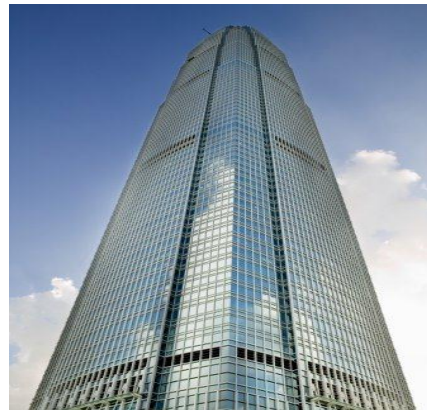


# “International Credit Optimization In The Post-Great Recession Financial System”



**North America Power Credit Organization (NAPCO)  
Chattanooga, TN**

**September 12, 2013**

Jack Malvey, CFA  
Chief Global Markets Strategist  
Director of Center for Global Investment & Market Intelligence  
BNY Mellon Investment Management



**BNY MELLON**

# Agenda

- ◆ Fifth Anniversary of Great Recession: Causes, Effects, and Aftermath
- ◆ Current State and Outlook for Global Capital Markets
- ◆ Big Data/Next Generation Credit Tool
- ◆ International Credit Optimization

# Global Financial Asset Choice Set

## August 31, 2013 and December 31, 2050\*\*

\$380 Trillion as of 8/31/2013: ~\$54,000 Per Global Capita\*\*

Estimated \$5 Quadrillion as of 12/31/2050: ~\$541,000 Per Global Capita\*\*

Global Cash Financial Market Value		Size (U.S.\$ Billion)	
	8/31/2013	CAGR (%)	12/31/2050
<b>Total Debt<sup>1</sup></b>	<b>115,568</b>		<b>1,308,322</b>
Multiverse Index	43,813		784,909
U.S. Aggregate Index	16,489	6%	145,192
Pan-European Aggregate	14,217	8%	251,552
Asian-Pacific Aggregate	8,736	10%	306,633
Global High Yield	1,897	10%	66,602
Canadians	1,162	3%	3,502
Euro Yen	23	3%	68
Other	1,290	6%	11,359
Global Inflation-Linked Securities Index	2,017	5%	12,470
Global Capital Securities	641	2%	1,342
U.S. Municipal Bond Index	1,250	5%	7,726
Global FRNs	816	1%	1,183
Russia, India, and China Aggregate Indices	2,676	10%	93,934
Short-Term Indices	5,241	6%	46,147
Non-Agency U.S. MBS, U.S. Hybrid ARMs	1,005	4%	4,348
U.S. Commercial & Industrial Loans	1,570	4%	6,789
Cash and Cash-Like <sup>6</sup>	56,539	5%	349,474
<b>Total Equity</b>	<b>59,362</b>		<b>742,165</b>
Global Common Equity <sup>2</sup>	55,155	7%	689,567
Private Equity Funds <sup>3</sup>	4,207	7%	52,598
<b>Total</b>	<b>174,930</b>		<b>2,050,488</b>

Global Real Estate Asset Value		Size (U.S.\$ Billion)	
	8/31/2013	CAGR (%)	12/31/2050
<b>Real Estate/Land<sup>4</sup></b>			
Non-U.S. Real Estate	140,981	7%	1,762,604
United States	39,514	5%	244,242
<b>Total</b>	<b>180,495</b>		<b>2,006,846</b>

Global Derivative Financial Markets <sup>5</sup>		Size (U.S.\$ Billion)	
	Notional	Market Value	
<b>Commodities</b>	<b>2,587</b>	<b>358</b>	<b>2,219</b>
Gold	486	53	5%
Other commodities	2,101	306	5%
<b>Currencies</b>	<b>67,358</b>	<b>2,304</b>	<b>33,629</b>
Forwards and forex swaps	31,718	803	6%
Currency swaps	25,420	1,247	8%
Options	10,220	254	8%
<b>Credit Default Swaps</b>	<b>25,069</b>	<b>848</b>	<b>10%</b>
<b>Interest Rate Contracts</b>	<b>489,703</b>	<b>18,833</b>	<b>661,068</b>
Forward rate agreements	71,353	47	10%
Interest rate swaps	369,999	17,080	10%
Options	48,351	1,706	10%
<b>Equity Derivatives</b>	<b>6,251</b>	<b>605</b>	<b>21,236</b>
Forwards and swaps	2,045	157	10%
Options	4,207	448	10%
<b>Other Derivatives</b>	<b>41,611</b>	<b>1,792</b>	<b>62,902</b>
<b>Total</b>	<b>632,579</b>	<b>24,740</b>	<b>810,821</b>
<b>Grand Total</b>		<b>380,165</b>	<b>4,868,155</b>

Global Credit Market Value\* U.S. \$12,722 Bil. as of August 31, 2013

\*Sum of U.S. FRNs, Short-term government/corporate, Pan Euro FRNs, U.S./Canada/Pan-Euro/Asia Pacific/China investment grade corporate, U.S. high-yield FRNs, U.S. high-yield loans, U.S. corporate high-yield, Pan-Euro high-yield, EM (U.S.-dollar denominated), Pan-Euro EM, and U.S. convertibles – all indices from Barclays

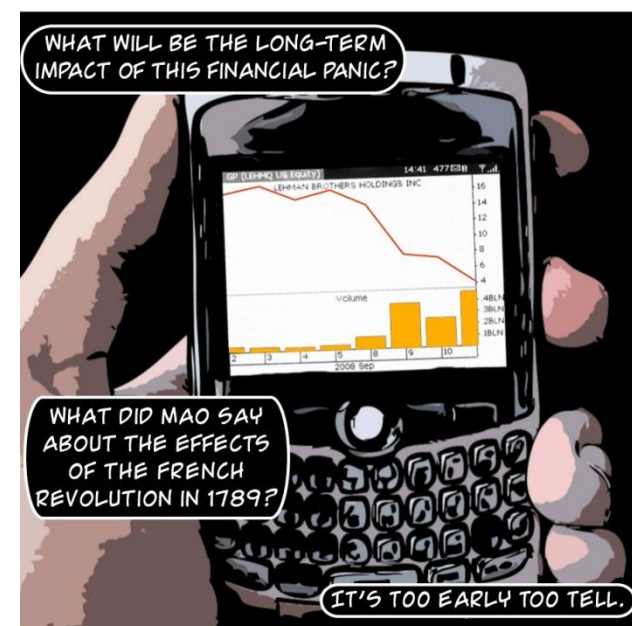
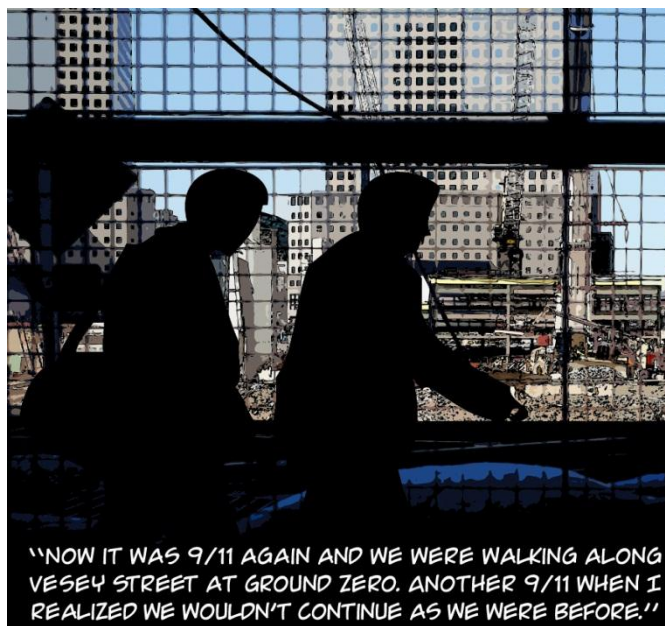
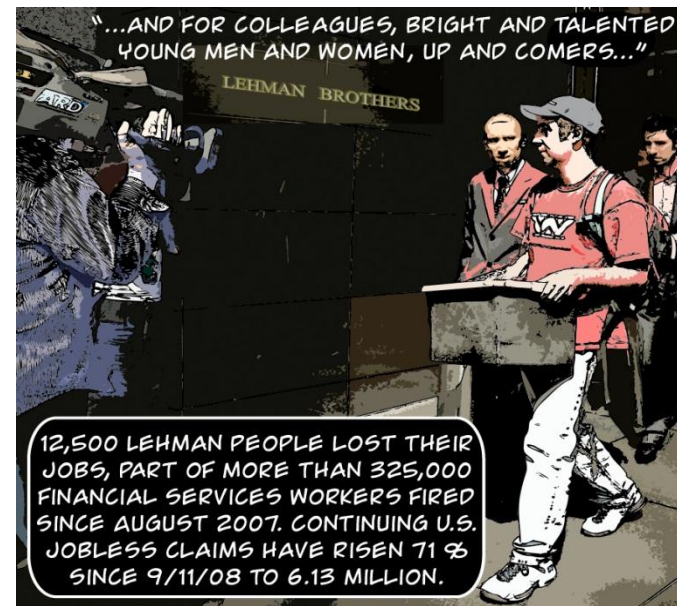
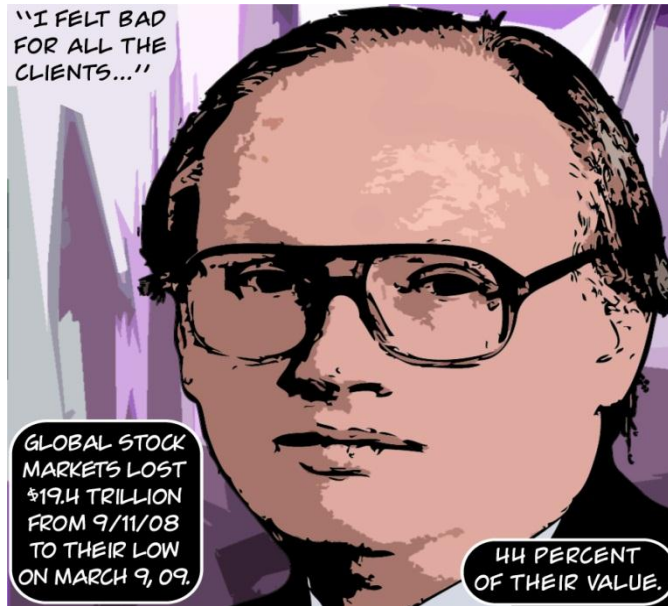
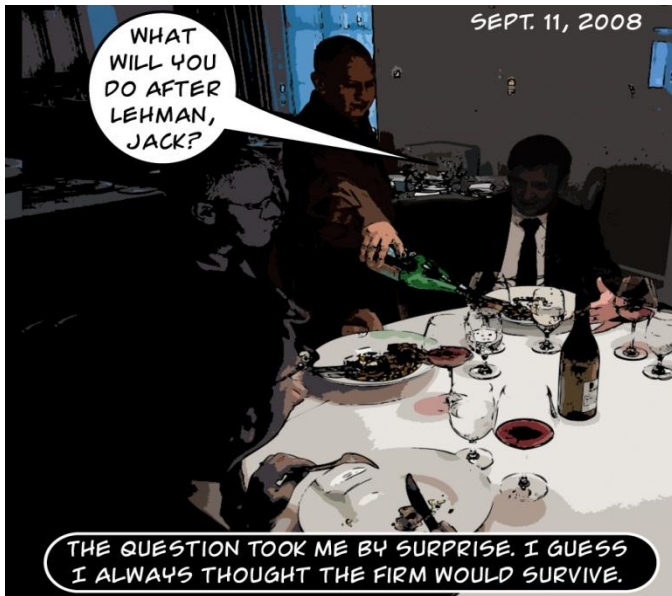
\*\*Population from U.S. Census Bureau World Population Clock; assumed 9 billion world population at year-end 2050; CAGR as shown above based on our historically derived assumptions

1) Barclays Indices data as of August 31, 2013, except U.S. commercial and industrial loans (August 21, 2013), non-agency U.S. MBS (March 29, 2013), and cash and cash-like<sup>6</sup> (see below); 2) Global equity market capitalization per Bloomberg; 3) 2011 private equity global AUM x 2003 to 2011 CAGR estimate of 19% from TheCityUK January 2012 Private Equity report; 4) U.S. data as of March 29, 2013; non-U.S. real estate estimated from U.S. share of global GDP; 5) BIS data as of June 30, 2012, and may not add up exactly to total due to rounding; 6) Cash and Cash-Like: M2 money supply except for India which excludes other deposits with Reserve Bank of India (RBI) as defined by RBI; converted to U.S. \$ using most recent data and exchange rates as of August 31, 2013 for Brazil, Canada, China, Eurozone, Hong Kong, India, Japan, Russia, Singapore, U.K., and U.S.; dates of most recently published data do not exactly match.

Global Financial Asset Choice Set: Intended to be a representation of various market values as defined by the footnotes above and should not be construed as a complete representation of all assets or markets. Sum of asset class components and all asset classes may not add up exactly to total due to rounding

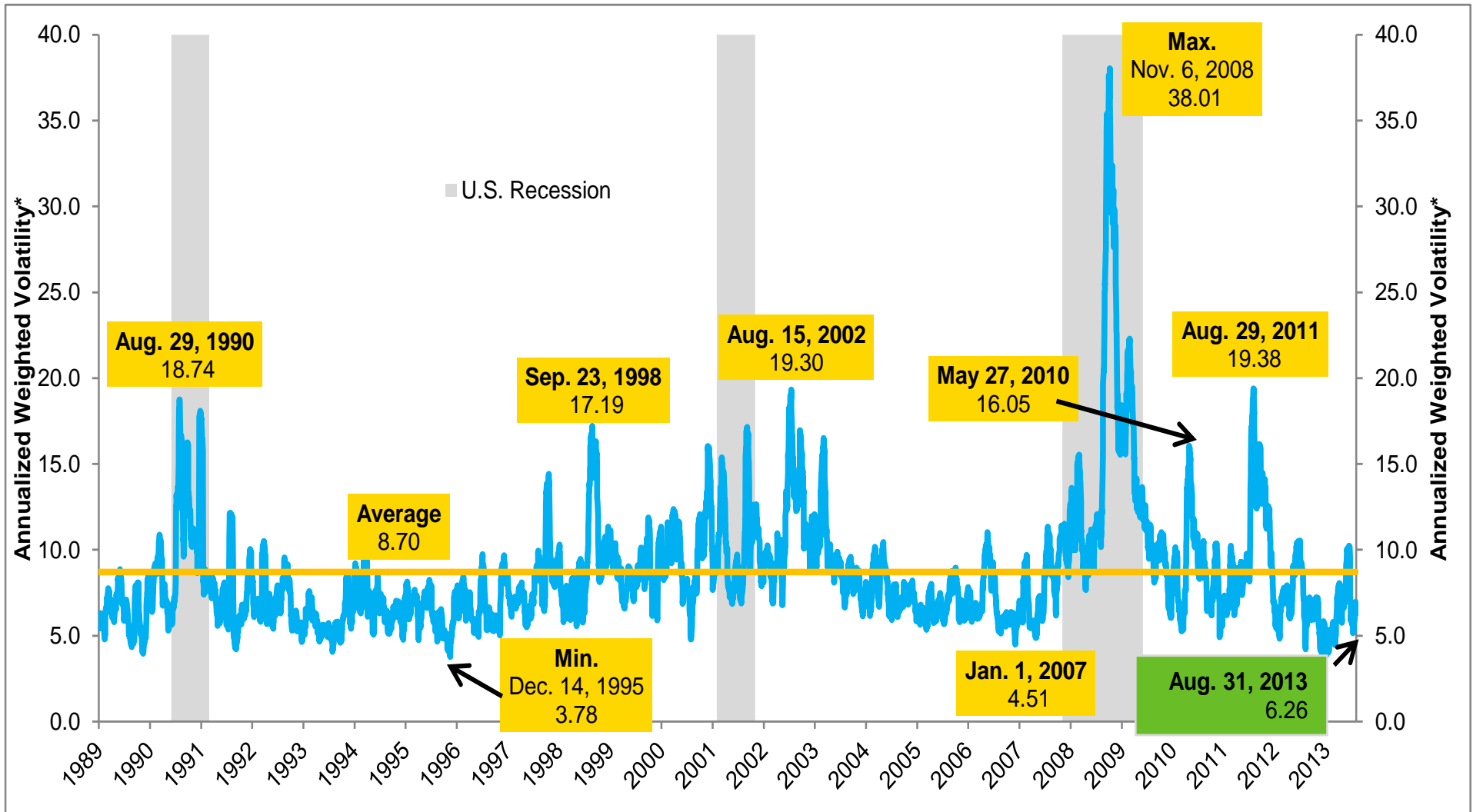
Source: BNY Mellon using data from FactSet, Bloomberg, Barclays Live, IMF, BIS, Preqin, U.S. Census Bureau, and Reserve Bank of India

# A Strategist Reacts to the Fall of Lehman It's Too Early to Tell



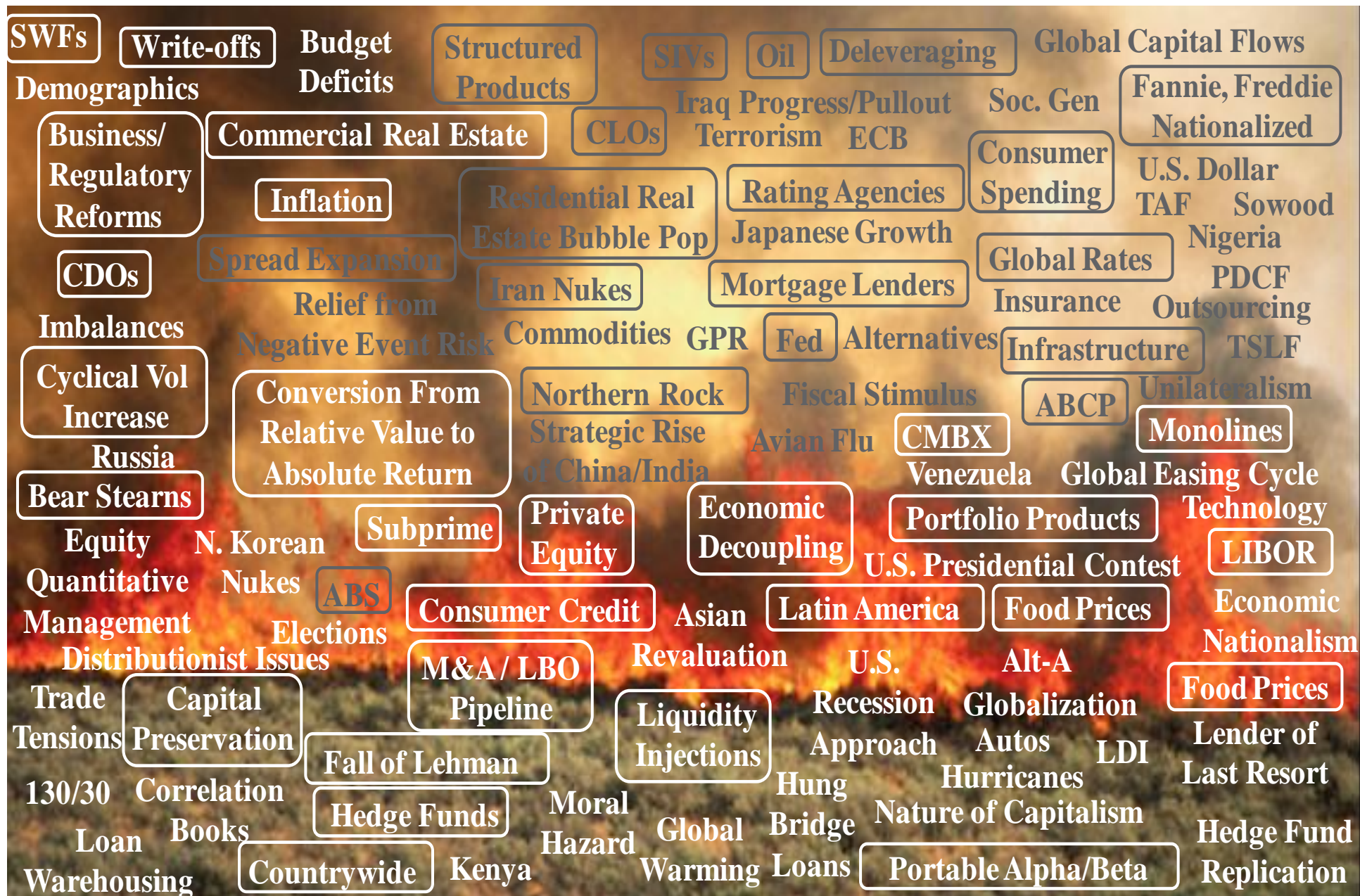
Employment statistics as of Fall 2009; Source: Bloomberg

# BNY Mellon "Beta" World Volatility Index\* (WVI): 2000 to August 31, 2013



\*Weighted average of trailing 21-day return standard deviation (annualized) of commodity (10%), equity (40%), fixed income (40%), and Fx (10%). Commodity: S&P GSCI Index Spot; Equity: MSCI AC World Price Index (local currency); Fixed Income: Barclays U.S. Aggregate Index from 1989 to August 1997 (total return); Global Treasury Index (U.S.\$ Hedged, total return) from September 1997 to September 1, 2000; Barclays Multiverse (U.S.\$ Hedged, total return) thereafter; Fx: U.S. Majors Dollar Index. U.S. recession dates per NBER  
Source: BNY Mellon using data from Barclays Live, Bloomberg, FactSet, and NBER

# “The Great Recession of 2007-2009”: Unusual in its Length, Magnitude, and Assault More on “Alleged” High Quality Than Low Quality



## “The Great Global Capital Markets Circle Game”

*“And the seasons, they go round and round,  
And the painted ponies go up and down  
We’re captive on the carousel of time,  
We can’t return, we can only look behind,  
From where we came,  
And go round and round and round,  
In the circle game.”*

*“The Circle Game”*  
by Joni Mitchell

## “The Capital Markets Framework”

*“Recurrent speculative insanity and the associated financial deprivation and larger devastation are, I am persuaded, inherent in the system. Perhaps it is better that this be recognized and accepted.”*

-- John Kenneth Galbraith, *A Short History of Financial Euphoria*, 1993

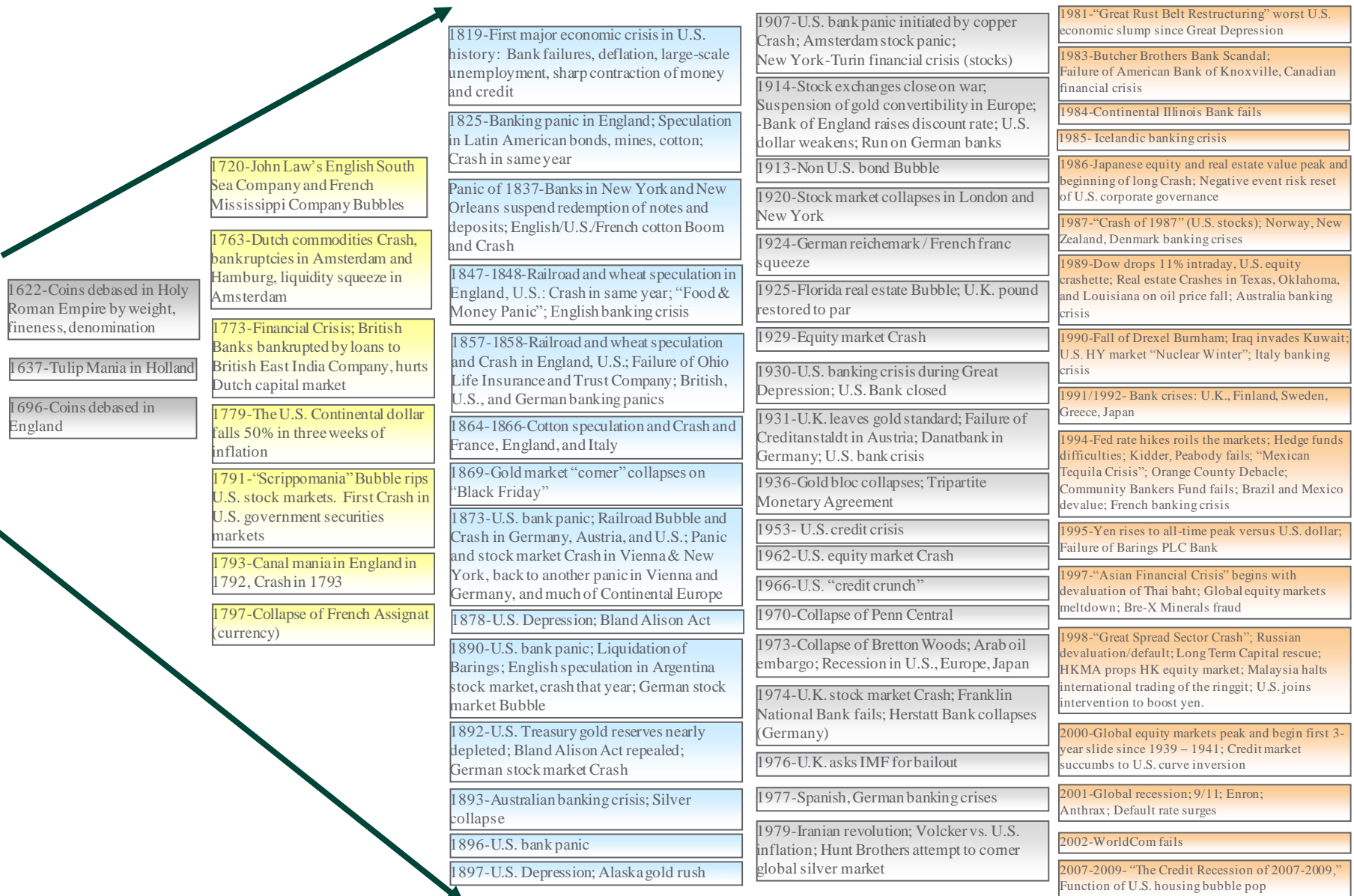
*“I can measure the motion of bodies, but I cannot measure human folly.”*

-- Sir Isaac Newton



# Capital Market Corrections Are All Too Common

## Crash Timeline (1622 to 2013): A Major Adjustment Every 5 – 10 Years



Sources: Author's compilation from various sources

# Investment Strategy Along The Global Economic/Credit Cycle: 1990-2027

High rates, flat-to-inverted curves, tight spreads, low vol, equities peak

**January 2000**

“CDO Fuss” 2/07

**May 2007**

Higher rates, flatter curves, tighter spreads, low-to-medium vol, equities peak

*Next Peak 2015-2016*

“Middle of The Cycle”

*Fatigue after 8-year expansion, rates climb, fall of Drexel, Iraq invasion of Kuwait*

**1990-1991**

9/11

Enron 11/1/01

**2001-2002**

WorldCom 4/02

Low rates, steep curves, wide spreads, high vol

Lehman Failure 9/08

Panic 9/08-3/09

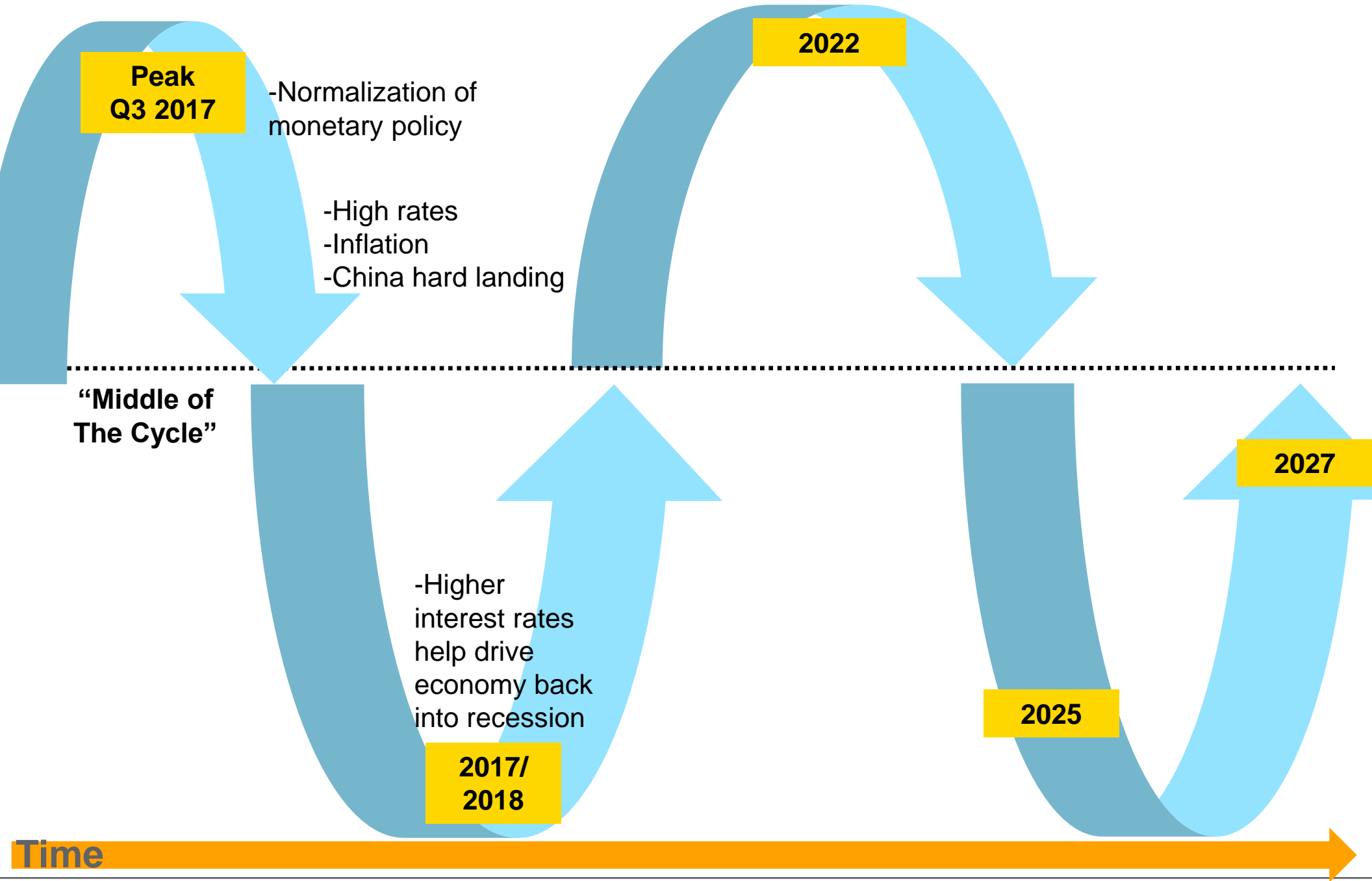
**June 2009**

**September 2013**

*European Recession 2011-2013*

**Time**

# Investment Strategy Along The Global Economic/Credit Cycle: 1990-2027 continued.....



## 30+ Root Causes of “The Great Recession”

- 1) No Single Factor Accounts for the Mishaps of the Oughts
- 2) Failure to Be Adequately Versed in Economic/Capital Market History
- 3) Global Financial System Complexity/Vastness
- 4) Vast Changes in the Global Economic and Financial Systems. Examples: EM Grand Convergence and End of Broker-Dealer Partnerships
- 5) Major Economic Correction Overdue
- 6) “Long-Wave Swing” in the Economic/Regulatory Philosophy Pendulum Begun in the 1970s
- 7) In Some Instances, the Enormous Scale of Newly-Created Mega Financial Institutions Exceeded Management Capability and Regulators’ Surveillance Efficiency
- 8) Supremacy of Short-Termism in Political, Economic, Corporate, Investment, Consumer Decision-Making, Economic and Capital Market Forecasting
- 9) Rise of Shadow Banking
- 10) Rating Agencies: Another Miss On Structured Product, More Conservative, Additional Regulatory Involvement
- 11) Elevation of Finance from “Means” to “The End”
- 12) Too Much Faith Was Placed in the Efficacy of “Bubble-Piercing Shy Central Banks” and Monetary Policy as Guardians of Global and Local Financial Stability

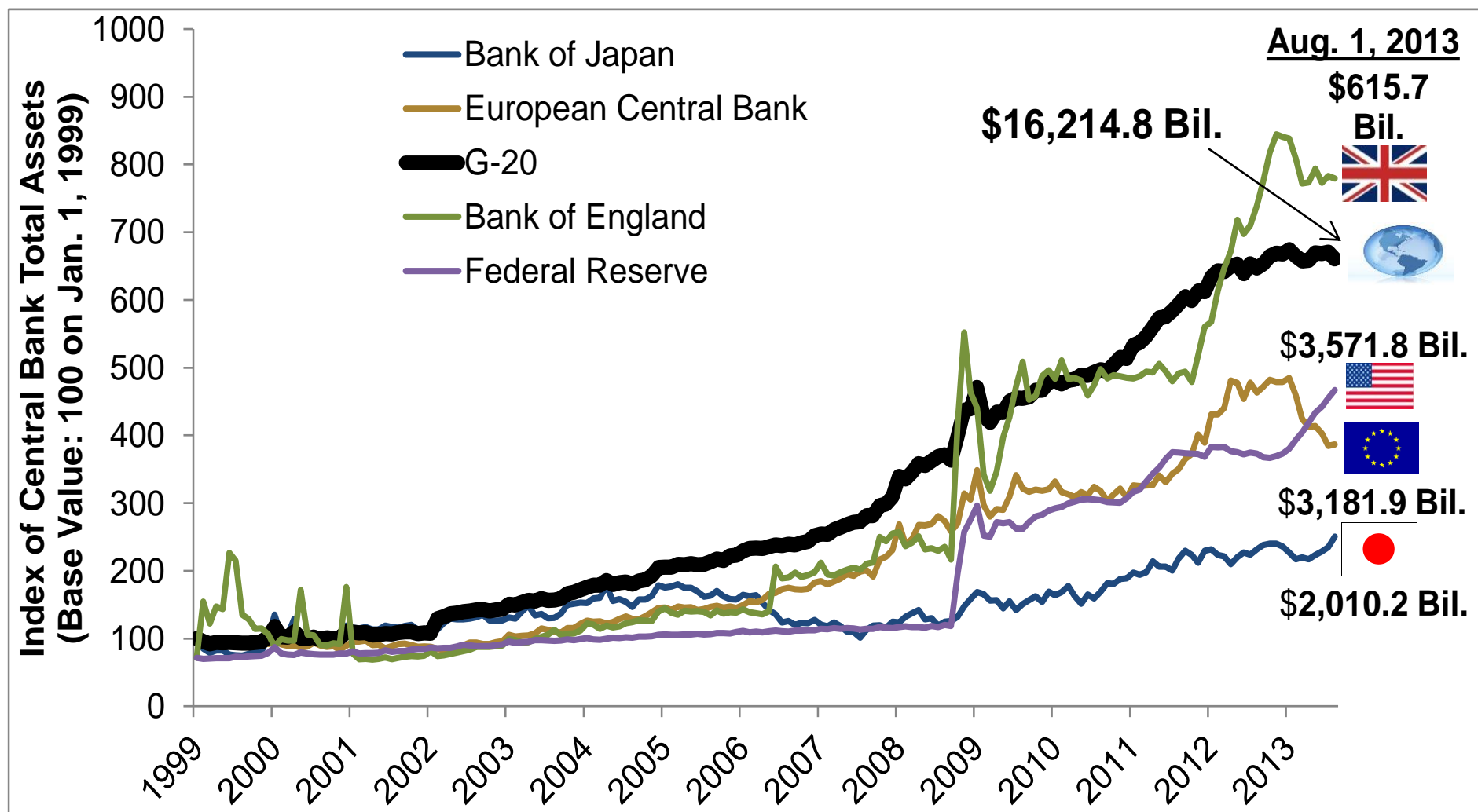
# Root Causes of “The Great Recession”

- 13) Excessive Systemic Financial Leverage
- 14) Mean Reversion of Geopolitical Risk (GPR) in the Oughts Encouraged Extended Central Bank Generosity
- 15) Growing Sell-Side and Buy-Side Scale Made for Extremely Crowded Trading Lanes
- 16) Cross-Border Accounting, Regulatory, and Economic Policymaking Inconsistencies
- 17) Erroneous Specifications of Economic and Asset Class Correlations; Elevated Confidence in Diversification
- 18) Yield Deficits in Early and Mid-Oughts
- 19) All New Products Are Stress Tested; Structured Credit Products Were Due in the Oughts
- 20) To Paraphrase the Late Nobel Laureate Merton Miller, Derivatization of All Financial Asset Classes, Including Credit, Was Inevitable
- 21) Multi-Decade Global Housing Infatuation
- 22) Credit Evaluation Indolence at Too Many Organizations
- 23) Asset Management Philosophical Conversion from Relative Value to Absolute Return

# Root Causes of “The Great Recession”

- 24) Persistence of Ancient Difficulty in Differentiating Between Secular and Cyclical Economic/ Industry/Issuer Changes
- 25) Early 21<sup>st</sup> Century Schism Between Old and New Credit Markets Distracted
- 26) Regional/Product Siloization and Absence of Methodological Consilience
- 27) Economics/Finance Academic and Practitioner Dissonance
- 28) Irregular Pace and Digestion of Technological and Productivity Changes
- 29) Faulty Management Processes at Some Major Financial Institutions
- 30) Uneven Distribution of Experience/Talent
- 31) Ethical Deficiencies

# “Extraordinary Monetary Policy Represses Interest Rates and Boosts Financial Assets, Commodities, and Real Estate”: Index<sup>1</sup> (100=Jan. 1, 1999) of Major Central Banks Total Assets (U.S.\$): **Approximately \$16.2 Trillion at G-20<sup>1</sup> Central Banks**

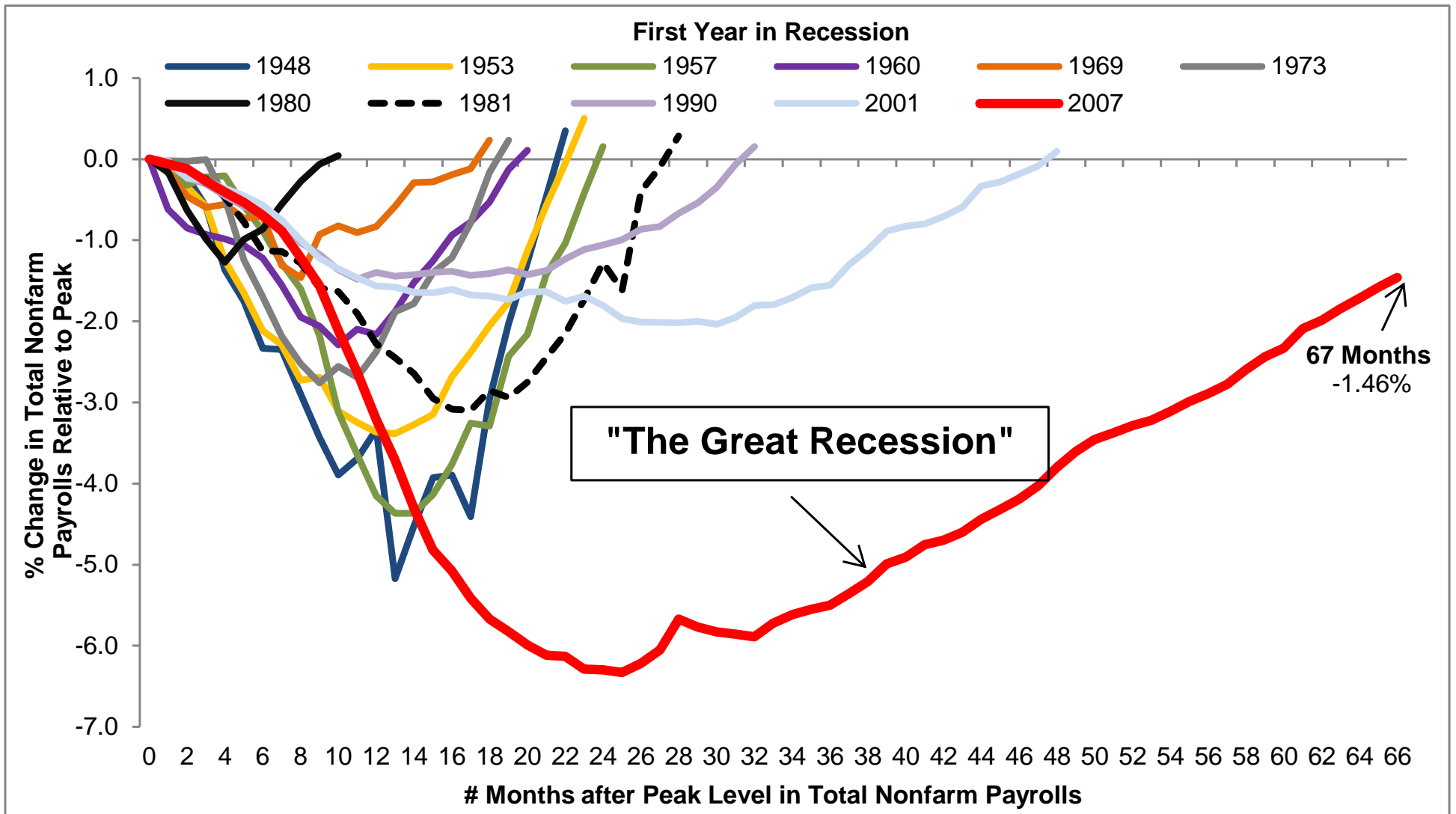


1) Base Value: January 1, 1999 = 100 and includes Reserve Bank of Australia, Bank of Canada, European Central Bank, Bank of Japan, Bank of Mexico, Central Bank of Russia, Bank of Korea, Bank of England, and Federal Reserve from 1999 to present; also includes People's Bank of China from February 2002 to present, Reserve Bank of India from November 2005 to present, and Central Bank of Brazil from 2008 to present. For the latest month, South Korea is not included due to data availability.

Source: *BNY Mellon using data from various central banks, FactSet, and Bloomberg*

# “Atypical, Anemic U.S. Cyclical Recovery”

Percentage Change in Total Nonfarm Payrolls Relative to Peak<sup>1</sup>  
in Post WWII Recessions: 1948 to August 31, 2013



Total nonfarm payrolls seasonally adjusted

1) Max employment (total nonfarm payrolls) month near business cycle peak as determined by NBER and may not be in the same year each recession begins

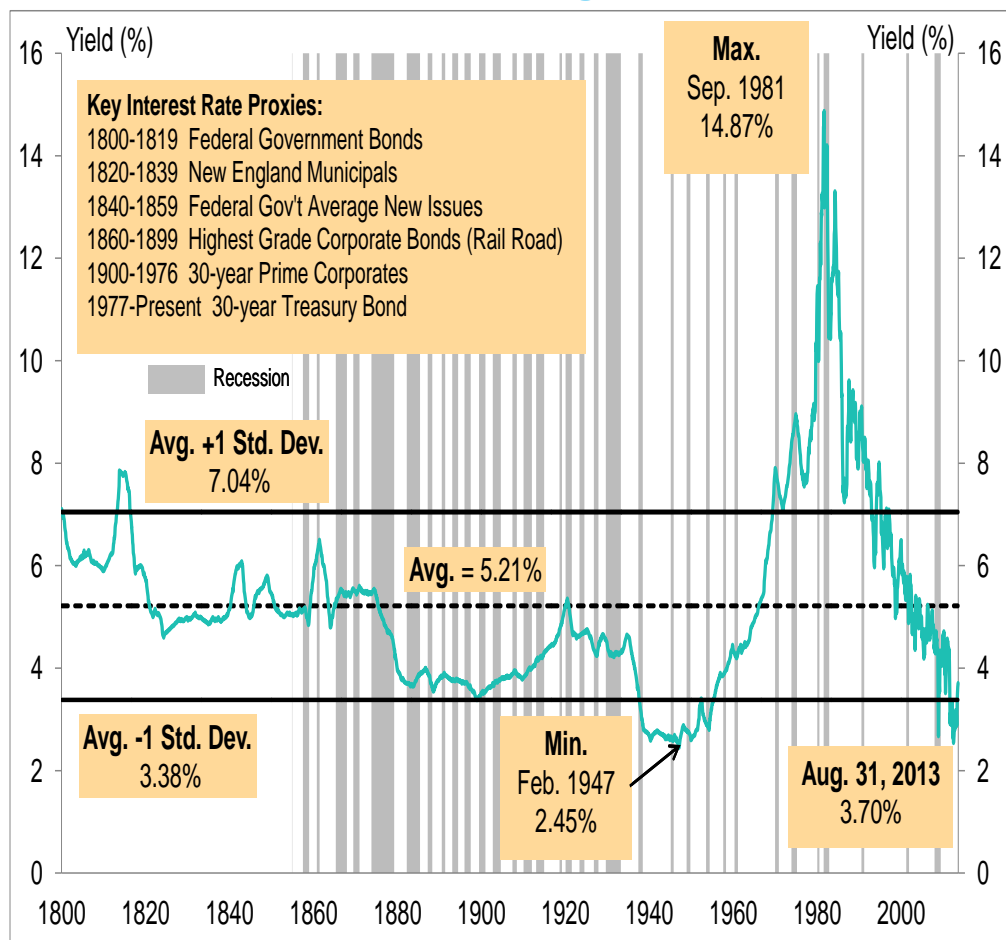
Source: BNY Mellon using data from Bloomberg and NBER



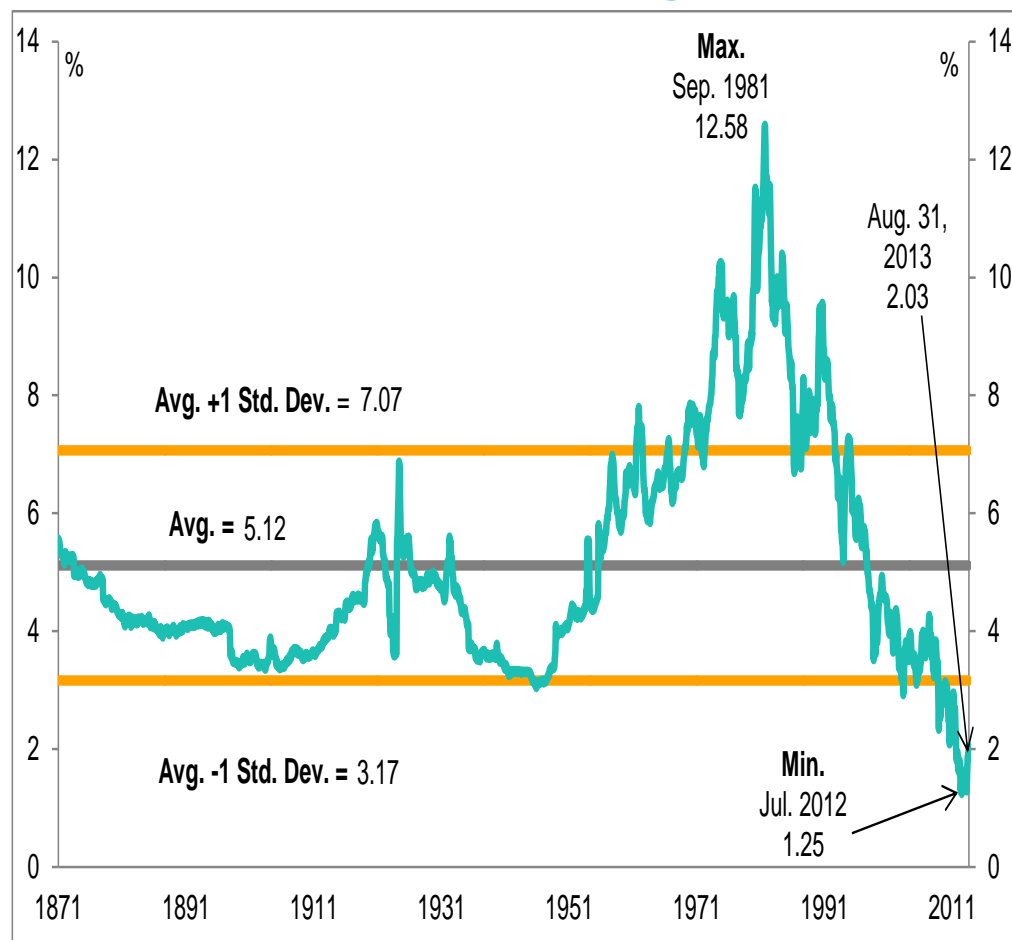
# 21<sup>st</sup> Century Structural Reconfiguration of the Global Economic System

Major central bank repression of interest rates to counter “rapid-change motion sickness” stimulates new debt origination but equivalent to modern usury for bondholders

## Lowest Rates Since February 1947 in 2012: A History of Key Long-Term U.S. Interest Rates: 1800 to August 31, 2013



## Average of Big Four<sup>1</sup> 10-Year Bellwethers (%): 1871 to August 31, 2013



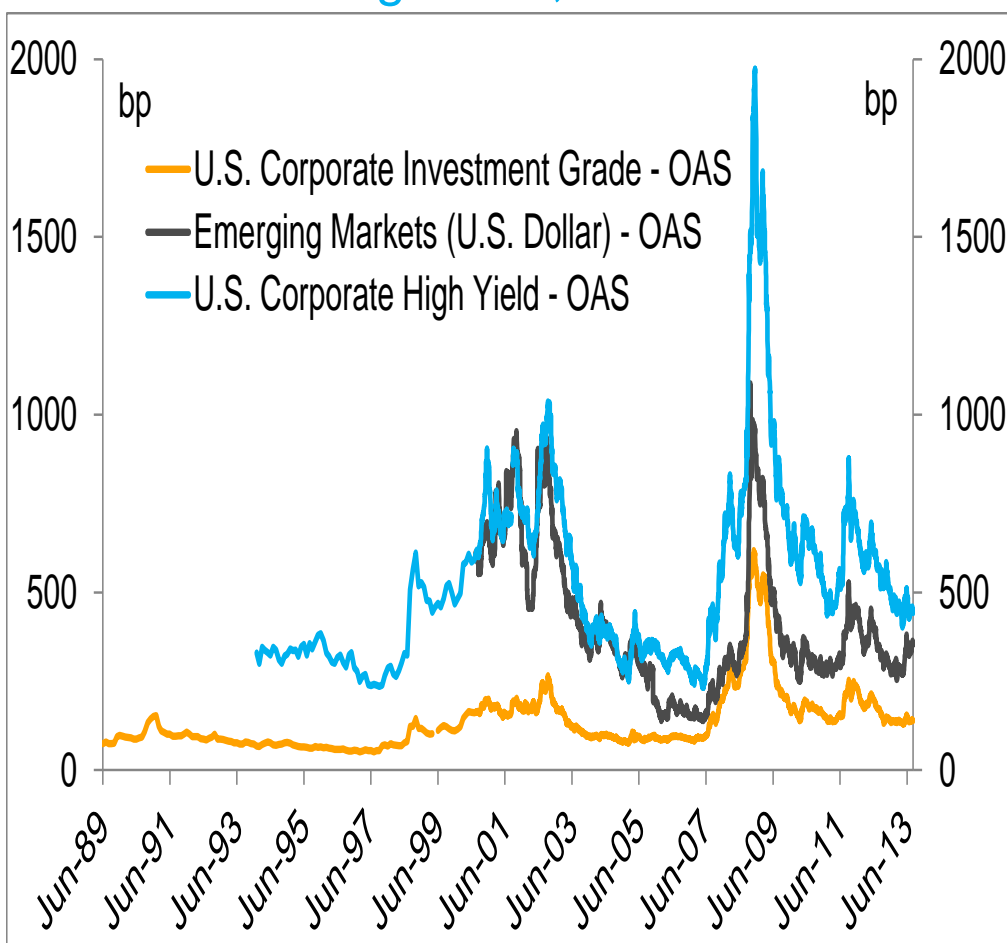
1) Germany, Japan, U.K., and U.S.

U.S. recession dates per NBER

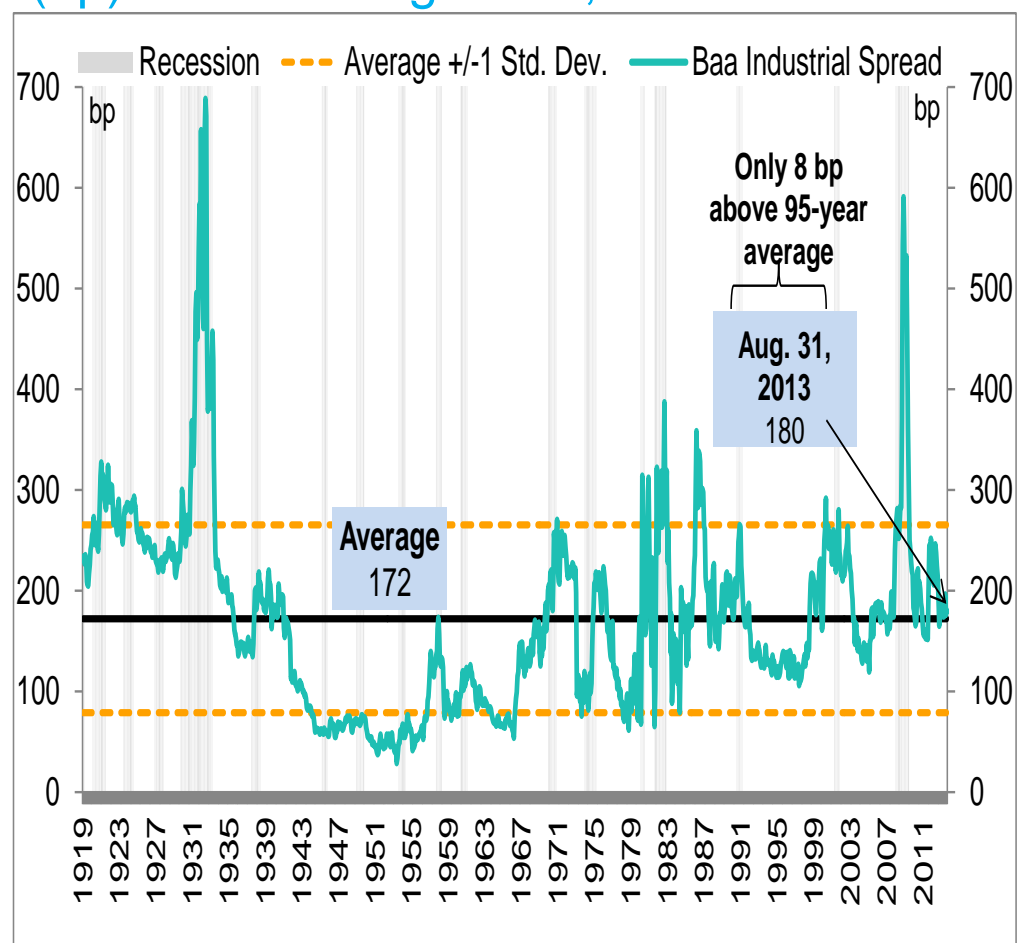
Source: BNY Mellon using data from Global Financial Data, NBER, and Bloomberg

# Credit Spread Compression Not Done

**U.S. Corporate Investment-Grade, High-Yield, and Emerging-Markets Spreads (U.S. dollar-denominated, OAS bps): June 1989 to August 31, 2013**



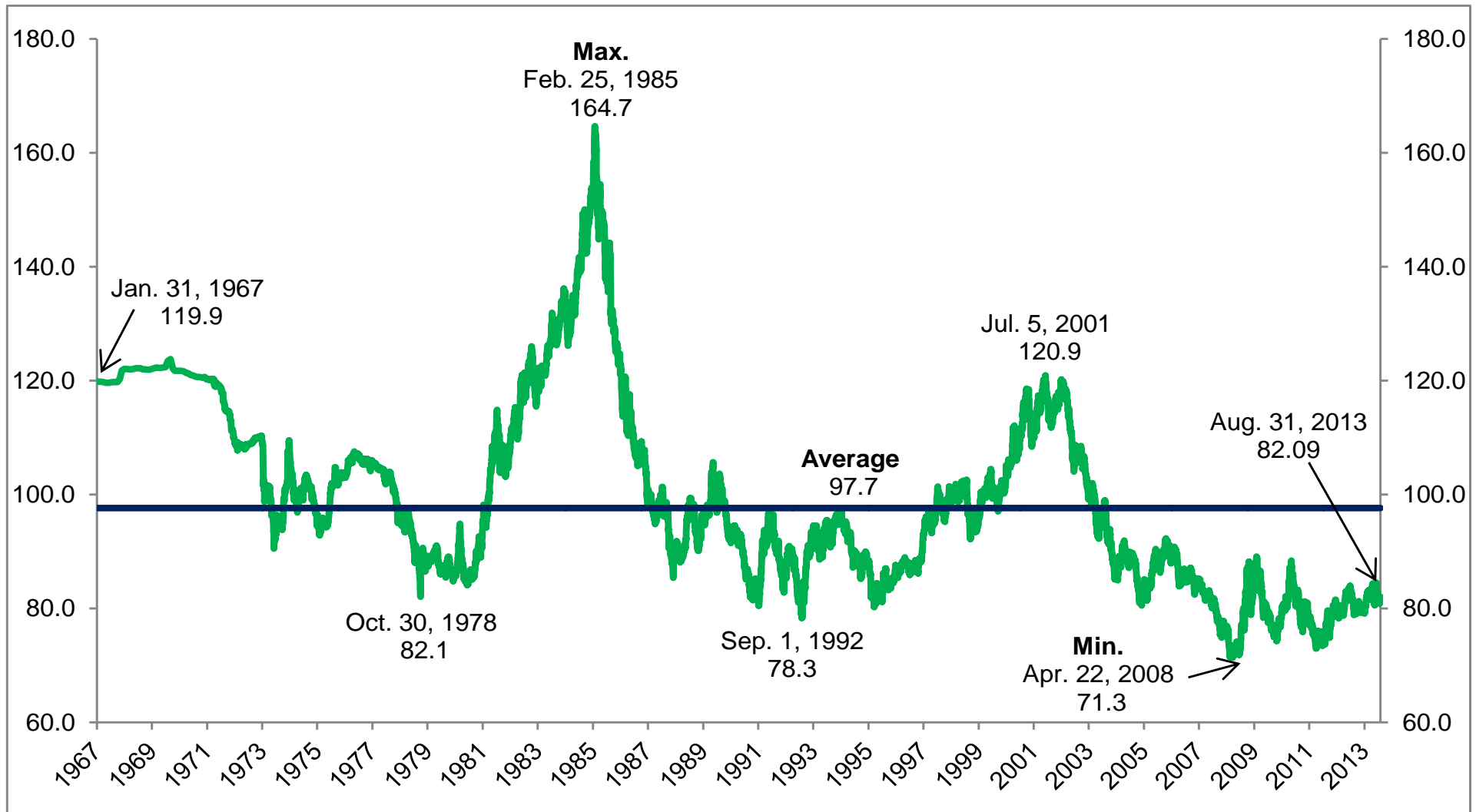
**Credit Is Not the Most Expensive Ever “Investment-Grade U.S. Corporates Still Have Room to Tighten”:  
Moody's 30-Year Baa Industrial Spreads (bp): 1919 to August 31, 2013**



Source: BNY Mellon using data from Barclays Live, NBER, Bloomberg, and Global Financial Data

# U.S. Dollar Stability: Tripolar World Currency Regime on the Way

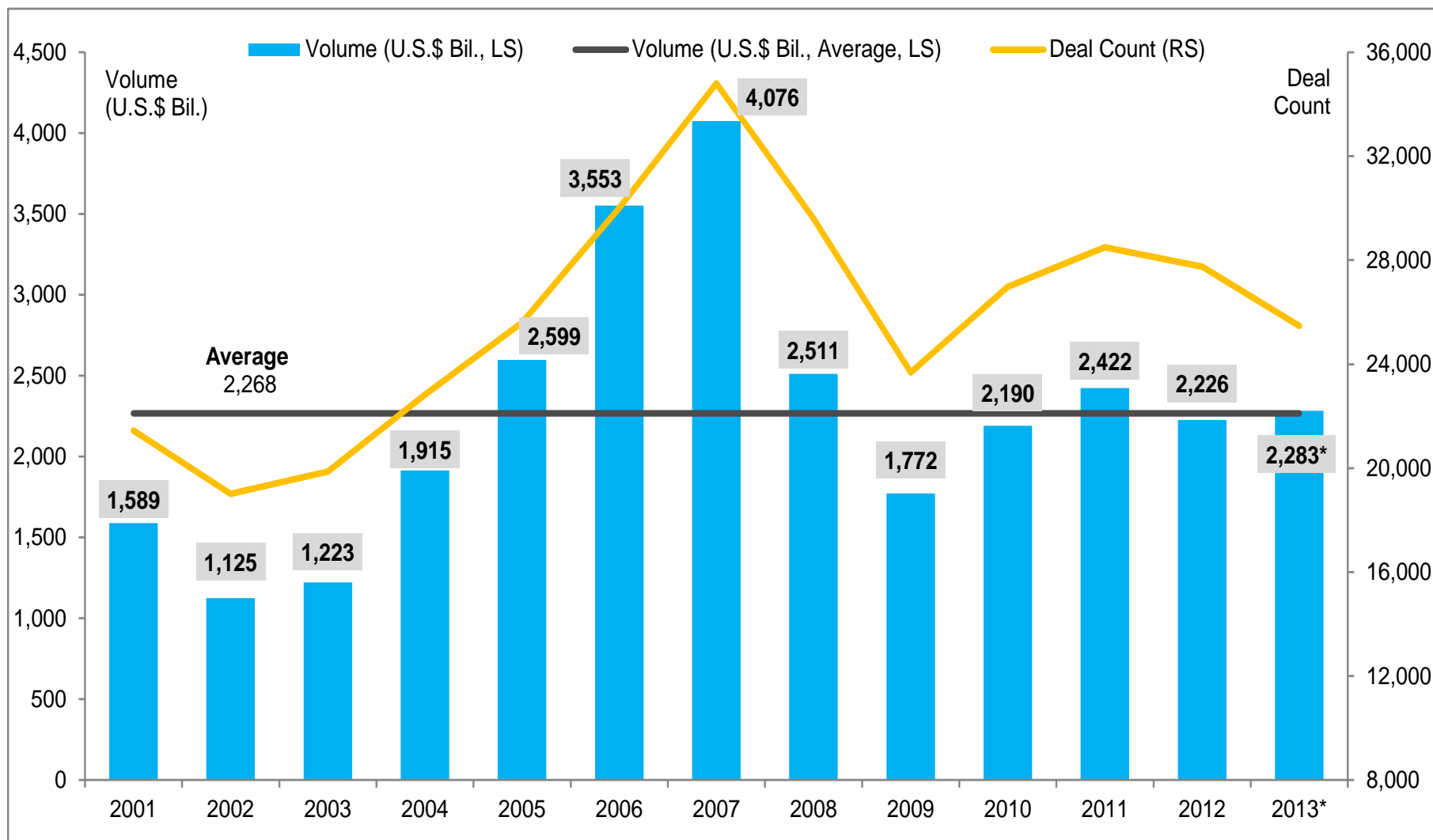
## U.S. Majors Dollar Index: 1967 to August 31, 2013



Source: BNY Mellon using data from Bloomberg

# “Source of Incremental Equity Valuation”

Global M&A Activity Slow to Match Previous Post Recession Annual Volumes and Deal Count:  
Faster M&A Pace Expected in 2013\*-2015



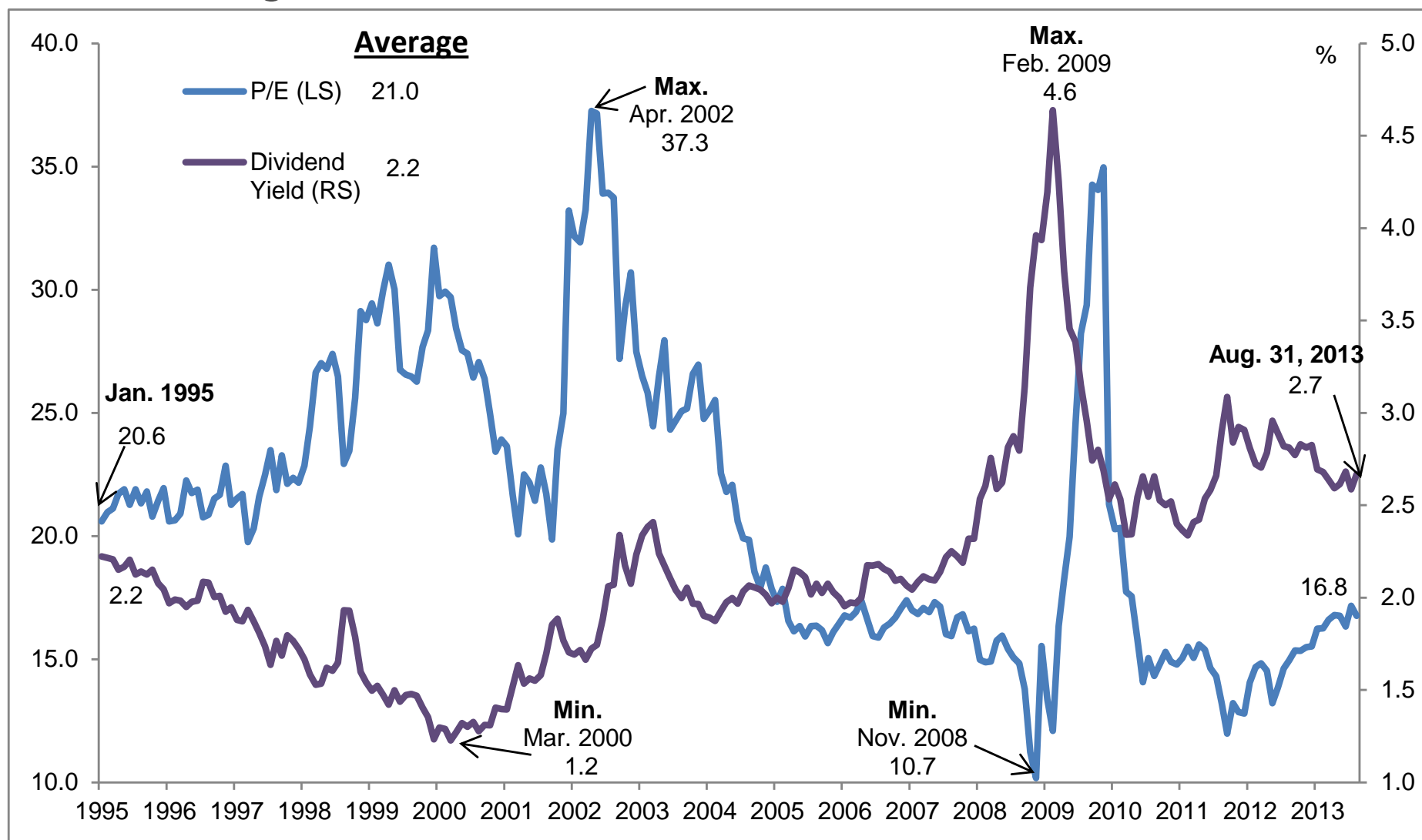
M&A activity not limited to all cash transactions and may also include stock

\*2013 M&A annualized as of September 2

Source: BNY Mellon using data from Bloomberg

# Global Equities on Cheap Side Using Standard Metrics

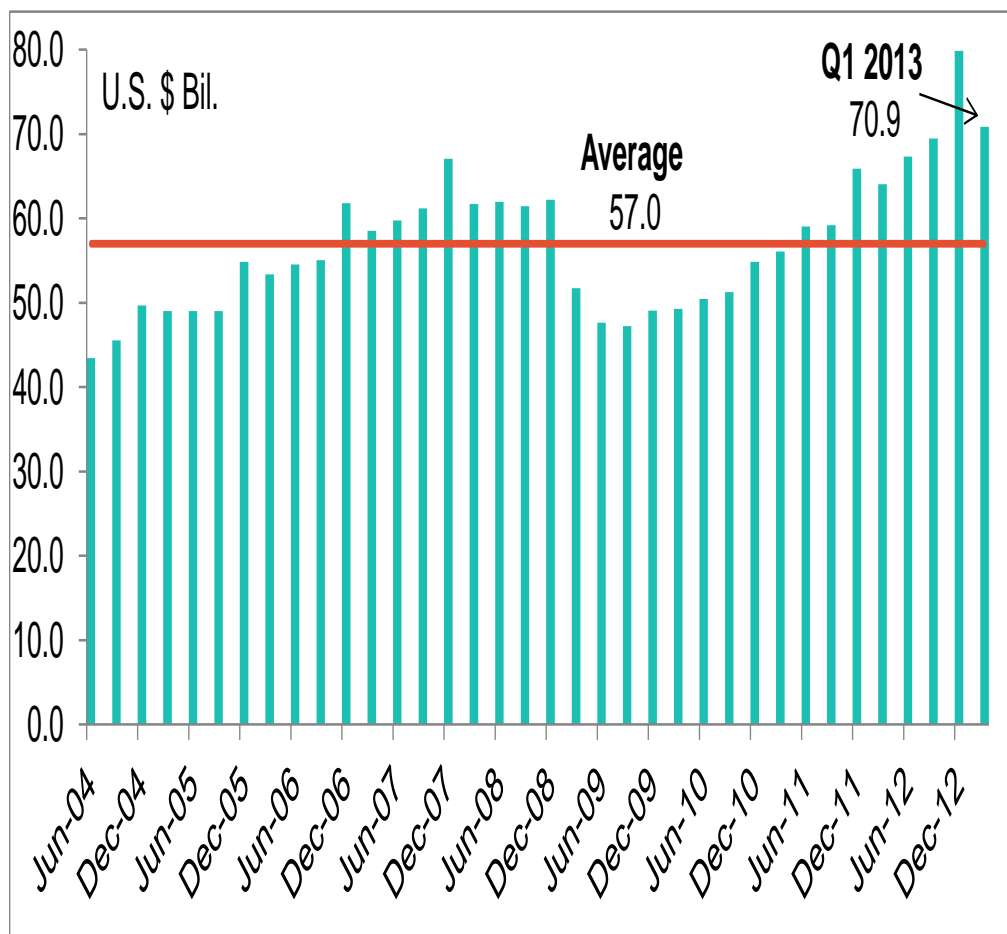
## MSCI World Index Trailing 12-Month P/E and Dividend Yield (%): 1995 to August 31, 2013



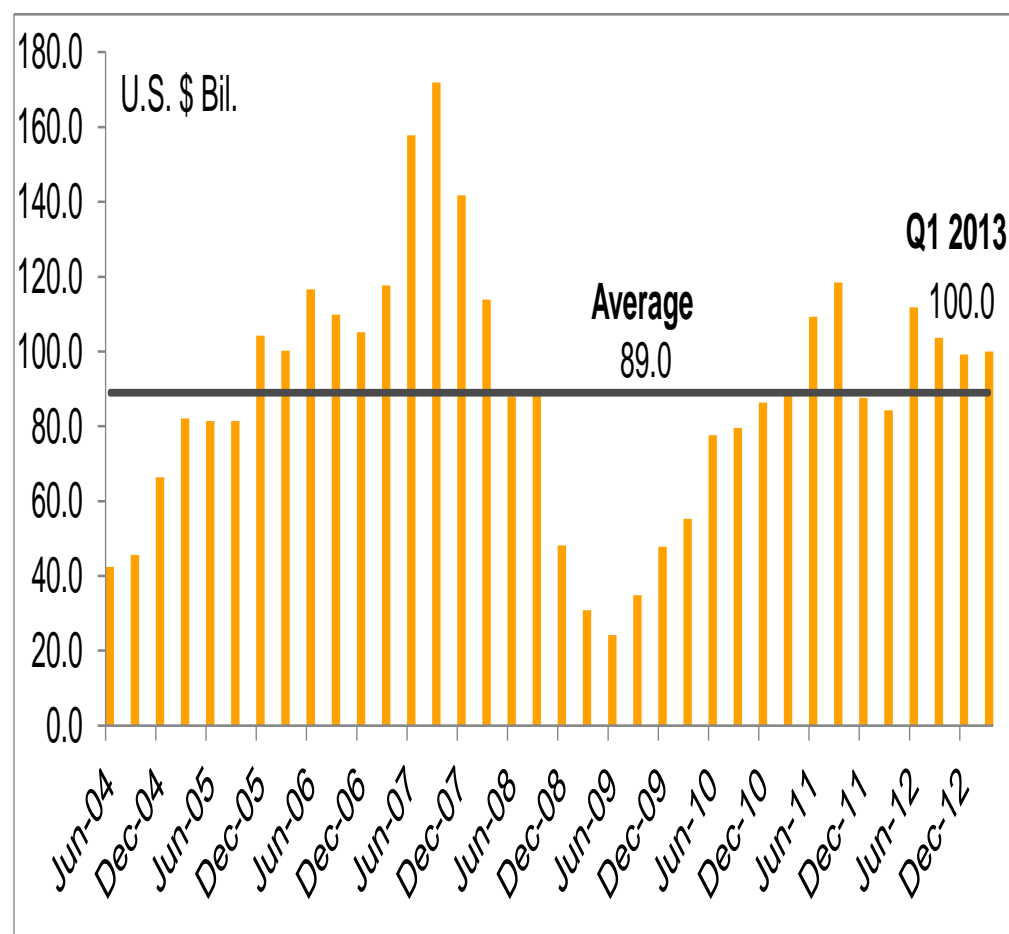
Monthly data  
Source: BNY Mellon using data from Bloomberg

# Rising S&P 500 Dividends and Buybacks (U.S. \$ Billion): Q2 2004 to Q1 2013<sup>1</sup>

## Dividends



## Buybacks



1) Preliminary as of June 19, 2013

Source: BNY Mellon using data from [www.standardandpoors.com](http://www.standardandpoors.com) and [www.sp-indexdata.com](http://www.sp-indexdata.com)

# Global Capital Market Summary: June 30, 2008 to August 31, 2013

## Global 10-Year Yields (%)

	6/30/2008	8/31/2013	Change (bp)
U.S.	3.97	2.78	-119
U.K.	5.13	2.77	-236
Japan	1.60	0.72	-89
Germany	4.62	1.86	-277

## Foreign Exchange

	6/30/2008	8/31/2013	Change (%)
Dollar Index Majors	72.46	82.09	13.28
Euro	1.58	1.32	-16.08
British Pound	1.99	1.55	-22.18
Japanese Yen	106.21	98.17	8.19

## Equities

	6/30/2008	8/31/2013	Change (%)
<b>U.S.</b>			
DJIA	11,350.01	14,810.31	30.49
S&P 500	1,280.00	1,632.97	27.58
<b>Europe</b>			
STOXX 600 (Europe)	289.39	297.32	2.74
CAC 40 (France)	4,434.85	3,933.78	-11.30
DAX (Germany)	6,418.32	8,103.15	26.25
FTSE MIB (Italy)	29,346.00	16,682.21	-43.15
IBEX 35 (Spain)	12,046.20	8,290.50	-31.18
FTSE 100 (U.K.)	5,625.90	6,412.93	13.99
<b>Asia/BRIC</b>			
Nikkei 225 (Japan)	13,481.38	13,388.86	-0.69
Bovespa (Brazil)	65,017.58	50,008.38	-23.08
MICEX (Russia)	1,753.67	1,364.65	-22.18
SENSEX (India)	13,461.60	18,619.72	38.32
Shanghai Comp. (China)	2,736.10	2,098.38	-23.31

## Fixed Income

	Total Return* (%)
Global Aggregate*	27.73
Euro Aggregate	34.77
Sterling Aggregate	40.89
Japan Aggregate	12.35
U.S. Aggregate	28.29
China Aggregate	21.76
Indian Government	48.58
U.S. Corporate HY	70.18
Pan European HY*	97.93
EM (U.S.-dollar)	51.27
U.S. Municipal	26.69

## Commodities

	6/30/2008	8/31/2013	Change (%)
S&P GSCI	862.81	657.05	-23.85
WTI Oil (U.S.\$/Barrel)	140.00	107.65	-23.11
Brent Oil (U.S.\$/Barrel)	138.05	114.01	-17.41
Natural Gas (U.S.\$/MMBtu)	10.74	3.58	-66.64
Gold (U.S.\$/Troy Oz.)	925.40	1395.15	50.76
Silver (U.S.\$/Troy Oz.)	17.41	23.53	35.12
Copper (U.S.\$/Ton)	8693.00	7077.50	-18.58
Wheat**	582.70	443.77	-23.84
Corn**	609.08	397.94	-34.67
Cotton**	111.87	118.80	6.20

## Real Estate

	6/30/2008	6/30/2013	Change (%)
S&P/Case-Shiller U.S.			
National HPI (SA)***	155.08	144.24	-6.99

\*Barclays fixed income indices in local currency unless otherwise stated; Global Aggregate.: U.S.-dollar hedged; Pan European HY: euro hedged; \*\*S&P GSCI spot indices;

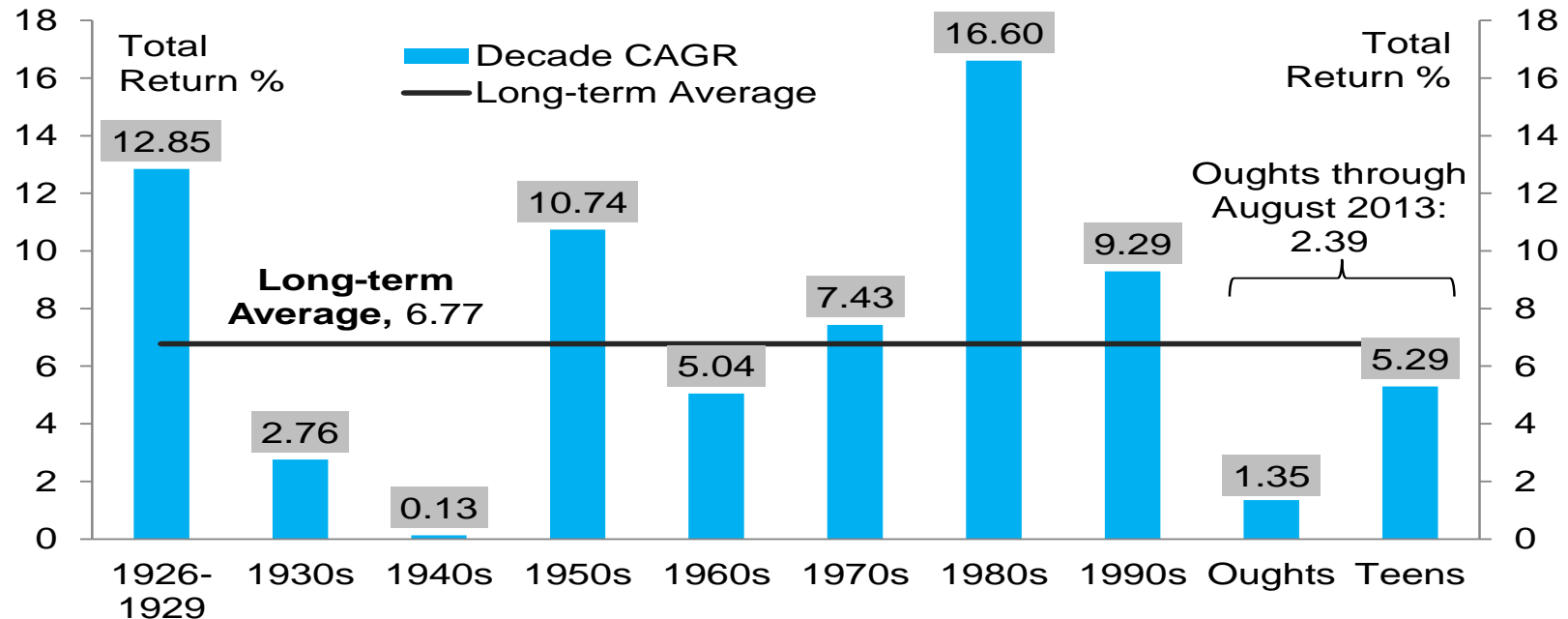
\*\*\*Through June 30, 2013

Source: BNY Mellon using data from Bloomberg and Global Financial Data

# Buoyant 2012 and 2013 for Risky Assets

Global Financial Asset<sup>1</sup> Nominal Returns (%) Stalled During the Transition to 21<sup>st</sup> Century Financial System but Are Rebounding in the Teens

**5.29% Nominal Return in the Teens Below 88-Year Average of 6.77%**



	Periodic Compound Average Annual Growth Rates (%)									
	1926 - 1999	1946 - 1999	1970 - 1999	1970s	1980s	1990s	Oughts	2010 - August 31, 2013	Oughts through August 31, 2013	2013 YTD
Global Equity	9.64	11.19	12.11	6.96	20.77	9.09	-2.60	6.90	-0.14	12.74
Global Bond	4.78	5.48	9.07	7.16	12.02	8.08	5.84	4.17	5.39	-1.03
Global Financial Asset	7.60	8.69	11.04	7.43	16.60	9.29	1.35	5.29	2.39	4.41

	1926 - August 31, 2013	1980 - August 31, 2013
Global Equity	8.05	8.47
Global Bond	4.88	8.12
Global Financial Asset	6.77	8.50

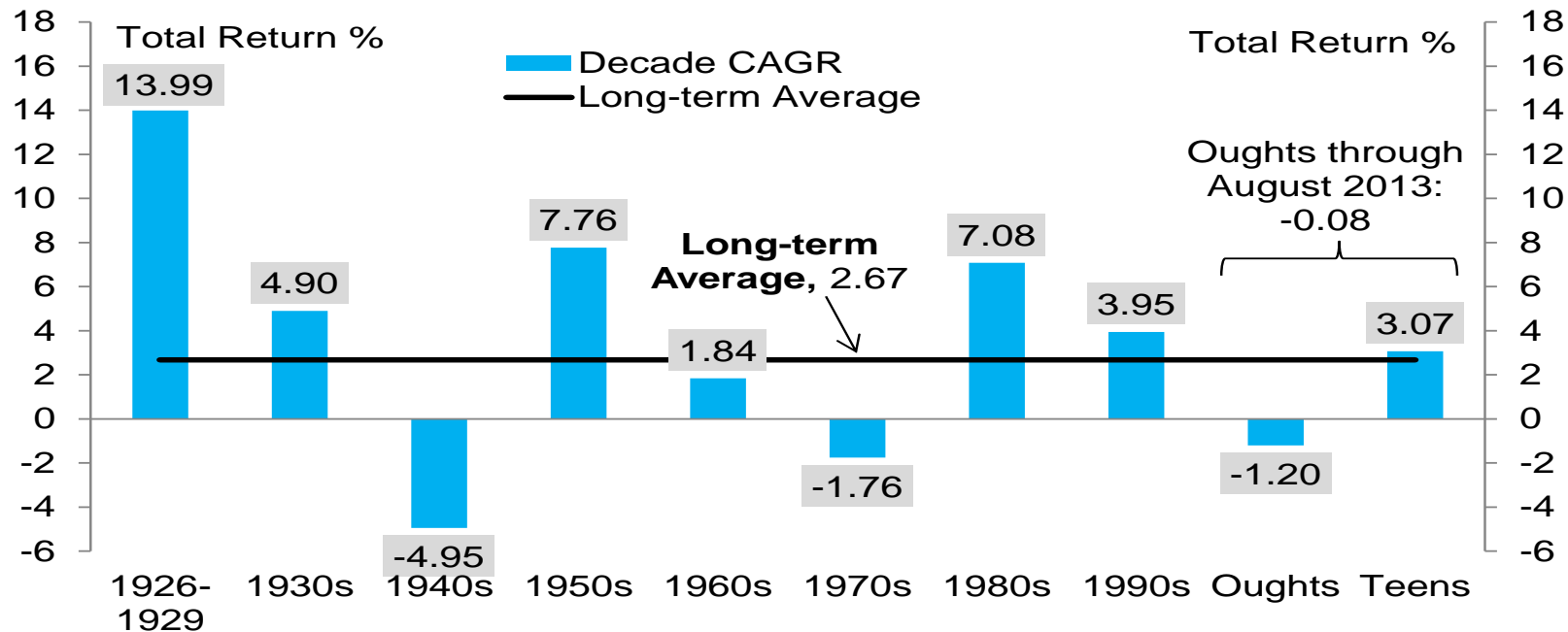
1) **Global Financial Asset:** Equally weighted average return of Global Equity and Global Bond from 1926 to 1989; market-value weighted average return from 1990 to current. **Global Equity:** Data provided by Global Financial Data, a provider of historical market datasets and indices as described at [www.globalfinancialdata.com](http://www.globalfinancialdata.com), from 1926 to 1987; MSCI-Hedged World U.S. \$ Index from 1988 to current. **Global Bond:** Data provided by Global Financial Data from 1926 to 1986; Barclays Live from 1987 to current. Global Bond U.S.-dollar hedged after 1986; Global Equity U.S.-dollar hedged after 1987. Financial asset total return series begins in 1926; Global Equity total return except from 1988 to current. Source: BNY Mellon using data from FactSet, Bloomberg, Global Financial Data, and Barclays Live



# Buoyant 2012 and 2013 for Risky Assets

Global Financial Asset<sup>1</sup> Real Returns (%) Stalled During the Transition to 21<sup>st</sup> Century Financial System but Are Rebounding in the Teens

**3.07% Real Return in the Teens Exceeds 88-Year Average of 2.67%**



	1926 - 1999	1946 - 1999	1970 - 1999	1970s	1980s	1990s	Oughts	2010 - August 31, 2013	Oughts through August 31, 2013	2013 YTD
Global Equity	5.13	5.01	4.02	-2.19	10.91	3.76	-5.06	4.64	-2.55	11.42
Global Bond	0.48	-0.38	1.20	-2.01	2.88	2.80	3.17	1.97	2.84	-2.19
Global Financial Asset	3.18	2.65	3.03	-1.76	7.08	3.95	-1.20	3.07	-0.08	3.19





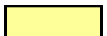

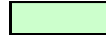



	1926 - August 31, 2013	1980 - August 31, 2013
Global Equity	3.90	3.17
Global Bond	0.85	2.84
Global Financial Asset	2.67	3.20

1) **Global Financial Asset:** Equally weighted average return of Global Equity and Global Bond from 1926 to 1989; market-value weighted average return from 1990 to current. **Global Equity:** Data provided by Global Financial Data, a provider of historical market datasets and indices as described at [www.globalfinancialdata.com](http://www.globalfinancialdata.com), from 1926 to 1987; MSCI-Hedged World U.S. \$ Index from 1988 to current. **Global Bond:** Data provided by Global Financial Data from 1926 to 1986; Barclays Live from 1987 to current. Global Bond U.S.-dollar hedged after 1986; Global Equity U.S.-dollar hedged after 1987. Financial asset total return series begins in 1926; Global Equity total return except from 1988 to current. Source: BNY Mellon using data from FactSet, Bloomberg, Global Financial Data, and Barclays Live

# EM Usually Best Or Worst Since 2003

## Broad Asset Class Annual Returns (%): Ranked In Order of Performance (Best to Worst): 1995 to August 31, 2013

1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	YTD
U.S. EQUITY	EMG MARKET DEBT	U.S. EQUITY	U.S. EQUITY	EMG MARKET EQUITY	COMMO-DITIES	U.S. BONDS	COMMO-DITIES	EMG MARKET EQUITY	EMG MARKET EQUITY	EMG MARKET EQUITY	EMG MARKET EQUITY	EMG MARKET EQUITY	INT'L FIXED	EMG MARKET EQUITY	EMG MARKET EQUITY	U.S. TIPS	EMG MARKET EQUITY	U.S. EQUITY	
37.58	35.22	33.36	28.58	66.41	49.74	8.44	32.07	56.28	25.95	34.54	32.59	39.78	10.11	79.02	19.20	13.56	18.63	16.15	
EMG MARKET DEBT	COMMO-DITIES	HIGH YIELD U.S.	INT'L DEVEL-OPED	COMMO-DITIES	EMG MARKET DEBT	U.S. TIPS	INT'L FIXED	INT'L DEVEL-OPED	INT'L DEVEL-OPED	COMMO-DITIES	INT'L DEVEL-OPED	COMMO-DITIES	U.S. DOLLAR	HIGH YIELD U.S.	HIGH YIELD U.S.	EMG MARKET DEBT	EMG MARKET DEBT	INT'L DEVEL-OPED	
26.38	33.92	13.27	20.33	40.92	14.41	7.90	21.99	39.17	20.70	25.55	26.86	32.67	6.01	57.51	15.19	8.46	18.54	8.54	
HIGH YIELD U.S.	U.S. EQUITY	U.S. DOLLAR	INT'L FIXED	INT'L DEVEL-OPED	U.S. TIPS	U.S. DOLLAR	U.S. TIPS	U.S. EQUITY	COMMO-DITIES	INT'L DEVEL-OPED	U.S. EQUITY	INT'L DEVEL-OPED	U.S. BONDS	INT'L DEVEL-OPED	U.S. EQUITY	U.S. BONDS	INT'L DEVEL-OPED	U.S. DOLLAR	
20.46	22.96	13.08	17.79	27.30	13.17	6.56	16.57	28.68	17.28	14.02	15.79	11.63	5.24	32.46	15.06	7.84	17.90	2.91	
COMMO-DITIES	HIGH YIELD U.S.	EMG MARKET DEBT	U.S. BONDS	EMG MARKET DEBT	U.S. BONDS	HIGH YIELD U.S.	EMG MARKET DEBT	HIGH YIELD U.S.	INT'L FIXED	U.S. DOLLAR	HIGH YIELD U.S.	U.S. TIPS	U.S. TIPS	EMG MARKET DEBT	EMG MARKET DEBT	INT'L FIXED	U.S. EQUITY	HIGH YIELD U.S.	
20.33	11.27	11.95	8.69	24.48	11.63	4.48	13.11	28.15	12.14	12.76	11.77	11.63	-2.35	28.17	12.04	5.17	16.00	2.77	
INT'L FIXED	INT'L DEVEL-OPED	U.S. BONDS	U.S. TIPS	U.S. EQUITY	U.S. DOLLAR	EMG MARKET DEBT	U.S. BONDS	EMG MARKET DEBT	EMG MARKET DEBT	EMG MARKET DEBT	EMG MARKET DEBT	EMG MARKET DEBT	INT'L FIXED	EMG MARKET DEBT	U.S. EQUITY	COMMO-DITIES	HIGH YIELD U.S.	HIGH YIELD U.S.	COMMO-DITIES
19.55	6.36	9.65	3.95	21.04	7.55	1.36	10.26	25.66	11.73	10.73	9.88	11.45	-10.91	26.46	9.02	4.38	15.58	2.59	
U.S. BONDS	EMG MARKET EQUITY	INT'L DEVEL-OPED	HIGH YIELD U.S.	U.S. DOLLAR	INT'L FIXED	EMG MARKET EQUITY	HIGH YIELD U.S.	COMMO-DITIES	U.S. EQUITY	U.S. EQUITY	INT'L FIXED	U.S. BONDS	HIGH YIELD U.S.	COMMO-DITIES	INT'L DEVEL-OPED	U.S. EQUITY	U.S. TIPS	U.S. BONDS	
18.47	6.03	2.06	2.95	8.18	-2.63	-2.37	-1.89	20.72	10.88	4.91	6.94	6.97	-26.39	13.49	8.21	2.11	6.98	-2.81	
INT'L DEVEL-OPED	INT'L FIXED	INT'L FIXED	U.S. DOLLAR	HIGH YIELD U.S.	HIGH YIELD U.S.	INT'L FIXED	EMG MARKET EQUITY	INT'L FIXED	HIGH YIELD U.S.	U.S. TIPS	U.S. BONDS	EMG MARKET DEBT	U.S. EQUITY	U.S. TIPS	U.S. BONDS	U.S. DOLLAR	U.S. BONDS	INT'L FIXED	
11.55	4.08	-4.26	-5.50	2.51	-5.12	-3.54	-6.00	18.52	10.87	2.84	4.33	6.28	-37.00	11.41	6.54	1.46	4.21	-5.73	
U.S. DOLLAR	U.S. DOLLAR	EMG MARKET EQUITY	EMG MARKET DEBT	U.S. TIPS	U.S. EQUITY	U.S. EQUITY	U.S. DOLLAR	U.S. TIPS	U.S. TIPS	HIGH YIELD U.S.	U.S. TIPS	U.S. EQUITY	INT'L DEVEL-OPED	U.S. BONDS	U.S. TIPS	COMMO-DITIES	INT'L FIXED	U.S. TIPS	
-4.46	3.96	-11.59	-11.54	2.40	-9.10	-11.89	-12.76	8.40	8.46	2.74	0.41	5.49	-43.06	5.93	6.31	-1.18	1.51	-8.07	
EMG MARKET EQUITY	U.S. BONDS	COMMO-DITIES	EMG MARKET EQUITY	U.S. BONDS	INT'L DEVEL-OPED	INT'L DEVEL-OPED	INT'L DEVEL-OPED	U.S. BONDS	U.S. BONDS	U.S. BONDS	U.S. DOLLAR	HIGH YIELD U.S.	COMMO-DITIES	INT'L FIXED	INT'L FIXED	INT'L DEVEL-OPED	COMMO-DITIES	EMG MARKET DEBT	
-5.21	3.63	-14.07	-25.34	-0.82	-13.96	-21.21	-15.66	4.10	4.34	2.43	-8.25	2.19	-46.49	4.39	5.21	-11.73	0.08	-9.84	
n/a	n/a	n/a	COMMO-DITIES	INT'L FIXED	EMG MARKET EQUITY	COMMO-DITIES	U.S. EQUITY	U.S. DOLLAR	U.S. DOLLAR	INT'L FIXED	COMMO-DITIES	U.S. DOLLAR	EMG MARKET EQUITY	U.S. DOLLAR	U.S. DOLLAR	EMG MARKET EQUITY	U.S. DOLLAR	EMG MARKET EQUITY	
			-35.75	-5.07	-30.61	-31.93	-22.10	-14.66	-6.98	-9.20	-15.09	-8.31	-53.18	-4.24	1.50	-18.17	-0.51	-9.94	

 S&P 500 Index (Gross Total Return)	 MSCI EAFE (Gross Total Return, U.S. \$)	 Barclays U.S. Aggregate (Total Return)
 Dollar Index Spot (DXY Currency in Bloomberg)	 BofA Merrill Lynch U.S. High Yield - Master II (Total Return)	 MSCI EM (Gross Total Return, U.S. \$)
 S&P GSCI (Total Return)	 Citigroup Non-USD WGBI (Total Return, U.S. \$)	 J.P. Morgan EMBI Global Total Return Index
 Barclays U.S. TIPS		

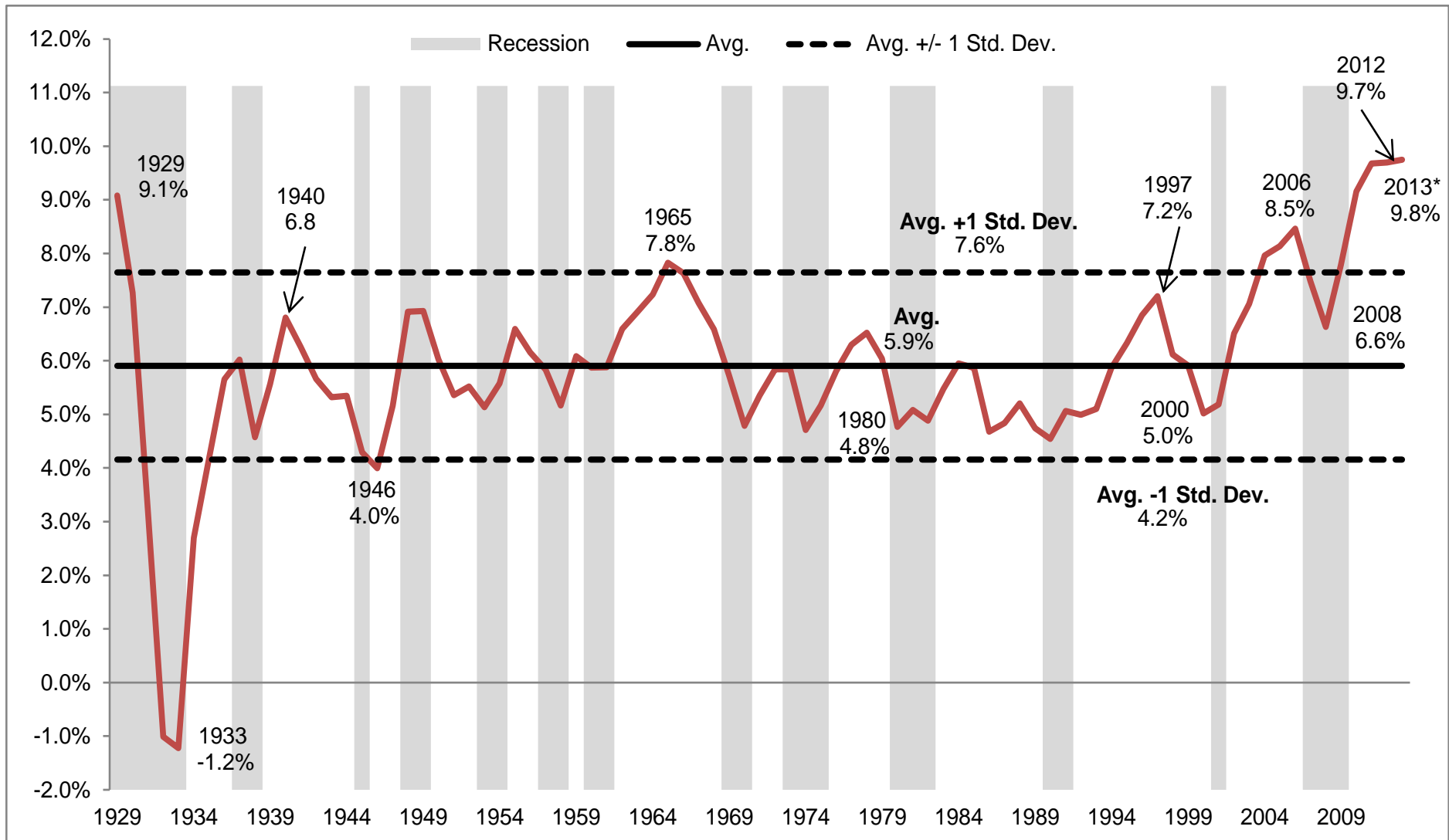
1) 2013 YTD: as of August 31

Source: BNY Mellon using data from EACM, FactSet, Barclays Live, and Bloomberg

# U.S. Capital Rewards Boom; Labor Lags

## Capital's Share of U.S. Economy at a Record High

### U.S. Corporate Profits After-tax\*\* (% of Nominal GDP): 1929 to 2013\*

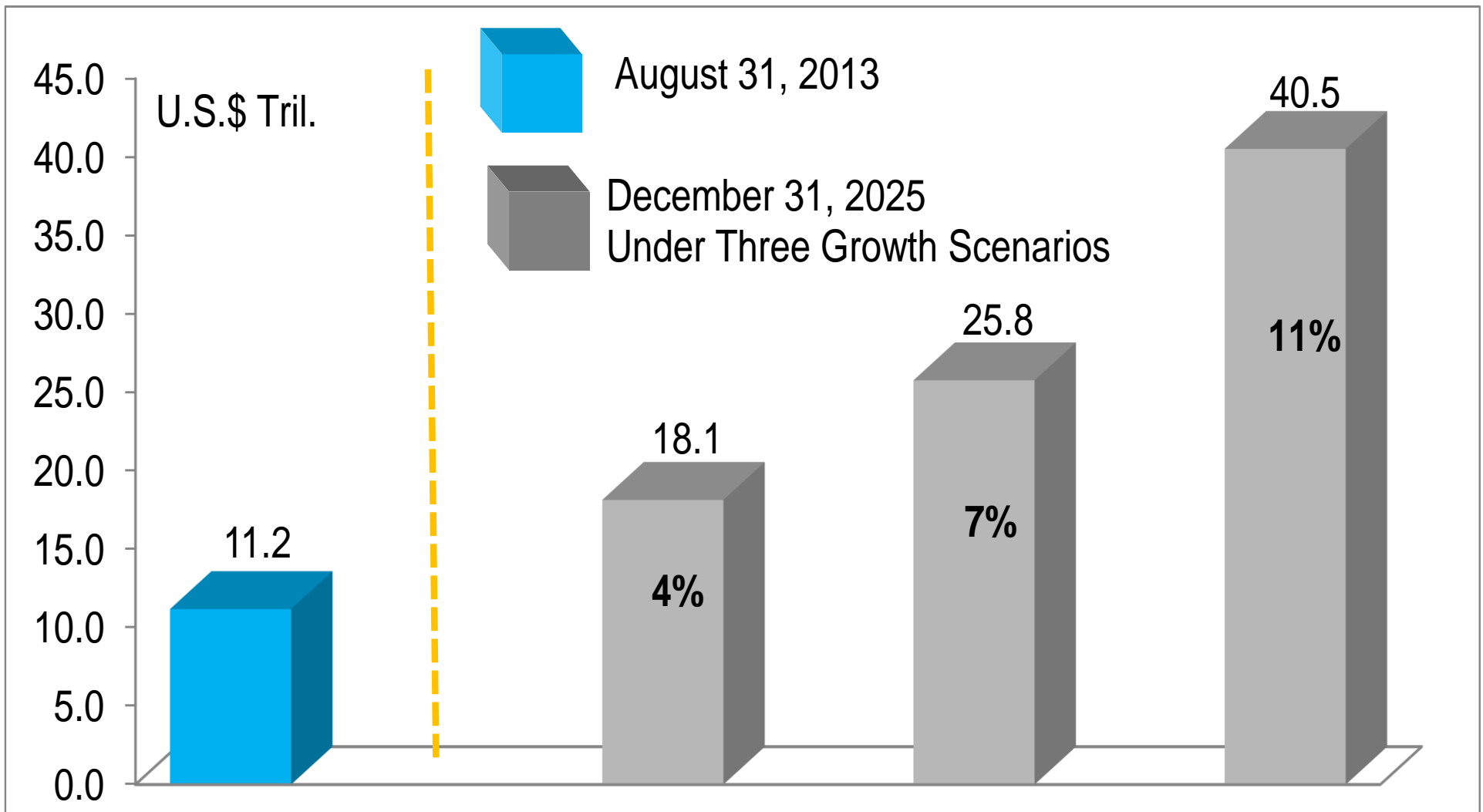


\*Q1 2013 corporate profits after tax (saar) divided by Q1 2013 nominal GDP (saar)

\*\*Corporate profits after tax with inventory and capital consumption adjustments; adjusts inventories and depreciation of fixed assets at current cost; revenue excludes dividends and capital gains; expenses exclude bad debt, depletion, and capital losses

Source: BNY Mellon using data from BEA, FactSet, and NBER

# Strategic Effects of Global Imbalances Accumulation Enormous Central Bank Reserves<sup>1</sup> (U.S. \$ Trillion): August 31, 2013 and Forecasted<sup>2</sup> to 2025 Under Three Growth Scenarios



1) International reserve assets excluding gold

2) Forecasted annual percentage change (CAGR) in total reserves from natural accretion and investment return

Source: BNY Mellon using data from Bloomberg

# The Structural Aftermath of “The Great Recession”: The Beginning of the 21<sup>st</sup> Century Capital Market Order

## “Invisible Hand” Becomes More Visible

- ◆ Prevent future financial system disruptions from spilling over into real economy with “too big to fail” financial institutions owning a put back to taxpayers
- ◆ Identify and better monitor systemically important financial institutions
- ◆ “Post-bubble conservatism” for “neo-modern credit markets”
- ◆ Shift of government legislative/regulatory pendulum toward more oversight
- ◆ More conservative consumer finance
- ◆ Lower financial leverage for certain classes of financial institutions; especially broker-dealers
- ◆ Global mortgage origination process: less low-quality capacity, more caution
- ◆ Rating agencies: more conservative, additional regulatory involvement
- ◆ Greater emphasis on in-house fundamental credit analysis
- ◆ Structured credit products: medium-to-long term resurrection in more conservative form
- ◆ Acceleration of disintermediation; especially in Europe
- ◆ Attempt to better coordinate cross-border regulatory and economic policymaking
- ◆ Virtues, efficacy, even existence of efficient markets questioned
- ◆ Re-appraisal of strategic liquidity premia; likely extended era of higher risk premia
- ◆ Better appreciation of limits to empirical models, improved blend of macro & micro models
- ◆ Slower capital formation and productivity growth
- ◆ Anxiety about extended natural resource competition, inciting stubborn commodity inflation, higher interest rates
- ◆ Extended restraint for world growth and breed new found tolerance for inflation (in some quarters)
- ◆ Strategic shift in balance of power away from U.S.
- ◆ Temporary, not permanent, stall in the pace of financial market innovation
- ◆ Real progress on multi-generational issues such as energy and climate change derailed by slow growth
- ◆ Asset management philosophy: acceleration into alternatives and alpha/beta separation; reduced management fees, higher barriers to entry for new alternative managers
- ◆ Everything’s up for re-interpretation

# “The Great Transition Age: 2009 – 2025”

## No Wonder Corporate Cash Balances Are So High in 2013

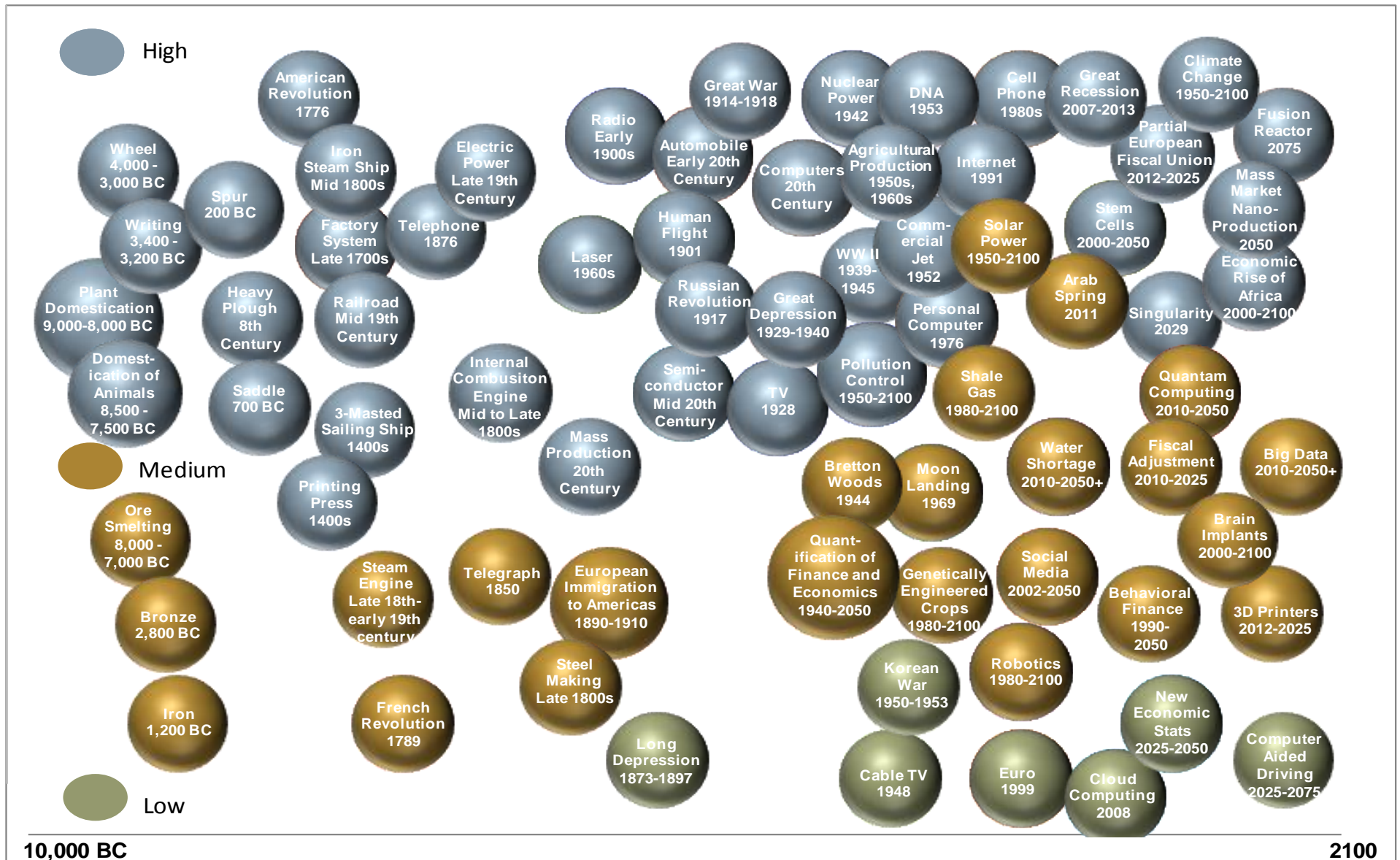


# “Future Global Financial System: 2013 – 2050”



# “The Great Disruptors”

## Technological Progress & Major Geopolitical Events: 10,000 BC to 2100



Source: BNY Mellon using data from Financial Times

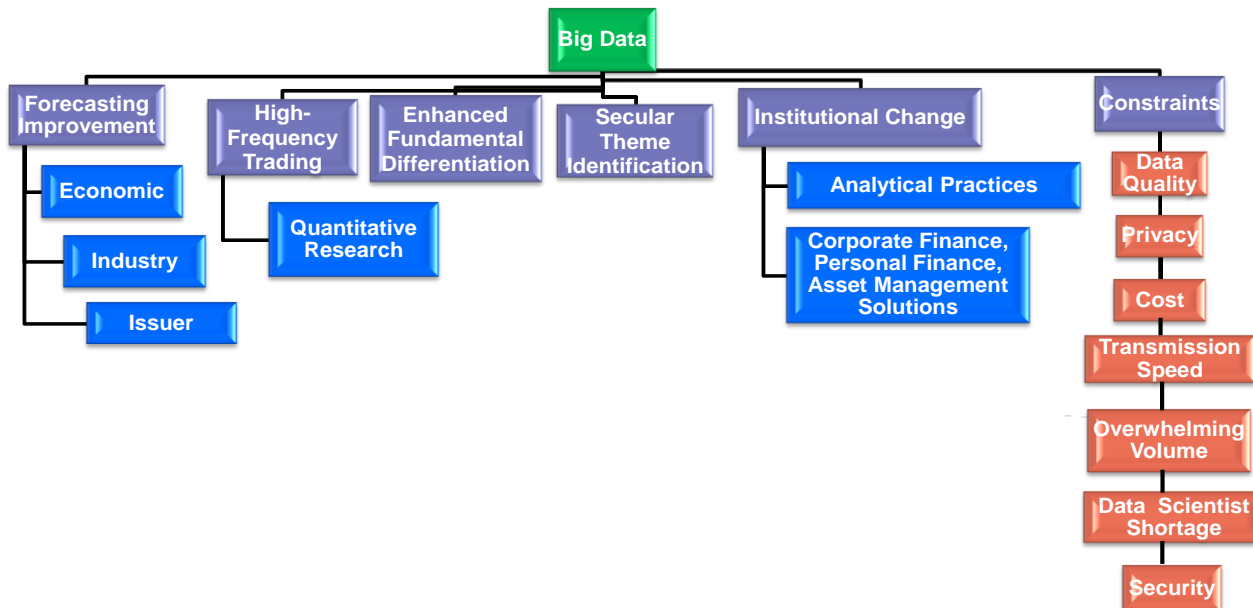
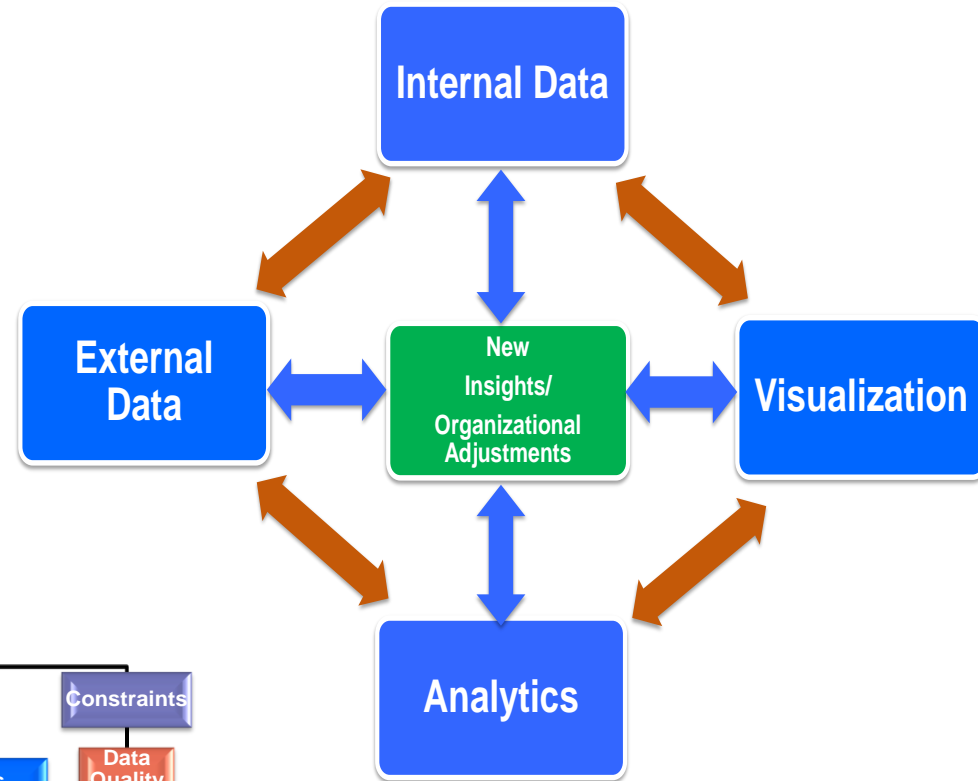
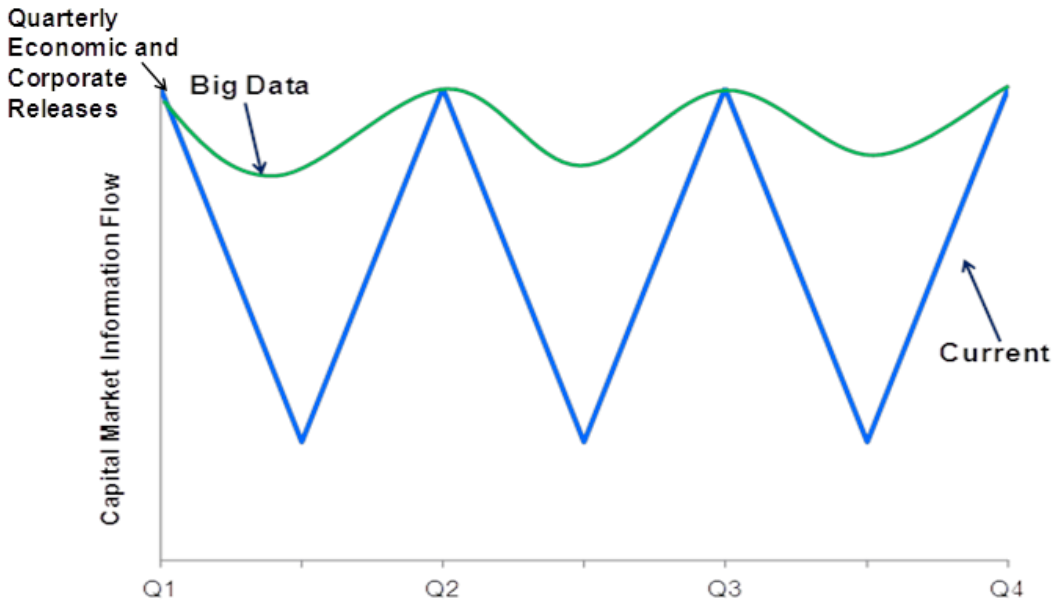


# Big Data: Exponential Climb in Analyses and Stored Information

- By 2020, the amount of information that needs to be actively managed is expected to grow 50-fold; by 2100, information will grow by  $2^{44}$
- With a steady stream of novel and higher quality inputs from big data, stock and bond markets may become less inclined to be subservient to infrequent information lumps such as quarterly economic and corporate reports
- Economic releases such as GDP, inflation, and industrial production may become more accurate (subject to less revision) and less surprising
- Due to greater volume, velocity, and variety of information flows, new approaches will be required in research, analytics, asset allocation, trading, and risk management. Deterioration of real time data quality, privacy/confidentiality issues, overwhelming volumes, and data scientist shortage will emerge
- The increased frequency of data point releases will lead to more day-to-day noise as markets have difficulty in distinguishing between brief aberrations and inception of new meaningful trends



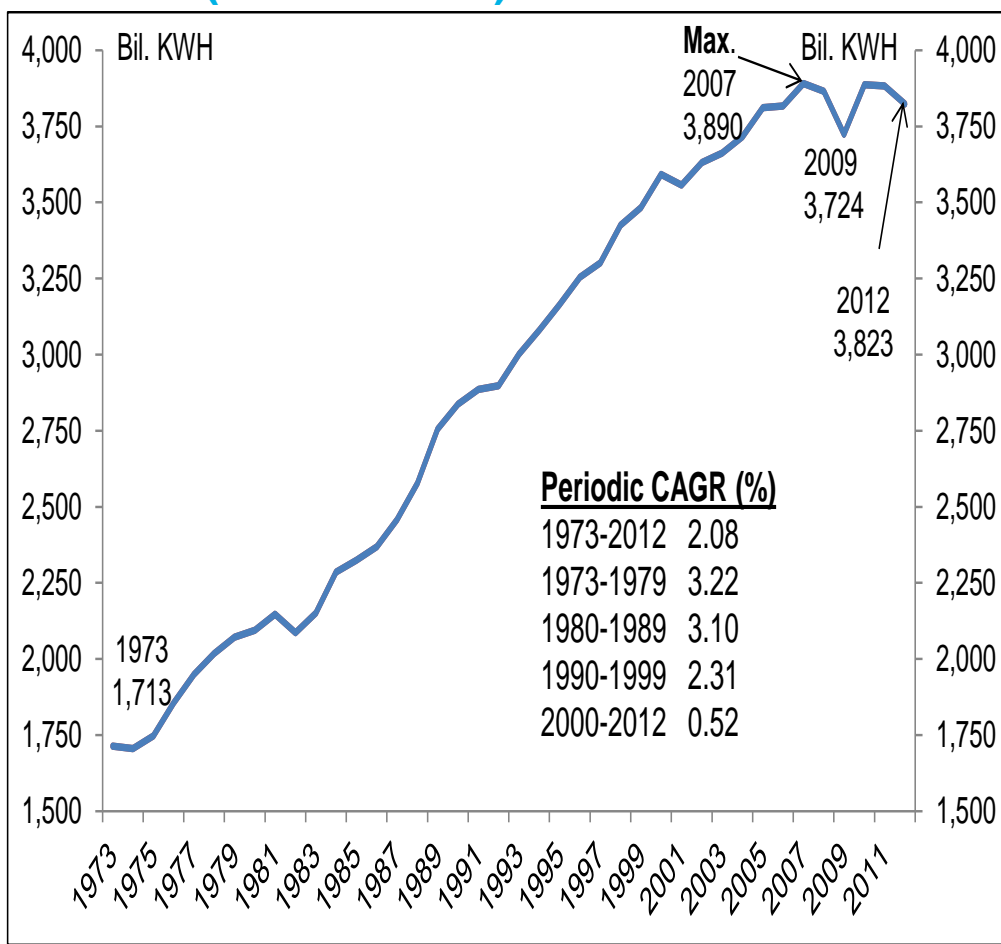
# Big Data: Smoother and More Granular Information Flows



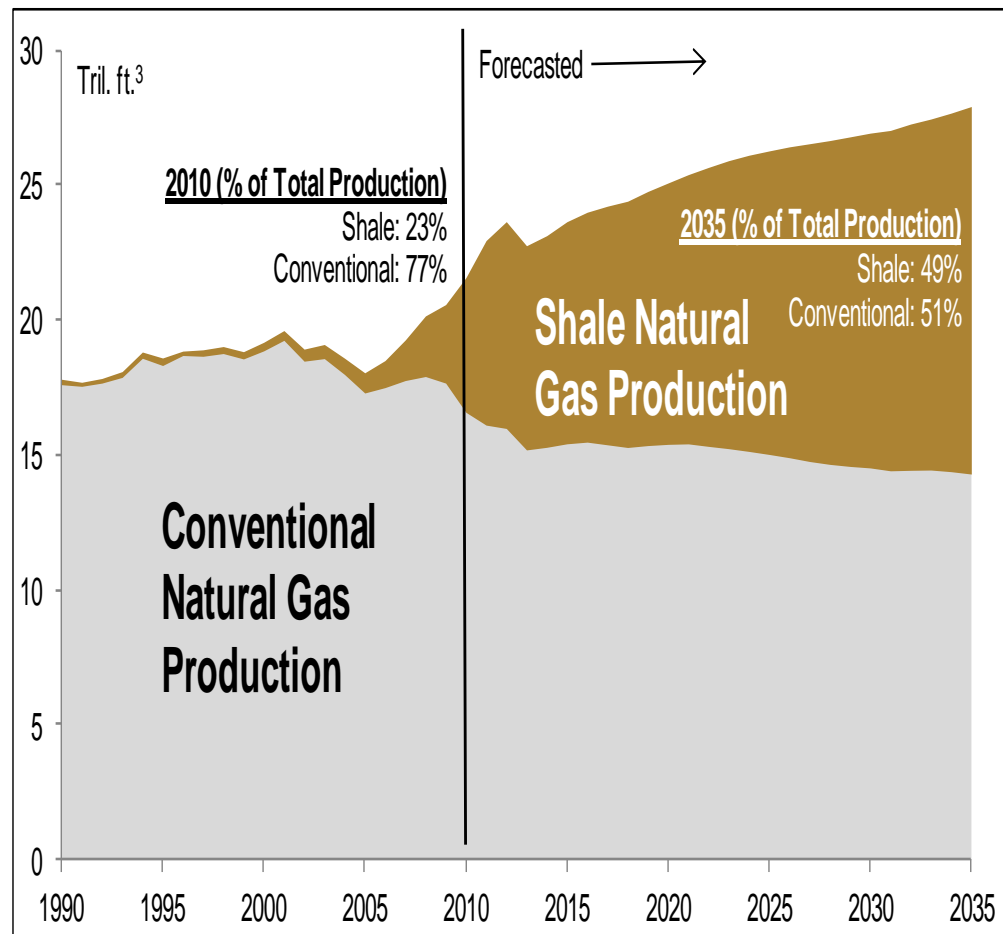
# “The Hydrocarbon Revolution”

## From Deliverability Shortage Concerns in the Oughts to Abundance Expectations in The Teens

Thanks to Conservation,  
Growth Cools in 21st Century  
U.S. Annual Electricity Usage  
(Billion KWH): 1973 to 2012



Increased Role of Shale Gas  
Natural Gas Production<sup>1</sup>  
(Trillion ft.<sup>3</sup>): 1990 to 2035



1) Forecasted after 2010

Source: BNY Mellon using data from U.S. Energy Information Agency and International Energy Agency

# Clustered Key Tactical Market Trends in Mid 2013: On Path to Economic/Market Mid-Cycle Ascent Akin to 1983-1987, 1993-1997, 2003-2007

- ◆ Rising Geopolitical Risk (Syria, Iran, Egypt)
- ◆ Tapering Timing the Fed's Withdrawal of the Punch Bowl: Monetary Policy Normalization Starts in September
- ◆ EM Wobbles: Tactical or Strategic
- ◆ China Growth Destiny
- ◆ European Restoration
- ◆ 2013: U.S. Fiscal & Sequestration Resolution
- ◆ Endurance of Bull Run in Risky Assets; Arrival of "Tactical Time Out"
- ◆ 2014 Outlook
- ◆ Structural Change in Financial Services
- ◆ Advanced Economy Productivity Slippage
- ◆ Currency and Trade Competition: "Currency Wars"
- ◆ Portfolio Management Philosophy: How to Best Preserve Principal in Fixed Income

# Inter-And Intra-Asset Class Correlations Diverging in 2013

Global YTD Leaders and Laggards (Total Return, %):

Top and Bottom 4 Across Multiple Asset Classes as of August 31

## Global Equities<sup>1</sup>

**EM & Frontier Markets Dominate**

Top 4		Bottom 4	
Venezuela	196.18	Mongolia	-22.43
Ghana	66.71	Peru	-19.28
U.A.E.	62.66	Cyprus	-18.02
Argentina	38.63	Brazil	-17.95

1) Returns measured in local currency

## Global Spread-Sectors<sup>1</sup>:

**EM Decouples from U.S. HY**

Top 4			Bottom 4		
	TR <sup>1</sup> (%)	ER <sup>1</sup> (bp)		TR <sup>1</sup> (%)	ER <sup>1</sup> (bp)
Pan-Euro. HY <sup>2</sup>	4.85	580	EM (U.S. \$)	-7.33	-357
U.S. HY	2.71	467	U.S. Munis	-4.92	n/a
Euroyen	2.64	210	U.S. IG Credit	-3.70	24
Euro FRN	1.27	126	144A	-3.67	-53

1) TR: total return; ER: excess return; 2) Excess returns are relative to local European government curves on a euro-hedged basis

## Global Treasuries<sup>1</sup>

**HY Rises, High Quality Sinks**

Top 4		Bottom 4	
Spain	7.17	Singapore	-4.84
Ireland	5.48	Denmark	-4.19
Chile	3.38	Sweden	-3.65
Italy	3.34	Switzerland	-3.60

1) Returns measured in local currency

Source: BNY Mellon using data from Barclays Live, FactSet, and Bloomberg

## Commodities<sup>1</sup>

**Highly Heterogeneous**

Top 4		Bottom 4	
Orange Juice	17.85	Coffee	-24.92
Crude Oil	15.66	Silver	-22.89
Soybeans	14.63	Nickel	-20.16
Cotton	9.24	Wheat	-20.03

1) Returns measured with S&P GSCI total return indices

## FX<sup>1</sup>

**Volatility & Return Separation Climb**

Top 4		Bottom 4	
Danish Krone	0.24	South Africa Rand	-17.57
Euro	0.22	Australian Dollar	-14.36
Swiss Franc	-1.55	Brazilian Real	-14.00
Swedish Krona	-1.75	Japanese Yen	-11.63

1) Spot return vs. U.S. \$; includes major currencies as defined by Bloomberg in WCRS (World Currency Rankings); currencies include BRL, DKK, EUR, SEK, NOK, NZD, MXN, CHF, AUD, CAD, SGD, TWD, KRW, GBP, ZAR, JPY

# Early-to-Mid 21<sup>st</sup> Century Global Financial System: Recession, Recovery, Reform, Restoration

<b>Summary</b>	<b>Recovering from Great Recession, greater oversight, greater competition, medium financial risk, modest returns, more frequent spasms of volatility, high correlations thanks to real-time information saturation</b>
Geopolitical Risk	Mean-reverting higher, intergenerational concord needed
Demographics	Enormous skew between AE and EM
Climate Change	Rising risk and remediation cost
Economics	Great Reset, EM convergence to AE status; fiscal austerity, monetary policy largesse
Technology	Exponential change, Big Data, 3-D Printers
Financial System	Derisk, deleverage, downsize, less liquidity, faster trading, eventual privatization of U.S. mortgage GSEs
Regulation	Greater oversight; continued balkanization among jurisdictions
Issuers: Financial Policy	More conservative, EM mainstreaming
Investors: Asset Management Philosophy	“Great Rotation” from bonds to equities, standardization, analytics, active vs. passive; global diversification; alternatives; strategic view emphasis
Markets	Lower trading, volatility waves, reticent broker-dealers; algorithmic trading
Education	Heart of excellence, especially history
Ethics	Ongoing crusade; rogue financial institutions and traders will occasionally surface

# Key Secular Global Market Trends in 2013: “Two Cheers for The Teens”

Positive	Negative	Mixed
Geopolitical Realignment	Continuing Clash of Competing Civilizations; No Plan for Iran; Arab Spring to Arab Winter	Normalization of Economic Policy in Mid-to-Late Teens
Global Economic & Financial System Architecture (Capitalism) Upgrade	AE Economy Politics of Austerity (Sequestration)	Unleashing Record Corporate Cash Hoards
Led by China, EM Convergence to AE Status; Full Convertibility of Chinese and Indian Currency	Lower WMD Barrier to Entry	More Competitive and More Mobile Human Capital
Path to Fiscal Soundness	Cyber Terrorism/Wars	Intergenerational Clash Over Entitlement Reform (Grand Bargains)
Exponential Technological Change <sup>1</sup>	Protectionism/Currency Competition (Wars)	Economic Stress = High Political Change
Globalization vs. Political Fragmentation	Economic and Market Asymmetries (EM vs. AE)	Post-Deleveraging Adjustments
Housing Value Stabilization/Appreciation	Wealth, Income, Knowledge, Technology Distribution Gaps	Another Robotic/Automation Supply Shock
Energy Production Diversification (Fracking); U.S. Economic Miracle Drug	Aging Demographics in Most AE Nations/ Rising Health Care Costs	Equities Are New Bonds
Education Advances in EM	Resource Competition	ETF Proliferation
EM Middle Class Explosion	Climate Change/Water Resource Management	Relocation of Production and Services
Urbanization Quickening	Government/Regulatory Reset to High Market Involvement	Rating Agencies Destiny
Rise of Africa and Frontier Assets	Lack of Global Regulatory Harmonization & Financial Transaction Tax	Index Customization
Central Bank Largesse, Success, & Inflation Targeting	Lack of Clarity on Realignment of World Production Based On Cost and Technology (3-D Printers)	Capital Superabundance
Eventual Money Market Revival	Food Inflation Risk	Commodity Supercycle Bursts
Positive Risky Asset Wealth Effect	Stagnant Labor (Wages) Market	
High Corporate Profitability	Miniscule Yields On Debt Securities	
	Broken Broker-Dealer Model = Less Liquidity	

1) Life Sciences, Robotics, AI, Singularity, Smart Clothes, Self Driven Cars, 3D Printers, and Big Data

# The Future of Global Asset Management

## Late 20<sup>th</sup>/Early 21<sup>st</sup> Century Global Capital Market Framework

❑ The Great Recession of 2007-2015 will be recalled for “systematic credit cleansing”; a secular adjustment in credit risk premia and credit market methodology

❑ The beginning of the 21<sup>st</sup> century more conservative capital market order

– Everything’s ripe for re-interpretation

❑ Institutional aftermath: assimilation of learning lessons; long process; full adjustment by 2025

❑ Bright strategic outlook for the Teens

❑ Absolute return to relative value to absolute return

❑ Asia-focused financial system

## Global Asset Management Developments

Low yields, paltry AE growth	Deregulation/re-regulation	Global diversification/issuer concentration	Pension fund capitalism
Aging AE demographics	Privatization/nationalization	Algorithmic/quant over fundamental value	Shorter tactical timeline
Global Grand Convergence	Derivitization/stagnation	Active vs. passive indexing & ETFs	Horizon and academic/practitioner dissonance
EM mainstreaming	Securitization pause/resurgence	Index customization (self indices)	Risk budgeting/risk parity
GPR rise	Disintermediation/quickening in Europe/Asia	Better capitalized financial system	Quadruple A <sup>1</sup> & quadruple I <sup>2</sup> doctrine
Globalization/deceleration	Liquidity declines/liquidity scoring	Equity market fragmentation	Global electronic bond exchange
			Big data/technology advances

## Global Portfolio Strategy

❑ Moving out risk horizon curve; portfolio concentration; minimization of pro-cyclical processes; model standardization

❑ Opportunities in IG and HY credit, EM, Frontier, real estate, and Alternative markets

1) Quadruple A’s: alternatives; absolute return; alpha/beta separation; all styles, geographies on choice menu

2) Quadruple I’s: innovation; infrastructure; inflation-protection; insurance of risk



# The Most Important Potential Capital Market Developments from 2013 to 2020 (\*Biggest Risks)

- Capitalist Model Re-engineered
- Global Financial System Upgraded; Regulatory Evolution
- \***Western Central Bank Tapering to Normalcy and Subsequent Economic Market Reaction Function (Undoubtedly, Some Organizations Will Trip on Curve Flattening and Elevation Like Orange County in 1994)**
- European Economic Resurrection, China's First Major Slow Down Since 1970s
- \***Survival and Scale of Eurozone**
- Full and Free Convertibility of Renminbi and Rupee
- \***Bubble Puncture: Bonds, EM, Precious Metals**
- \***ETF Rationalization**
- Creation of World Volatility Index
- U.K. Considers Departure from EU
- \***Geopolitical Risk Events (Cyberattacks, Terrorism, Conventional Military Skirmishes) Tied to Ideology Competition Over Energy and Water Resources**
- EM Convergence to AE Status
- Rise of EM Middle Class
- \***Technological Change (Cloud, Social Media, Google Glasses, Capacity, Speed)**
- Application of Big Data to Financial Markets
- ESG Investment Expansion
- Baby-Boom Peaking Retirements
- Economic Rise of Africa and LATAM
- Asian Pollution Control and Safety Net Construction
- \***Fiscal Rectitude Magnitude**
- Rate of Human Capital Development
- \***Where's the Liquidity; Episodic "Flash Crashes"**
- \***Redefinition of Broker-dealer Business Model**
- New Asset Management Philosophy (Mix of Empirical and Behavioral Data); Increased Competition Among Asset Managers
- Better Risk Prevention Design: Equation for Disaster is (Natural Hazard, Nature) + (Hubris, Arrogance, Greed, Indolence)

# The 2013 Valuation Seesaw

## Macro Concerns

- ◆ Slow AE Economic Recovery
- ◆ Lost Generation of Structural Unemployed
- ◆ Nature of Entitlement Reform
- ◆ Tapering
- ◆ Iran/North Korea/Egypt/Syria
- ◆ Europe (Cyprus, Portugal)
- ◆ European Banks
- ◆ Fiscal Cliff/Sequestration
- ◆ China Hard Landing
- ◆ EM Softness
- ◆ Regulators and Institutional Adjustments
- ◆ Effects of Bear Bond Market
- ◆ Diminished Systemic Liquidity

## Micro Pockets of Strength

- ◆ Autos
- ◆ Retail
- ◆ Airlines
- ◆ Energy
- ◆ Japan Economic Stimulus
- ◆ Housing
- ◆ Consumer Confidence
- ◆ U.S. Employment
- ◆ Health Care
- ◆ Technology



# Global Real GDP Growth (%): Pick-up in 2H 2013 and 2014

## “Austerity, Rebalancing, and then Re-Ignition”

2011/2012 Actual; 2013 to 2015 Forecasts<sup>1</sup> (as of August 31, 2013)

	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
World	2.95	2.13	1.94	2.92	3.18
Euro area	1.50	-0.60	-0.60	1.00	1.40
<i>France</i>	2.00	0.00	-0.20	0.80	1.30
<i>Germany</i>	3.30	0.70	0.50	1.65	1.60
<i>Italy</i>	0.40	-2.40	-1.80	0.50	0.90
<i>Spain</i>	0.10	-1.60	-1.50	0.50	0.90
United States	1.80	2.80	1.60	2.70	3.00
China	9.30	7.70	7.50	7.45	7.20
Japan	-0.58	1.98	1.90	1.50	1.10
United Kingdom	1.10	0.20	1.00	1.70	2.20
Canada	2.53	1.71	1.70	2.35	2.70
Brazil	2.76	0.87	2.20	2.65	3.10
Russia	4.30	3.40	2.30	3.00	3.20
India	7.48	5.10	5.70	5.20	6.00
Indonesia	6.49	6.23	5.80	6.00	6.40
Mexico	3.90	3.90	2.30	3.90	4.00
South Africa	3.48	2.58	2.30	3.00	3.45
Turkey	8.80	2.20	3.55	4.35	4.70

1) Bloomberg consensus estimate  
Source: BNY Mellon using data from Bloomberg

# “Black and White Swan Lake”

**China/EM Hard Landing**



**Unknown**



**Political Uncertainties**



**Housing Correction Ended**



**Deleveraging**



**Global Imbalances**



**Social Unrest**



**Lower Corporate Tax Rates Possible**



**Demographics**



**Technology**



**Iran**



**Politics**



**Energy Supply**



**Higher Dividend and Capital Gains Taxes**



**European Economy**



**Savings Rates**



**Regulatory Change**



**Global Economic Revival**



**Productivity Slowdown**



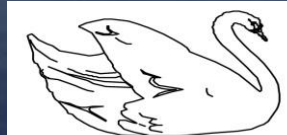
**Currency Competition**



**Natural Disasters**



**Capitalism**



# The Future History of Global Capital Markets

## Brute Force in Early-to-Mid Industrial Age



**All  
Fundamentals,  
Technicals,  
Prices, Indices,  
New Issues,  
Retirements  
(Calls, Tenders,  
Maturities)**



**Real-Time  
Portfolio  
Adjustments  
Executed  
Through Global  
Virtual  
Exchange**

## Desktop AI Optimization Subject to Flexible Portfolio Constraints



### Moore's Law\*

2008  
2010  
2012  
2025  
2050

### PC Chip Speed

500 GHz  
1,300 GHz  
3,700 GHz  
1,578,667 GHz  
165,535,197,867 GHz

\* Processing Speed doubles approximately every 18 months

# “Through the Too Many Years and Too Many Tears”

## Major Credit Detonations from 1970-2013

- ◆ Penn Central (1970)
- ◆ W.T. Grant (1976)
- ◆ Nuclear-Building Utilities (Mid-1970s, Late 1980s)
- ◆ Electric Utilities (Mid-1970s to Mid-1980s)
- ◆ U.S. Manufacturers: Rust-Belt Restructuring (Mid-1970s)
- ◆ U.S. Money Center Banks (Late 1970s-Early 1980s)
- ◆ Energy Companies (Late 1970s)
- ◆ Johns-Manville (1982)
- ◆ Mexico (1982)
- ◆ Penn Square (1982)
- ◆ Continental Illinois (1984)
- ◆ Underleveraged U.S. Industrials (Mid-1980s)
- ◆ U.S. High-Yield Corporate Debt (Mid-to-Late 1980s)
- ◆ S&Ls (late 1980s)
- ◆ P.S. of New Hampshire (1988)
- ◆ L.F. Rothschild (1988)
- ◆ Columbia Savings (1989)
- ◆ Franklin Savings and Loan (1990)
- ◆ Drexel Burnham (1990)
- ◆ U.S. Banks, European Banks (Early 1990s)
- ◆ EM Debt (Early 1990s)
- ◆ Asian Sovereigns (1997-1998)
- ◆ European Telephone/Media (Late 1990s)
- ◆ Bank of New England (1991)
- ◆ Columbia Gas (1991)
- ◆ Blue Chip Credit Massacre - Sears, GM, Marriott (October 1992)
- ◆ Askin Asset Management (1994)
- ◆ Kidder Peabody (1994)
- ◆ Mexico (1995)
- ◆ Tiphook (1997)
- ◆ LTCM, Russia Devaluation/Default (1998)

# “Through the Too Many Years and Too Many Tears”

## Major Credit Detonations from 1970-2013

- ◆ Argentina Default (2001)
- ◆ Enron (2001)
- ◆ WorldCom (2002)
- ◆ Corporate Governance (2001-2003)
- ◆ HealthSouth (2003)
- ◆ Housing-Related Debt (Early-to-Mid 2000s)
- ◆ Broker-Dealers (Mid-2000s)
- ◆ Structured Credit Product (Early-to-Mid 2000s)
- ◆ Northern Rock (2007)
- ◆ Iceland, Ireland, Portugal, Greece, Spain, Italy (2007-2013)
- ◆ RBS (2008)
- ◆ AMBAC, MBIA (2008)
- ◆ Bear Stearns (2008)
- ◆ Fannie Mae, Freddie Mac (2008)
- ◆ Lehman Brothers (2008)
- ◆ Merrill Lynch (2008)
- ◆ Wachovia, Washington Mutual (2008)
- ◆ AIG (2008)
- ◆ U.S. (almost) (2011)
- ◆ European Sovereigns (Early Teens)
- ◆ MF Global (2012)
- ◆ Cyprus (2013)

# Fragility of Institutions: Acquired or Defunct

## 1974 to 2012

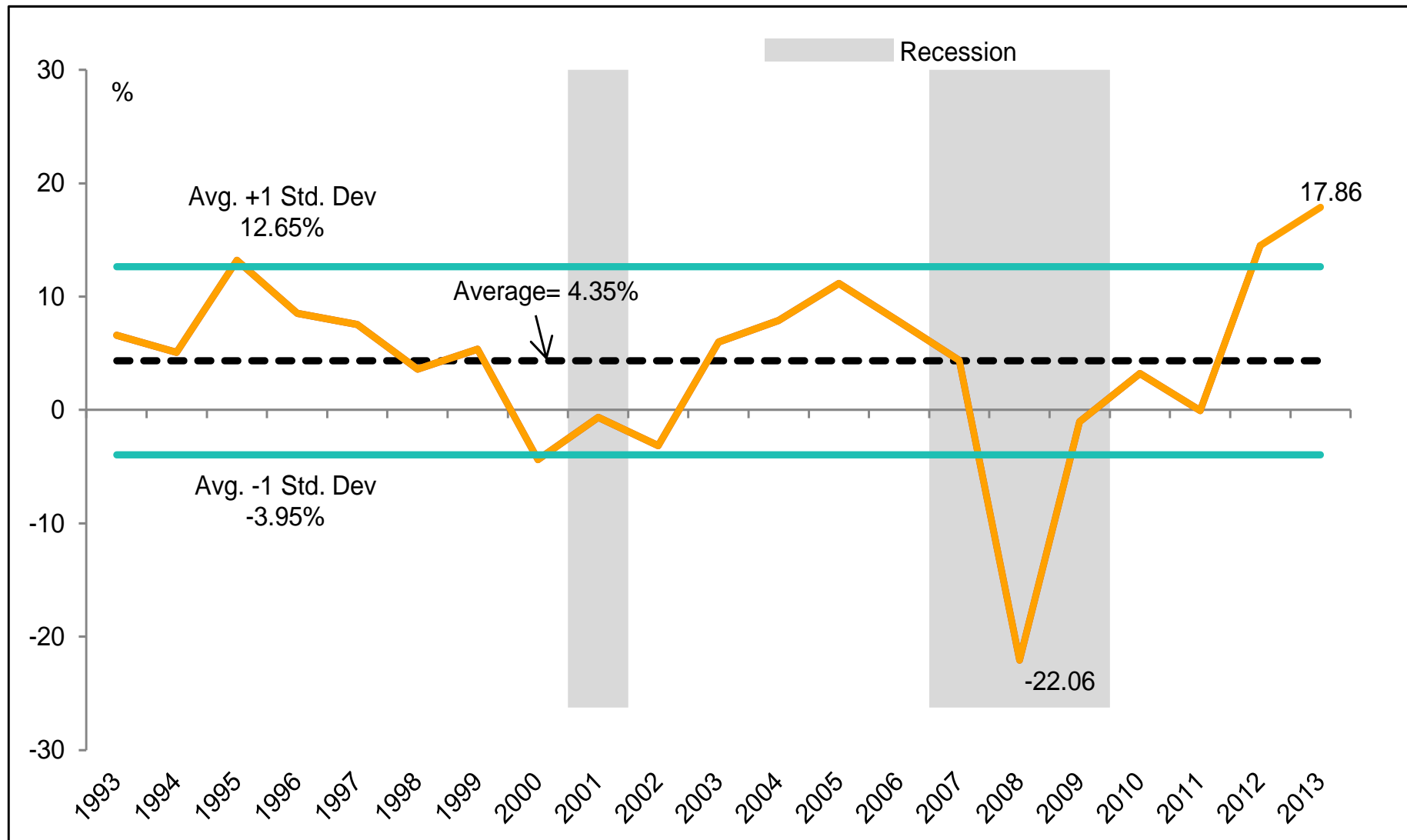
- ◆ Halsey Stuart (1974)
- ◆ Kuhn Loeb (1977)
- ◆ White Weld (1978)
- ◆ Hornblower & Weeks (1979)
- ◆ Shearson Hayden Stone (1979)
- ◆ Bache (1981)
- ◆ Continental Illinois (1984)
- ◆ Irving Securities (1988)
- ◆ E.F. Hutton (1988)
- ◆ L.F. Rothschild (1988)
- ◆ Thompson McKinnon (1989)
- ◆ First Boston (1990)
- ◆ Drexel Burnham (1990)
- ◆ Manufacturers Hanover (1991)
- ◆ Security Pacific (1992)
- ◆ Kidder, Peabody & Co. (1994)
- ◆ Barings (1995)
- ◆ First Interstate (1996)
- ◆ Chemical (1996)
- ◆ Alex Brown (1997)
- ◆ Dillon Read (1997)
- ◆ Dean Witter (1997)
- ◆ Harris Trust (1998)
- ◆ Salomon Brothers (1998)
- ◆ First Chicago (1998)
- ◆ Hambrecht & Quist (1999)
- ◆ Bankers Trust (1999)
- ◆ Yamaichi (1999)
- ◆ Robert Fleming (2000)
- ◆ Chase Manhattan (2000)
- ◆ Wertheim Schroder (2000)
- ◆ DLJ (2000)
- ◆ Paine Webber (2000)
- ◆ Prudential Securities (2003)
- ◆ Bank One (2004)
- ◆ Refco (2005)
- ◆ ABN Amro (2007)
- ◆ Bear Stearns (2008)
- ◆ Lehman Brothers (2008)
- ◆ Merrill Lynch (2008)
- ◆ MF Global (2011)
- ◆ Peregrine Financial (2012)



# Key Credit Diagnostic Problems

- ◆ Macro obliviousness
- ◆ Lack of differentiation between transitory cyclical and long-term structural factors
- ◆ Management quality
- ◆ Fraud
- ◆ Supply-side shock
- ◆ Demand-shock
- ◆ Regulation
- ◆ Litigation
- ◆ Too much short-term debt
- ◆ Excess financial leverage
- ◆ Over dependence on rating agencies
- ◆ Inadequate in-house credit staffing (size, experience, financial statement analysis)
- ◆ Failure to incorporate market signals (spreads, CDS, equities)
- ◆ Siloization by industry issuers
- ◆ Historical Ignorance

# Rolling 5-Year Excess Return of U.S. Investment-Grade Corporate Credit: 1988 to 2013 as of August 31



1) Incremental return of duration-matched treasuries and investment-grade corporates  
 Recession dates provided from NBER  
 Source: BNY Mellon using data from Barclays Live

# 2012 Second Best Year Ever for Spread Sectors; Lower Outperformance Expected in 2013

## Global Spread-Sector Performance (Excess Return, bp): August 31, 2013

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 YTD <sup>1</sup>	Info. Ratio 1990-2013 <sup>1</sup>
<b>Global Treasury (ex-U.S.)*</b>	-497	-426	-35	302	-69	-42	867	119	104	560	-396	110	-518	-55	156	266	50	-466	-788	734	-386	-834	325	456	-0.04
<b>U.S. Universal</b>	-	-	-	46	-27	15	55	10	-167	180	-202	19	-30	329	168	4	152	-260	-997	1015	224	-147	358	20	0.10
<b>U.S. Aggregate</b>	2	56	-12	-9	35	12	49	36	-80	80	-131	54	29	155	103	-31	85	-206	-710	746	171	-114	227	-2	0.10
<b>U.S. Agency</b>	41	59	23	53	-16	59	25	52	-49	41	-13	73	96	27	78	13	75	-52	-110	238	72	19	97	-47	0.53
<b>U.S. MBS</b>	125	13	-111	-104	93	-49	83	130	-90	113	-77	-75	173	11	142	-37	122	-177	-232	495	225	-106	91	-19	0.20
<b>U.S. ABS</b>	-	-	77	125	53	48	74	-13	-88	137	43	139	-16	181	142	32	87	-634	-2223	2496	169	52	246	-35	0.07
<b>U.S. CMBS ERISA-Eligible</b>	-	-	-	-	-	-	-	27	-192	87	-41	131	210	201	118	15	137	-435	-3274	2960	1501	47	841	-24	0.11
<b>U.S. Inv.-Grade Credit 144A</b>	-189	268	104	91	53	136	125	-30	-238	170	-463	277	-187	527	159	-85	119	-464	-1786	1990	192	-322	695	24	0.08
<b>U.S. Floating-Rate Note</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	25	62	53	74	-117	-756	848	157	-102	398	78	0.17
<b>Eurodollar</b>	-	-	-	-	-	52	75	-62	-76	85	-119	169	-8	291	126	-24	101	-280	-1157	1303	157	-299	654	-27	0.11
<b>U.S. High Yield</b>	-523	2139	632	755	249	66	826	374	-843	476	-1897	-285	-1329	2642	800	47	843	-777	-3832	5955	974	-240	1394	467	0.21
<b>U.S. CMBS High Yield</b>	-	-	-	-	-	-	-	1786	-2612	1409	721	413	1011	96	1286	1082	1048	-1459	-6958	3542	7035	--	--	--	--
<b>EM (U.S. dollar-denominated)</b>	-	-	-	2999	-1301	787	2544	400	-2046	2417	148	-541	23	2465	823	959	702	-457	-2842	3797	508	-537	1503	-357	0.34
<b>Pan-European High Yield**</b>	-	-	-	-	-	-	-	-	-	1669	-1865	-914	-1036	2677	877	257	1039	-547	-4241	8095	1025	-876	2406	580	0.22
<b>Pan-European Aggregate**</b>	-	-	-	-	-	-	-	-	-	3	-6	77	12	65	28	-2	10	-78	-511	378	-215	-288	411	185	0.02
<b>Euro-Aggregate</b>	-	-	-	-	-	-	-	-	13	1	-21	72	16	57	33	-9	7	-59	-488	389	-277	-312	469	215	0.03
<b>Pan-European Credit**</b>	-	-	-	-	-	-	-	-	-	5	-17	164	-28	261	74	15	38	-274	-1389	1075	10	-427	802	202	0.06
<b>Euro-ABS</b>	-	-	-	-	-	-	-	-	-	24	6	-1320	6	-87	93	-7	9	-76	-502	409	46	103	188	191	-0.15
<b>Euro Floating-Rate Note</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	24	35	-111	-709	758	100	-148	586	126	0.17
<b>Asian-Pacific Aggregate ***</b>	-	-	-	-	-	-	-	-	-	-	-	1	11	6	6	4	0	-4	-10	15	15	-26	13	10	0.27
<b>Asian-Pacific Credit***</b>	-	-	-	-	-	-	-	-	-	-	-	0	47	48	39	13	1	-47	-217	185	135	-386	220	88	0.06
<b>Euroyen</b>	-	-	-	-	-	-	-	-	-	-	-	301	-183	-11	21	15	-13	-50	-481	307	135	-338	390	210	0.09
<b>Global Aggregate*</b>	-	-	-	-	-	-	-	-	-	-	-	32	14	89	56	-6	40	-117	-490	461	-7	-162	242	64	0.08

1) 2013 YTD: as of August 31

Excess Return: Excess returns remove the duration dependence of nominal returns and represent the incremental reward for the assumption of credit and volatility risk over the domestic treasury curve

U.S. CMBS High Yield: As of January 1, 2011, High Yield CMBS was removed from the Barclays Global High Yield Index

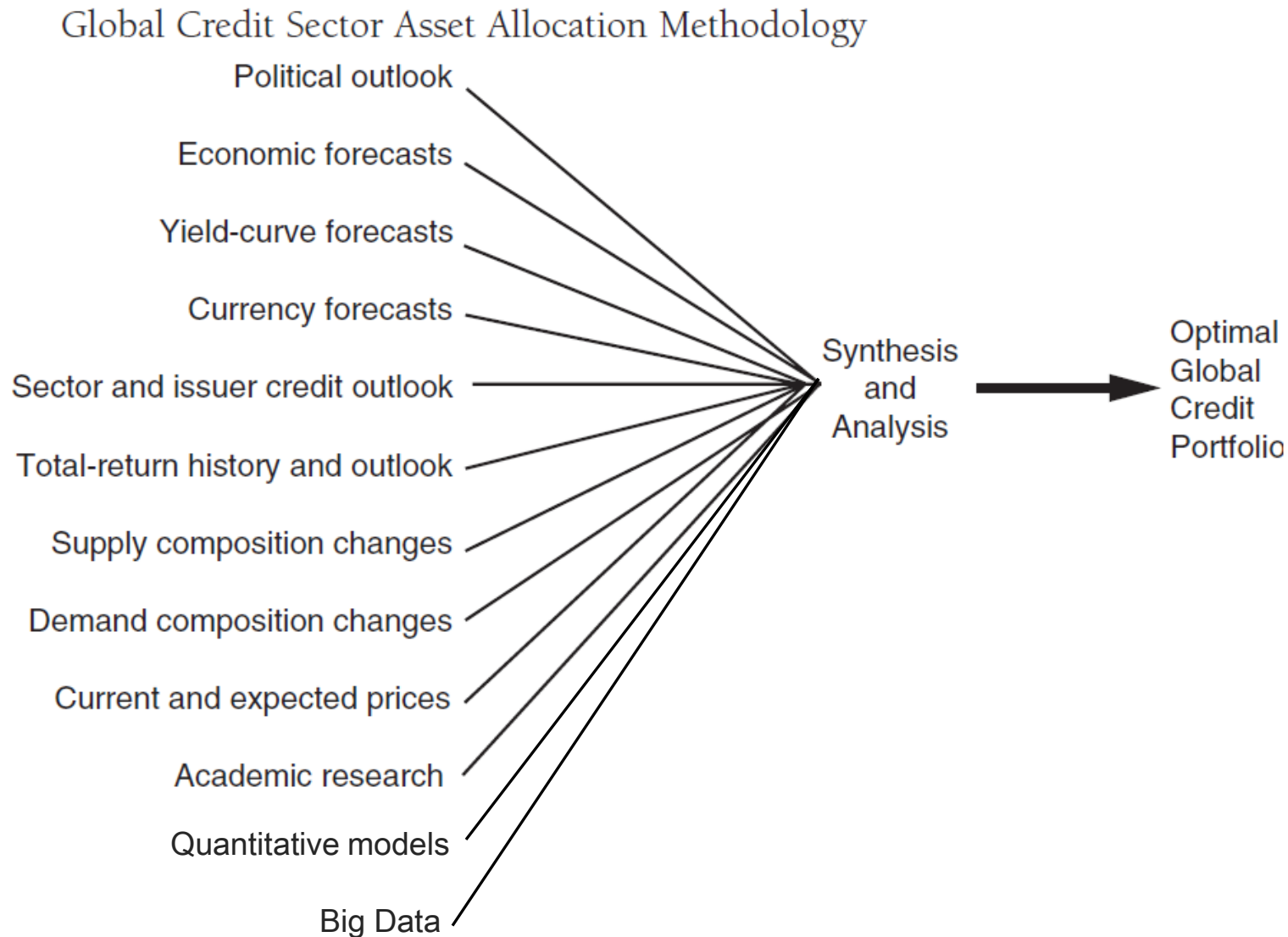
\*Excess returns are relative to U.S. Treasury bonds on a U.S. dollar-hedged basis

\*\*Excess returns are relative to local European government curves on a euro-hedged basis

\*\*\*Excess returns are relative to local Asian-Pacific government curves on a yen-hedged basis

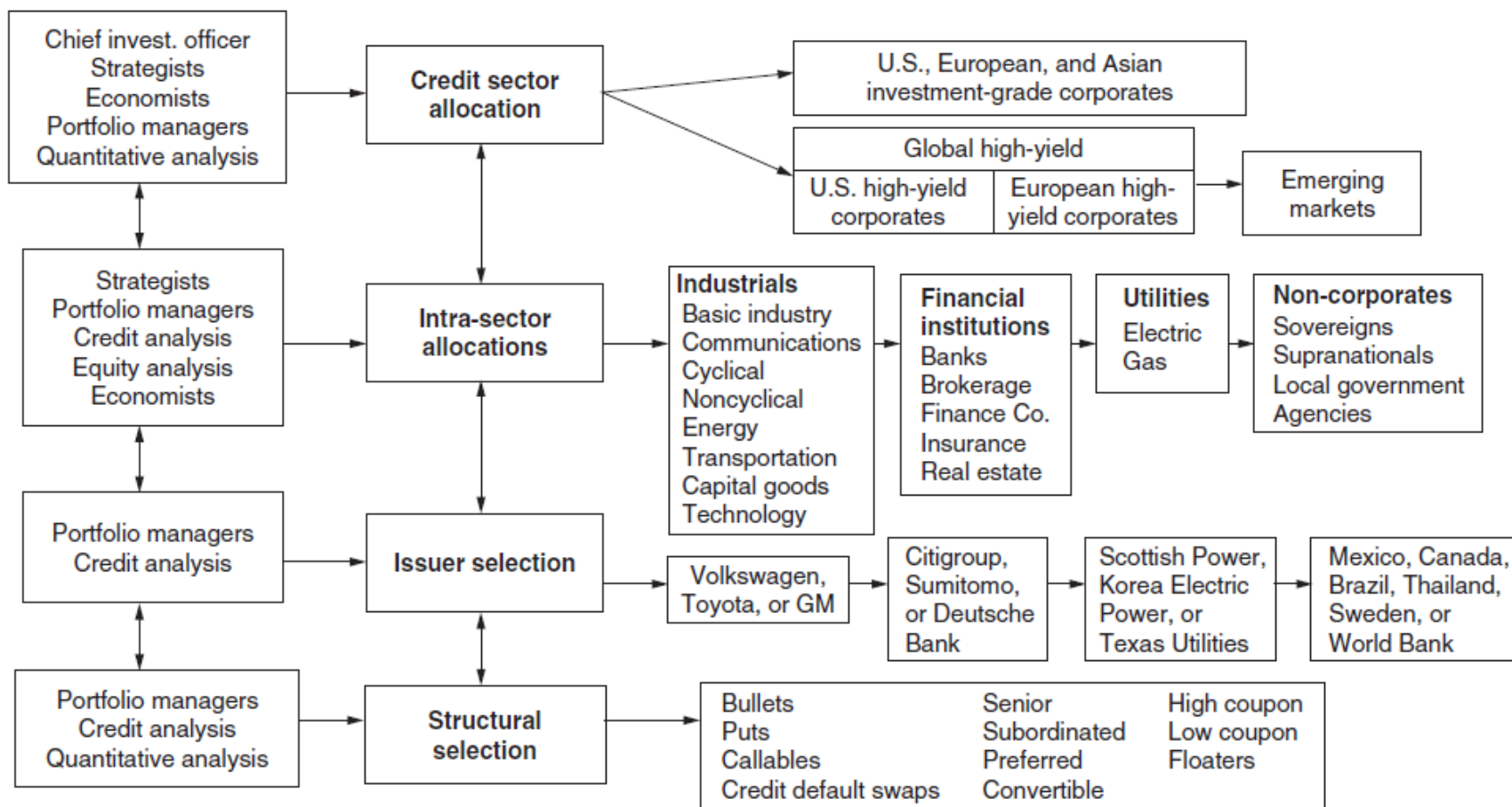
Source: BNY Mellon using data from FactSet and Barclays Live

# Global Credit Sector Asset Allocation Methodology



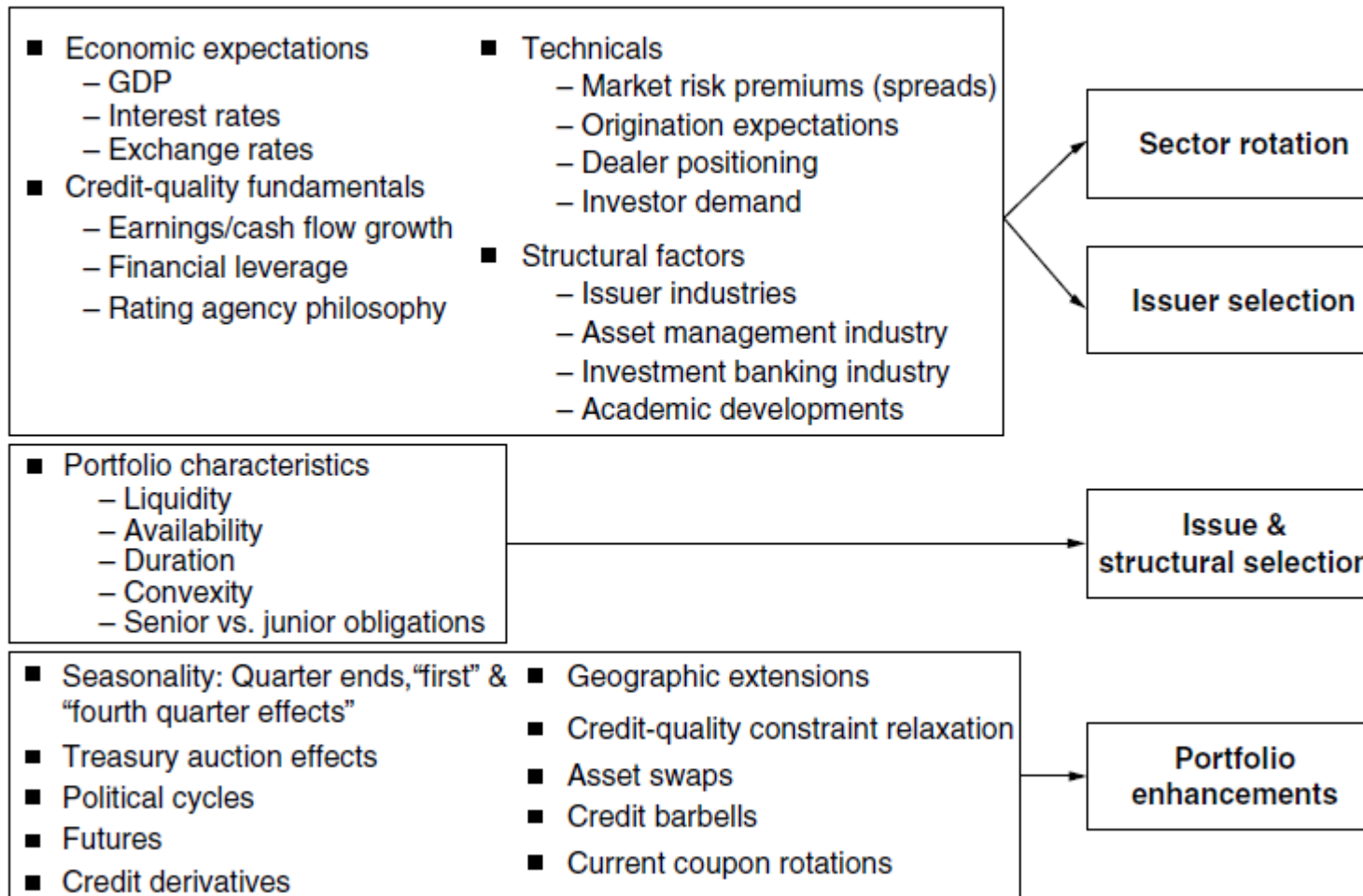
# Dialectical Credit Sector Portfolio Management Process: Top Down and Bottom Up

Credit-Sector Portfolio Management Process: Classic, Dialectic Relative-Value Analysis



# Some Outperformance Methodologies

## Some Outperformance Methodologies



# Credit Analyses (Studying Past, Ranking Present, Predicting Future)

## Key Factors

- Geography
    - Industry
      - Issuer
        - Operations
          - Products and Services
            - Innovation
              - Acquisitions and Divestitures
                - Operating Management Quality
- Liquidity
  - Cash Flow
    - Profits
      - Capital Structure
        - Capital Spending
          - Financing Plan
            - Stock Buyback Plans
              - Dividend Policy

## Key Values

- Nominal Spread
  - Option-Adjusted Spread
    - CDS
      - Equity Price

## Key Ratios

- Revenue Growth
  - Operating Income Growth
    - Net Income Growth
      - EBITDA Growth
        - EBITDA/Total Cash Ratio
          - Debt/ Total Capitalization Ratio
            - Short-Term Debt/Total Debt

# Research Sources

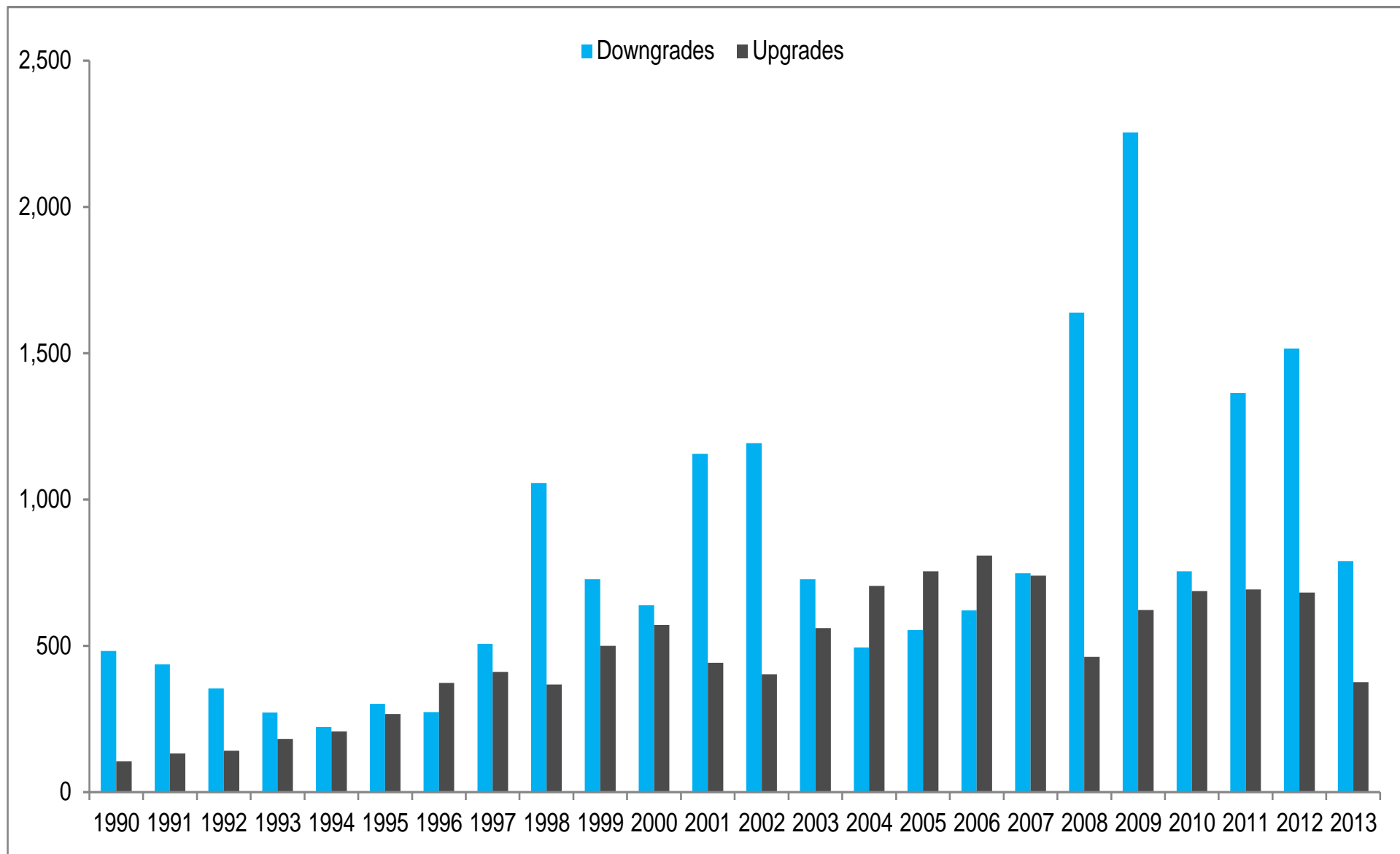
- ◆ Issuers: Meetings, calls, conferences
- ◆ Internal: Read Annual Report, 10-Ks, 10-Qs, other company documents
- ◆ Independent credit analytic providers (CreditSights, Gimme Credit)
- ◆ IRP: Independent Equities Research Providers
- ◆ Broker-Dealers
- ◆ Rating Agencies
- ◆ Financial Media
- ◆ Industry Trade Organizations



# Rating Agencies

- ◆ History (founded in 1900)
- ◆ Purpose: Cross-Sectional, Global Relative “Fundamental” Snapshot, “Implicit Regulatory License”
- ◆ Big Three (Moody’s, S&P, Fitch)
- ◆ Other NRSRO’s (Nationally Recognized Statistical Rating Organizations)
  - Egan-Jones, Dominion Bond Rating Service, Japan Credit Agency, Japan Credit Rating Agency, Morningstar
- ◆ Downgrade Ratios
- ◆ Quality
- ◆ Philosophy
- ◆ Future:
  - Move to Credit Quantification
  - Agencies modifying sector-specific criteria/incorporating more algorithmic approach in order to capture “outliers”

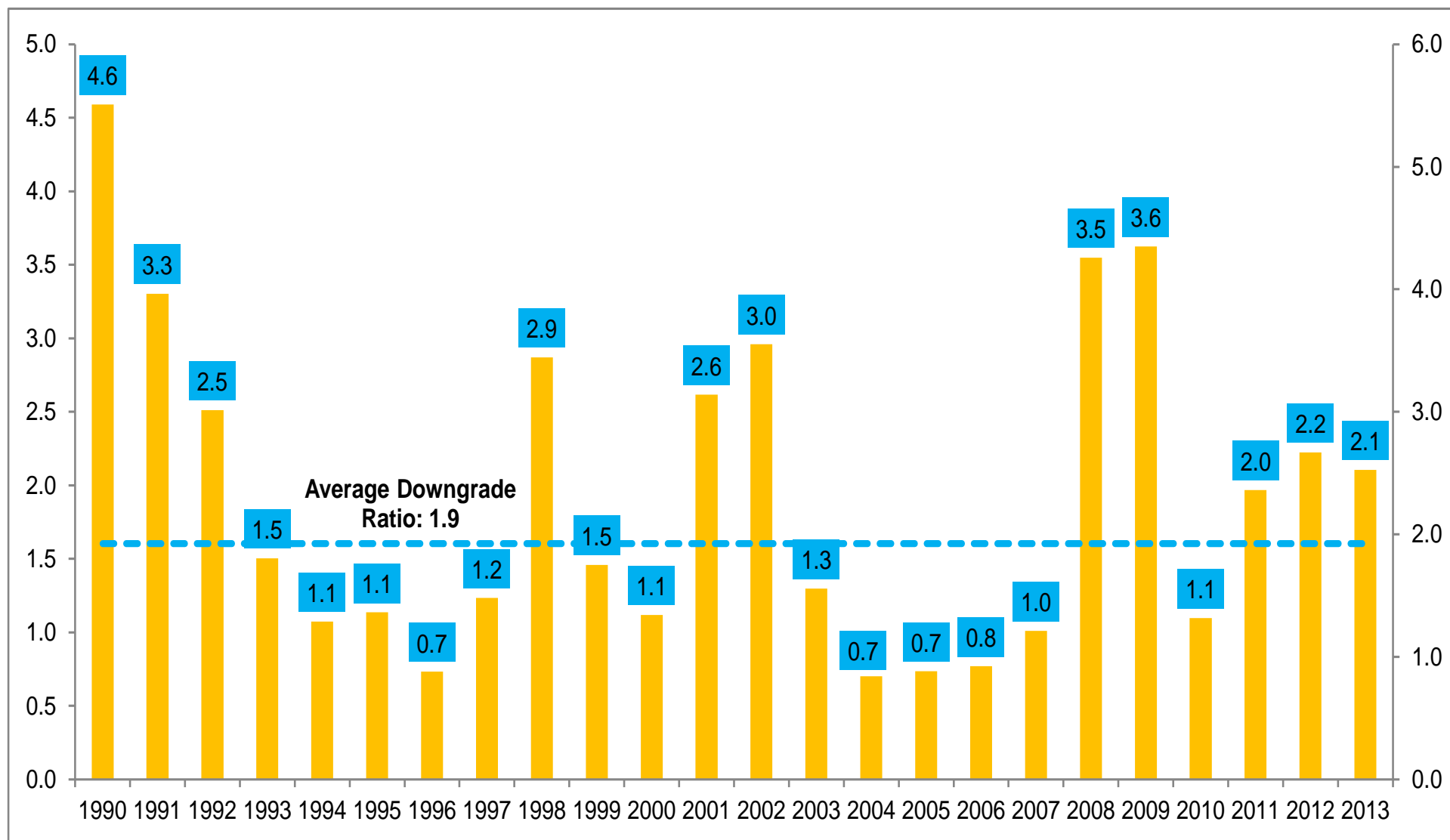
# Moody's Global\* Downgrades and Upgrades: 1990 to July 31, 2013



\*Count of ratings changes for all rated issuers; excludes structured transactions and U.S. public finance rating changes

Source: BNY Mellon using data from Moody's

# Moody's Global\* Downgrade/Upgrade Ratio: 1990 to July 31, 2013



\*Count of ratings changes for all rated issuers; excludes structured transactions and U.S. public finance rating changes  
 Source: BNY Mellon using data from Moody's

# Conclusion

- ◆ Reality conforms to theory: over the long run, credit products with higher long-term returns than presumably risk-free government securities
- ◆ Credit returns and risk viewed as “asymmetric.” Asset managers may suffer large, transitory relative underperformance to Treasuries with the onset of systemic risk event (i.e., the financial panic in September 2008). And the price of individual credit securities may tumble from the par vicinity to zero in the event of default
- ◆ Credit bond portfolio management requires more work and asset management firm infrastructure than other debt asset classes
- ◆ Thousands of credit choices, dozens of security forms, multiple structures
- ◆ Global credit asset class size to accelerate with new emerging-market based issuers
- ◆ Global bond management philosophy evolution: euro in 1999; usage of CDS; new quantitative tools for relative- value rankings, asset allocation; credit portfolios globalized; major portfolio-duration bets less common because of duration-timing disappointments
- ◆ Higher long-term returns of corporates, migration from “government-only index benchmarks” to “government plus corporate and securitized index benchmarks,” propelled investor interest in global credit portfolio optimization as a path to more consistent overall portfolio outperformance in an increasingly competitive asset management industry

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