Practical Economics

Economic Concepts for Understanding the Global Landscape

November 2013

Jim Kee, Ph.D

President & Chief Economist

Overview

- The Global Economy
- **Understanding the Economy and the Stock Market**
- Understanding the Federal Reserve
- Prices Lead Quantities 1: Inflation Forecasting
- Prices Lead Quantities 2: Europe
- Practical Diversification Tools

Global Growth: Arnold Harberger

USAID
FROM THE AMERICAN PEOPLE

"It is not an exaggeration to say that the half-century from 1950 to 2000 was the greatest in history in terms of improvements in the health, prosperity, and welfare of the world's population. Further, the quarter-century from 1975 to 2000 has no problem in claiming the championship as the best ever."

–Arnold Harberger

Source: United States Agency for International Development

He Was Talking About 2.8% Global GDP Growth

Harberger's Data:

Table I. World Economic Growth 1975–2001

	Growth Rate (% per Year)		
	Population	GDP Per Capita	Total GDP
World	1.6	1.2	2.8

More Recently, "IMF Lowers Growth Forecast" …

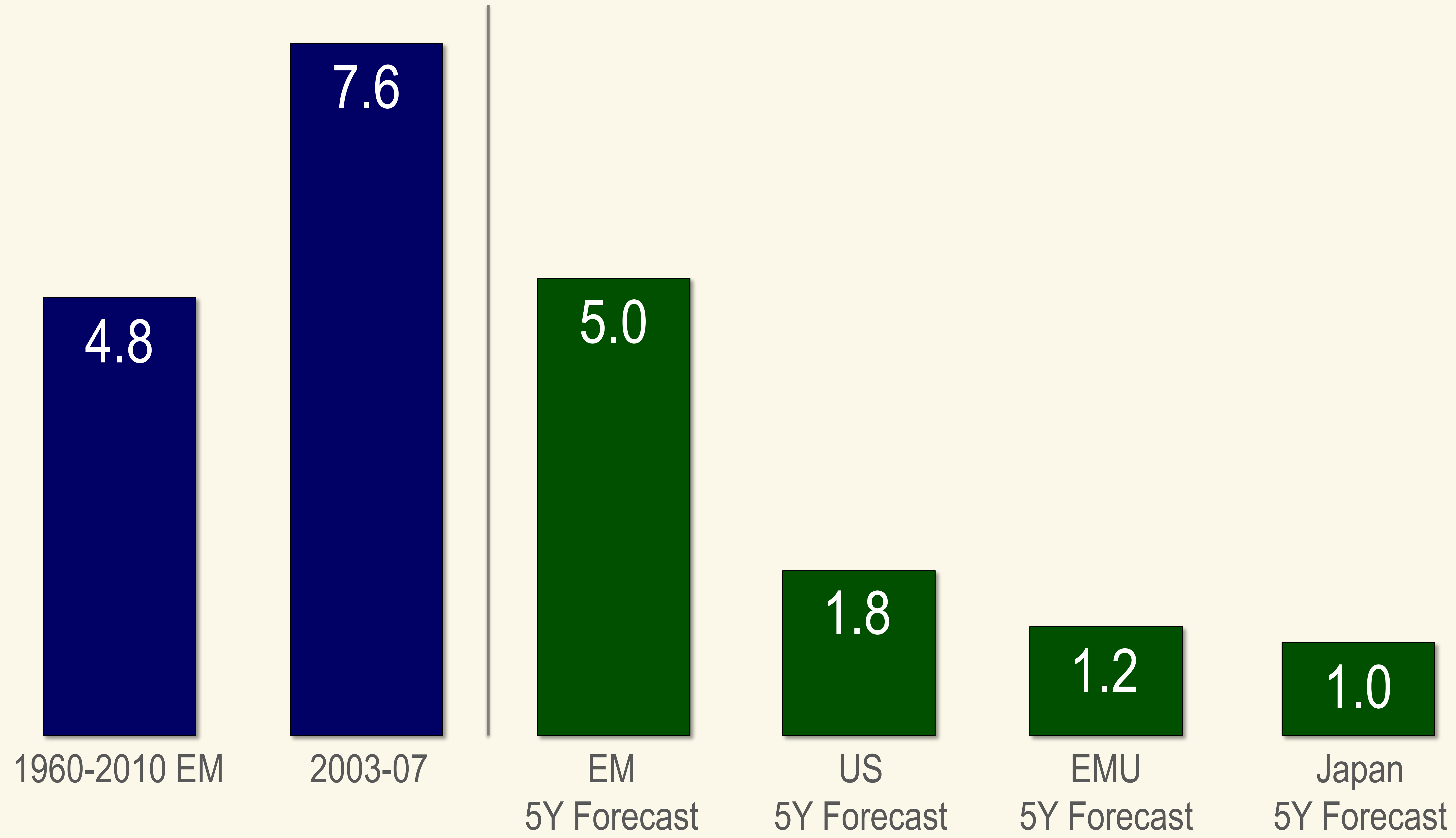
International Monetary Fund

"global growth at 3.1 percent in 2013"

Source: United States Agency for International Development, IMF

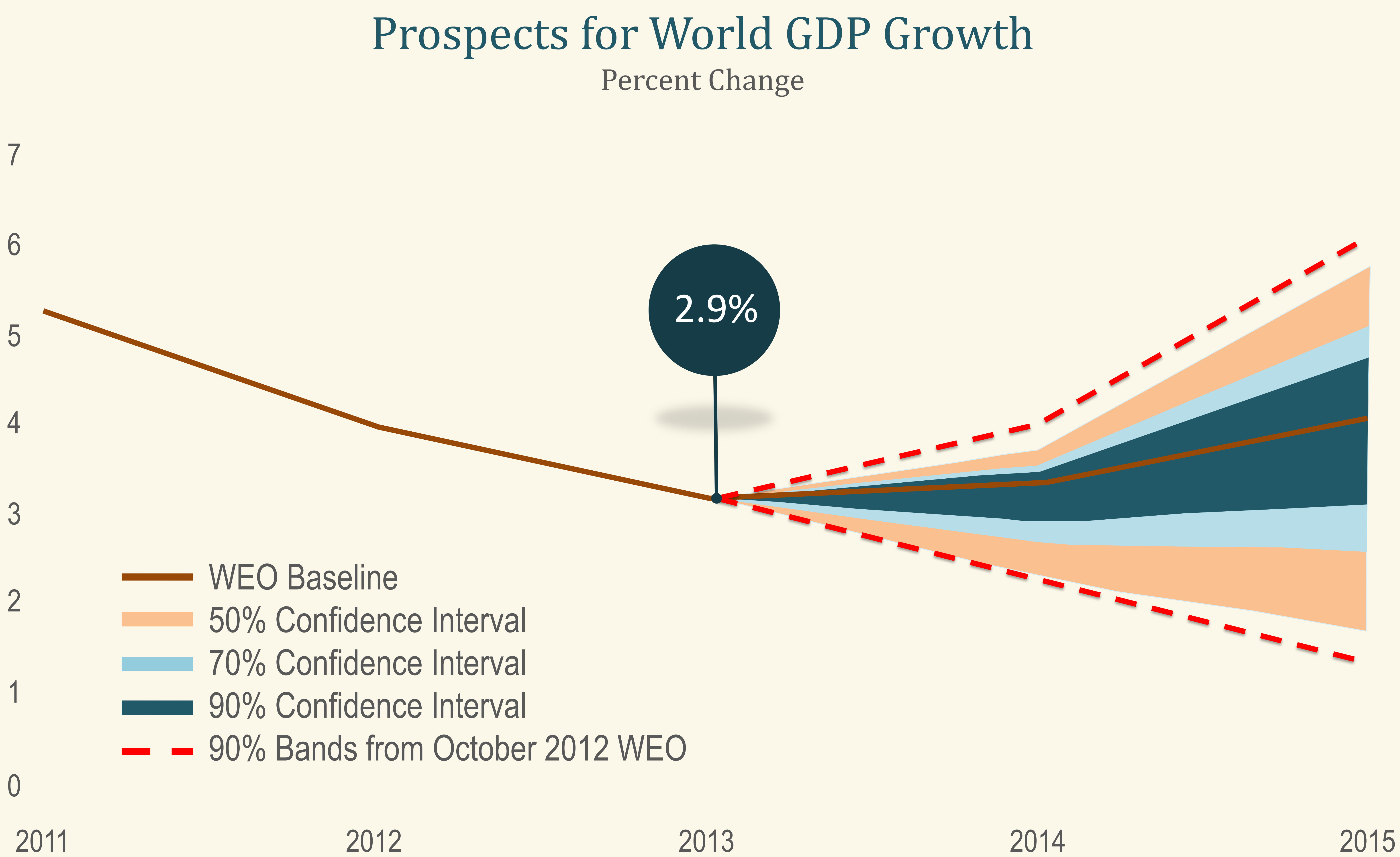
2003-2007 Was an Anomaly, Not the Norm

Back to the Future
Real GDP Growth
Historical and 5 year Forecasts (%)
As of August 2012



Source: Morgan Stanley, August 2012

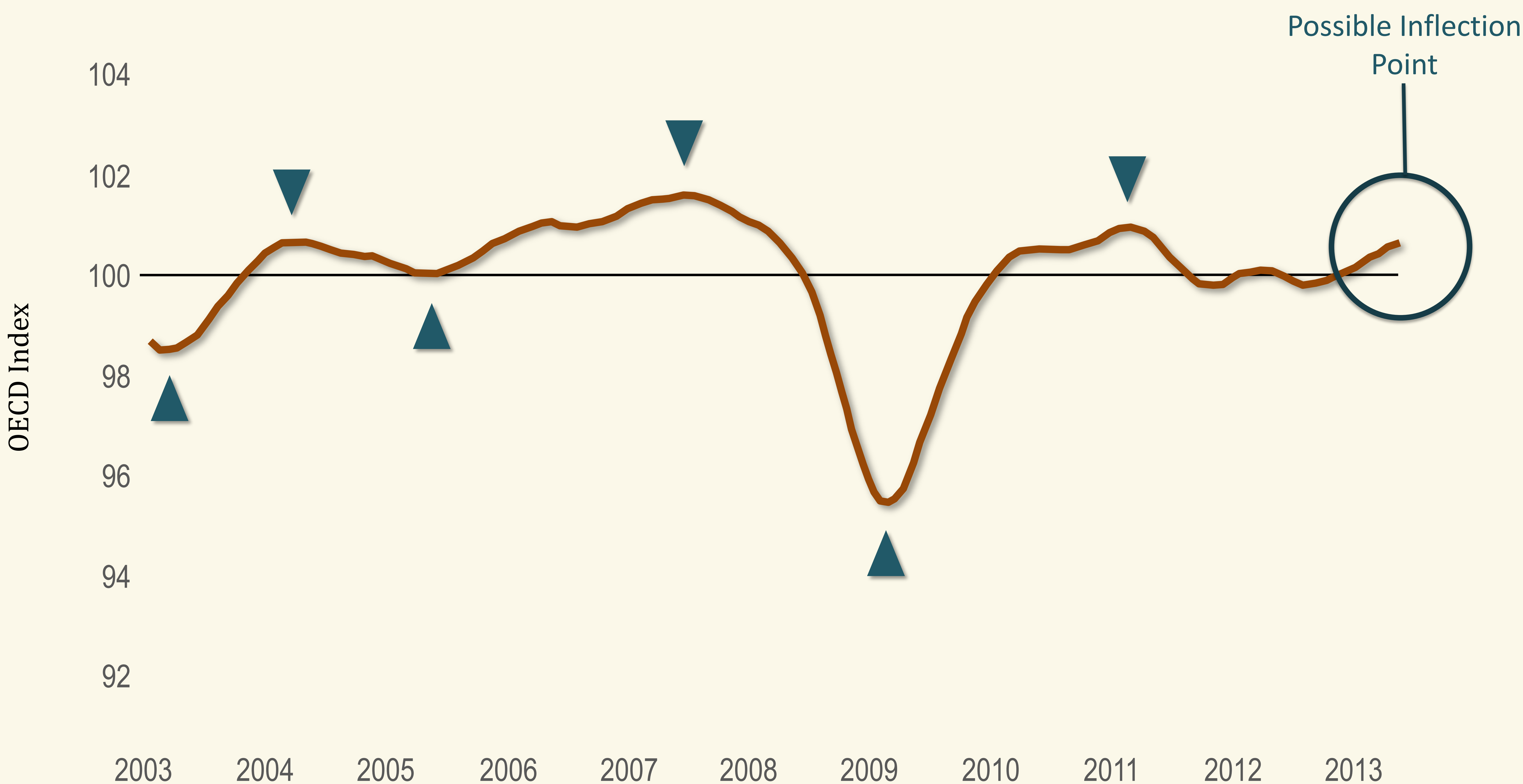
Global Growth Has Been Decelerating



Source: IMF World Economic Outlook October 2013

But That Might Be Nearing an End

Growth Gaining Momentum in the OECD Area



Source: Organization for Economic Cooperation and Development

US: Continued Moderate Expansion

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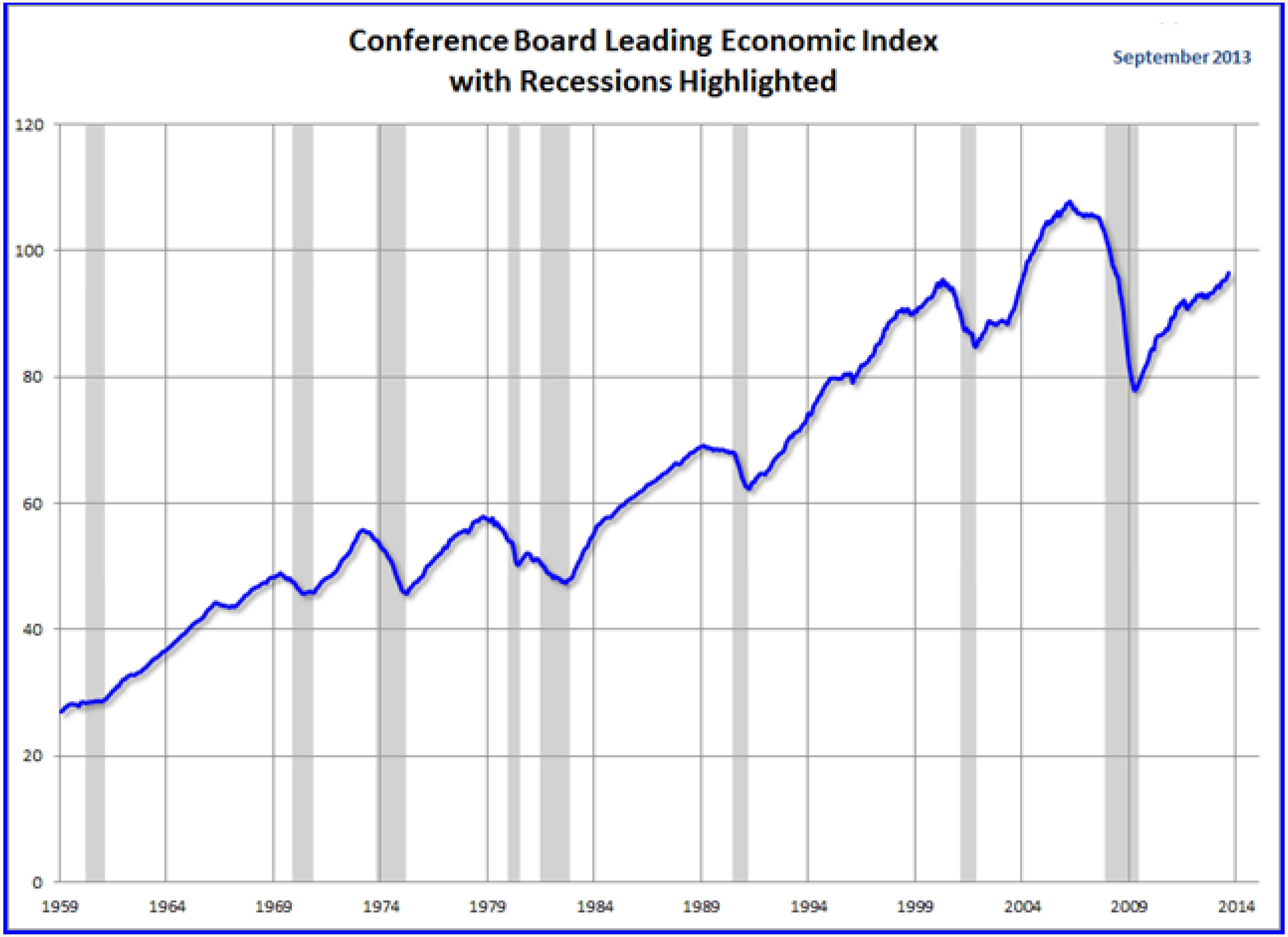
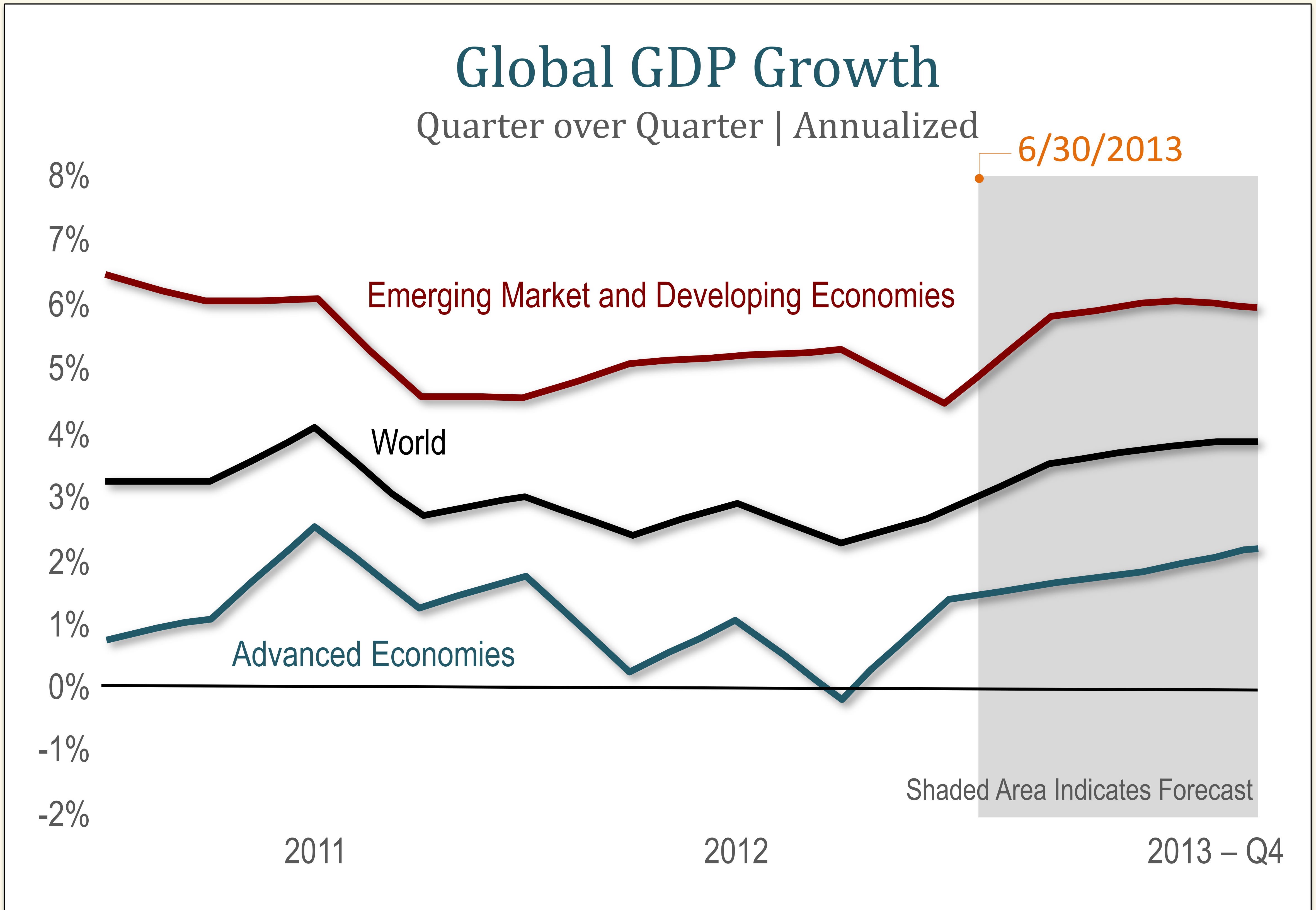


Source: National Bureau of Economic Research

China Outlook is the Most Contentious



Real GDP Growth Estimates		
	2013	2014
United States	1.75%	2.75%
Japan	2.00%	1.25%
Euro Area	-0.50%	1.00%
Emerging	5.00%	5.40%
China	7.80%	7.70%
World	2.90%	3.60%

Too High

Some proprietary research suggests China is too high

Source: International Monetary Fund Staff Estimates

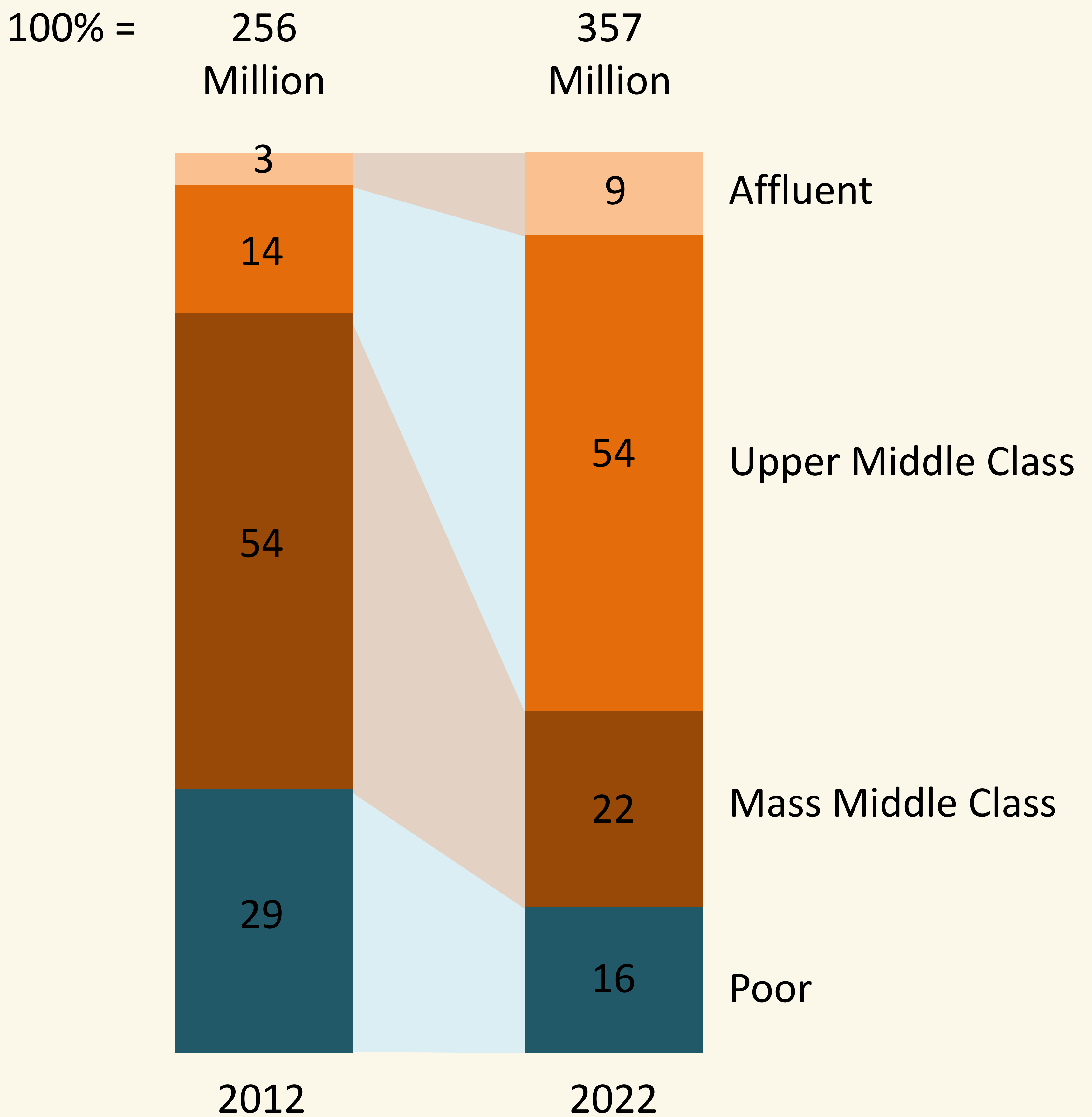
China Most Likely to Disappoint

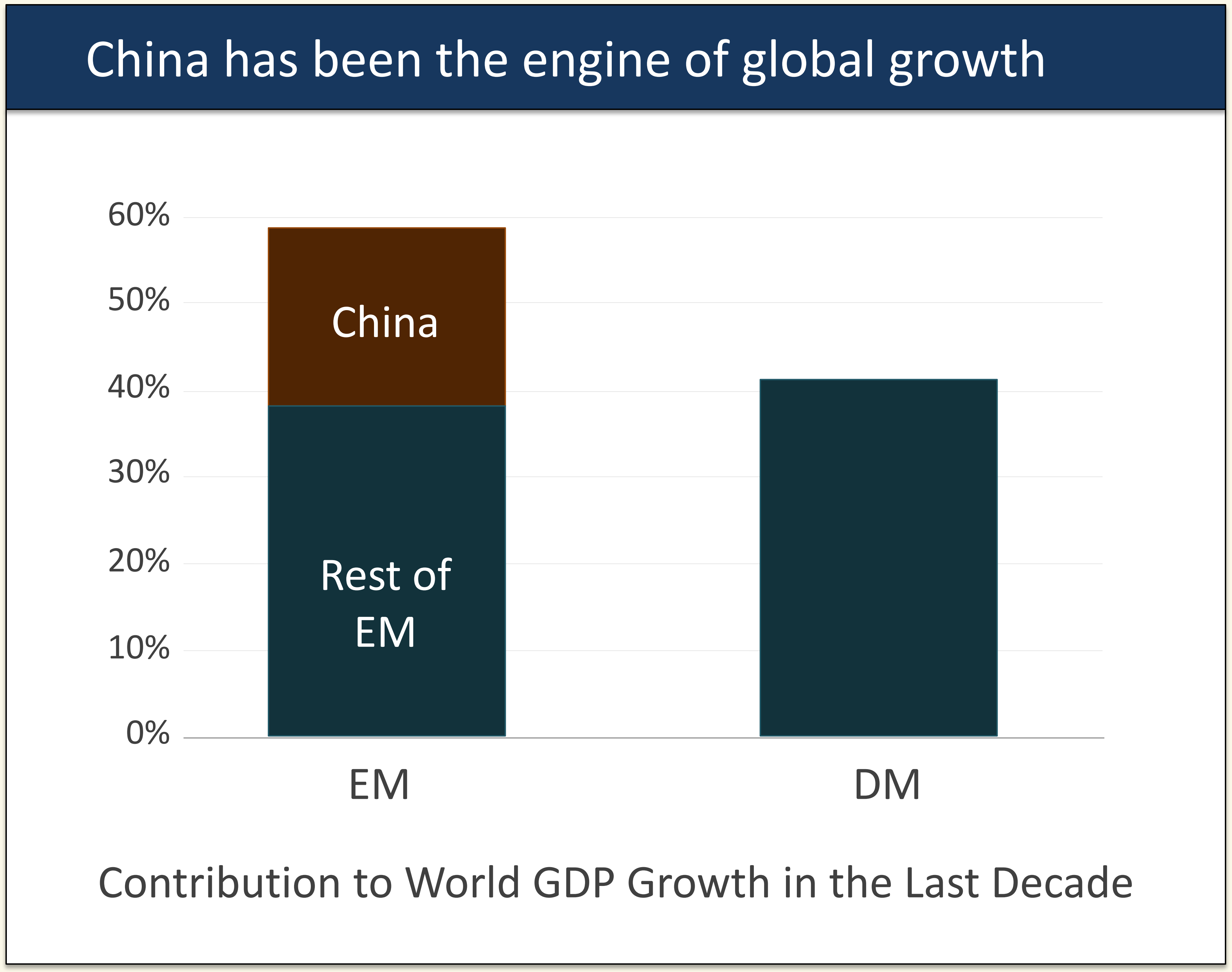
"While many economists now project that China's average annual economic growth will fall to between 5 and 7 percent a year during the next decade, I expect it to slow even more, perhaps to 3 to 4 percent a year. In modern history, no country that has experienced an investment-driven growth "miracle" has avoided a slowdown (such as Japan's after 1990) that surprised even the pessimists, and it is hard to find good reasons to think China will be an exception."

– McKinsey Quarterly, June 2013

But the Rise of the Chinese Consumer Isn't Going Away

Share of urban households,[1] %





[1] Figures may not sum to 100%, because of rounding; data for 2022 are projected.

[2] Defined by annual disposable income per urban household, in 2010 real terms; affluent, >229,000 renminbi (equivalent to >$34,000); upper middle class, 106,000 to 229,000 renminbi (equivalent to $16,000 to $34,000); mass middle class, 60,000 to 106,000 renminbi (equivalent to $9,000 to $16,000); poor, <$60,000 renminbi (equivalent to <$9,000).

Source: McKinsey Quarterly, June 2013

McKinsey Predictions Continued…

- **The price of hard commodities will drop sharply**. Perhaps 50% – excluding agricultural commodities
- **This will hurt commodity producing countries**: Examples include Canada, Russia, Brazil, S. Africa, Australia, Norway
- **Industries that profit from building infrastructure or manufacturing capacity will suffer**…construction equipment, heavy manufacturing, transportation – shipping
- **Countries, especially developing ones like Mexico, that rely heavily for growth on manufacturing will benefit from China's higher labor costs**
- **Consumer goods companies in aggregate little affected**

Source: McKinsey Quarterly, June 2013

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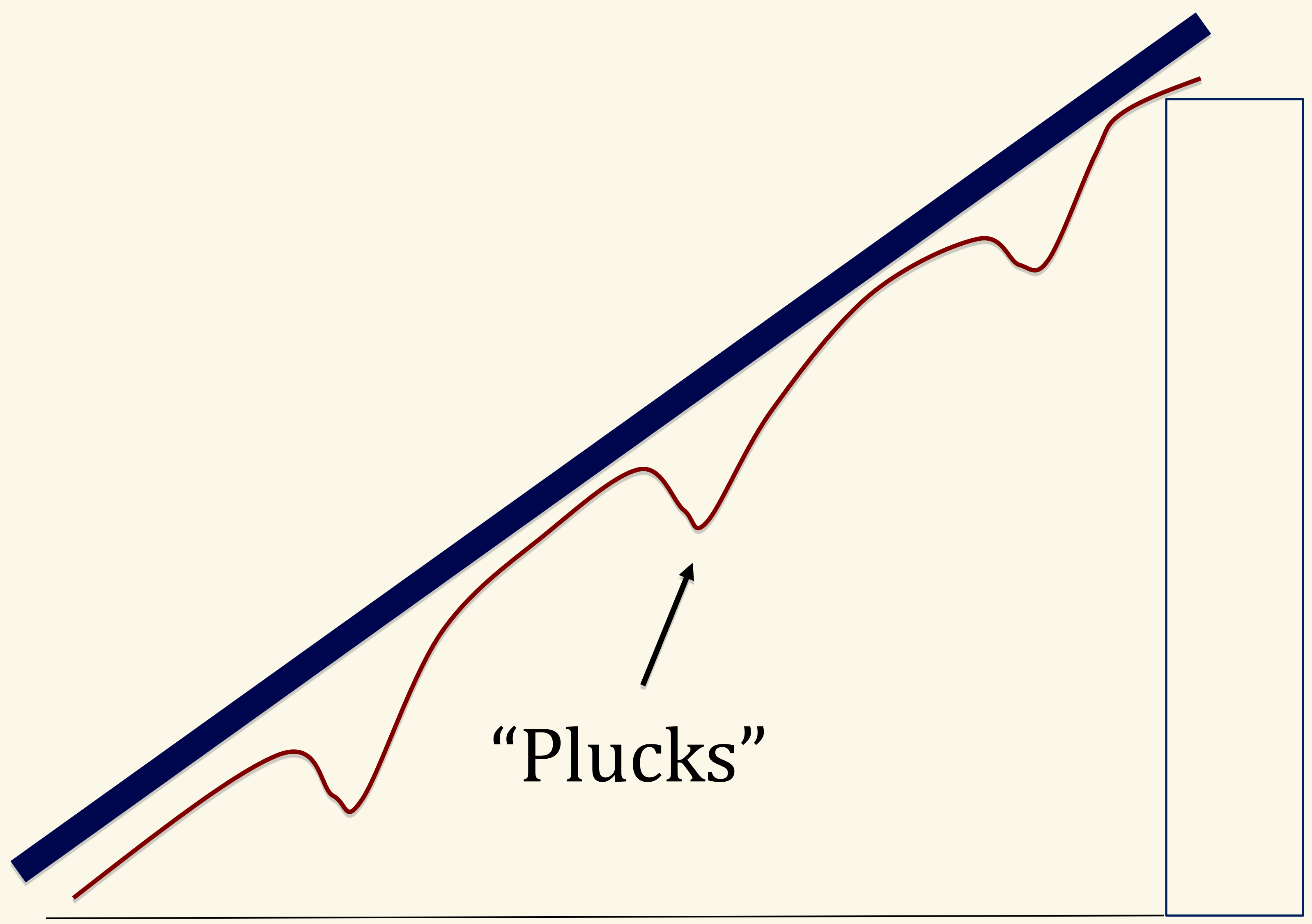
Milton Friedman's "Plucking" Model

- The 'catalyst' for growth is always present.
- Removing shock is all that's required
- Recently that meant restoring confidence in the banking system



The economy comes back on its own once the shock is removed.

Baseball Analogy (what inning is it?) Does Not Apply

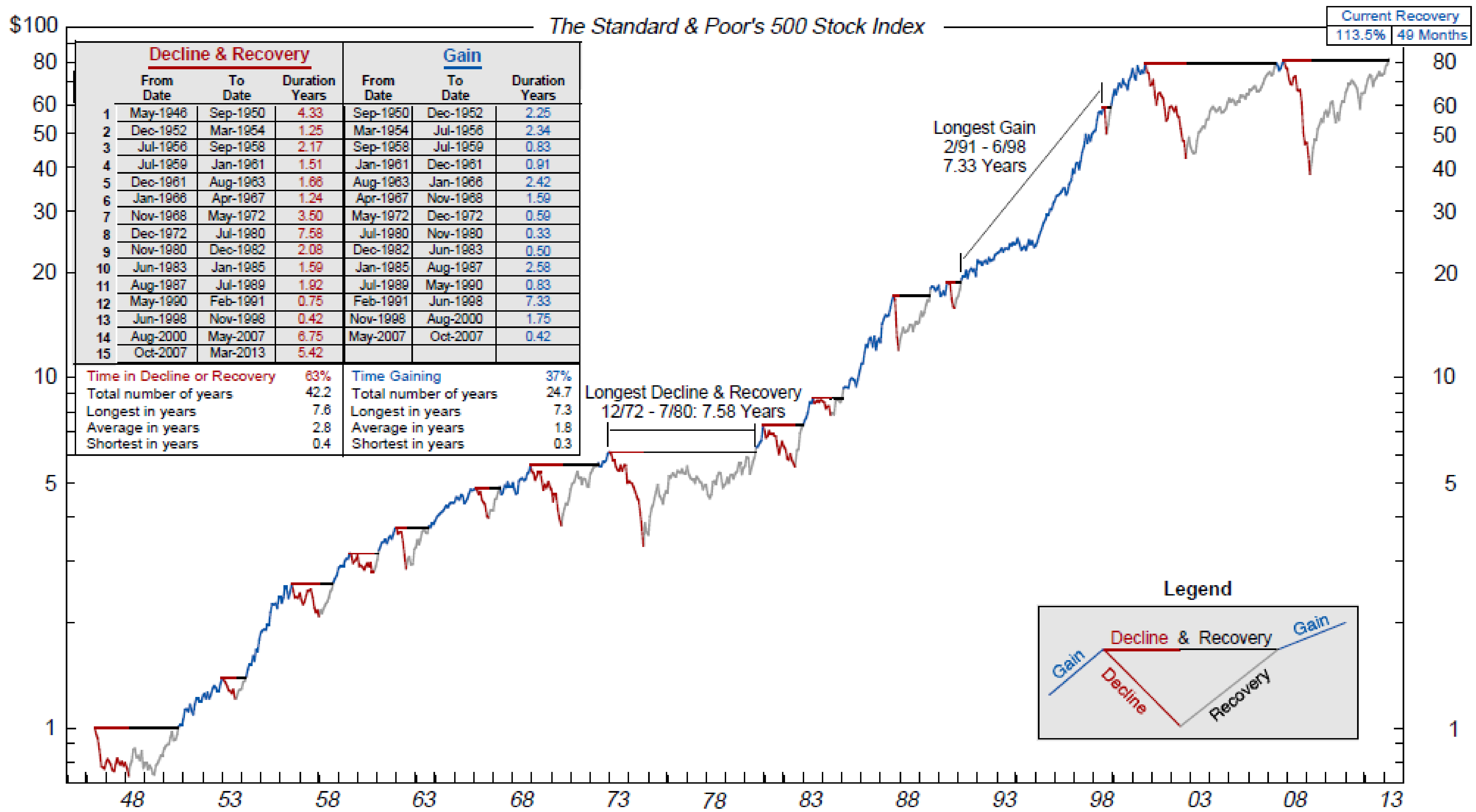
REFERENCE DATES		DURATION IN MONTHS			
Peak	Trough	Contraction	Expansion	Cycle	
Quarterly dates are in parentheses		*Peak to Trough*	*Previous trough to this peak*	*Trough from Previous Trough*	*Peak from Previous Peak*
	December 1854 (IV)	--	--	--	--
June 1857(II)	December 1858 (IV)	18	30	48	--
October 1860(III)	June 1861 (III)	8	22	30	40
April 1865(I)	December 1867 (I)	32	46	78	54
June 1869(II)	December 1870 (IV)	18	18	36	50
October 1873(III)	March 1879 (I)	65	34	99	52
March 1882(I)	May 1885 (II)	38	36	74	101
March 1887(II)	April 1888 (I)	13	22	35	60
July 1890(III)	May 1891 (II)	10	27	37	40
January 1893(I)	June 1894 (II)	17	20	37	30
December 1895(IV)	June 1897 (II)	18	18	36	35
June 1899(III)	December 1900 (IV)	18	24	42	42
September 1902(IV)	August 1904 (III)	23	21	44	39
May 1907(II)	June 1908 (II)	13	33	46	56
January 1910(I)	January 1912 (IV)	24	19	43	32
January 1913(I)	December 1914 (IV)	23	12	35	36
August 1918(III)	March 1919 (I)	7	44	51	67
January 1920(I)	July 1921 (III)	18	10	28	17
May 1923(II)	July 1924 (III)	14	22	36	40
October 1926(III)	November 1927 (IV)	13	27	40	41
August 1929(III)	March 1933 (I)	43	21	64	34
May 1937(II)	June 1938 (II)	13	50	63	93
February 1945(I)	October 1945 (IV)	8	80	88	93
November 1948(IV)	October 1949 (IV)	11	37	48	45
July 1953(II)	May 1954 (II)	10	45	55	56
August 1957(III)	April 1958 (II)	8	39	47	49
April 1960(II)	February 1961 (I)	10	24	34	32
December 1969(IV)	November 1970 (IV)	11	106	117	116
November 1973(IV)	March 1975 (I)	16	36	52	47
January 1980(I)	July 1980 (III)	6	58	64	74
July 1981(III)	November 1982 (IV)	16	12	28	18
July 1990(III)	March 1991(I)	8	92	100	108
March 2001(I)	November 2001 (IV)	8	120	128	128
December 2007 (IV)	June 2009 (II)	18	73	91	81
Average, all cycles:					
1854-2009 (33 cycles)		16	42	56	55*
1854-1919 (16 cycles)		22	27	48	49**
1919-1945 (6 cycles)		18	35	53	53
1945-2009 (11 cycles)		11	59	73	66

Source: NBER

That’s Also How to Think About Stocks

The Long Term Investment Cycle

Gain, Decline, Recovery - The Standard & Poor's 500 Stock Index



	Decline & Recovery From Date	Decline & Recovery To Date	Decline & Recovery Duration Years	Gain From Date	Gain To Date	Gain Duration Years
1	May-1946	Sep-1950	4.33	Sep-1950	Dec-1952	2.25
2	Dec-1952	Mar-1954	1.25	Mar-1954	Jul-1956	2.34
3	Jul-1956	Sep-1958	2.17	Sep-1958	Jul-1959	0.83
4	Jul-1959	Jan-1961	1.51	Jan-1961	Dec-1961	0.91
5	Dec-1961	Aug-1963	1.66	Aug-1963	Jan-1966	2.42
6	Jan-1966	Apr-1967	1.24	Apr-1967	Nov-1968	1.59
7	Nov-1968	May-1972	3.50	May-1972	Dec-1972	0.59
8	Dec-1972	Jul-1980	7.58	Jul-1980	Nov-1980	0.33
9	Nov-1980	Dec-1982	2.08	Dec-1982	Jun-1983	0.50
10	Jun-1983	Jan-1985	1.59	Jan-1985	Aug-1987	2.58
11	Aug-1987	Jul-1989	1.92	Jul-1989	May-1990	0.83
12	May-1990	Feb-1991	0.75	Feb-1991	Jun-1998	7.33
13	Jun-1998	Nov-1998	0.42	Nov-1998	Aug-2000	1.75
14	Aug-2000	May-2007	6.75	May-2007	Oct-2007	0.42
15	Oct-2007	Mar-2013	5.42			

Decline & Recovery		Gain	
Time in Decline or Recovery	63%	Time Gaining	37%
Total number of years	42.2	Total number of years	24.7
Longest in years	7.6	Longest in years	7.3
Average in years	2.8	Average in years	1.8
Shortest in years	0.4	Shortest in years	0.3

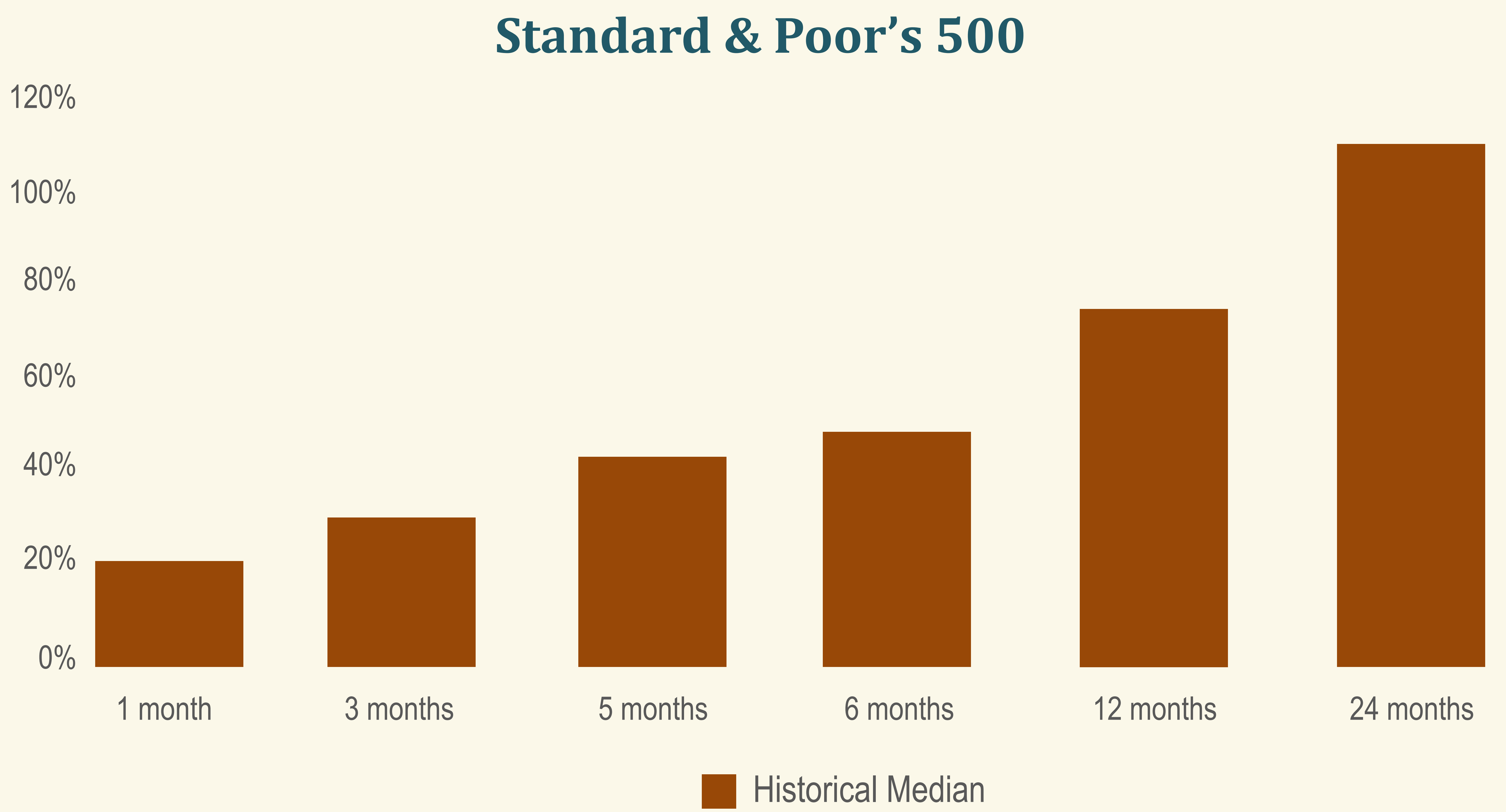
$1.00 Invested 5/31/46 • Ending Value: $81.81 (March 31, 2013) • Compound Annual Rate: 6.8%
Data is based on capital appreciation, month end data, and declines of 10% or greater.

Headlines and Stocks:

Headlines During 100%+ Stock Market Gain: Anemic economic growth, jobs growth, high unemployment rates, European debt crisis, Middle East tension, China slowing, Japanese Tsunami, BRICs slowing, unprecedented monetary experimentation

But Not Anomalously So: 24 Months after Corrections

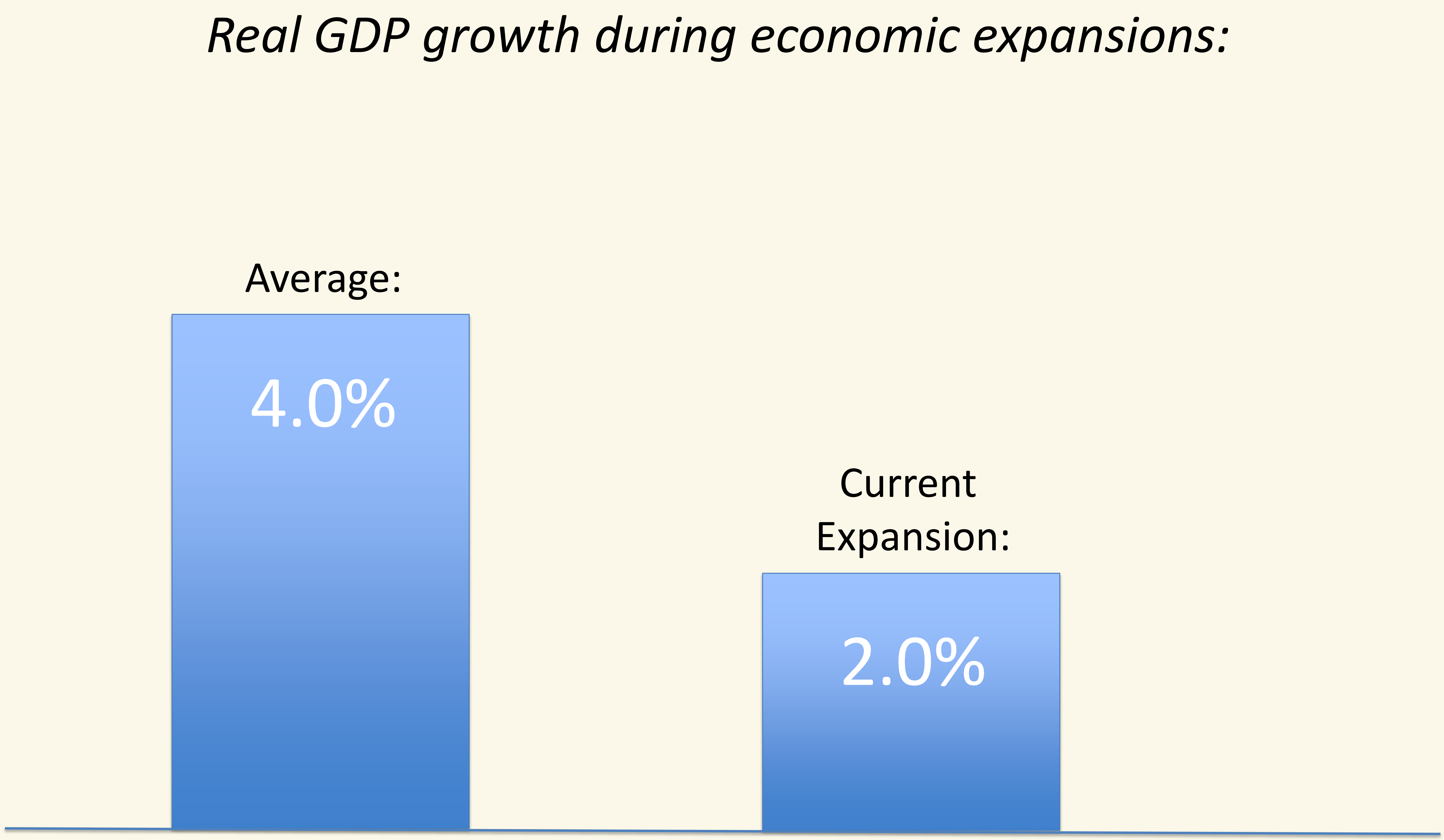
Historically, market has regained value within 24 Months – average rebound following declines of 10% or more since 1926



Past performance does not guarantee future results.

Source: Banc of America Securities – Merrill Lynch US Equity Strategy

That Makes Sense: Current Expansion is About Half as Strong as Normal



Source: CrandallPierce; IMF

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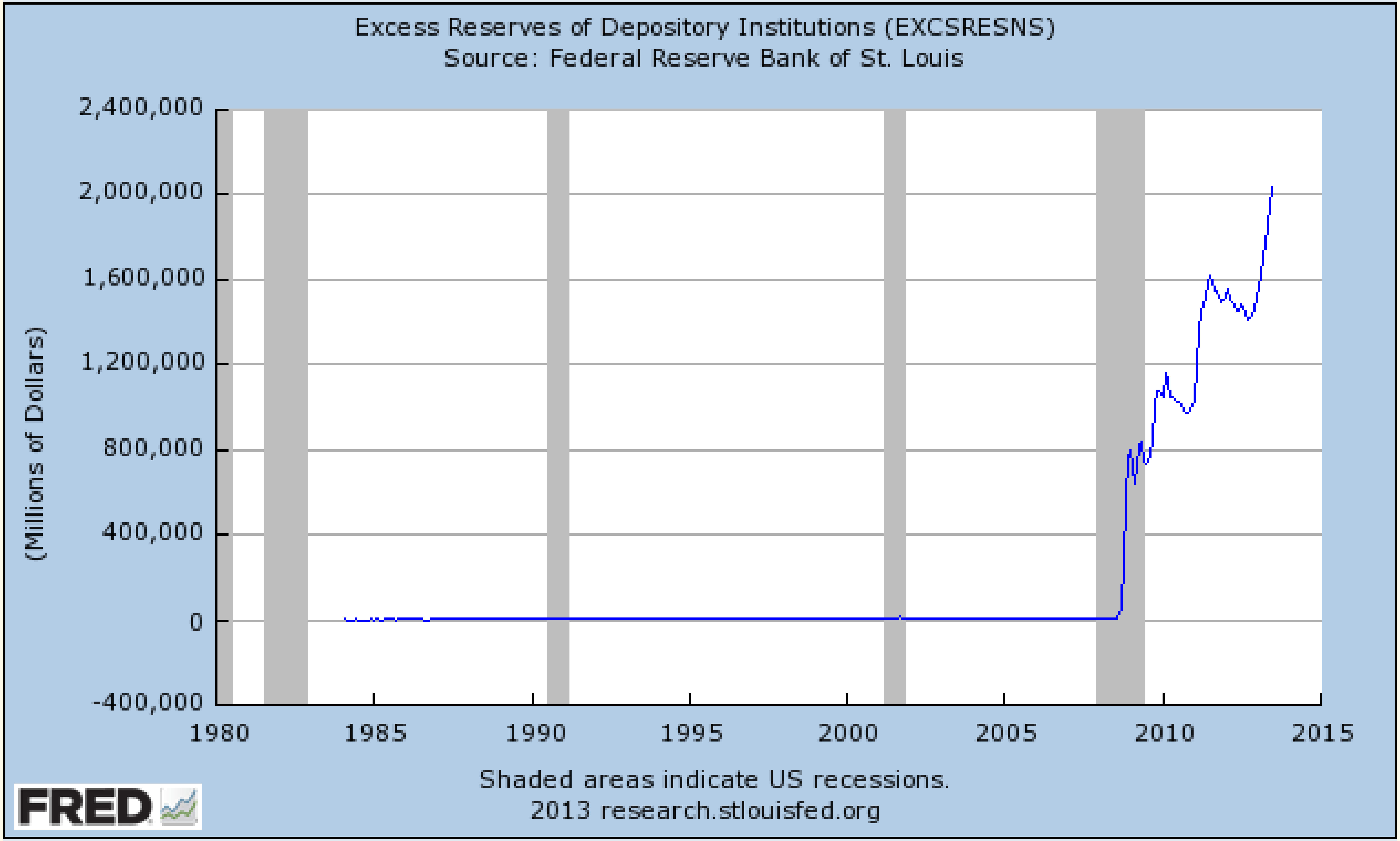
The Fed Has Created Excess Reserves



Source: Board of Governors of the Federal Reserve System | 2013 research.stlouisfed.org

The Financial Crisis: Long Story Short

- From 1929 to 1933 the Federal Reserve stood by and allowed the banking system to collapse as it failed to provide liquidity or act as a lender of last resort

- The Fed has done the opposite in every crisis since and depression has been averted

It is almost impossible to imagine a central bank response more directly opposite to that of the Great Depression than what we are seeing today.

Verdict (Lucas)

This is good central banking!

The Fed is acting boldly as lender of last resort, just as it should have done in the 1930s, and failed to do.

Source: Robert E. Lucas, Jr. The Current Financial Crisis, Universidad Torcuato di Tella, December 9, 2008

A Game Changer in 2008

Bloomberg

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Fed Asks Congress for Power to Pay Interest on Reserves Sooner

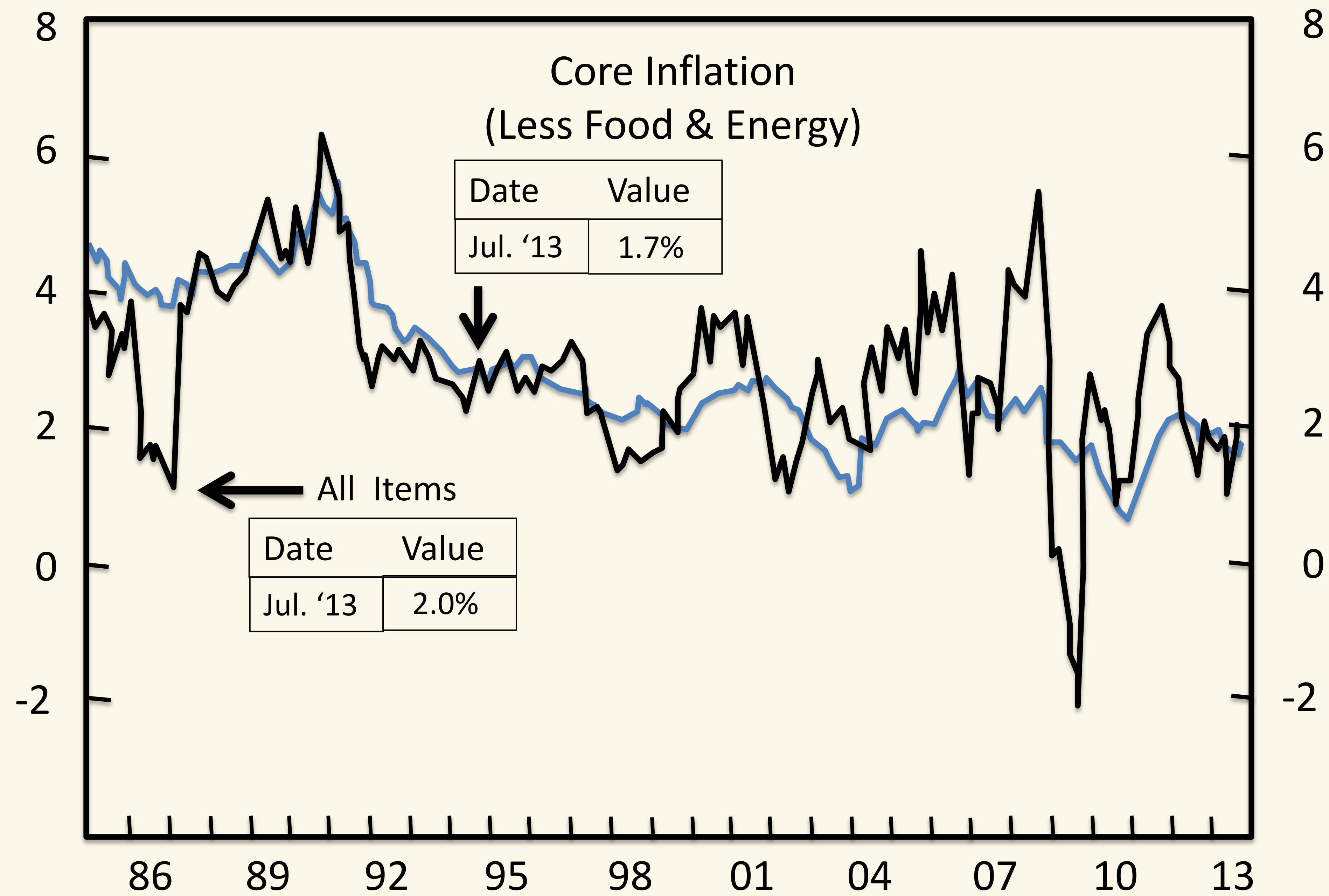
By Craig Torres – May 6, 2008 23:49 EDT

Source: www.bloomberg.com

Core Inflation is in Check

Headline CPI versus Core CPI

Year-over-Year Percent Change

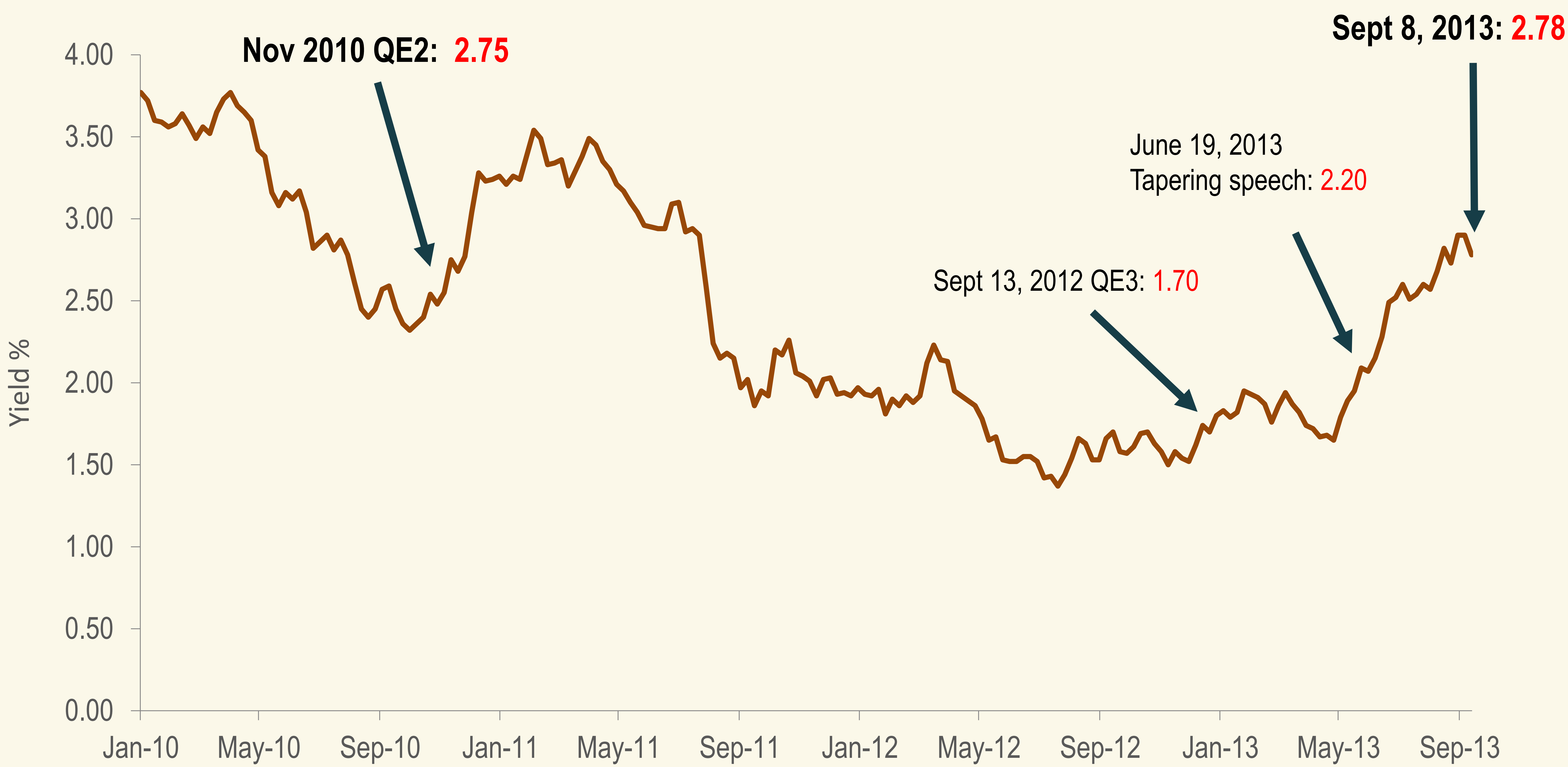


As of July 31, 2013

Fed: Summer Rates Surge Largely Reversed QE2 and QE3

Term Premium: Difference Between 10-Year U.S Treasury and 3-Month T-bill

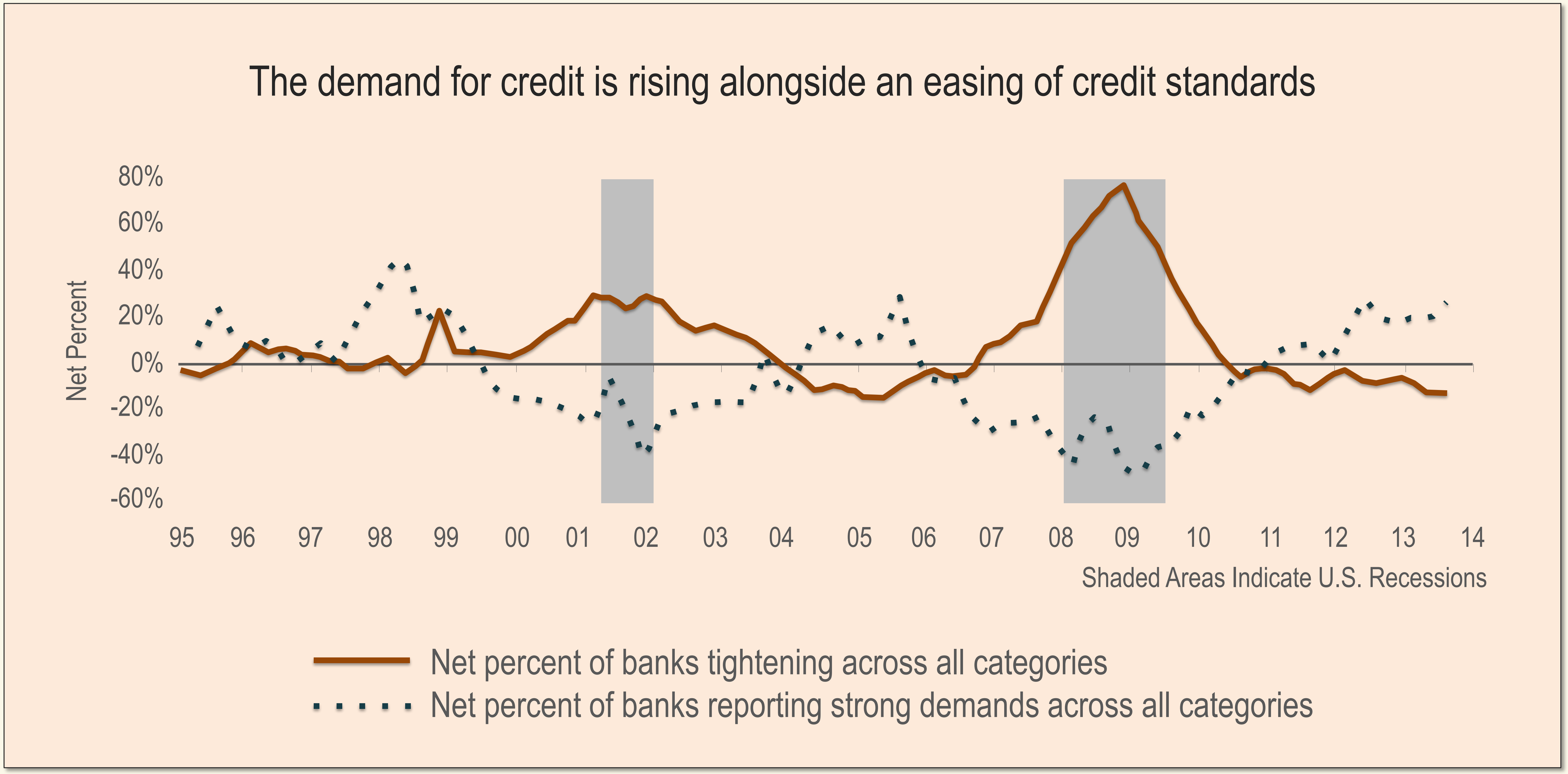
January 1, 2010 – September 8, 2013



Source: St. Louis Federal Reserve Bank

Credit Conditions are Improving Despite Higher Rates

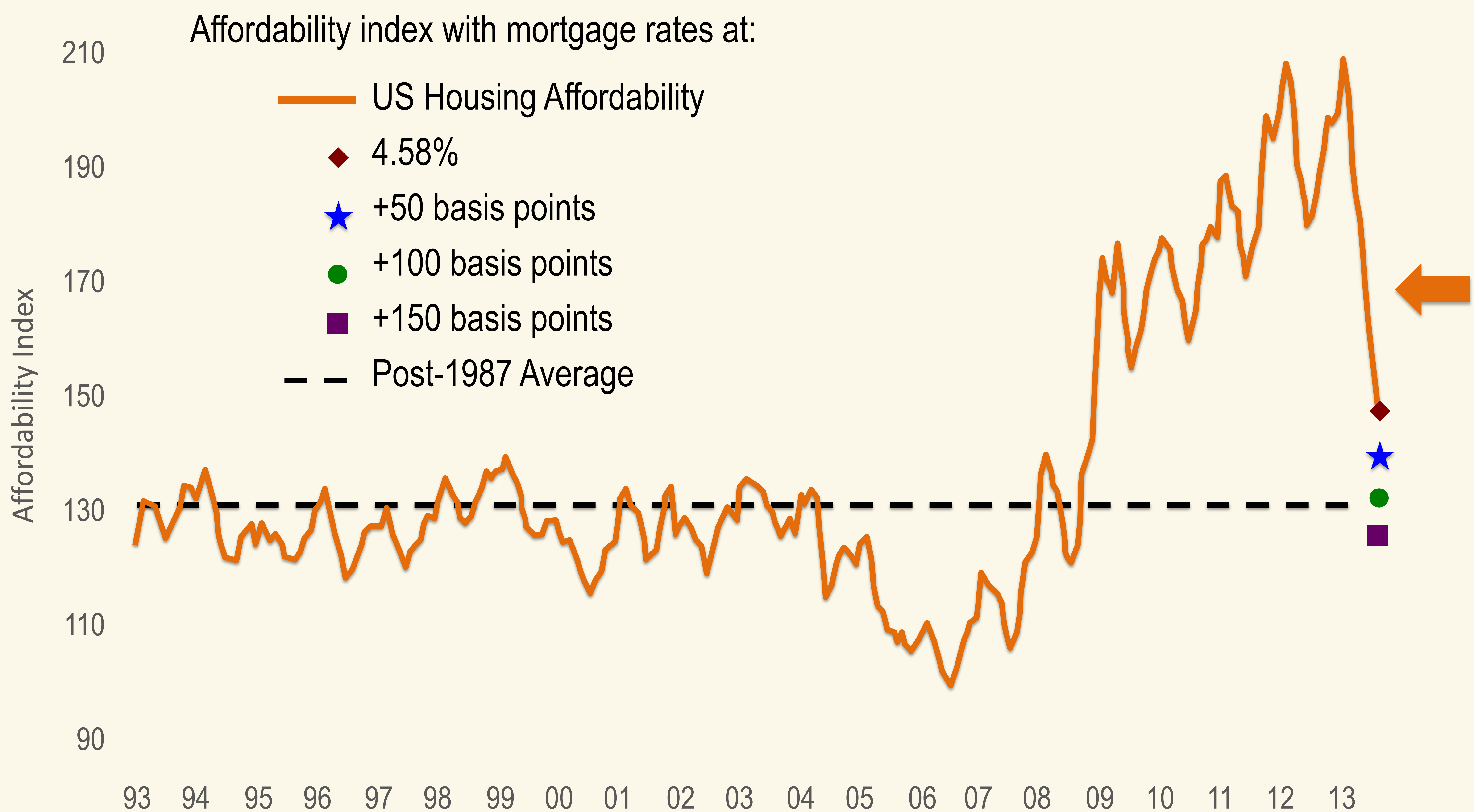
"More credit is available, albeit at a higher price…
The price of credit has increased, but so too has its availability"



Source: Deutsche Bank

Impact of Rates on Housing Affordability

Mortgage interest rates need to rise by another 100 basis points to 5.6% to bring housing affordability in line with its historical average



Source: Thomson Reuters, Credit Suisse Research

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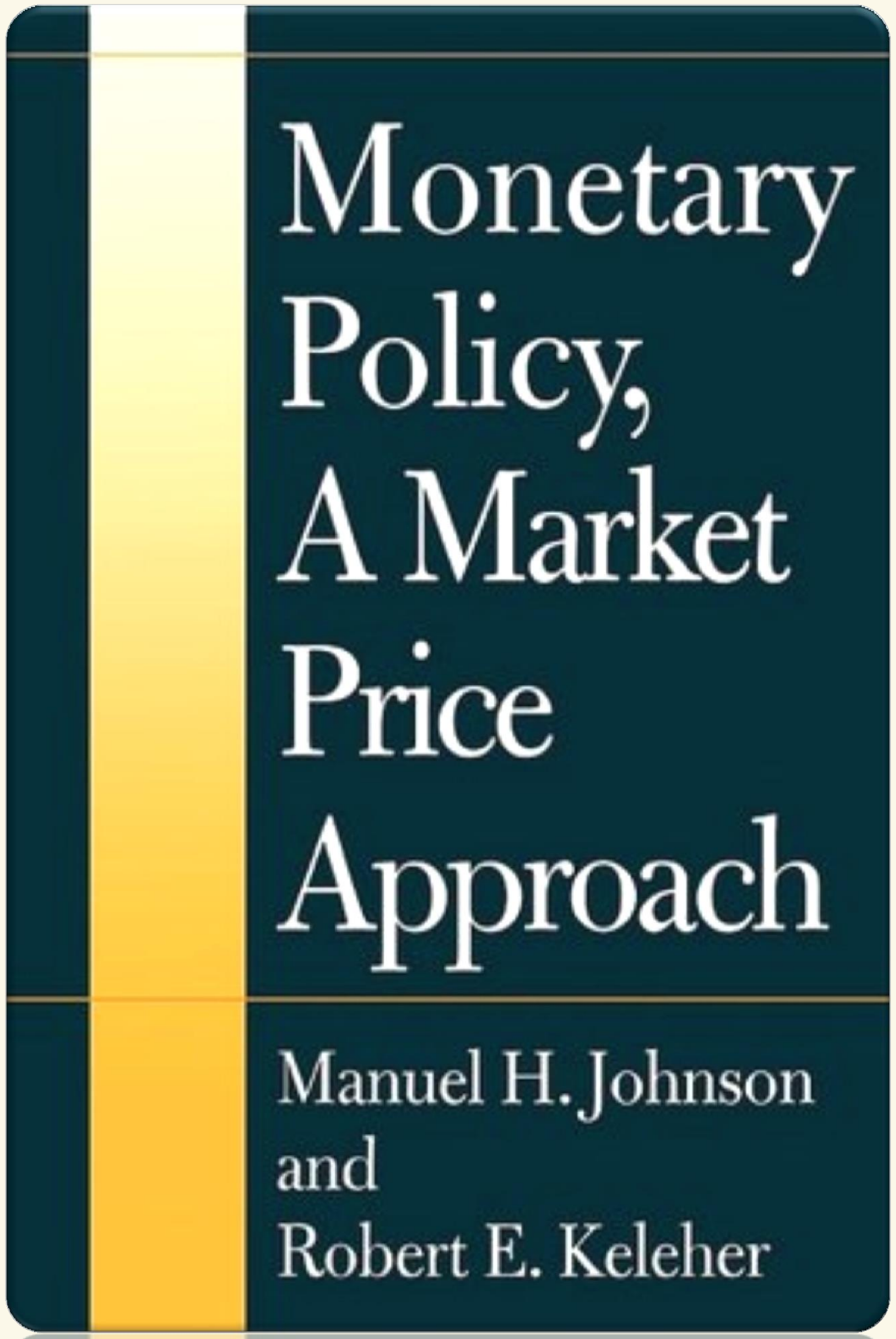
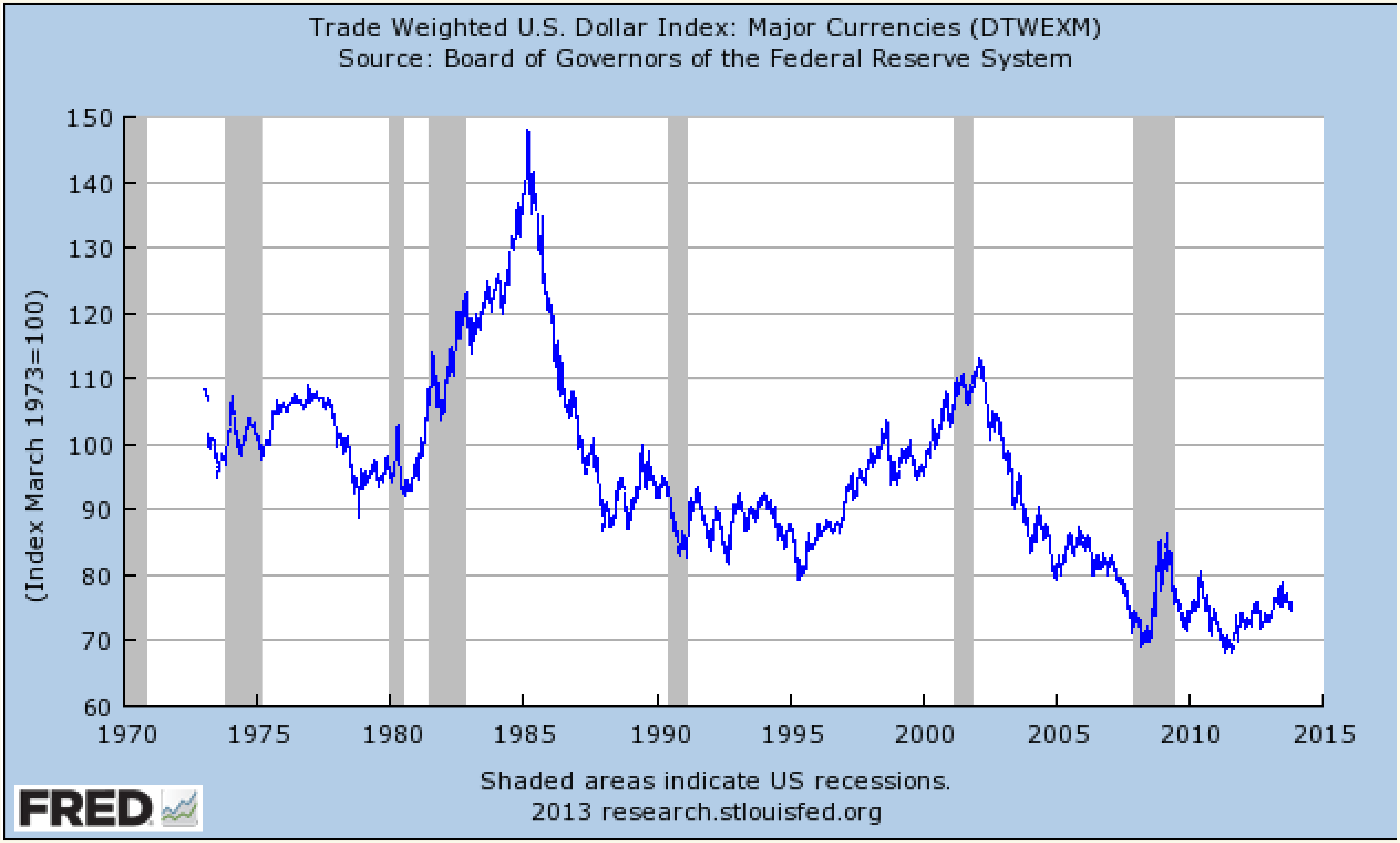

Monetary Policy, A Market Price Approach
Manuel H. Johnson
and
Robert E. Keleher

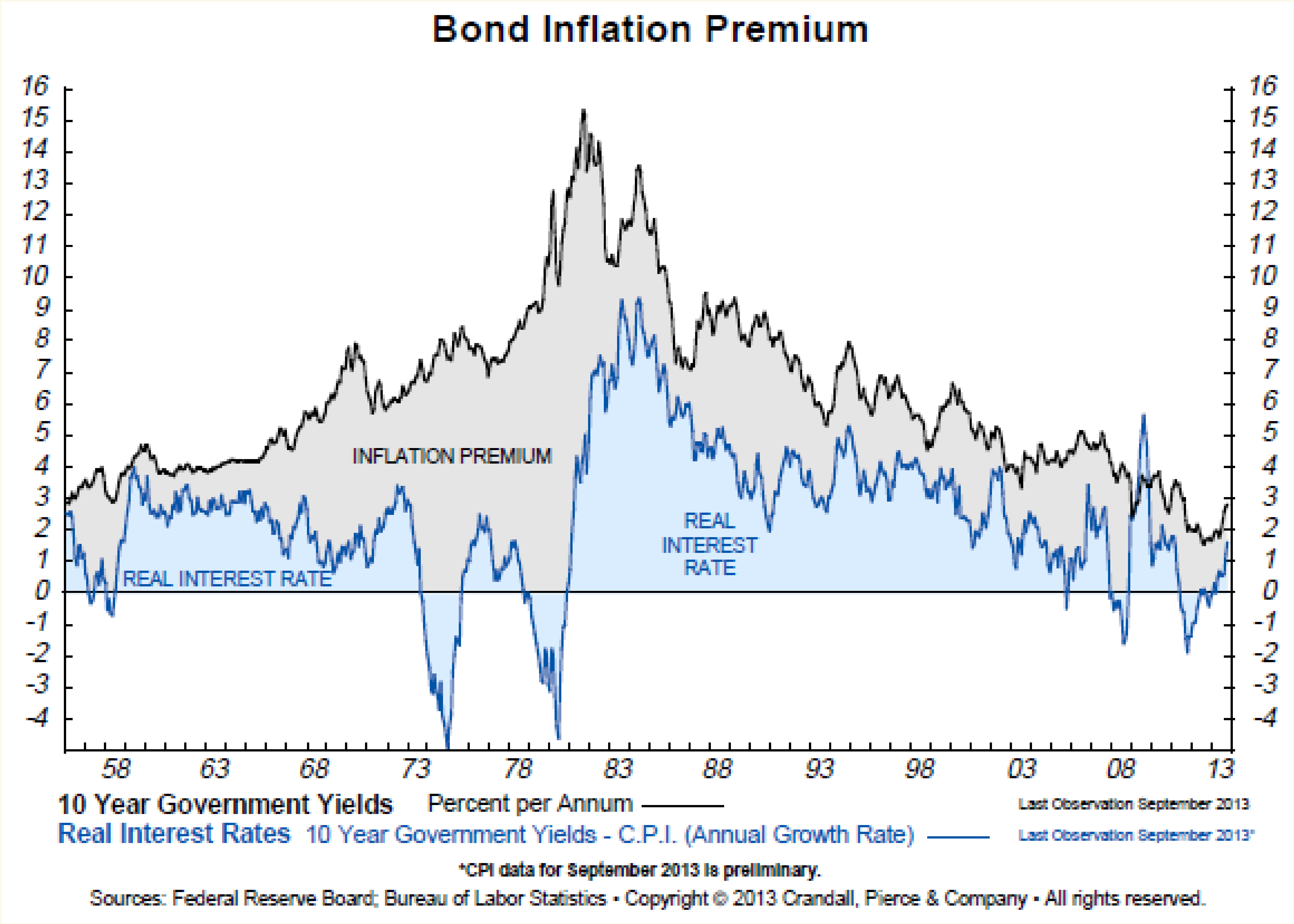
No Inflation Signal From the Dollar



The dollar has been strengthening, not weakening

Source: Federal Reserve Bank of Saint Louis. As of November 1, 2013

That's Also What the Bond Market is Telling Us



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Measuring Financial Stress

Interest Rates:

- Effective federal funds rate
- 2-year Treasury
- 10-year Treasury
- 30-year Treasury
- Baa-rated corporate
- Merrill-Lynch High-Yield Corporate Master II Index

Yield Spreads:

- Yield curve: 10-year Treasury minus 3-month Treasury
- Corporate Baa-rated bond minus 3-moth Treasury
- Merrill Lynch High-Yield Corporate Master II Index minus 10-year Treasury
- 3-month London Interbank Offering Rate-Overnight Index Swap (LIBOR-OIS) spread
- 3-month Treasury-Eurodollar (TED) spread

Other Indicators:

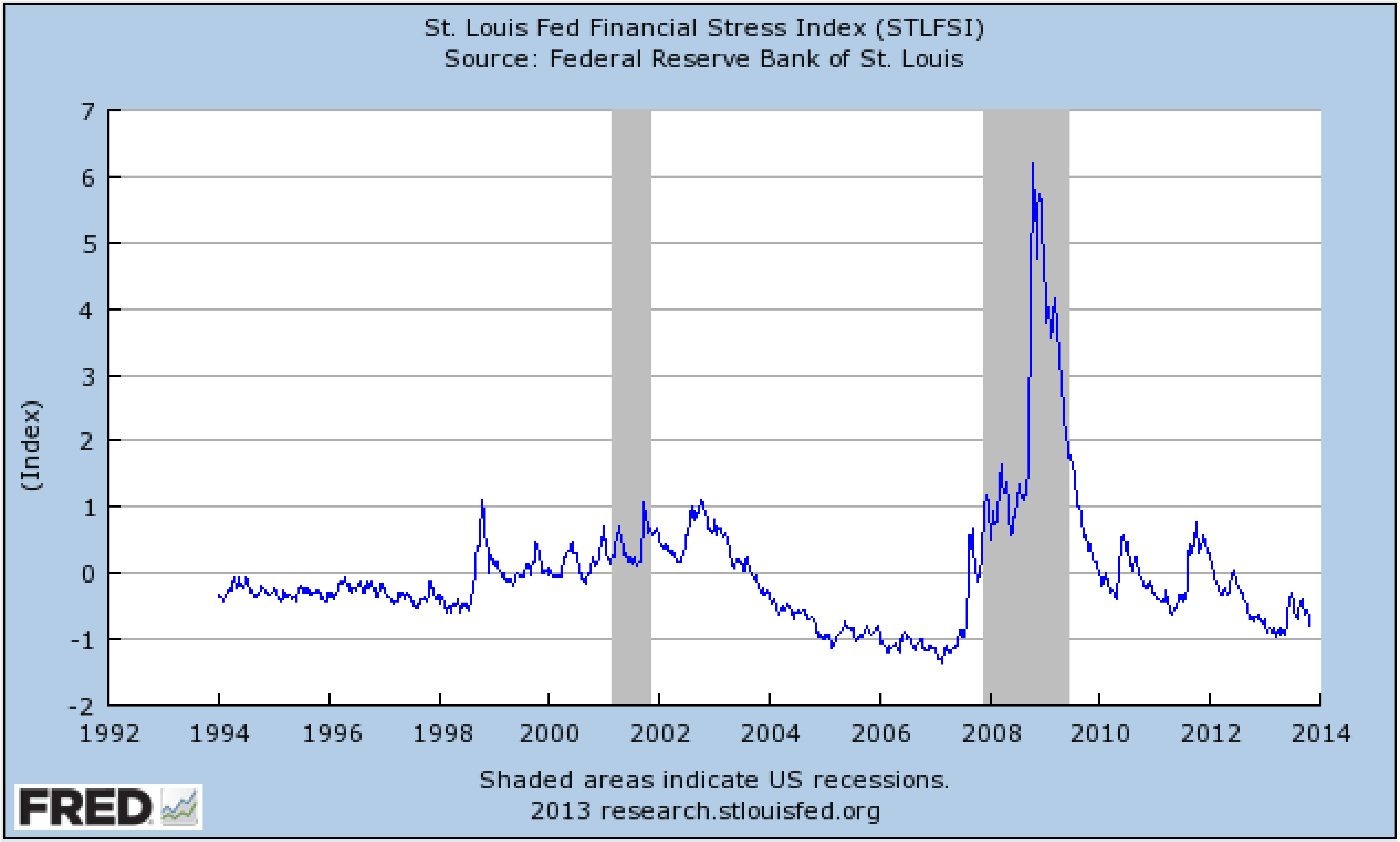
- J.P. Morgan Emerging Markets Bond Index Plus
- Chicago Board Options Exchange Market Volatility Index (VIX)
- Merrill Lynch Bond Market Volatility Index (1-month)
- 10-year nominal Treasury yield minus 10-year Treasury Inflation Protected Security yield (breakeven inflations rate)
- Vanguard Financials Exchange-Traded Fund (equities)

Source: Federal Reserve Bank of St. Louis

Onto the Outlook: Global Risk is Down

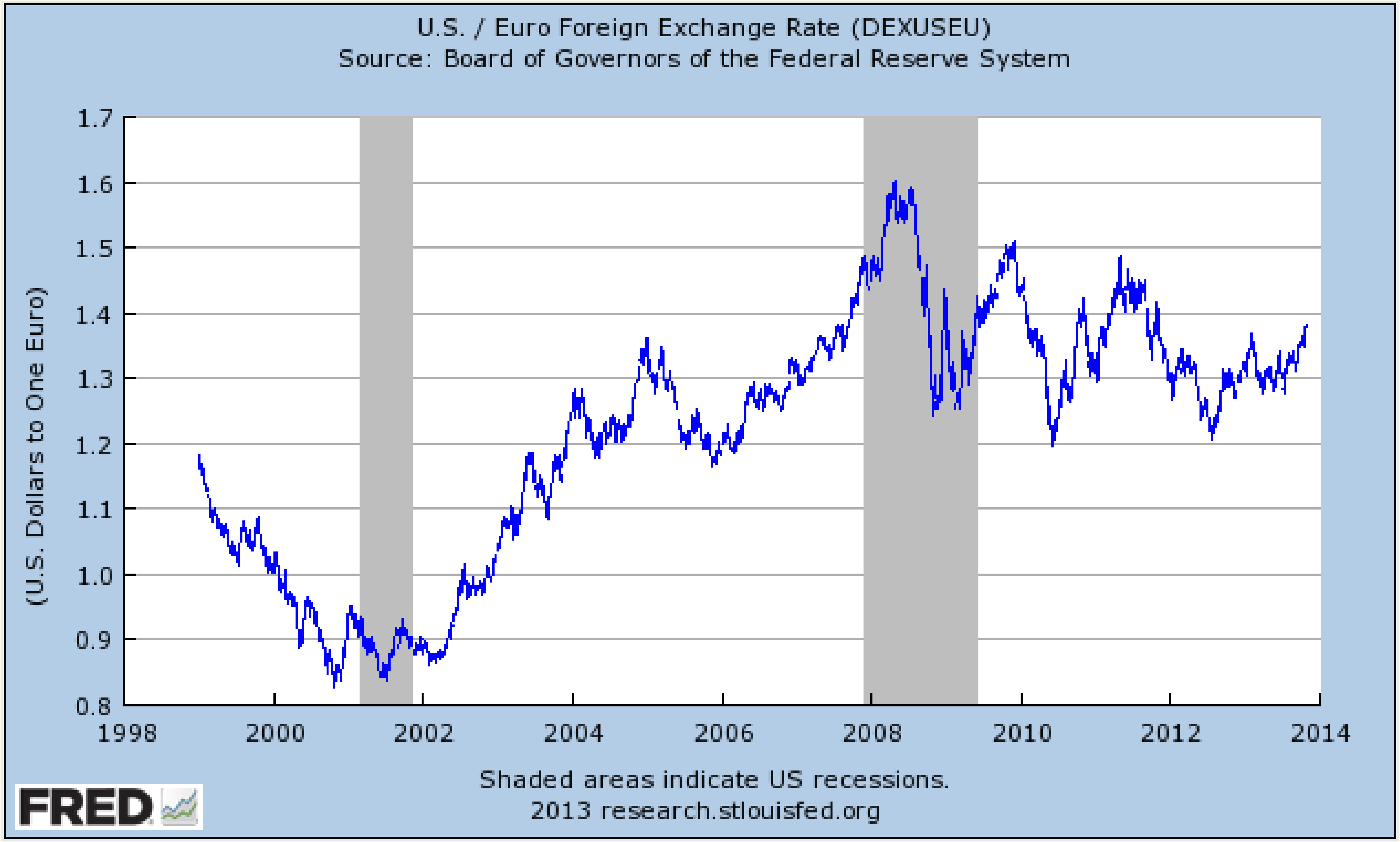
St. Louis Financial Stress Index | STLFSI

December 31, 1993 – October 31, 2013



Source: Federal Reserve Bank of St. Louis

Prices Lead Quantities: The Euro/Dollar Exchange Rate



"A great risk to recovery in the U.S. is a strong dollar and a great risk to fiscal insolvency in Europe is a strong euro. Actions to stabilize the dollar-euro rate (with the Fed supporting the euro when it went, say, below $1.25 and the ECB supporting the dollar when the euro went to $1.35) would remove the instability of the dollar-euro exchange rate as a threat to global prosperity and would benefit the entire world economy."

-Robert Mundell

Source: Federal Reserve Bank of St. Louis. Robert Mundell Quoted on Bloomberg

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- Current Fed Policies
- **Practical Diversification Tools**

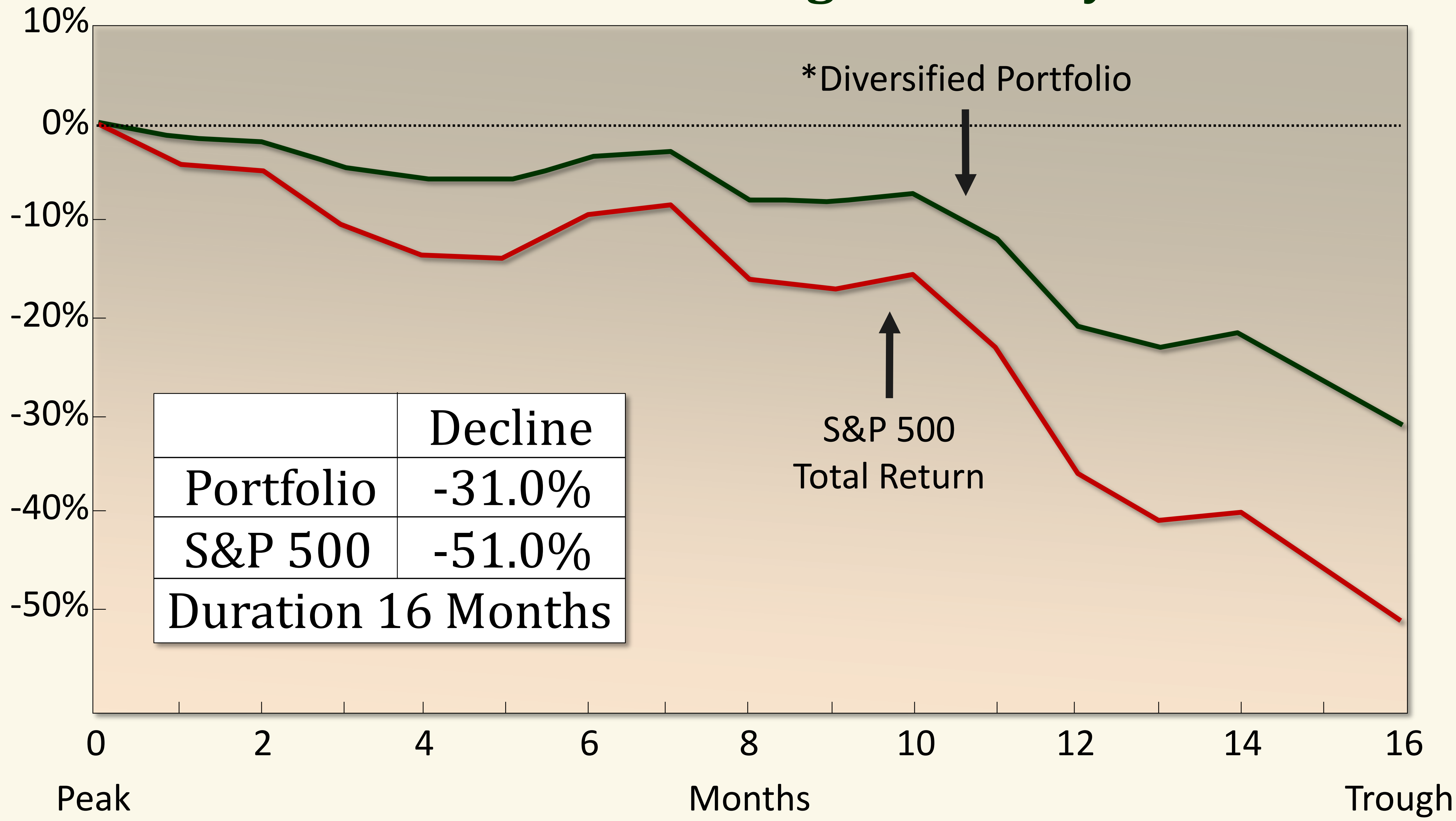
Practical Diversification Tools

- Stocks and Safe Bonds
- Within Stocks: Value and Growth
- Within Stocks: Sector Constraints
- Using Individual Stocks (but not too many!)

But Not Just Any Bonds!

Correlations With S&P 500: 1 yr Holding Periods - 1991 Through July 2010				
MSCI World Ex. US Stocks	Barclays High Yield Bonds	Wilshire REIT Index	DJ-UBS Commodity Index	Intermediate Treasury Bonds
.76	.63	.55	.31	-.19

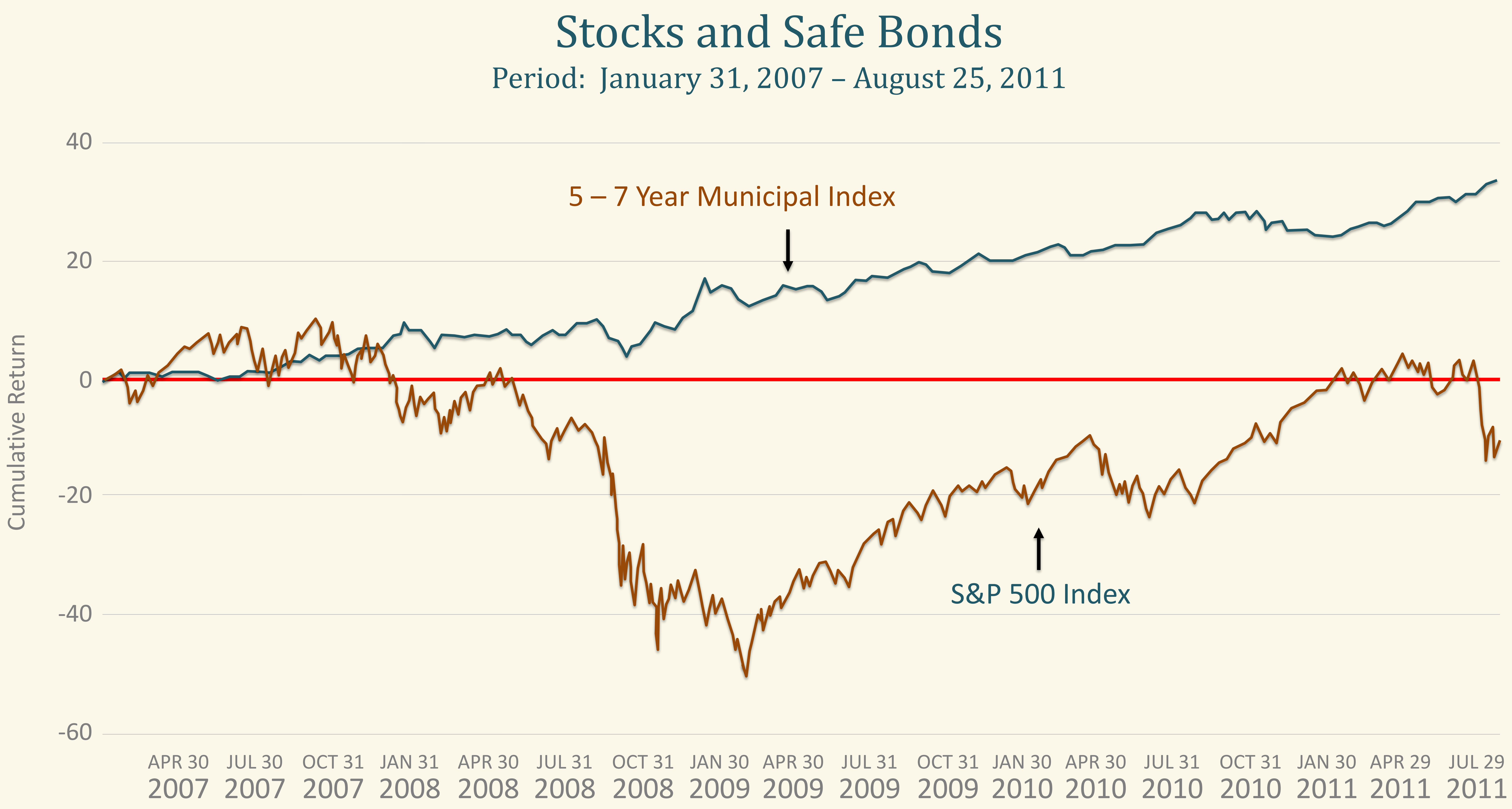
November 2007 through February 2009



	Decline
Portfolio	-31.0%
S&P 500	-51.0%
Duration 16 Months	

*The diversified portfolio includes 60% S&P 500 and 40% Intermediate Treasury Bonds.

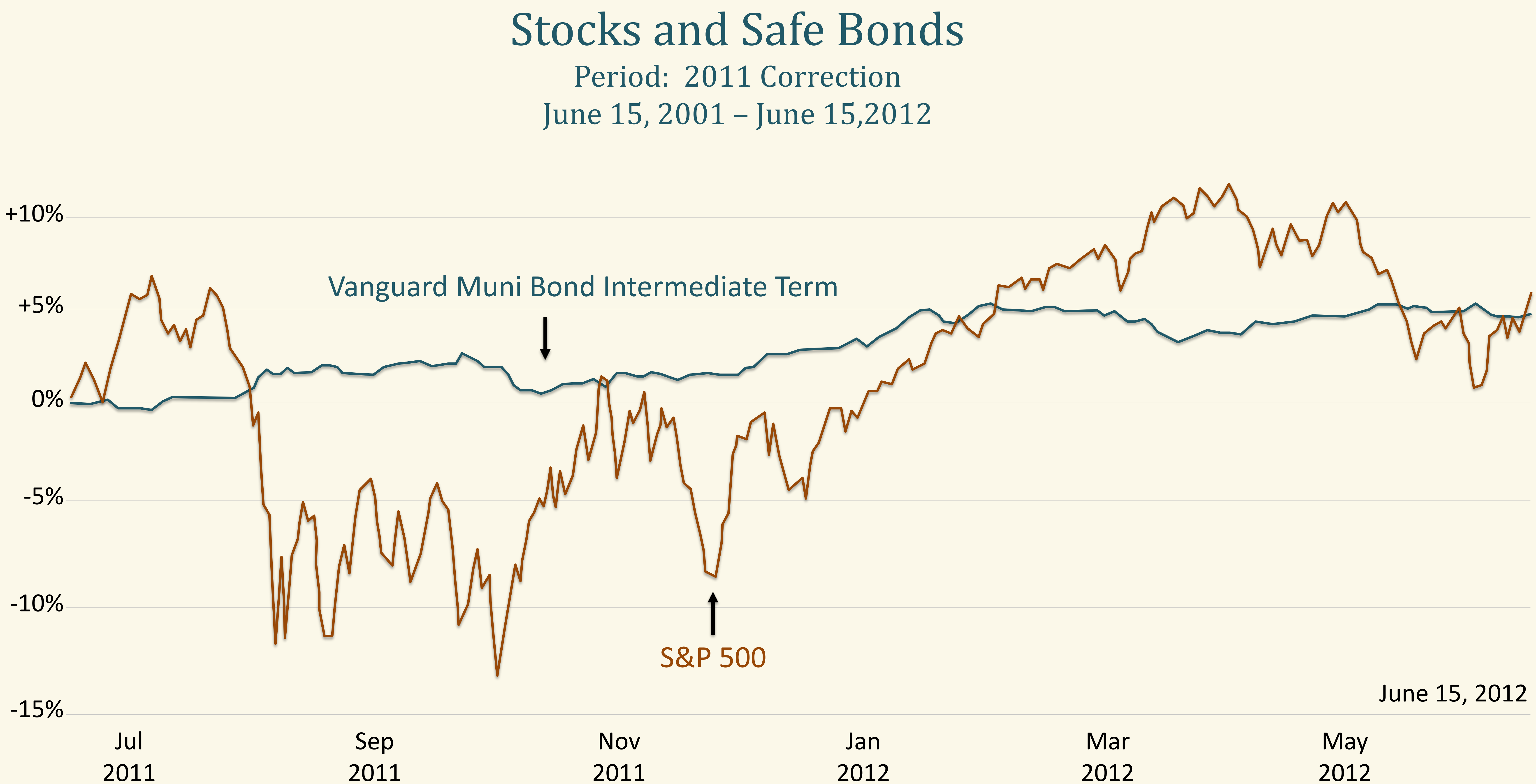
Owning Safe Bonds is Important to Manage “Tail Risk”



Past performance does not guarantee future results.
There is a risk of loss.

Source: Bloomberg

And the 2011 Correction



Past performance does not guarantee future results.
There is a risk of loss.

Source: Yahoo Finance

And You Can't Time the Market

"Our paper explores the out-of-sample performance of these variables ***[P/E ratios, dividend payout ratios, price-to-book, credit spreads, yield curves]*** *and finds that not a single one would have helped a real-world investor…Most would have outright hurt. Therefore, we find that, for all practical purposes, the equity premium [overall stock market valuation] has not been predictable."*

– *Review of Financial Studies*, July 2008

Michael Brennan Award for Best Paper at the Reviews

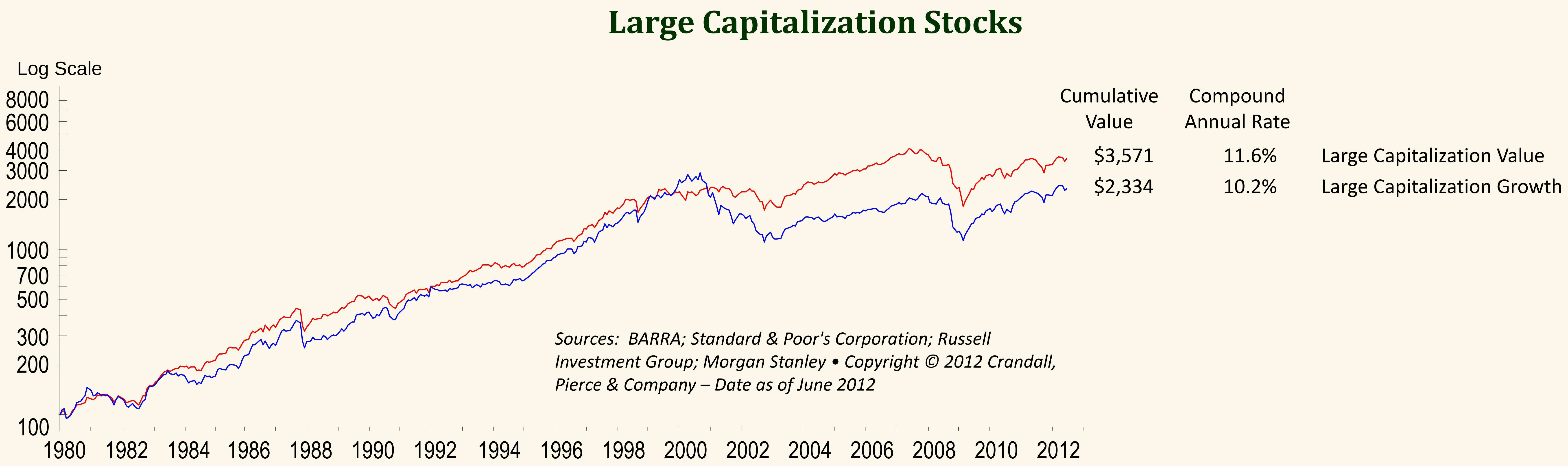
Ivo Welch, Yale University and National Bureau of Economic Research; Amit Goyal, Emory University

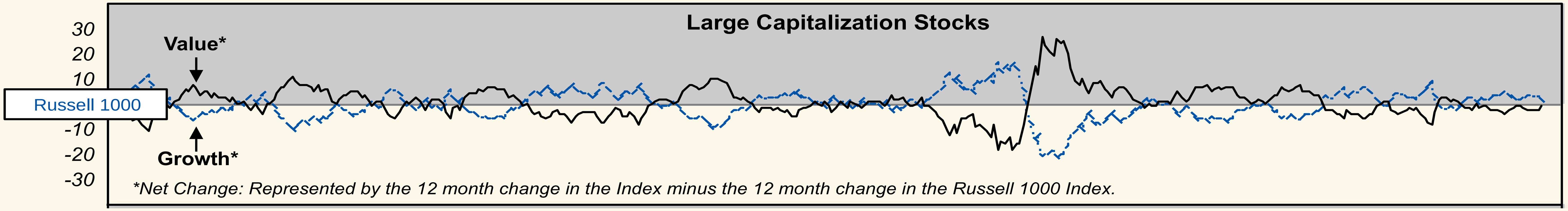
NOTE

'Out of sample' means using only data that would actually have been available at the time.

The 'equity risk premium' is the extra return that equity investors demand over bonds because of risk. It reflects the market's overall valuation.

Within Stocks: Value & Growth





Shaded area indicates periods where Value Stocks or Growth Stocks have outperformed the benchmark index.
Total Return – Last Observations June 2012

AFA 2010 Atlanta Meetings Paper

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Value and Momentum Everywhere

Clifford S. Asness
AQR Capital Management, LLC

Tobias J. Moskowitz
University of Chicago - Booth School of Business

Lasse Heje Pedersen
New York University (NYU) - Department of Finance; National Bureau of Economic Research (NBER)

March 6, 2009

Their Conclusion

"In every market and asset class, a value and momentum combination outperforms either value or momentum by itself in terms of risk and return… applied not only to US equities but also to stocks in Japan, the UK, and continental Europe, and to country equity index futures, currencies, commodity futures, and bonds."

Source: Asness, Moskowitz, Pedersen, "Value and Momentum Everywhere, " NBER, 2009.

Sector Constraints

Overall Stock Market Bubbles are Rare

- Two in the last 50 years
  - 1967-1972: Mostly concentrated “Nifty 50” stocks
  - 1997-2001: Mostly concentrated in IT, Telecommunications, Media “New Economy” stocks

Individual Company Stock Bubbles are Rare

- Studies 3560 Companies trading above $1bb market cap any year between 1982 and 2007
- Only 123 considered a bubble, defined as (a) P/E double that of the S&P 500, (b) Share price decline > 30% in a year not based upon a substantial decline in earnings
- Fully 92 of those were IT, Telecomm, Media stocks during tech boom
- Of remaining 31, only 7 ever achieved a market cap > $5bb

Conclusion: “Sector bubbles” are most common (e.g. financials recently, biotech stocks 2005-06, tech, energy, consumer stocks)

Source: Koller, T. et al, Valuation, New York: Wiley, 2010.

Recent Studies of Sector Caps

Eakins and Stansell, *Journal of Asset Management (2007):*

Analyzed the returns that could be achieved by rebalancing when any one sector grew to a trigger threshold. By evaluating different trigger points they determined that the optimal portfolio returns were achieved when the portfolio was rebalanced when any sector grew to more than 9% of the total portfolio. They had used 19 sector funds (a mix of broad *Sector* and narrower *Industry* funds) from the years 1995 to 2002 with initial equal weights in each sector of 5.25%.

- They found that consistent rebalancing *"reduced investor exposure to sectors that have grown rapidly and may experience reduced performance."*

- They also looked at the effect of dropping the internet sector and found that:

> *"Without this sector there were no gains to rebalancing."*

Their Conclusion: *"A much longer time series will be needed to draw firmer conclusions as to which strategy will surface as superior in the long run."*

Source: Eakins, S. and Stansell, S. "An Examination of alternative Portfolio Rebalancing Strategies Applied to Sector Funds," Journal of Asset Management (2007).

Consistency of Outperformance

Year-by-year, the 10% cap with monthly rebalancing produced a higher risk/return ratio in 14 years, or 73% of the time over the 19 full-year periods. It produced a lower maximum drawdown in 18 years, or 95% of the time. These results were calculated from the table below:

Year-by Year Results: 10% Strategy versus the S&P 500 Index

Description	10 % Cap				S&P 500				Comparisons	
Year	Absolute Annual Return	Standard Deviation	Return/Risk	Maximum Drawdown	Absolute Annual Return	Standard Deviation	Return/Risk	Maximum Drawdown	Return/Risk 10% Strategy Minus Market	Max. Drawdown Market Minus 10% Strategy
1989	2	8.7	22.98850575	7.1	2	8.7	22.98850575	7.1	0	0
1990	-2.7	15.9	-16.98113208	18.9	-3.1	16.1	-19.25465839	19.2	2.27352631	0.3
1991	29	14.1	205.6737589	12.9	30.5	14.3	213.2867133	14	-7.612954421	1.1
1992	7.9	9.5	83.15789474	5.5	7.6	9.7	78.35051546	5.6	4.807379273	0.1
1993	11.3	8.6	131.3953488	4.4	10.1	8.6	117.4418605	4.8	13.95348837	0.4
1994	2.2	9.8	22.44897959	8.6	1.3	9.8	13.26530612	8.5	9.183673469	-0.1
1995	37.8	7.6	497.3684211	2.4	37.6	7.8	482.0512821	2.6	15.317139	0.2
1996	21.1	11.3	186.7256637	7.4	23	11.8	194.9152542	7.4	-8.18959052	0
1997	31.8	16.9	188.1656805	9.9	33.4	18.1	184.5303867	10.8	3.635293733	0.9
1998	25.2	18.1	139.2265193	16.8	28.6	20.3	140.8866995	19.2	-1.66018017	2.4
1999	15	15.5	96.77419355	11.3	21	18.1	116.0220994	11.8	-19.2479059	0.5
2000	1.9	17.8	10.6741573	12.2	-9.1	22.2	-40.99099099	16.6	51.66514829	4.4
2001	-9.3	18.4	-50.54347826	23.9	-11.9	21.5	-55.34883721	35.7	4.805358948	11.8
2002	-20.3	25.1	-80.87649402	39.6	-22.1	26	-85	47.4	4.123505976	7.8
2003	27.2	16.1	168.9440994	36.5	28.7	17.1	167.8362573	45.4	1.107842069	8.9
2004	14.4	10.7	134.5794393	12.1	10.9	11.1	98.1981982	25.6	36.38124105	13.5
2005	6.1	10.5	58.0952381	6.8	4.9	10.3	47.57281553	19.5	10.52242256	12.7
2006	18.5	9.9	186.8686869	7	15.8	10	158	11.5	28.86868687	4.5
2007	9.9	15.7	63.05732484	9.3	5.5	16	34.375	9.9	28.68232484	0.6
2008	-35.1	40.2	-87.31343284	48.3	-37	41	-90.24390244	50.7	2.930469603	2.4
2009	-17.7	14.1	-125.5319149	48.8	-18.2	14.7	-123.8095238	51.4	-1.722391084	2.6

Source: Irevna Research, S&P 500

Stocks: Single Stock Diversification

- Many investors follow a 30 stock rule-of-thumb for optimal diversification
- This number comes from research published by James Lorie in 1970
- More recent studies concluded that the optimal number has been increasing over time
- In 2001 the *Journal of Finance* published Burtain Malkiel's work that put the number closer to 50 stocks; others have put it closer to 100
- We target 60 to 80 stocks and hold no more than 3% in any single company

Source: Malkiel, Campbell, et al. "Have Individual Stocks Become More Volatile? An Empirical Exploration of Idiosyncratic Risk," Journal of Finance, vol. LVL No. 1, Feb., 2001

Summary: Enduring Investment Principles

- Don’t try to time the market
- Think hard about your allocation between stocks and bonds – it’s the most important decision investors make
- If you want the benefit of diversification, avoid riskiest bond classes
- Own Value stocks *and* Growth stocks; don’t try to time the style bet
- Own stocks in all sectors, and cap exposure to any one sector at 15%
- Hard to do with funds, easier with individual stocks. Own at least 50, but fewer than 100

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