Segal Marco Advisors

10 Years After the Great Recession: How Have We Recovered? What Have We Learned?

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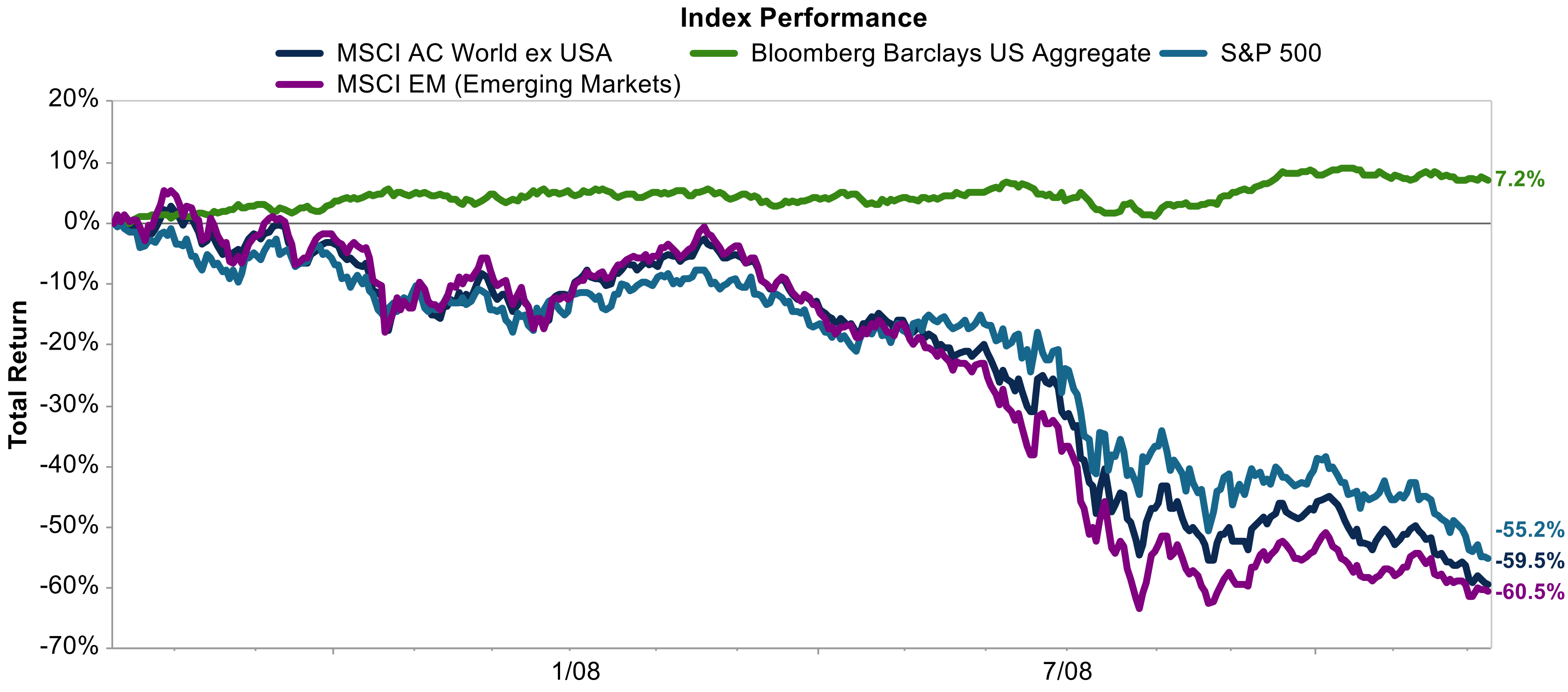
President & CEO

Agenda

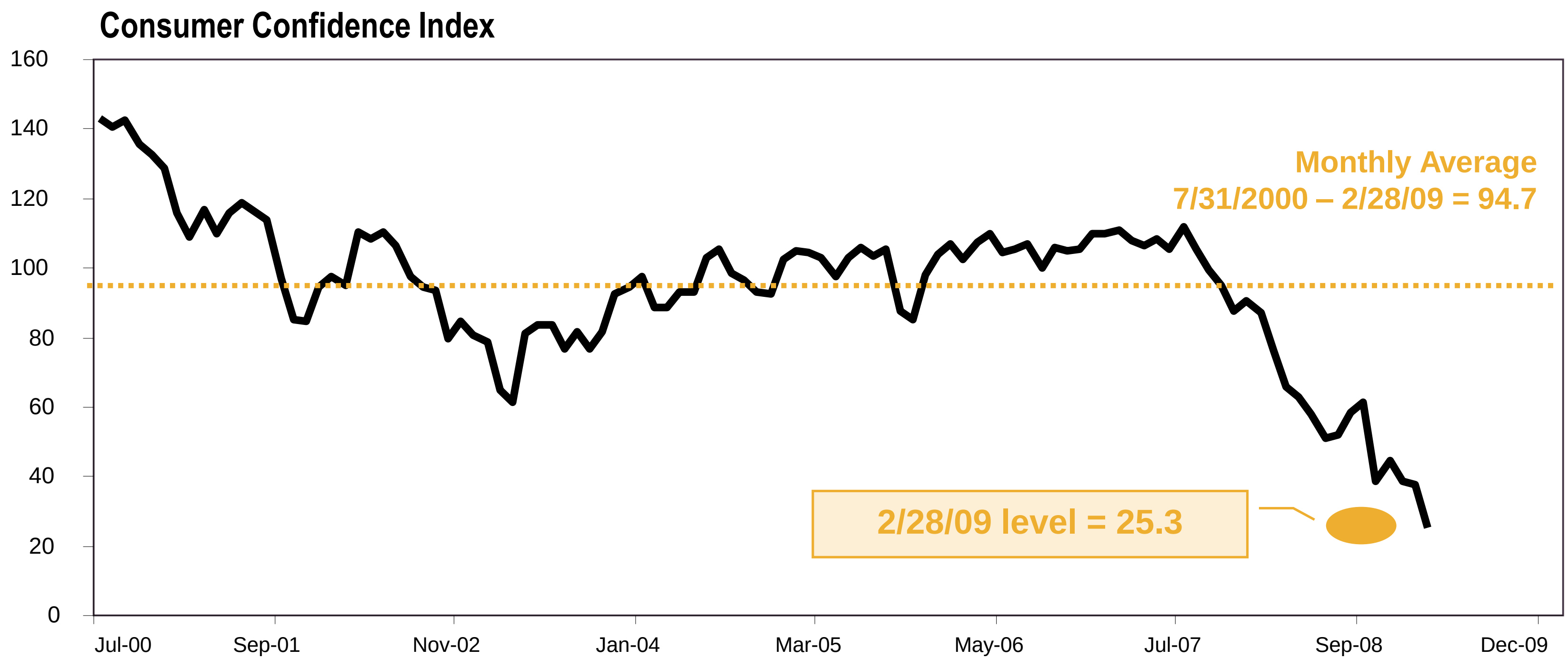
- **Introduction**
- **Hindsight is 20/20**
  - Causes of the Global Financial Crisis “GFC”
  - Results: The Fallout From GFC
  - Fixes: What Repairs Were Done
- **Where Are We Now – 10 Years Later**
  - Market Performance
  - Investment Returns and Funding
- **Future Impacts**
  - Risks and Opportunities

Early 2009 Headlines…

October 10, 2007 to March 9, 2009



Consumer Confidence



Source: The Conference Board (via Bloomberg). Consumer Confident Index through 2/28/2009.

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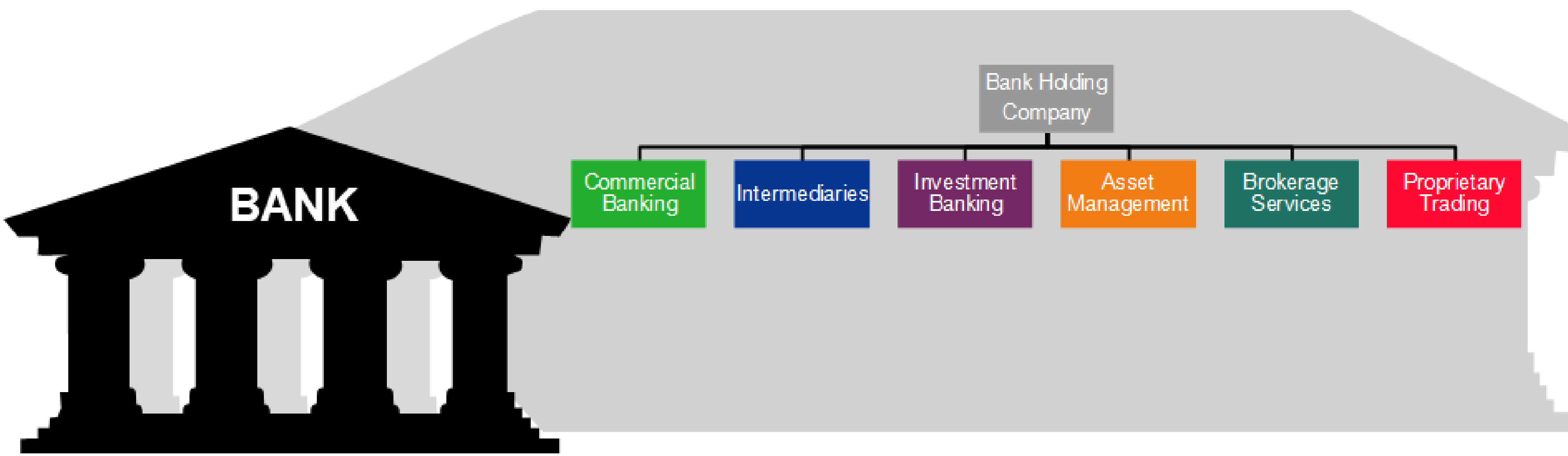
Causes: Bank Deregulation

- **Gramm Leach Biley Act** (1999) repealed sections of Glass-Steagall that prohibited banks from engaging in underwriting and trading in securities markets
- Risk and Leverage are embedded within the banking system
- Created
  - Institutions "Too Big to Fail"
  - Complex derivatives
  - "Shadow Banking System"



Causes: Deregulation of Mortgage Market

- **1991:** Affordable Housing Initiative
  - Government Sponsored Enterprises "GSE" (Fannie Mae and Freddie Mac) lowered lending targets for low and moderate income qualifiers
- **1992:** Federal Housing Enterprise Financial Safety and Soundness Act
  - Act sets targets and goals for expanding loans and turbo charges sub-prime loans
- **RESULT:**
  - GSE's share of mortgage market rose to 60% from 30% in 2000

> We will do "$1 trillion lending and strive to eliminate "no" in our mortgage application process.
>
> —*Fannie Mae press release*

Causes: Mortgage Loans Repackaged

Homes

Mortgages

Ginnie Mae

Freddie Mac — We make home possible®

FannieMae

Agency assets

Agency-guaranteed MBS

Bond Investors

Causes: Structured Product Proliferation

…created structured products to sell to others

LEHMAN BROTHERS

Merrill Lynch

BEAR STEARNS

40 mortgages,
$200,000 each
= $8 million

CMO

Collateralized Mortgage Obligation

AAA-rated Tranche
Absorbs final $3 million losses

BBB-rated Tranche
Absorbs next $3 million losses

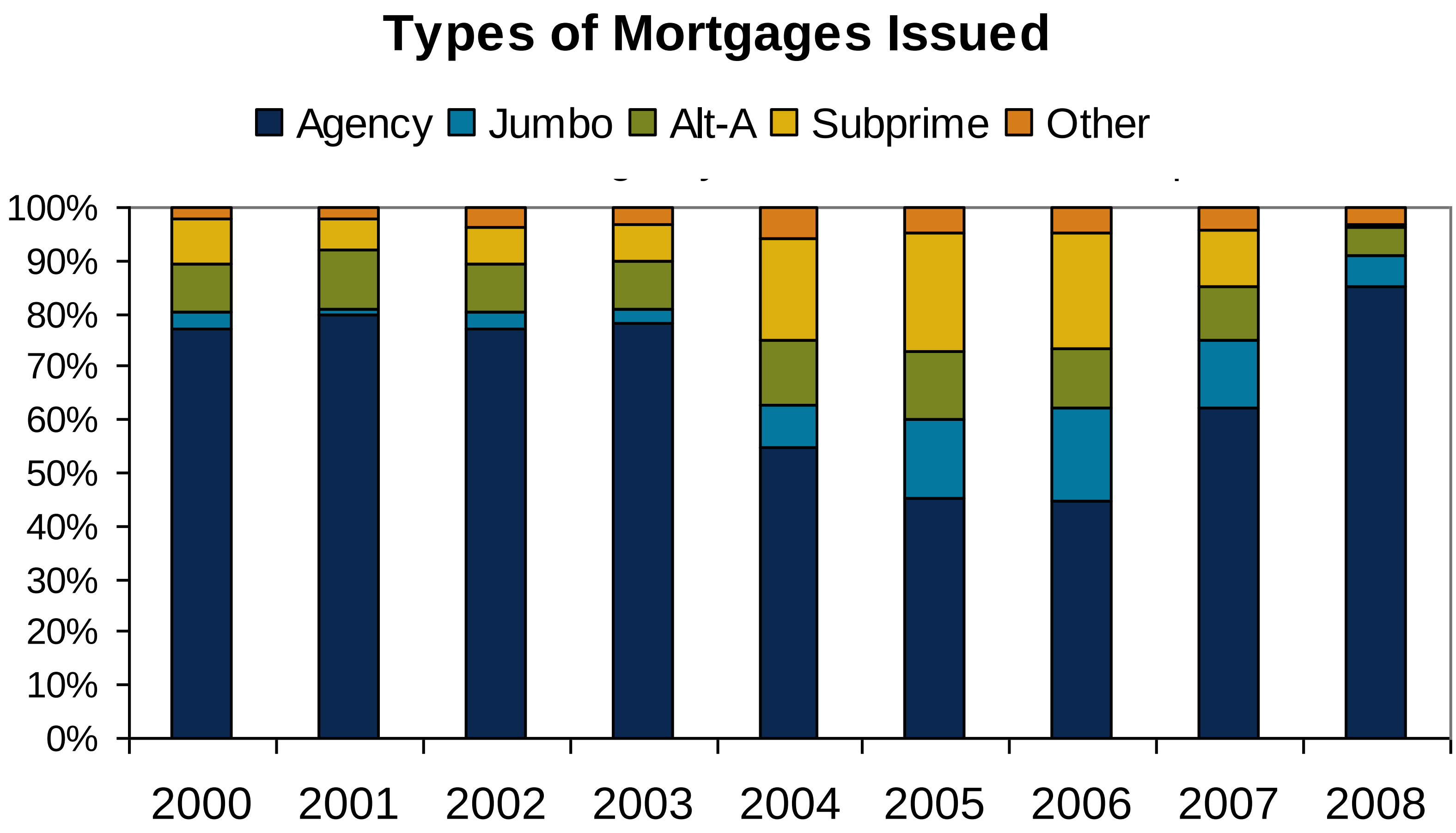
CCC-rated Tranche
Absorbs next $1 million losses

C-rated Tranche
Absorbs first $1 million losses

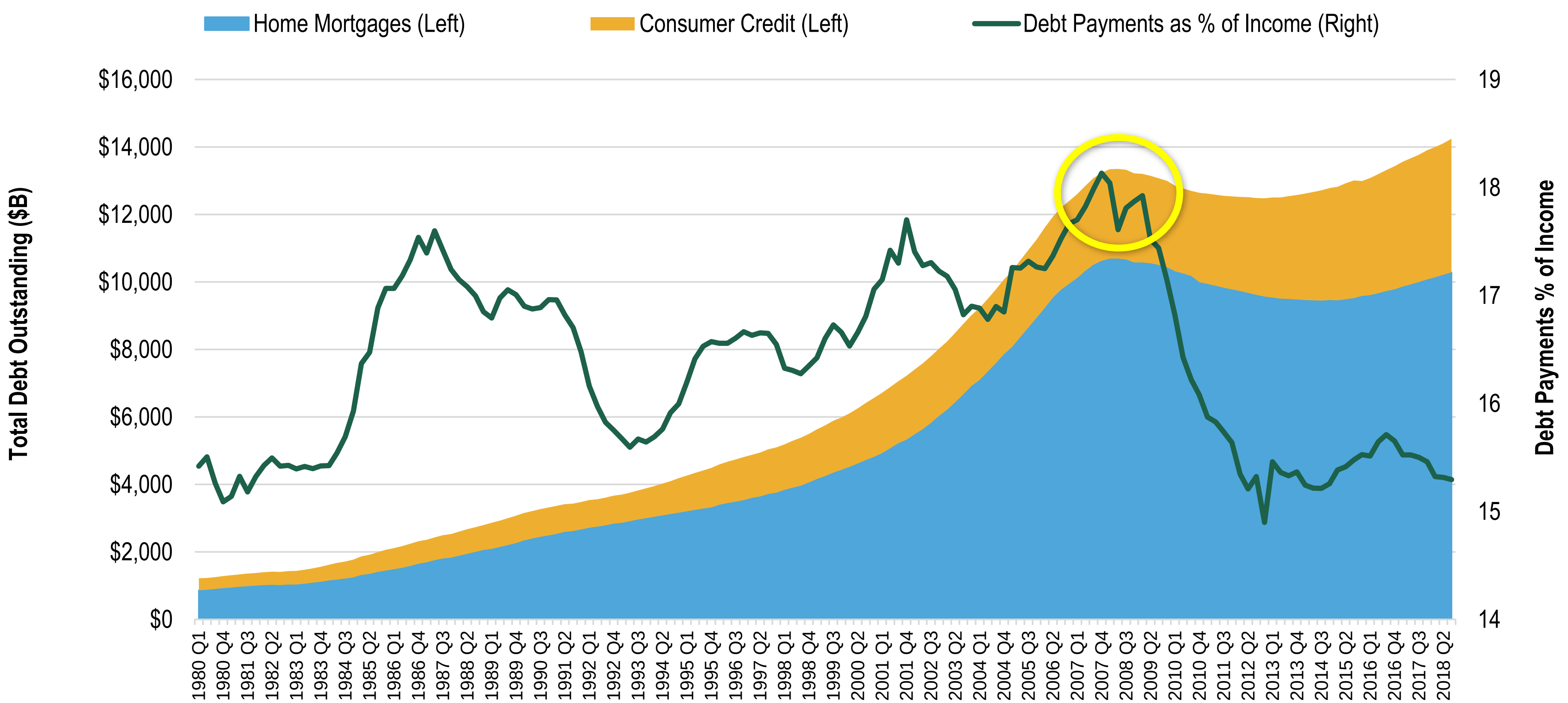
Bond Investors

Hedge Funds

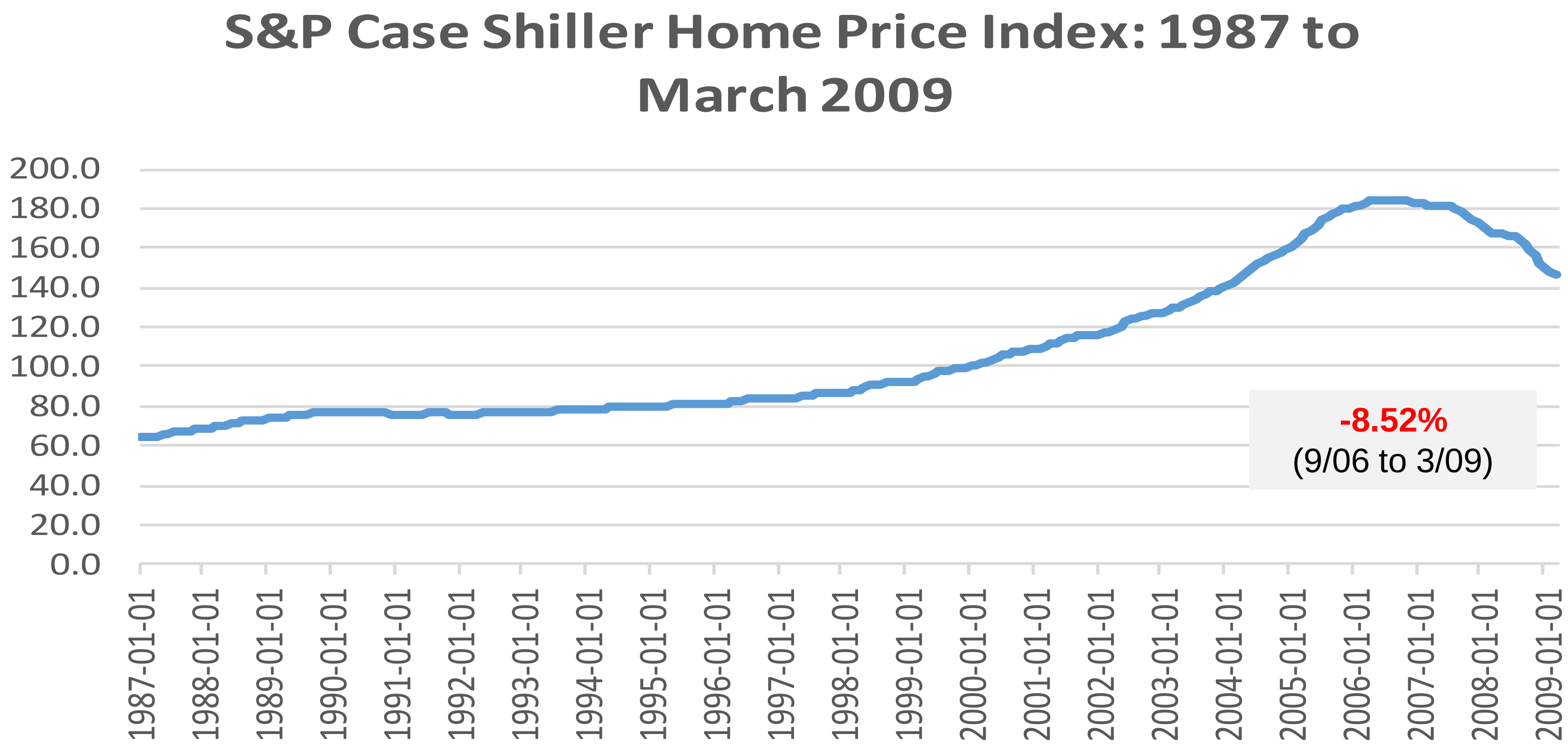
Result: Risky Mortgages Made Riskier



Result: Overextended Homeowners…



Result: Housing Decline



Source: FRED

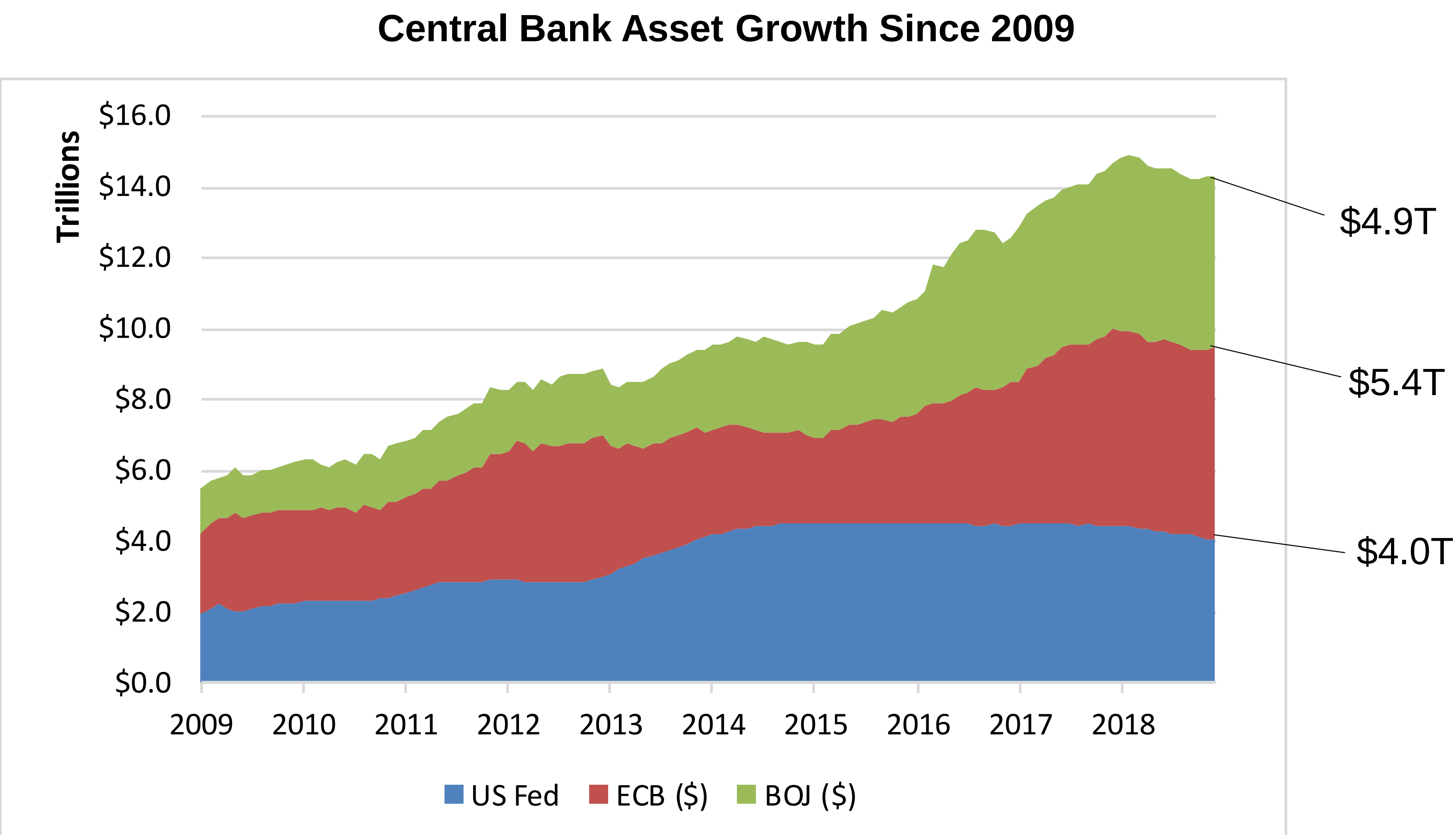
Result: Overextended Banks

- Decreased risk in the financial system

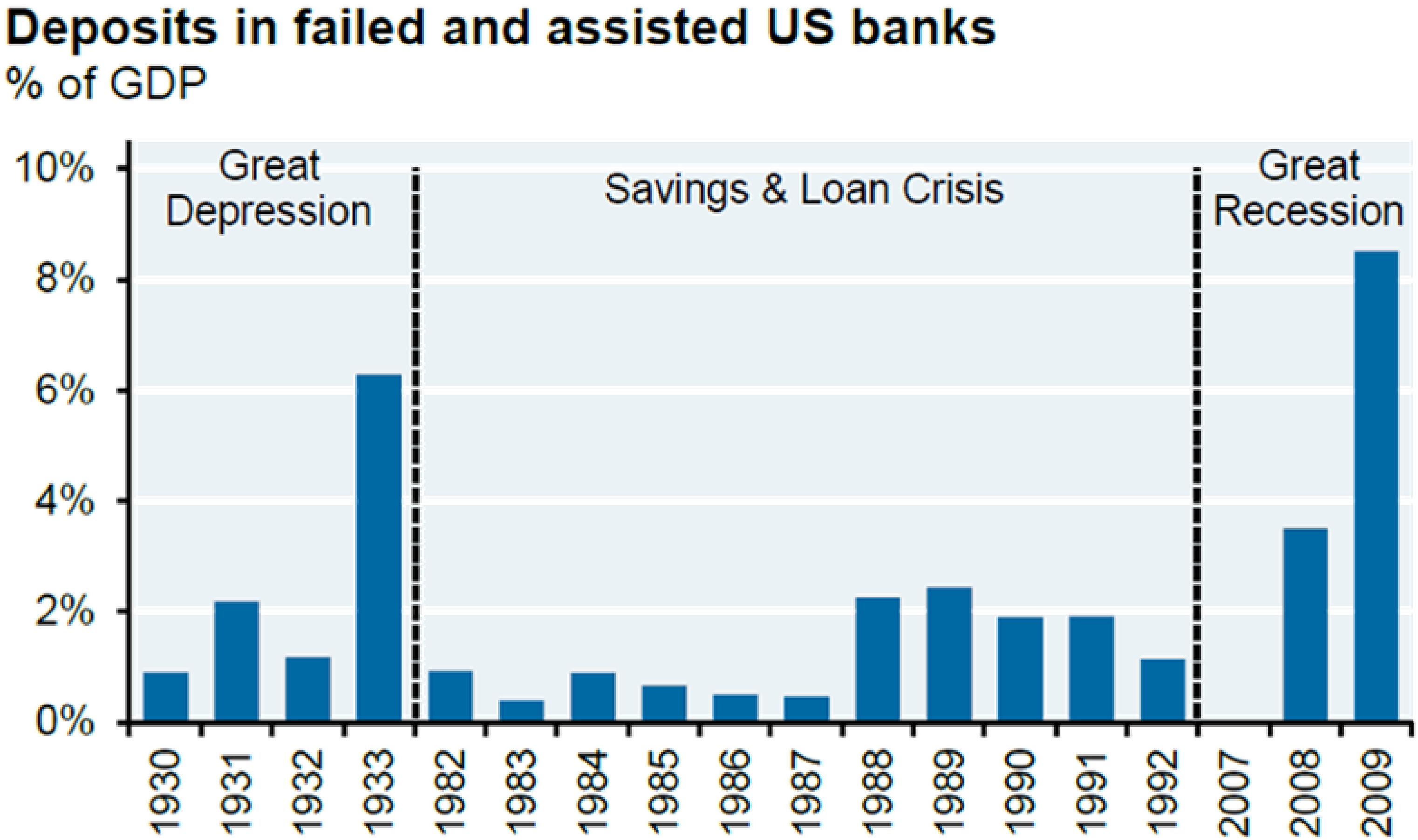
Bank risk-weighted-capital ratio	2007
U.S.	8.5%
Europe	8.0%
Bank liquid assets as % of short term liabilities	**2007**
U.S.	41.0%
Europe	35.0%
Bank loan-to-deposit ratio	**2007**
U.S.	97.0%
Europe	139.0%

Source: FED, FDIC, ECB, JPMAM 2018

Fixes: Monetary Stimulus Worldwide

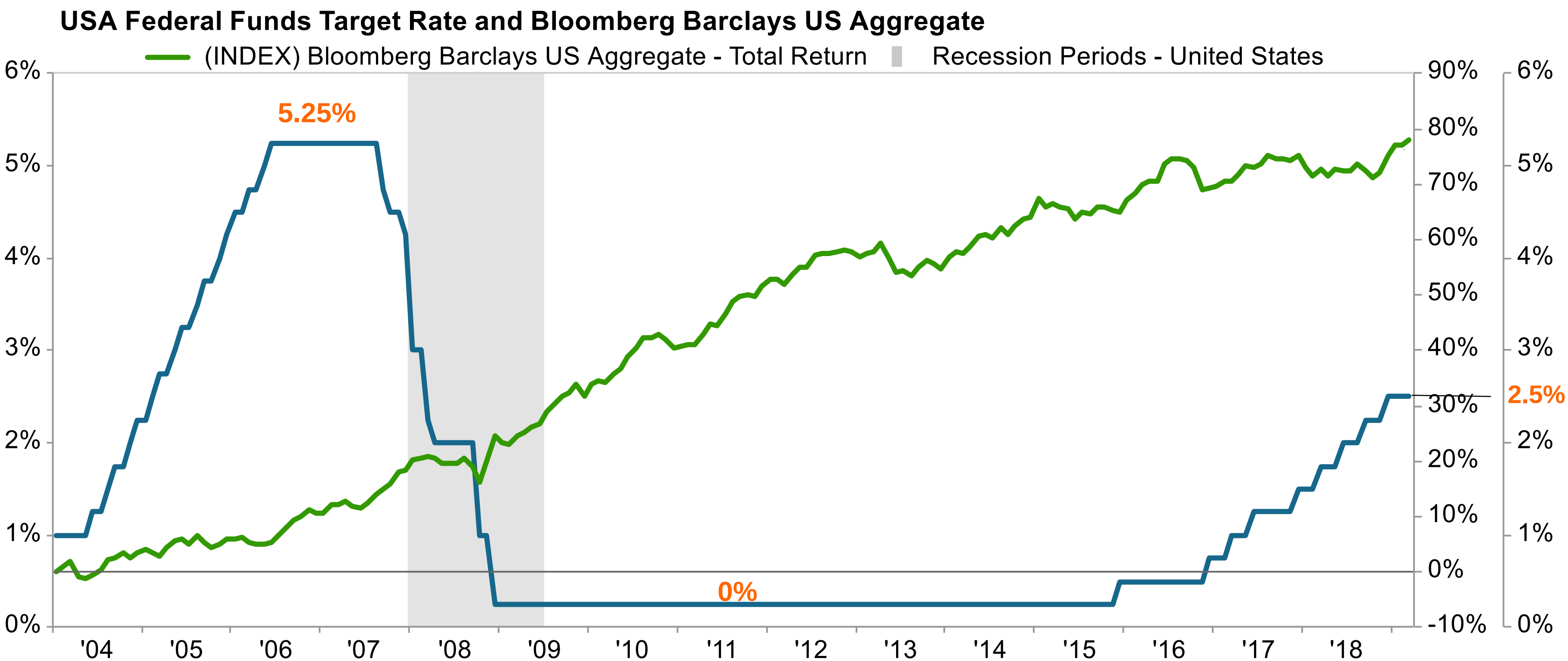


Fixes: Asset Bailout

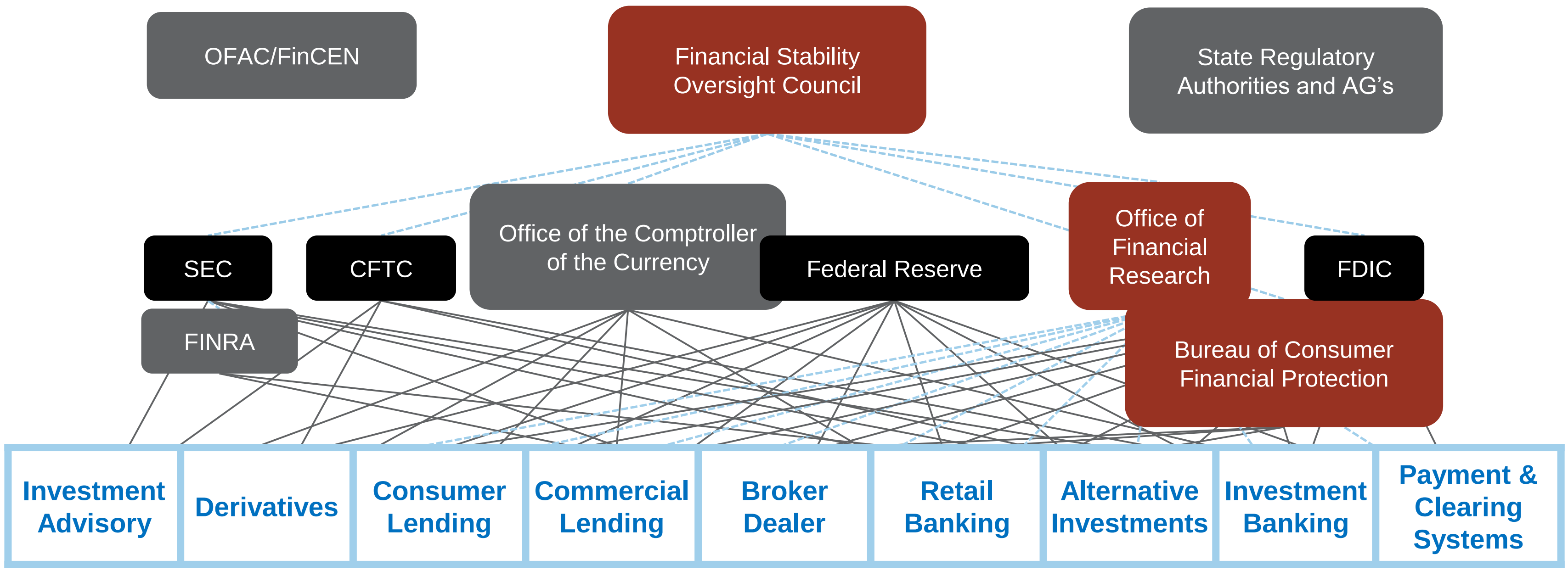


Source: FDIC, BEA, JPMAM, January 2016

Fixes: U.S. Interest Rates



Fixes: Reregulation, Dodd Frank



Financial Agencies

Old
New
Old With New Powers
Affected Parties

Lines of Reporting

Can Request Information
Has Authority to Examine

Source: Wall Street Journal; JPMorgan Chase

Fixes: Reregulation Outside U.S.: Basel Accords

- Basel 1: focused primarily on credit risk
- Basel 2: focused on credit risk, operational risk, and market risk (Never adopted in US)
- Basel 3: focuses on lending risks, balance sheet risk, and liquidity risk

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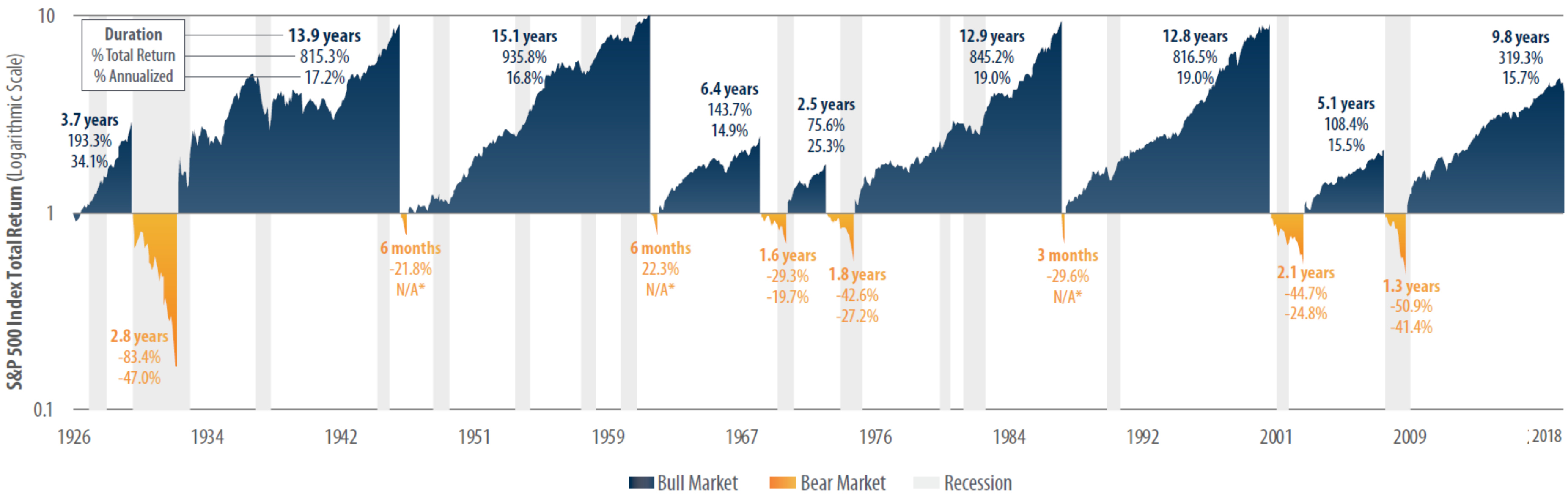
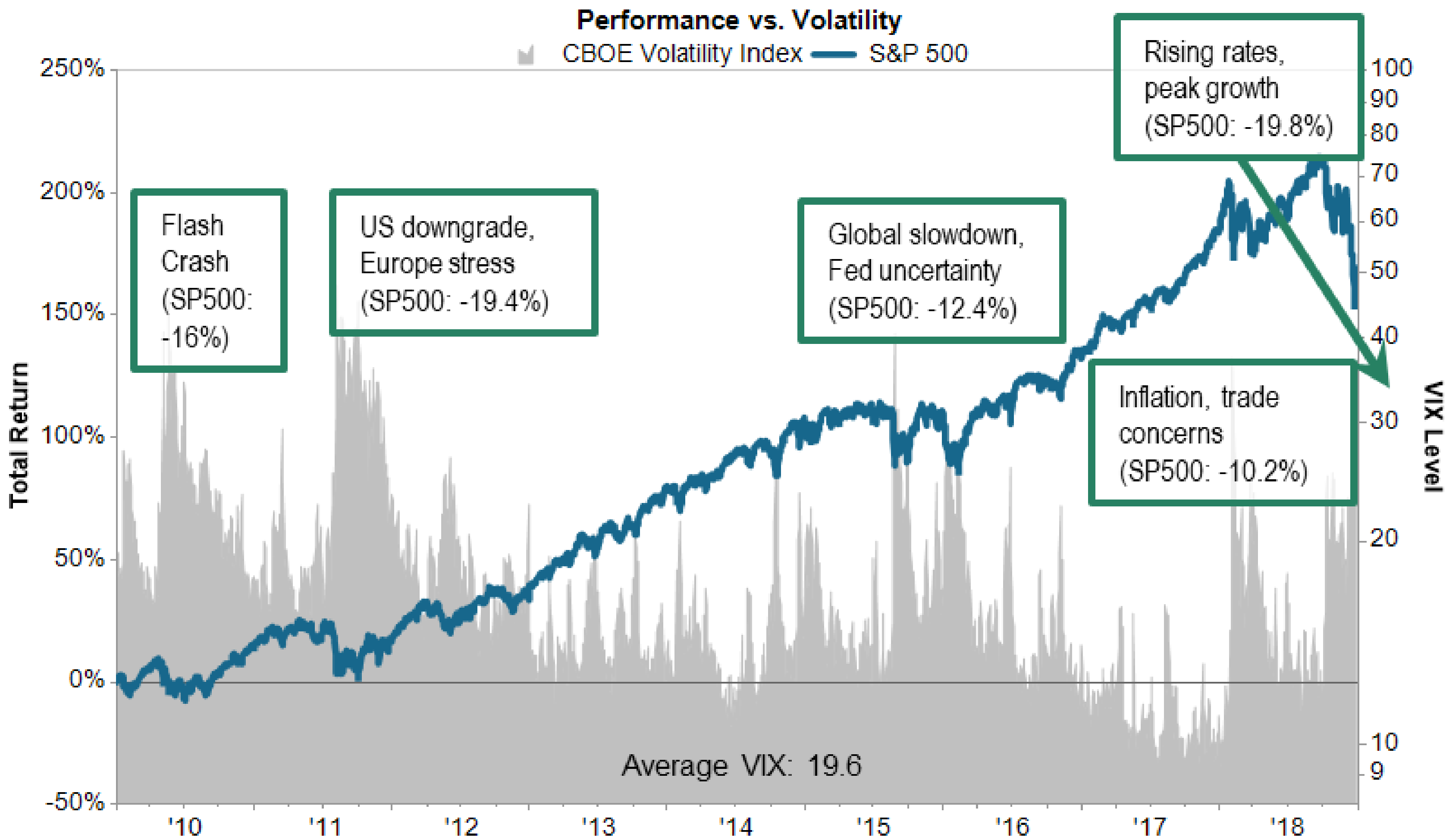
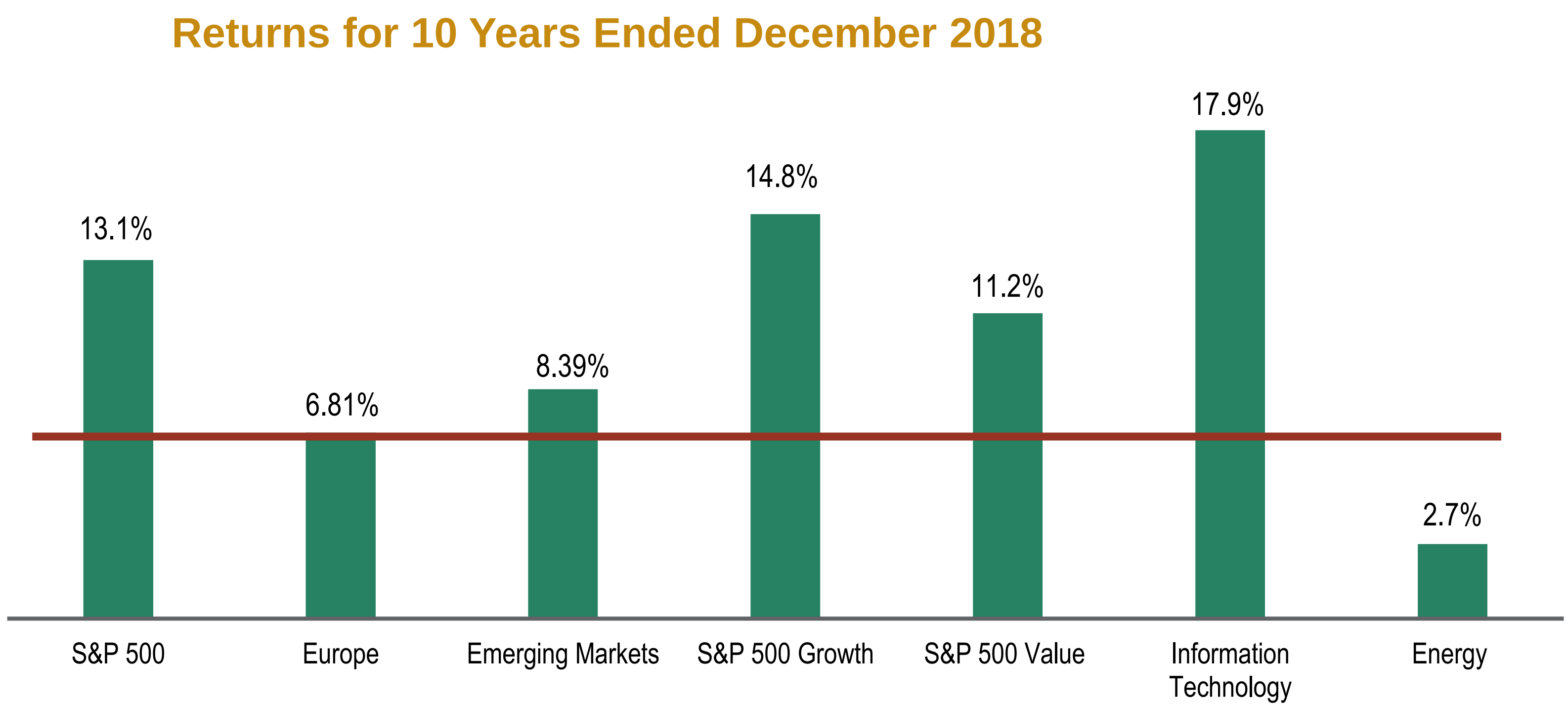
Current Market Cycle



U.S. Equity Market Volatility



U.S. Equity Market Dominance



Long Term Average U.S. Equity Returns 7%

Equity Markets Rolling 10-Year Returns

PERIOD ENDED	WORLD	U.S.	NON-U.S.	EME
June 30, 2017	4.0%	7.3%	1.0%	1.9%
September 30, 2017	4.2%	7.6%	1.3%	1.3%
December 31, 2017	5.0%	8.6%	1.9%	1.7%
March 31, 2018	5.9%	9.6%	2.7%	3.0%
June 30, 2018	6.3%	10.2%	2.8%	2.3%
September 30, 2018	8.6%	12.0%	5.4%	5.4%
December 31, 2018	9.7%	13.2%	6.3%	8.0%
March 31, 2019	12.4%	16.0%	9.0%	8.9%

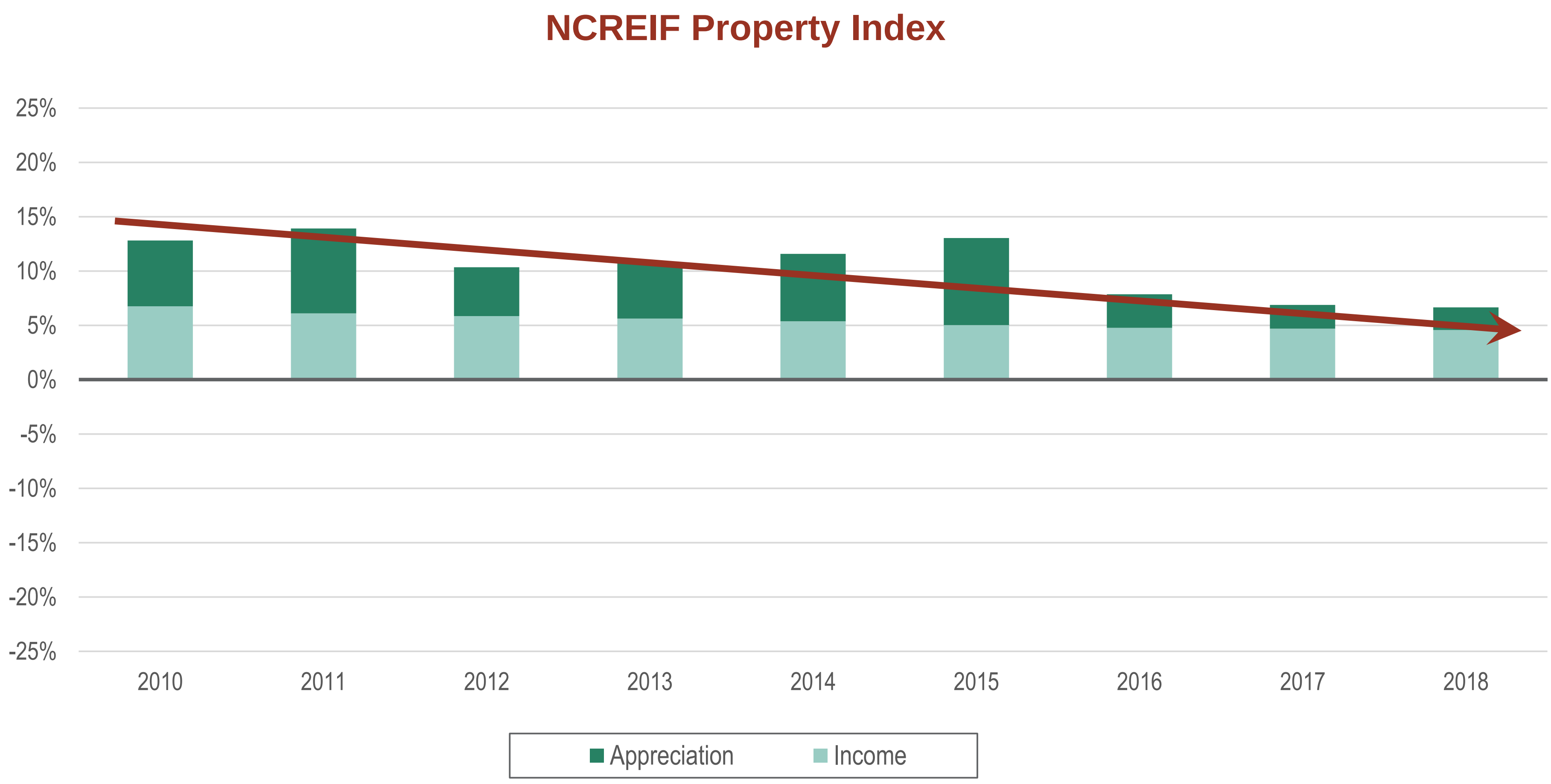
U.S. Equity Market Over the 10-Year Period

Year	S&P 500
2009	26.5%
2010	15.1%
2011	2.1%
2012	16.0%
2013	32.4%
2014	13.7%
2015	1.4%
2016	12.0%
2017	21.8%
2018	-4.4%

U.S. Bond Yields and Returns Last 10 Years

US Barclays Aggregate Index	
Year	Return
2009	5.9%
2010	6.5%
2011	7.8%
2012	4.2%
2013	-2.0%
2014	6.0%
2015	0.6%
2016	2.6%
2017	3.5%
2018	0.0%

Real Estate Market (2010—2018)



Historical Optimal Portfolio

- Overweight U.S. Large Cap Stocks
- Protection and consistency in U.S. Bond Market
- Solid income and appreciation in the U.S. Real Estate market

U.S. Portfolio vs. Global Portfolio

U.S. Portfolio

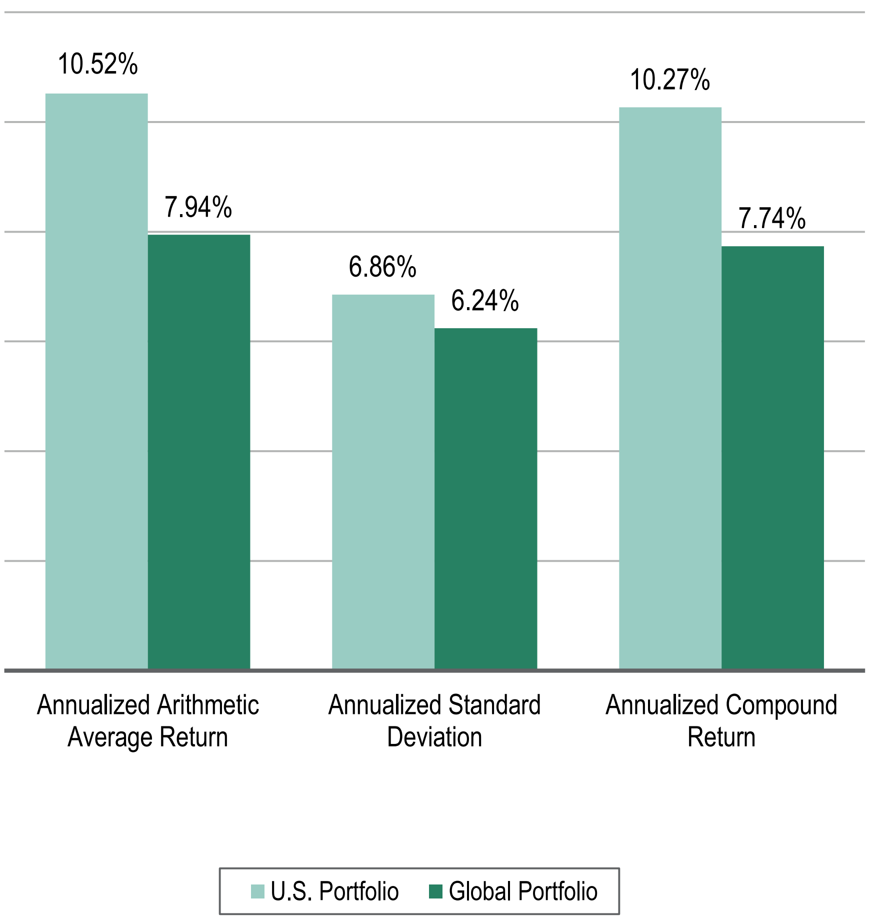
Asset Class	Proxy	Weight
U.S. Equity	S&P 500	60%
Core Fixed Income	Bloom/Barc US AGG	30%
Direct Real Estate	NCREIF Property	10%

Global Portfolio

Asset Class	Proxy	Weight
Global Equity	MSCI ACWI	42%
Global Fixed Income	Bloom/Barc Global Agg	28%
Direct Real Estate	NCREIF Property	15%
Private Equity	CA Buyout Index	7.5%
Hedge Funds	HFRX Global	7.5%

Results: 2010 – 2018

Return Risk

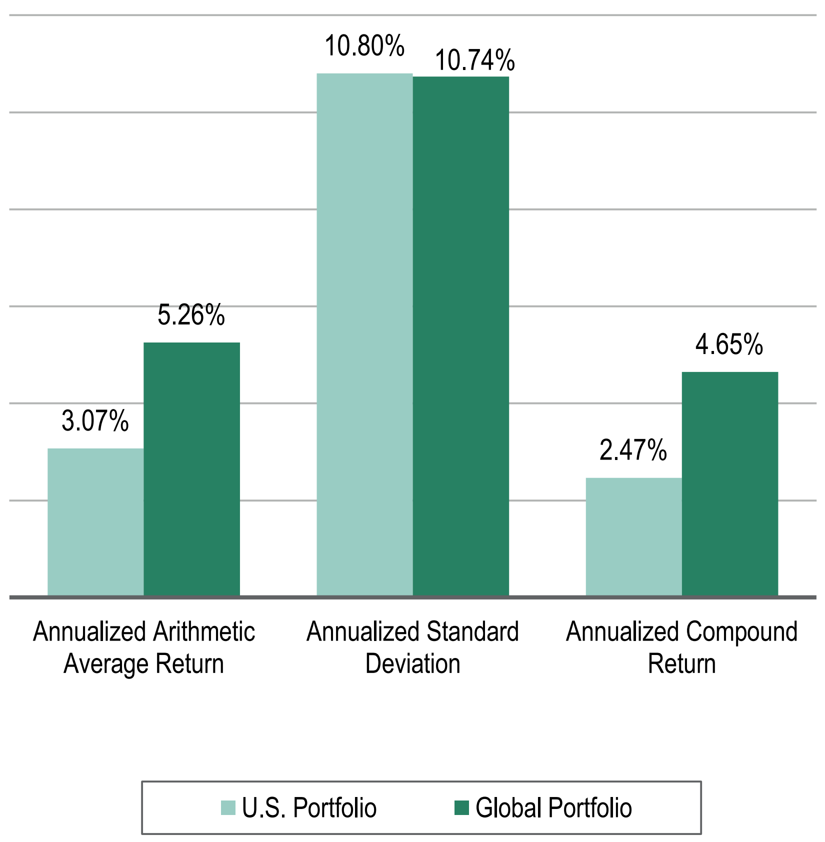


Source: MSCI, SMA

Performance period: January 1, 2010 – December 31, 2018

Results: 2000 – 2009

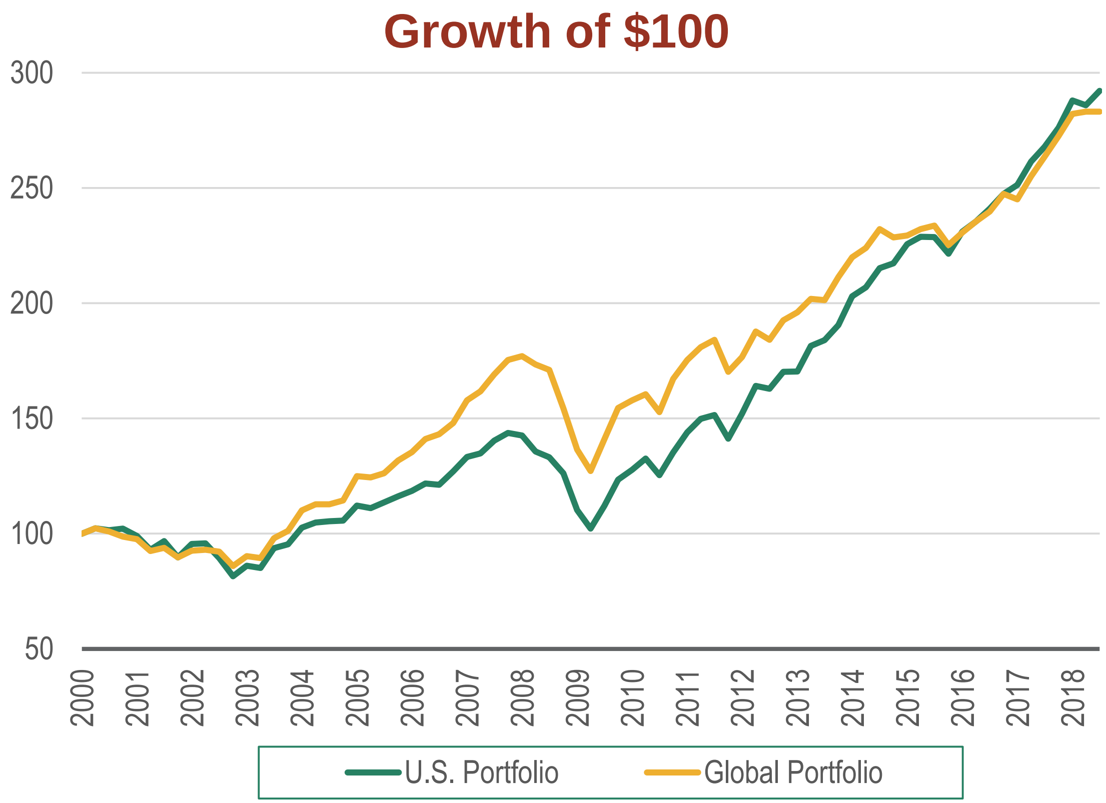
Return Risk



Source: MSCI, SMA

Performance period: January 1, 2000 – December 31, 2009.

2000 to 2018 – Market Snapshots

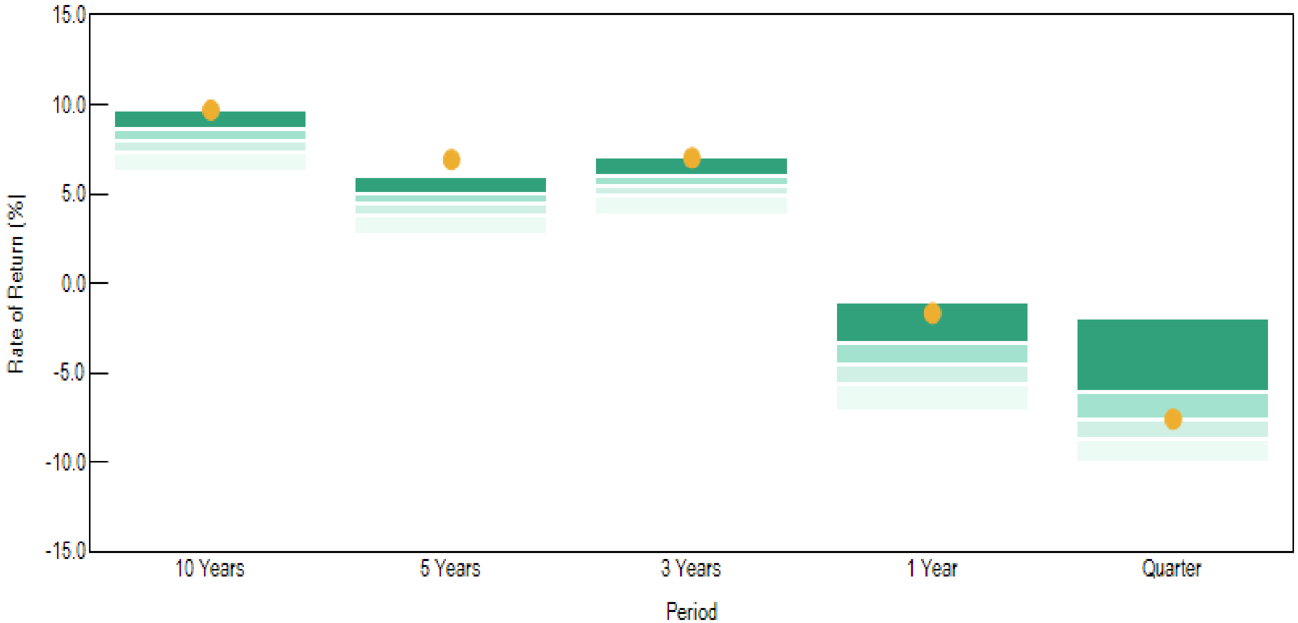


- Overall, Global portfolios and U.S. portfolios performed comparably, over the past 20 years, entering 2019
- However, while their paths were directionally similar, the absolute paths were different

Source: MSCI, SMA.

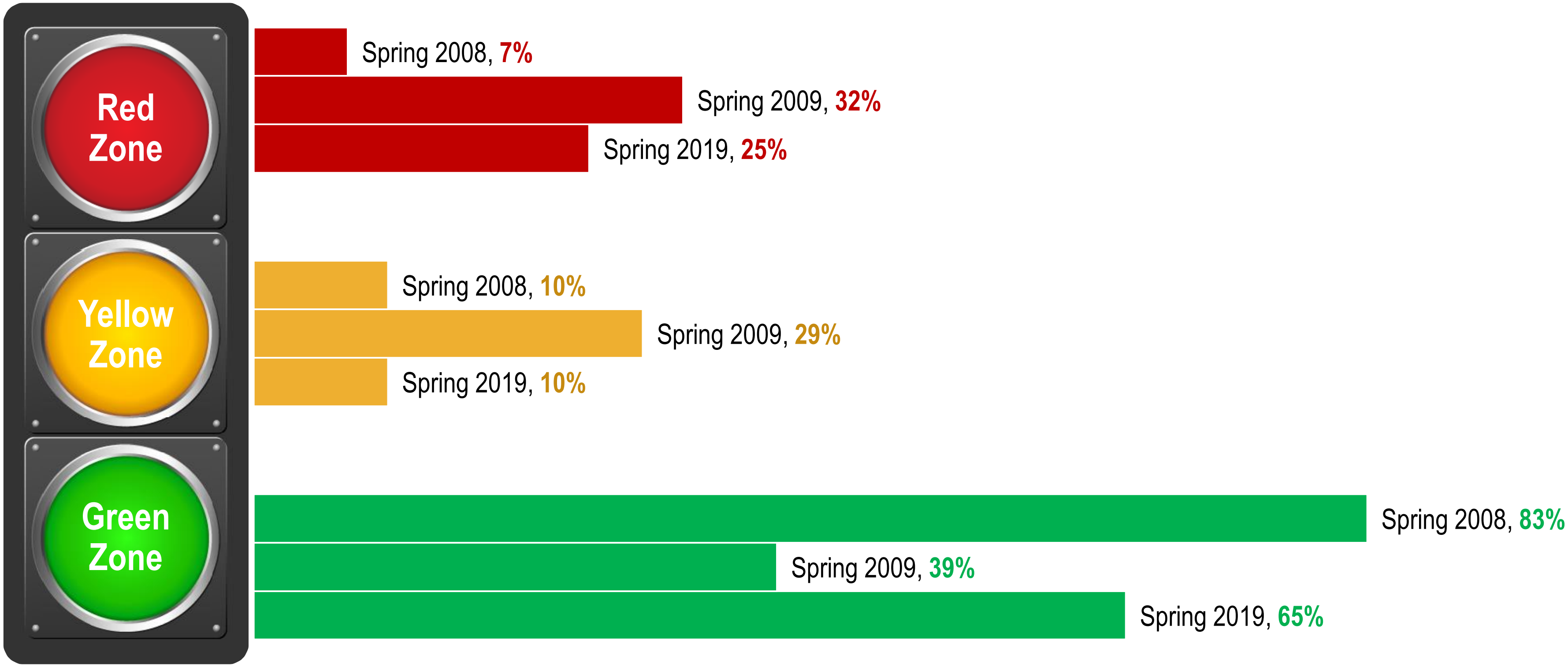
Investment Results – Defined Benefit Plans

InvestorForce All DB Net Return Comparison
Ending December 31, 2018

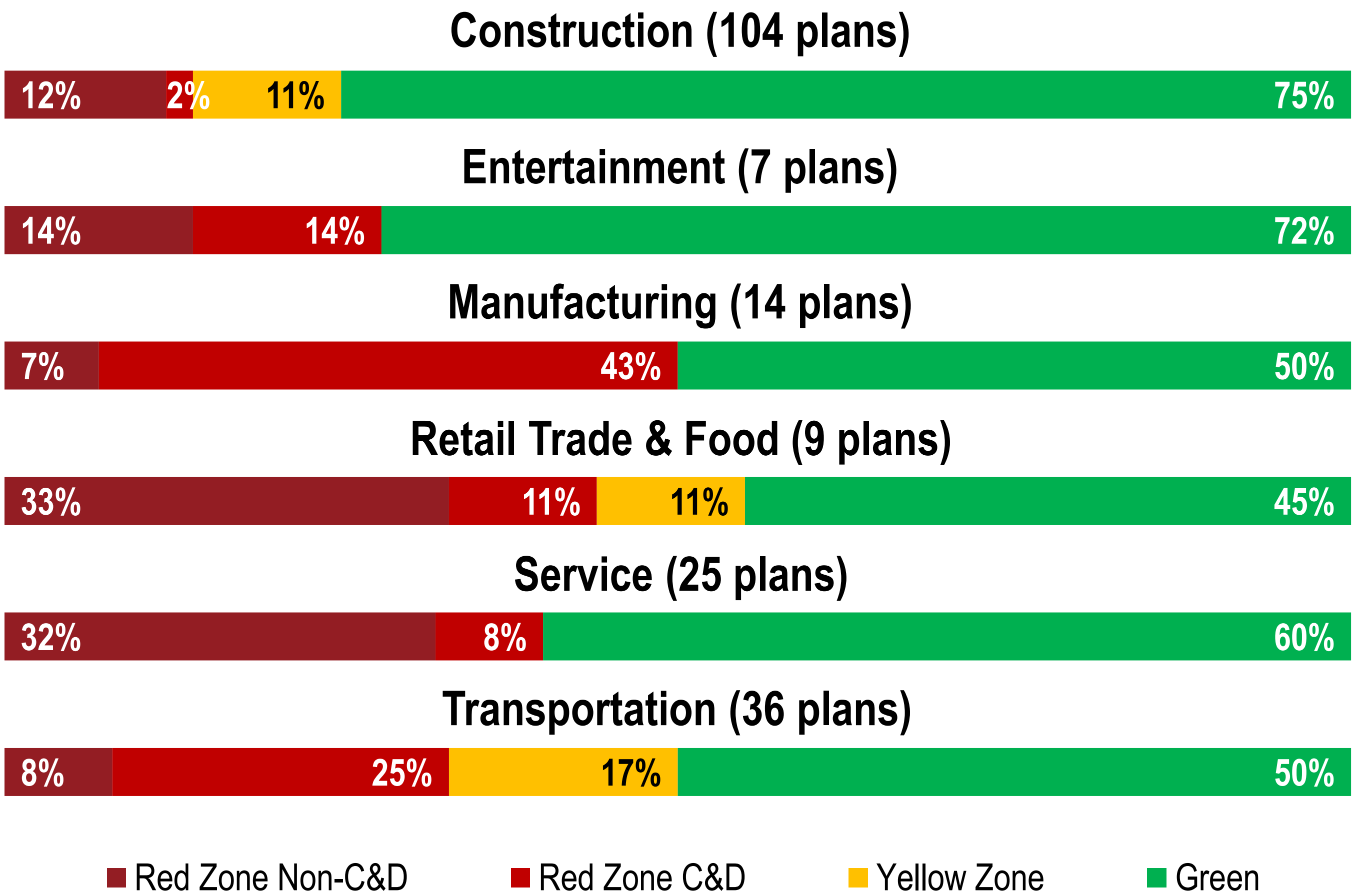


	Return (Rank)									
5th Percentile	9.7		5.9		7.0		-1.1		-1.9	
25th Percentile	8.7		5.1		6.1		-3.3		-6.0	
Median	8.1		4.5		5.5		-4.5		-7.5	
75th Percentile	7.4		3.9		5.0		-5.5		-8.7	
95th Percentile	6.2		2.7		3.8		-7.2		-10.0	
# of Portfolios	1,124		1,444		1,561		1,647		1,665	
● 603010	9.7	(5)	6.9	(1)	7.0	(6)	-1.7	(9)	-7.6	(52)

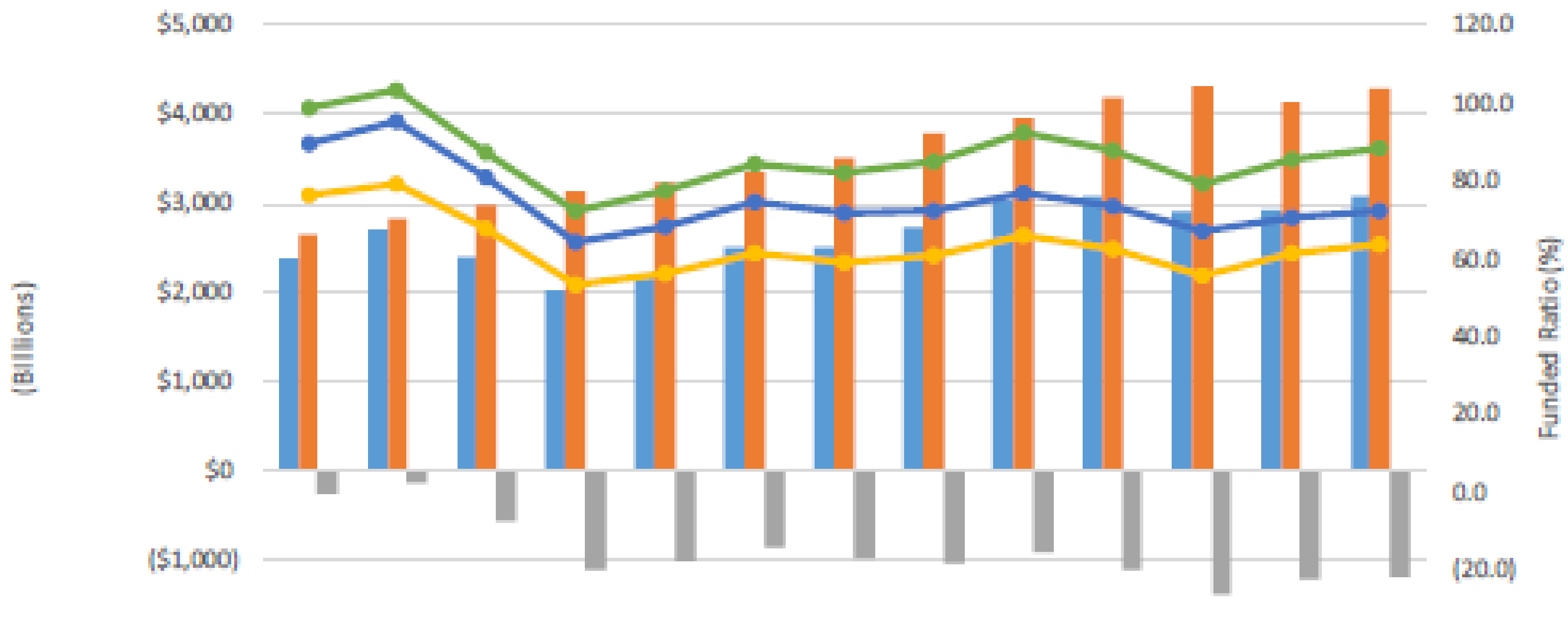
Zone Status – Multiemployer Calendar Year Plans



Zone Status – Calendar Year Plans By Industry



State Retirement Systems Funding Level



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Assets	2,379	2,695	2,402	2,015	2,211	2,493	2,507	2,731	3,041	3,075	2,902	2,918	3,088
Liability	2,647	2,833	2,976	3,133	3,233	3,349	3,496	3,775	3,951	4,188	4,304	4,141	4,278
Deficit	(268)	(138)	(574)	(1,118)	(1,022)	(856)	(989)	(1,044)	(910)	(1,113)	(1,402)	(1,223)	(1,190)
25th Percentile	76.3	79.5	67.5	53.6	56.5	61.7	59.0	61.1	66.0	62.7	55.8	61.3	63.6
Aggregate	89.9	95.1	80.7	64.3	68.4	74.4	71.7	72.4	77.0	73.4	67.4	70.5	72.2
75th Percentile	98.8	103.1	87.5	72.6	77.5	84.7	82.1	85.3	92.6	88.1	79.2	85.4	88.5

Source: 2019 Wilshire Report on State Retirement Systems: Funding Levels and Asset Allocation

Pension Fund Investing

- **Overall**
  - More transparency – banks taking less risk
  - Rise of alternative lenders – shadow banking
  - Less liquidity – banks less willing to use balance sheet for support
  - Increase in compliance and oversight
  - Changes to money market regulation and securities lending risk management
- **Governance**
  - More de-risking and ultra-“risk” awareness
  - Increased interest in outsourcing and discretionary solutions
  - Greater attention in reducing actuarial assumption rates
  - More legal and due diligence scrutiny

Pension Fund Investing

- Portfolio Structure
  - Return on capital vs. return of capital
  - Lower yield environment led to more diversified fixed income portfolios
  - Lack of downside protection led to more passive management in equities
  - Focus on lower investment management fees
  - Avoid complexity led to less interest in hedge fund investing
  - Increased use of private markets
  - Growth of Below Investment Grade Bond Market
  - Search for more risk controls – opportunistic, MACS
  - Alternative source of financing – private debt
  - Cash flow management

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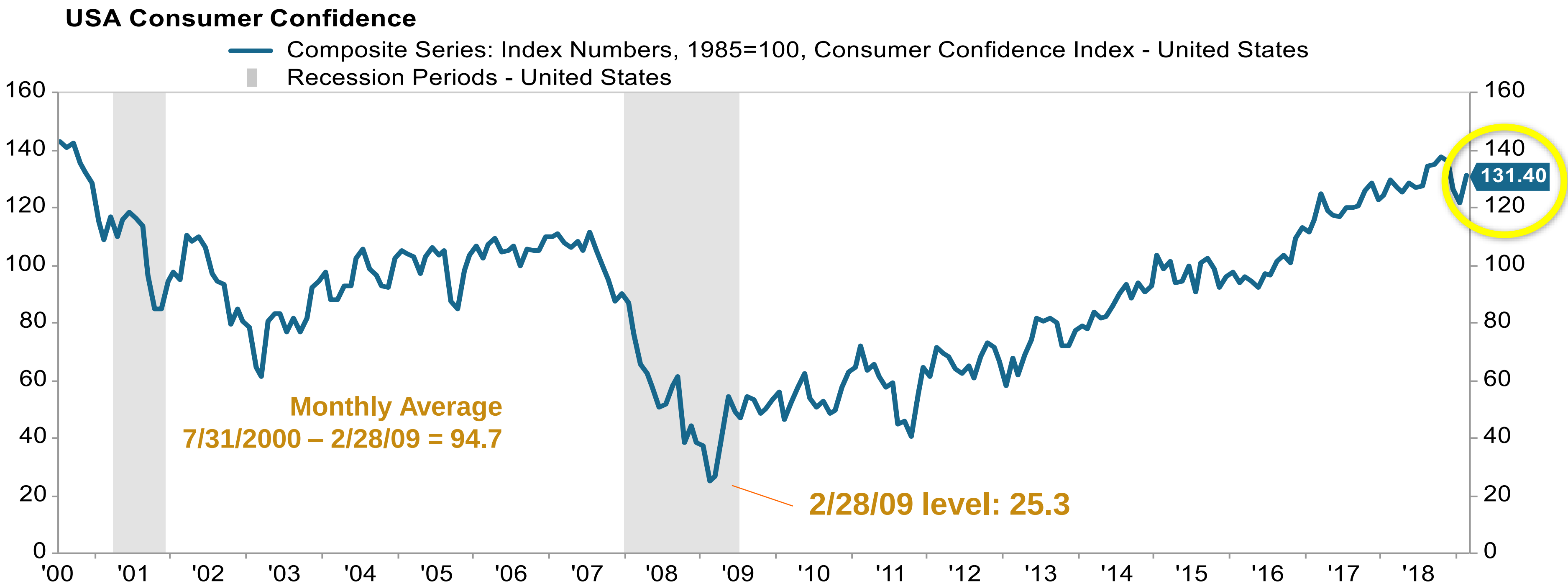
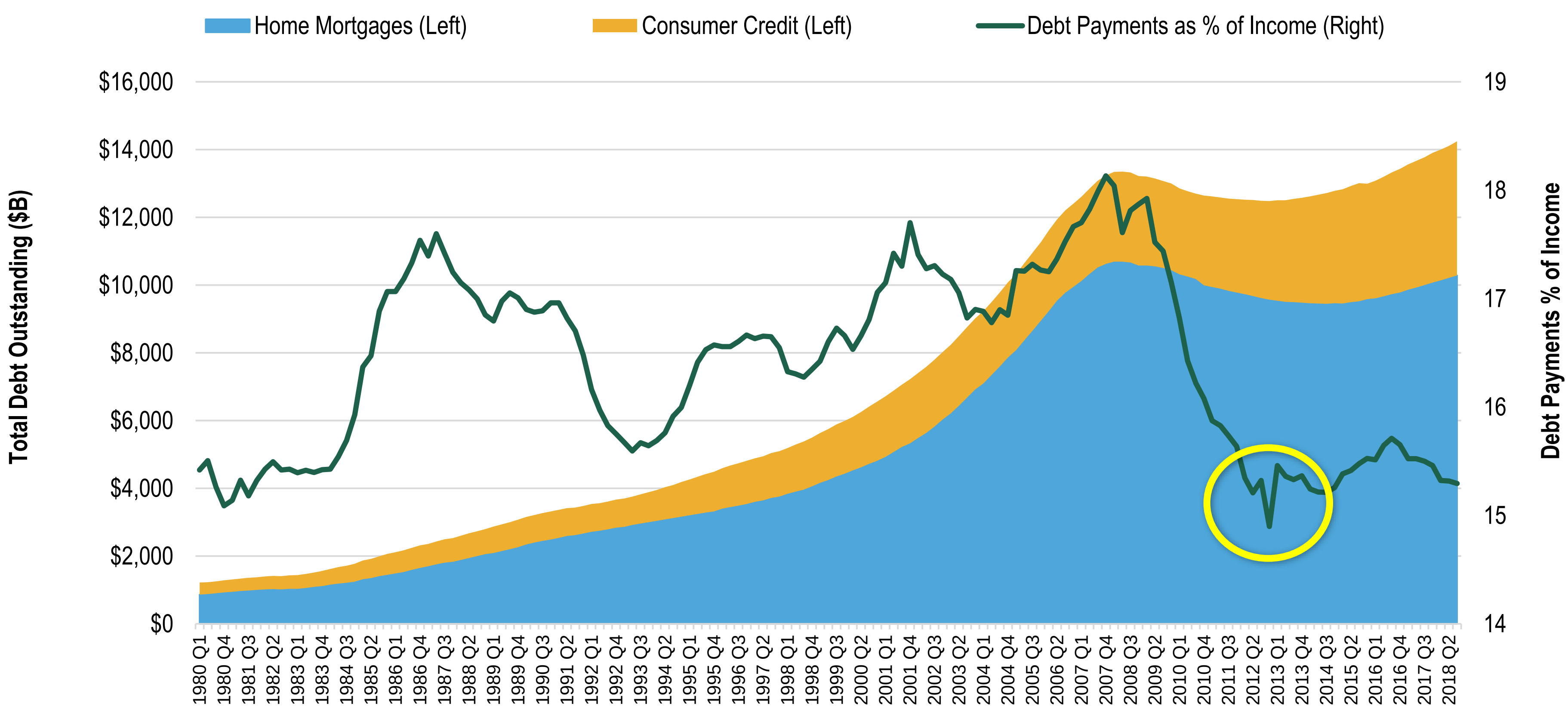
Consumer Confidence Rebounded



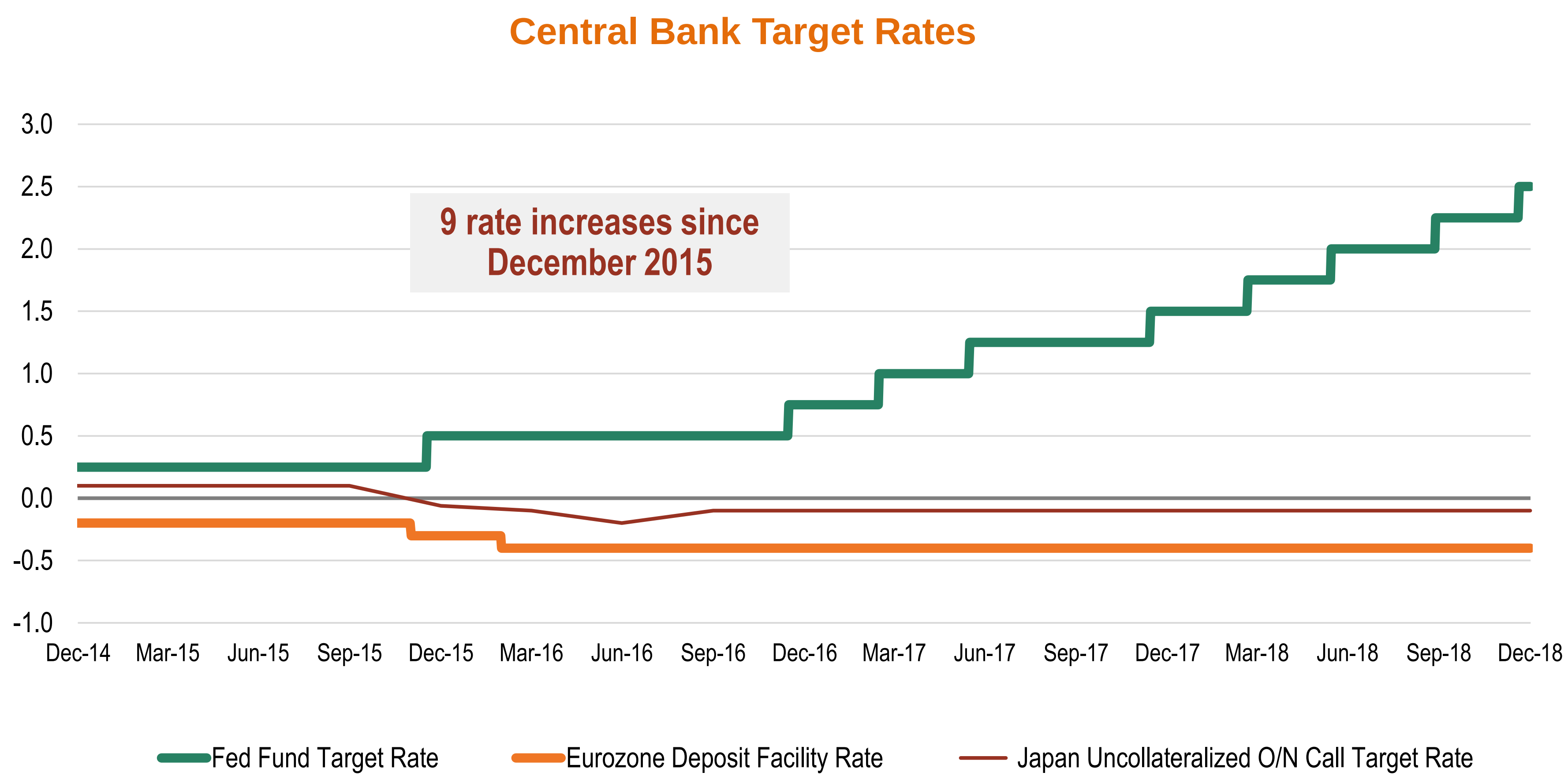
Source: Conference Board, Factset

Consumer Balance Sheet Deleveraged



Source: FRED, Federal Reserve

Fixed Income Environment

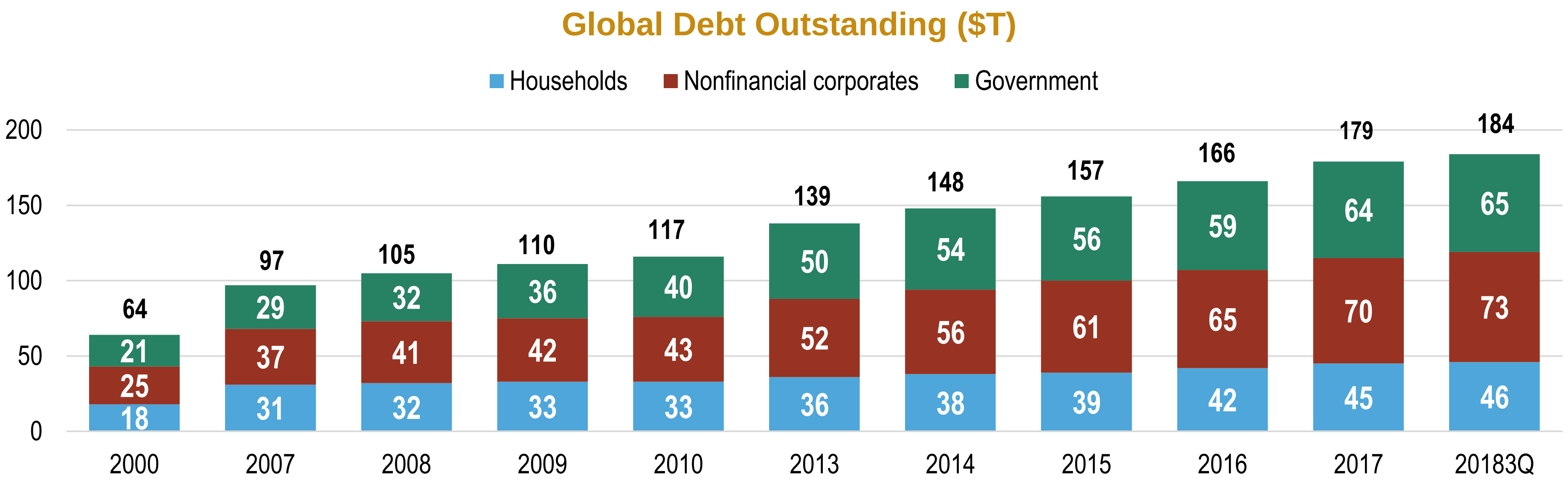


Source: FactSet

Current State of Central Banks – Interest Rates

Central Bank	Rate	Last Change	Direction of Last Change
U.S. Fed	2.50%	12/19/18	▲
Royal of Australia	1.25%	6/5/19	▼
Bank of England	0.75%	8/2/18	▲
Bank of Canada	1.75%	10/24/18	▲
European Central Bank	0.00%	3/10/16	▼
Bank of Japan	-0.10%	2/1/16	▼
Peoples Bank of China	4.35%	10/23/15	▼

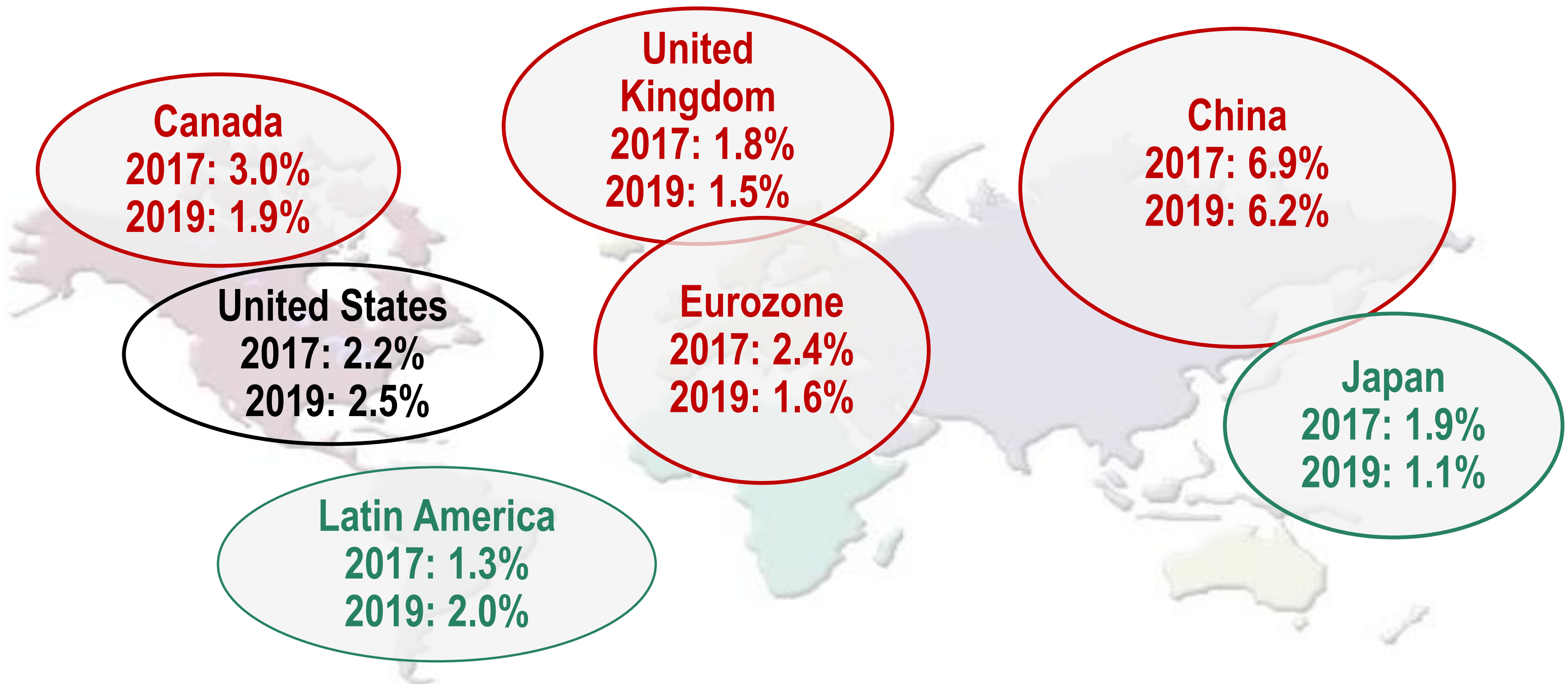
Global Debt Continues to Grow



	2000	2007	2008	2009	2010	2013	2014	2015	2016	2017	2018
Total Debt to GDP (%)	188	167	164	183	177	180	187	209	218	221	216

Source: Bank for International Settlements; McKinsey Global Institute

Slower GDP Growth Worldwide



2019 World Economic Outlook with projections 2019

Segal Marco Advisors
2006 vs. 2019 Capital Market Assumptions

Asset Class	2006 Assumptions		2019 Assumptions		2006-2019 (Difference)	
	Standard Deviation (Risk)	Geometric Return	Standard Deviation (Risk)	Geometric Return	Standard Deviation (Risk)	Geometric Return
Cash	2.8%	4.3%	2.5%	3.1%	-0.3%	-1.2%
Core US Fixed Income	8.5%	5.0%	5.5%	3.8%	-3.0%	-1.2%
US Inflation Linked Bonds	5.0%	5.0%	5.5%	3.8%	0.5%	-1.2%
Dev Mkt. Non-US FI	9.5%	4.8%	10.0%	2.9%	0.5%	-1.9%
Real Estate	9.5%	7.3%	11.8%	6.1%	2.3%	-1.2%
High Yield	13.0%	5.9%	10.0%	5.7%	-3.0%	-0.2%
REITs	13.0%	7.1%	17.5%	6.5%	4.5%	-0.6%
Broad US Equity	18.5%	7.9%	17.5%	7.0%	-1.0%	-0.9%
Dev Mkt. Non-US Eq.	22.5%	7.9%	19.0%	7.3%	-3.5%	-0.6%
Emerging Mkt Debt	19.4%	7.0%	11.0%	6.1%	-8.4%	-0.9%
Emerging Mkt Equity	33.5%	9.5%	24.0%	9.4%	-9.5%	-0.1%
Private Equity	35.0%	10.6%	22.5%	10.2%	-12.5%	-0.4%

Summary

- Volatility is in, and can be our friend
- Lower return environment
- Fixed income looks more like “fixed” income
- Equities still command a long term risk premium vs. fixed income
- Equities challenged to be “kicker” that we are familiar with historically
- The longer term emerging markets growth story is relevant for both equities and fixed income
- Alternatives can provide long term, uncorrelated sources of alpha, especially for those investors who can govern nimbly
- Real estate and hard assets can still play a role as diversifiers, and/or return enhancers for certain client specific objectives