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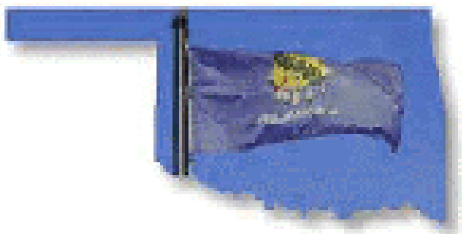

Oklahoma State Pension Commission

Public Funds' Market Update

November 30, 2016

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Executive Summary

Macro Trends Influencing Client Needs

- Given modest asset growth and flat funding levels, institutional investors continue to face myriad challenges, ranging from portfolio underperformance to market volatility and risk management
- While goals and objectives of specific funds remain unique, generally public funds have been cognizant of a prospective low-return environment and heightened volatility and have been searching for yield to shore up funding gaps
- Use of investment consultants remains widespread, though the trend towards outsourcing to a third part (often the consultant) continues to hold appeal for small corporate funds and E&F's and has generally not been successful with larger public funds.

Allocations Designed to Achieve Plan Objectives

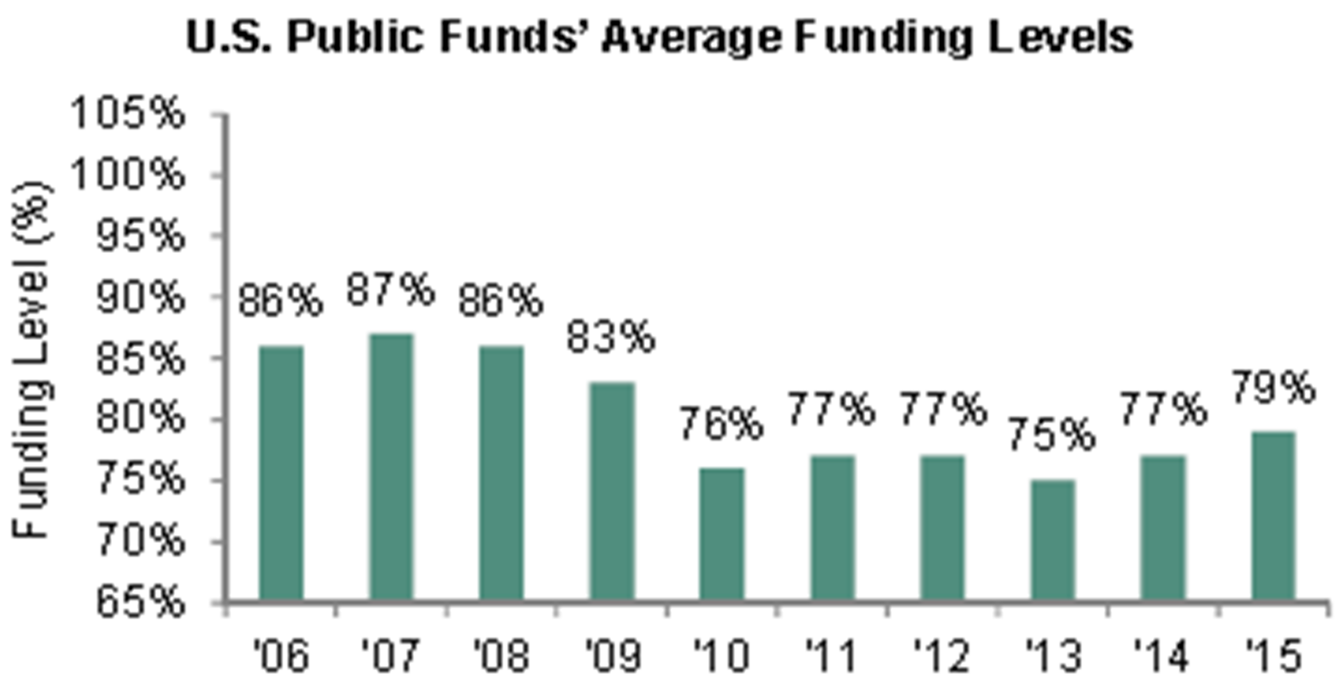
- Overall portfolio asset allocations remained largely static over the past year as funds seek clarity about the future direction of various market dynamics (i.e. interest rates, energy prices, equity markets, etc.)
- Product categories that provide uncorrelated returns, inflation protection, or growth opportunities are expected to receive higher allocations in the future (real estate, commodities, EMD, private debt)
- For the second consecutive year, institutes shifted equity portfolios sharply toward passive management, but remain committed to active manage in certain categories.

Future Hiring and Money in Motion

- Manager Hiring expectations are forecasted to drop considerably in 2016 to their lowest levels in 5 years.
- New active equity opportunities exist in EM and global, while U.S. equity competition remains switching game. Private debt and EMD will be the most active fixed income categories. Private equity and real estate will continue to be the most active alternative investment categories in 2016.

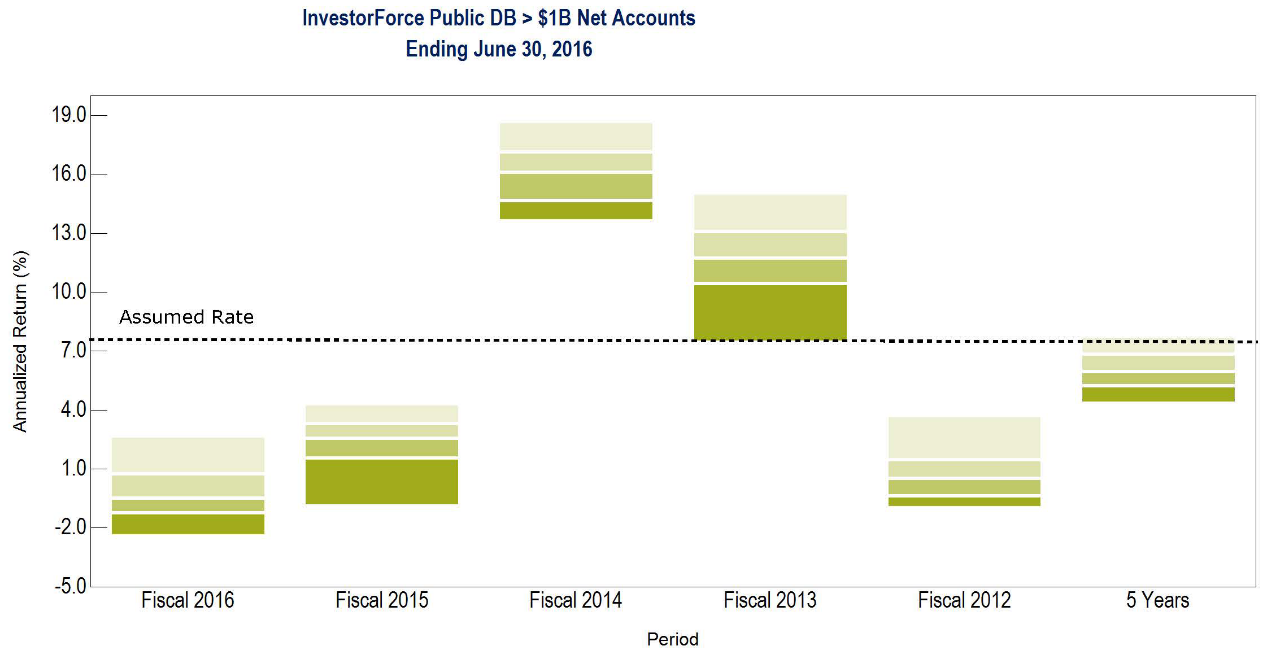
Funding Levels Only Showing Slight Improvement

Funding levels remained largely flat in 2015, still well below desirable levels.



Source: Greenwich Associates 2015 USII-15
Mean calculation does not include values of zero or null. At time of interview, valuation calculated within the last 6 months. Results are for larges funded and qualified defined benefits plan assets of corporate and public plans. PBO (Projected Benefits Obligation) shown for corporate funds. Funding Ration (net present value of assets divided by net present value of liabilities) shown for public funds

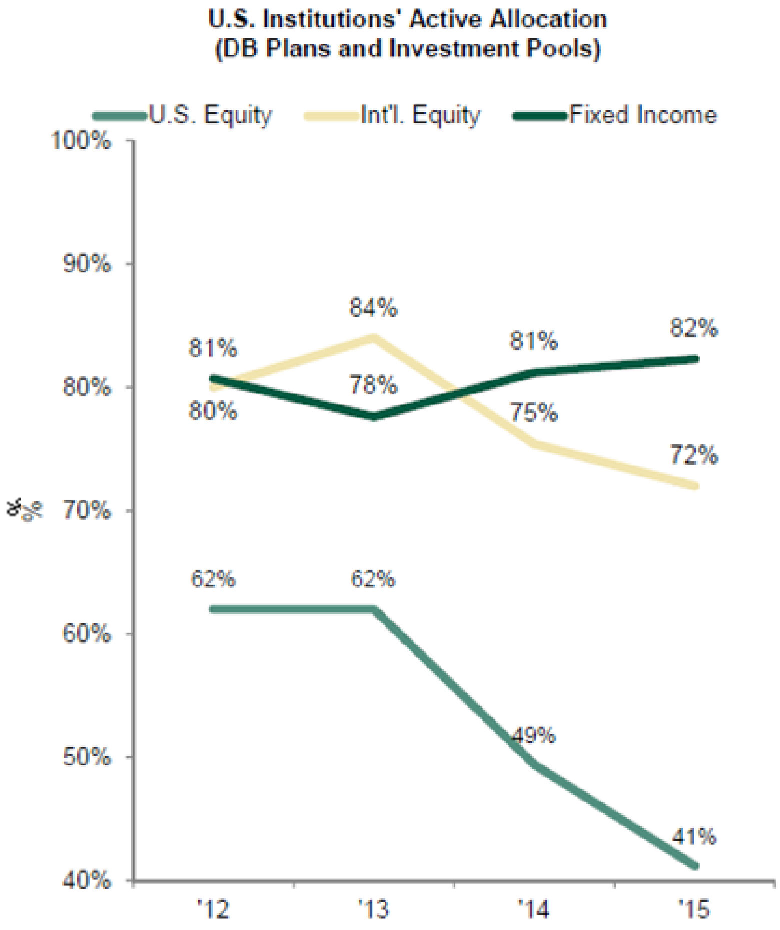
Total Fund Return Summary vs. Peer Universe Net

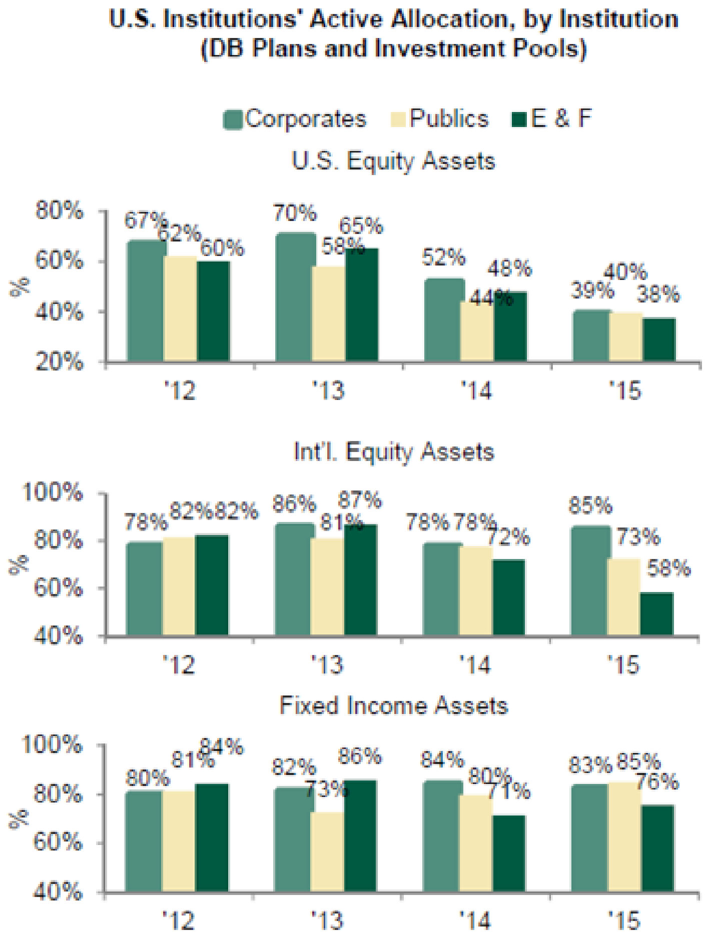


	Return (Rank)					
5th Percentile	2.7	4.3	18.7	15.0	3.7	7.7
25th Percentile	0.8	3.3	17.2	13.1	1.5	6.9
Median	-0.5	2.6	16.1	11.8	0.5	6.0
75th Percentile	-1.2	1.6	14.7	10.5	-0.3	5.3
95th Percentile	-2.4	-0.9	13.6	7.5	-0.9	4.4
# of Portfolios	55	53	43	56	41	53

Active vs Passive

For the second consecutive year, institutions made significant shifts in their equity portfolios from active to passive.





Source: Greenwich Associates 2015 USII-15
Percentages are weighted in U.S dollars and projected to the Greenwich Associates universe of U.S. Institutional investors, Protections based only on the assets of institutions disclosing their specific asset allocation. Results are corporate and union DB plans, public fund DB plans, and endowment and foundation investment pools.

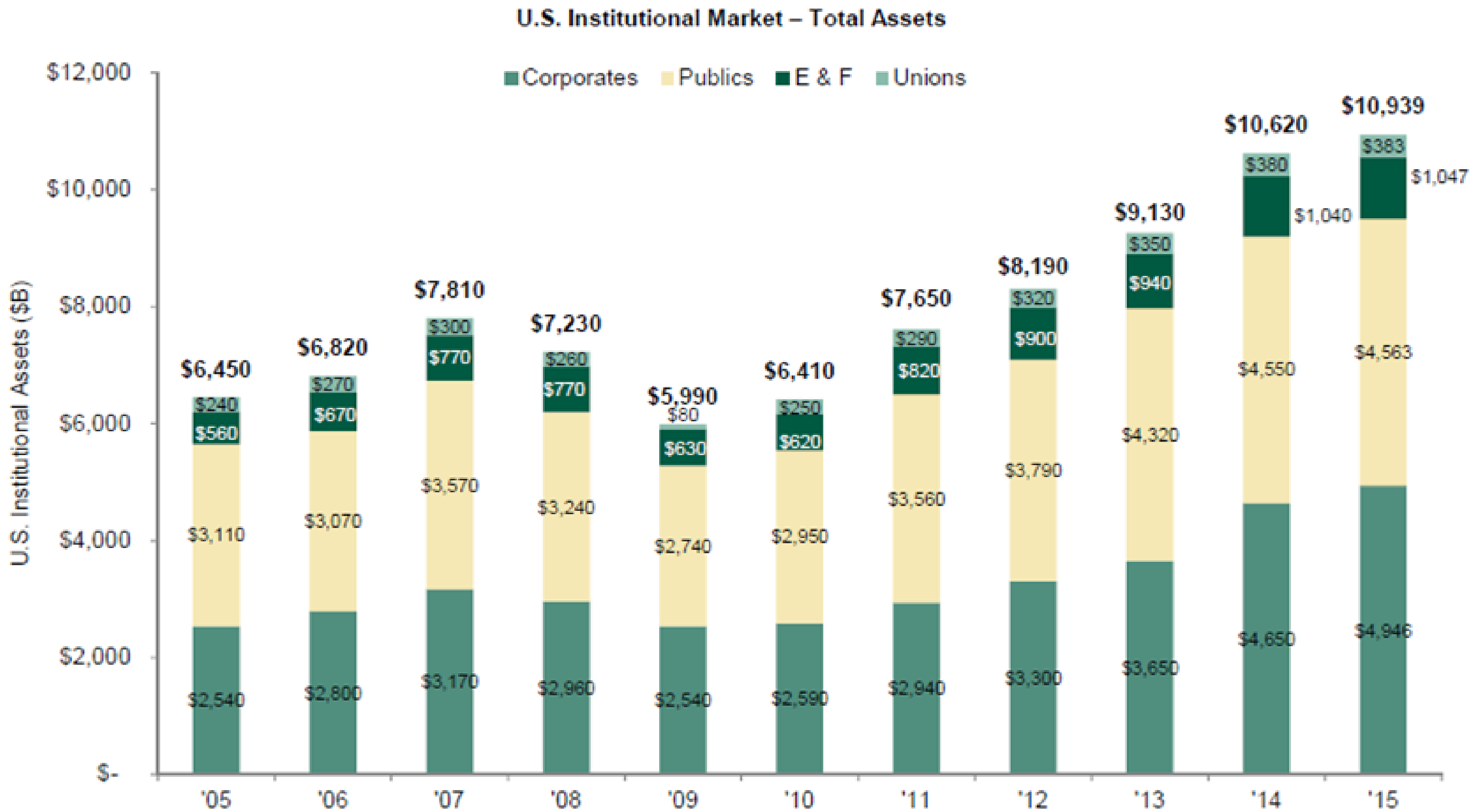
Active Management in US Equities

Gross of Fee Performance as of September 30, 2016

	3 Month	YTD	1 Year	2 Year	3 Year	5 Year	7 Year
eA US Large Cap Value	3.82	8.05	13.61	4.67	9.11	15.4	12.26
Russell 1000 Value	*3.48*	*10.00*	*16.20*	*5.38*	*9.70*	*16.15*	*12.34*
Over/Under	0.34	**-1.95**	**-2.59**	**-0.71**	**-0.59**	**-0.75**	**-0.08**
eA US Large Cap Core	3.83	6.43	12.74	6.22	10.36	15.88	12.92
Russell 1000	*4.03*	*7.92*	*14.93*	*6.88*	*10.78*	*16.41*	*13.25*
Over/Under	**-0.20**	**-1.49**	**-2.19**	**-0.66**	**-0.42**	**-0.53**	**-0.33**
eA US Large Cap Growth	5.29	4.18	11.46	7.29	10.89	16.00	13.54
Russell 1000 Growth	*4.58*	*6.00*	*13.76*	*8.34*	*11.83*	*16.60*	*14.11*
Over/Under	0.71	**-1.82**	**-2.30**	**-1.05**	**-0.94**	**-0.60**	**-0.57**
eA US Small-Mid Cap	6.15	9.29	12.59	6.54	7.39	16.06	13.49
Russell 2500	*6.56*	*10.80*	*14.44*	*7.18*	*7.77*	*16.30*	*13.40*
Over/Under	**-0.41**	**-1.51**	**-1.85**	**-0.64**	**-0.38**	**-0.24**	0.09

Asset Growth

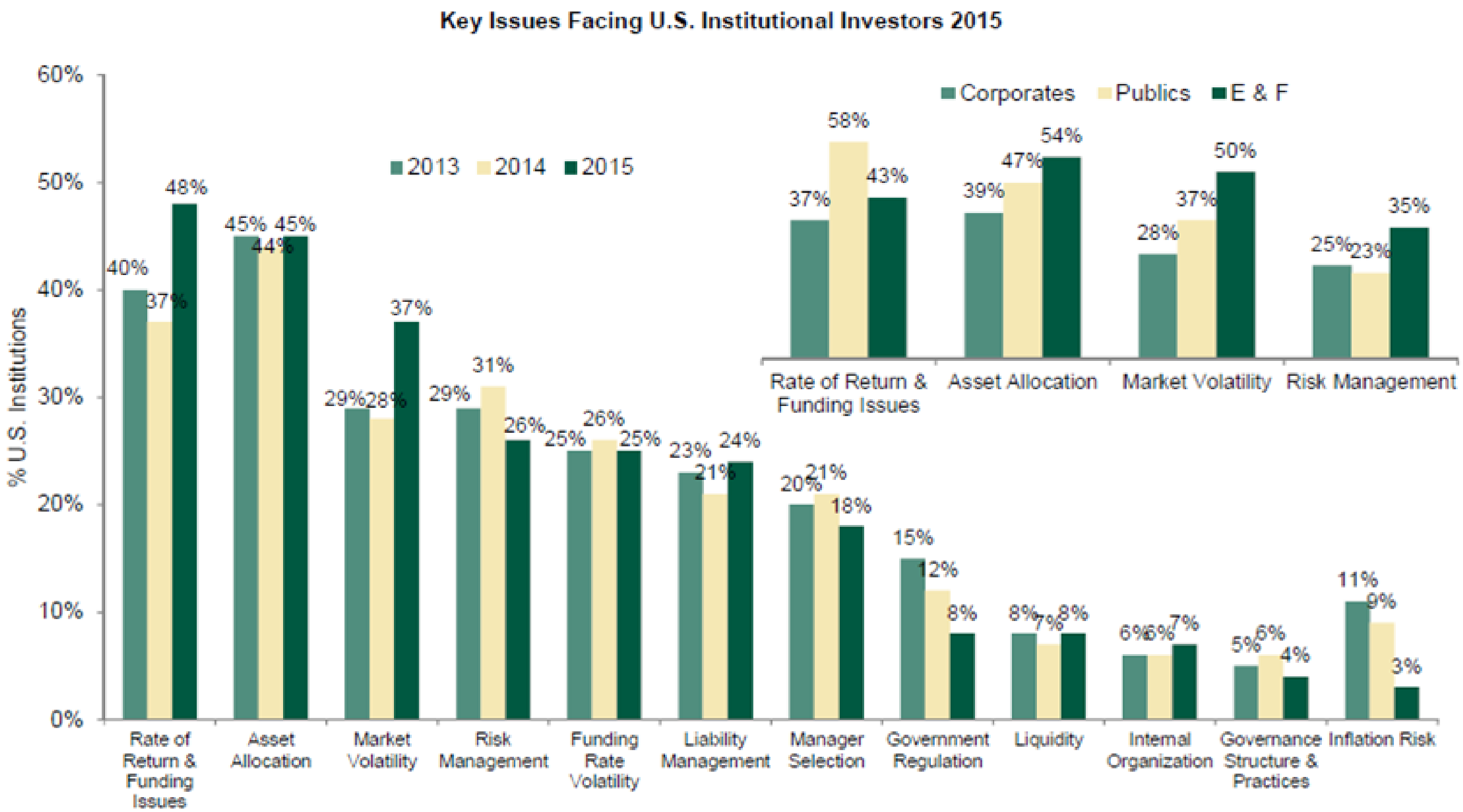
Total U.S. institutional assets increased for the sixth consecutive year, this year appreciating by approximately 3%.



Source: Greenwich Associates 2015 USII-15
In billion of U.S dollars and projected to the Greenwich Associates universe of U.S. institutional investors. Projections based on total assets. At time of interview, valuation calculated within the last six months. Results are for corporate and union DB plans, public fund DB plans, healthcare DB, DC and operating assets, endowment and foundation investment pools and insurance general account assets. Healthcare and insurance assets include in Corporate segment to enable year-to-year comparisons.

Key Issues By Client Type

Sideways markets have led to increasing attention on funding levels and market volatility, while remaining focused on asset allocation.



Source: Greenwich Associates 2015 USII-15.

Key Issues Facing Institutional Funds

Rate of Return and Funding Issues

- "The concern is how to achieve positive returns in light of expectations of future returns. Our view of expected returns is a lot lower than what our plans needs."

Asset Allocation

- **"The first conversation we have at every meeting is asset allocation.** Are we allocated properly for the current stat of the market and are we allocated properly to meet our long term funding requirements? We've made some asset allocation changes, but we haven't added and new tool. We're comfortable with what we're doing currently but its just **remaining vigilant"**

Market Volatility

- **"We're expecting more sideways movement in the equity markets** so less of a bull run. So in order to address that we've put a permanent allocation to the long/short equity"
- **"Take a long term investment perspective.** That's really what were trying to do to wade through this environment."

Risk Management

- More public funds are seeking advice on risk identification and management

Fees

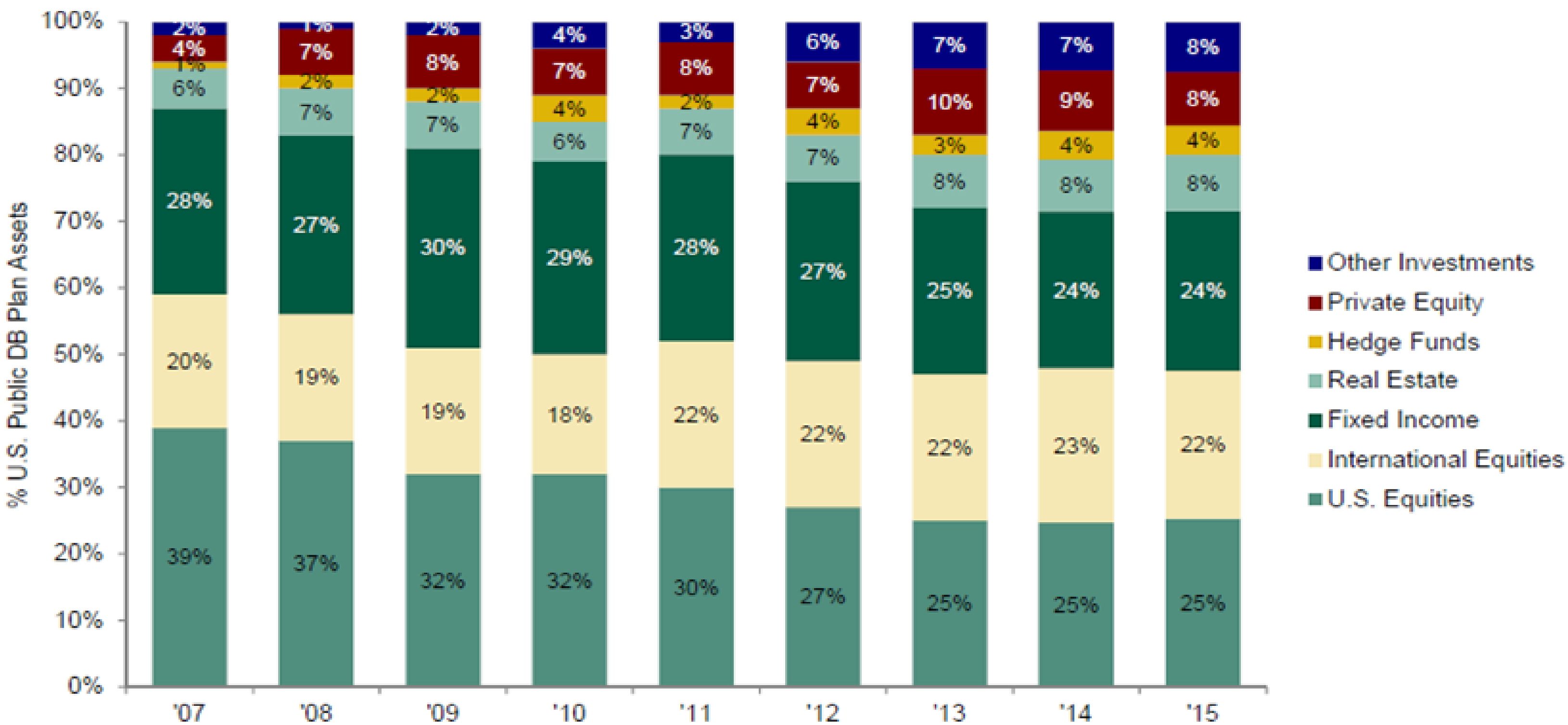
- In a low return world, fees, especially in alternatives are receiving more attention

Source: Greenwich Associates 2015 USII-15.

Asset Allocation Comparison

Public funds' elevated allocations to alternatives have remained steady over the past three years.

U.S. Public Funds' Asset Mix of Defined Benefit Plan Assets

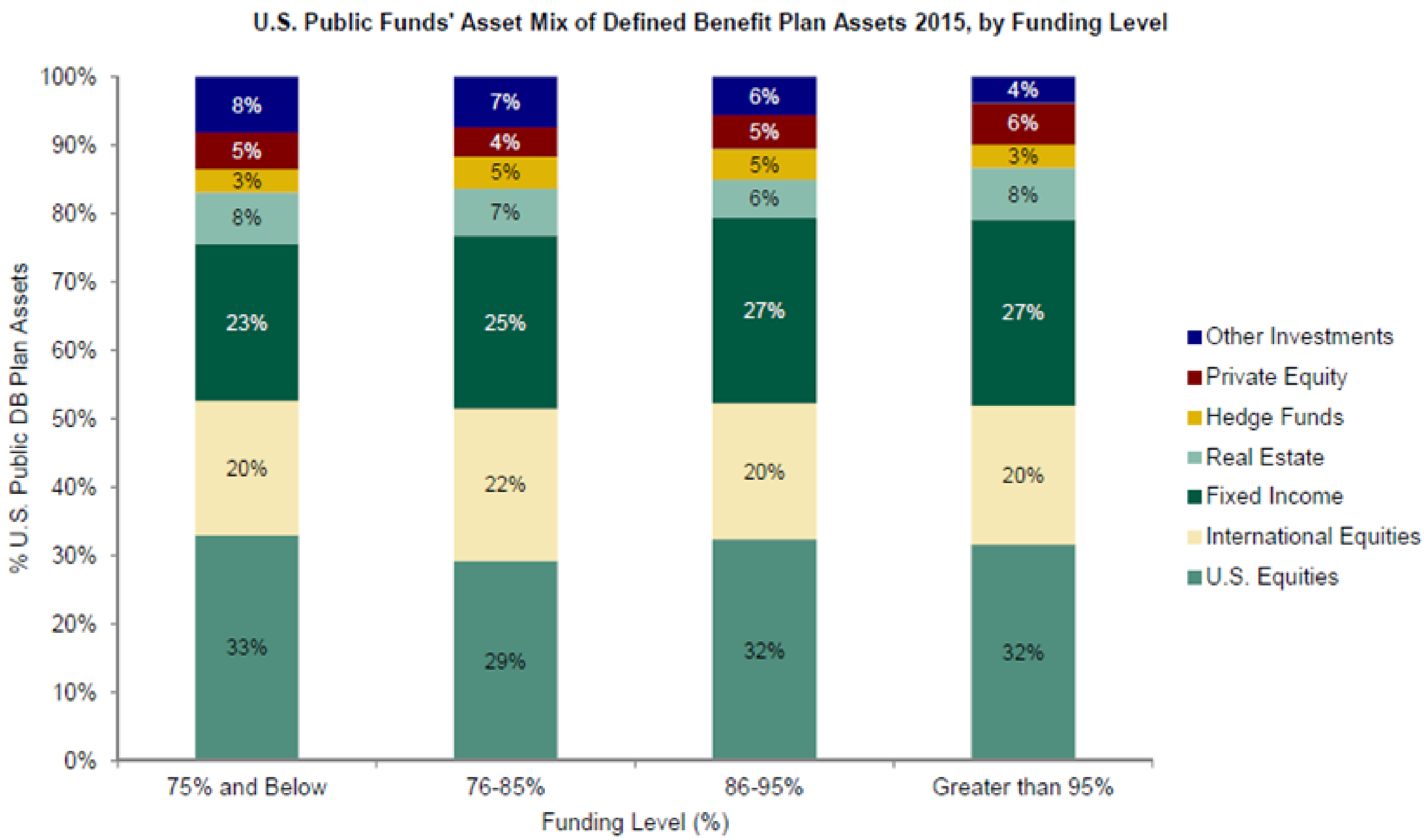


	'07	'08	'09	'10	'11	'12	'13	'14	'15
Average Annual Return	**15%**	**1%**	**-17%**	**14%**	**18%**	**4%**	**12%**	**16%**	**4%**

Source: Greenwich Associates 2015 USII-15
Percentages are weighted in U.S dollars and projected to the Greenwich Associates universe of U.S. Institutional investors, Protections based only on the assets of institutions disclosing their specific asset allocation. Results are for public fund DB plans. Other investments include multi-asset, commodities, and money market. Results exclude outlier allocations.

Asset Allocation Effect on Funding

Unlike their corporate fund counterparts, funding levels have little impact on asset allocation at public funds.



Source: Greenwich Associates 2015 USII-15
Percentages are weighted in U.S dollars and projected to the Greenwich Associates universe of U.S. Institutional investors, Protections based only on the assets of institutions disclosing their specific asset allocation. Results are for public fund DB plans. Other investments include multi-asset, commodities, and money market. Results exclude outlier allocations.

Current Investment Environment

Low expected returns are here to stay – fundamental economic drivers likely to persist over 5-7 year horizon

- Lower 30-year yields extend unattractive bond returns to the long-term
- Slower global growth, investor complacency, coupled with lower liquidity, may leave markets more vulnerable/volatile

US equities face headwinds but without major concerns

- Dollar strength likely to slow earnings growth and valuations remain above average
- Fed rate hike remains on the horizon and is a first step in a multi-year policy normalization process

Global monetary policies and capital markets continue to diverge

- The US economy shows strength relative to other developed markets after having navigated an end to quantitative easing
- European Union, Japan and China monetary stimulus programs demonstrating divergent global economic environments are driving volatility

Global monetary stimulus, though unlikely, could spark inflationary pressures

- Real assets provide protection, but otherwise have low return prospects
- Still play an important strategic role in portfolios, but less attractive on a tactical basis

Emerging Market fatigue tangible; low valuations cannot be ignored

- Short- and medium-term challenges camouflage long-term economic growth prospects
- Plummeting energy prices have potential to create challenges for certain economies