



# Global Themes and Risks

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# Composition of US GDP, 2008-2012

## Private construction remains the laggard

	2005	2006	2007	Growth Rates		2010	2011(E)	2012(E)
				2008	2009			
GDP	3.1 %	2.7 %	1.9 %	0.0 %	(2.6) %	2.9 %	2.9 %	3.8 %
Domestic Final Demand	3.2	2.6	1.3	(1.1)	(3.6)	3.2	2.7	4.1
Personal Consumption	3.4	2.9	2.4	(0.3)	(1.2)	1.7	3.3	3.5
→ Residential Fixed Investment	6.2	(7.3)	(18.7)	(24.0)	(22.9)	(3.0)	0.5	15.0
Business Fixed Investment	6.7	7.9	6.7	0.3	(17.1)	5.7	6.8	8.7
Government	1.3	2.1	1.3	7.3	5.7	4.8	0.4	2.5
→ Exports	6.7	9.0	9.3	6.0	(9.5)	11.7	7.1	8.0
Imports	6.1	6.1	2.7	(2.6)	(13.8)	12.6	4.9	9.2

Source: Goldman Sachs Economics Research.

# Composition of US GDP, 2010-2011

Expect quarterly volatility linked to weather, employment, global factors

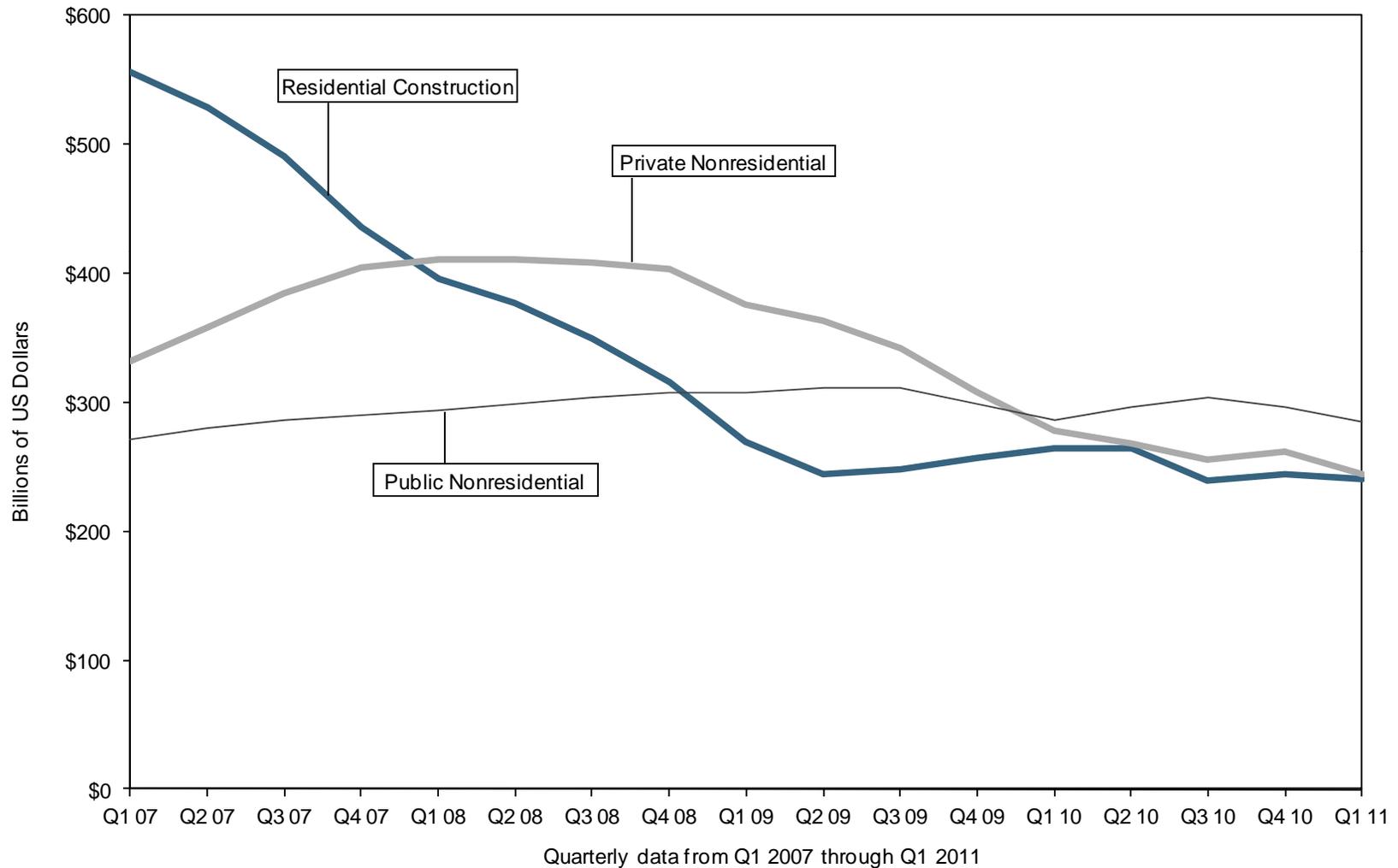


	Growth Rates							
	Q1	2010			2011 E			
	Q1	Q2	Q3	Q4	Q1 E	Q2 E	Q3 E	Q4 E
GDP	3.7 %	1.7 %	2.6 %	3.1 %	1.8 %	4.0 %	4.0 %	4.0 %
Domestic Final Demand	3.9	5.1	4.2	(0.2)	1.8	3.6	4.4	4.6
Personal Consumption	1.9	2.2	2.4	4.0	2.7	4.0	4.0	3.5
→ Residential Fixed Investment	(12.3)	25.6	(27.3)	3.3	(4.1)	5.0	15.0	15.0
Business Fixed Investment	7.8	17.2	10.0	7.7	1.8	5.0	7.5	12.5
Government	1.9	9.1	8.8	(0.3)	(7.9)	2.5	2.5	2.5
→ Exports	11.4	9.1	6.7	8.6	4.9	8.5	6.0	8.0
Imports	11.2	33.5	16.8	(12.6)	4.4	5.0	8.0	11.0

Source: Goldman Sachs Economics Research.

# Residential and nonresidential construction

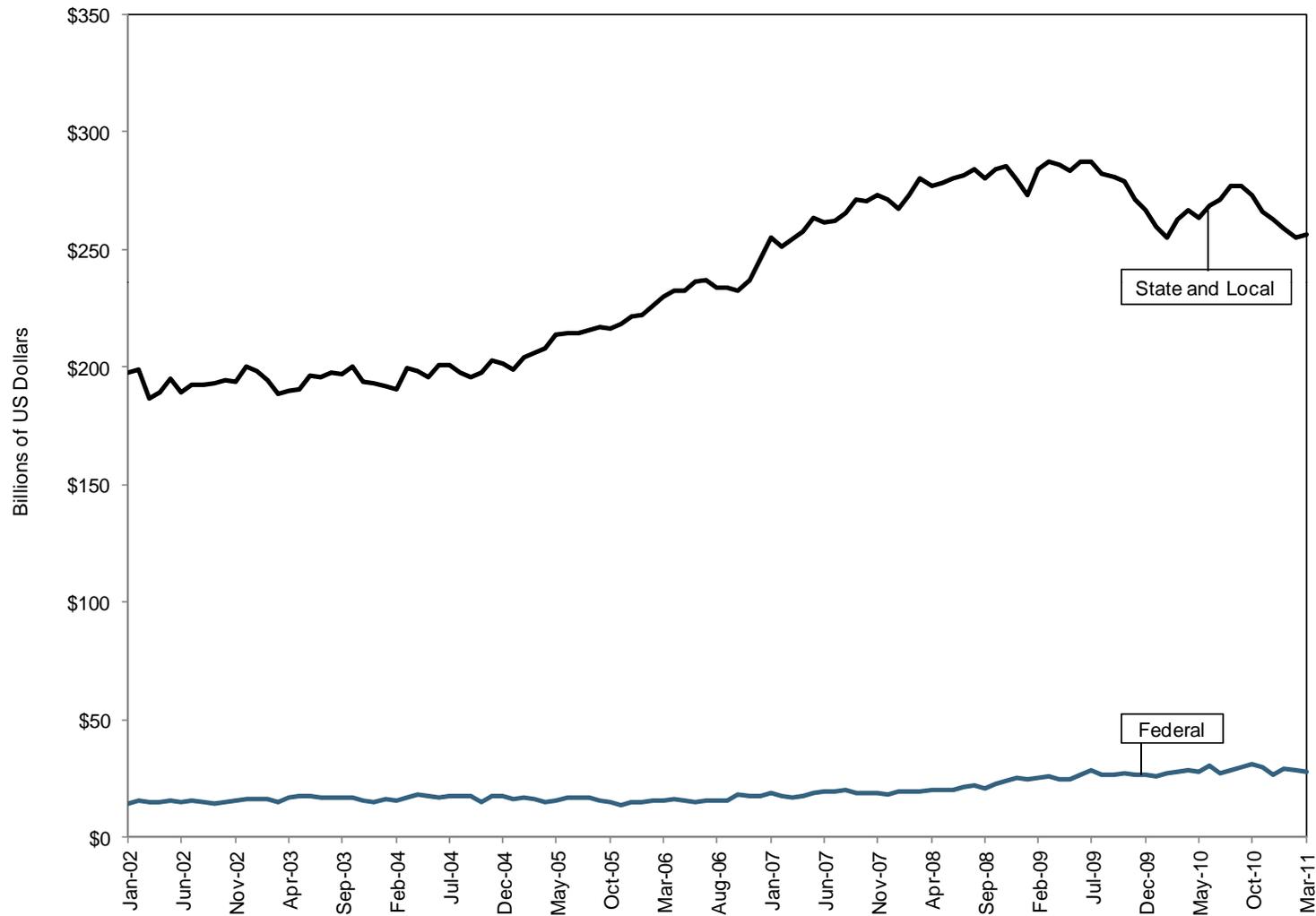
Stimulus package targeted public construction spending mainly through state and local entities



Source: US Department of Commerce.

# Public construction spending

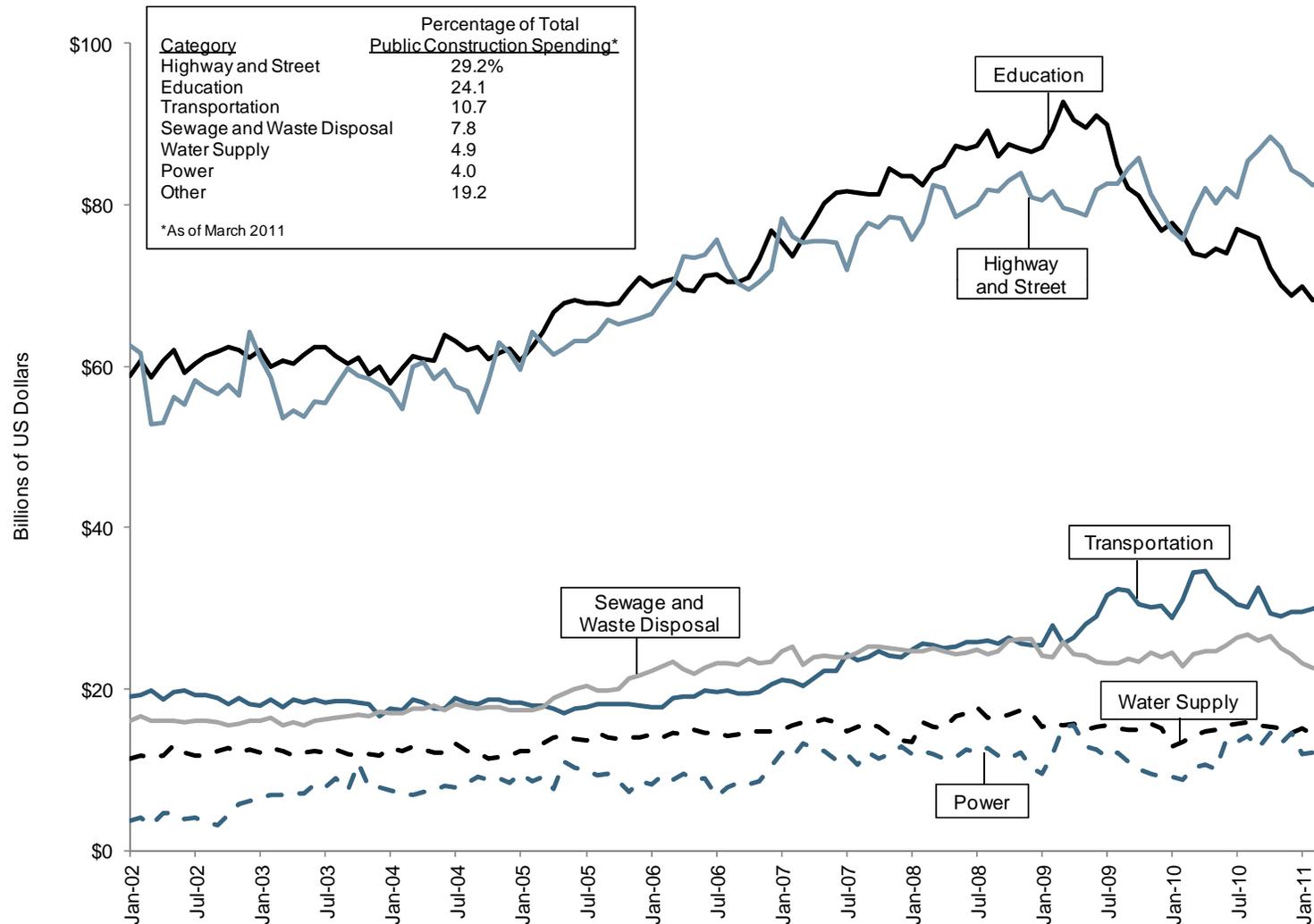
## Dominated by state and local government activities



Source: US Department of Commerce.

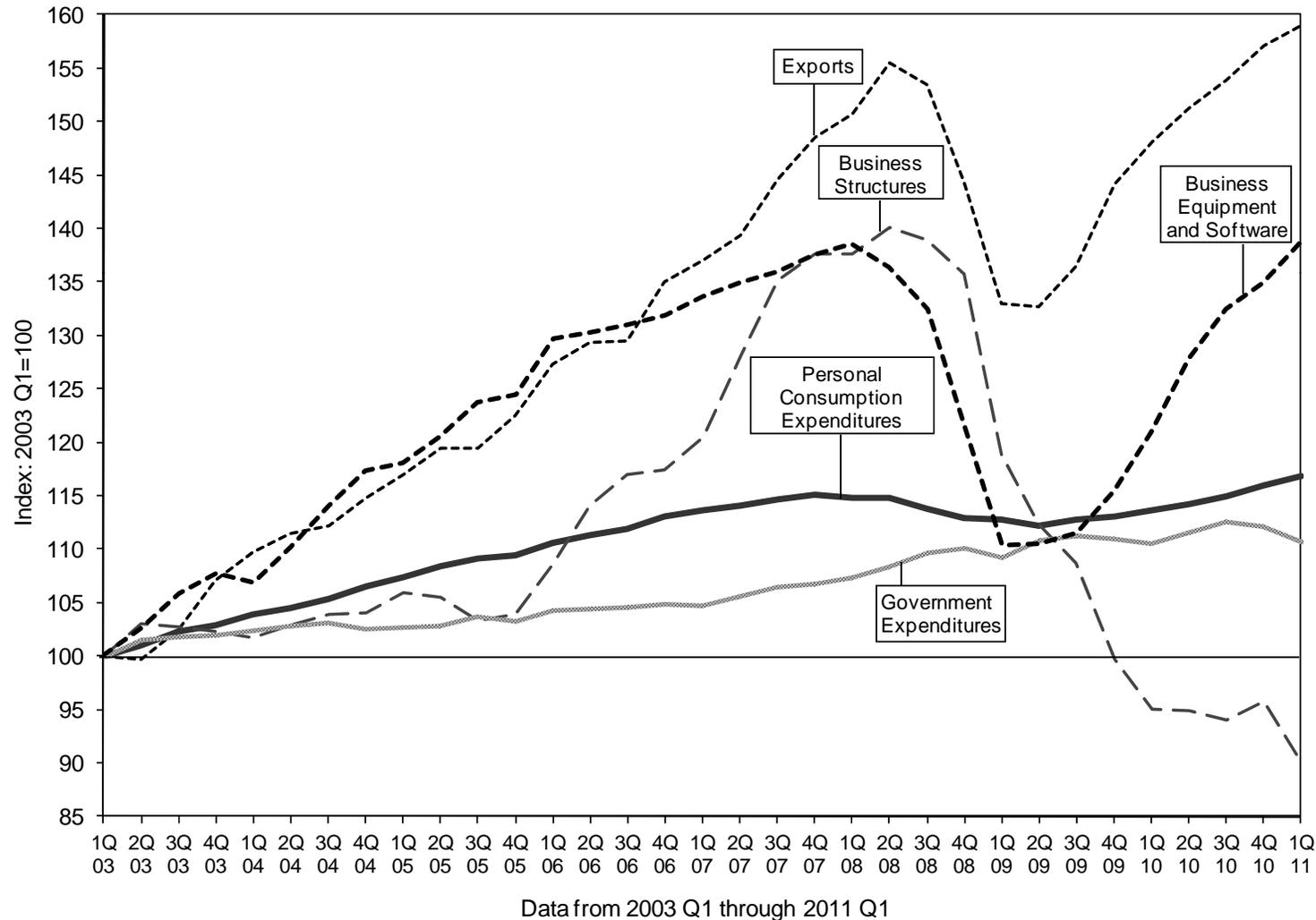
# Public construction spending

## Breakdown by category



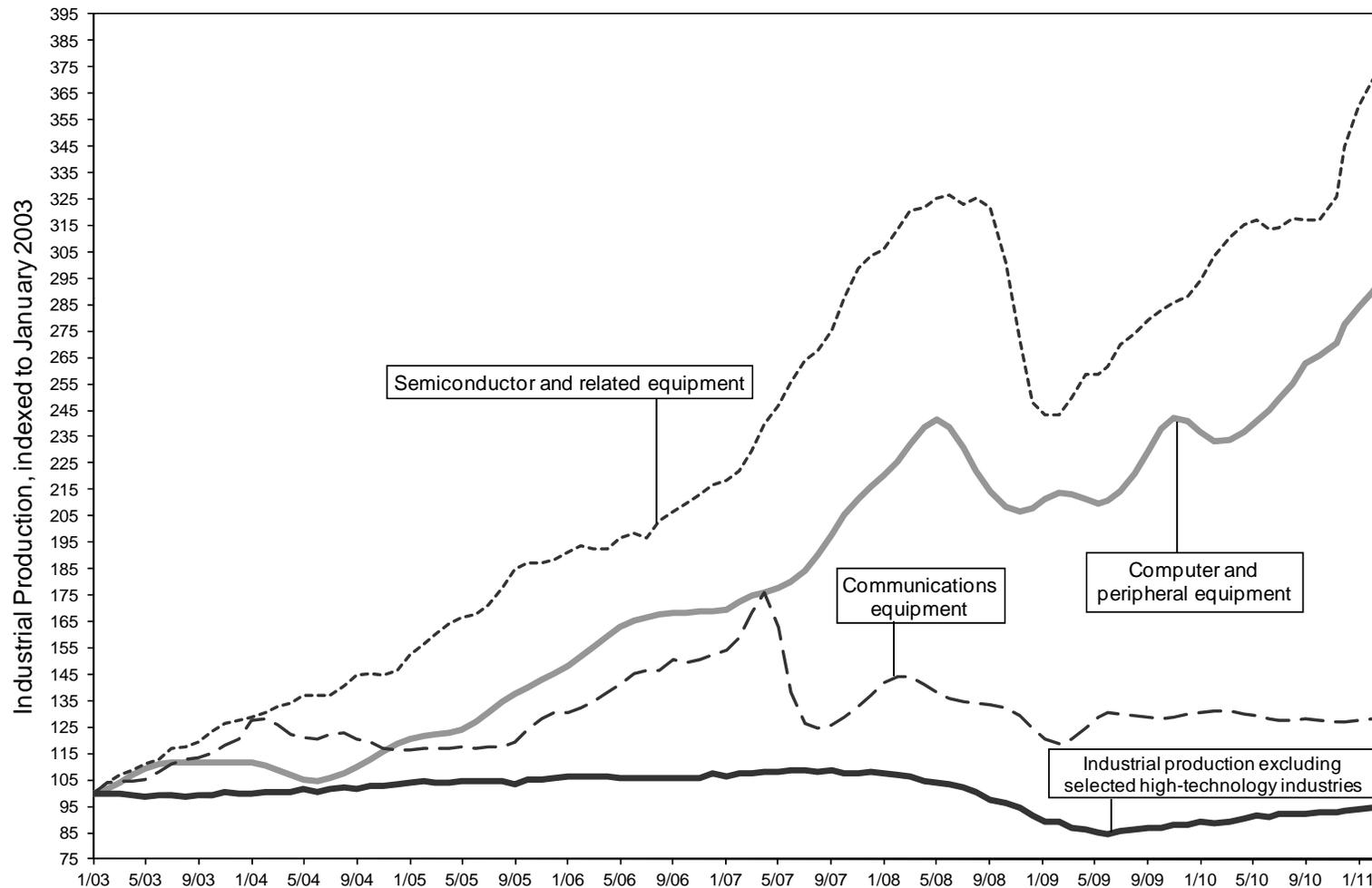
Source: US Department of Commerce.

# Exports and business equipment lead all other sectors Similar to pattern before the recession



Source: Bureau of Economic Analysis.

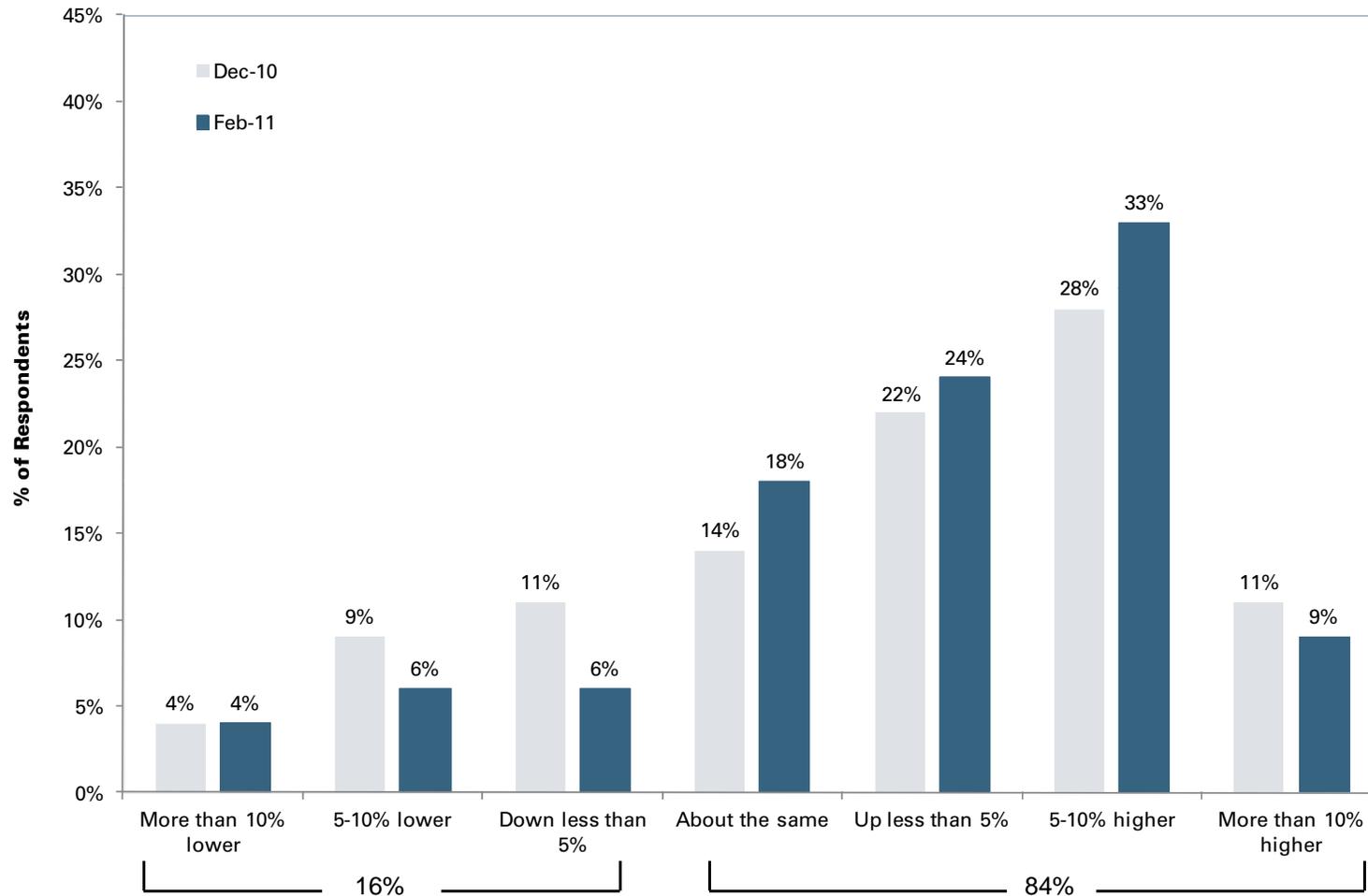
# Technology and capex weakened sharply after mid-2008, now expanding



Monthly data from 1/2003 through 3/2011

Source: Federal Reserve Board.

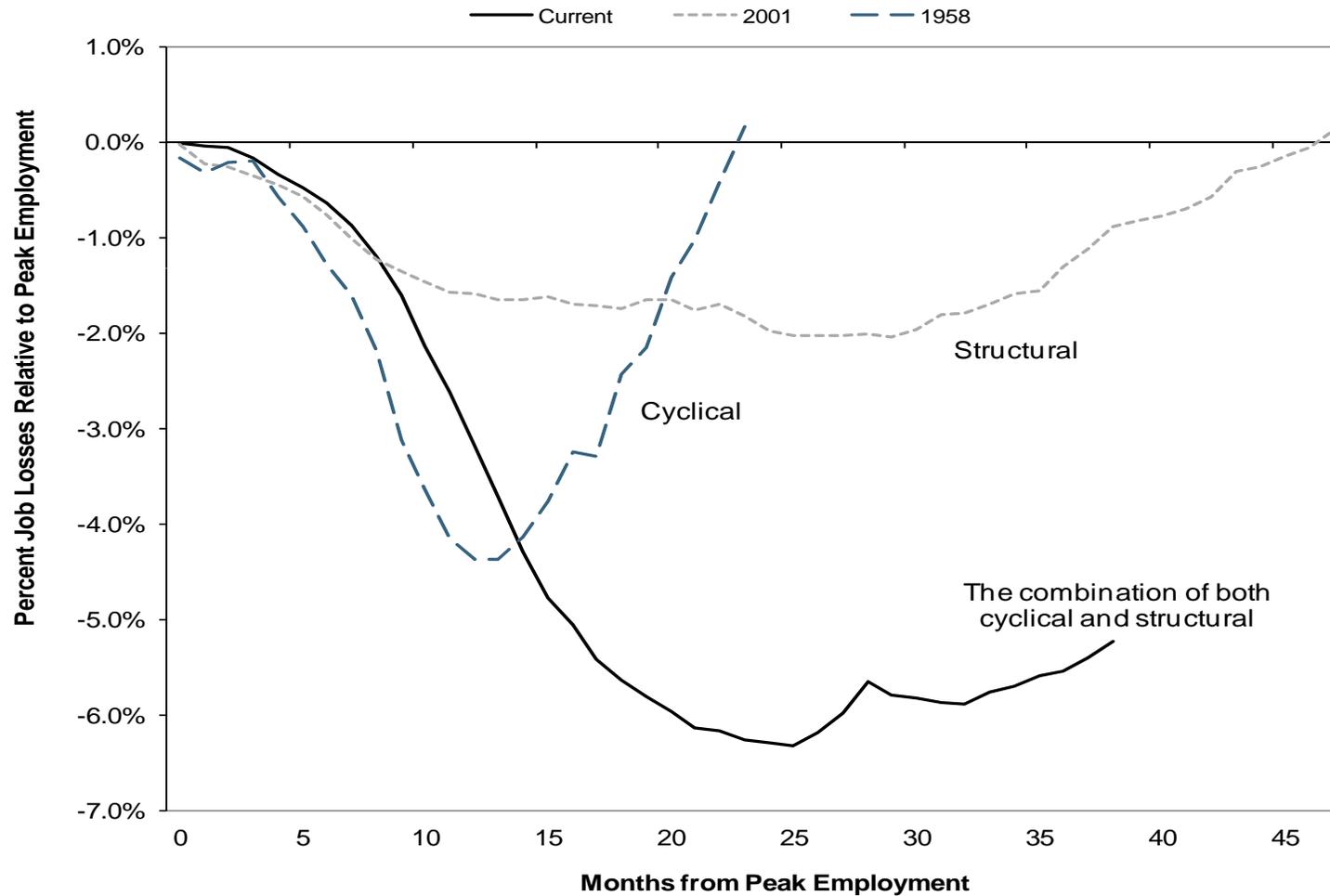
# Total IT spending an improving source of strength Plans are moving higher at many companies for 2011



Note: Due to rounding, totals may not add up to 100 percent.

Source: Goldman Sachs IT Spending Survey, February 2011.

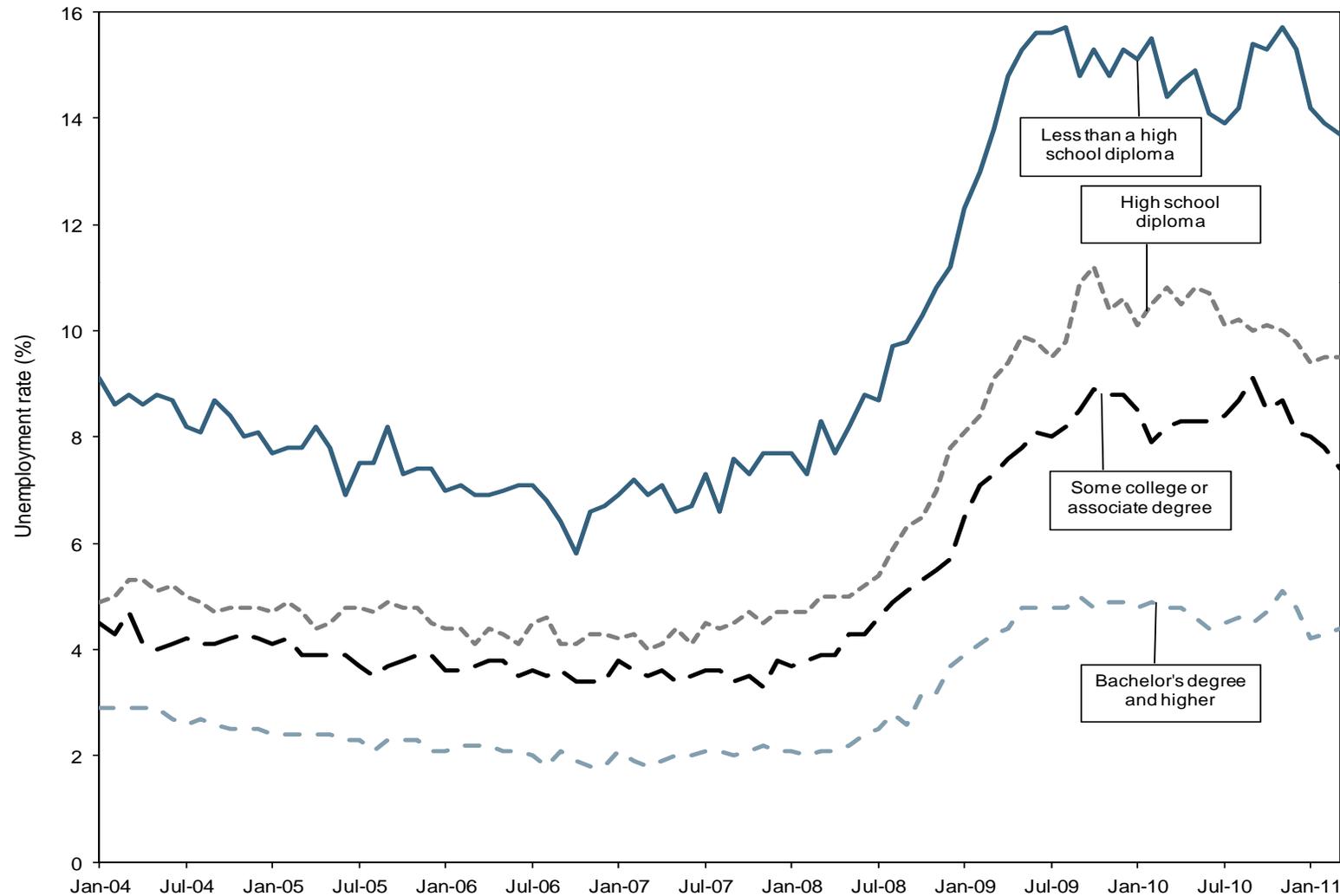
# Employment changes during selected recessions and recoveries



Source: Brookings, Bureau of Labor Statistics, Goldman Sachs Global Markets Institute.

# Employment gap by education

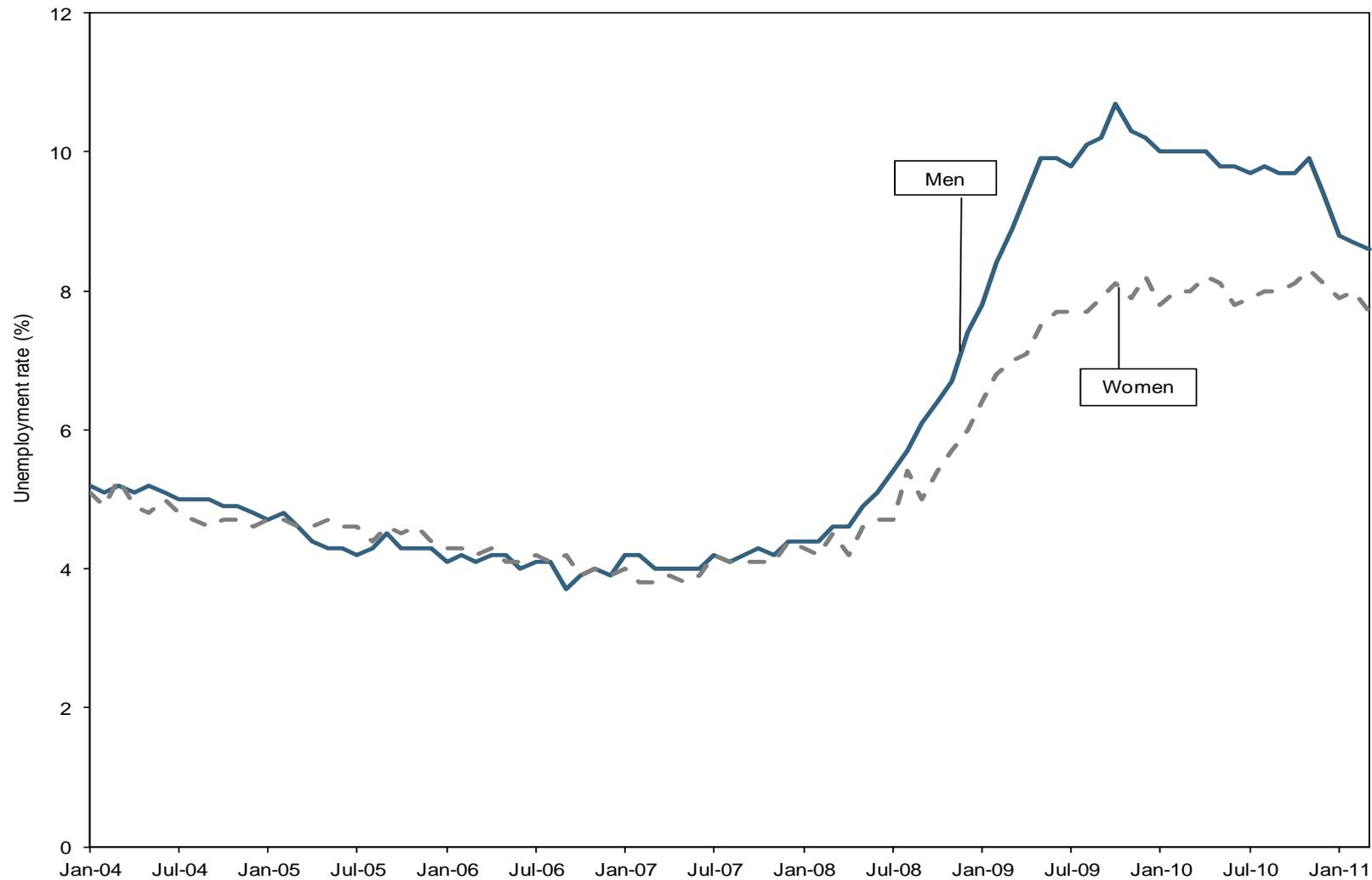
## Unemployment rates for adults, 25 years and over



Source: Bureau of Labor Statistics

# Employment gap by gender

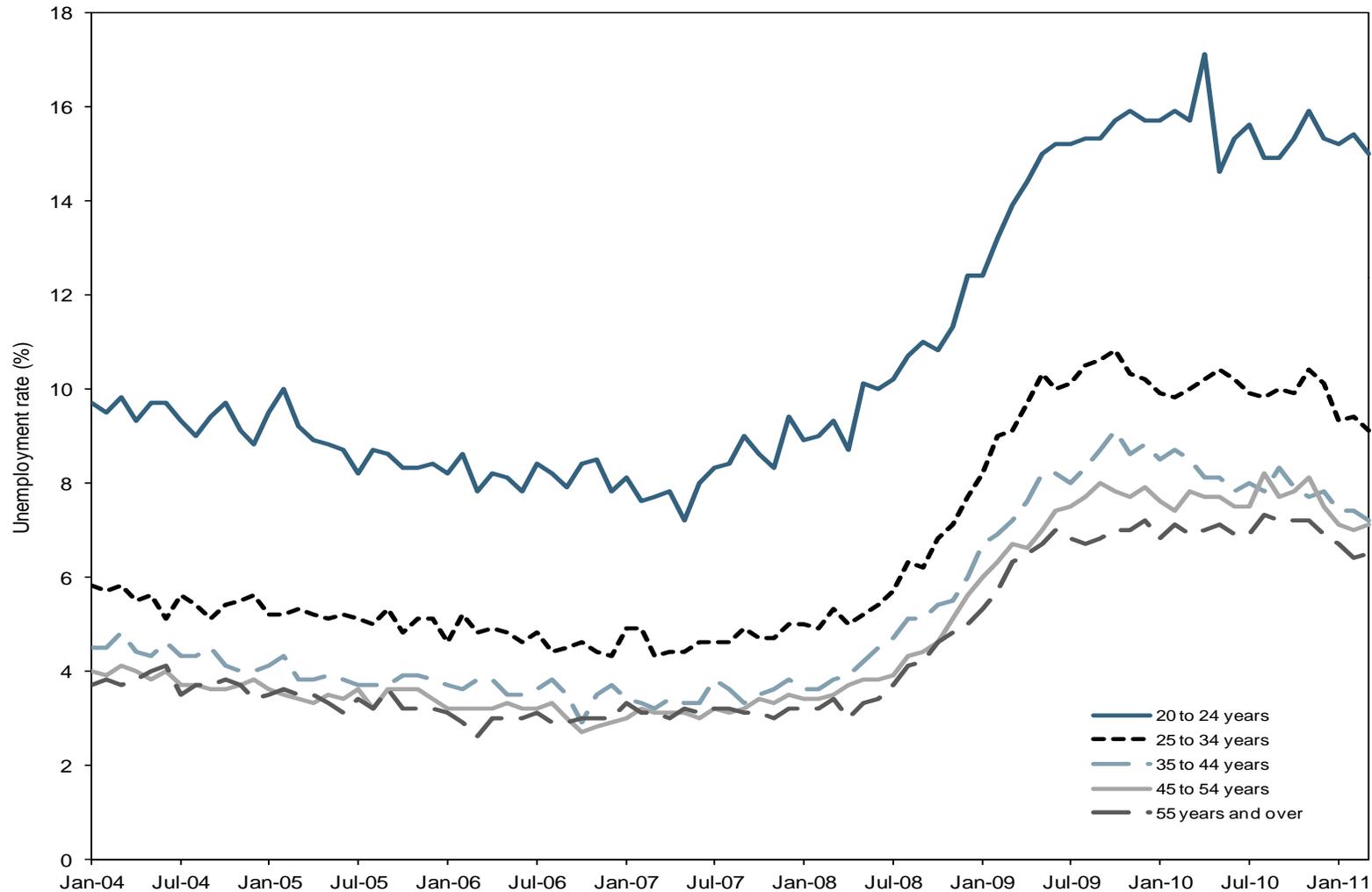
## Unemployment rates for adults, 20 years and over



Source: Bureau of Labor Statistics

# Employment gap by age

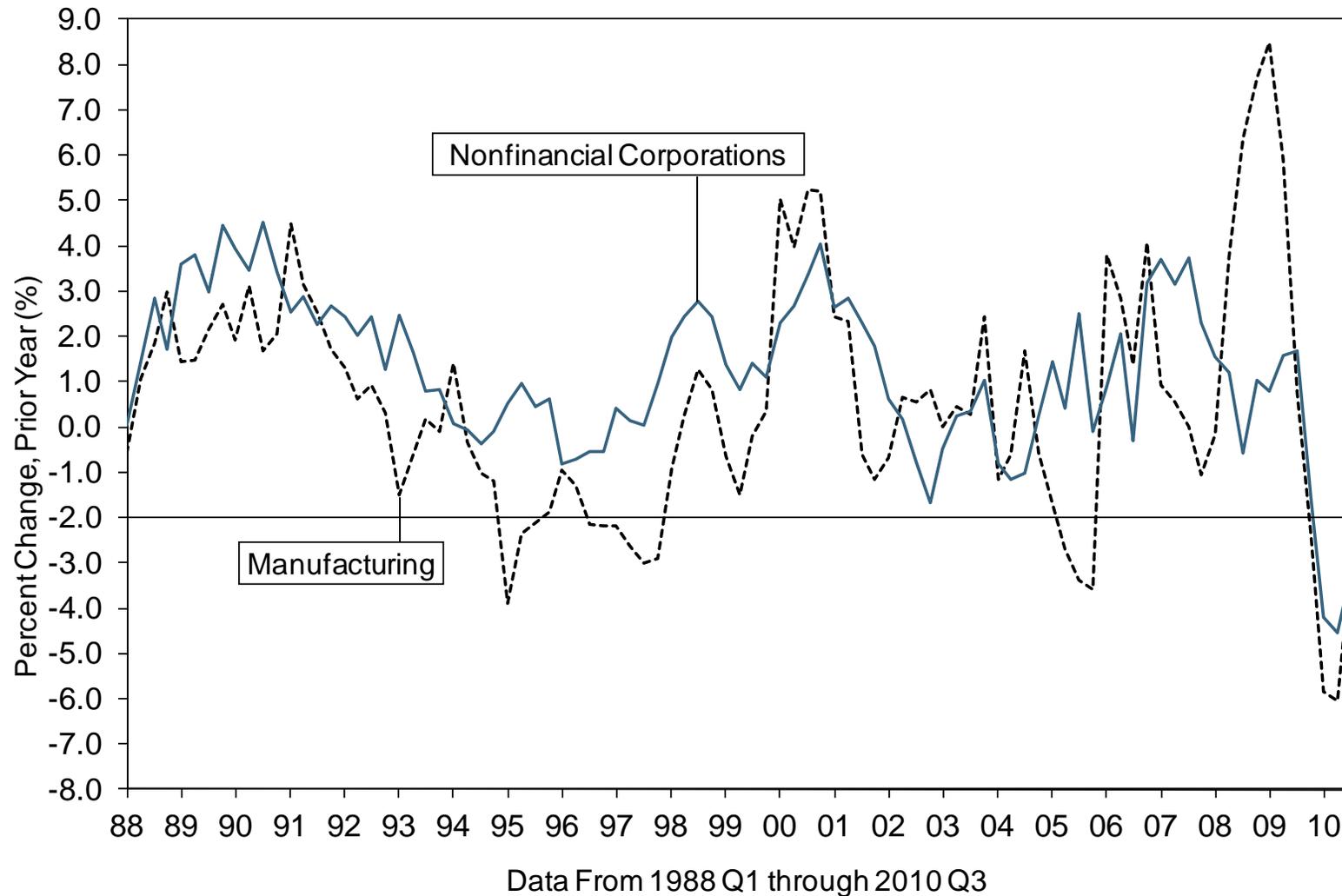
## Unemployment rates for adults, 20 years and over



Source: Bureau of Labor Statistics

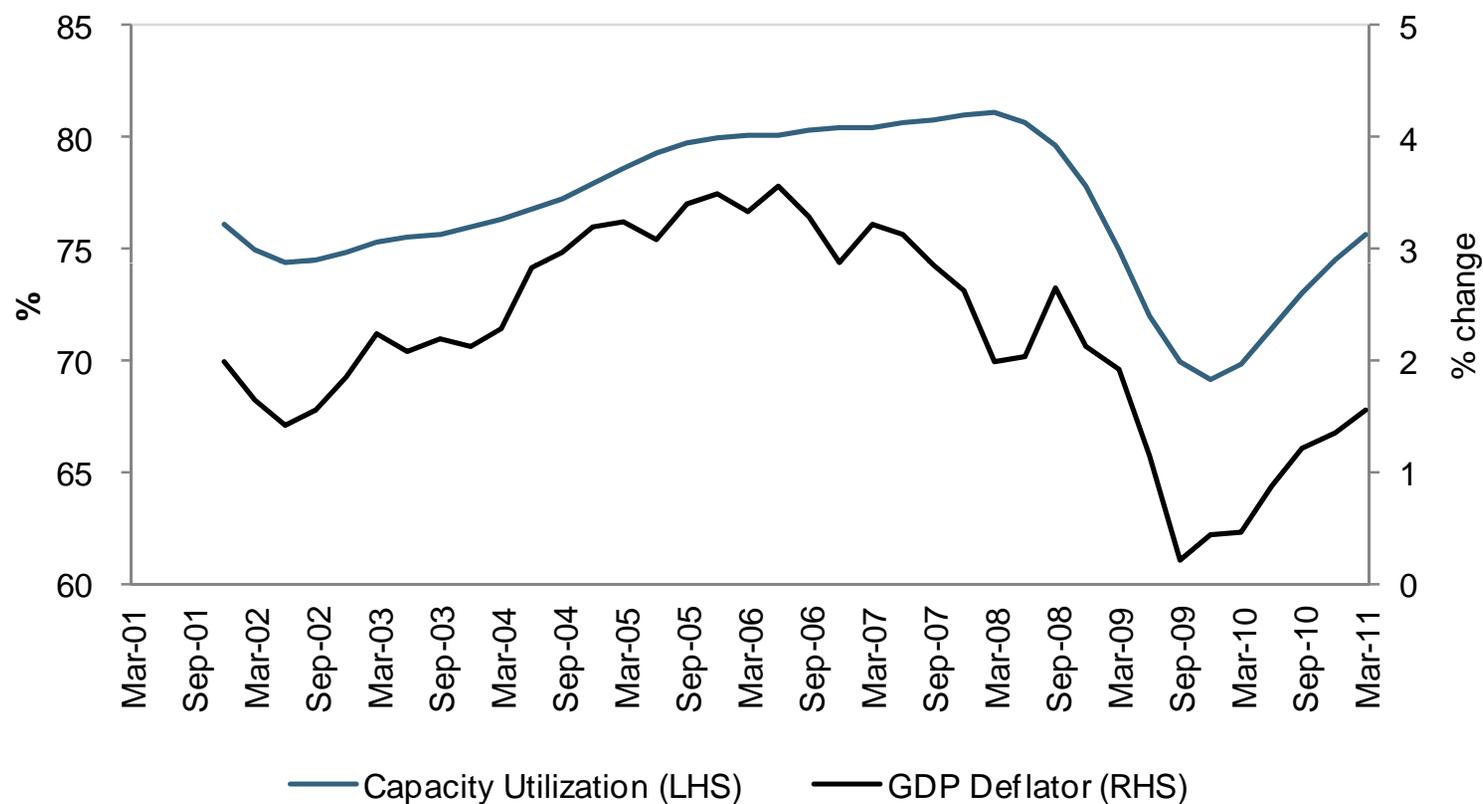
# Unit labor costs remain controlled

Recent surge in productivity helpful to profits and stable core inflation, but is bolstered by weak employment



Source: Bureau of Labor Statistics.

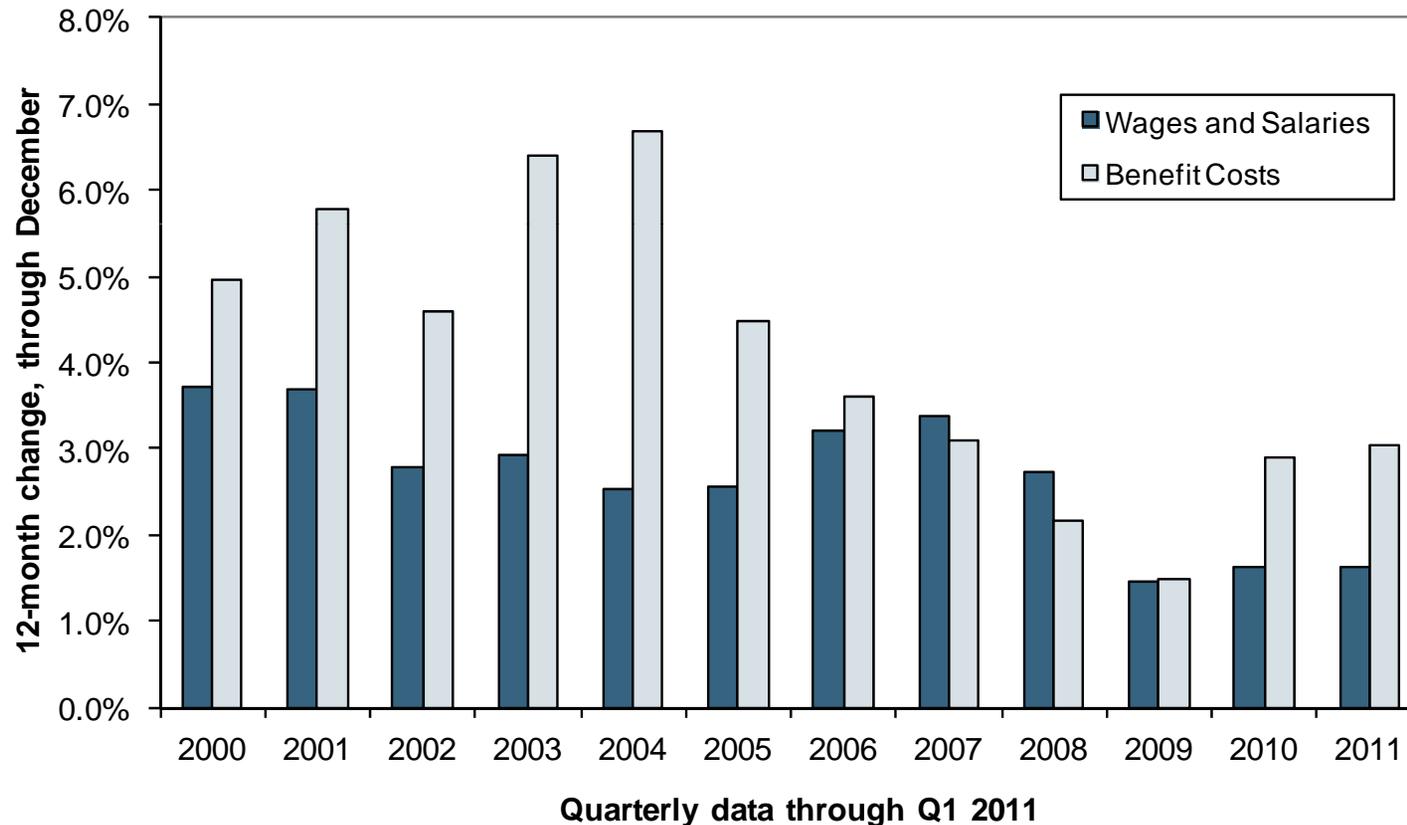
# Impact of weak economic activity on inflation



Source: Bureau of Economic Analysis, Federal Reserve Board.

# Wages have grown more slowly in years with large benefit increases

Healthcare inflation impeded worker cash compensation



Source: Bureau of Labor Statistics.

# Commodity returns

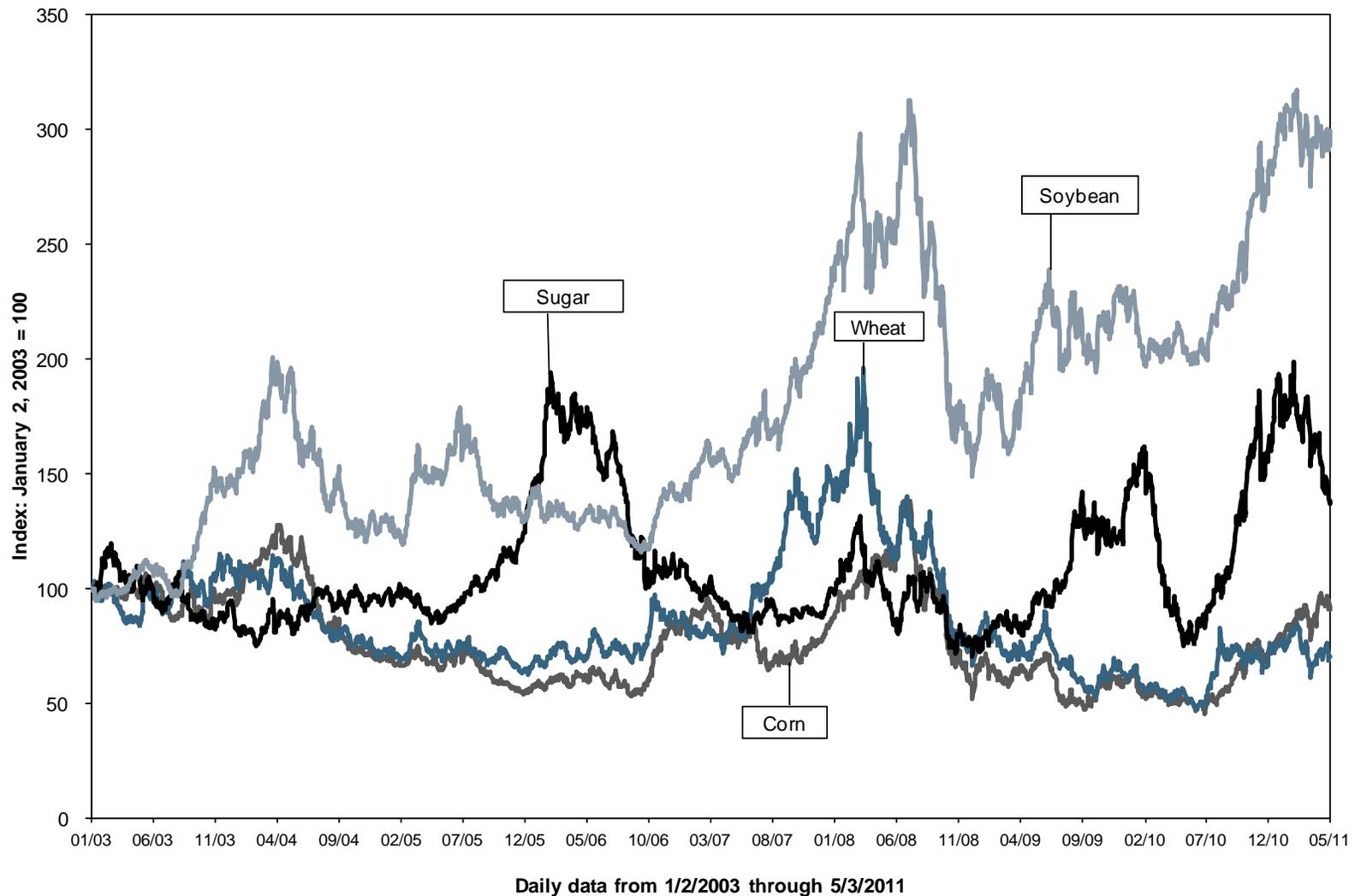
Industrial metals prices rise on BRICs demand; rising food prices problematic in some nations



Source: Goldman Sachs Commodity Research.

# Agricultural prices are rising

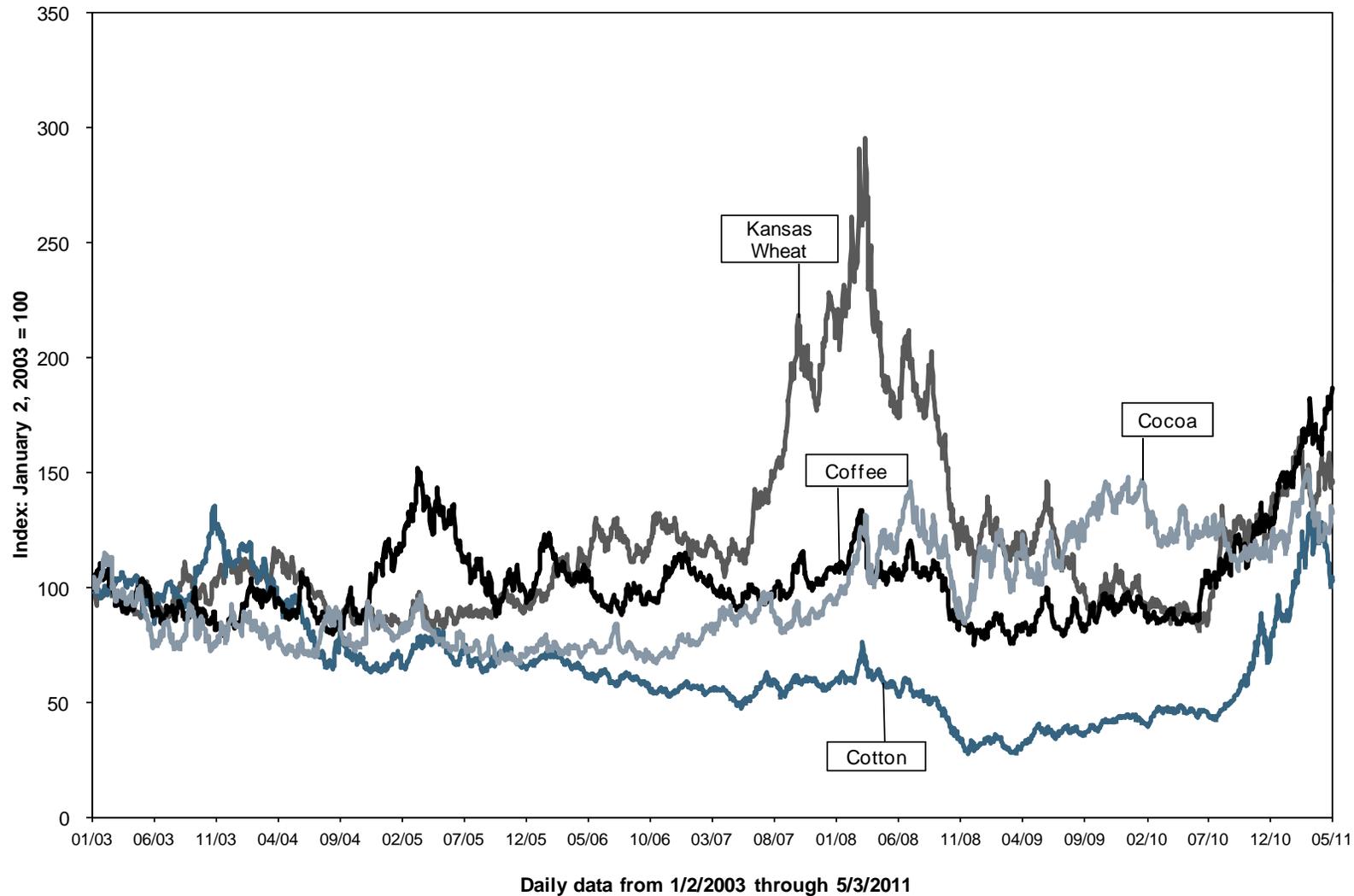
## Four largest index components



Source: Goldman Sachs Commodity Research.

# Agricultural prices are rising

## Additional index components



Source: Goldman Sachs Commodity Research.

# Commodity returns and forecasts, S&P GSCI™

Prices likely to increase further in response to stronger global demand



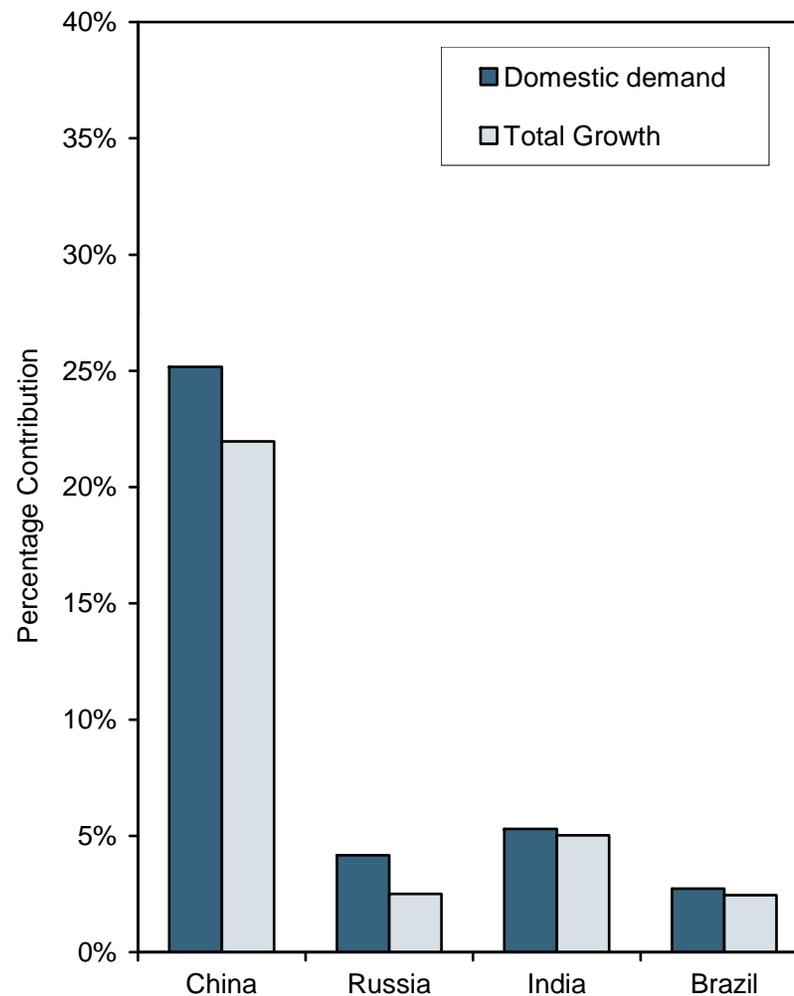
	Current Weight (%)	Returns (%)							12-Month Forward Forecast
		2005	2006	2007	2008	2009	2010	2011 YTD*	
S&P GSCI	100.0	25.5	(15.1)	36.2	(41.1)	10.3	6.3	13.6	10.0
Energy	69.0	31.1	(26.8)	44.8	(45.9)	7.3	(1.0)	19.1	10.0
Ind. Metals	7.5	35.8	60.9	(5.3)	(48.9)	73.8	14.7	2.2	18.0
Prec. Metals	3.0	18.6	24.1	28.0	0.5	25.5	31.6	12.5	13.0
Agriculture	16.0	2.4	13.3	36.6	(23.4)	3.6	31.8	1.6	7.0
Livestock	4.4	3.5	(6.7)	1.2	(26.5)	(16.1)	10.9	(1.0)	2.0

\* As of 5/3/2011.

Source: Goldman Sachs Commodity Research.

# Contributions to global growth, 2000-2009

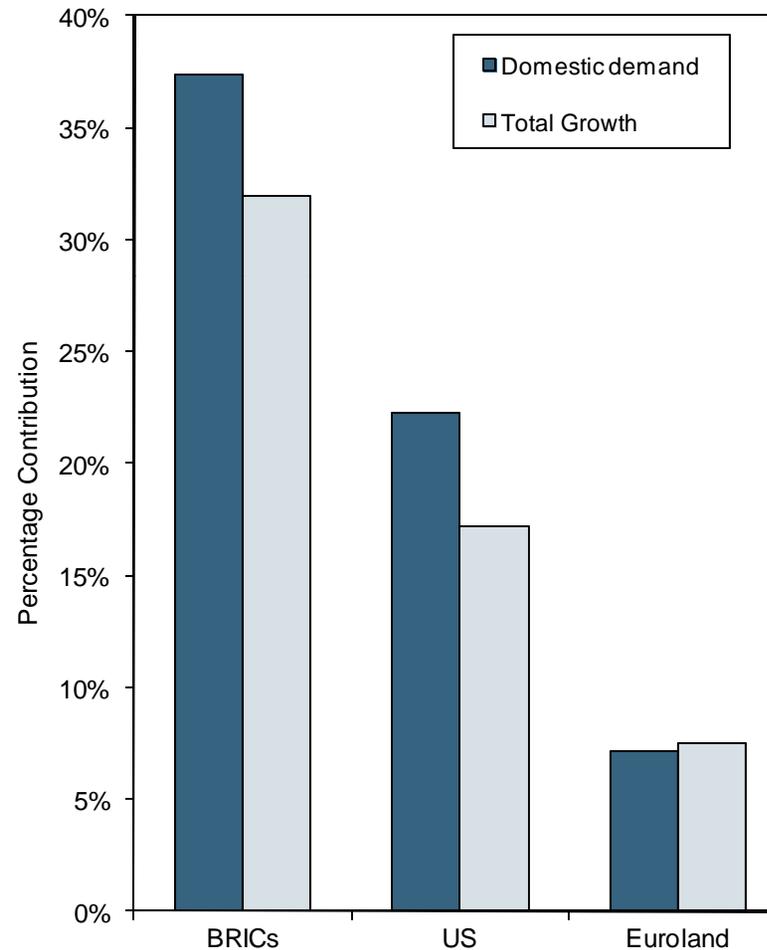
BRICs nations contributed significantly to aggregate growth, especially during global recession



Source: World Bank, Goldman Sachs Economics Research.

# Contributions to global growth, 2000-2009

BRICs nations contributed significantly to aggregate growth, especially during global recession



Source: World Bank, Goldman Sachs Economics Research.

# Global growth outlook

## Recovery underway in the global economy

(\$ Billions)

	2008 GDP	Growth Rates				
	Current Dollars	2008	2009	2010	2011(E)	2012(E)
US	14,369	0.0 %	(2.6) %	2.9 %	2.9 %	3.8 %
Eurozone	13,820	0.3	(4.0)	1.7	2.1	1.9
Germany	3,706	0.7	(4.7)	3.5	2.8	2.0
France	2,911	0.1	(2.5)	1.5	2.2	2.0
Italy	2,345	(1.3)	(5.2)	1.2	1.5	1.5
Japan	4,746	(1.2)	(6.3)	3.9	0.7	2.3
United Kingdom	2,786	-0.1	(4.9)	1.3	2.0	2.7
China	4,521	9.6	9.2	10.3	10.0	9.5
Canada	1,559	0.5	(2.5)	3.1	2.9	3.4
Brazil	1,649	5.2	(0.6)	7.5	4.5	4.0
Mexico	1,096	1.5	(6.1)	5.5	5.0	4.6
Korea	933	2.3	0.3	6.2	4.6	4.8
Australia	1,056	2.6	1.3	2.7	2.9	3.7

Source: Goldman Sachs Economics Research.

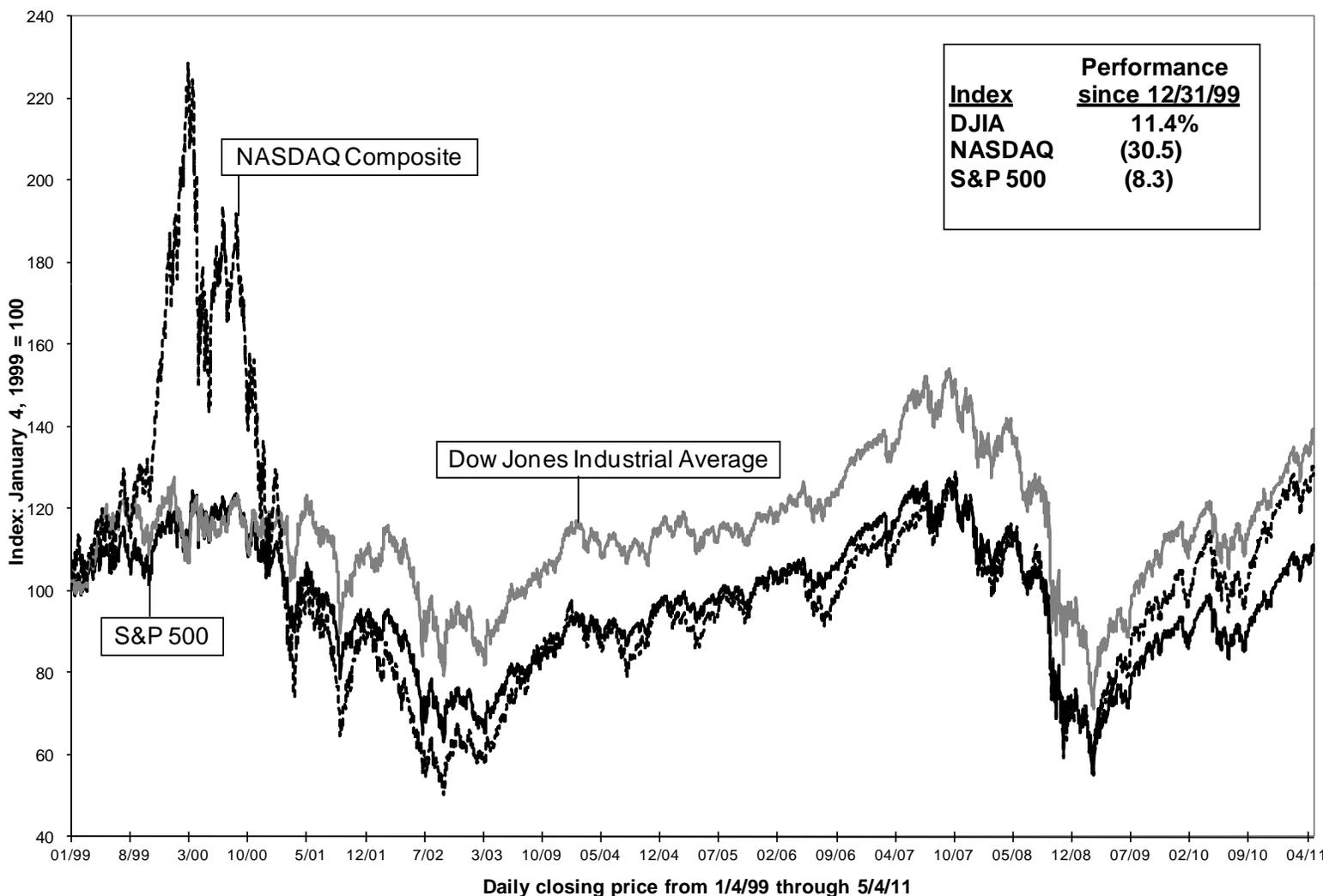
# Global inflation outlook

Inflation dropped sharply in early 2009, not expected to rise notably in 2011 in mature economies due to excess capacity

	Consumer Prices (% change, yoy)				
	2008	2009	2010	2011(E)	2012(E)
US	3.8 %	(0.3) %	1.6 %	2.9 %	2.2 %
Eurozone	3.3	0.3	1.6	2.6	1.9
Germany	2.8	0.2	1.2	2.5	2.1
France	3.2	0.1	1.7	2.4	1.9
Italy	3.5	0.8	1.6	2.6	1.9
Japan	1.4	(1.3)	(0.7)	0.5	0.2
United Kingdom	3.6	2.2	3.3	4.0	1.9
China	5.9	(0.7)	3.3	4.3	3.0
Canada	2.4	0.3	1.8	2.5	2.0
Brazil	5.7	4.9	5.2	6.9	6.8
Mexico	5.1	5.3	4.2	3.8	3.5
Korea	4.7	2.8	3.0	3.9	3.3
Australia	4.4	1.8	2.8	3.4	2.8

Source: Goldman Sachs Economics Research.

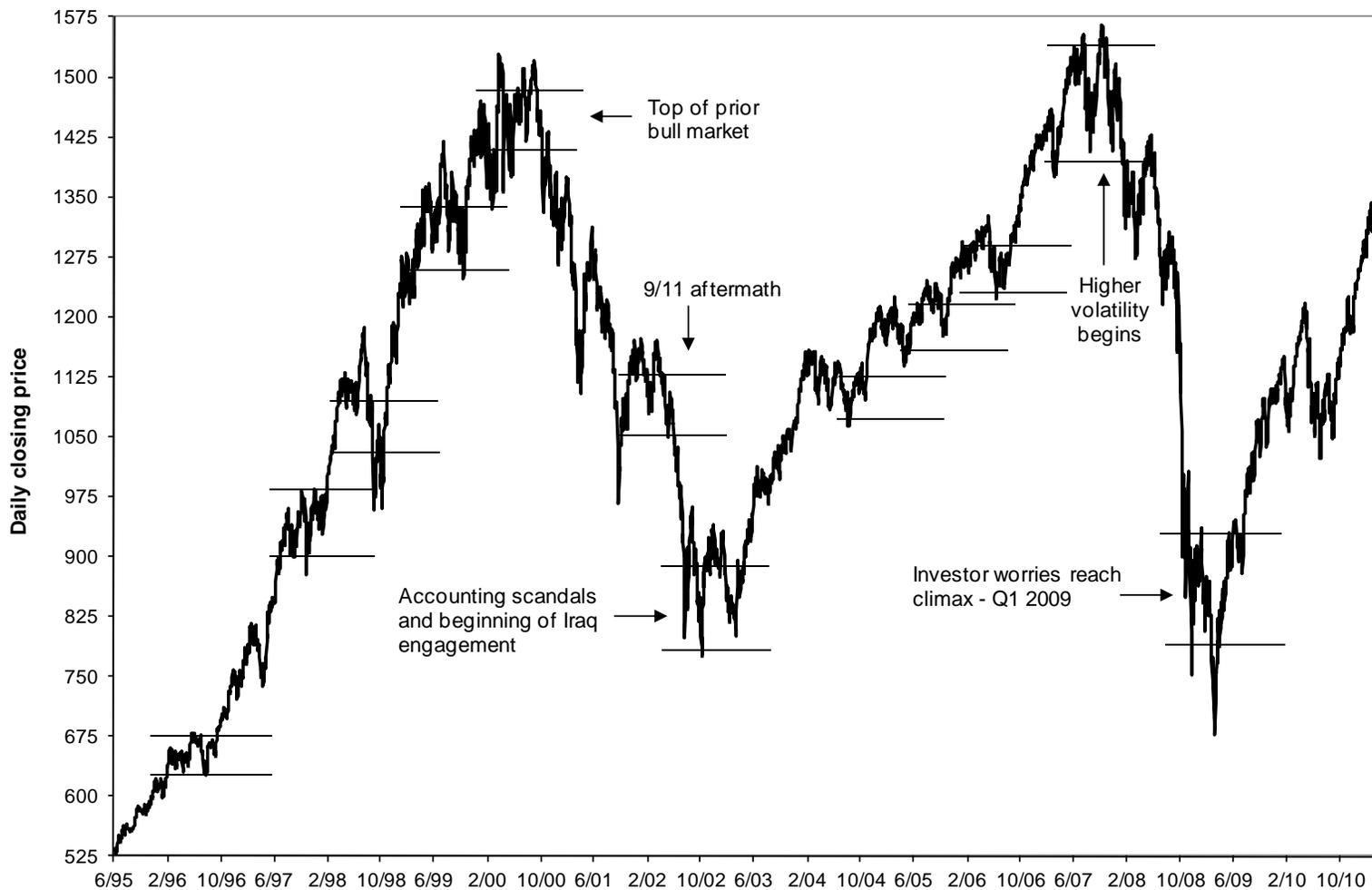
# Stock prices reached new highs in October 2007 before retreating NASDAQ was the outlier in 1999-2000



Source: Standard & Poor's, Dow Jones, National Association of Securities Dealers Inc.

# S&P 500 performance: Staircase pattern

June 1995 – May 2011



Daily closing price from 6/1/95 through 5/4/11

Source: Standard & Poor's, FactSet, Goldman Sachs Global Markets Institute.

# Comparing cyclical troughs: 2002 vs. now

## Share price performance has lagged profit growth



	2002 YE	2011 Q2	2002 - 2011 Q2 % Change
Nominal GDP, \$ billions	\$10,469.6	\$15,214.5	45.3 %
S&P 500 Operating Earnings, per share	46.04	96.00	108.5
S&P 500 Price	875.40	1,347.32 (a)	53.9

(a) Closing price as of 5/4/2011.

Source: Goldman Sachs Portfolio Strategy, Standard & Poor's.

# Inflation and P/E multiples<sup>(a)</sup>

The S&P 500 now at 15.4X 2011 estimated median EPS



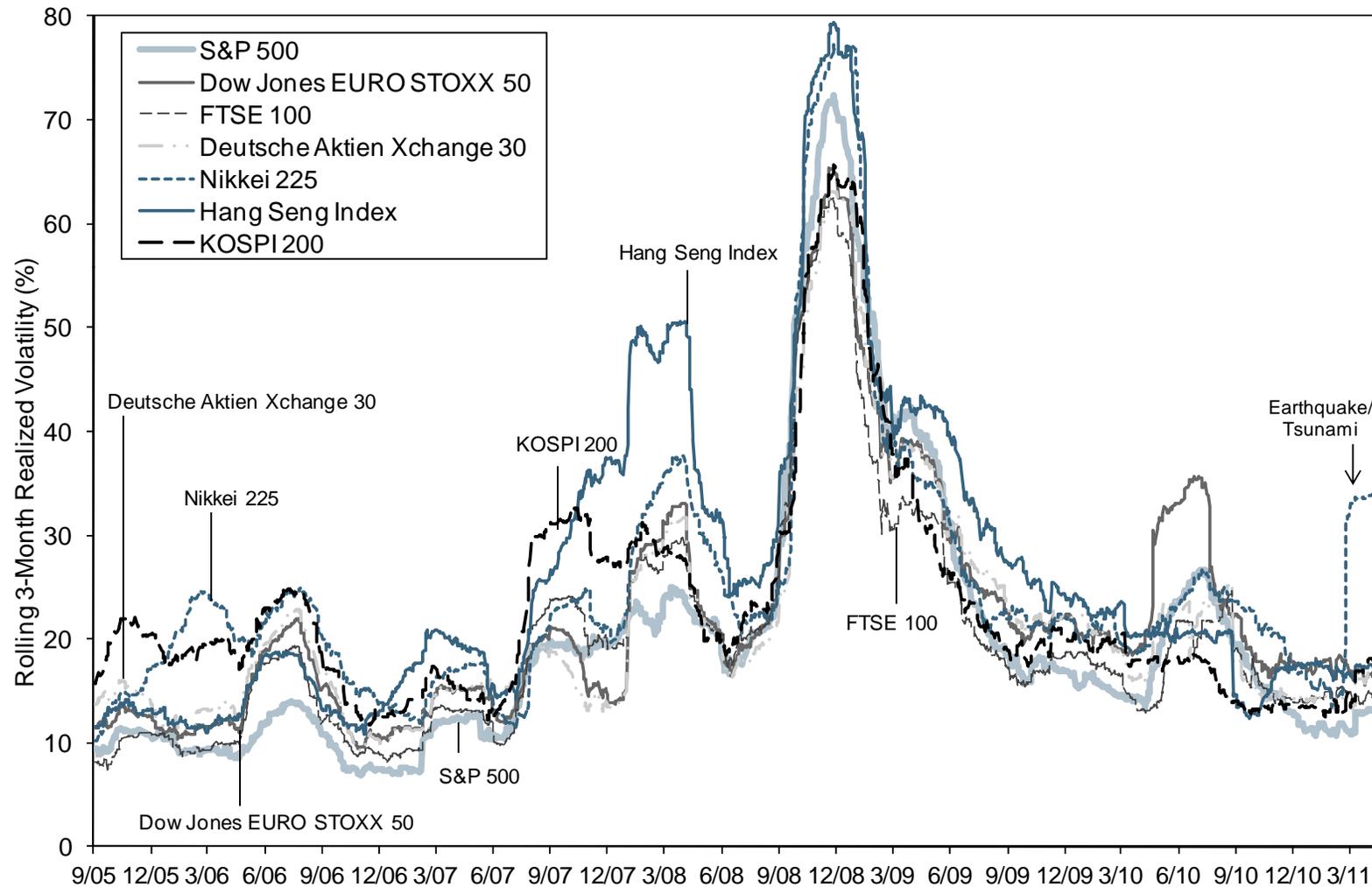
Inflation	Average S&P 500 P/E
Less than 2.5%	18.6 X
2.5% - 3.5%	17.6
3.5% - 4.5%	12.1
4.5% - 5.5%	14.2
5.5% - 6.5%	12.8
6.5% - 7.5%	10.0
Greater than 7.5%	8.6

(a) For the period 1950-2007

Source: Standard & Poor's, US Department of Labor, Goldman Sachs Global Markets Institute.

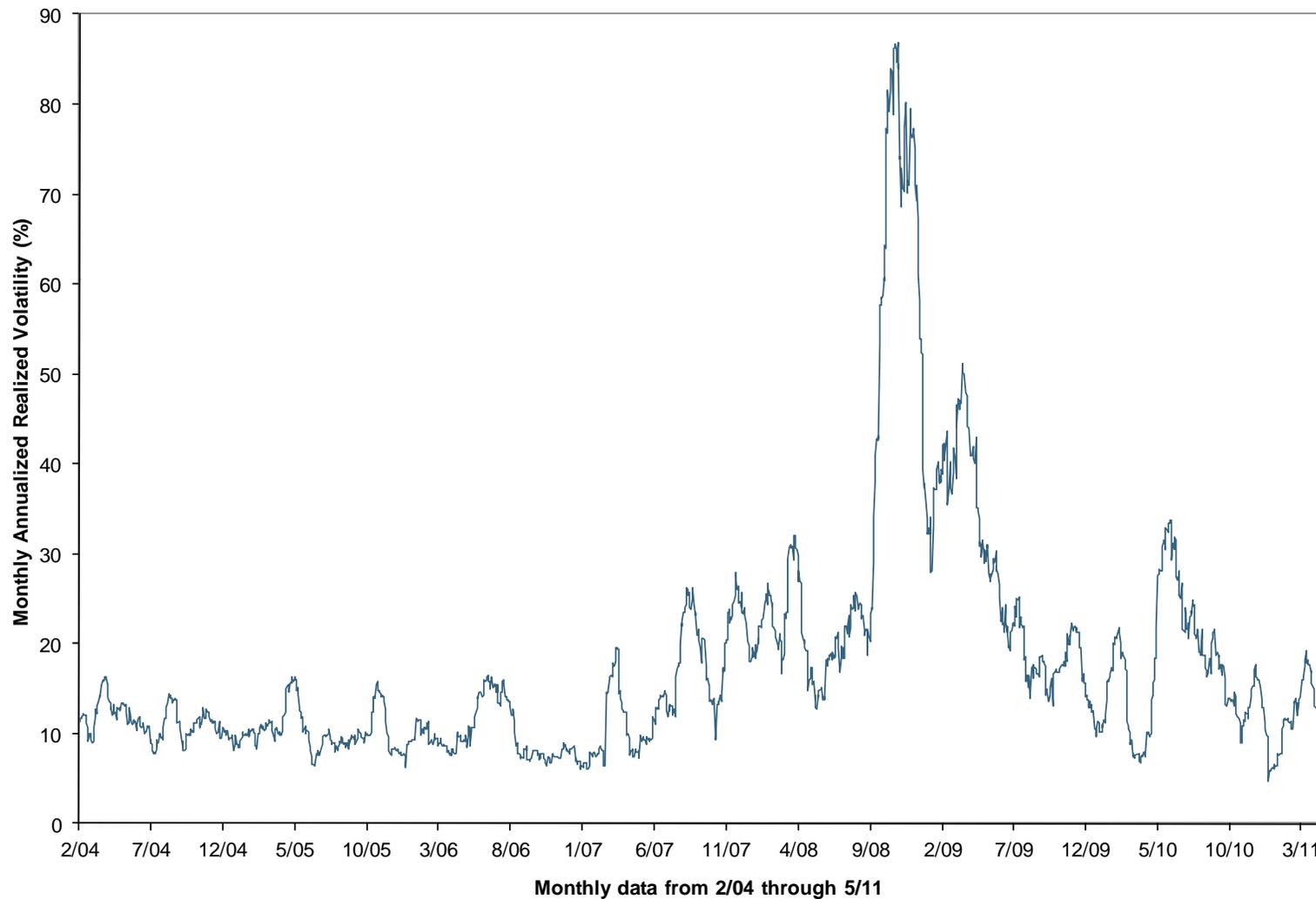
# Realized volatility for major indices

Volatility has sharply declined but still above historical averages



Source: Goldman Sachs Options Research.

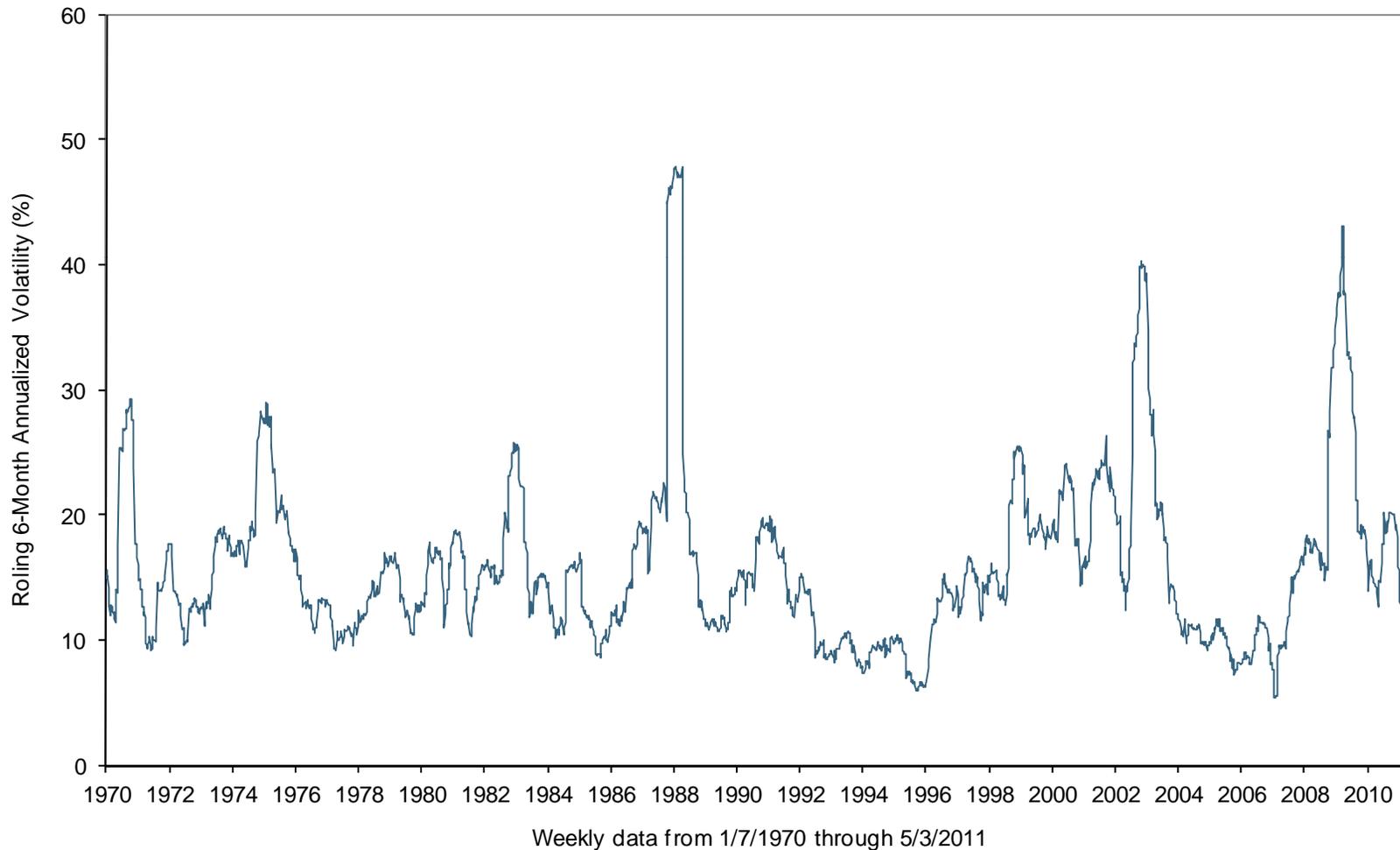
# Volatility of the S&P 500 has declined sharply from credit crisis levels



Source: Goldman Sachs Equity Derivatives Research.

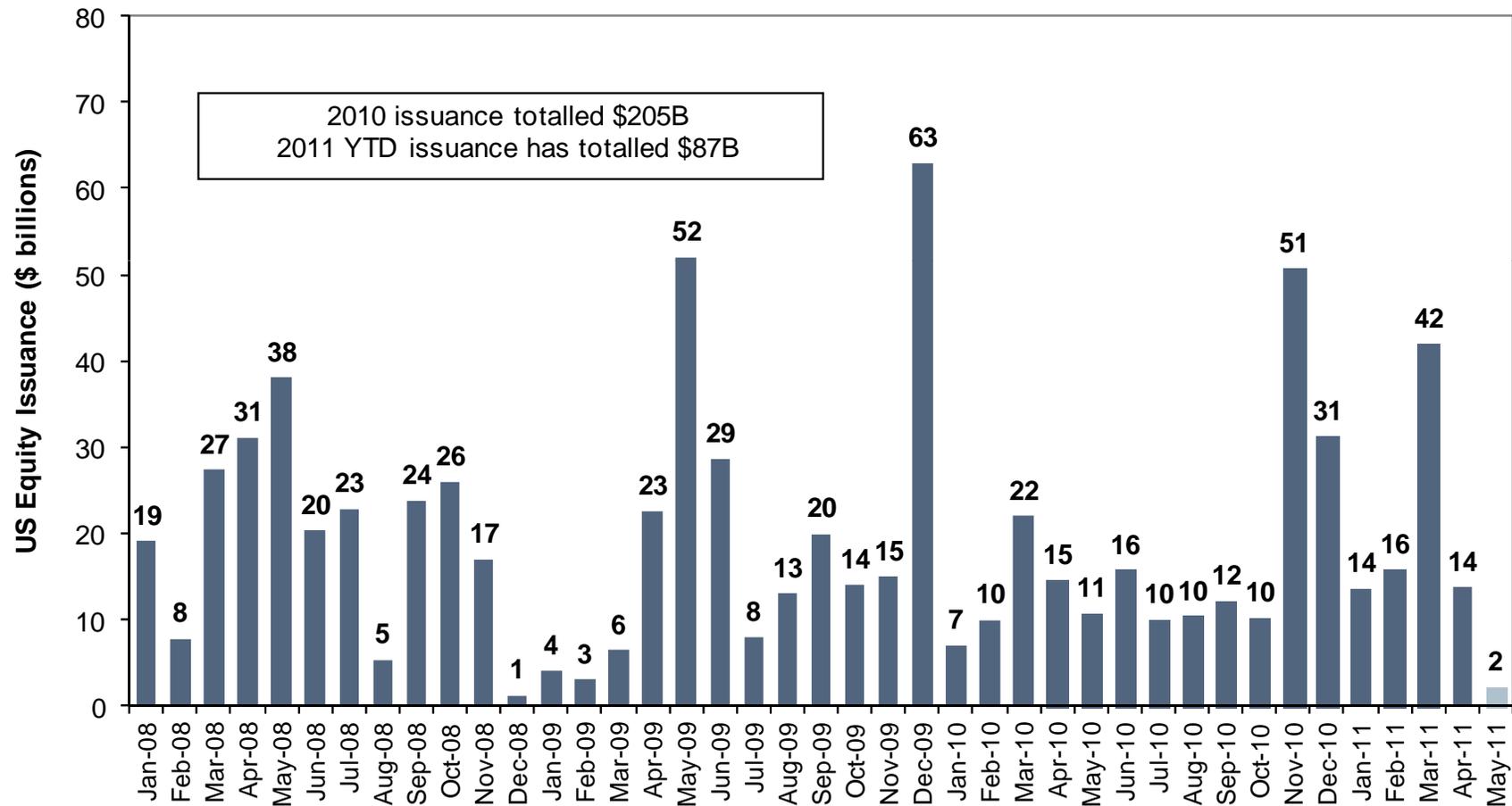
# Volatility of the S&P 500 somewhat above historical norm

Extremely low levels, 2004 through mid-2007



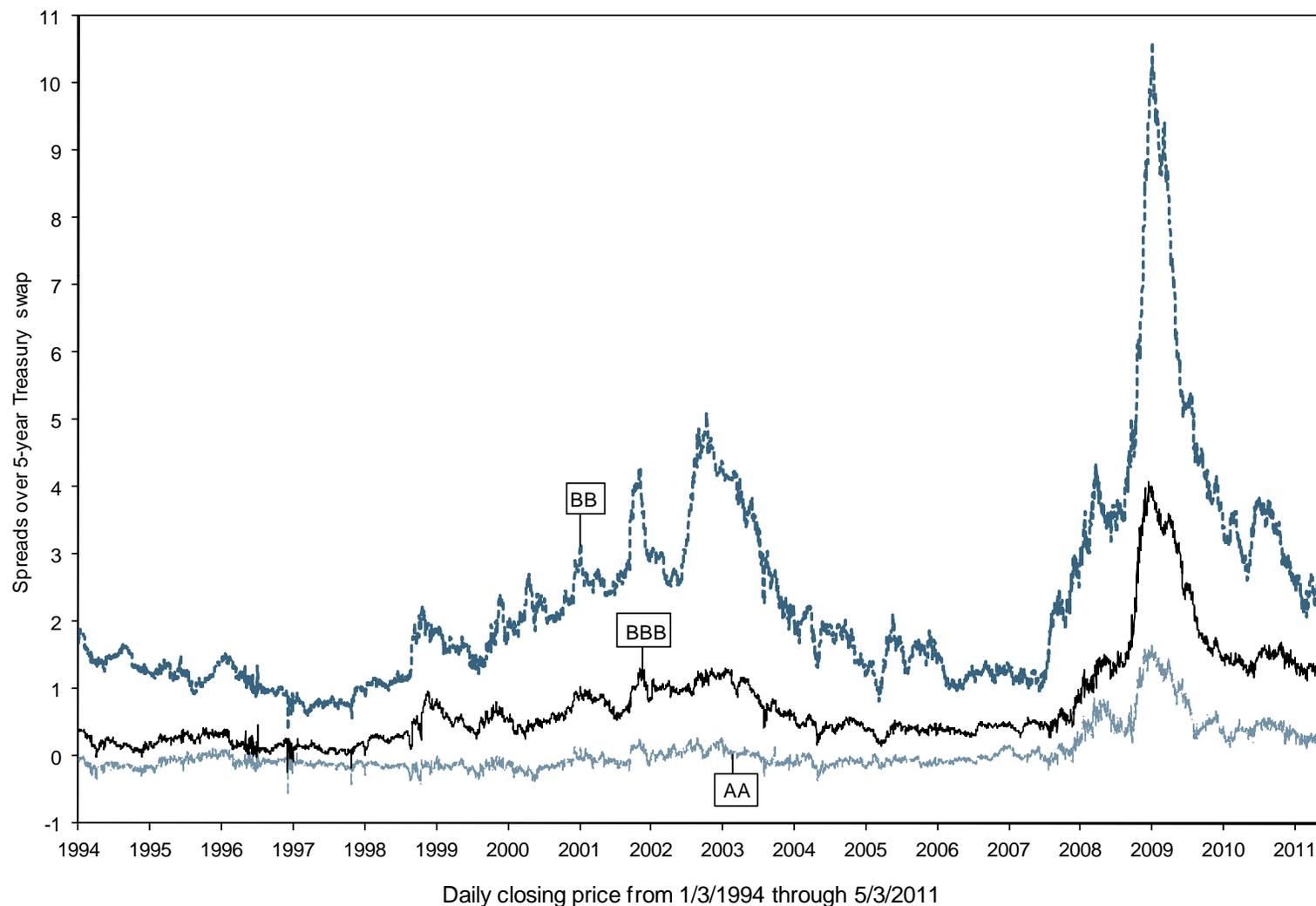
Source: Goldman Sachs Equity Derivatives Research.

# US equity market issuance has picked up



Source: Dealogic, Goldman Sachs Global Markets Institute.

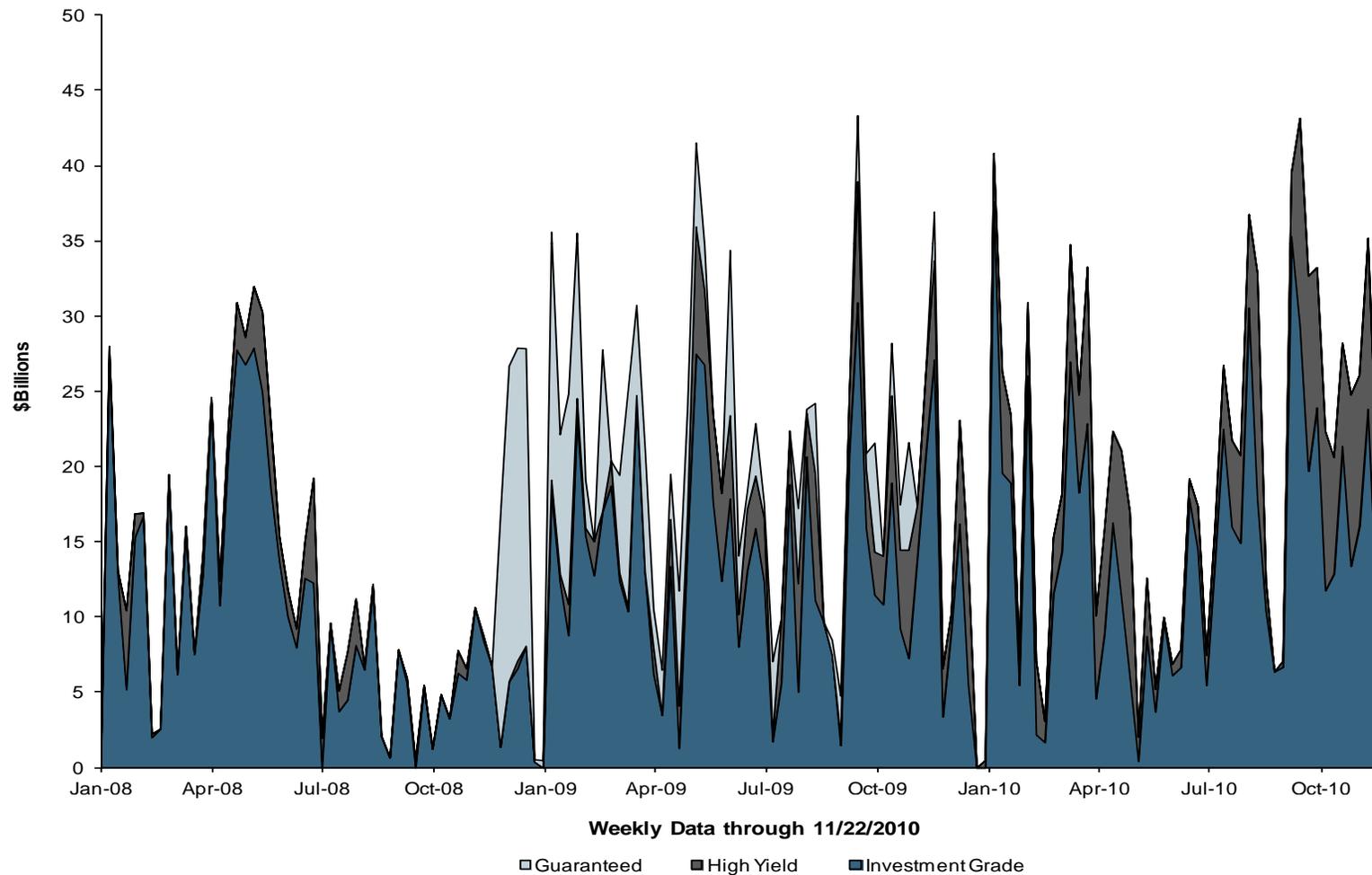
# Corporate bond spreads have narrowed



Source: Bloomberg, Goldman Sachs Credit Strategy.

# Bond issuance up sharply since spring 2010

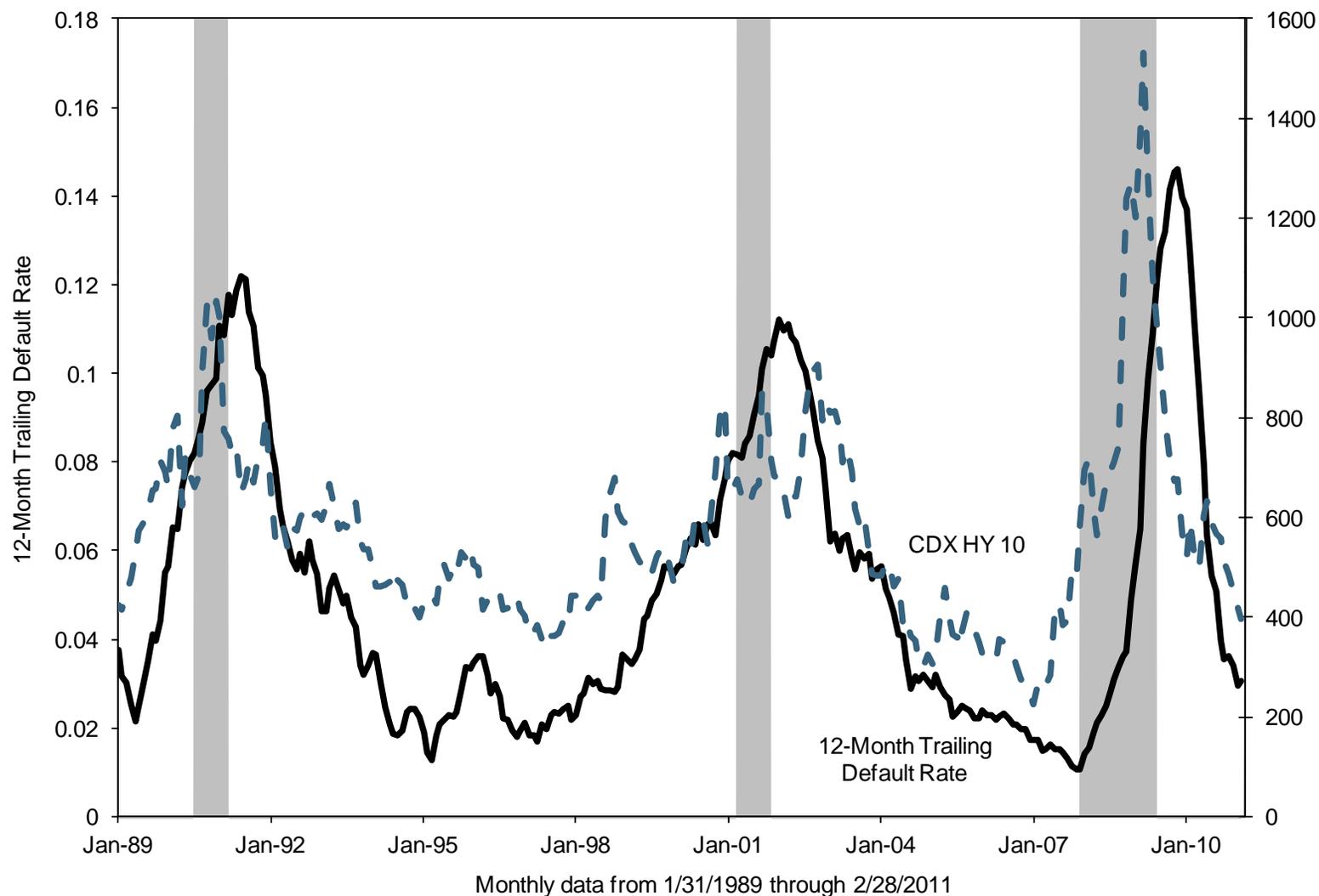
Corporations are taking advantage of historically low borrowing rates



Source: Goldman Sachs Credit Strategy.

# High yield bond spreads have narrowed

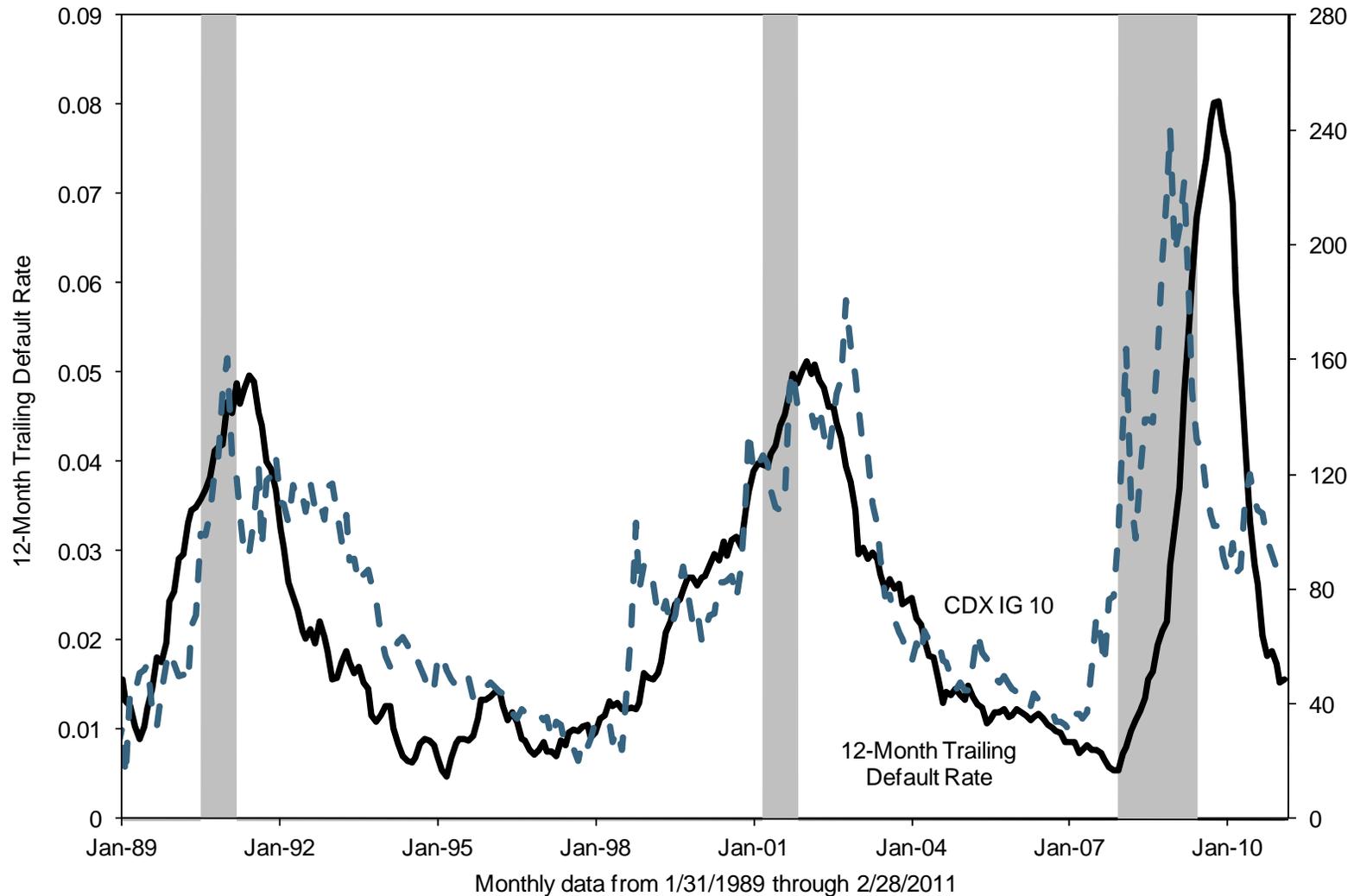
## Default rates have peaked



Source: Goldman Sachs Credit Strategy.

# Investment grade spreads have narrowed

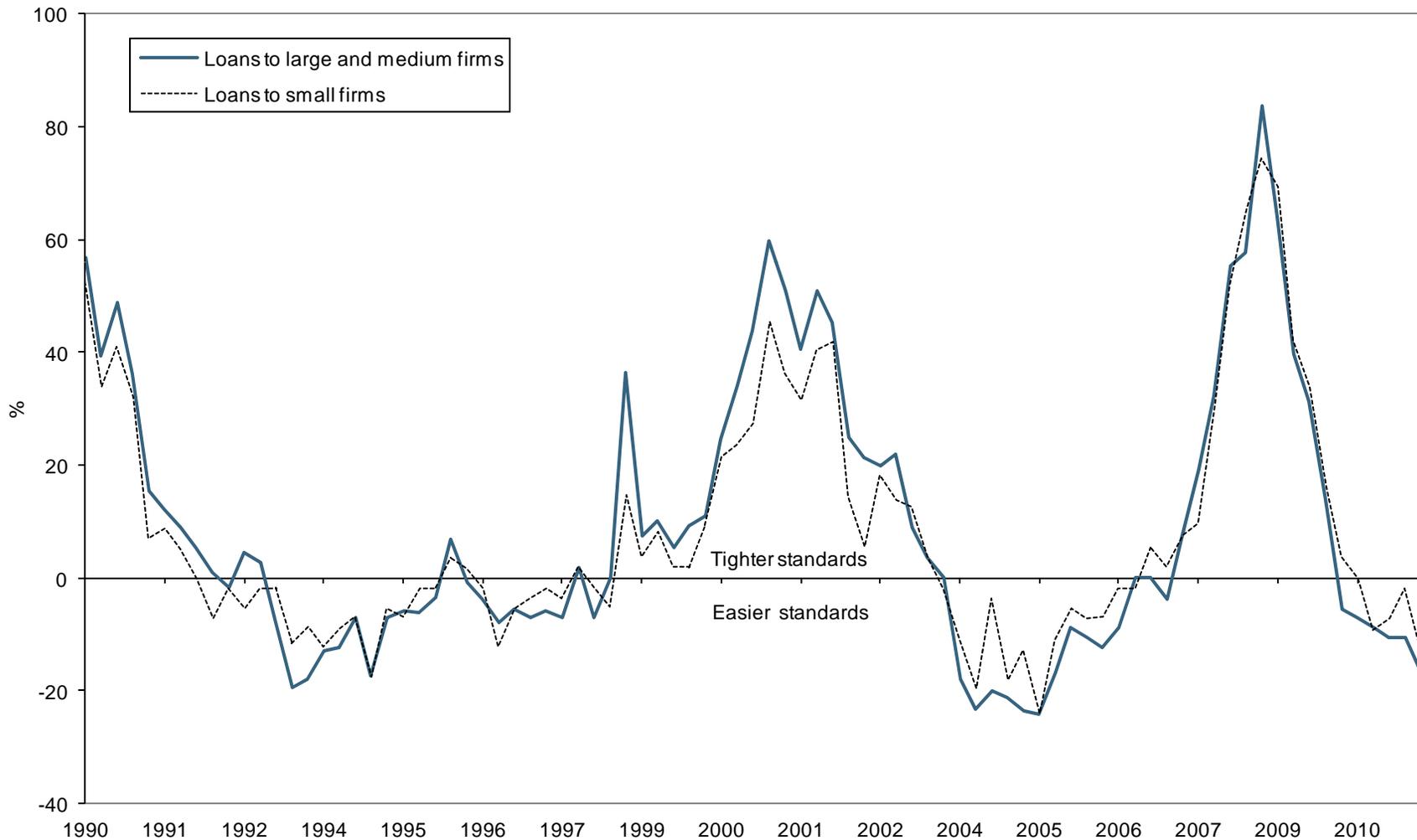
## Default rates have peaked



Source: Goldman Sachs Credit Strategy.

# Trends in credit standards

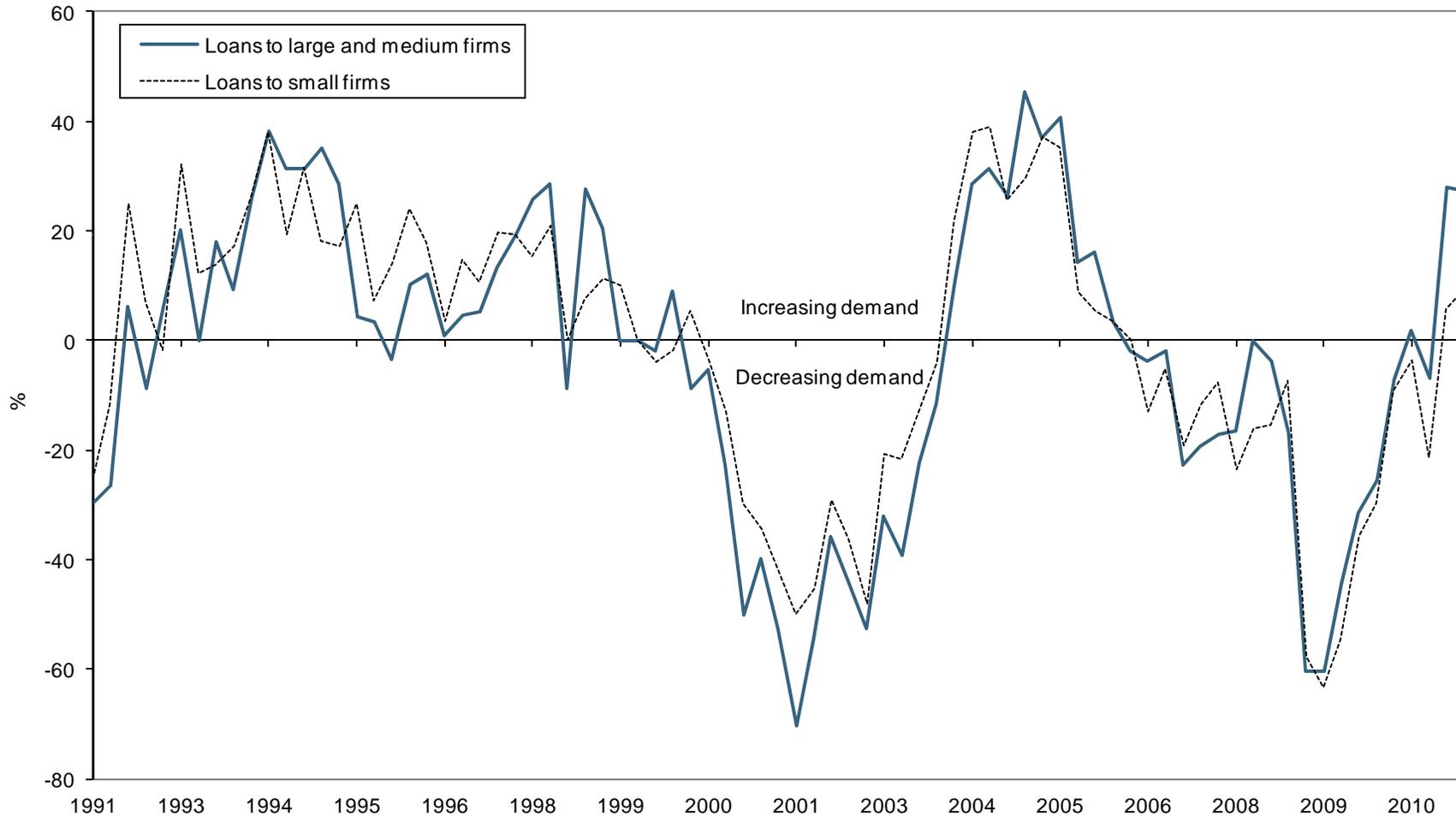
Surveyed banks reporting that standards for C&I loans are beginning to ease



Source: Federal Reserve Board Senior Loan Officer Opinion Survey, April 2011.

# Trends in credit lending

Surveyed banks reporting that demand for C&I loans has begun to increase



Source: Federal Reserve Board Senior Loan Officer Opinion Survey, April 2011.

# Reasons cited by banks for easing credit standards

## C&I loans: increased competition



Reasons	July 2010	October 2010	January 2011	April 2011
More aggressive competition from other banks or nonbank lenders	2.56	2.44	2.40	2.46
More favorable or less uncertain economic outlook	1.63	1.59	1.87	1.53
Increased liquidity in the secondary market	1.28	1.37	1.27	1.37
Improving conditions in borrower's industry	1.44	1.44	1.27	1.23
Increased risk tolerance	1.19	1.19	1.27	1.20

1 = not important

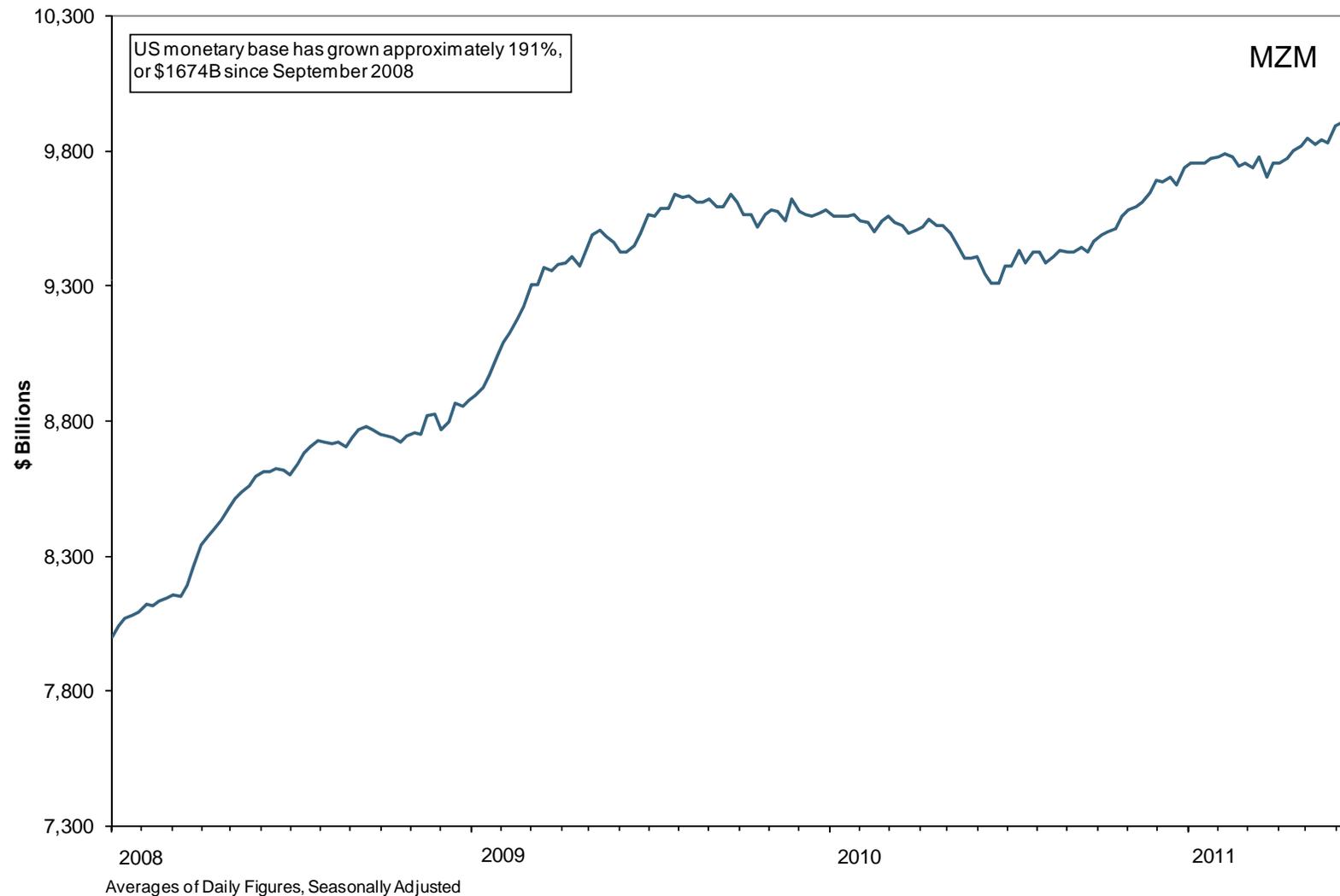
2 = somewhat important

3 = very important

Source: Federal Reserve Board Senior Loan Officer Opinion Survey, April 2011.

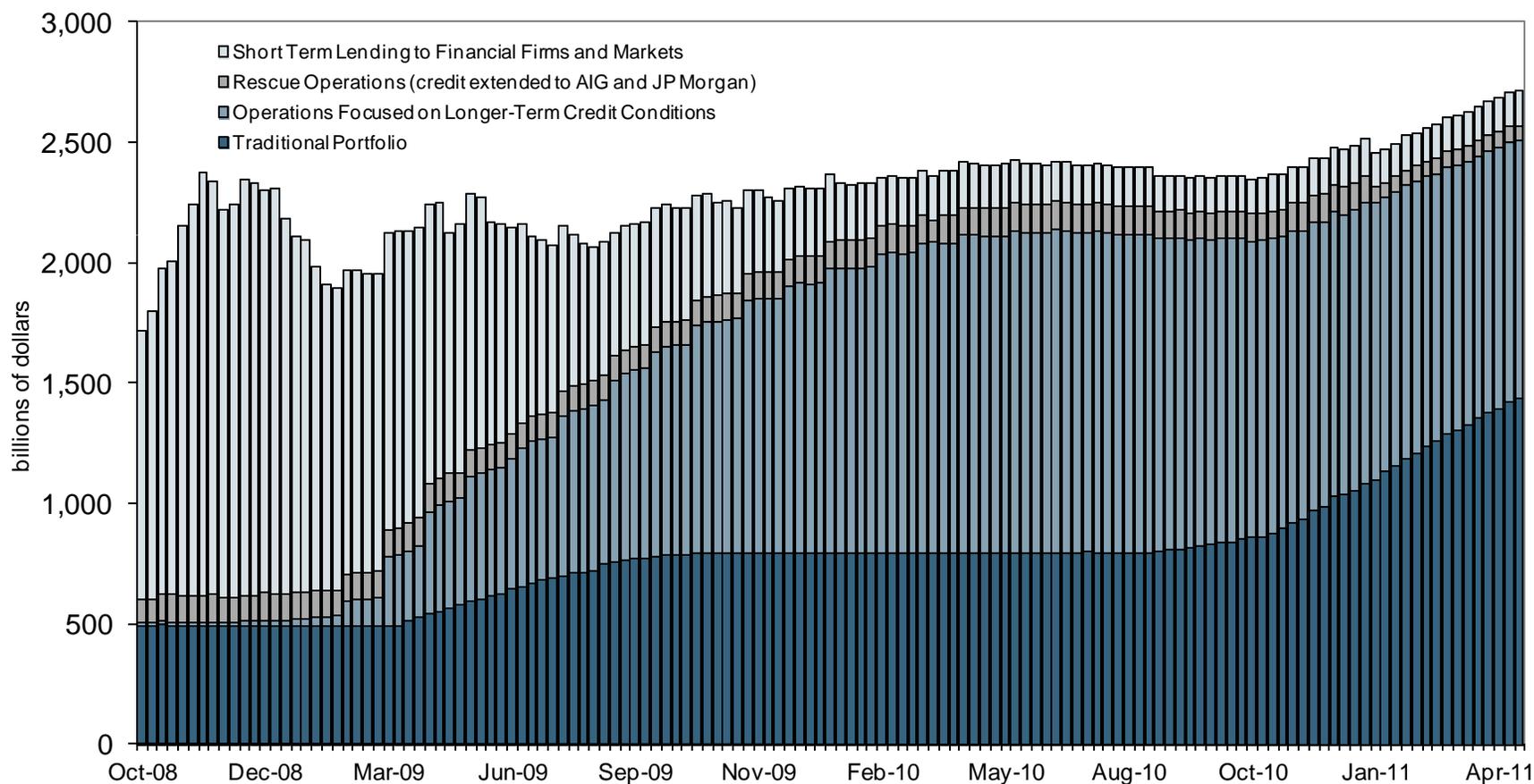
# Recent expansion of money supply

## Impact of quantitative easing



Source: Federal Reserve Bank of St. Louis.

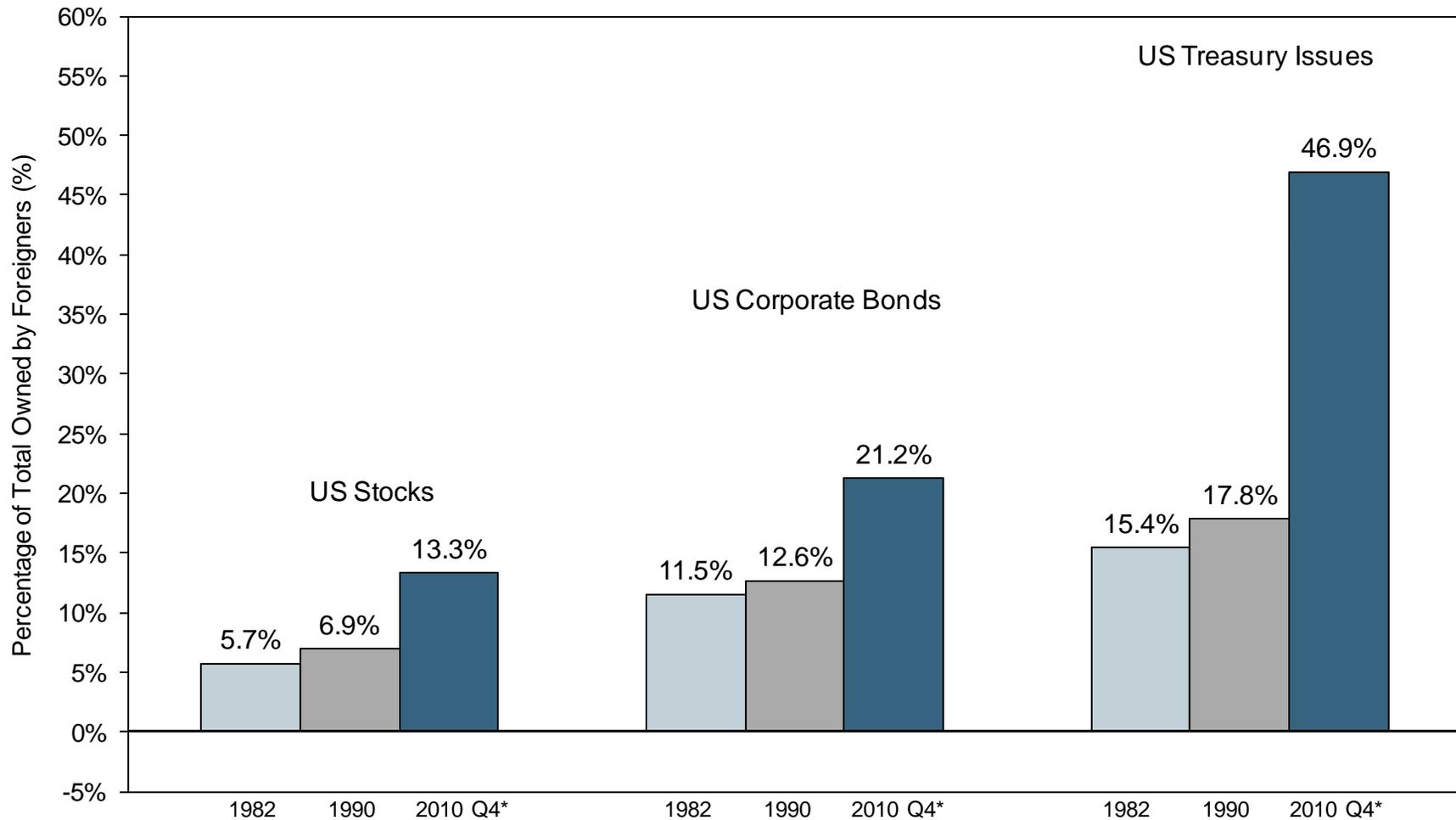
# Composition of Federal Reserve assets



Source: Federal Reserve Bank of St. Louis, Federal Reserve Board of Governors and the Goldman Sachs Global Markets Institute.

# Foreign ownership of US stocks and bonds

## A smaller proportion of stocks than bonds



\*Data for 2010 Q4 are preliminary.

Source: Federal Reserve Board.

# Foreign net purchases of US equities

Little portfolio interest in 2008; recent signs of life



(\$ Billions)

	1993	2000	2002	2004	2006	2007	2008	2009	2010	2010			
										Q1	Q2	Q3	Q4
Europe	\$10.7	\$164.7	\$32.9	\$19.6	\$97.1	\$89.3	\$11.6	\$68.4	\$54.1	\$2.7	(\$2.6)	\$25.4	\$31.9
United Kingdom	4.6	58.7	15.2	15.2	75.8	69.5	30.9	33.7	27.8	(4.6)	1.7	8.9	21.9
Canada	(3.2)	6.0	8.2	1.3	11.8	8.1	7.2	(1.6)	6.5	3.0	(1.2)	3.5	0.9
Latin America-Caribbean	5.7	(17.8)	(15.4)	0.6	37.2	49.4	(38.9)	41.0	29.4	18.1	(1.0)	5.0	7.2
Asia	7.9	21.7	21.4	6.2	3.5	44.0	69.3	42.8	18.1	5.1	10.4	3.2	(0.5)
Hong Kong	1.1	0.2	1.8	(0.8)	(0.5)	35.4	27.4	6.3	9.8	2.4	2.5	1.9	2.9
Japan	3.8	2.1	12.3	2.8	(0.7)	(5.0)	23.0	13.8	4.6	0.2	2.9	1.8	(0.2)
Singapore	3.1	10.8	8.2	(1.7)	(4.5)	(2.5)	7.1	12.0	(4.4)	0.6	1.4	(2.5)	(4.0)
Australia	(0.1)	1.4	3.0	0.3	1.0	4.8	0.1	3.0	2.0	1.2	(0.1)	1.1	(0.2)
<b>Total</b>	<b>\$21.6</b>	<b>\$174.9</b>	<b>\$50.2</b>	<b>\$28.5</b>	<b>\$150.4</b>	<b>\$195.5</b>	<b>\$44.8</b>	<b>\$152.7</b>	<b>\$109.7</b>	<b>\$29.7</b>	<b>\$5.5</b>	<b>\$38.2</b>	<b>\$39.3</b>

Source: US Department of the Treasury.

# US capital flows continue

New direct investment expected to shift towards Asia, away from Europe



(\$ Billions)

	2000	2002	2004	2005	Average, 2004-2005	2006	2007	2008	2009	2010	2010			
											Q1	Q2	Q3	Q4
All Countries	\$142.6	\$134.9	\$294.9	\$15.4	\$155.1	\$221.7	\$313.8	\$298.6	\$248.1	\$325.6	\$101.6	\$77.1	\$81.5	\$65.4
Canada	16.9	15.0	24.0	13.6	18.8	8.1	22.8	20.9	18.1	35.7	11.0	5.5	11.4	7.7
Europe	78.0	79.5	137.3	(29.0)	54.1	131.4	197.3	174.8	129.0	160.7	57.0	40.7	32.8	30.2
Latin America	23.2	15.2	32.4	74.0	53.2	40.6	33.7	53.2	66.1	59.1	16.1	19.1	14.4	9.5
Asia and Pacific	22.4	23.3	97.0	24.4	60.7	32.4	54.4	42.4	24.2	63.2	15.7	9.8	21.2	16.6
Europe / A&P	3.5x	3.4x			0.9 x	4.1 x	3.6 x	4.1 x	5.3 x	2.5 x	3.6 x	4.2 x	1.6 x	1.8 x

(a) The timing of flows in 2004-2005 were affected by a tax change that encouraged flows to be accelerated into the second half of 2004, boosting the amounts for 2004 and reducing those for 2005. We view the average of the two years to be more meaningful than the results for individual years.

Source: US Department of Commerce.

# Capital flows into the United States

## Europe remains the largest provider of direct investment

(\$ Billions)

	2000	2002	2004	2006	2007	2008	2009	2010	2010			
									Q1	Q2	Q3	Q4
All Countries	\$314.0	\$74.5	\$135.8	\$236.7	\$232.8	\$320.9	\$129.8	\$189.7	\$48.4	\$19.4	\$70.3	\$51.7
Canada	27.3	4.6	33.2	18.1	36.9	23.5	25.8	9.4	3.3	0.3	5.5	0.3
Europe	251.0	45.4	80.7	181.4	144.9	223.6	83.7	141.6	42.5	6.9	51.3	40.9
Latin America	12.7	10.3	(2.9)	9.8	(0.6)	27.2	8.4	9.5	(1.3)	4.4	5.4	0.9
Asia and Pacific	19.9	13.0	24.8	24.8	49.2	45.1	12.2	28.7	2.9	7.8	8.4	9.5

Source: US Department of Commerce.

# Foreign holdings of US Treasury securities

## Asian holders are key



	Jan-05	Jan-06	Jan-07	Jan-08	Jan-09	Jan-10	Jan-11	Feb-11
Japan	35.6%	31.9%	29.4%	24.4%	20.7%	20.6%	19.9%	19.9%
China (ex. Hong Kong)	11.7	15.3	18.9	20.5	24.1	24.0	25.9	25.8
United Kingdom	5.3	7.7	4.9	6.7	4.0	5.6	6.3	6.6
OPEC	3.5	4.4	5.2	5.9	6.1	5.9	4.8	4.9
Caribbean (a)	4.9	3.1	3.5	4.6	5.7	3.9	3.7	3.8
Hong Kong	2.4	2.2	2.6	2.3	2.3	4.0	2.9	2.8
Germany	2.8	2.3	2.3	1.8	1.8	1.3	1.4	1.3
Taiwan	3.6	3.4	2.8	1.6	2.4	3.2	3.5	3.5
Switzerland	2.1	1.5	1.6	1.6	2.0	2.3	2.4	2.5
Korea	2.8	3.5	2.9	1.8	1.0	1.1	0.7	0.7
<b>Total foreign holdings (\$ billions)</b>	<b>\$1,908.6</b>	<b>\$2,045.1</b>	<b>\$2,132.4</b>	<b>\$2,399.3</b>	<b>\$3,071.5</b>	<b>\$3,706.8</b>	<b>\$4,453.0</b>	<b>\$4,474.3</b>
<b>Total government as % of foreign holdings</b>	<b>64.9%</b>	<b>63.3%</b>	<b>68.0%</b>	<b>70.4%</b>	<b>70.5%</b>	<b>72.3%</b>	<b>71.3%</b>	<b>71.2%</b>

(a) Caribbean includes Bahamas, Bermuda, Cayman Islands, Netherlands Antilles, and Panama.

Source: Federal Reserve Board, New York Stock Exchange, Goldman Sachs Global Markets Institute.

# Foreign net purchases of US Treasuries

Large purchases from United Kingdom linked to petrodollars and global asset management located in London



(\$ Billions)

	1993	2000	2002	2004	2006	2007	2008	2009	2010	2010			
										Q1	Q2	Q3	Q4
Europe	(\$2.4)	(\$50.7)	\$43.7	\$88.4	\$99.0	\$177.3	\$195.6	\$206.5	\$354.3	\$103.7	\$94.8	\$96.8	\$59.8
Netherlands	(0.5)	2.1	(17.0)	(3.2)	0.7	1.5	(4.8)	1.4	(1.4)	\$0.3	(\$0.4)	(\$0.8)	(\$0.4)
United Kingdom	6.2	(33.7)	61.6	78.7	91.8	208.6	188.6	171.0	343.6	96.6	82.5	88.1	76.3
Latin America-Caribbean	(4.6)	(4.9)	20.0	33.5	12.0	88.1	19.9	2.8	36.8	\$8.3	\$6.4	\$6.4	\$16.3
Asia	20.6	1.6	55.7	214.8	68.7	(69.3)	99.0	280.4	235.8	\$77.3	\$8.1	\$101.5	\$48.8
China	0.5	(4.0)	24.1	18.9	40.6	(8.0)	84.7	123.5	51.2	29.4	(14.8)	23.3	13.3
Hong Kong	2.4	(0.3)	(9.1)	1.1	16.3	2.0	6.2	(0.9)	8.7	\$6.4	\$1.8	(\$1.2)	\$1.8
Japan	17.1	10.6	30.5	166.4	1.3	(48.7)	6.1	129.5	124.1	25.9	18.7	59.2	20.4
Australia	(3.2)	1.4	3.3	(2.2)	(2.6)	(1.4)	(3.0)	2.6	(5.6)	\$0.9	(\$2.0)	(\$1.9)	(\$2.6)
<b>Total</b>	<b>\$23.6</b>	<b>(\$54.0)</b>	<b>\$119.9</b>	<b>\$352.1</b>	<b>\$195.5</b>	<b>\$198.0</b>	<b>\$314.9</b>	<b>\$538.4</b>	<b>\$706.6</b>	<b>\$216.4</b>	<b>\$123.4</b>	<b>\$225.7</b>	<b>\$142.5</b>

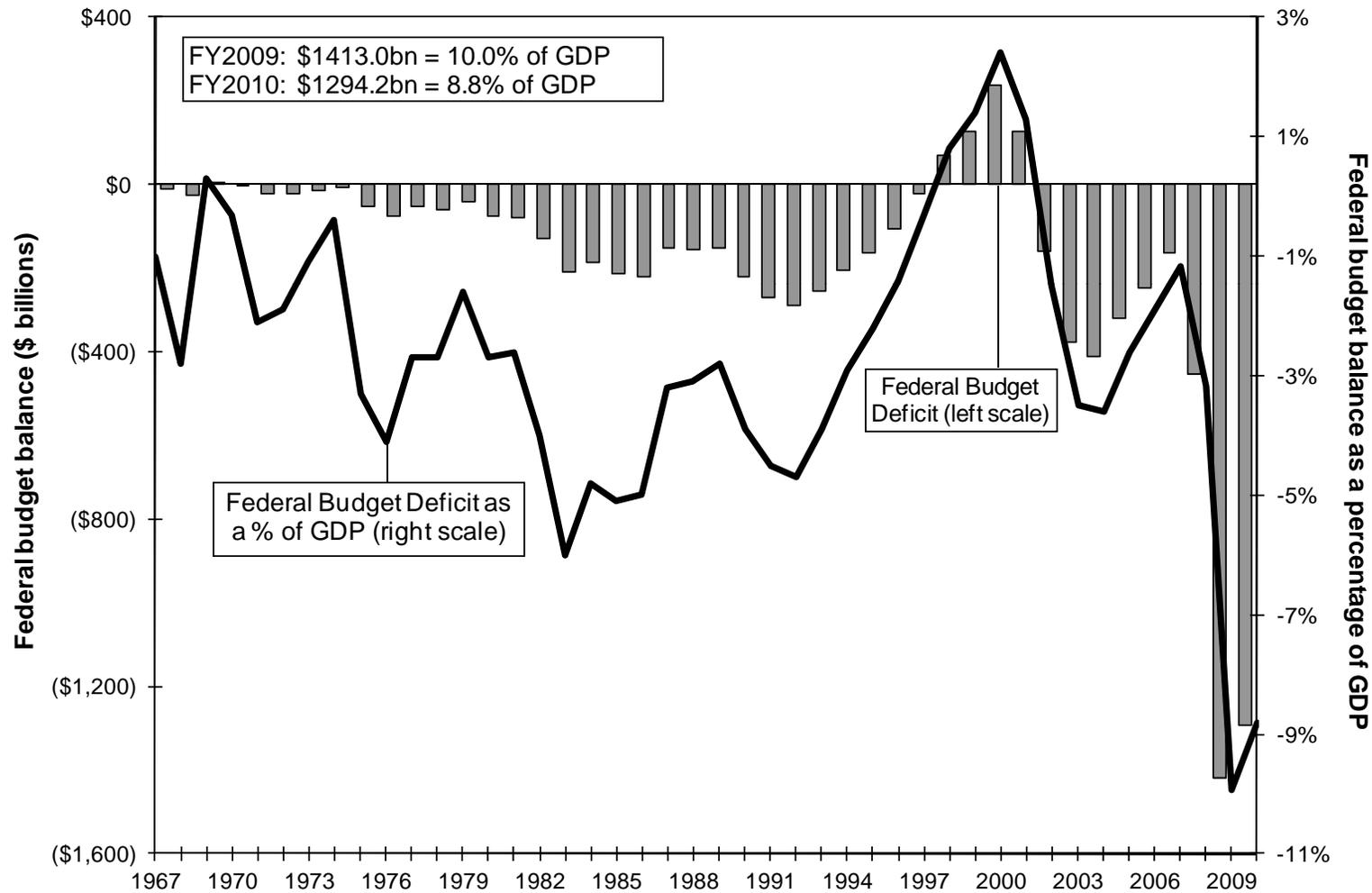
Source: US Department of the Treasury.

# Some large numbers remain out of balance

- US structural budget deficit worsened even during period of strong economic growth and tax revenues through mid-2007. Government spending data frequently adjusted upward as Bush administration made new requests for the military; much of this was kept off-budget.
- US trade deficit reflects many factors, including differences in economic growth rates between the United States and its trade customers, and petroleum imports. The trade deficit declined from historical levels beginning in 2006 as exports accelerated in response to global conditions and the long-term decline of the dollar relative to some other senior currencies. Faster export growth in categories such as information technology, industrial materials, heavy equipment, and specialized services have recovered following the global recession.
- The challenges of climate change and environmental degradation are increasingly on the radar screens of investors. US government regulators have intensified their activities, aiming to influence global decisions. However, little legislative progress has been made. The Obama Administration has identified energy efficiency and climate as 2011 priorities.

# Federal budget deficit

Record deficits in 2009-2010 reflect recession and countercyclical spending



Annual data from 1967 through 2010

Source: US Department of the Treasury, CBO, Goldman Sachs Economic Research, Goldman Sachs Global Markets Institute.

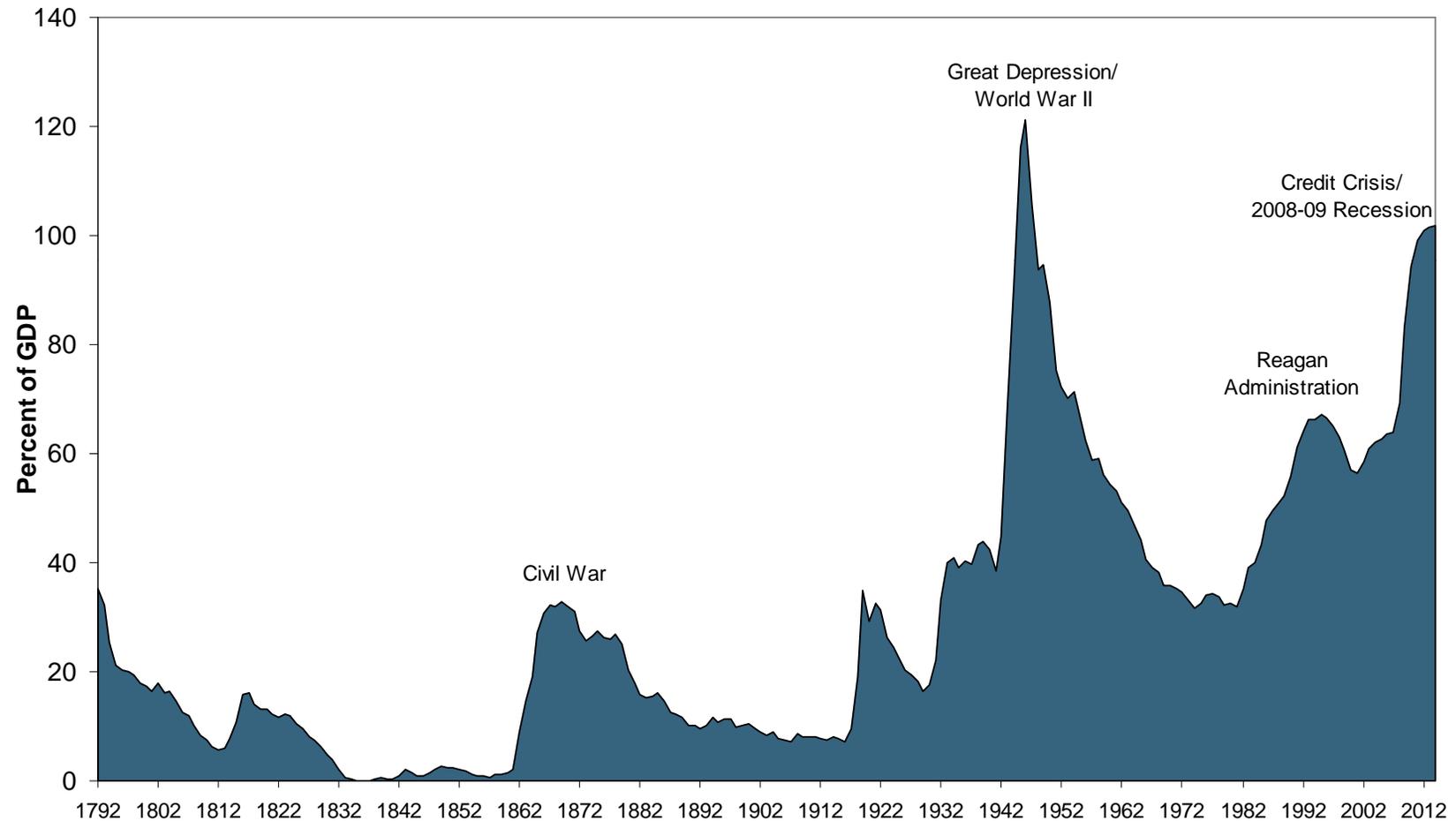
# Federal budget deficit

## CBO projects decline in deficit as % of GDP

<b>CBO Budget Deficit Estimates</b>		
\$ (billions)		
<u>FY</u>	<u>deficit, \$</u>	<u>as % of GDP</u>
2011	(1,480)	(9.8)
2012	(1,100)	(7.0)
2013	(704)	(4.3)
2014	(533)	(3.1)
2015	(551)	(3.0)
2016	(659)	(3.4)
Total		
2012-2016	(3,547)	(4.1)

Source: CBO.

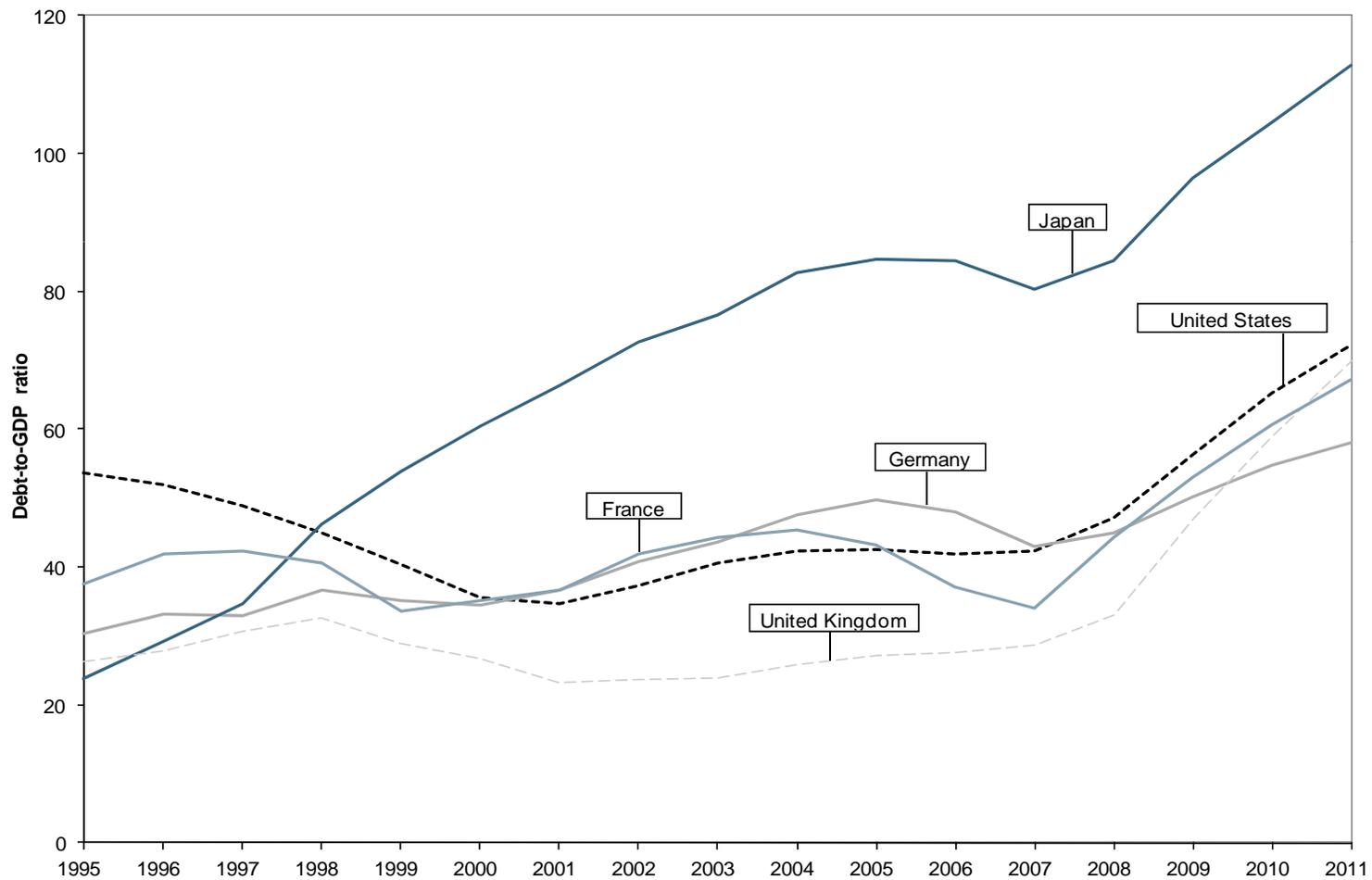
# US federal debt as a percentage of GDP



Source: [USGovernmentSpending.com](http://USGovernmentSpending.com).

# Developed country debt to GDP ratios

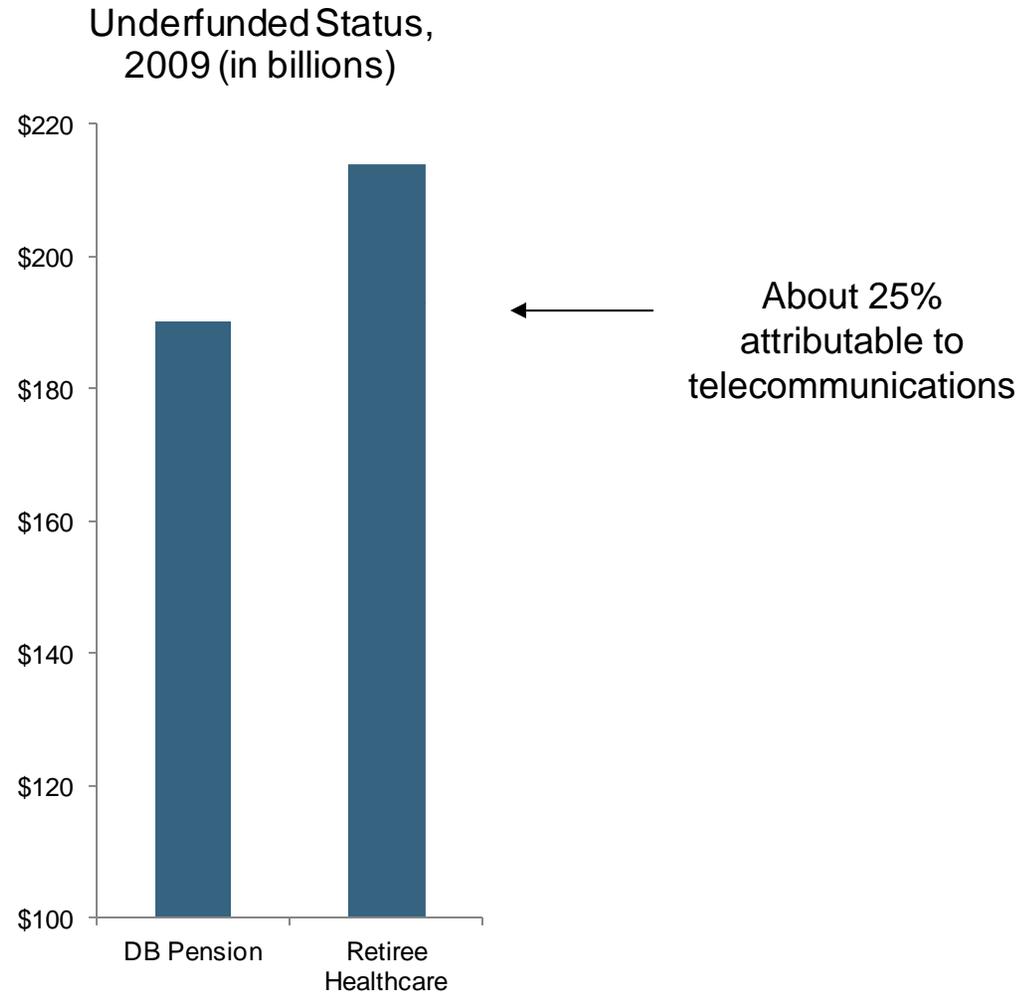
Major developed countries



Source: OECD Economic Outlook, Goldman Sachs Global Markets Institute.

# Retiree healthcare underfunding larger than pensions for corporations

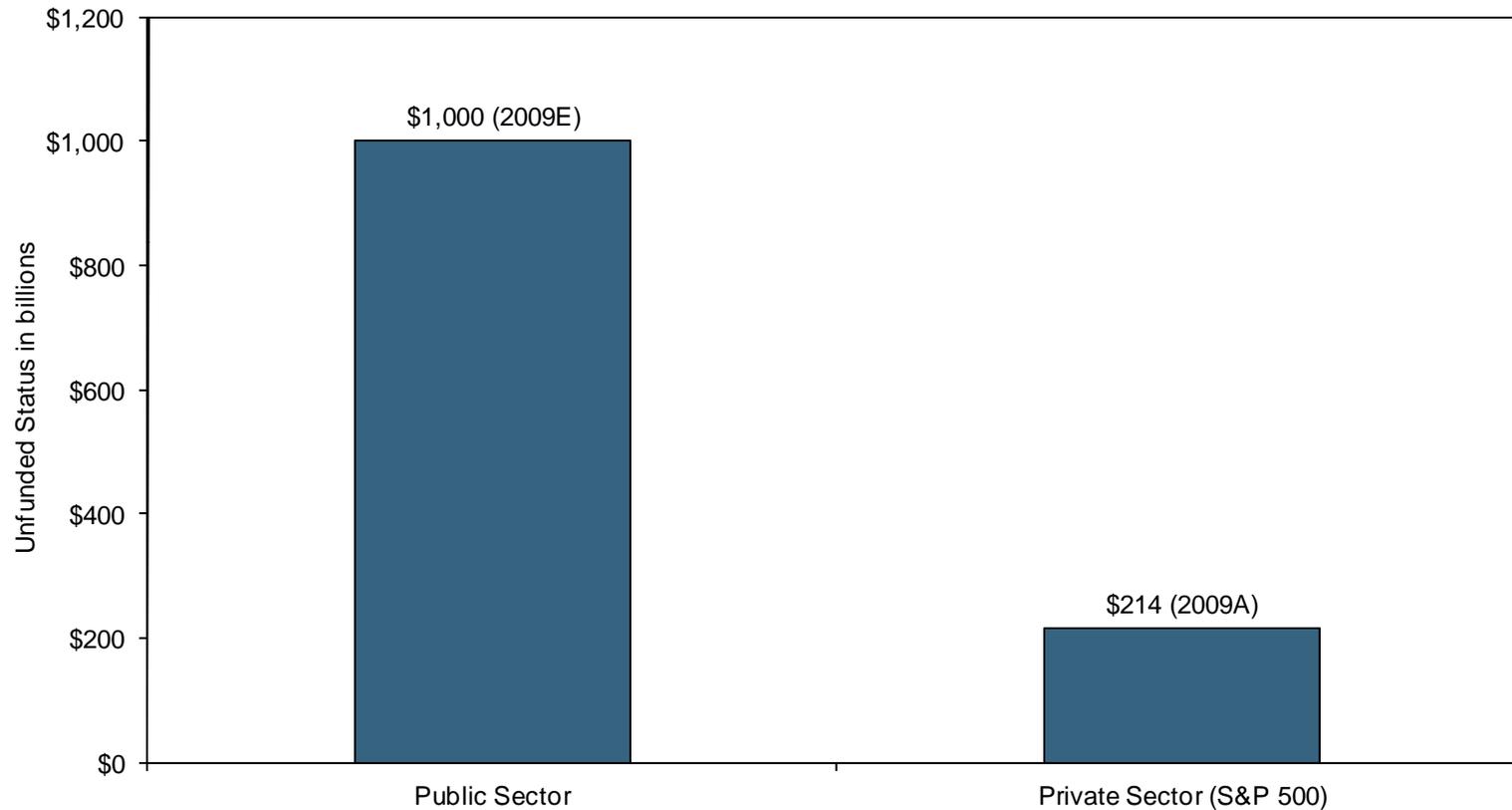
Underfunding highly concentrated in unionized companies



Source: Company reports, Goldman Sachs Global Markets Institute.

# Public retiree healthcare is bigger issue

## Public plans are more underfunded than private plans: the trillion dollar issue



Source: Company reports, Goldman Sachs Global Markets Institute.

# Public retiree health care obligations

A trillion dollar burden



<b>State</b>	<b>Estimated GASB 45 retiree health care liability (in billions)</b>
California	\$62
New York	56
Louisiana	24
Ohio	21
Georgia	18
Michigan	15

*Source: 2008 State reports.*

# Share of US foreign trade

## March 2010 through February 2011

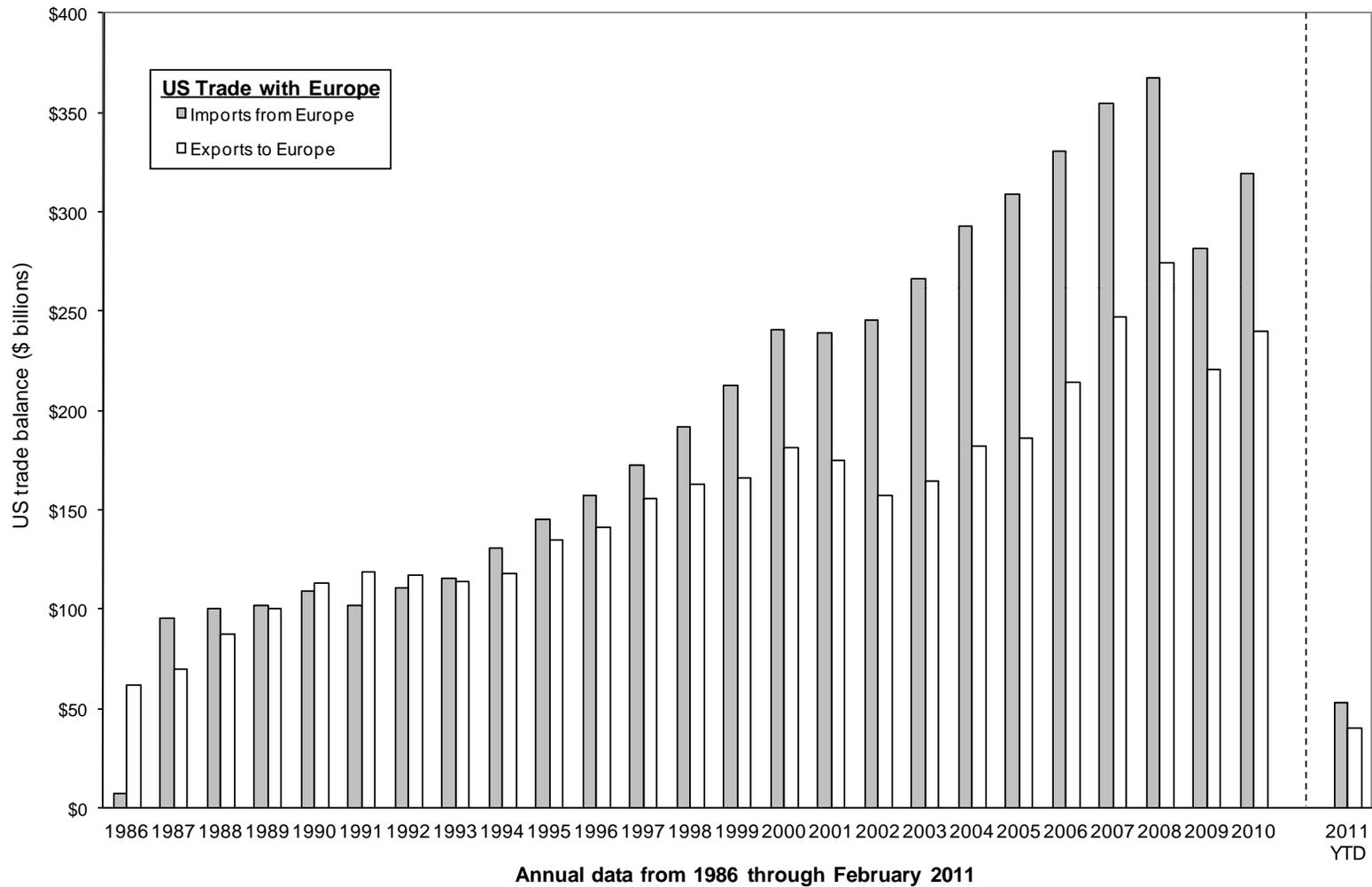
	US Exports to \$Billions	% Share	US Imports from \$Billions	% Share
North America	\$423.1	32.3 %	\$517.9	26.4 %
Canada	254.2	19.4	285.3	14.5
Mexico	168.9	12.9	238.3	12.1
European Union	243.5	18.6	327.7	16.7
Japan	61.4	4.7	123.7	6.3
Central/South America	143.5	10.9	136.3	6.9
Brazil	36.9	2.8	25.8	1.3
Argentina	7.7	0.6	4.2	0.2
China	94.6	7.2	375.0	19.1
Korea	39.5	3.0	50.7	2.6
<b>Total</b>	<b>\$1,311.7</b>	<b>100</b>	<b>\$1,965.4</b>	<b>100</b>

Aggregate trade deficit of \$653.7 billion.

Source: Goldman Sachs Global Markets Institute, US Department of Commerce.

# US trade with European Union

US exports to Europe began to grow in 2006 for first time since 2000:  
 \$84.2 billion deficit in last 12 months, down from \$122.3 billion in 2005

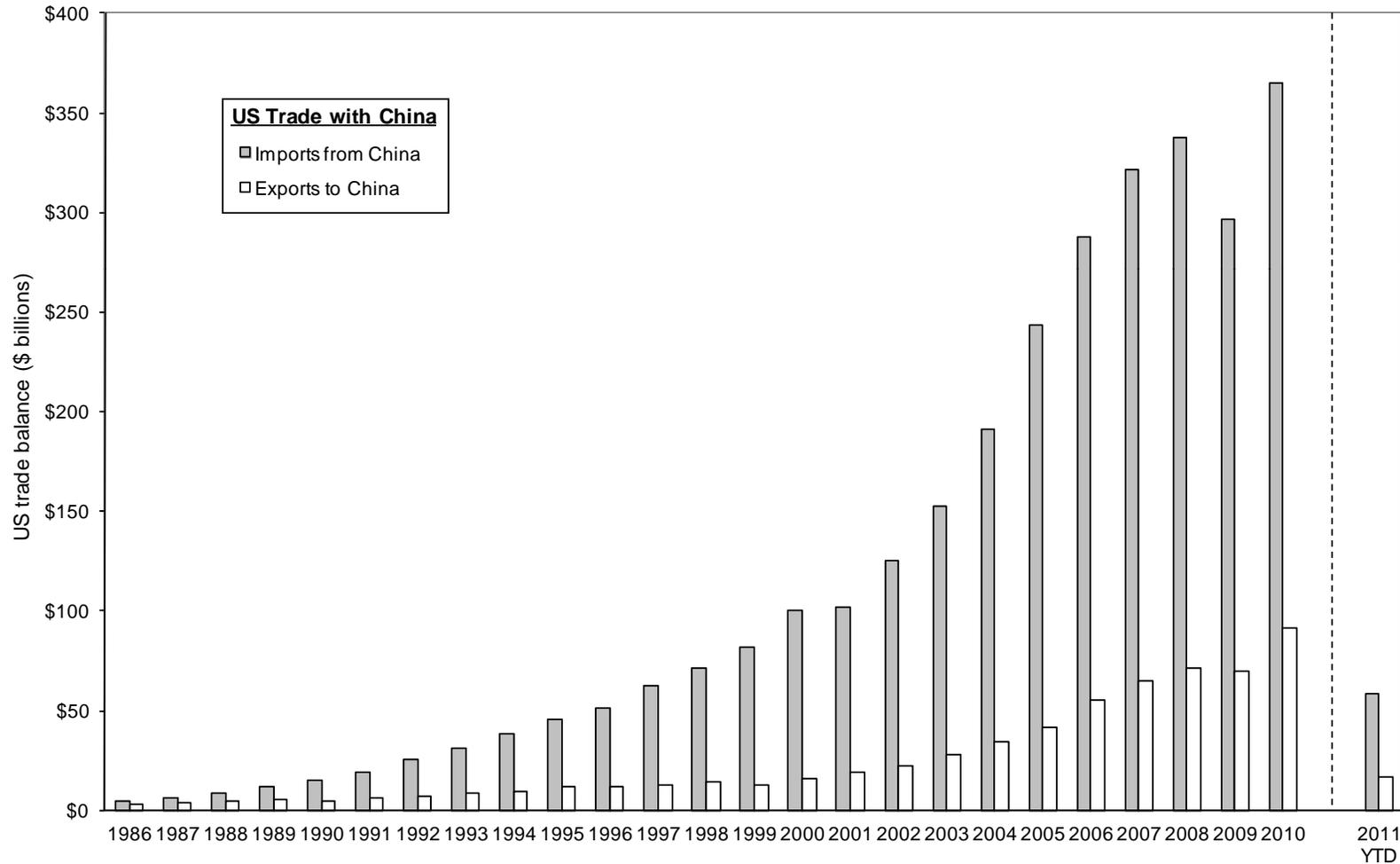


\*Annual data reflect composition of the EU at that time

Source: Goldman Sachs Global Markets Institute, US Department of Commerce.

# US trade with China

Explosion of imports, modest exports: \$280.4 billion deficit in last 12 months



Annual data from 1986 through February 2011

Source: Goldman Sachs Global Markets Institute, US Department of Commerce.

# Japanese exports to the US

## Dominated by machinery and transport equipment

(\$ Billions)

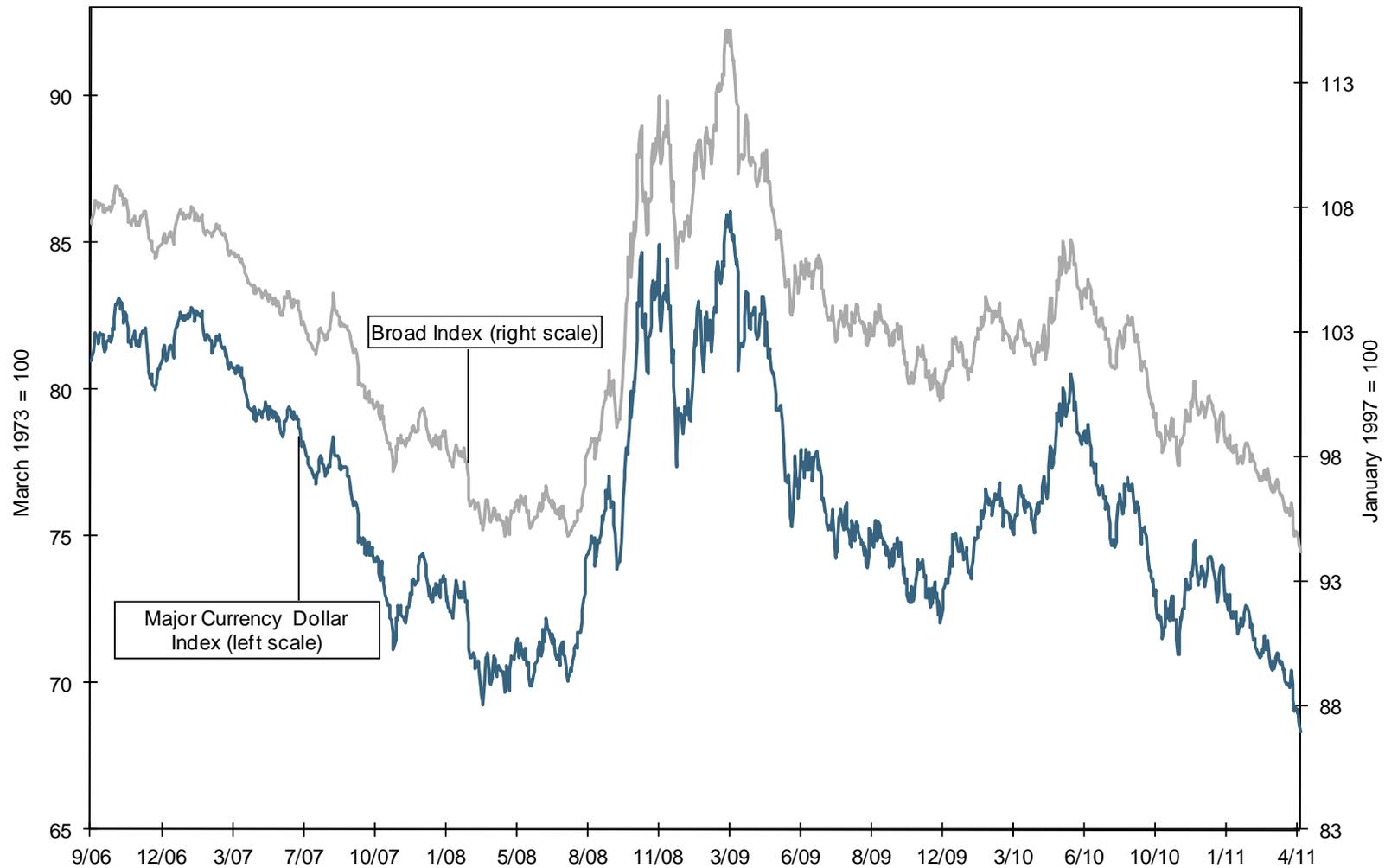
	2003	2004	2005	2006	2007	2008	2009	2010	2011 YTD
Food and live animals	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.1
Crude materials excluding fuels	0.2	0.3	0.3	0.4	0.6	0.6	0.4	0.5	0.1
Chemicals	8.0	8.3	8.5	8.0	8.6	8.7	7.7	9.1	1.6
Manufactured goods	6.7	7.7	8.1	8.9	8.6	8.8	6.6	8.7	1.6
Machinery and transport equipment	94.5	104.2	110.4	119.6	116.3	106.6	69.0	88.8	15.2
Machinery, except electrical	17.7	21.8	23.5	24.9	21.7	21.3	13.1	17.7	3.7
Computer and electronic products	25.8	28.2	27.8	27.4	27.7	22.7	15.9	19.4	3.0
Electrical equipment and appliances	3.2	3.9	4.5	4.5	4.4	4.5	3.6	4.4	0.7
Transportation equipment	47.8	50.3	54.6	62.8	62.6	58.2	36.4	47.2	7.9
Miscellaneous manufactured articles	10.4	11.6	11.9	11.5	11.5	11.1	8.1	9.9	1.6
Other	3.8	4.1	4.6	5.6	5.7	4.5	3.5	4.1	0.4
<b>Total</b>	<b>124.1</b>	<b>136.6</b>	<b>144.3</b>	<b>154.7</b>	<b>151.7</b>	<b>140.9</b>	<b>95.9</b>	<b>121.6</b>	<b>20.5</b>

Note: Total Japanese exports to the US represent 6.3% of all US imports.

Source: Bureau of the Census.

# Trade-weighted exchange rate indexes

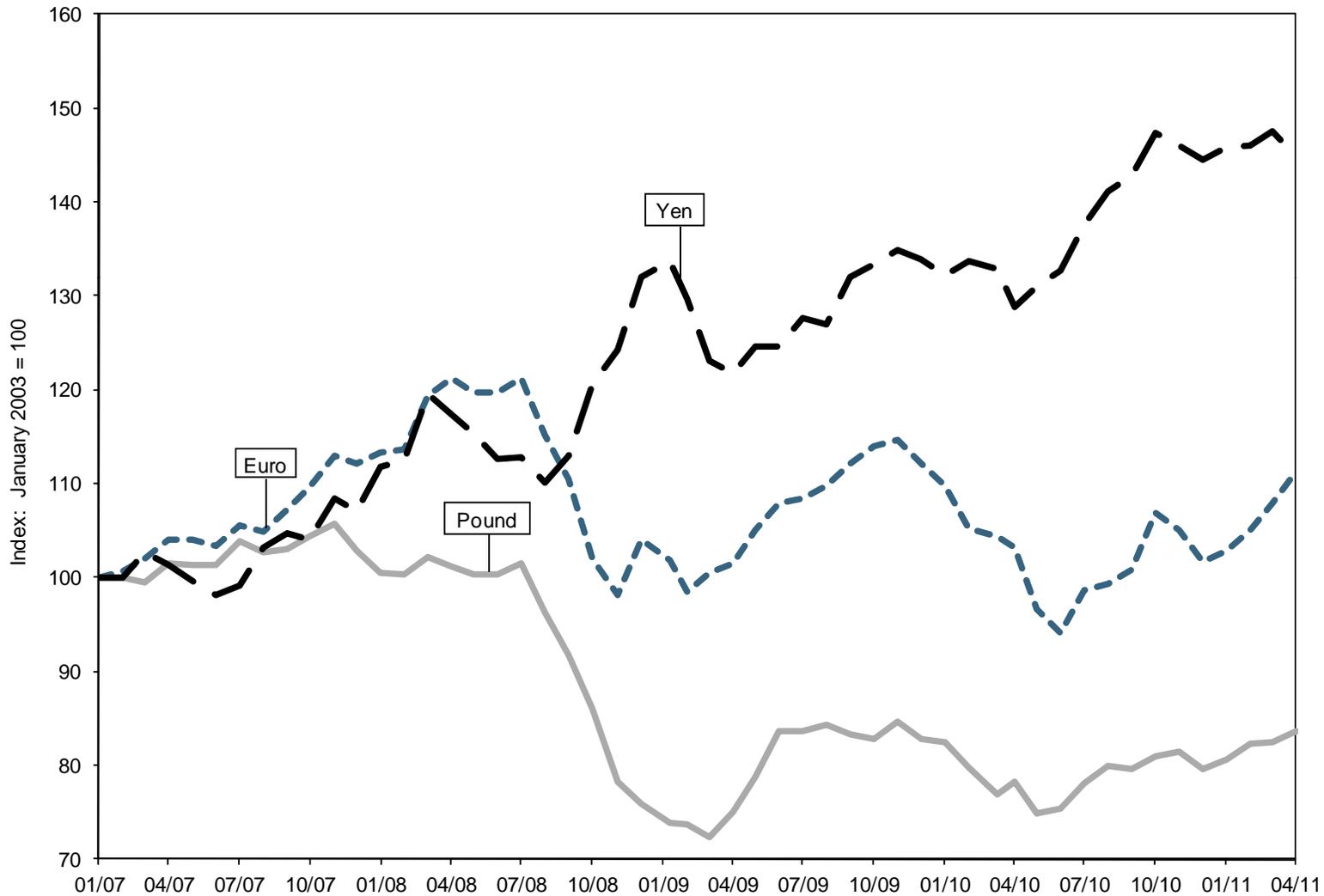
## Dollar's decline since 2008 linked to low interest rates and deceleration in economic growth



Source: Federal Reserve Bank of St. Louis.

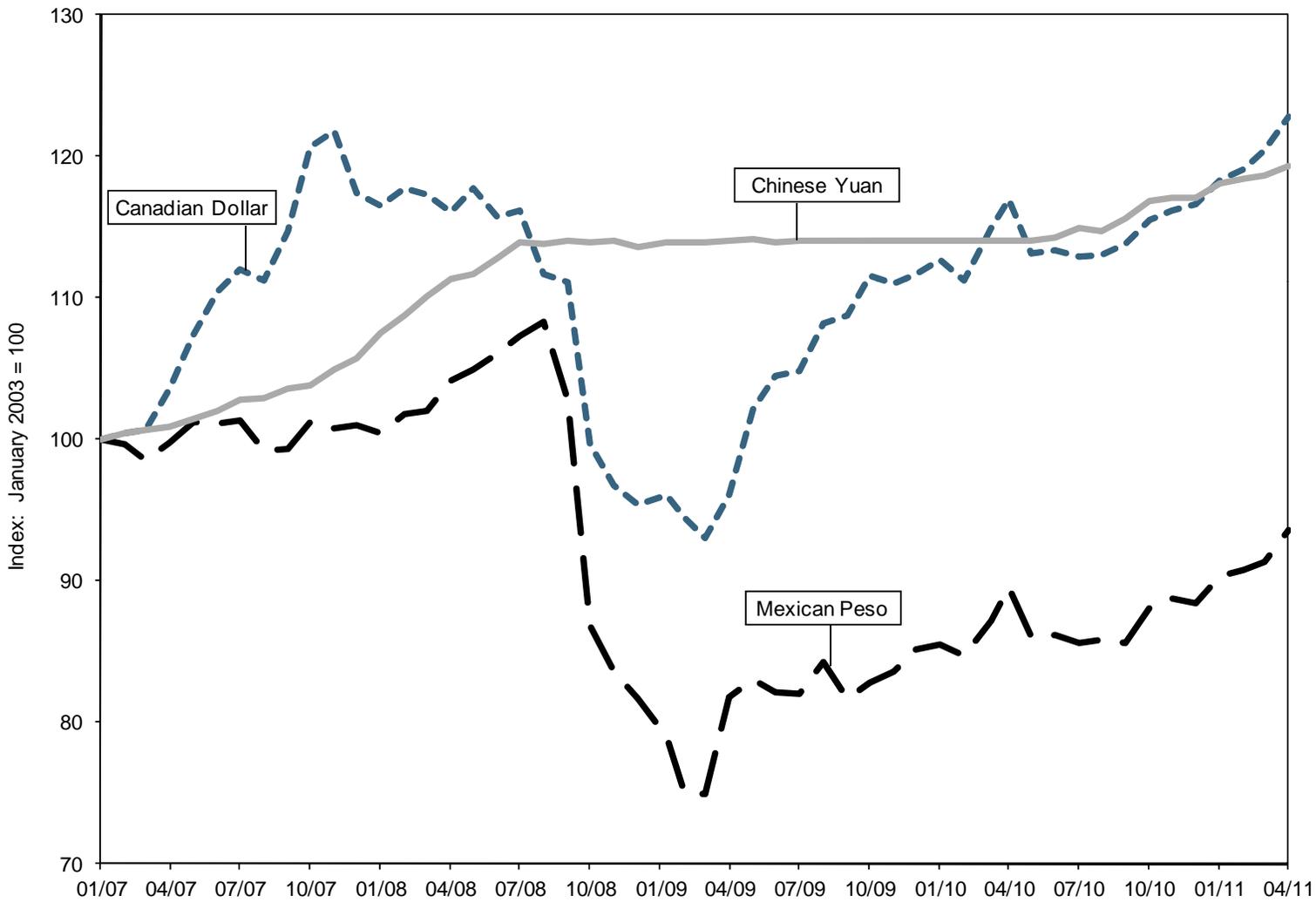
# Selected foreign exchange rates

US dollar strengthening relative to several senior currencies since late 2009; Japanese yen is an outlier



Source: Federal Reserve Board, Goldman Sachs Global Markets Institute.

# Selected foreign exchange rates US dollar relative to currencies of key trading partners



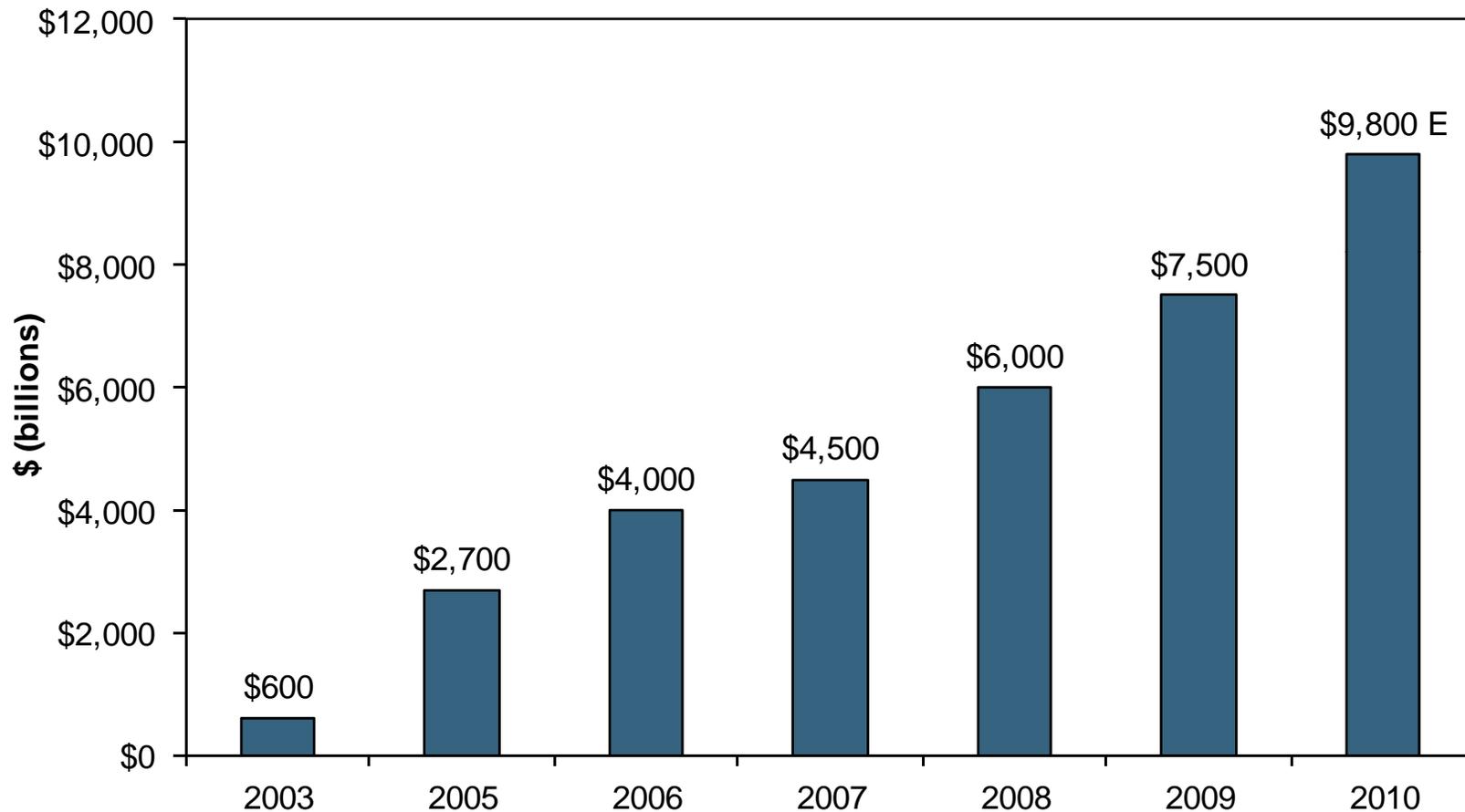
Source: Federal Reserve Board, Goldman Sachs Global Markets Institute.

# Environmental awareness is growing for both corporations and investors

- Large increase in ESG investment: Environmental, Social Responsibility, and Governance. Has this reached critical mass?
- Pension funds must focus on fiduciary responsibilities: Does “green” investing generate good returns? What are the long-term liabilities of ignoring environmental issues?
- Recent US regulatory actions by the SEC and EPA are likely to affect company reporting and required disclosures in all industries, even without Congressional action.
- Corporations look enhance competitive position, reputation, and employee retention.
- Federal US climate legislation, with a focus on “green” job creation, remains a 2011 priority of the Obama Administration. Individual states and regions continue to implement their own climate laws and regulations.
- What are the global implications of outsourcing industrial production to nations with higher energy intensity and lower environmental standards?

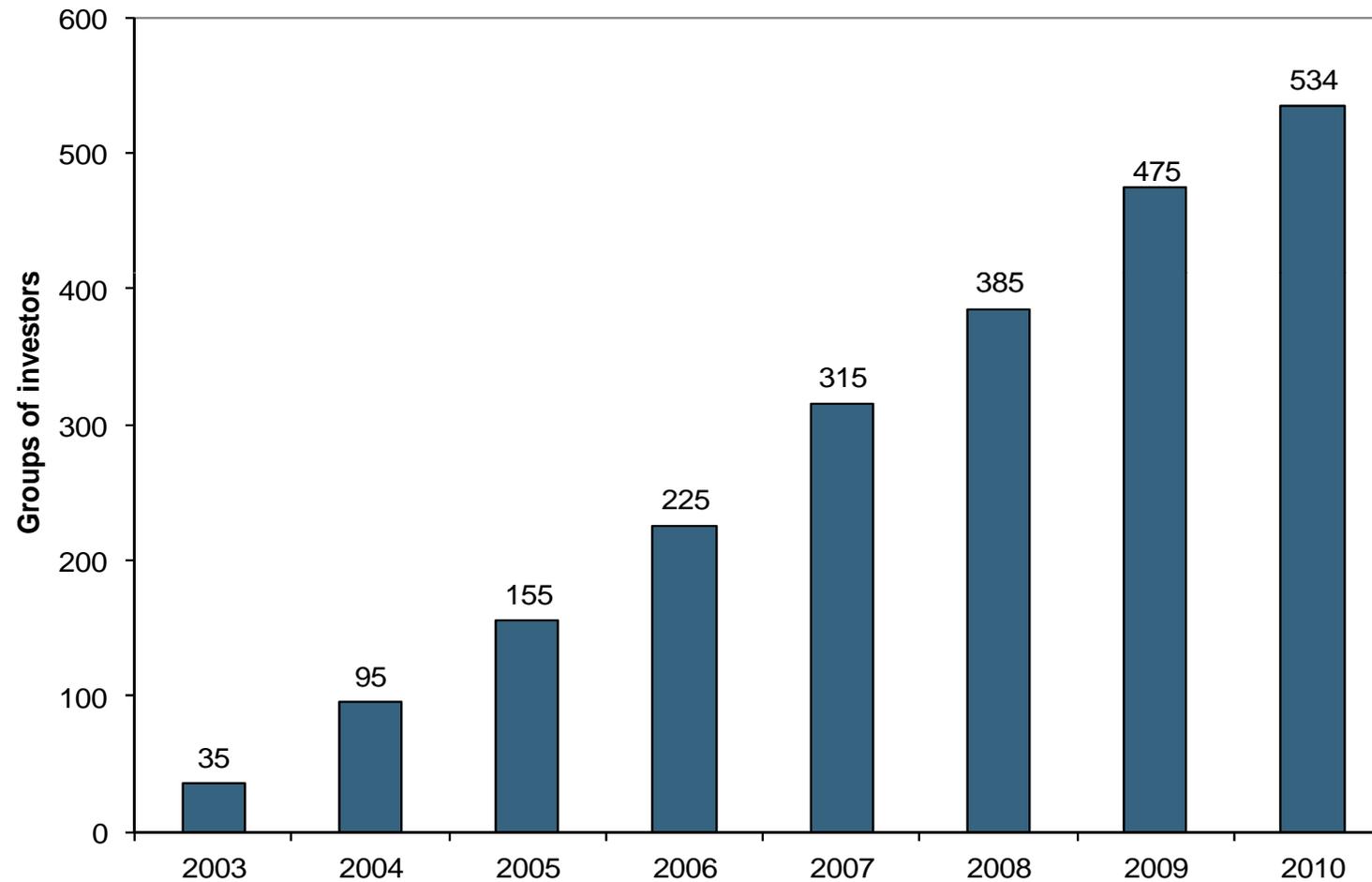
# Assets controlled by INCR participants

Approximately \$9.8 trillion in total assets



Source: Investor Network on Climate Risk, CERES.

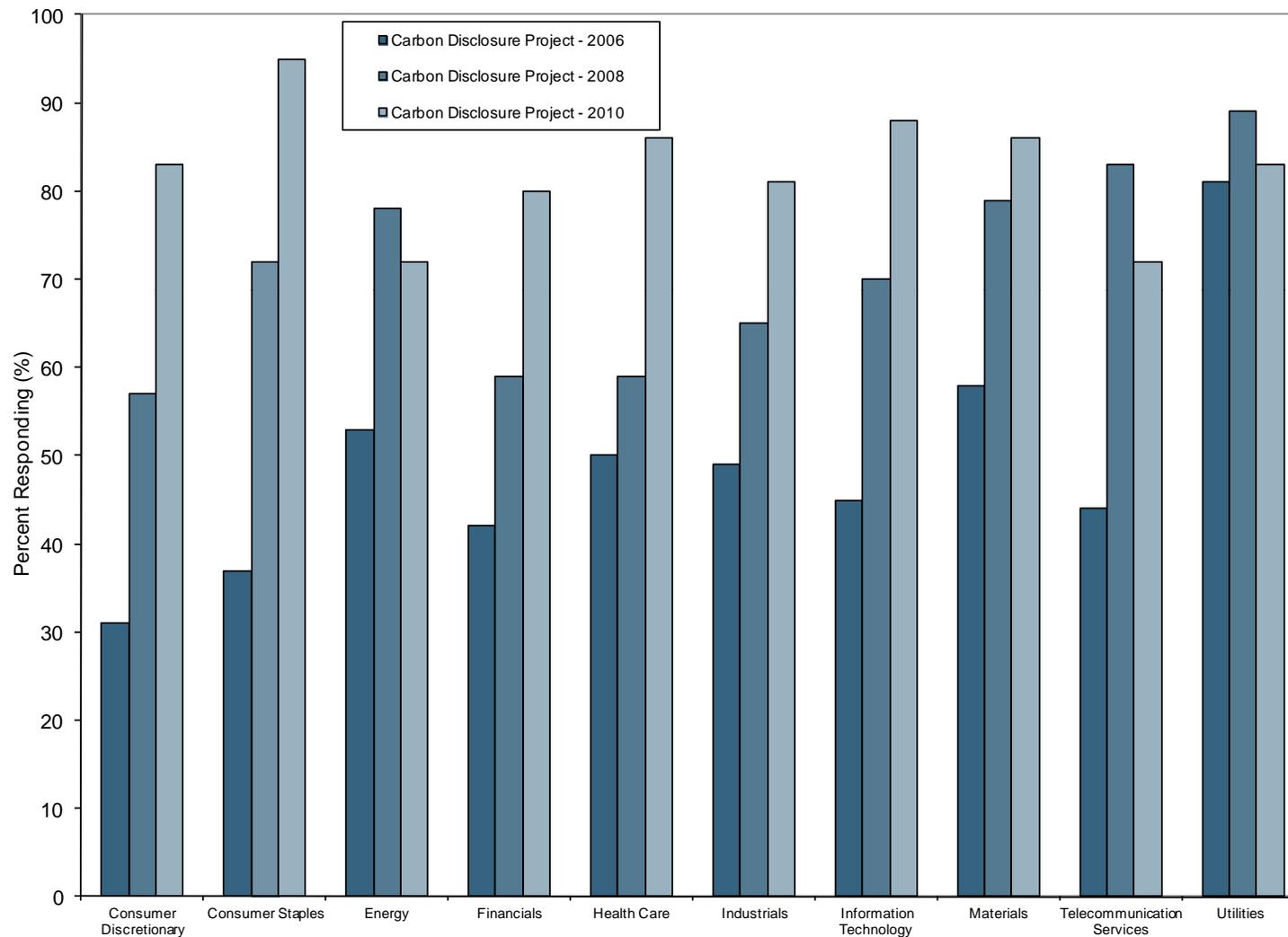
# More investor groups participating in the CDP Demanding more information from public companies



Source: Carbon Disclosure Project.

# CDP response rate has risen in every economic sector

## Highest initial participation seen in carbon-intensive industries



Source: Carbon Disclosure Project.

# Environmental-related disclosures

## Companies in every economic sector affected by this issue



Ticker	Company	Market Capitalization (\$Millions)	Significant Policy Initiatives
<b>Consumer Discretionary</b>			
F	Ford Motor Co.	\$42,785	<p>On track to exceed targeted CO<sub>2</sub> emissions reduction for U.S. and EU vehicles, a 30% reduction for 2006 models to be reached by 2020.</p> <p>On track to improve facility energy efficiency by 3% during 2010.</p> <p>Active member of the U.S. Climate Action Partnership (USCAP) to advocate for a comprehensive U.S. cap-and-trade policy in the U.S.</p> <p>Introduced the EcoBoost™ engine technology on several vehicles, which uses gasoline turbocharged direct-injection technology to deliver up to 20% better fuel economy, 15% fewer CO<sub>2</sub> emissions, and superior driving performance compared to larger-displacement engines.</p> <p>Reduced North American facility emissions by 5% between 2000 to 2010 and on track to reduce U.S. facility emissions by 10% per vehicle produced between 2002 and 2012.</p>
KSS	Kohl's Co.	\$15,597	<p>Through the U.S. EPA's Climate Leaders Program, pledged to achieve net zero emissions by 2010 and to maintain that level through 2012.</p> <p>North America's largest retail host of solar power.</p> <p>Currently operates with 100% renewable energy by purchasing over 1 billion kWh of renewable energy credits.</p> <p>Named 2010 ENERGY STAR Partner of the Year for Energy Management by the U.S. EPA and U.S. Department of Energy.</p>
SBUX	Starbucks Co.	\$19,135	<p>Set target to purchase renewable energy equivalent to 50% of electricity used in company-owned stores by 2010. Renewable purchases increased to equivalent to 25% of electricity used in company-owned stores in 2009.</p> <p>Set target to make 100% of cups reusable or recyclable by 2015.</p> <p>Founding member of Business for Innovative Climate and Energy Policy (BICEP), which works with the business community and members of Congress to make changes to energy and climate change legislation.</p> <p>Participant in the U.S. Green Building Council's Volume Certification pilot program to achieve LEED certification for all new company-owned stores starting in 2010.</p>
<b>Consumer Staples</b>			
GIS	General Mills Inc.	\$24,120	<p>Established five-year goals in 2006 to reduce energy consumption rate by 15%, greenhouse gas emission rate by 15%, solid waste generation rate by 15% and water usage rate by 5%.</p> <p>Through 2009, energy consumption was reduced by 2.4% compared to 2005 baseline levels, GHG emissions declined by 2.3% and solid waste generation was reduced by 24.5%.</p> <p>In 2009, a plant in San Adrian, Spain, switched to an electricity provider that uses only renewable sources, reducing CO<sub>2</sub> emissions by over 6,000 tons.</p>

Source: Company reports through 2010.

# Environmental-related disclosures (cont'd)

## Companies in every economic sector affected by this issue

Ticker	Company	Market Capitalization	Significant Policy Initiatives
WMT	Wal-Mart Stores Inc.	\$194,263	<p>Adopted an approach called Sustainability 360 in 2005 to find ways to reduce environmental impact while engaging suppliers, associates and customers around the world in sustainability efforts.</p> <p>In 2008, achieved a 38% improvement in fleet efficiency, using 2005 baseline levels.</p> <p>Retrofitted low-and medium-temperature refrigerated display cases at 1,000 U.S. stores with energy-saving LED lighting.</p> <p>Established goal to reduce packaging by 5% globally by 2013 and to be packaging-neutral globally by 2025.</p>
CL	Colgate-Palmolive Co.	\$37,218	<p>From 2002 through 2009, manufacturing facilities and R&amp;D sites reduced the amount of energy to produce a ton of product by over 21%. Efforts include developing energy-efficient lighting, LEED certification (several manufacturing facilities have been awarded LEED certification) and product transport efficiencies.</p> <p>From 2002 to 2009, CO<sub>2</sub> emissions were reduced by 22.6% on a per-ton basis.</p> <p>U.S. EPA ENERGY STAR program partner company, a US Green Building Council member company and an annual participant in the Carbon Disclosure Project's investor request and supply chain projects.</p>
<b>Energy</b>			
DVN	Devon Energy Corp.	\$27,285	<p>Received the 2010 Steward of Excellence award from the Canadian Association of Petroleum Producers (CAPP) for significantly reducing the width of access roads in forested areas and for using waste wood in road construction.</p> <p>In 2007, established a GHG emissions inventory system that includes all U.S. production sites in order to identify opportunities for reducing emissions through new technology.</p> <p>Received the 2008 Chairman's Stewardship Award from the Interstate Oil and Gas Compact Commission, the highest honor for environmental stewardship, recognizing Devon's development of technology that recycles 85% of water recovered from well completions in natural gas.</p>
XOM	Exxon Mobil Corp.	\$310,447	<p>Reduced GHG emissions by 3 million metric tons since 2008 and on track to meeting goal of improving energy efficiency by 10% by 2012.</p> <p>Reduced upstream hydrocarbon flaring volumes by 23% from 2008 levels.</p> <p>Invested \$1.3 billion on activities to increase energy efficiency and reduce GHG emissions since 2005.</p> <p>Reduced normalized emissions of combined VOCs and NOx from chemical operations by over 10% in 2009.</p>

Source: Company reports through 2010.

# Environmental-related disclosures (cont'd)

## Companies in every economic sector affected by this issue



Ticker	Company	Market Capitalization	Significant Policy Initiatives
<b>Financials</b>			
C	Citigroup Inc.	\$115,032	<p>Set goal to achieve 25% reduction in absolute GHG emissions from 2005 baseline levels by 2015. On track to meeting goal with a 9% reduction of GHG emissions in 2009 from 2008 levels.</p> <p>In 2009, purchased 125,899 MWH of green power for operations in 7 countries.</p> <p>Set target to obtain LEED certification for 15% of global estate portfolio by 2015.</p> <p>In 2007, announced the intent to target \$50 billion over ten years in a wide-ranging portfolio of climate-related activities. In 2009, the cumulative invested amount was approximately \$24.3 billion.</p>
WFC	Wells Fargo & Co.	\$136,330	<p>Pledged to reduce absolute US-based GHG emissions by 20% from 2008 levels by 2018.</p> <p>From 2005 to 2009, made over \$6 billion in loans and investments to environmentally beneficial businesses and projects (including wind farms, solar installations, green building development, renewable energy equipment manufacturers, and smart-grid companies).</p> <p>In 2009, launched 3 business groups focused on providing commercial banking, investment banking, and public finance services in environmental finance area.</p> <p>In 2009, invested in over 75 commercial-scale solar PV projects and 3 utility-scale wind projects and installed solar PV projects on 10 retail banking stores in Colorado.</p>
STT	State Street Co.	\$19,375	<p>Since 2005, achieved goal of reducing fossil fuels burned and GHG emissions by 5% by 2010 in Massachusetts and reduced GHG emissions in the state by 20% due to a renewable energy initiative.</p> <p>In 2005, launched the Environmental Management System (EMS), which reports environmental data on global operations to track environmental impact.</p> <p>Launched the U.S. Community Investing Index to meet clients' increasing interest in sustainability issues in December 2009.</p>
<b>Health Care</b>			
JNJ	Johnson & Johnson	\$168,801	<p>Decreased CO<sub>2</sub> emissions by 12.7% or 88,000 tons per year from 1990 to 2007.</p> <p>In 2008, 34% of the electricity used in operating companies came from renewable sources.</p> <p>Committed to reduce the total CO<sub>2</sub> emissions per kilometer driven by 30 percent against a 2003 baseline by 2010.</p> <p>Minimum fuel efficiency requirements for fleets were established by vehicle category and the U.S. fleet had 978 hybrid vehicles in March 2008.</p> <p>Made enterprise-wide goals, set every five years, for biodiversity, compliance, energy use, environmental literacy, external manufacturing, paper and packaging, product stewardship, transparency, waste reduction, and water use.</p> <p>Reduced hazardous waste by 4% and non-hazardous waste by 10% from 2005 to 2007.</p>

Source: Company reports through 2010.

# Environmental-related disclosures (cont'd)

## Companies in every economic sector affected by this issue



Ticker	Company	Market Capitalization (\$Millions)	Significant Policy Initiatives
MRK	Merck & Co. Inc.	\$112,252	<p>Committed to reduce the Company's total global GHG emissions by 12% by the end of 2012, using 2004 as the baseline year and to reduce CO<sub>2</sub> emissions by 20% by 2020, compared to 2006 baseline levels.</p> <p>Participant of the CO<sub>2</sub> emissions certificate trading launched in Europe in 2005.</p> <p>In 2008, recycled 50% of waste.</p>
BAX	Baxter International Inc.	\$26,281	<p>Committed to reduce GHG emissions by 45% indexed to revenue from 2005 baseline levels by 2015. In 2009, GHG emissions were reduced by 26% indexed to revenue compared to 2005.</p> <p>Pledged to increase facility energy usage of renewable power to 20% of total energy use by 2015. In 2009, 17% of energy use came from renewable energy sources.</p>
<b>Industrials</b>			
CAT	Caterpillar Inc.	\$45,394	<p>Set 2020 goals to increase energy efficiency by 25% compared to baseline 2006 levels, to reduce absolute GHG emissions from existing facilities by 25% compared to baseline 2006 levels, to use alternative/renewable resources to meet 20% of the energy needs and to eliminate waste by reducing waste generation and reusing/recycling the remainder.</p> <p>In 2009, 79.7% of waste was recycled and 12.3% of energy needs were met with renewable energy.</p> <p>In 2009, 18 buildings/projects were designed to LEED standards.</p>
RTN	Raytheon Co.	\$17,099	<p>Received 2010 ENERGY STAR Award for Sustained Excellence in energy management (received for third consecutive year).</p> <p>Pledged to reduce total GHG emissions by 10% by 2015, as compared to 2008 baseline levels and to achieve LEED certification for new, owned buildings.</p> <p>Member of U.S. EPA's Climate Leaders Program since 2002. Received EPA's 2009 GHG Reduction Goal Achiever Award for exceeding reduction goal ahead of schedule by reducing GHG emissions by 38% per dollar revenue from 2002 to 2008.</p> <p>In 2009, reduced hazardous waste by 15% and 85% of hazardous waste produced was recycled or diverted from a landfill.</p> <p>In 2009, solid waste generation was reduced by 4% and 63% of solid waste was recycled.</p>
UNP	Union Pacific Corp.	\$39,444	<p>Over 75% of the locomotive fleet is certified under existing EPA standards. The locomotive fleet includes 186 ultra-low emission switchers.</p> <p>Recognized by the Society of Automotive Engineers (SAE) with the Engineering Excellence in Transportation award in 2007 for work in developing the Genset, an ultra-low-emitting diesel locomotive. The Genset reduces GHG emissions by almost 37%.</p> <p>In 2002, tested the world's first diesel-battery, hybrid switch locomotive and in 2005, acquired the first Green Goat, which relies on a diesel-powered engine to charge onboard storage batteries.</p> <p>Since 2000, spent approximately \$6 billion to purchase new, environmentally friendly locomotives, added over 3,400 new fuel-efficient, long-haul, high-horsepower locomotives, retired over 2,300 older, less fuel-efficient locomotives and rebuilt almost 3,200 locomotive diesel engines to run more efficiently.</p>

Source: Company reports through 2010.

# Environmental-related disclosures (cont'd)

## Companies in every economic sector affected by this issue

Ticker	Company	Market Capitalization (\$Millions)	Significant Policy Initiatives
<b>Information Technology</b>			
IBM	International Business Machines	\$163,550	<p>Pledged to reduce total global GHG emissions by 7% from 2005 to 2012. Initial goal was achieved by reducing total global energy-related GHG emissions by an average of 5% per year from 2000 to 2005.</p> <p>In 2009, savings as Percentage of Total Energy Use equaled 5.4%, exceeding the corporate goal of 3.5%.</p> <p>As of year-end 2009, PFC emissions were reduced by 48.8% from 1995 baseline, exceeding corporate goal of 25%. CO<sub>2</sub> emissions were reduced 5.7% from the 2005 base year.</p> <p>In 2009, purchased 260 million kWh of renewable energy, representing 11.3% of the 2009 global electricity use.</p>
INTC	Intel Corp.	\$105,606	<p>In 2009, reduced total emissions by 48% on an absolute basis relative to 2007 baseline.</p> <p>In 2009, recycled 80% of solid waste and 71% of chemical waste.</p> <p>Set goal to reduce energy consumption per chip by 5% per year from 2007 to 2012 and to reduce chemical waste per chip by 10% by 2012 from 2007 levels.</p> <p>In 2008, became the largest corporate purchaser of green power in the U.S., under the U.S. EPA's Green Power Partnership program.</p>
<b>Materials</b>			
AA	Alcoa Inc.	\$11,499	<p>Set goal to reduce total CO<sub>2</sub> intensity by 20% from 2005 baseline by 2010 and by 30% from 2005 baseline by 2030.</p> <p>In 2009, achieved a 44% reduction in absolute GHG emissions from 1990 levels, a 29% reduction in fresh water usage compared to 2000 levels and a 54% recycling rate in used beverage cans.</p>
MON	Monsanto Co.	\$30,956	<p>In 2008, set goal to reduce by 1/3 the soil lost, the GHG emissions and the land, water and energy resources used to produce a metric ton of corn, soybean and cotton by 2030, compared to 2000 baseline levels.</p> <p>Committed to growing sustainable yields by (1) developing better seeds to double yield for 3 core crops of corn, soybeans and cotton by 2030 compared to base year of 2000 and (2) conserving resources by developing seeds that will reduce by 1/3 the amount of key resources required to grow by 2030.</p> <p>Joined the Chicago Climate Exchange in 2007.</p>

Source: Company reports through 2010.

# Environmental-related disclosures (cont'd)

## Companies in every economic sector affected by this issue



Ticker	Company	Market Capitalization	Significant Policy Initiatives
<b>Telecommunication Services</b>			
T	AT&T Inc.	\$166,103	<p>Committed to replace retiring passenger vehicles with alternative-fuel models and to deploy approximately 8,000 compressed natural gas (CNG) service vehicles by year-end 2013.</p> <p>Launched an Energy Scorecard in 2009 to benchmark the energy performance of the 500 largest energy-consumer facilities to track energy management.</p> <p>In 2009, prevented 72.1 million pounds of materials from being sent to landfills, including copper and copper cable, lead and lead-acid batteries and steel. Also collected over 63,000 computers, monitors and servers for reuse and recycling.</p>
VZ	Verizon Communications Inc.	\$88,816	<p>Require new telecommunications network equipment to be at least 20% more energy efficient than equipment already in place. In 2009, this practice helped result in savings of almost 91 million kWh and over 144 million pounds of CO<sub>2</sub> avoidance.</p> <p>Decreased overall CO<sub>2</sub> intensity from 64.4 metric tons per million dollars of revenue to 60.2 metric tons in 2009.</p> <p>Re-engineered freight shipments in 2009 by cutting back air shipments, increasing rail shipments, and consolidating truck deliveries to reduce associated CO<sub>2</sub> emissions by 14.4%.</p>
<b>Utilities</b>			
ETR	Entergy Corp.	\$14,568	<p>Committed to stabilize CO<sub>2</sub> emissions at 20% below year 2000 levels from 2006 to 2010. Met goal for 2009.</p> <p>In 2009, purchased Acadia Unit 2, a 580-MW, natural gas-fired generating unit.</p> <p>In January 2010, announced the purchase of 100,000 metric tons of GHG emissions offsets generated by capturing and combusting methane at a wastewater treatment facility.</p> <p>Worked with the Pew Center on Global Climate Change to launch the Make an Impact website (FindYourCO2.com) which provides visitors with a personalized CO<sub>2</sub> footprint analysis.</p> <p>Sold or recovered over 12.3 million pounds of scrap material and 430,000 tons of coal ash (60% of generated amount).</p>
NEE	NextEra Energy, Inc.	\$22,401	<p>Number 1 provider of renewable energy in North America.</p> <p>Joined U.S. EPA's Climate Leaders Program in 2003. Set goal to achieve an 18% reduction in GHG emissions by 2008 compared to 2001 baseline. Met and exceeded target in 2008 with a 21% reduction in GHG emissions rate per kWh.</p> <p>Committed to a 15% improvement in electric generation efficiency in power plants by 2020 from a 2002 baseline under the World Wildlife Fund's PowerSwitch! program. Exceeded 15% efficiency improvement goal in 2009.</p> <p>Largest generator of wind-powered electricity in North America, with over 7,540 megawatts of capacity at 76 facilities in 17 states and Canada as of year-end 2009. Share of total U.S. wind energy capacity is over 20%. Through 2009, invested approximately \$11 billion in zero-emissions wind.</p>

Source: Company reports through 2010.

# Regional climate change initiatives in North America



Participants include entities in the US, Canada and Mexico

Initiative	Description	Announced	North American Participants
<b>Western Climate Initiative (WCI)</b>	<p>The WCI released a comprehensive strategy designed to reduce GHG emissions, stimulate development of clean energy technologies, create green jobs, increase energy security, and protect public health.</p> <p>Members set regional emissions target (the regional greenhouse gas emissions target of 15 percent below 2005 levels by 2020 as of August 2007), as well as establishes a cap-and-trade program.</p>	<p>July 2010</p> <p>February 26, 2007</p>	<p>Arizona, British Columbia, California, Manitoba, Montana, New Mexico, Ontario, Oregon, Quebec, Utah, Washington, Alaska, Colorado, Idaho, Kansas, Nevada, Wyoming, Saskatchewan, Baja California, Chihuahua, Coahuila, Nuevo Leon, Sonora, and Tamaulipas.</p>
<b>Transportation and Climate Initiative in the Northeast and Mid-Atlantic US</b>	<p>11 Mid-Atlantic and Northeastern states, and the District of Columbia, announced a Declaration of Intent for the Transportation and Climate Initiative (TCI). The TCI aims to "expand safe and reliable transportation options, attract federal investment, lower transportation costs, improve overall air quality and public health, and mitigate the transportation sector's impact on climate change."</p>	<p>June 16, 2010</p>	<p>Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, Pennsylvania, and the District of Columbia</p>
<b>Offset Quality White Paper</b>	<p>Three regional climate initiatives in North America - the Northeast and Mid-Atlantic Regional Greenhouse Gas Initiative (RGGI), the Midwestern GHG Reduction Accord, and the Western Climate Initiative (WCI) - jointly released a white paper recognizing the value of offsets and demonstrating a commitment to ensuring offset integrity.</p>	<p>May 19, 2010</p>	<p>Northeast and Mid-Atlantic Regional Greenhouse Gas Initiative (RGGI), Midwestern GHG Reduction Accord, and the Western Climate Initiative (WCI)</p>
<b>Memorandum of Understanding</b>	<p>Governors from 11 Northeast and Mid-Atlantic states signed a Memorandum of Understanding (MOU) to develop a regional Low Carbon Fuel Standard by 2011. Ten of the signatory states are members of the Regional Greenhouse Gas Initiative.</p>	<p>December 30, 2009</p>	<p>Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Pennsylvania</p>
<b>Midwestern Regional Greenhouse Gas Reduction Accord</b>	<p>Establishes regional greenhouse gas reduction targets that include a long-term target of 60 to 80 percent below 2007 emissions levels and develops a multi-sector cap-and-trade system that includes a greenhouse gas emissions reductions tracking system.</p>	<p>November 15, 2007</p>	<p>Wisconsin, Minnesota, Illinois, Indiana, Iowa, Michigan, Kansas, Ohio, South Dakota, Indiana, and Manitoba.</p>
<b>Energy Security and Climate Stewardship Platform for the Midwest</b>	<p>Establishes goals for improving energy efficiency, low-carbon transportation fuel accessibility, renewable electricity production, and carbon capture and storage development.</p>	<p>November 15, 2007</p>	<p>Wisconsin, Minnesota, South Dakota, Illinois, Indiana, Iowa, Kansas, Michigan, Missouri, Nebraska, North Dakota, Ohio, and Manitoba.</p>
<b>Regional Greenhouse Gas Initiative (RGGI)</b>	<p>A cooperative effort by 9 Northeast and Mid-Atlantic states to design a regional cap-and-trade program for carbon dioxide emissions from power plants. It is the first mandatory U.S. cap-and-trade program for carbon dioxide. The program will begin capping emissions at current levels in 2009, and then reducing emissions 10% by 2019.</p>	<p>December 20, 2005</p>	<p>Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, District of Columbia, Pennsylvania, Ontario, Quebec, and New Brunswick.</p>
<b>Clean and Diversified Energy Initiative</b>	<p>The Western Governors' Association (WGA) creates the Clean and Diversified Energy Advisory Committee. The advisory committee identifies changes needed for state and federal policies to achieve 30,000 megawatts of new clean and diverse energy generation by 2015, a 20 percent increase in energy efficiency by 2020 and adequate transmission capacity for the region over the next 25 years.</p>	<p>June 22, 2004</p>	<p>New Mexico, California, Wyoming, Utah and North Dakota.</p>

Source: State Press releases, Pew Center on Global Climate Change.

# State initiatives in 2011

## Not waiting for the US federal government

States	State Initiatives in 2011	Date	Action	Key items
<b>California</b>	Governor Jerry Brown signed SBX1 2, increasing California's Renewable Portfolio Standard to require 33% of electricity to come from renewable sources by 2020. The law makes the 33% by 2020 target legally binding. The policy is projected to reduce greenhouse gas emissions below business-as-usual levels by the equivalent of 12 to 13 million metric tons of carbon dioxide per year by 2020.	4/12/2010	Law	Increased renewable portfolio standard

Source: State Press releases, Pew Center on Global Climate Change.

# State initiatives in 2010

## Not waiting for the US federal government

States	State Initiatives in 2010	Date	Action	Key items
<b>California</b>	The California Air Resources Board (CARB) voted 9-1 to approve the state's greenhouse gas cap-and-trade program. The regulation will place a limit on 85% of the state's greenhouse gas emissions; the number of emission allowances will decrease annually. The program will start in 2012 and include all major industrial sources and utilities, and a second phase will start in 2015 and include distributors of transportation fuels, natural gas, and other fuels.	12/16/2010	Law	Cap-and-trade program
	The California Air Resources Board unanimously voted to increase the state's Renewable Portfolio Standard (RPS) to 33% by 2020. The regulation will require investor owned and publicly owned utilities to increase the amount of electricity obtained from renewable sources.	9/23/2010	Law	Increased renewable portfolio standard
	The California Air Resources Board adopted a regulation to limit and monitor sulfur hexafluoride (SF6) emissions from electric power sector equipment. The measure was adopted in consultation with electric utility representatives and is expected to achieve a 70% reduction in SF6 emissions statewide from electric utilities.	2/25/2010	Law	Monitoring and regulating SF6 emissions
	The California Office of Administrative Law (OAL) approved the state's Low Carbon Fuel Standard (LCFS) for implementation as a discrete early action GHG emission reduction measure under the California Global Warming Solutions Act of 2006.	1/12/2010	Law	Low carbon fuel standard
	The California Building Standards Commission approved the most environmentally stringent building code in the US for new commercial buildings, hospitals, schools, shopping malls, and homes. The code, named CALGreen requires builders to install a number of environmentally friendly features in new buildings.	1/14/2010	Law	New building codes
<b>New Mexico</b>	The New Mexico Environmental Improvement Board enabled the state's participation in the Western Climate Initiative by approving a plan to establish a state-level greenhouse gas cap-and-trade program. The state program will begin in 2012 and will affect 63 industrial emission sources, including electric generators. These sources will have to reduce emissions 2% annually until 2020 or obtain – from either other market participants or the program administrator – a number of allowances (rights to emit) sufficient to cover their emissions. In order to protect the state's industries, the program will not be implemented unless there are at least 100 million tons of emissions within the emissions trading bloc, outside of New Mexico.	11/2/2010	Law	Cap-and-trade program
<b>New York</b>	Governor Patterson signed into law the "State Smart Growth Public Infrastructure Policy Act" which establishes smart growth criteria for state infrastructure agencies (SIA). The law stipulates that SIA cannot approve, undertake, support, or finance a public infrastructure project unless it meets defined smart growth criteria.	8/30/2010	Law	Smart growth for infrastructure

Source: State Press releases, Pew Center on Global Climate Change.

# State initiatives in 2010 (cont'd)

## Not waiting for the US federal government

States	State Initiatives in 2010	Date	Action	Key items
<b>Vermont</b>	Governor Douglas signed H. 781 "An Act Relating to Renewable Energy" that simplifies the process for permitting renewable energy projects without changing environmental standards. The law also reforms existing solar tax incentives to strengthen the state's commitment to renewable energy.	6/4/2010	Law	Renewed commitment to renewable energy
<b>Maryland</b>	Governor O'Malley signed four clean energy bills continuing the state's leadership in sustainability. The legislation includes a motor vehicle excise tax and credit for electric vehicles, allows drivers to use electric vehicles in HOV lanes, extends the termination of the clean energy production tax credit and increases the annual percentage requirements under Maryland's Renewable Energy Portfolio Standard (RPS) for electricity from solar between 2011 and 2016.	5/20/2010	Law	Comprehensive energy legislation
<b>West Virginia</b>	Governor Manchin signed Senate Bill 183, the Diesel-Powered Motor Vehicle Idling Act, which aims to reduce emissions by setting a limit on how long a diesel truck can run its engine when the vehicle is not moving. Idling will be limited to no more than 5 minutes. Violators will face fines between \$150 and \$300.	5/13/2010	Law	Diesel truck idling limits
<b>Maine</b>	Maine Governor Baldacci signed five energy bills aimed to achieve clean energy development goals and energy independence. The legislation includes creating smart grid policy in the state, increasing the affordability of clean energy for homeowners and businesses and the implementation of a Governor's Ocean Energy Task Force.	5/11/2011	Law	New comprehensive energy legislation
<b>Colorado</b>	Colorado Governor Bill Ritter signed legislation (HB 1001) requiring 30% of Colorado's electricity to come from renewable sources by 2020, one of the highest percentage requirements in the country. The legislation requires that 3 percentage points of the 30% come from solar power.	3/22/2010	Law	New renewable electricity standards
<b>Oregon</b>	Oregon Governor Kuglonski signed Senate Bill 1059 that lays the groundwork for smart, sustainable, and cost-effective transportation systems. The law directs the Oregon Transportation Commission, with other state agencies, to develop a state-level strategy to reduce greenhouse gas emissions from transportation sources.	3/18/2010	Law	Action plan to reduce transportation GHGs
<b>Massachusetts</b>	Massachusetts announced new energy efficiency standards for utilities supported by \$1.6B in incentives. The new requirement calls for a statewide reduction of 2.4% in electricity use and 1.15% in natural gas use annually for 3 years.	1/29/2010	Law	New energy efficiency standards

Source: State Press releases, Pew Center on Global Climate Change.

# State initiatives in 2009

## Not waiting for the US federal government

States	State Initiatives in 2009	Date	Action	Key items
<b>New York</b>	The New York Senate and Assembly voted unanimously to pass legislation authorizing municipal loan programs for renewable and energy efficiency improvements on homes and businesses. The Property Assessed Clean Energy Program (PACE) eliminates the upfront cost of installing energy improvements and allows property owners to pay for the measures over 15-20 years through an increase in annual property taxes.	11/16/2009	Law	Municipal loan programs for renewable and energy efficiency
<b>California</b>	Governor Arnold Schwarzenegger signed two major renewable energy bills, AB 920 and SB 32. AB 920 expands the state's net metering program, requires utility companies to pay households, businesses, and schools for extra electricity produced by the customer's solar or wind power systems. SB 32 modifies the existing feed-in tariff by requiring investor-owned and large utilities to purchase all renewable electricity from facilities producing up to 3 MW at a set rate until they reach their portion of a statewide cap of 750 MW.	10/11/2009	Law	Feed-in tariff, net metering bill
<b>Oregon</b>	Governor Ted Kulongowski signed into law H.B. 2186, which allows the Oregon Environmental Quality Commission (EQC) to adopt rules for the reduction of greenhouse gas emissions from transportation fuels. The EQC may adopt a low carbon fuel standard (LCFS), which would require a reduction in fuel carbon intensity of 10% from 2010 levels by 2020.	7/22/2009	Law	Low carbon fuel standard
<b>Hawaii</b>	Governor Linda Lingle signed into law three energy bills designed to promote the development of in state renewable energy technology and energy efficiency. HB 1464 extends and increases Hawaii's current renewable electricity portfolio standard to 40% by 2030. SB 1202 promotes the use of clean energy vehicles by mandating the creation of reserved parking spaces for them that include electric vehicle charging apparatus. SB 464 offers incentives for renewable energy.	6/25/2009	Law	Renewable electricity portfolio standard, promotion of clean energy vehicles and renewable energy incentives
<b>Maryland</b>	Governor Martin O'Malley signed into law the Greenhouse Gas Emissions Reduction Act of 2009, which contains a greenhouse gas emissions reduction target for the state. The legislation sets the target at 25% below 2006 levels by 2020 and requires that a task force create and submit a plan for achieving this target which is to be adopted by December 2012.	5/7/2009	Law	Greenhouse gas emissions limit

Source: State Press releases, Pew Center on Global Climate Change.

# State initiatives in 2009 (cont'd)

## Not waiting for the US federal government

States	State Initiatives in 2009	Date	Action	Key items
<b>Washington</b>	Governor Christine Gregoire issued an Executive Order directing state agencies to develop and implement a number of strategies to reduce GHG emissions. The new Executive Order directs state agencies to develop plans consistent with the 2007 goal of achieving 1990 emissions levels by 2020.	5/21/2009	Law	Greenhouse emission limit
<b>Kansas</b>	Governor Mark Parkinson signed into law Senate Substitute for H.B. 2369, which includes a renewable energy standard, net metering provisions, and various other energy efficiency and energy-related provisions. The legislation includes a variety of energy-related provisions, such as the use of energy-efficient appliances in state facilities and using funds from the American Recovery and Reinvestment Act of 2009 for energy efficiency, energy conservation and other programs.	5/22/2009	Law	Renewable energy standard, net metering provisions
<b>Vermont</b>	"The Vermont Energy Act of 2009" (H. 446) became law, establishing a statewide feed-in tariff to incentivize in-state renewable energy facilities. Incentives will be offered to every participating renewable generator with production capacity of 2.2 MW or less.	5/27/2009	Law	Feed-in tariff
<b>Wyoming</b>	Governor Dave Freudenthal signed three bills (H.B. 57, H.B. 58, H.B. 80) to address ownership and liability issues related to geological storage of carbon dioxide. The legislation makes Wyoming an early mover in clarifying the legal and regulatory issues related to geological storage of CO <sub>2</sub> .	2/26/2009 and 2/27/2009	Law	Carbon capture and storage legislation
<b>Michigan</b>	The Michigan Climate Action Council (MCAC) released its Climate Action Plan. The MCAC recommends specific policies and actions to achieve greenhouse gas reductions within the state of Michigan. The MCAC determined the recommendations would decrease Michigan's emissions about 33% below 2005 levels by 2025.	3/1/2009	Proposal	Climate action plan

Source: State Press releases, Pew Center on Global Climate Change.

# State initiatives in 2008

## Not waiting for the US federal government

States	State Initiatives in 2008	Date	Action	Key items
<b>Massachusetts</b>	Governor Deval Patrick signs The Green Communities Act, requiring that electric utilities generate an increasing amount of electricity from renewable sources, growing one percentage each year beyond the 4 percent standard in 2009. The legislation also mandates that half the state's fleet to be hybrid or alternative fuel vehicles by 2018.	7/2/2008	Law	Renewable Portfolio Standards, Vehicle requirements
<b>Delaware</b>	Governor Ruth Ann Minner signs Senate Bill 263, authorizing the state to participate in the Regional Greenhouse Gas Initiative (RGGI), a cap-and-trade system. Participation in the RGGI will begin on January 1, 2009.	6/30/2008	Law	Cap-and-trade system
<b>Maryland</b>	Governor Martin O'Malley signs into law several pieces of energy and climate change legislation. The High Performance Buildings Act establishes green building standards for public buildings and the Empower Maryland Energy Efficiency Act of 2008 establishes goals of reducing per capita electricity consumption and peak energy demand by 2015.	4/24/2008	Law	Green building standards, Goals for energy consumption reduction
<b>Florida</b>	Governor Charlie Crist signs into law House Bill 7135, enacting new energy and climate change policies. The Florida Climate Protection Act authorizes the Department of Environmental Protection to develop an electric-utility greenhouse gas cap-and-trade program, which may begin operating in January 2010.	6/25/2008	Law	Several policies, i.e. developing cap-and-trade system
<b>California</b>	California's Air Resources Board announces a plan to help reduce state greenhouse gas emissions to 1990 levels by 2020, provisions include designing a cap-and-trade program and increasing renewable portfolio standards from 20 by 2010 to 33 percent by 2020.	6/26/2008	Proposal	Cap-and-trade system, Renewable Portfolio Standards
<b>New York</b>	The New York State Public Service Commission announces Energy Efficiency Portfolio Standards that requires electricity consumption to reduce by 15 percent below projected levels by 2015.	6/18/2008	Proposal	Energy Efficiency Portfolio Standards
<b>Utah</b>	Announces goal to reduce statewide GHG emissions to 2005 levels by 2020 through renewable energy sources, reduced energy demand and increased efficiency, as well as joining the Western Climate Initiative (WCI) GHG, a cap-and-trade program.	6/20/2008	Proposal	Cap-and-trade system

Source: State press releases, Pew Center on Global Climate Change.

# State initiatives in 2008 (cont'd)

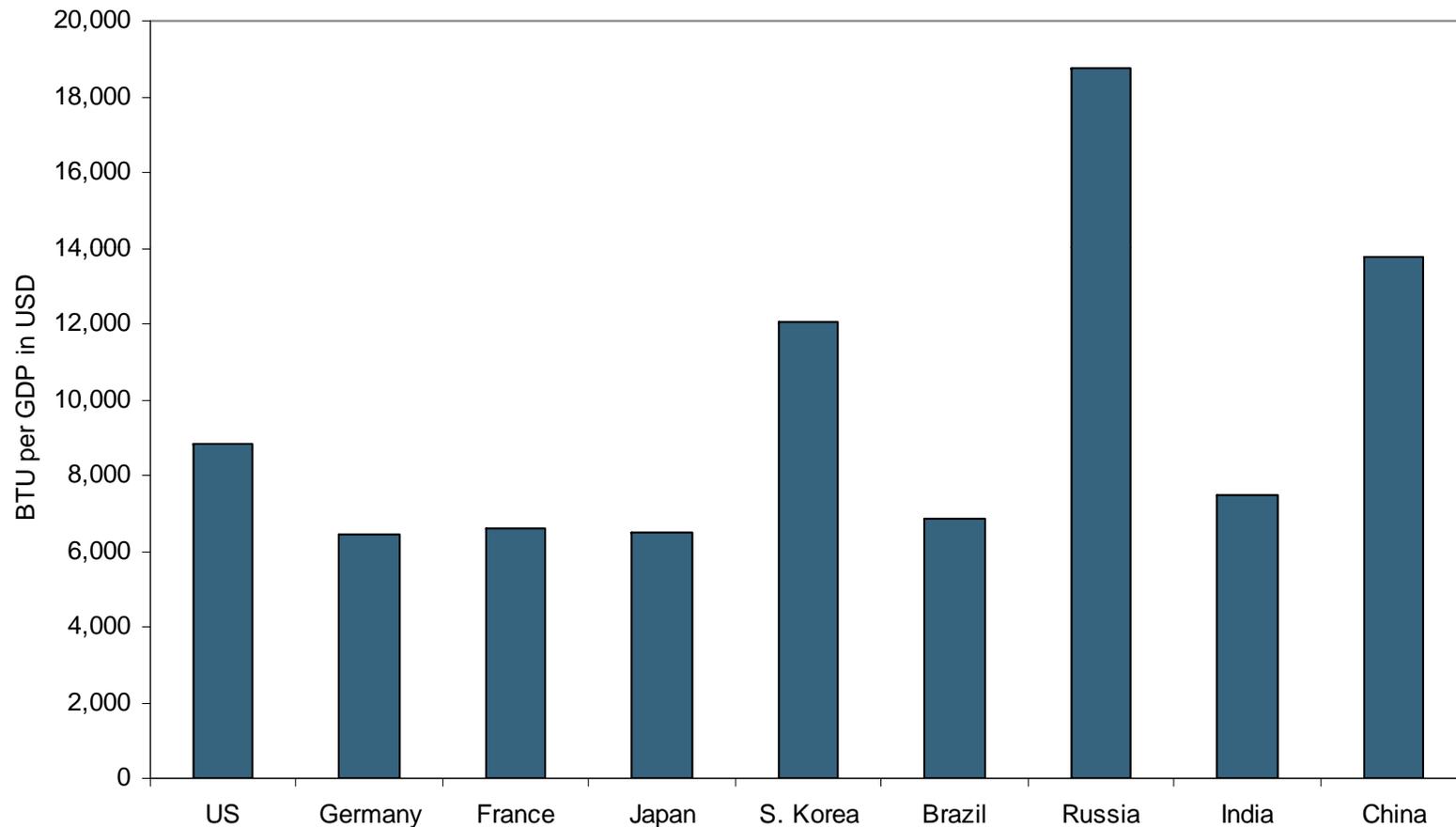
## Not waiting for the US federal government

States	State Initiatives in 2008	Date	Action	Key items
<b>Washington</b>	Adopted Emissions Performance Standard, a broad legislative package designed to reduce greenhouse gas emissions that includes a requirement that baseload electricity generation facilities meet a greenhouse gas emission limit of 1,100 pounds of CO2 per megawatt hour.	6/19/2008	Law	Greenhouse emission limit
<b>Ohio</b>	Governor Ted Strickland signs House Bill 554, a \$1.57 billion economic stimulus package that includes \$84 million appropriated over three years to low-carbon energy sources, such as wind, solar, geothermal, hydro, and solid waste energy.	6/12/2008	Law	Funding for low-carbon energy
<b>Connecticut</b>	Governor Jodi Rell signs House Bill 5600, setting a statewide Greenhouse Gas emissions reduction target of 10 percent below 1990 levels by 2020. CT will also participate in Regional Greenhouse Gas Initiative, a cap-and-trade system.	6/2/2008	Law	Emissions target, Cap-and-trade system
<b>Kansas</b>	Governor Kathleen Sebelius signs Executive Order 08-03, establishing the Kansas Energy and Environmental Policy Advisory Group. This 25-member group will recommend steps to reduce greenhouse gas emissions and propose a timetable for implementation.	3/21/2008	Law	Advisory group
<b>Vermont</b>	Governor Jim Douglas signs the Energy Efficiency and Affordability Act of 2008, establishing a statewide goal of producing 25 percent of the energy consumed from renewable sources by 2025.	3/20/2008	Law	State-wide goal
<b>New Mexico</b>	Governor Bill Richardson signs House Bill 305, strengthening the state's existing Efficient Use of Energy Act. The bill provides financial incentives to electric and gas utilities that reduce their customers' energy consumption. Also, the bill requires electric utilities to achieve energy-efficiency savings of at least five percent of 2005 sales by 2014, and 10 percent by 2020.	2/27/2008	Law	Legislation providing financial incentives and new mandates
<b>Iowa</b>	The Climate Change Advisory board, established by Governor Chet Culver in 2007, released its preliminary report recommending multiple scenarios for greenhouse gas reductions, such as reducing emissions by 50 percent by 2050. Specific policy options will be recommended by December 31, 2008.	1/1/2008	Proposal	Preliminary report

Source: State press releases, Pew Center on Global Climate Change.

# Energy intensity gap between developed and developing economies, 2006

Energy-intensive activities are being outsourced along with pollution



Source: US Department of Energy.

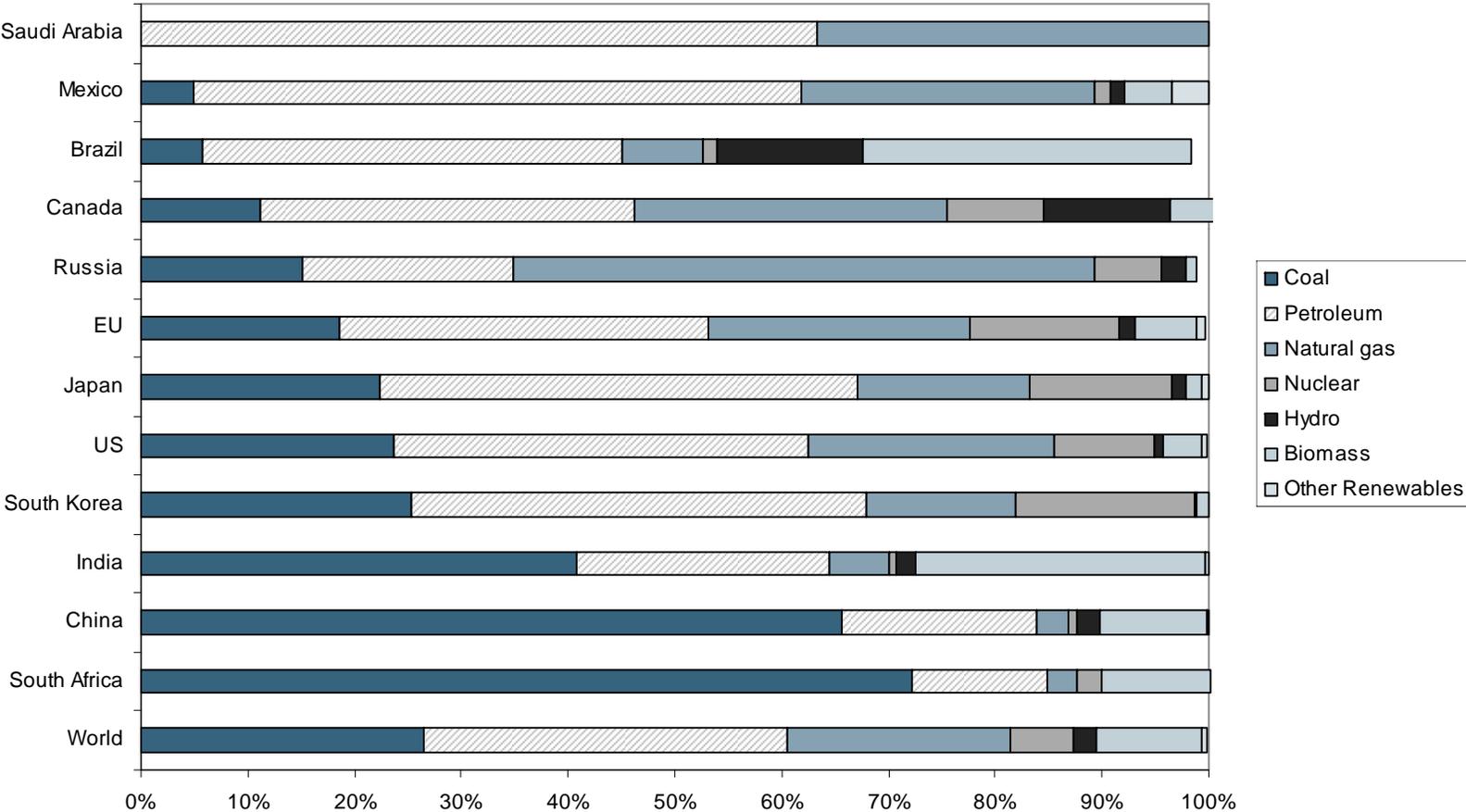
# Direct cost of various energy sources

Energy Source	Cost per Kilowatt-hour (kWh) range
Coal	2-6 cents per kWh
Nuclear	2-6 cents per kWh
Wind	3-7 cents per kWh
Natural gas	5.5-10 cents per kWh
Biomass	5-10 cents per kWh
Geothermal	5-10 cents per kWh
Solar	12-35 cents per kWh (most expensive)

Source: World Nuclear Association, EIA, DOE, IEA, Oregon.gov, WSJ article - "The New Math of Alternative Energy" by Rebecca Smith, 2007.

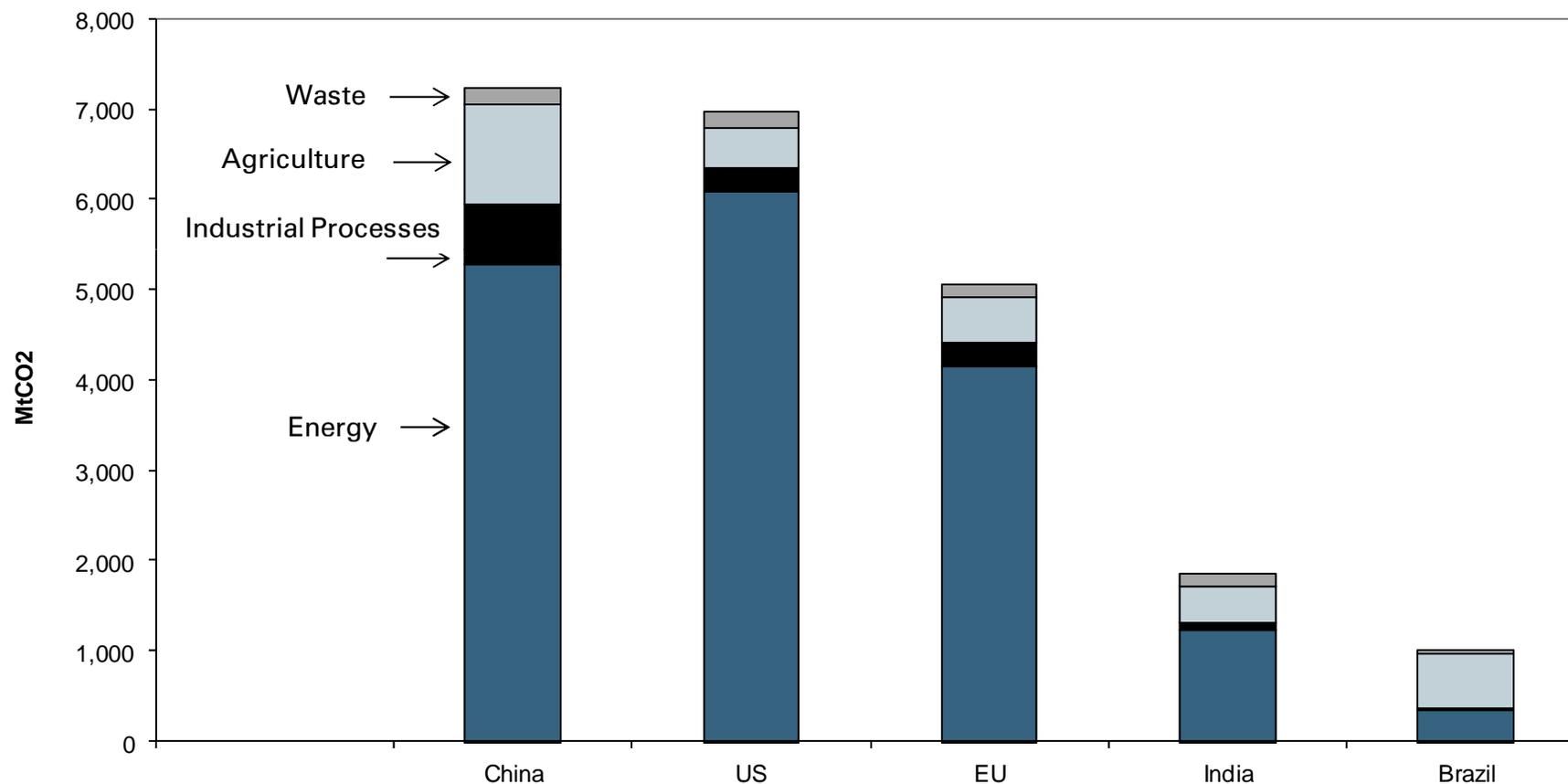
# Fuel use mix by country, 2007

Wide variation often linked to availability of domestic energy sources



Source: WRI.

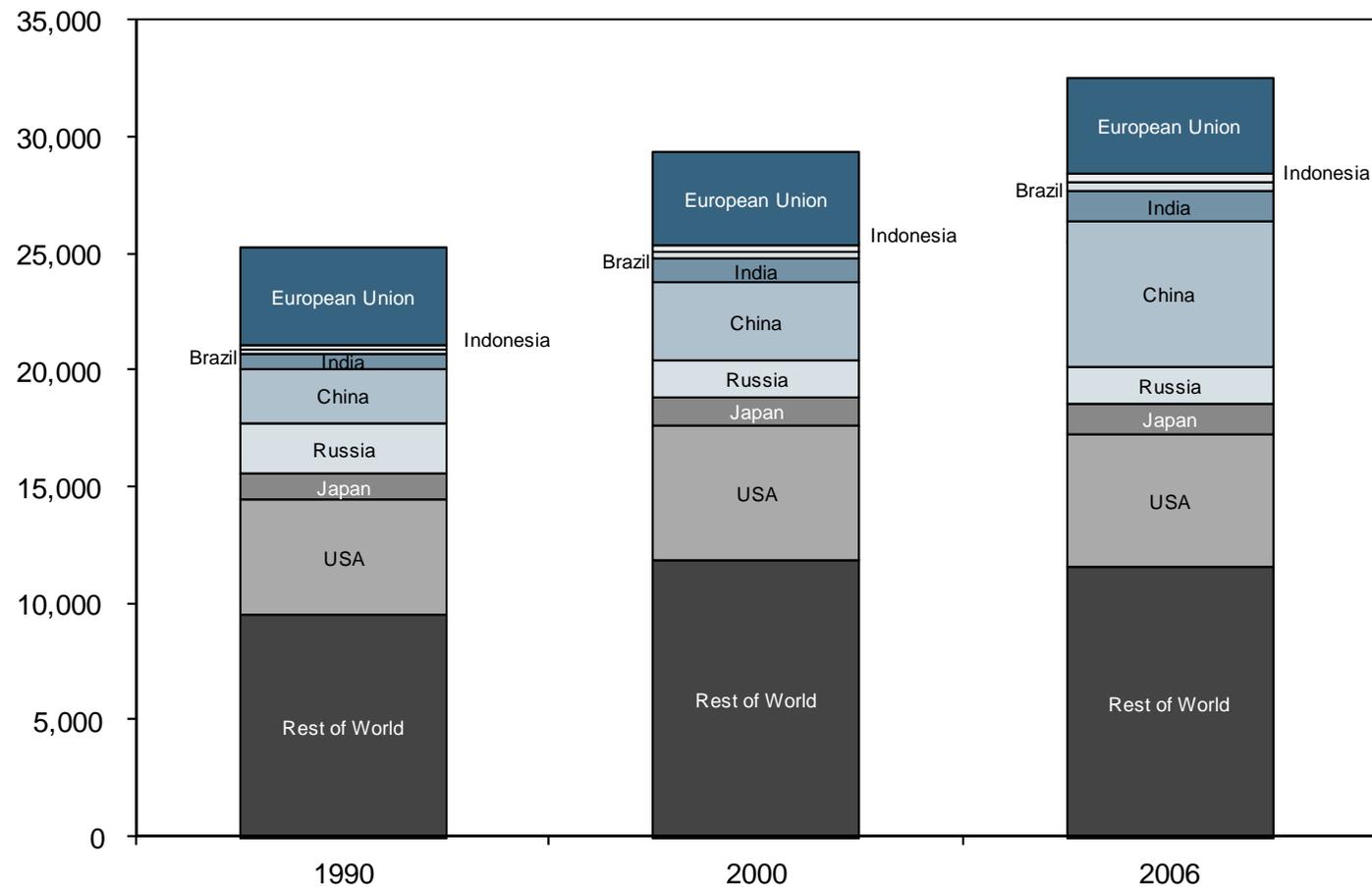
# Comparison of country GHG emissions by sector, 2005



Source: WRI.

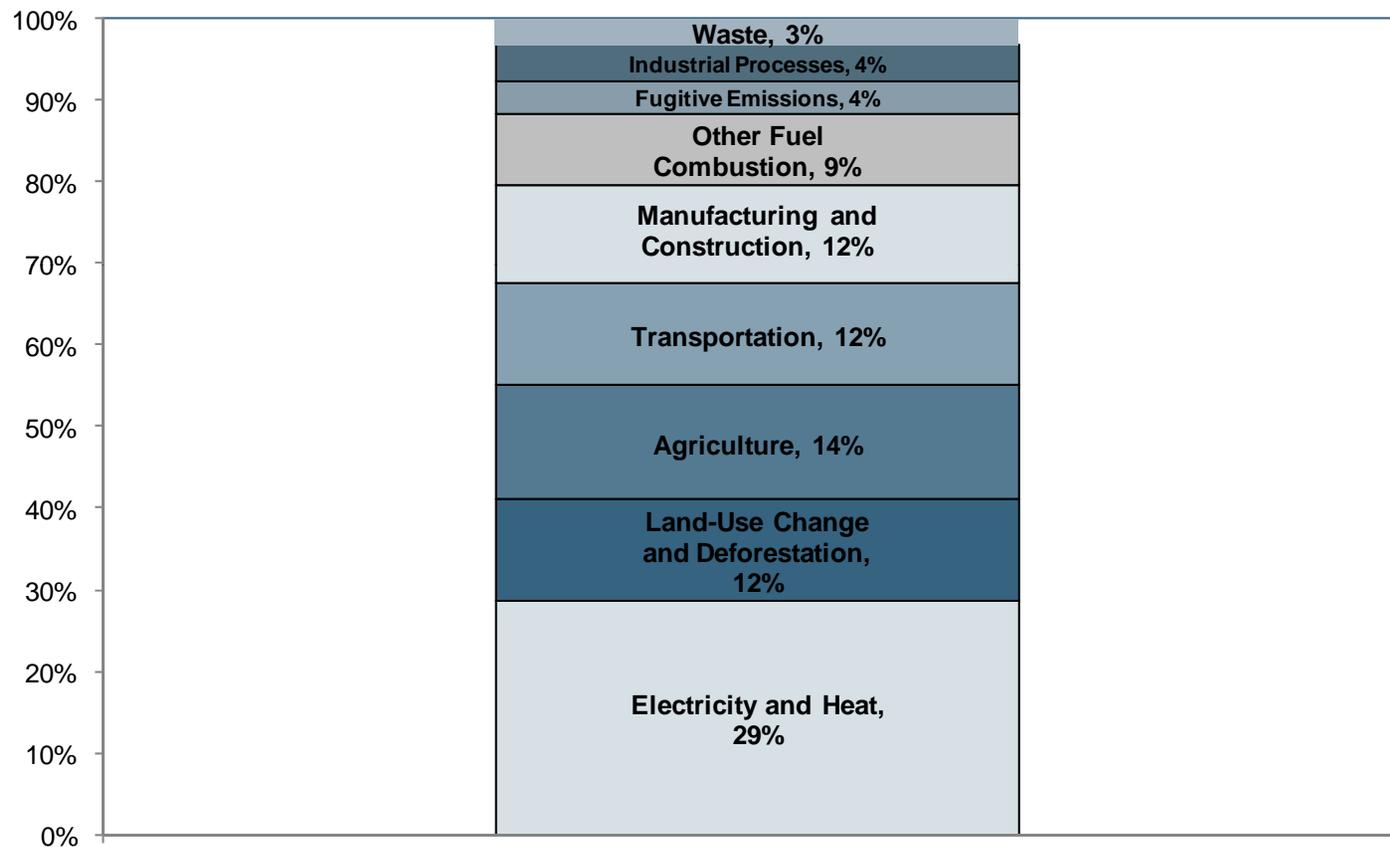
# Yearly GHG emissions (CO<sub>2</sub> only)

## Aggregate global emissions continue to grow



Source: UNFCCC, WRI.

# Composition of Global GHG emissions, 2005



Source: UNFCCC, WRI, September 2010.



# Disclosures

**May 6, 2011**

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