995:Q2	8.96	ND
1995:Q3	9.36	ND
1995:Q4	9.29	ND
1996:Q1	9.73	ND
1996:Q2	9.72	ND
1996:Q3	9.69	ND
1996:Q4	9.78	ND
1997:Q1	9.97	ND
1997:Q2	10.10	ND
1997:Q3	10.35	ND
1997:Q4	10.09	ND
1998:Q1	9.13	ND
1998:Q2	8.85	ND
1998:Q3	8.88	ND
1998:Q4	8.57	ND
1999:Q1	9.01	ND
1999:Q2	8.94	ND

	Percent	Forecast
1999:Q3	8.73	ND
1999:Q4	8.80	ND
2000:Q1	8.31	ND
2000:Q2	8.14	ND
2000:Q3	7.89	ND
2000:Q4	7.62	ND
2001:Q1	7.21	ND
2001:Q2	7.11	ND
2001:Q3	6.79	ND
2001:Q4	8.16	ND
2002:Q1	8.27	ND
2002:Q2	8.41	ND
2002:Q3	8.31	ND
2002:Q4	8.57	ND
2003:Q1	8.42	ND
2003:Q2	9.21	ND
2003:Q3	9.92	ND
2003:Q4	10.48	ND
2004:Q1	10.49	ND
2004:Q2	ND	10.56
2004:Q3	ND	10.44
2004:Q4	ND	10.33
2005:Q1	ND	10.15
2005:Q2	ND	9.93
2005:Q3	ND	9.72
2005:Q4	ND	9.52

Note: As shown in the chart, shaded bars denote the recession periods of 1973:Q4-1975:Q1, 1980:Q1-1980:Q3, 1981:Q3-1982:Q4, 1990:Q3-1991:Q1, and 2001:Q1-2001:Q4, as defined by the National Bureau of Economic Research (NBER).

* Ratio of economic profits before tax to GNP. Excludes FR Banks. Return to text

Bottom-left panel
Accelerator Effects

Horizon: Annual, 1985 to 2005
Description: For accelerator effects, accelerator measured as an 8-quarter percent change in real business output less year-earlier 8-quarter percent change. Regression line fit to data for 1985 to 2000.

Data are shown as dots (black dots for the years 1985 to 2000 and red dots for years 2001 to 2005). Units on the y-axis are the four-quarter percent change in real E&S. The x-axis is labeled "Accelerator," with tick marks ranging from negative four to positive four. A regression line (with a positive slope (the line goes upward from left to right)) runs from the zero line in the top-left

quadrant to the upper level of the top-right quadrant, from a little less than negative three to almost positive three (x-axis) and from zero to a little more than 15 (y-axis).

The black dots are fitted to the regression line. The red dots are for the more recent years (as a comparison for the fitted black dots).

Bottom-right panel
Real Business Fixed Investment

Percent change, Q4/Q4

	2003	2004	2005
		projection	
1. Total BFI	7	12	9
2. E&S	10	15	10
3. NRS	-1	1	7

Chart 6
The Labor Market

Top-left panel
Private Payroll Employment

Horizon: 1997 to 2005 (projections begin in 2004:Q2)
Description: Data are plotted as a curve. Units are in thousands. The data represents the average monthly change over the quarter. The curve begins at about 250 in 1997 and generally remains at that level through 1999. Beginning in 2000, the series falls until reaching nearly negative 400 near approximately year-end 2001. The series then generally rises to near 200 in approximately early 2004. The series is projected to reach nearly 300 in about the middle of 2004. The series is projected to fall to a little less than 200 approximately near the end of 2005.

Top-right panel
Output per Hour

Chained (2000) dollars per hour, ratio scale

	Structural	Structural Forecast	Actual	Actual Forecast
1997:Q1	36.46	ND	36.22	ND
1997:Q2	36.68	ND	36.60	ND
1997:Q3	36.90	ND	36.98	ND
1997:Q4	37.13	ND	37.05	ND
1998:Q1	37.38	ND	37.32	ND
1998:Q2	37.63	ND	37.46	ND
1998:Q3	37.88	ND	37.74	ND
1998:Q4	38.13	ND	38.12	ND
1999:Q1	38.39	ND	38.36	ND
1999:Q2	38.64	ND	38.43	ND

	Structural	Structural Forecast	Actual	Actual Forecast
1999:Q3	38.90	ND	38.70	ND
1999:Q4	39.17	ND	39.33	ND
2000:Q1	39.43	ND	39.15	ND
2000:Q2	39.70	ND	39.88	ND
2000:Q3	39.96	ND	39.84	ND
2000:Q4	40.23	ND	40.15	ND
2001:Q1	40.58	ND	40.15	ND
2001:Q2	40.94	ND	40.46	ND
2001:Q3	41.29	ND	40.64	ND
2001:Q4	41.65	ND	41.33	ND
2002:Q1	41.99	ND	42.29	ND
2002:Q2	42.34	ND	42.36	ND
2002:Q3	42.68	ND	42.84	ND
2002:Q4	43.03	ND	43.09	ND
2003:Q1	43.43	ND	43.47	ND
2003:Q2	43.83	ND	44.12	ND
2003:Q3	44.24	ND	45.12	ND
2003:Q4	44.65	ND	45.40	ND
2004:Q1	45.00	ND	45.81	ND
2004:Q2	ND	45.35	ND	46.08
2004:Q3	ND	45.71	ND	46.24
2004:Q4	ND	46.06	ND	46.41
2005:Q1	ND	46.40	ND	46.60
2005:Q2	ND	46.75	ND	46.85
2005:Q3	ND	47.09	ND	47.10
2005:Q4	ND	47.44	ND	47.36

Middle-left panel
Private Employment

Series: Establishment survey and Adjusted household survey
Horizon: 1994 to 2004:Q2
Description: Data are plotted as curves. Units are in millions, ratio scale. Note: Observations for 2004:Q2 are April-May averages.

For the establishment survey, the series begins at nearly 113 in early 1994, then generally rises to somewhat more than 130 in 2001, and then falls a little to about 130 in 2001 and generally remains around that level until the end of 2004:Q2.

For the adjusted household survey, the series begins at nearly 113 in about early 1994, then generally rises to about 130 in 2001, remaining overall at that level, before rising to a little over 130 in 2004:Q2.

The curves intersect from early 1994 to about the middle of 1995. The curves generally come close to or intersect with each other from about late 1995 through about early 1998. After that, the curves have a little more separation until becoming close again in about 2004:Q2.

Middle-right panel
Unemployment Rate

Percent

	Unemployment Rate	Unemployment Rate Forecast	NAIRU	NAIRU Forecast
1997:Q1	5.20	ND	5.18	ND
1997:Q2	5.00	ND	5.15	ND
1997:Q3	4.90	ND	5.16	ND
1997:Q4	4.70	ND	5.17	ND
1998:Q1	4.60	ND	5.13	ND
1998:Q2	4.40	ND	5.12	ND
1998:Q3	4.50	ND	5.14	ND
1998:Q4	4.40	ND	5.17	ND
1999:Q1	4.30	ND	5.16	ND
1999:Q2	4.30	ND	5.11	ND
1999:Q3	4.20	ND	5.14	ND
1999:Q4	4.10	ND	5.15	ND
2000:Q1	4.00	ND	5.13	ND
2000:Q2	3.90	ND	5.10	ND
2000:Q3	4.00	ND	5.13	ND
2000:Q4	3.90	ND	5.12	ND
2001:Q1	4.20	ND	5.11	ND
2001:Q2	4.40	ND	5.09	ND
2001:Q3	4.80	ND	5.08	ND
2001:Q4	5.60	ND	5.09	ND
2002:Q1	5.70	ND	5.08	ND
2002:Q2	5.80	ND	5.04	ND
2002:Q3	5.70	ND	5.07	ND
2002:Q4	5.90	ND	5.04	ND
2003:Q1	5.80	ND	5.02	ND
2003:Q2	6.14	ND	4.98	ND
2003:Q3	6.13	ND	5.02	ND
2003:Q4	5.86	ND	4.99	ND
2004:Q1	5.64	ND	5.01	ND
2004:Q2	ND	5.56	ND	5.00
2004:Q3	ND	5.45	ND	5.00
2004:Q4	ND	5.26	ND	5.00

	Unemployment Rate	Unemployment Rate Forecast	NAIRU	NAIRU Forecast
2005:Q1	ND	5.22	ND	5.00
2005:Q2	ND	5.19	ND	5.00
2005:Q3	ND	5.17	ND	5.00
2005:Q4	ND	5.15	ND	5.00

Bottom-left panel
Labor Force Participation Rate

	Percent	Forecast
1997:Q1	66.99	ND
1997:Q2	67.11	ND
1997:Q3	67.16	ND
1997:Q4	67.14	ND
1998:Q1	67.10	ND
1998:Q2	67.02	ND
1998:Q3	67.07	ND
1998:Q4	67.17	ND
1999:Q1	67.14	ND
1999:Q2	67.07	ND
1999:Q3	67.05	ND
1999:Q4	67.09	ND
2000:Q1	67.29	ND
2000:Q2	67.17	ND
2000:Q3	66.91	ND
2000:Q4	66.94	ND
2001:Q1	67.15	ND
2001:Q2	66.77	ND
2001:Q3	66.70	ND
2001:Q4	66.75	ND
2002:Q1	66.58	ND
2002:Q2	66.65	ND
2002:Q3	66.65	ND
2002:Q4	66.46	ND
2003:Q1	66.27	ND
2003:Q2	66.40	ND
2003:Q3	66.19	ND
2003:Q4	66.13	ND
2004:Q1	65.96	ND
2004:Q2	ND	65.93
2004:Q3	ND	66.10

	Percent	Forecast
2004:Q4	ND	66.24
2005:Q1	ND	66.36
2005:Q2	ND	66.43
2005:Q3	ND	66.50
2005:Q4	ND	66.54

Note: Average, 1987:Q1-2004:Q1: 66.65 percent.

Bottom-right panel
Average Workweek

The period covered is 1997 through 2005, and 2004:Q2 through 2005:Q4 is a forecast. The data are plotted on two curves. One curve shows the average workweek and the other curve shows a trend. The Y axis shows hours in a range from 33.0 to 35.0.

The average workweek curve begins in 1997 at about 34.4, increases to about 34.6 in the latter half of 1997 and stays there until dropping to about 34.4 at mid-1998 and increasing to 34.5 by year-end. The curve drops to about 34.3 near the end of 1999:Q1 and remains around there through year-end. Starting in 2000:Q1, the curve decreases steadily through year-end 2001 to about 33.8. It remains there through 2002:Q1, then increases to about 33.9 in 2002:Q2 before falling to about 33.6 in 2003:Q3. The curve then rises to just below 34.0 at year-end 2005.

The trend curve begins in 1997 at about 34.2 and steadily drops to just below 34.0 at year-end 2005.

Chart 7
Recent Inflation Developments

Top-left panel
PCE Price Inflation

Four-quarter percent change

	Total	Total Forecast	Core	Core Forecast
1994:Q1	1.93	ND	2.20	ND
1994:Q2	1.82	ND	2.12	ND
1994:Q3	2.38	ND	2.45	ND
1994:Q4	2.29	ND	2.46	ND
1995:Q1	2.38	ND	2.47	ND
1995:Q2	2.39	ND	2.35	ND
1995:Q3	1.92	ND	2.05	ND
1995:Q4	1.89	ND	2.06	ND
1996:Q1	2.03	ND	2.01	ND
1996:Q2	2.12	ND	1.88	ND
1996:Q3	2.10	ND	1.79	ND
1996:Q4	2.35	ND	1.84	ND

	Total	Total Forecast	Core	Core Forecast
1997:Q1	2.18	ND	1.75	ND
1997:Q2	1.72	ND	1.78	ND
1997:Q3	1.59	ND	1.58	ND
1997:Q4	1.25	ND	1.36	ND
1998:Q1	0.87	ND	1.33	ND
1998:Q2	0.85	ND	1.16	ND
1998:Q3	0.91	ND	1.31	ND
1998:Q4	0.95	ND	1.43	ND
1999:Q1	1.13	ND	1.38	ND
1999:Q2	1.62	ND	1.53	ND
1999:Q3	1.84	ND	1.52	ND
1999:Q4	2.07	ND	1.55	ND
2000:Q1	2.70	ND	1.85	ND
2000:Q2	2.53	ND	1.74	ND
2000:Q3	2.44	ND	1.62	ND
2000:Q4	2.28	ND	1.53	ND
2001:Q1	2.19	ND	1.61	ND
2001:Q2	2.34	ND	1.77	ND
2001:Q3	1.99	ND	1.88	ND
2001:Q4	1.64	ND	2.14	ND
2002:Q1	1.02	ND	1.69	ND
2002:Q2	1.11	ND	1.68	ND
2002:Q3	1.50	ND	1.85	ND
2002:Q4	1.83	ND	1.58	ND
2003:Q1	2.36	ND	1.56	ND
2003:Q2	1.76	ND	1.29	ND
2003:Q3	1.70	ND	1.05	ND
2003:Q4	1.52	ND	0.97	ND
2004:Q1	1.56	ND	1.19	ND
2004:Q2	ND	2.17	ND	1.38

Note: Observation for 2004:Q2 is staff forecast.

Top-right panel
Recent Monthly Price Changes

Percent

	Total PCE	Core
January	.4	.2
February	.2	.1

	Total PCE	Core
March	.3	.2
April	.2	.2
May	.5	.2

Middle-left panel
Contributions to Core PCE Inflation: By Component

Percentage points

	2003		2004
	H1	H2	H1
1. Total	.8	1.1	2.1
2. Motor vehicles	-.2	-.3	.1
3. Non-MV goods	-.7	-.2	.1
4. Market services	1.6	1.5	1.5
5. Owner-occupied rent	.3	.3	.4
6. Nonmarket services	.2	.1	.5

Note: Half years are Q2/Q4 or Q4/Q2. Figures for 2004:H1 are staff forecasts.

Middle-right panel
Contributions to Core PCE Inflation: By Underlying Cause

Percentage points

	2003		2004
	H1	H2	H1
1. Energy-price pass-through	.0	.1	.2
2. Import-price pass-through	.0	.0	.2
3. Other	.8	1.0	1.7

Bottom-left panel
Commodity Prices

Series: Commodity Research Bureau (CRB) spot industrial materials prices (last observation is for Monday, June 28) and Wholesale Gasoline (last observation is average for June 23 through June 28)
Horizon: July 2002 to March 2004
Description: Data are plotted as curves. Units for CRB spot industrial materials prices is index, 1967=100; units for wholesale gasoline are in cents per gallon.

For the CRB spot industrial materials prices, the series begins at about 250 in approximately July 2002, generally staying around that level until about March 2003. The series generally rises until reaching a peak at about 310 in about late September 2003. The series then falls to about 290 near approximately year-end 2003.

For wholesale gasoline, the series begins at about 93 cents in approximately July 2002, then rises to about 115 cents sometime in September 2002. After that, the series generally falls to about 85 cents sometime in November 2002, remaining at about that level until rising again to about 115 cents

sometime in February 2003. The series falls to about 85 cents sometime in April 2003, remaining at about that level until approximately June 2003. The series then begins to rise until reaching a peak of nearly 150 cents sometime in November 2003. After that, the series falls, reaching approximately 125 cents and then rising a bit to about 128 cents sometime in December 2003.

Sources: Commodity Research Bureau and Department of Energy.

Bottom-right panel
Median Expected Inflation

Percent

	Next 12 months	Next 5-10 years
January 2000	3.00	3.00
February 2000	2.90	2.90
March 2000	3.20	3.10
April 2000	3.20	2.80
May 2000	3.00	2.90
June 2000	2.90	2.80
July 2000	3.00	2.80
August 2000	2.70	2.90
September 2000	2.90	3.00
October 2000	3.20	3.00
November 2000	2.90	2.90
December 2000	2.80	3.00
January 2001	3.00	2.90
February 2001	2.80	3.00
March 2001	2.80	3.00
April 2001	3.10	3.10
May 2001	3.20	3.00
June 2001	3.00	3.00
July 2001	2.60	2.90
August 2001	2.70	3.00
September 2001	2.80	2.90
October 2001	1.00	2.70
November 2001	0.40	2.80
December 2001	1.80	3.00
January 2002	1.90	2.70
February 2002	2.10	2.80
March 2002	2.70	2.80
April 2002	2.80	2.80
May 2002	2.70	3.00
June 2002	2.70	2.80
July 2002	2.60	2.80

	Next 12 months	Next 5-10 years
August 2002	2.60	2.90
September 2002	2.50	2.50
October 2002	2.50	2.80
November 2002	2.40	2.80
December 2002	2.50	2.80
January 2003	2.50	2.70
February 2003	2.70	2.70
March 2003	3.10	2.80
April 2003	2.40	2.70
May 2003	2.00	2.80
June 2003	2.10	2.70
July 2003	1.70	2.70
August 2003	2.50	2.70
September 2003	2.80	2.70
October 2003	2.60	2.80
November 2003	2.70	2.70
December 2003	2.60	2.80
January 2004	2.70	2.80
February 2004	2.60	2.90
March 2004	2.90	2.90
April 2004	3.20	2.70
May 2004	3.30	2.80
June 2004	3.30	2.90

Source: Michigan SRC.

Chart 8
Inflation Outlook

Top panel
PCE Price Inflation

Percent, annual rate*

	2003	2004		2005
		H1	H2	
		projection		
1. Total	1.5	3.4	1.3	1.3
2. (Jan. GB)	*(1.4)*	*(1.3)*	*(.7)*	*(1.0)*
3. Energy	7.8	25.7	-8.7	-4.2
4. *(Jan. GB)*	*(8.5)*	*(3.8)*	*(-6.8)*	*(-.4)*

	2003	2004		2005
		H1	H2	
		projection		
5. Food	2.6	3.3	2.1	2.0
6. *(Jan. GB)*	*(2.7)*	*(1.8)*	*(1.4)*	*(1.4)*
7. Excluding food and energy	1.0	2.1	1.8	1.6
8. (Jan. GB)	*(.8)*	*(1.0)*	*(1.0)*	*(1.0)*

* Years are Q4/Q4; half years are Q2/Q4 or Q4/Q2. Return to text

Middle-left panel
Energy Prices

	Four-quarter percent change	Forecast
2001:Q1	10.53	ND
2001:Q2	10.37	ND
2001:Q3	1.20	ND
2001:Q4	-10.53	ND
2002:Q1	-14.35	ND
2002:Q2	-10.78	ND
2002:Q3	-4.47	ND
2002:Q4	7.90	ND
2003:Q1	21.11	ND
2003:Q2	10.57	ND
2003:Q3	12.15	ND
2003:Q4	7.77	ND
2004:Q1	4.20	ND
2004:Q2	ND	12.42
2004:Q3	ND	8.33
2004:Q4	ND	7.64
2005:Q1	ND	-0.70
2005:Q2	ND	-7.09
2005:Q3	ND	-7.06
2005:Q4	ND	-4.60

Middle-right panel
Food Prices

	Four-quarter percent change	Forecast
2001:Q1	2.80	ND
2001:Q2	2.93	ND
2001:Q3	2.95	ND

	Four-quarter percent change	Forecast
2001:Q4	3.09	ND
2002:Q1	2.70	ND
2002:Q2	2.19	ND
2002:Q3	1.53	ND
2002:Q4	1.36	ND
2003:Q1	1.32	ND
2003:Q2	1.66	ND
2003:Q3	2.09	ND
2003:Q4	2.65	ND
2004:Q1	2.87	ND
2004:Q2	ND	3.37
2004:Q3	ND	3.39
2004:Q4	ND	2.88
2005:Q1	ND	2.73
2005:Q2	ND	2.12
2005:Q3	ND	1.97
2005:Q4	ND	1.99

Bottom-left panel
Core Non-fuel Import Prices*

	Four-quarter percent change	Forecast
2001:Q1	0.57	ND
2001:Q2	-0.32	ND
2001:Q3	-1.40	ND
2001:Q4	-1.96	ND
2002:Q1	-2.69	ND
2002:Q2	-1.94	ND
2002:Q3	-0.65	ND
2002:Q4	0.11	ND
2003:Q1	1.19	ND
2003:Q2	1.24	ND
2003:Q3	1.17	ND
2003:Q4	1.60	ND
2004:Q1	2.32	ND
2004:Q2	ND	3.31
2004:Q3	ND	3.99
2004:Q4	ND	4.04
2005:Q1	ND	2.87

	Four-quarter percent change	Forecast
2005:Q2	ND	1.77
2005:Q3	ND	0.92
2005:Q4	ND	0.52

* Excluding oil, natural gas, semiconductors, and computers. Return to text

Bottom-right panel
Core PCE Prices

	Four-quarter percent change	Forecast	Lower 90% GB confidence interval*	Lower 70% GB confidence interval	Upper 70% GB confidence interval	Upper 90% GB confidence interval
2001:Q1	1.61	ND	ND	ND	ND	ND
2001:Q2	1.77	ND	ND	ND	ND	ND
2001:Q3	1.88	ND	ND	ND	ND	ND
2001:Q4	2.14	ND	ND	ND	ND	ND
2002:Q1	1.69	ND	ND	ND	ND	ND
2002:Q2	1.68	ND	ND	ND	ND	ND
2002:Q3	1.85	ND	ND	ND	ND	ND
2002:Q4	1.58	ND	ND	ND	ND	ND
2003:Q1	1.56	ND	ND	ND	ND	ND
2003:Q2	1.29	ND	ND	ND	ND	ND
2003:Q3	1.05	ND	ND	ND	ND	ND
2003:Q4	0.97	0.97	0.97	0.97	0.97	0.97
2004:Q1	ND	1.19	1.04	1.10	1.27	1.34
2004:Q2	ND	1.38	1.07	1.20	1.55	1.69
2004:Q3	ND	1.55	1.07	1.27	1.82	2.02
2004:Q4	ND	1.66	1.04	1.23	2.09	2.29
2005:Q1	ND	1.62	0.72	1.04	2.19	2.52
2005:Q2	ND	1.60	0.53	0.89	2.31	2.68
2005:Q3	ND	1.52	0.32	0.72	2.33	2.73
2005:Q4	ND	1.46	0.19	0.61	2.31	2.73

* Confidence intervals based on Greenbook forecast errors, 1978-2003. Return to table

Chart 9
How Big is the Gap in Resource Utilization?

Chart 9 is a three-by-two array of graphs. Each graph shows data plotted as two curves. Units are standard deviations. Horizon: 1990 to 2004. Except where noted, observations for 2004:Q2 are the averages of April and May.

Each graph includes unemployment gap data plotted as a curve. The series begins at about one standard deviation in approximately early 1990 and falls to about negative two standard deviations

by approximately early 1992. The series generally rises from that level, reaching a peak of about a bit more than zero standard deviation in about early 1995. The series generally rises from that level to about 1.80 standard deviations at about year-end 2000, falls generally from that level until reaching about negative 0.5 standard deviation in approximately early 2003 before rising a bit to about negative 0.25 standard deviation in about early 2004.

Top-left panel
Employment-Population Ratio and Unemployment Gap

For the employment-population ratio, the series begins at about one standard deviation in about early 1990, then falls to approximately negative two standard deviations in about year-end 1991. The series generally rises to a little more than zero standard deviation at approximately year-end 1994. The series generally rises from that point until reaching a peak of approximately 1.75 standard deviations sometime in early 2000. From that point, the series generally falls, reaching approximately a bit less than zero standard deviation toward approximately year-end 2002, then falling again until reaching approximately negative one standard deviation in approximately the middle of 2004.

The employment-population ratio and unemployment gap curves generally intersect throughout the horizon.

Top-right panel
Job-Market Perceptions* and Unemployment Gap

For job-market perceptions, the series begins at a little more than zero standard deviation in about early 1990, falls to approximately negative 1.80 standard deviations by about year-end 1991. The series then rises to about zero standard deviations in early 1995, generally remaining at that level until early 1996. The series generally rises from that level beginning in about the middle of 1996, reaching a peak of about 1.90 standard deviations in approximately late 2000. The series then generally falls until reaching about negative one standard deviation toward year-end 2003. The series then rises to about negative 0.5 standard deviation in approximately early 2004.

The job-market perceptions and unemployment gap curves generally intersect throughout the horizon.

* Source: Conference Board. The proportion of households believing jobs are easy to get, minus those believing jobs are hard to get, plus 100. Observation for 2004:Q2 is average of April, May, and June. Return to text

Middle-left panel
Manufacturing Capacity Utilization and Unemployment Gap

For capacity utilization, the series begins at about one standard deviation in about early 1990 and falls to about negative 0.5 standard deviation by approximately the end of 1990. From that level, the series generally rises reaching a peak of about one standard deviation in about early 1995. The series then falls a bit to about 0.25 standard deviation toward year-end 1995; the series generally rises to about one standard deviation at about the end of 1997, falls generally until reaching about 0.5 standard deviation in about early 2000 and then falls generally again reaching nearly negative two standard deviations toward year-end 2001. The series generally remains at that level until rising to about negative one standard deviation in about early 2004.

The capacity utilization and unemployment gap curves generally do not intersect except nearly intersecting in approximately year-end 1990 and intersecting in early 1998.

Middle-right panel
ISM Capacity Utilization and Unemployment Gap

Note: ISM series is semiannual. Last observation for ISM series is 2004:H1.

For capacity utilization, the series begins at about 0.25 standard deviation in approximately early 1990 and, with some dips and rises, generally remains at that level until reaching zero standard deviation in about the middle of 1992. The series then rises generally until reaching a peak of about 1.80 standard deviations by about year-end 1994. The series falls a bit to about 0.5 standard deviation in about early 1996, and generally remains around that level until reaching about one standard deviation in early 2000. The series then falls generally to a little below about negative two standard deviations toward year-end 2001. The series rises to about negative 1.75 standard deviations in early 2002, remains generally around that level until rising to about one standard deviation in about early 2004.

The capacity utilization and unemployment gap curves generally do not intersect except nearly intersecting in approximately year-end 1990 and intersecting in about the middle of 1991, about early 1998, and about early 2004.

Bottom-left panel
Output Gap* and Unemployment Gap

For output gap, the series begins at about a little more than zero standard deviation in about early 1990. The series then falls to nearly negative two standard deviations toward year-end 1990, remains generally around that level until rising to about negative one standard deviation toward year-end 1991, and then generally rises from that level until reaching a peak of about two standard deviations toward year-end 1999. The series generally remains around that level and then falls to about negative one standard deviation in about early 2003. The series then rises to about negative 0.25 standard deviation in about early 2004.

The output gap and unemployment gap curves generally intersect throughout the horizon.

* Observation for 2004:Q2 is staff forecast. Return to text

Bottom-right panel
National Activity Index* and Unemployment Gap

For the National Activity Index, the series begins at about a little more than zero standard deviation in approximately early 1990. The series then falls to about negative 2.50 standard deviations at about year-end. The series generally rises from that level until reaching a peak of about 1.75 standard deviations in approximately year-end 1994. The series, after falling to a level which is a little less than zero standard deviation near approximately mid-1995, generally remains around that level and then rises to about one standard deviation in approximately mid-1996. The series generally remains around that level until falling to a little more than zero standard deviation in about early 1998. The series remains generally at that level until rising to about 1.75 standard deviations at approximately year-end 1999. The series then falls to approximately a little less than negative two standard deviations in about early 2001. From that level, the series rises to a bit above zero standard deviation in about early 2002, falls to about negative 0.75 toward year-end 2002, and remains generally around that level until rising to nearly 1.75 standard deviations in about early 2004.

The National Activity Index and unemployment gap curves generally do not intersect except intersecting in about the middle of 1991, intermittently in 1995, in about early 1996, in about mid-1997,intermittently in 2002, and in about early-to-middle 2003.

* Source: Federal Reserve Bank of Chicago. Observation for 2004:Q2 is the April figure. Return to text

Chart 10
Selected Sources of Uncertainty in the Outlook for Inflation

Top-left panel
Resource Utilization Simulations

- NAIRU is baseline value plus or minus 1/2 percentage point
- Slope coefficient is baseline value plus or minus one standard error
- "Resource utilization uncertainty" includes coefficient uncertainty

Top-right panel
Core PCE Prices

Series: Core PCE prices (resources utilization uncertainty (projected))
Horizon: 2001 to 2005; data are projected for 2004 and 2005.
Description: Data are plotted as a curve. Units are four-quarter percent change. Confidence intervals are based on Greenbook forecast errors, 1978-2003.

The series begins at about 1.75 percent sometime in the first quarter of 2001, rising generally to a peak of about 2.25 percent sometime in the fourth quarter of 2001. The series then falls to about 1.75 percent, remaining at about that level until falling generally to a little less than 1 percent sometime in the fourth quarter of 2003.

In the projected area, the series reflects the resource utilization uncertainty and begins at about a little less than 1 percent at about the beginning of 2004, rises generally to about 2 percent sometime in the fourth quarter of 2004, then the series decreases gradually to about 1.50 percent by about year-end 2005.

The projected data are within the 70 percent GB confidence interval.

Middle-left panel
Energy Price Simulations

- Energy prices are in range consistent with a 2/3 confidence interval around baseline oil price
- Slope coefficient is baseline value plus or minus one standard error
- "Energy-prices uncertainty" includes coefficient uncertainty

Middle-right panel
Core PCE Prices

Series: Core PCE prices (energy-price uncertainty (projected))
Horizon: 2001 to 2005; data are projected for 2004 and 2005.
Description: Data are plotted as a curve. Units are four-quarter percent change. Confidence intervals are based on Greenbook forecast errors, 1978-2003.

The series begins at about 1.75 percent sometime in the first quarter of 2001, rising generally to a peak of about 2.25 percent sometime in the fourth quarter of 2001. The series then falls to about 1.75 percent, remaining at about that level until falling generally to a little less than 1 percent sometime in the fourth quarter of 2003.

In the projected area, the series reflects the energy-price uncertainty and begins at about a little less than 1 percent at about the beginning of 2004, rises generally to about 2 percent sometime in the fourth quarter of 2004, then the series decreases gradually to about 1.50 percent by about year-end 2005.

The projected data are within the 70 percent GB confidence interval.

Bottom-left panel
Core Non-fuel Import Price Simulations

- Import prices are in range consistent with a 2/3 confidence interval around baseline exchange rate
- Slope coefficient is baseline value plus or minus one standard error
- "Core non-fuel import price uncertainty" includes coefficient uncertainty

Bottom-right panel
Core PCE Prices

Series: Core PCE prices (core non-fuel import-price uncertainty (projected))
Horizon: 2001 to 2005; data are projected for 2004 and 2005.
Description: Data are plotted as a curve. Units are four-quarter percent change. Confidence intervals are based on Greenbook forecast errors, 1978-2003.

The series begins at about 1.75 percent sometime in the first quarter of 2001, rising generally to a peak of about 2.25 percent sometime in the fourth quarter of 2001. The series then falls to about 1.75 percent, remaining at about that level until falling generally to a little less than 1 percent sometime in the fourth quarter of 2003.

In the projected area, the series reflects the core non-fuel import-price uncertainty and begins at about a little less than 1 percent at about the beginning of 2004, rises generally to about 2 percent sometime in the fourth quarter of 2004, then the series decreases gradually to about 1.50 percent by about year-end 2005.

The projected data are within the 70 percent GB confidence interval.

Chart 11
Risks to Inflation Outlook

Top-left panel
An Upside Risk

- Assume NAIRU is 5-3/4 percent rather than 5 percent
- Assume rebound in labor force participation will be only half as great
- Assume long-term inflation expectations gradually rise one percentage point

Top-right panel
Core PCE Inflation

Horizon: 2001 to 2005; data are projected for 2004 and 2005.
Description: Data are plotted as a curve. Units are four-quarter percent change. Confidence intervals are based on Greenbook forecast errors, 1978-2003. Data for high NAIRU/inflation expectations are

projected.

The series begins at about 1.75 percent sometime in the first quarter of 2001, rising generally to a peak of about 2.25 percent sometime in the fourth quarter of 2001. The series then falls to about 1.75 percent, remaining at about that level until falling generally to a little less than 1 percent sometime in the fourth quarter of 2003.

In the projected area, the series begins at about a little less than 1 percent at about the beginning of 2004, rises generally to about 2 percent sometime in the fourth quarter of 2004, then the series decreases gradually to about 1.50 percent by about year-end 2005.

Also in the projected area, the series for high NAIRU/inflation expectations begins at about 1.50 percent sometime in mid-2004. The series gradually rises from that level, reaching about 2.50 percent by about year-end 2005.

The projected data are within the 70 percent GB confidence interval. The data for 2005:Q4 is just within the area of the 90 percent GB confidence interval.

Middle panel
Price Markup Over Unit Labor Costs, Nonfarm Business Sector

Horizon: 1947 to 2005; data are projected for 2004 to 2005.
Description: Data are plotted as a curve. Units are ratio. Note: Nonfarm business sector using compensation per hour and actual productivity. The 1947-2003 average is approximately 1.56 over the horizon.

The series generally oscillates between 1.48 and 1.60 from 1947 to about year-end 1994. The series then rises generally, peaking at nearly 1.65 near year-end 1997. The series then generally falls, reaching nearly 1.53 near year-end 1999. The series remains generally around that level until rising generally to a peak of a little more than 1.65 near year-end 2003. The series is generally projected to fall in 2004 and 2005, reaching about 1.63 by around year-end 2005.

The series for lower markup is also projected to fall from a little more than 1.65 in about early 2004 to about 1.60 by around year-end 2005.

Bottom-left panel
A Downside Risk

- Firms may bid up wages faster than in the baseline
- Competitive pressures may be so strong that they more than offset the price effects of higher unit labor costs
- For a combination of these reasons, assume markup moves halfway back to its long-term average

Bottom-right panel
Core PCE Prices

Horizon: 2001 to 2005; data are projected for 2004 and 2005.
Description: Data are plotted as a curve. Units are four-quarter percent change. Confidence intervals are based on Greenbook forecast errors, 1978-2003. Data for lower markup are projected.

The series begins at about 1.75 percent sometime in the first quarter of 2001, rising generally to a peak of about 2.25 percent sometime in the fourth quarter of 2001. The series then falls to about 1.75 percent, remaining at about that level until falling generally to a little less than 1 percent sometime in

the fourth quarter of 2003.

In the projected area, the series begins at about a little less than 1 percent at about the beginning of 2004, rises generally to about 2 percent sometime in the fourth quarter of 2004, then the series decreases gradually to about 1.50 percent by about year-end 2005.

Also in the projected area, the series for lower markup begins at about 1.50 percent sometime in mid-2004. The series gradually falls from that level, reaching about 0.80 percent by about year-end 2005.

The projected data are within the 70 percent GB confidence interval.

Chart 12
International Financial Markets

Chart 12 is a two-by-two array of graphs for ten-year government bond yields, three-month eurocurrency futures, nominal exchange rates, and stock price indexes.

Top-left panel
Ten-Year Government Bond Yields

Ten-Year Government Bond Yields on a weekly basis for the United States, the United Kingdom, Germany, and Japan for 2002 through mid-2004. The range of the y-axis is [0, 7]; unit is percent. There is a vertical line in the graph that indicates the time of the January 2004 FOMC. The yields for the United States, the United Kingdom, and Germany all start at about 5 percent and track fairly closely for the entire period. The yields for the United States rise to nearly 5½ percent by early 2002, decline to about 3¼ percent by mid-2003, quickly rise to about 4½ percent, decline a bit to about 4 percent by the January 2004 FOMC, decline further to about 3¾ percent by early 2004, and then rise to about 4¾ percent by the end of the period. The yields for the United Kingdom rise to about 5¼ percent by early 2002, decline to just under 4 percent by mid-2003, rise to about 5 percent by late 2003, decline a bit to about 4¾ percent by the January 2004 FOMC, and then rise to about 5¼ percent by the end of the period. The yields for Germany rise to about 5¼ percent by early 2002, decline to about 3½ percent by mid-2003, rise to about 4½ percent by late 2003, decline to about 4¼ percent by the January 2004 FOMC, decline further to just under 4 percent by early 2004, and then rise to nearly 4½ percent by the end of the period. The yields for Japan start at about 1½ percent, decline to about ½ percent by mid-2003, quickly rise to about 1½ percent, decline slightly to about 1¼ percent by the January 2004 FOMC, and then rise to nearly 2 percent by the end of the period.

Top-right panel
Three-Month Eurocurrency Futures

Three-Month Eurocurrency Futures for sterling, the U.S. dollar, the euro, and the yen, as of January 28, 2004 and as of June 28, 2004 for 2004 through early 2006. The range of the y-axis is [0, 7]; unit is percent. Sterling as of January 28, 2004, begins at about 4½ percent and rises smoothly to just over 5 percent by the end of the period. Sterling as of June 28, 2004, begins at just over 5 percent and rises smoothly to just over 5½ percent by the end of the period. The U.S. dollar as of January 28, 2004, begins at about 1½ percent and rises smoothly to about 3½ percent by the end of the period. The U.S. dollar as of June 28, 2004, begins at just over 2 percent and rises smoothly to about 4½ percent by the end of the period. The euro as of January 28, 2004, begins at just over 2 percent and rises smoothly to just about 3¼ percent by the end of the period. The euro as of June 28, 2004, begins at about 2¼ percent and rises smoothly to about 3¾ percent by the end of the period. The yen

as of January 28, 2004, begins at just above 0 percent and rises slowly to about ½ percent by the end of the period. The yen as of June 28, 2004, begins at just above 0 percent and rises slowly to about ¾ percent by the end of the period.

Bottom-left panel
Nominal Exchange Rates

Nominal Exchange Rates, Foreign currency/U.S. dollar, on a weekly basis for 2002 through mid-2004. The range of the y-axis is [60, 110]; index, Jan. 4, 2002 = 100. There is a vertical line in the graph that indicates the time of the January 2004 FOMC. The four series are exchange rate indexes for the broad dollar, the yen, sterling, and the euro. The broad dollar index is trade-weighted. All the series begin at about 100. The broad dollar index rises immediately to about 102, falls to about 87 by the January 2004 FOMC, and then rises to just over 90 by the end of the period. The exchange rate index for the yen rises immediately to about 102, falls to about 80 by the January 2004 FOMC, and then rises with marked volatility to about 82 by the end of the period. The exchange rate index for sterling rises immediately to about 103, falls to just below 80 by the January 2004 FOMC, falls further to about 76, and then rises to just below 80 by the end of the period. The exchange rate index for the euro rises immediately to about 104, falls to about 70 by the January 2004 FOMC, and then rises to about 73 by the end of the period.

Bottom-right panel
Stock Price Indexes

Stock Price Indexes on a weekly basis for TOPIX, the S&P 500, the DJ Euro, and the FTSE-350 for 2002 through mid-2004. The range of the y-axis is [40, 120]; index, Jan. 4, 2002 = 100. There is a vertical line in the graph that indicates the time of the January 2004 FOMC. All the series begin at 100. The TOPIX index, with marked volatility, rises to about 107 by mid-2002, declines to about 75 by early 2003, rises to just over 100 by the January 2004 FOMC, and then rises further to about 117 by the end of the period. The S&P 500 index, with marked volatility, falls to about 70 by mid-2002, ranges from about 70-80 through early 2003, rises to nearly 100 by the January 2004 FOMC, and then ranges between about 95-98, ending at about 98 by the end of the period. The FTSE-350 index, with marked volatility, falls to about 63 by early 2003, rises to about 86 by the January 2004 FOMC, and then fluctuates between about 83-88, ending at about 87 by the end of the period. The DJ Euro index, with marked volatility, falls to about 55 by early 2003, rises to about 80 by the January 2004 FOMC, and then fluctuates between about 77-82, ending at about 80 by the end of the period.

Chart 13
Outlook for the Foreign Economies

Chart 13 is a three-by-two array of panels, including a table on real GDP projections, and a panel with word descriptions of the outlook for foreign economies. "Rebound in Japan" comprises the bottom four panels, including graphs on exports and corporate profits, investment and labor market, the household sector, and bank credit and land prices.

Top-left panel
Real GDP Projections*

Percent change, a.r.**

	2004	2005

	H1	H2	
1. Japan	5.0	2.8	2.4
2. China	11.3	6.3	7.3
3. Other Emerging Asia	5.9	5.1	4.7
4. Germany	1.2	1.2	1.5
5. Other Euro Area	2.3	2.0	2.0
6. Canada	3.2	3.6	3.5
7. Latin America	5.2	4.2	3.8
8. Total Foreign	4.2	3.6	3.5

* Aggregates weighted by U.S. exports. Return to text

** Year is Q4/Q4; half years are Q2/Q4 or Q4/Q2. Return to text

Top-right panel

- Global recovery now under way.
- Inflation likely to remain contained.
- New risks have emerged:
  - -- High and volatile oil prices.
  - -- Rising interest rates.
  - -- Hard landing in China.

Rebound in Japan

Middle-left panel
Exports and Corporate Profits

Exports and Corporate Profits for 1994 through early 2004. The range of the right y-axis, which measures real exports as an index, 1994:Q1=100, is [100, 180]. The range of the left y-axis, which measures corporate profits in percent of sales, is [1,5]. The series for real exports starts at 100, rises to about 128 by end-1997, dips to about 120 by the start of 1999, rises to just over 140 by end-2000, drops to about 125 by end 2001, and then rises steeply to just over 170 by the end of the period. Manufacturing profits start at about 2-1/3 percent, rise to just over 4 percent by mid-1997, fall to about 2¼ percent by end-1998, rise to about 4¾ percent by mid-2000, drop to about 2-1/3 percent by mid-2001, and rise to about 4¼ percent by the end of the period. Non-manufacturing profits start at about 2/3 percent, and, with some volatility, rise to nearly 3 percent by the end of the period.

Middle-right panel
Investment and Labor Market

Investment and Labor Market for 1994 through early 2004. The range of the right y-axis, which measures real business fixed investment as an index, 1994:Q1=100, is [90, 150]. The range of the left y-axis, which measures the offers-to-applicants ratio as percent, is [40,100]. The index for real business fixed investment starts at 100, rises to about 122 by end-1997, dips to about 113 by mid-1999, rises to about 135 by late 2000, drops to about 117 by early 2002, and then rises to about 140 by the end of the period. The offers-to-applicants ratio starts at about 65 percent, rises to about 75 percent by mid-1997, falls to about 45 percent by mid-1999, rises to about 65 percent by late 2000, drops to about 52 percent by end-2001, and rises to about 78 percent by the end of the period.

Bottom-left panel
Household Sector

Household Sector for 1994 through early 2004. The range of the right y-axis, which measures real consumption and real compensation as indexes, 1994:Q1=100, is [90, 130]. The range of the left y-axis, which measures the household saving rate in percent, is [2,12]. The series for real consumption starts at 100 and rises fairly steadily to about 113 by the end of the period. The series for real compensation starts at 100, and, tracking fairly closely with real consumption through early 1997, rises to about 105; the two series then diverge, with real compensation oscillating between about 102 and 107 for the remainder of the period, ending at about 105 at the end of the period. The household savings rate starts at about 11 percent, falls to just below 8 percent by late 1997, rises to about 9½ percent by mid-1998, and then falls to about 4½ percent by 2003:Q1, the last data point in this series.

Bottom-right panel
Bank Credit and Land Prices

Bank Credit and Land Prices for bank credit and urban land prices for 1994 through early 2004. The range of the y-axis is [50, 110]; index, 1994:Q1 = 100. Both series begin at 100. The bank credit index remains near 100 through end-1997, and then falls to about 75 by the end of the period. The index for urban land prices falls in a nearly straight line to about 57 by the end of the period.

Chart 14

Chart 14 is a three-by-two array of panels. "Divergence in the Euro Area" comprises the top two panels, including graphs on real consumption per capita, and employment. "Inflation Abroad" comprises the bottom four panels, including a table on the outlook for consumer prices, and graphs on Japanese prices, oil and non-fuel commodity prices, and selected commodity prices.

Divergence in the Euro Area

Top-left panel
Real Consumption per Capita

Real Consumption per Capita for Germany and for the euro area excluding Germany for 1994 through early 2004. The range of the y-axis is [90, 130]; index, 1994:Q1=100. Both series begin at 100. The index for Germany rises to about 112 by mid-2001 and then declines a bit to about 110 by the end of the period. The index for the euro area excluding Germany rises fairly steadily to just over 120 by the end of the period.

Top-right panel
Employment

Employment for Germany and for the euro area excluding Germany for 1994 through early 2004. The range of the y-axis is [90, 130]; index, 1994:Q1=100. Both series begin at 100. The index for Germany rises to about 105 by mid-2001 and then declines a bit to about 102 by the end of the period. The index for the euro area excluding Germany rises fairly steadily to about 115 by the end of the period.

Inflation Abroad

Middle-left panel
Outlook for Consumer Prices

4-quarter percent change

	2003	2004			2005
		Q1	Q2	H2	
			projection		
1. Average Foreign*	2.1	1.8	2.4	2.5	2.1
of which:					
2. Euro Area	2.0	1.6	2.3	2.1	1.9
3. Japan	-0.4	-0.3	-0.3	0.1	0.3
4. United Kingdom	1.3	1.2	1.6	1.3	1.8
5. Canada	1.7	0.9	1.9	1.8	1.7
6. China	2.6	2.8	4.3	3.7	1.6
7. Mexico	4.0	4.3	4.3	3.9	3.8

* Weighted by U.S. non-oil imports. Return to table

Middle-right panel
Japanese Prices

Japanese Prices: CPI for 2002-2004:Q2 (actual) and for 2004:Q3-2005 (forecast) and the PCE deflator for 2002-2004:Q1 (actual). The range of the y-axis is [-2.0, 0.5]; unit is 4-quarter percent change. The 4-quarter percent change for CPI begins at about -1.3 percent, rises to about -0.2 percent by 2004:Q1 and then dips to about -0.4 percent in 2004:Q2; then over the forecast horizon, the 4-quarter percent change for CPI rises to about 0.3 percent by the end of the period. The 4-quarter percent change for the PCE deflator begins at about -1.6 percent, rises to about -1.2 percent by early 2003, and then declines to about -1.6 percent by 2004:Q1.

Bottom-left panel
Oil and Non-fuel Commodity Prices

Oil and Non-fuel Commodity Prices on a monthly basis for 1994 through mid-2004 (actual) and for mid-2004-2005 (forecast). The range of the left y-axis, which measures non-fuel primary commodities as an index, Jan. 1994=100, is [70, 140]. The range of the right y-axis, which measures the WTI spot price in dollars per barrel, is [6, 42]. The non-fuel primary commodities index is comprised of IMF component indexes weighted by U.S. imports. The WTI spot price starts at about $15 per barrel, rises to about $25 per barrel by end-1996, falls to about $11 per barrel by end-1998, rises to about $35 per barrel by end-2000, falls to about $19 per barrel by end-2001, rises to about $41 per barrel by early 2004, declines to about $38 per barrel by mid-2004, and then declines further to about $34 per barrel by the end of the forecast period. The index for non-fuel primary commodities begins at 100, rises to about 124 by early 1996, falls to about 85 by late 2001, rises to about 118 by mid-2004, and then declines to about 111 by the end of the forecast period.

Bottom-right panel
Selected Commodity Prices

Selected Commodity Prices for steel scrap, soybeans, cotton, and copper for 2002 through mid-2004. The range of the y-axis is [50, 400]; index, Jan. 8, 2002=100. All series begin at 100. The index for steel scrap rises fairly steadily to about 200 by late 2003, then begins a steep rise to about 380 by early 2004, followed by a steep decline to about 250 by mid-2004. The index for soybeans rises fairly steadily to about 240 by early 2004 and then declines to about 210 by mid-2004. The index for cotton rises fairly steadily to about 230 by late 2003, and then declines to about 140 by mid-2004. The index for copper stays fairly stable around 100 through late 2003, rises to about 190 by early 2004, and then declines to about 175 by mid-2004.

Chart 15

Chart 15 is comprised of five panels. "Debt Burdens" comprises the top two panels, including graphs on corporate sector debt and household debt. "Vulnerabilities in Latin America" comprises the bottom three panels, including graphs on EMBI+ spreads and Latin American debt issuance, and a table on vulnerability indicators.

Debt Burdens

Top-left panel
Corporate Sector Debt*

Corporate Sector Debt for Japan, the euro area, and the United Kingdom for 2000 through early 2004. The range of the y-axis is [70, 140]; index, 2000:Q1=100. All series begin at 100. The index for Japan declines fairly steadily to about 80 by the end of the period. The index for the euro area rises to about 112 by early 2001 and stays at about that level through the end of the period. The index for the United Kingdom rises fairly steadily to about 125 by the end of the period.

* Bank loans and securities; percent of GDP. Return to text

Top-right panel
Household Debt*

Household Debt for Japan, the United Kingdom, and the euro area for 2000 through early 2004. The range of the y-axis is [70, 140]; index, 2000:Q1=100. All series begin at 100. The index for Japan declines slightly to about 97 by the end of the period. The index for the United Kingdom rises fairly steadily to about 130 by the end of the period. The index for the euro area rises fairly steadily to about 112 by the end of the period.

* Percent of GDP. Return to text

Vulnerabilities in Latin America

Middle-left panel
EMBI+ Spreads

EMBI+ Spreads on a weekly basis for 1999 through mid-2004 for EMBI+, Brazil, and Mexico. For Brazil, the range of the left y-axis is [0, 2500]; unit is basis points. For EMBI+ and Mexico, the range of the right y-axis is [0, 1500]; unit is basis points. All series show volatility. The spreads for EMBI+ start at about 1100 basis points, rise immediately to about 1350 basis points, fall to about 650 basis points by late 2000, rise to about 1100 basis points by late 2001, fall to about 600 basis points by early 2002, rise to just over 1000 basis points by late 2002, fall to about 400 basis points by late 2003, and then rise to about 500 basis points by the end of the period. The spreads for Brazil start at just about 1200 basis points, rise immediately to about 1600 basis points, fall to about 700 basis points by late 1999, rise to about 1300 basis points by late 2001, fall to about 750 basis points by early 2002, rise sharply to about 2300 basis points by late 2002, drop to about 500 basis points by late 2003 and then rise to about 700 basis points by the end of the period. The spreads for Mexico start at just about 700 basis points, rise immediate to about 850 basis points, and then fall gradually to about 200 basis points by the end of the period.

Middle-right panel
Latin American Debt Issuance

Latin American Debt Issuance for gross debt issuance and for debt issuance net of repayments for 1994 through early 2004. The range of the y-axis is [-5, 30]; unit is billions of dollars. The series for gross debt issuance is a 12-month moving average; the series for debt issuance net of repayments is a 4-quarter moving average. The series for gross debt issuance starts at about $9 billion, declines to about $5 billion by early 1995, rises steeply to about $28 billion by mid-1998, falls to about $13 billion by mid-1999, rises to about $18 billion by early 2000, stays at about that level through mid-2001, declines to about $7 billion by early 2003, and then rises to about $12 billion by May 2004. The series for debt issuance net of repayments starts at about $5 billion, declines to about $0.5 billion by early 1995, rises to about $13 billion by mid-1997, falls to about $4 billion by early 1999, rises to about $10 billion by early 2000, declines to about -$1 billion by late 2002, and then rises to about $4 billion by 2004:Q1.

Bottom panel
Vulnerability Indicators

	Current Account (% of GDP)		Gross External Debt* (% of GDP)		Reserves* ($ billions)		Short-term External Debt* (% of reserves)	
	1993	2003	1993	2003	1993	2003	1993	2003
1. Mexico	-5.8	-1.5	33.9	20.8	22.6	59.0	116.8	64.7
2. Chile	-5.7	-0.8	34.0	48.1	9.6	16.0	50.9	64.7
3. Brazil	-0.0	0.8	32.3	48.8	32.2	50.5	106.6	81.8
4. Argentina	-3.2	6.1	31.0	114.1	13.8	14.6	101.2	177.9

* End of period. Return to table

Chart 16

Chart 16 is comprised of five panels. "A Hard Landing in China?" comprises the top three panels, including a graph on real GDP and investment, a table on spillovers, and a graph on equity prices. "U.S. External Sector" comprises the bottom two panels, including graphs on real GDP and broad real dollar, and real exports and imports.

A Hard Landing in China?

Top-left panel
Real GDP and Investment

Real GDP and Investment for 2001 through 2004:Q1 for actual real investment* and actual real GDP and for 2004:Q2 through 2005 for forecast real GDP. Unit is 4-quarter percent change. The range of the left y-axis, which measures real investment, is [0, 40]. The range of the right y-axis, which measures real GDP, is [0, 20]. The four-quarter percent change for real investment starts at about 12 percent, rises to about 18 percent by mid-2001, declines to about 15 percent by end-2001, rises to about 23 percent by mid-2002, declines to about 17 percent by end-2002, rises to about 30 percent by mid-2003, declines to about 20 percent by end-2003, and then rises to about 34 percent by 2004:Q1. The four-quarter percent change for real GDP starts at about 7½ percent, rises to about 10 percent by early 2003, declines to about 6 percent by mid-2003, rises to almost 10 percent by 2004:Q1, rises further to about 12½ percent by mid-2004, and then falls to about 7½ percent by the end of 2005.

* Deflated by corporate goods price index. Return to text

Top-right panel
Spillovers

Percent of GDP

	Exports to China* (1)	Net Exports of Commodities** (2)
1. Taiwan	17.4	-5.3
2. ASEAN-5	11.4	0.6
3. Korea	8.2	-7.2
4. Chile	2.7	7.6
5. Japan	2.1	-3.1
6. Argentina	2.0	13.1
7. Russia	1.9	14.7
8. Brazil	1.2	2.8
9. Euro Area	0.8	-1.7
10. Canada	0.5	5.2
11. United Kingdom	0.4	-0.6
12. United States	**0.4**	**-1.1**
13. Mexico	0.3	1.0

* Includes to Hong Kong; 2003 data. Return to table

** Food and beverages, crude materials, and fuels; 2002 data. Return to table

Middle-left panel
Equity Prices

Equity Prices on a weekly basis for 2002 through mid-2004 for Korea, Taiwan, and Singapore. The range of the y-axis is [70, 140]; index, Jan. 4, 2002 = 100. The index for Korea starts at about 107, rises quickly to about 135 by early 2002, falls to about 77 by early 2003, rises to about 132 by early 2004, and then falls to about 108 by mid-2004. The index for Taiwan starts at about 105, rises quickly to about 118 by early 2002, falls to about 77 by mid-2003 (with a spike down to about 72 in late 2002), rises to about 125 by early 2004, and then falls to about 105 by mid-2004. The index for Singapore starts at about 105, rises quickly to about 112 by early 2002, falls to about 77 by early 2003, rises to about 118 by early 2004, and then falls to about 113 by mid-2004.

U.S. External Sector

Bottom-left panel
Real GDP and Broad Real Dollar

The panel plots U.S. and total foreign real GDP as a bar chart for 2002 and 2003 (actual) and 2004 and 2005 (forecast), and it plots the broad real dollar as a line chart on a quarterly basis for 2002 through mid-2004 (actual) and mid-2004 through 2005 (forecast).

The range of the left y-axis, which measures the broad real dollar as an index, 2002:Q1 = 100, is [75, 105]. The broad real dollar, plotted as a red line, starts at about 98, rises immediately to about 100, falls to about 88 by early 2004, rises to about 90 by mid-2004, and then stays at about that level for the entire forecast period.

The range of the right y-axis, which measures U.S. and total foreign real GDP in terms of percent

change, a.r., is [0, 6]. Approximate values for total foreign real GDP and U.S. real GDP are as follows.

Percent change, a.r.*

	2002 (actual)	2003 (actual)	2004:H1 (forecast)	2004:H2 (forecast)	2005 (forecast)
Total Foreign GDP** (blue)	2.9	2.7	4.1	3.7	3.5
U.S. GDP (yellow)	2.8	4.3	4.2	5.0	3.7

* Years are Q4/Q4; half years are Q2/Q4 or Q4/Q2. Return to text

** Weighted by shares of U.S. exports. Return to table

Bottom-right panel
Real Exports and Imports

Real Exports and Imports as a bar chart for 2002 and 2003 (actual) and 2004 and 2005 (projected). The range of the y-axis is [0, 14]. Approximate values are as follows.

Percent change, a.r.*

	2002 (actual)	2003 (actual)	2004:H1 (forecast)	2004:H2 (forecast)	2005 (forecast)
Exports (blue)	3.3	6.5	7.4	10.2	8.0
Imports (yellow)	9.5	4.5	7.8	10.9	8.1

* Years are Q4/Q4; half years are Q2/Q4 or Q4/Q2. Return to text

Chart 17

Top panel
ECONOMIC PROJECTIONS FOR 2004

	FOMC		Staff
	Range	Central Tendency	
Percentage change, Q4 to Q4			
Nominal GDP	**6 to 7**	**6¼ to 6¾**	**6.4**
February 2004	(5½ to 6½)	(5½ to 6¼)	(6.2)
Real GDP	**4 to 4¾**	**4½ to 4¾**	**4.4**
February 2004	(4 to 5½)	(4½ to 5)	(5.3)
Core PCE Prices	**1½ to 2**	**1½ to 1¾**	**2.0**
Average level, Q4, percent			
Unemployment rate	**5¼ to 5½**	**5¼ to 5½**	**5.4**
February 2004	(5¼ to 5½)	(5¼ to 5½)	(5.3)

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

Bottom panel
ECONOMIC PROJECTIONS FOR 2005

	FOMC		Staff
	Range	Central Tendency	
Percentage change, Q4 to Q4			
Nominal GDP	**4¾ to 6½**	**5 to 6**	**5.0**
Real GDP	**3½ to 4**	**3½ to 4**	**3.6**
Core PCE Prices	**1½ to 2½**	**1½ to 2**	**1.6**
Average level, Q4, percent			
Unemployment rate	**5 to 5½**	**5 to 5¼**	**5.3**

Appendix 5: Materials used by Mr. Reinhart

Material for **FOMC Briefing on Monetary Policy Alternatives**
Vincent R. Reinhart
June 30, 2004

Strictly Confidential (FR) Class I - FOMC

Exhibit 1

The Policy Situation

The top panels of Exhibit 1 include a chart and table that provide information on expected federal funds rates and policy expectations.

Top-left panel
Expected Federal Funds Rates

A line chart displays the expected path of the federal funds rate embedded in futures quotes as of June 29, 2004. This chart indicates the upward trend of the expected path of the fed funds rate through the end of the year. Current futures quotes suggest that the federal funds rate will rise from around 1 percent to around 2¼ percent by December 2004. The chart also displays implied rates after FOMC meetings: June 30, 1.26 percent; August 10, 1.58 percent; September 21, 1.86 percent; November 10, 2.13 percent; December 14, 2.30 percent.

Note. Estimates from federal funds futures on June 29, 2004, with an allowance for term premia and other adjustments.

Top-right panel
Policy Expectations

	Expected Federal Funds Rate (percent)	
	June Meeting	Year-End
Futures Market	1.26	2.30
Dealer Survey (median)	1.25	2.00
	Assessment of Risks Paragraph (percent of dealers)	

	To the Upside	Balanced
Growth Risks	17	83
Inflation Risks	22	78
	Use "Measured"	**Similar Language**
"Measured" Sentence	70	30

Note. Expected funds rate are from futures market based on money market futures prices as of June 29, 2004. Dealer expectations are based on a Trading Desk survey conducted June 17-22, 2004.

The Case for Alternative B

The middle and bottom panels of Exhibit 1 include charts demonstrating the case for the Committee to increase the funds rate to 1¼ percent.

Middle-left panel
Range of Estimated Equilibrium Real Rates

A line graph of the actual real federal funds rate and the range of estimates for the equilibrium real federal funds rate. The historical average calculated for 1964:Q1 through 2004:Q1 is plotted as a horizontal line at 2.64 percent. The chart shows that the current level of the actual real federal funds rate is already below the lower bound of the range of estimates of the equilibrium real funds rate, and these estimates are generally expected to move higher over the forecast period; thus suggesting policy tightening at this meeting to be beneficial. Included in the chart is a shaded range representing the maximum and the minimum values each quarter of four estimates of the equilibrium real federal funds rate. A four-quarter moving average of core PCE inflation is used as a proxy for inflation expectations.

Middle-right panel
Values from Policy Rules and Futures Markets

A line graph of the actual federal funds rate and the Greenbook path along with a shaded region representing the maximum and the minimum values each quarter of the prescriptions from five estimated policy rules based on the output gap and core PCE inflation. The chart shows the shaded area moving upward in 2004, calling for a higher nominal federal funds rate. This recommendation is bolstered by the movement of the line of the actual funds rate and Greenbook path from the middle of the shaded area to the lower bound.

Bottom-left panel
Change in Payroll Employment

A bar chart illustrates monthly changes in payroll employment over the past two years. The latest three employment reports have averaged near 300,000 monthly additions to payrolls, the highest rate in the past two years.

Bottom-right panel
Inflation Compensation

A line graph of TIPS-based inflation compensation measures over the period from January 2003 until June 2004. There are two series shown--inflation compensation over the next five years and over the next five to ten years. In the chart, both of these series continue to drift higher, demonstrating a potential for concern that inflation expectations may also begin to increase.

Note. Based on a comparison of an estimated TIPS yield curve to an estimated nominal off-the-run Treasury yield curve. Final observation is June 29, 2004.

Exhibit 2

Monetary Policy Alternatives

Top-left panel
The Case For Alternative C

- Intermediate-term inflation goal of 1 percent
- Concerned about the rapid erosion of slack
- But: Inconsistent with May announcement and subsequent statements

Top-right panel
The Case For Alternative A

- Intermediate-term inflation goal of 2 percent
- Concerned about the remaining level of slack
- But: Inconsistent with May announcement and subsequent statements

Model Simulations of Optimal Policy with Different Inflation Goals

Middle-left panel
Federal Funds Rate

A line chart showing the optimal federal funds rate path for three inflation goals. The line given an inflation goal of 1 percent, as in Alternative C, suggests an immediate tightening of the federal funds rate at a faster pace as compared with a "measured" inflation goal of 1.5 percent. Conversely, the line given an inflation goal of 2 percent, as in Alternative A, recommends policy tightening soon, but not immediate, and at a slower pace than the "measured" inflation goal.

Middle-right panel
PCE Inflation

A line chart forecasts PCE inflation, starting from its current level just above 1.5 percent, using the three inflation goals of 1 percent, 1.5 percent, and 2 percent. It predicts that the optimal policy associated with an inflation goal of 1 percent will drive down PCE inflation quicker and farther than the "measured" optimal policy given a 1.5 percent inflation goal. The projection of PCE inflation using a 2 percent inflation goal reduces PCE inflation from its current level in the short-term but increases it in the long run.

Bottom-left panel
Capacity Utilization in Manufacturing

A line chart plots capacity utilization in manufacturing over the past 25 years. It shows the percent of capacity utilization increased to 77 percent since its trough of roughly 73 percent in Spring 2003. This movement decreased the gap between current levels and the historical average of 80 percent.

Note. Historical average for 1972-2003.

Bottom-right panel
Fiscal Impetus

Calendar Year	Percent of GDP

Calendar Year	Percent of GDP
2002	1.04
2003	1.15
2004	0.95
2005	-0.21

Exhibit 3
Market Preparedness

The panels in Exhibit 3 present evidence that market participants are prepared for policy tightening.

Top-left panel
Policy Tightening During the First Year of Tightenings

	Expected*	Realized
	(Basis Points)	
1988	118	325
1994	111	300
1999	83	175
2004	221	

* Based on futures rates the day before the tightening began. For 2004, based on futures rates on June 29. Return to table

Top-right panel
Fed Funds Expectations for 1994 Q4
Feb. 1, 1994 Blue Chip Survey

A bar chart of the results of the Blue Chip Survey on February 1, 1994 on federal funds rate expectations for the fourth quarter of that year. The results were dispersed between rates of 2.7 percent and 4.3 percent. The majority of respondents indicated they expect the federal funds rate to increase to 3.5 percent or 3.7 percent by the fourth quarter.

Note. Frequencies based on interest rate forecasts by panel members.

As shown in the chart, target on Feb. 1, 1994: 3.0, and actual rate in 1994Q4: 5.17.

Middle-left panel
Net Long Position of Non-Hedgers

A line chart displays the net long positions in two-year Treasury futures of non-hedgers from 1995 through the current week. In early 2004, non-hedgers significantly reduced their positions from roughly $5 billion to almost zero. In recent months, this number has rebounded from zero to about $1.5 billion. Overall, this net decrease for 2004 implies non-hedgers' expectations of policy tightening.

Note. Positions in two-year Treasury futures. Final observation is June 22, 2004.

Source: CFTC.

Middle-right panel
Net Long Position of Primary Dealers

A line chart displays the net long position of primary dealers in the Treasury market over the past three years. Over the time range of the graph, primary dealers are short, in aggregate, Treasury securities with more than three years to maturity. This short position has intensified even more during 2004 to approximately $100 billion.

Note. Positions in Treasury securities with more than three years to maturity. Final observation is June 16, 2004.

Source: FRBNY.

Bottom-left panel
Mortgage Duration

A line chart shows the average duration of mortgages starting in 1999. Over the past year, mortgage duration has increased to almost 4.5 years, bringing current durations to around the highest level seen over the period.

Note. Estimated duration of a representative sample of fifteen- and thirty-year fixed rate mortgages. Final observation is June 25, 2004.

Source: Merrill Lynch.

Bottom-right panel
Credit Default Swap Financial Index

A line chart plots the average credit default swap spread for financial firms. Spreads are very low at less than 40 basis points. Thus, the low cost of protection from default by financial firms signifies that these firms are predicted to stay in strong health.

Note. Average of individual CDS quotes of 32 investment-grade financial firms weighted by the book value of liabilities. Final observation is June 29, 2004.

Exhibit 4: FOMC Statement Alternatives for the June Bluebook

	May FOMC	Alternative A	Alternative B	Alternative C
Policy Decision	1. The Federal Open Market Committee decided today to keep its target for the federal funds rate at 1 percent.	[Unchanged]	The Federal Open Market Committee decided today to raise its target for the federal funds rate to 1¼ percent.	The Federal Open Market Committee decided today to raise its target for the federal funds rate to 1½ percent.
Rationale	2. The Committee continues to believe that an accommodative stance of monetary policy, coupled with robust underlying growth in productivity, is providing important ongoing support to economic activity.	[Unchanged]	The Committee believes that, even after this action, the stance of monetary policy remains accommodative and, coupled with robust underlying growth in productivity, is providing ongoing support to economic activity.	The Committee believes that, even after this action, the stance of monetary policy remains accommodative and, coupled with robust underlying growth in productivity, is providing ongoing support to economic activity.
	3. The evidence accumulated over the intermeeting period	The evidence accumulated over the intermeeting period	The evidence accumulated over the intermeeting period	The evidence accumulated over the intermeeting period

	May FOMC	Alternative A	Alternative B	Alternative C
	indicates that output is continuing to expand at a solid rate and hiring appears to have picked up.	indicates that output is continuing to expand at a solid rate and hiring has picked up.	indicates that output is continuing to expand at a solid ~~rate~~ **pace** and hiring has picked up.	indicates that, with output expanding at a solid rate and hiring having picked up, the economic expansion is now well established.
	4. Although incoming inflation data have moved somewhat higher, long-term inflation expectations appear to have remained well contained.	Although incoming inflation data are somewhat elevated, a portion of the increase in recent months presumably has been due to transitory factors.	Although incoming inflation data are somewhat elevated, a portion of the increase in recent months ~~has~~ **appears to have** been due to transitory factors.	Incoming inflation data are somewhat elevated, and long-term inflation expectations have shown some tendency to edge higher.
Assessment of Risks	5. The Committee perceives that the upside and downside risks to the attainment of sustainable growth for the next few quarters are roughly equal.	The Committee perceives that the upside and downside risks to the attainment of both sustainable growth and price stability for the next few quarters are roughly equal.	The Committee perceives that the upside and downside risks to the attainment of both sustainable growth and price stability for the next few quarters are roughly equal.	The Committee perceives that the upside and downside risks to the attainment of sustainable growth for the next few quarters are roughly equal.
	6. Similarly, the risks to the goal of price stability have moved into balance.	[Covered above]	[Covered above]	However, the upside risks to the goal of price stability now appear to outweigh the downside risks.
	7. At this juncture, with inflation low and resource use slack, the Committee believes that policy accommodation can be removed at a pace that is likely to be measured.	With underlying inflation still relatively low and resource use slack, the Committee believes that policy accommodation can be removed at a pace that is likely to be measured.	With underlying inflation still expected to be relatively low, the Committee judges the outlook to be such that policy accommodation can be removed at a pace that is likely to be measured. Nonetheless, the Committee will respond to changes in economic prospects as needed to fulfill its obligation to maintain price stability ~~so as to foster maximum sustainable economic growth~~.	[None]

▲ Return to top

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