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Oklahoma State Pension Commission

Public Fund Analysis

June 26, 2013

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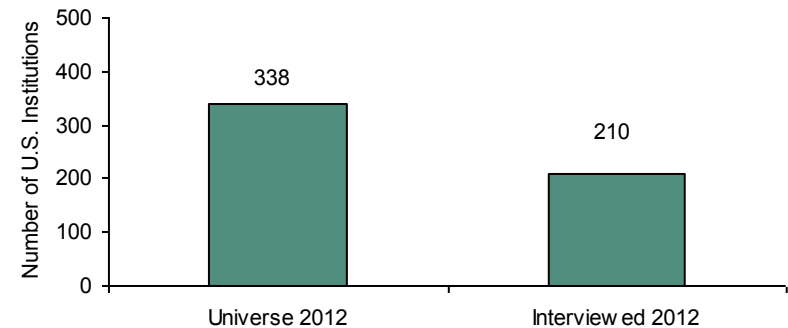


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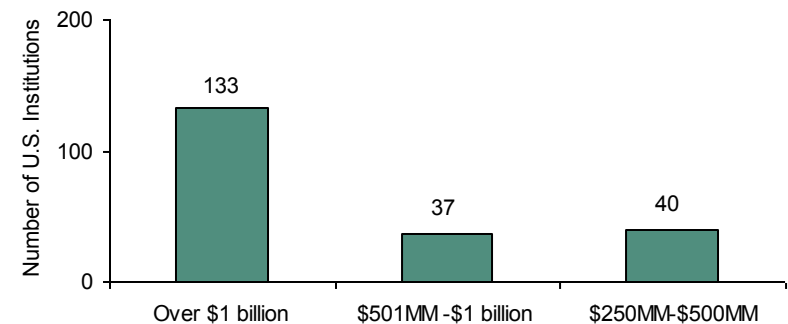
Greenwich Associates' 2012 research with U.S. institutional investors – this presentation is focused on Public Funds only.

- Each year Greenwich Associates interviews, in person, ~1,000 U.S. corporate and public pension plans, endowments and foundations and union funds with total assets over \$250 million.
- These in-person interviews were conducted from July through October of 2012.
- We interviewed 210 public funds, including 133 each with over \$1 billion in plan assets.

Greenwich Associates' U.S. Public Funds' Research Coverage 2012

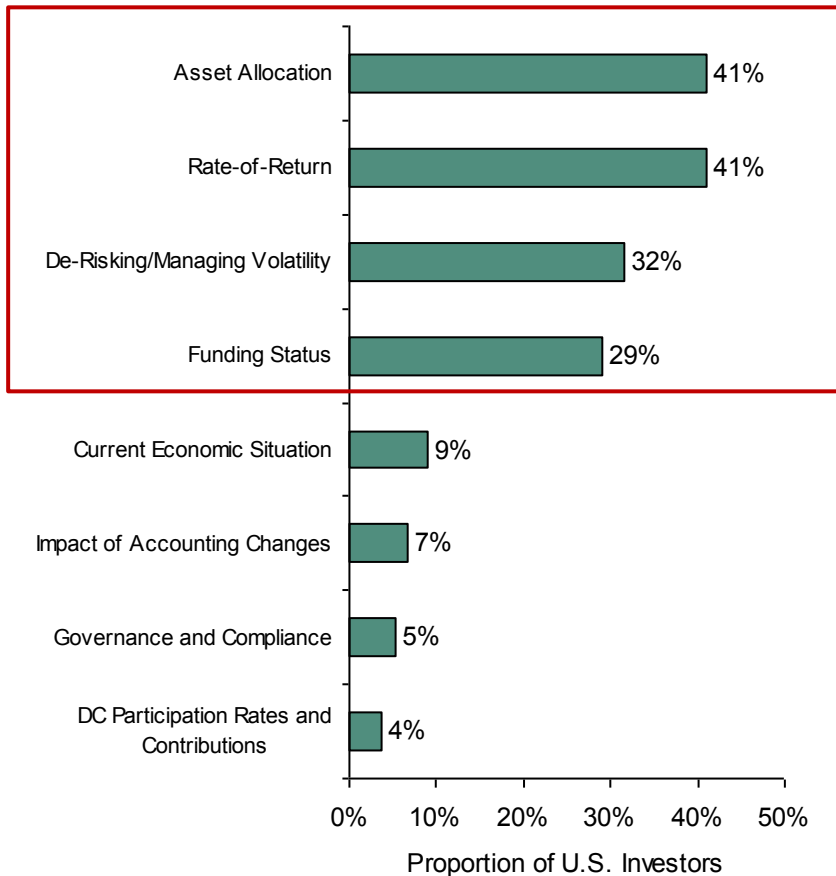


Greenwich Associates' U.S. Public Funds' Research Coverage 2012



Public Funds' primary challenge is meeting actuarial earnings rates – driving changes in asset allocation and within asset classes – while trying to de-risk.

Most Important Issues Facing Public Funds 2012



Representative Quotes

- *“The issue we are facing is the funding status of the plan. **We are still trying to get back to where we were prior to the 2008 losses.** The way we are doing that is changing asset allocation by providing down side protection.” – Public Fund*
- *“Investment performance and meeting our goals is a huge issue right now”. – Public Fund*
- *“Funding is the biggest issue. We’re addressing that in two ways: 1) we will probably reduce our assumed rate of return, and hope for interest rates to go up. 2) We are going to commit more money to alternative investments.” – Public Fund*
- *“The issue is funded status and our ability to meet the target return.” – Public Fund*

Source: Greenwich Associates 2012, USII-12.
Data is based on open-ended comments from 206 U.S. institutional investors.

To achieve this Public plans are tweaking asset allocation and moving further into alternatives to enhance returns.

- Historically low interest rates and the current low yield environment continue to have pension fund executives reviewing their asset allocation and manager line-up, as well as benefits.
- As fund executives seek greater rates-of-return, a major area of focus is alternatives and how they can play a role in generating returns, reducing risk, and helping plans close their funding gaps.
- Future changes in public fund regulation is a concern among many plans executives, as is public perception.

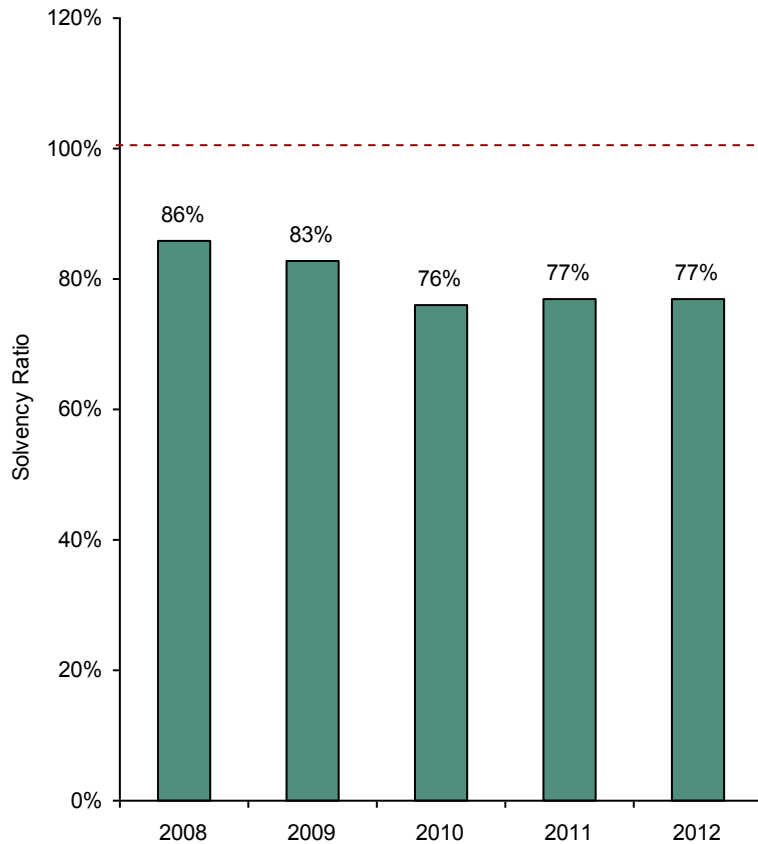
Source: Greenwich Associates 2012, USII-12.

Representative Quotes

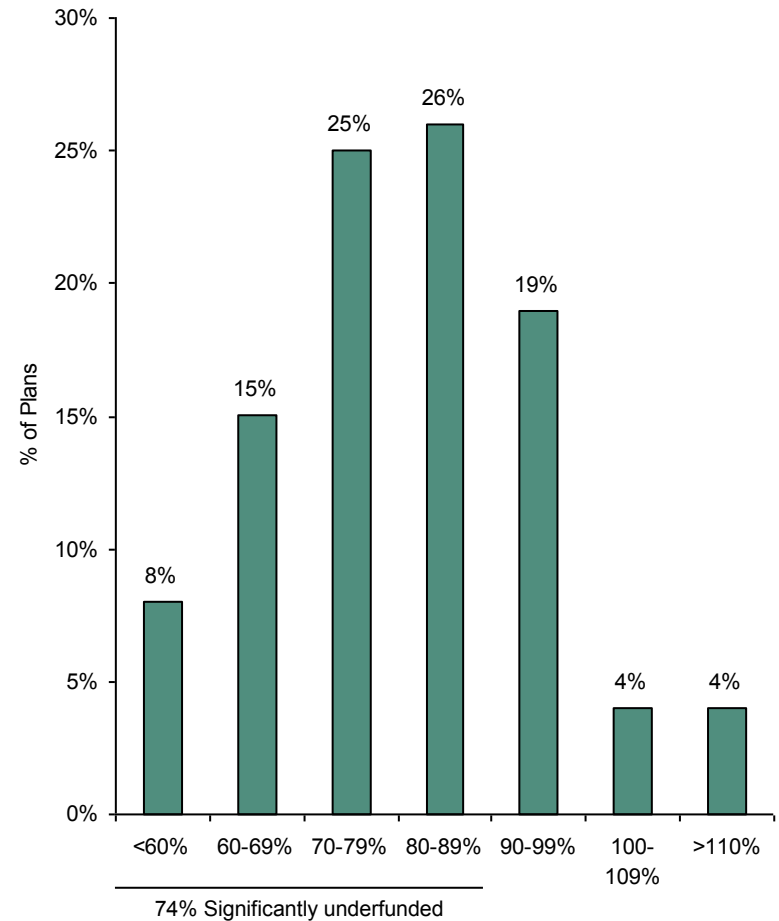
- *“So the question is do we start making changes or do we say this is a market cycle and we are going to work our way out of it?” - Public Fund*
- *“1) we will probably reduce our assumed rate of return, and hope for interest rates to go up. 2) We are going to commit more money to alternative investments.” - Public Fund*
- *“We are starting to look at changes in benefits, and enhancing our yields on our investments in ways that are not the traditional to us. I am talking about alternative investments.” – Public Fund*
- *“We have made some changes in our manager lineup to try to get more alpha with some different strategies. “ - Public Fund*
- *“We are concerned about the "demonization" of public pension plans. Employees have traded off a higher salary for a pension.” - Public Fund*

Insufficient returns and declining interest rates have caused large funding gaps with less than 10% of pension plans fully funded.

U.S. Public Funds' Average Solvency Ratio of Defined Benefit Plans



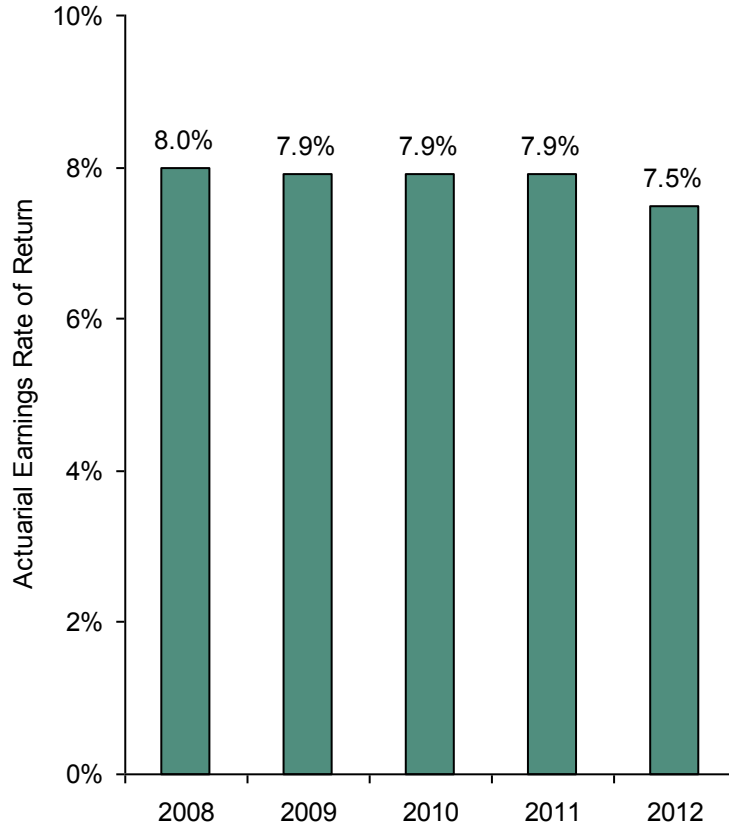
U.S. Public Funds' Distribution of Solvency Ratio of Defined Benefit Plans 2012



Source: Greenwich Associates 2012, USII-12.
 Mean calculation excludes reported answers of "0" and / or "None".
 Results are for public fund defined benefit plans assets.

Low economic growth has led plans to reduce anticipated returns, making funding challenges even more transparent.

U.S. Public Funds' Average Actuarial Earnings Return on Defined Benefit Plan Assets



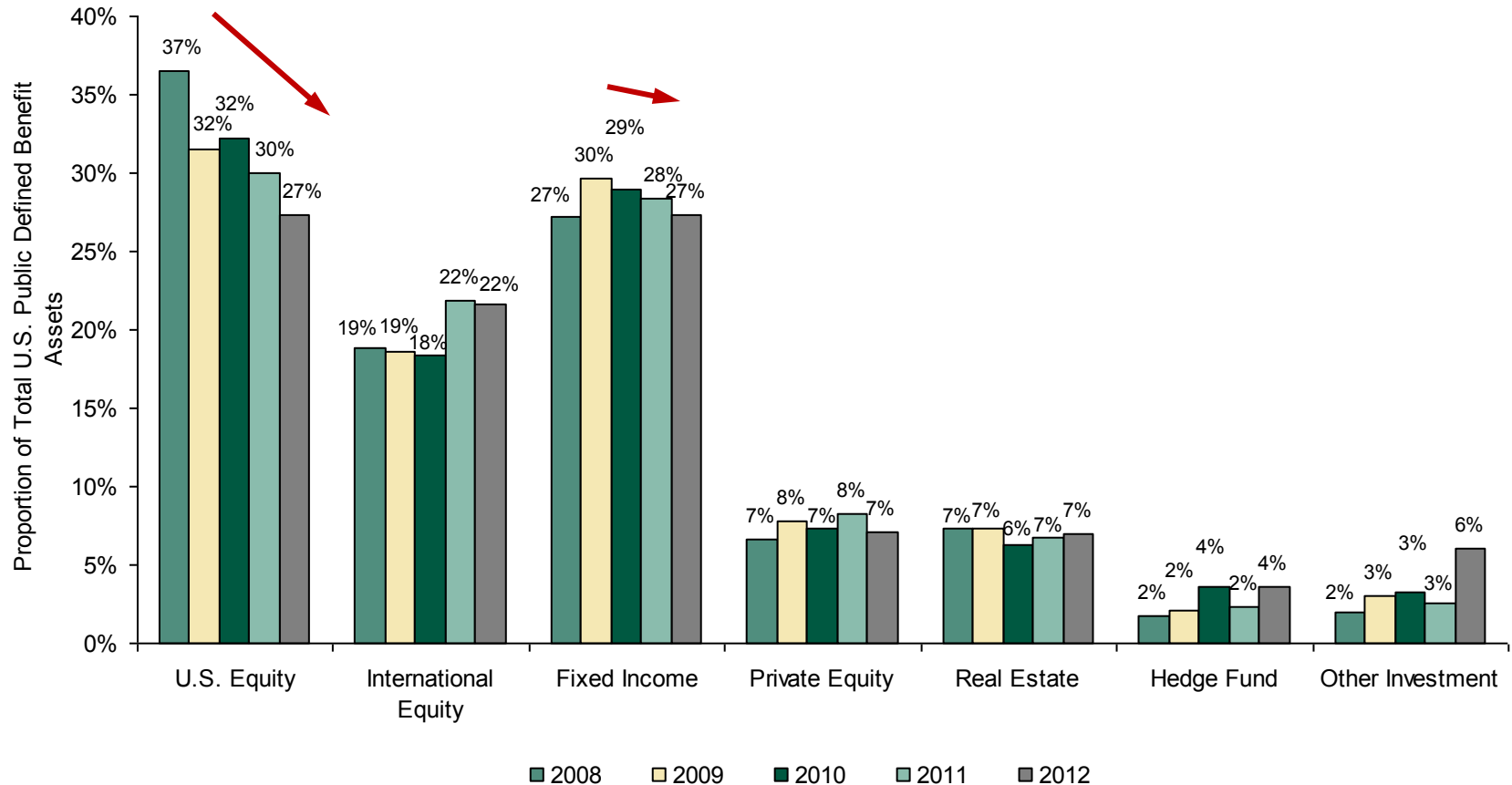
Representative Quotes

- *“We are looking at alternative investment strategies to access additional gains from equities, and a lot of soul searching while looking at different investment vehicles. We have not gotten anywhere near the actuarial investment rate in ten years.” – Public Fund*
- *“The most important thing is to be able to hit the assumed rate of return, which is becoming more challenging these days.” – Public Fund*
- *“We will probably reduce our assumed rate of return, and hope for interest rates to go up.” – Public Fund*

Source: Greenwich Associates 2012, USII-12.
Mean calculation excludes reported answers of "0" and / or "None".
Results are for public fund defined benefit plans assets.

Turning to Public Funds' asset allocation, this showed notable movements out of traditional asset classes and into alternatives.

U.S. Public Funds' Institutional Asset Allocation (DB, Excluding DC)

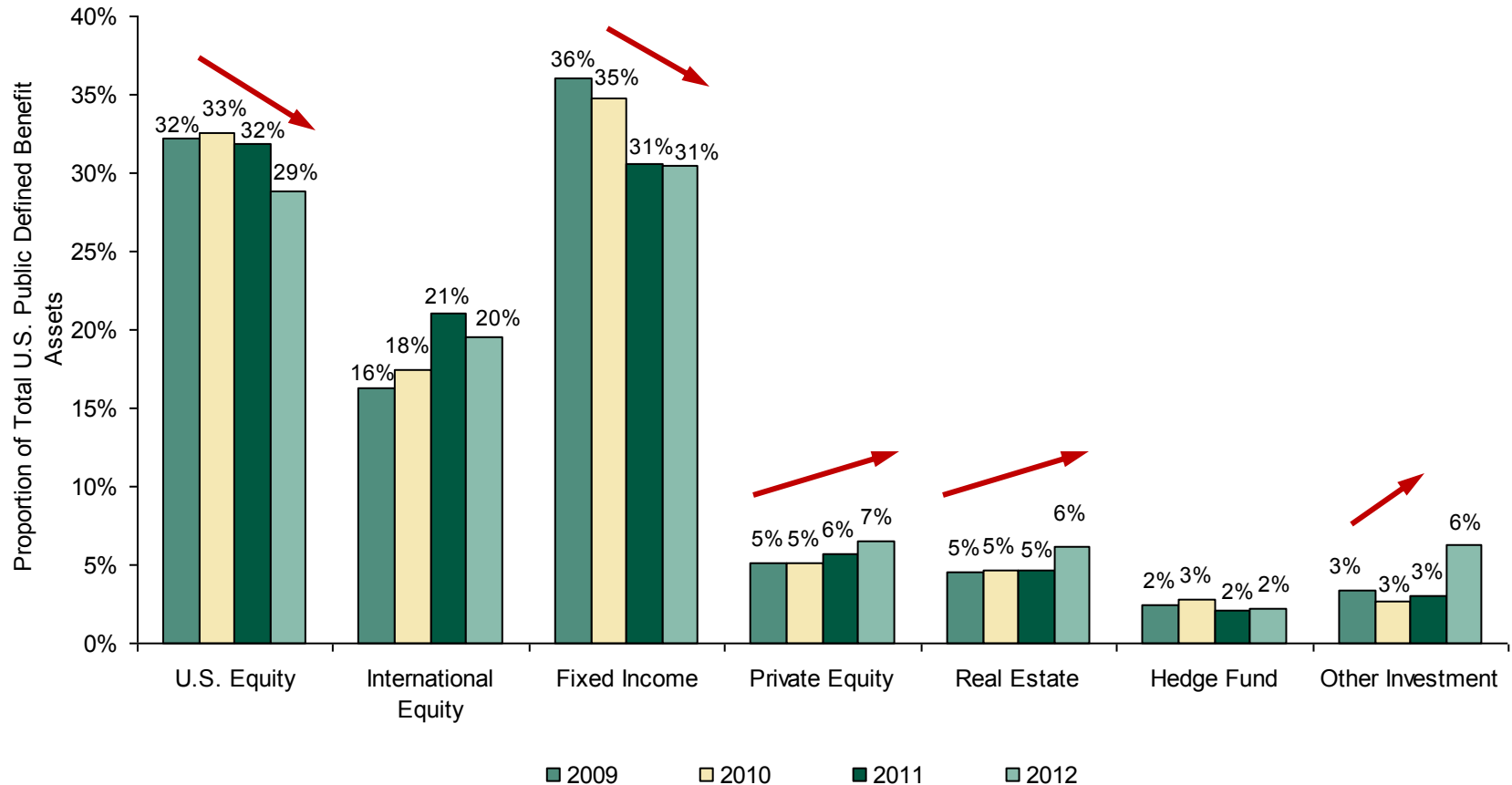


Source: Greenwich Associates 2012, USII-12.

U.S. assets are projected to the 2012 Greenwich Associates universe of 2,357 U.S. institutional investors with \$250 million or more in total assets. Percentages are dollar-weighted. "Other investment" represent allocations to commodities, money market, and other. Results are for public fund defined benefit plan assets.

A matched sample shows more clearly the move towards alternatives.

U.S. Public Funds' Institutional Asset Allocation, Matched Sample (DB, Excluding DC)

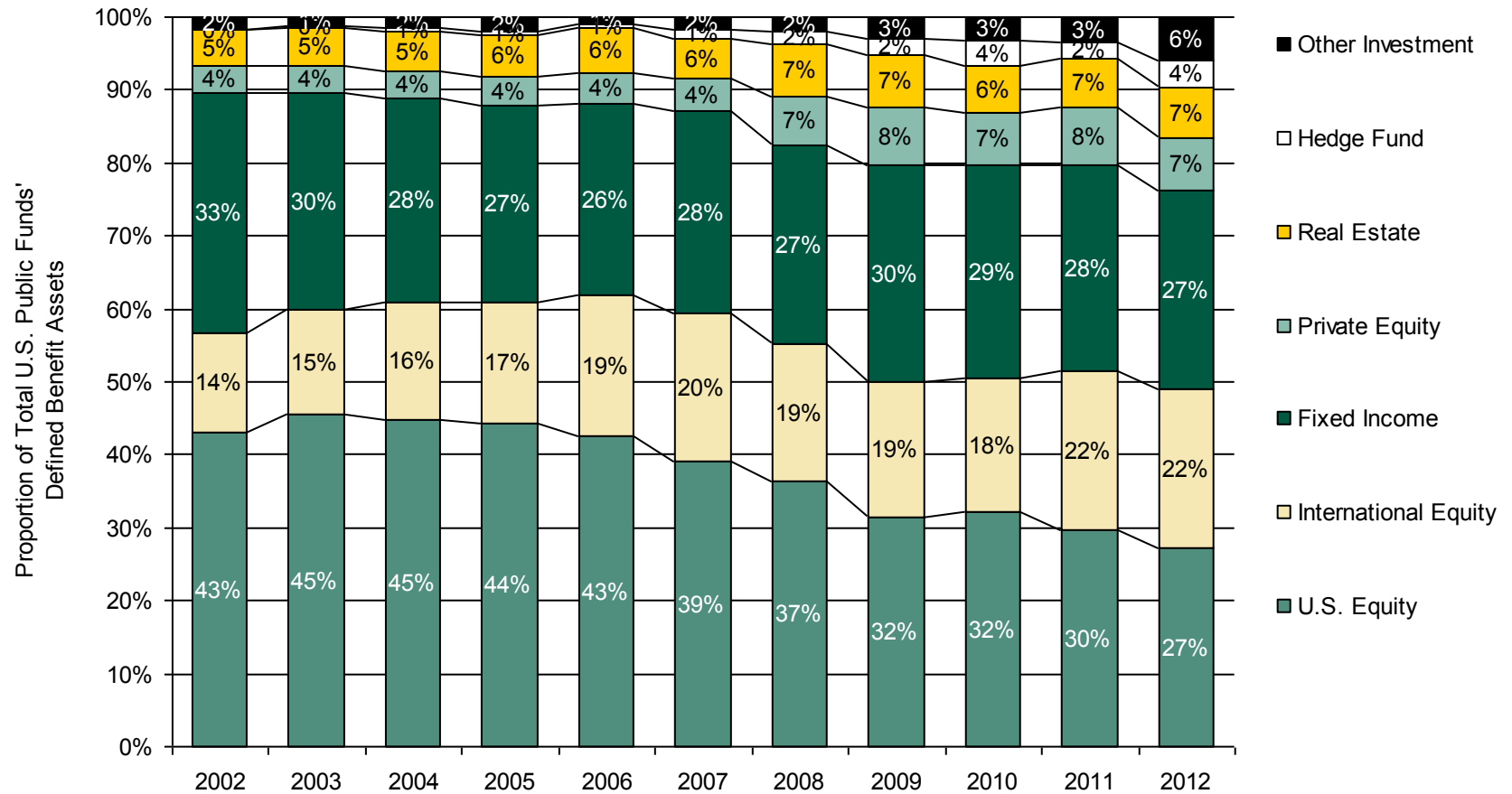


Source: Greenwich Associates 2012, USII-12.

U.S. assets are projected to the 2012 Greenwich Associates universe of 2,357 U.S. institutional investors with \$250 million or more in total assets. Percentages are dollar-weighted. "Other investment" represent allocations to commodities, money market, and other. Results are for public fund defined benefit plan assets.

On the DB side, the ten-year picture clearly shows the dramatic change Public Plans have gone through in asset allocation.

U.S. Public Funds' Institutional Asset Allocation (DB, Excluding DC)

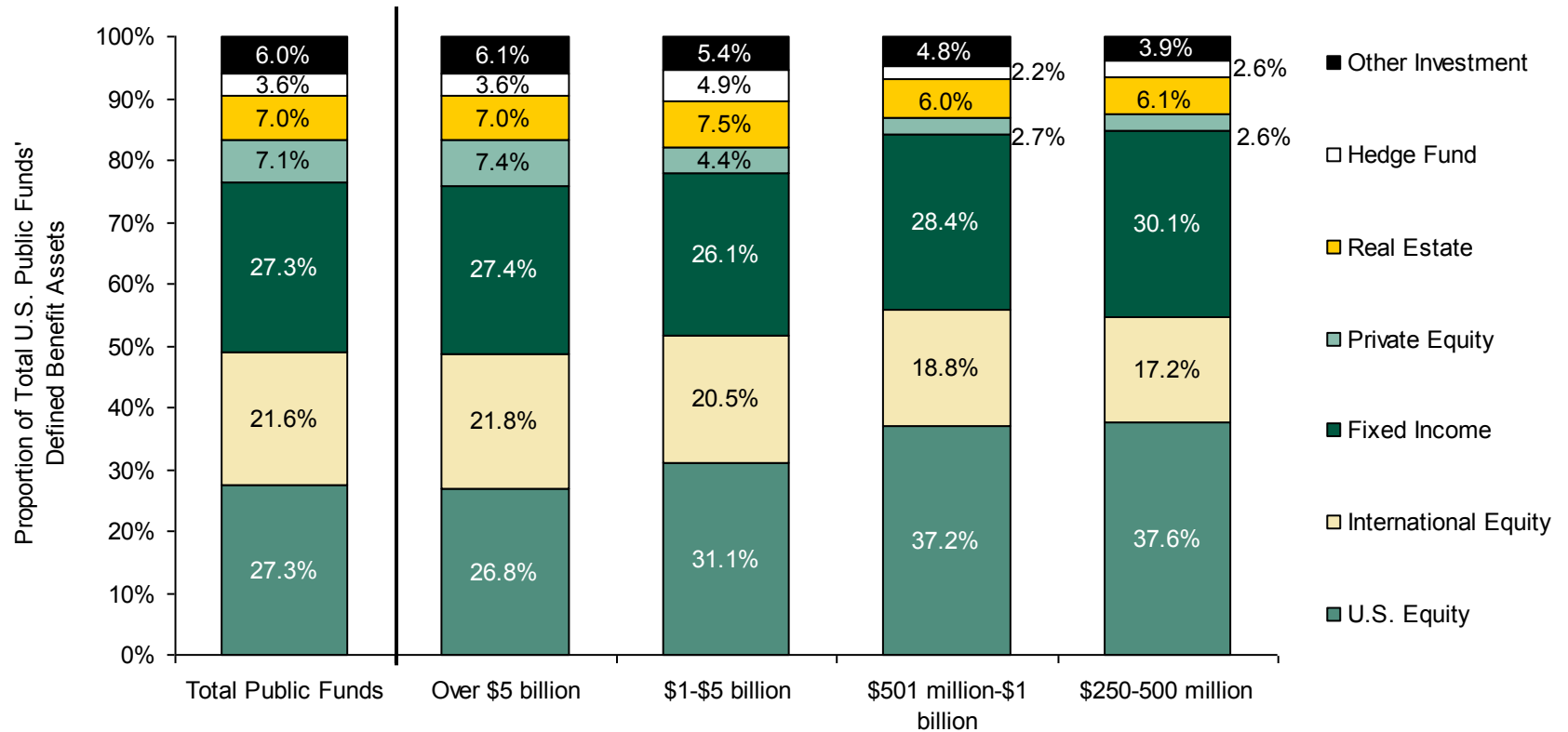


Source: Greenwich Associates 2012, USII-12.

U.S. assets are projected to the 2012 Greenwich Associates universe of 2,357 U.S. institutional investors with \$250 million or more in total assets. Percentages are dollar-weighted. "Other investment" represent allocations to commodities, money market, and other. Results are for public fund defined benefit plan assets.

The larger public plans rely less on domestic equities and more on alternatives than their smaller counterparts.

U.S. Public Funds' Institutional Asset Allocation 2012, by Size of Plan



2012 Average Blended Plan Return

4%

3%

5%

4%

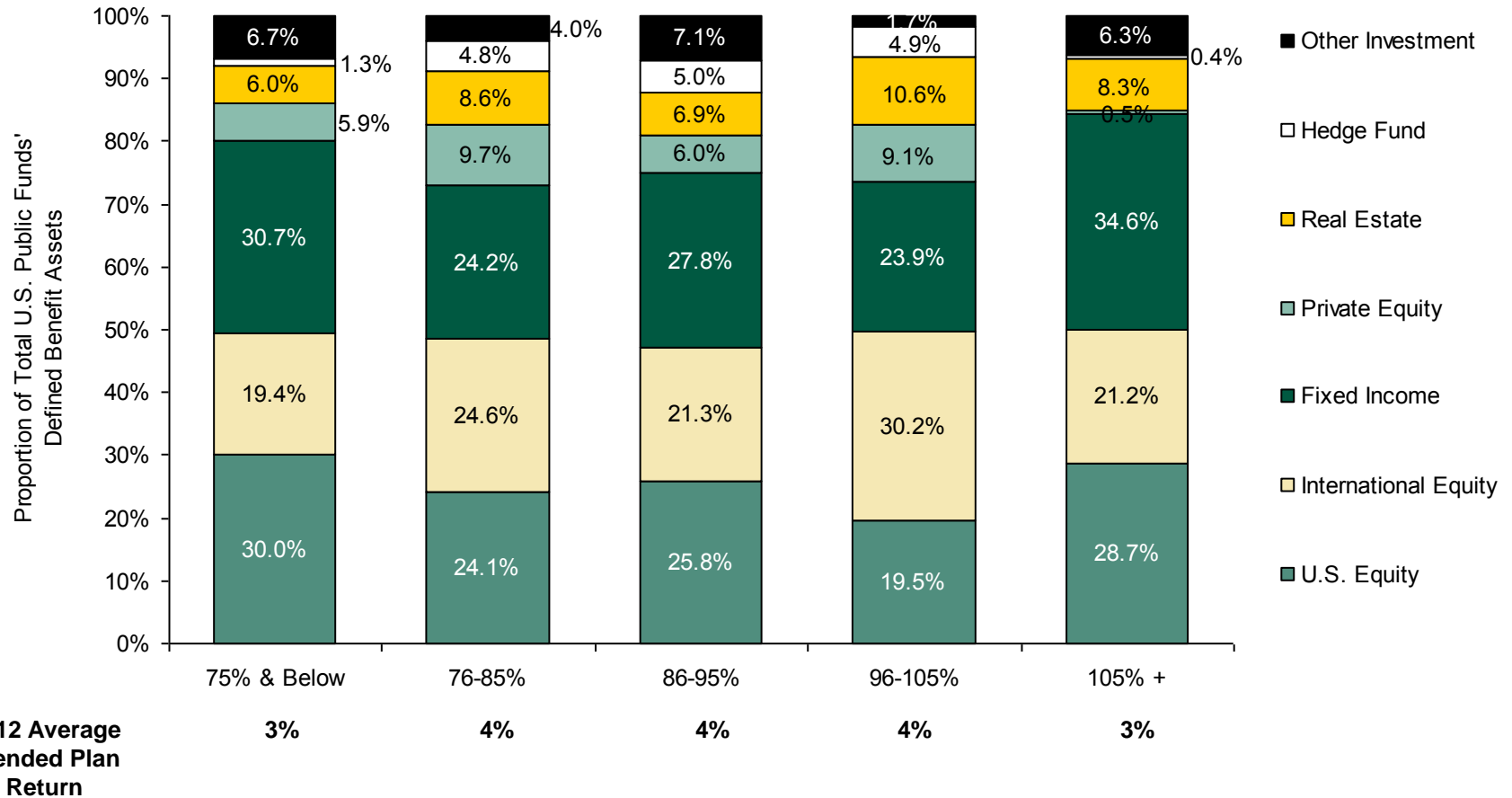
2%

Source: Greenwich Associates 2012, USII-12.

U.S. assets are projected to the 2012 Greenwich Associates universe of 2,357 U.S. institutional investors with \$250 million or more in total assets. Percentages are dollar-weighted. "Other investment" represent allocations to commodities, money market, and other. Results are for public fund defined benefit plan assets.

The over-funded public funds have more fixed income than others, but show fewer differences in asset allocation than their corporate counterparts.

U.S. Public Funds' Institutional Asset Allocation 2012, by Solvency Ratio

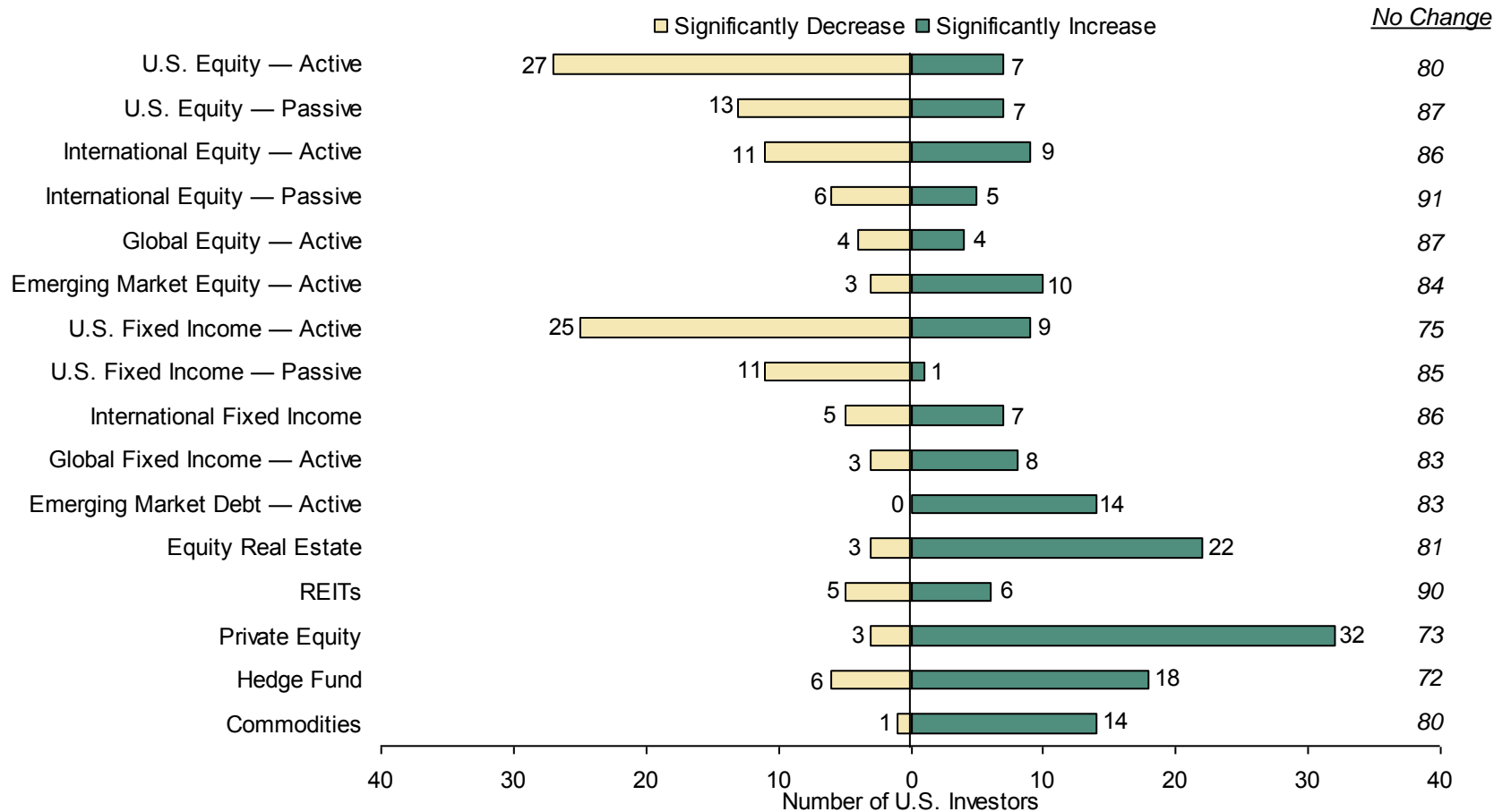


Source: Greenwich Associates 2012, USII-12.

U.S. assets are projected to the 2012 Greenwich Associates universe of 2,357 U.S. institutional investors with \$250 million or more in total assets. Percentages are dollar-weighted. "Other investment" represent allocations to commodities, money market, and other. Results are for public fund defined benefit plan assets.

Investors expect to continue movements into alternatives with shifts out of U.S. equities and fixed income.

U.S. Public Funds' 3-Year Institutional Asset Allocation Expectations

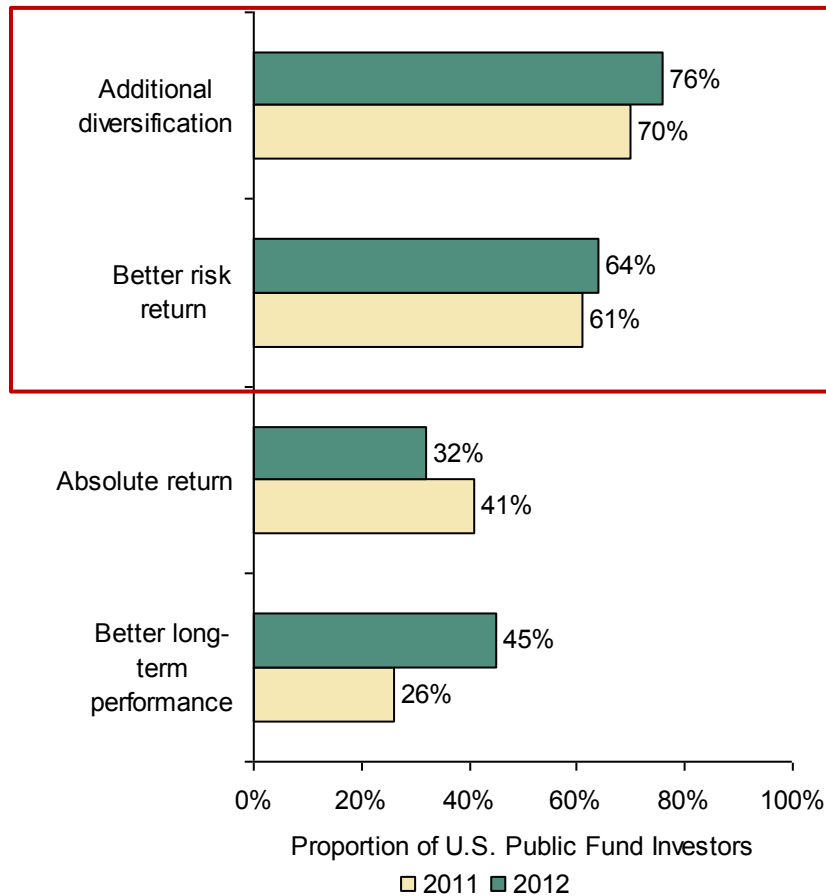


Source: Greenwich Associates 2012, US IIF-12.

Note: Three year outlook. "No Change" column indicates number of U.S. investors with no allocation changes planned for a given asset class. Results are for public fund defined benefit plan assets. Money market and 'other' are not shown.

Hedge funds continue to be an important part of portfolios, primarily as a way of achieving increased diversification and risk/return and increasingly as a way of improving returns.

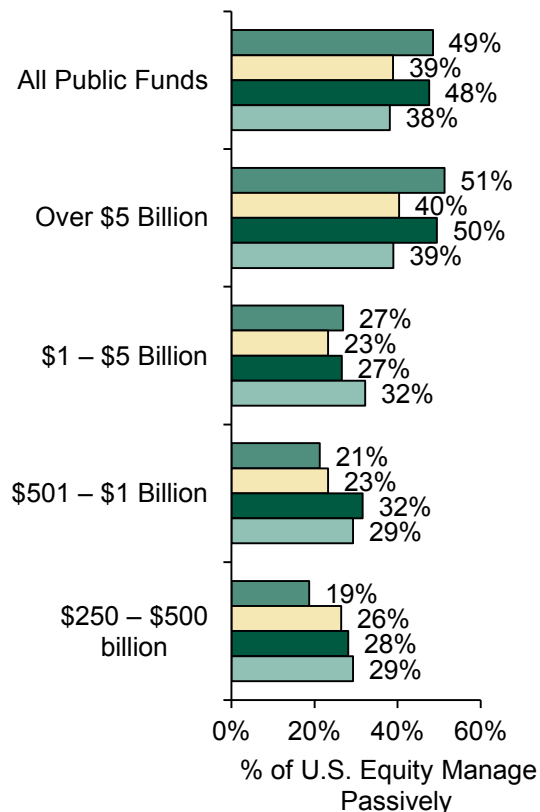
U.S. Public Funds' Investment Objectives for Hedge Fund Investments



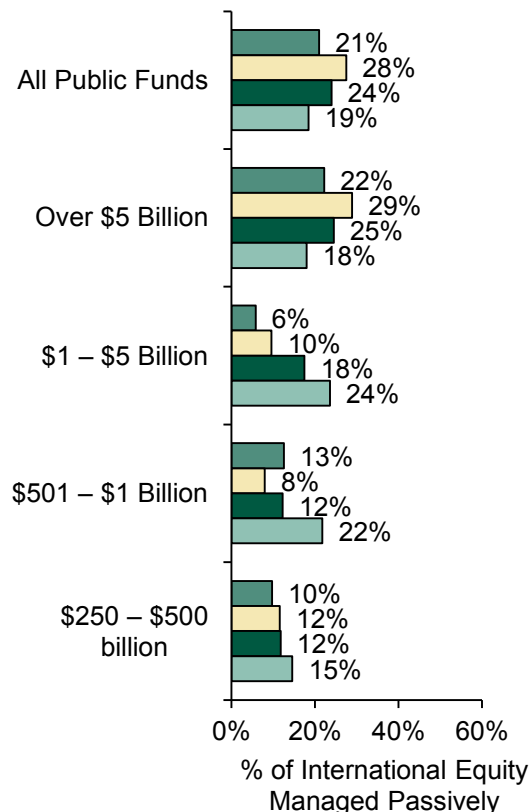
Source: Greenwich Associates 2012, U.S. IIF-12.

The commitment to active management remains firm, with the share of assets managed passively holding within long-term bands.

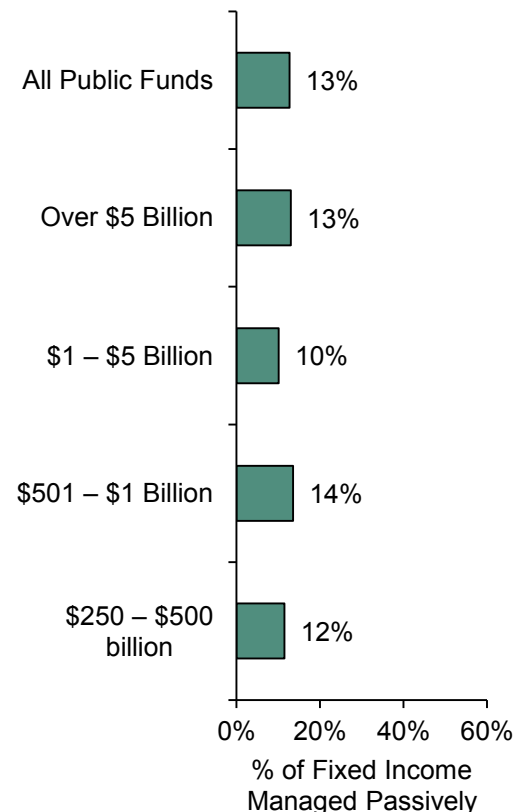
U.S. Public Funds' Institutional U.S. Equity Assets Managed Passively



U.S. Public Funds' Institutional Int'l Equity Assets Managed Passively



U.S. Public Funds' Institutional Fixed Income Assets Managed Passively



■ 2009 ■ 2010 ■ 2011 ■ 2012

■ 2009 ■ 2010 ■ 2011 ■ 2012

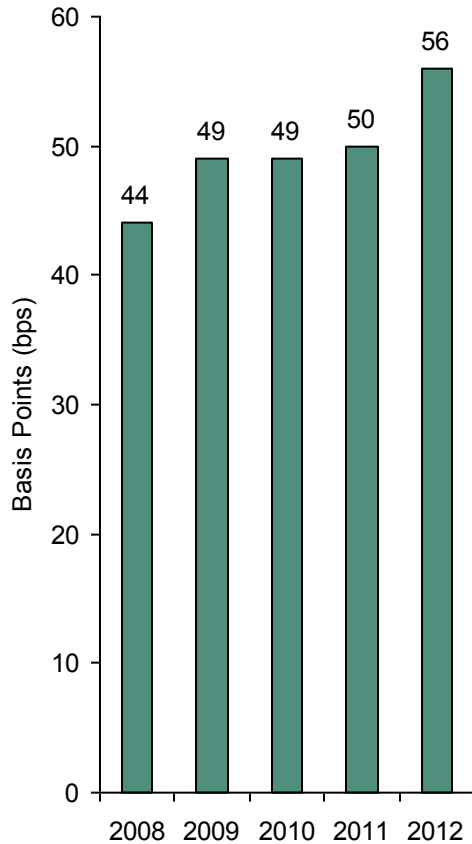
■ 2012

Source: Greenwich Associates 2012, U.S. IIF-12.

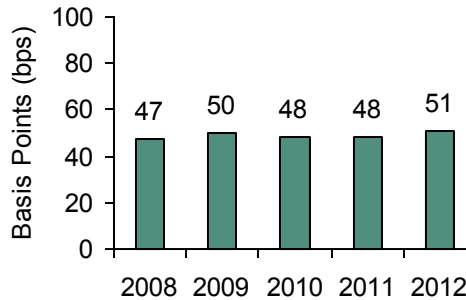
U.S. assets are projected to the 2012 Greenwich Associates universe of 2,357 U.S. institutional investors with \$250 million or more in total assets. Percentages are dollar-weighted. Results are public fund defined benefit plan assets.

Despite continued pressures, fees paid by public funds have increased quite significantly.

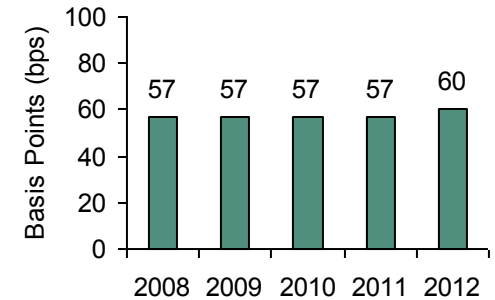
Average Fees Paid to External Managers



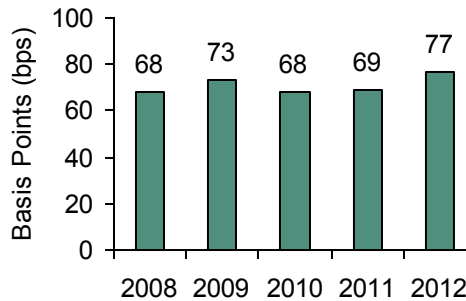
Average Fees Paid to Active U.S. Equity Managers



Average Fees Paid to Active International / Global Managers



Average Fees Paid to Active EME Managers



Average Fees Paid to Active Fixed Income Managers

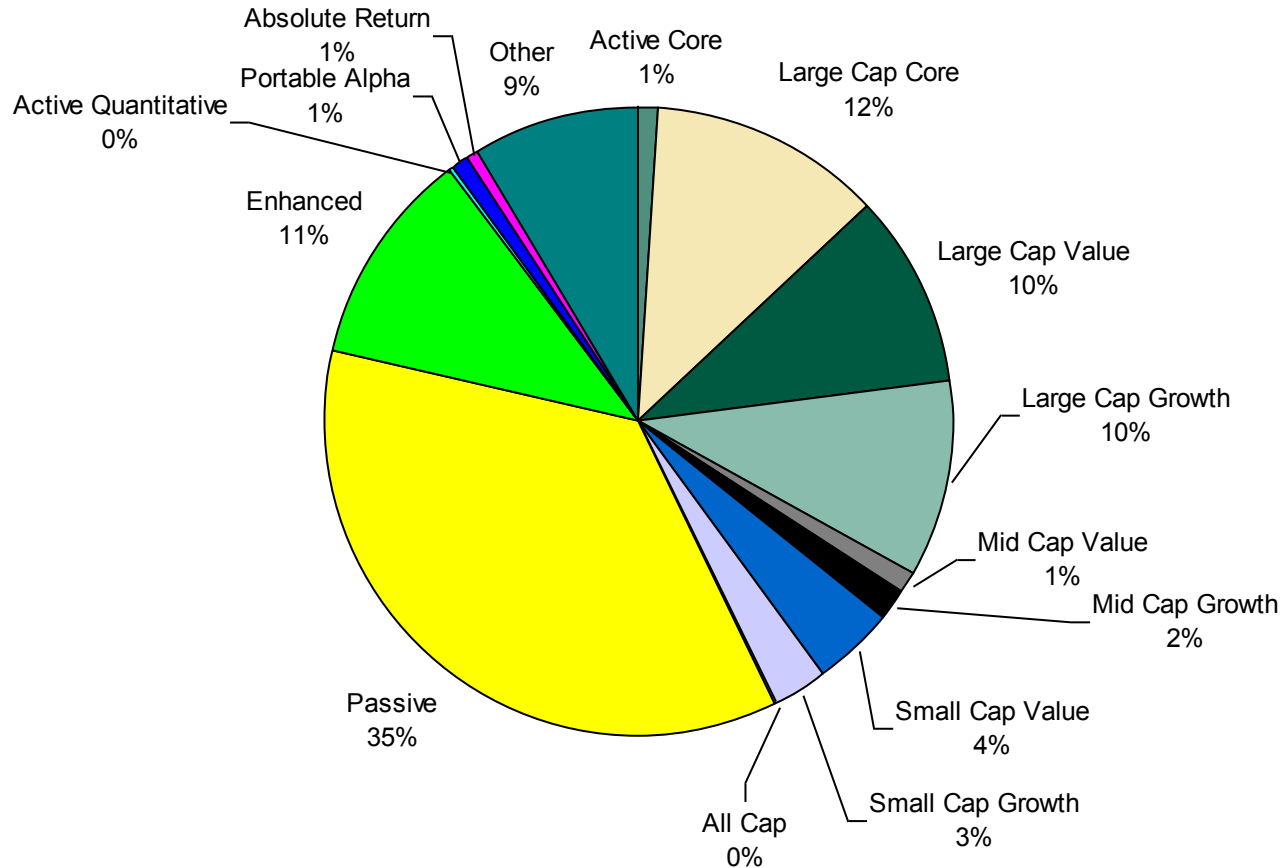


Source: Greenwich Associates 2012, U.S. IIF-12.

Note: Mean calculation shown excludes answers of "0" and/or "none". Shown in basis points.

Domestic equity specialists at large public funds have just over 30% of their U.S. equity assets in traditional large cap strategies.

U.S. Public Fund Specialist Investors' Style-Specific Allocation of Institutional U.S. Equity Assets 2012 (DB)



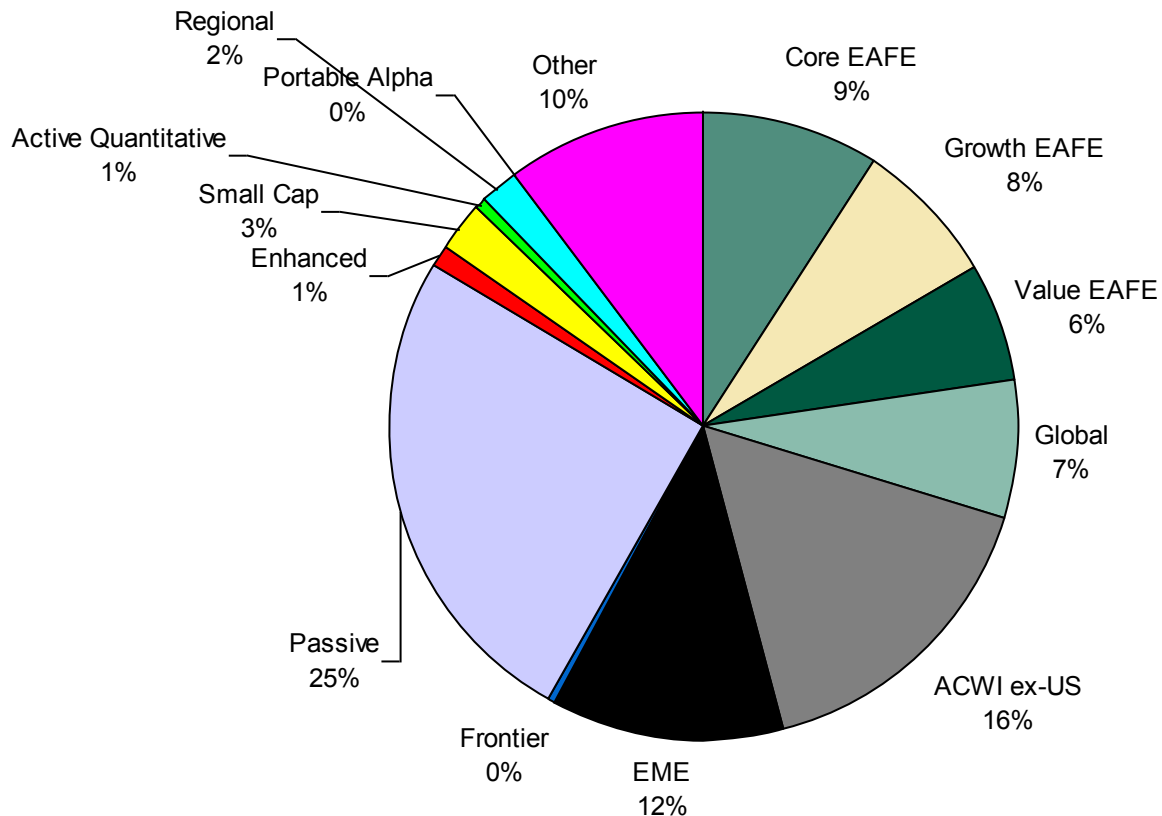
Source: Greenwich Associates 2012, USII-12.

U.S. assets are projected to the 2012 Greenwich Associates universe of 101 U.S. equity specialist investors. Percentages are dollar-weighted.

Results are for public fund defined benefit plan assets.

International equity specialists among public funds report just under one quarter of the international / global assets in active EAFE mandates.

U.S. Public Fund Specialist Investors' Style-Specific Allocation of International Equity Assets 2012 (DB)

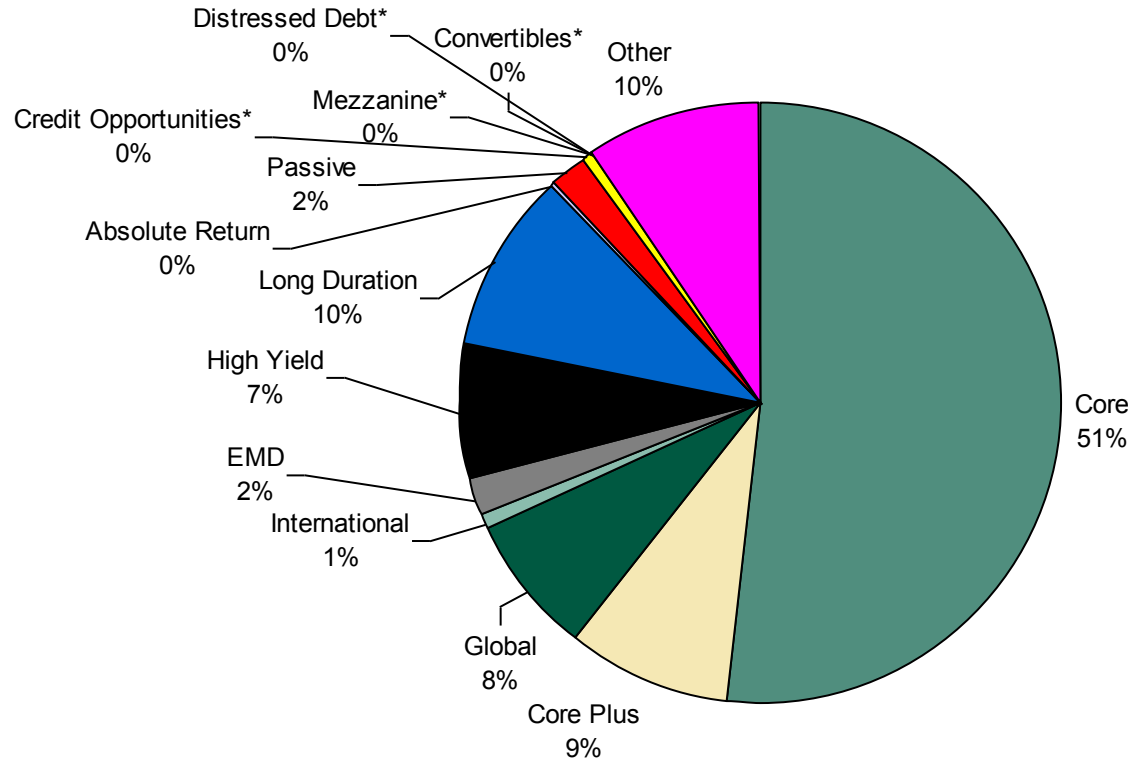


Source: Greenwich Associates 2012, USII-12.

U.S. assets are projected to the 2012 Greenwich Associates universe of 103 international equity specialist investors. Percentages are dollar-weighted. Results are for public fund defined benefit plan assets.

For funds with fixed income specialists, core and core plus are still the bulk of the assets, albeit lower than a few years ago.

U.S. Public Fund Specialist Investors' Style-Specific Allocation of Fixed Income Assets 2012 (DB)

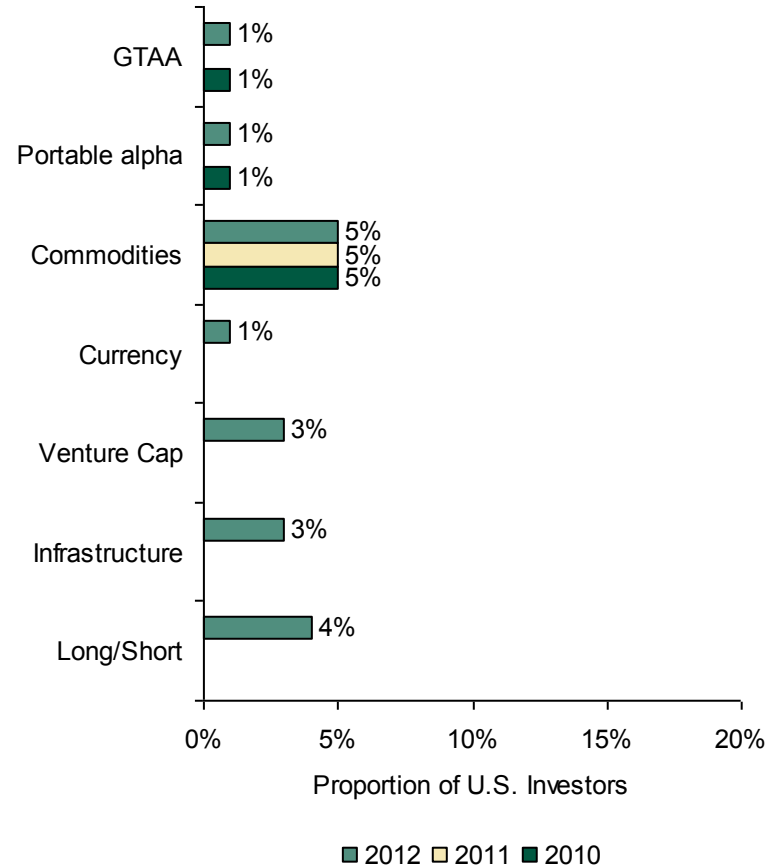
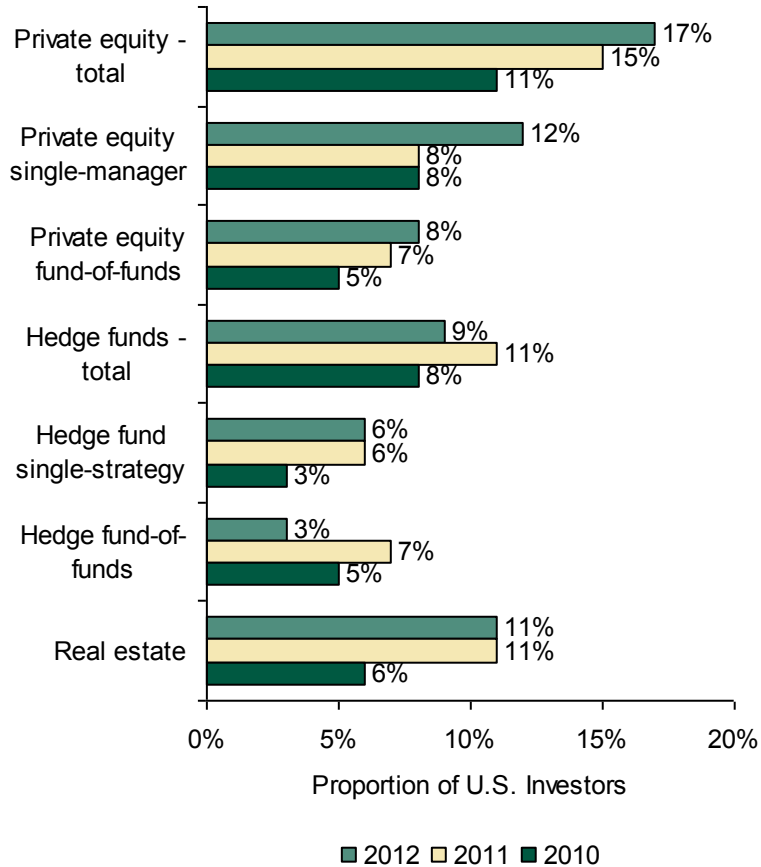


Source: Greenwich Associates 2012, USII-12.

U.S. assets are projected to the 2012 Greenwich Associates universe of 95 fixed income specialist investors. Percentages are dollar-weighted. Results are for public fund defined benefit plan assets. *Indicated new factors in 2012.

Alternative hiring is expected to be very robust with the greatest demand in private equity, real estate and hedge funds.

U.S. Public Funds' Anticipated Hiring for Alternative Mandates in the Next 12-Months

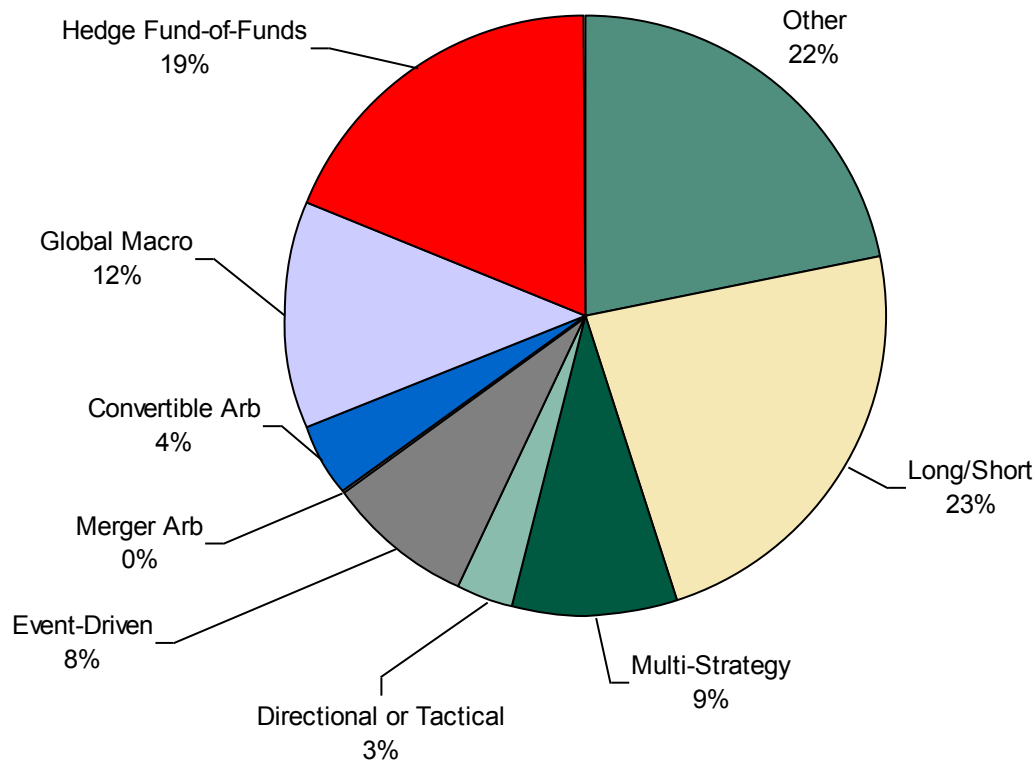


Source: Greenwich Associates 2012, USII-12.

Note: "Anticipated Hiring" refers to expected hiring of mandates or assignments in the next 12 months.

A very large portion of hedge funds are still fund-of-funds.

U.S. Public Funds' Style-Specific Institutional Asset Allocation of Hedge Fund Portfolios Assets 2012 (DB)



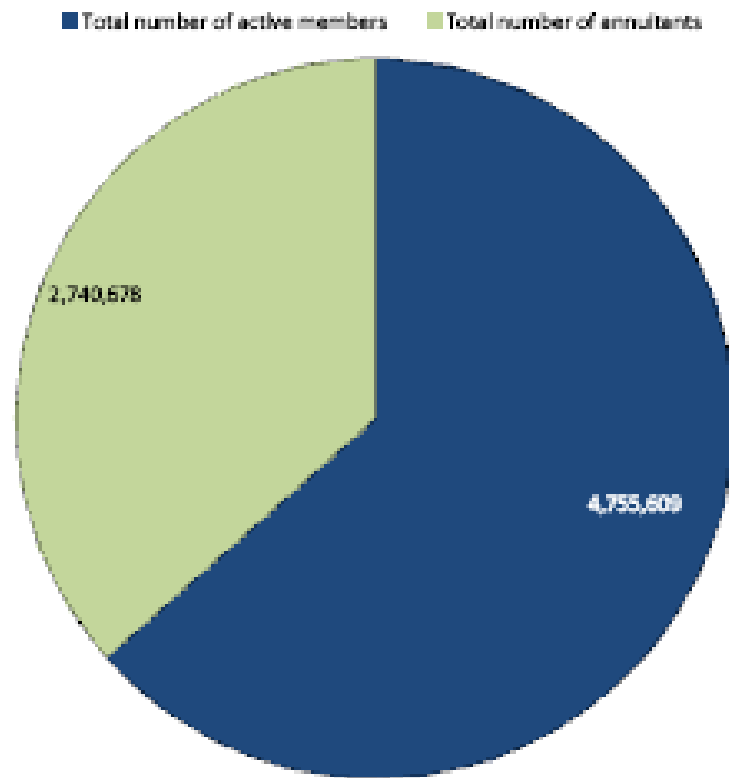
Source: Greenwich Associates 2012, USII-12.

U.S. assets are projected to the 2012 Greenwich Associates universe of 2,357 U.S. institutional investors with \$250 million or more in total assets. Percentages are dollar-weighted. Results are for institutional assets only: public fund defined benefit plan assets.

The NCPERS 2012 Fund Membership Study

Study conducted by the
National Conference on Public Employee Retirement Systems and
Cobalt Community Research

Source: NCPERS 2012 Fund Study

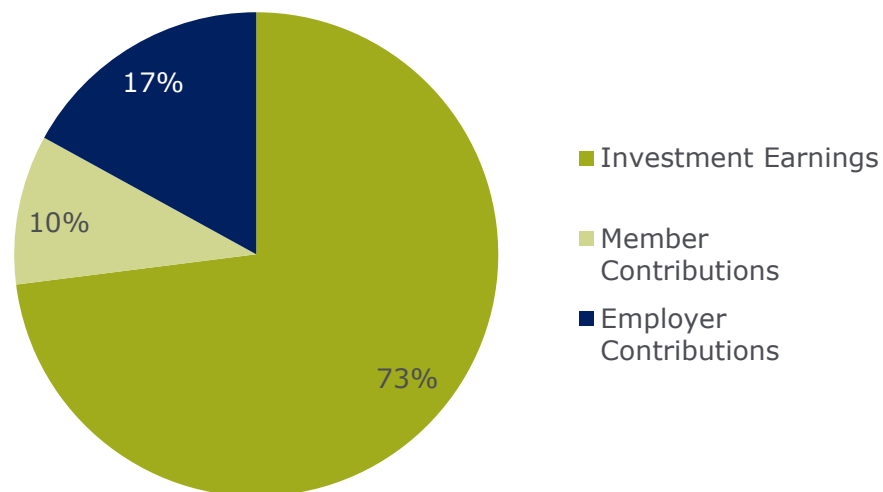


The graph to the left shows the number of active members and retiree/beneficiaries represented by these funds. This totals approximately 7,500,000 covered lives. The ratio is 1.7 actives per retiree.

Source: NCPERS 2012 Fund Study

- **Income used to fund pension programs generally comes from 3 sources**
 - Investment Earnings
 - Member Contributions
 - Employer Contributions

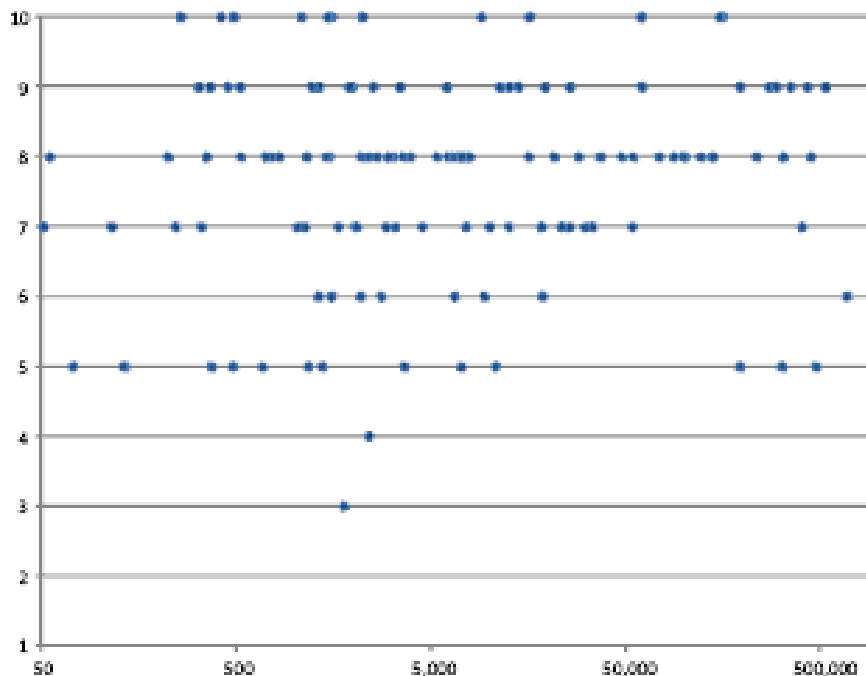
2012 Public Fund Sources of Funding



Source: NCPERS 2012 Fund Study

The study asked respondents "How satisfied are you with your readiness to address retirement trends and issues over the next two years?" Overall, respondents provided an overall "confidence" rating of 7.7 on a 10-point scale (very satisfied =10). This was up from 7.4 in 2011. Social Security eligible and non-eligible funds rated this question 7.8 and 7.4 respectively.

Fund Confidence

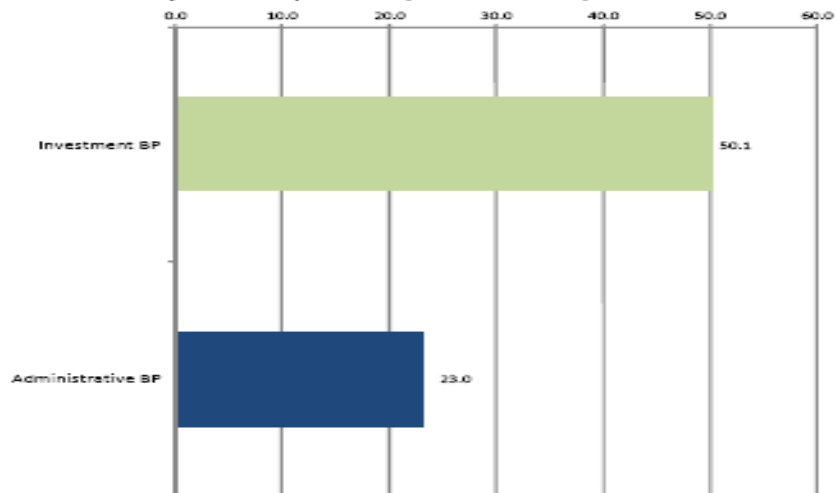


Source: NCPERS 2012 Fund Study

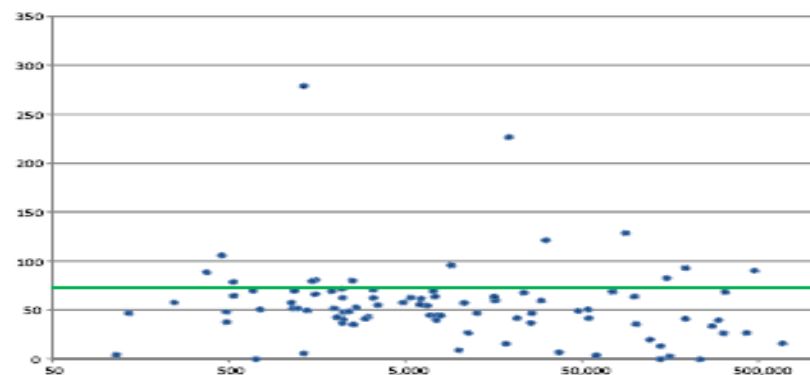
The overall average expense for respondents to administer the funds and to pay investment manager fees is 73.1 basis points (100 basis points equals 1 percentage point). This is a slight increase from the 2011 level of 69.2. According to the 2011 *Investment Company Fact Book*, the average expenses and fees of most equity/hybrid mutual funds average 95 basis points. This means that funds with lower expenses provide a higher level of benefit to members (and produce a higher economic impact for the communities those members live in) than most mutual funds.

The graph in the bottom right corner shows the distribution of total expense (in basis points) on the vertical axis and the size of the fund (by total participants) on the horizontal axis. The green line denotes the average expense, and that average is higher because of a few funds reporting especially high expense levels. It is important to note the plurality of funds are below the average score.

2012 Study Plan Expenses (Basis Points)



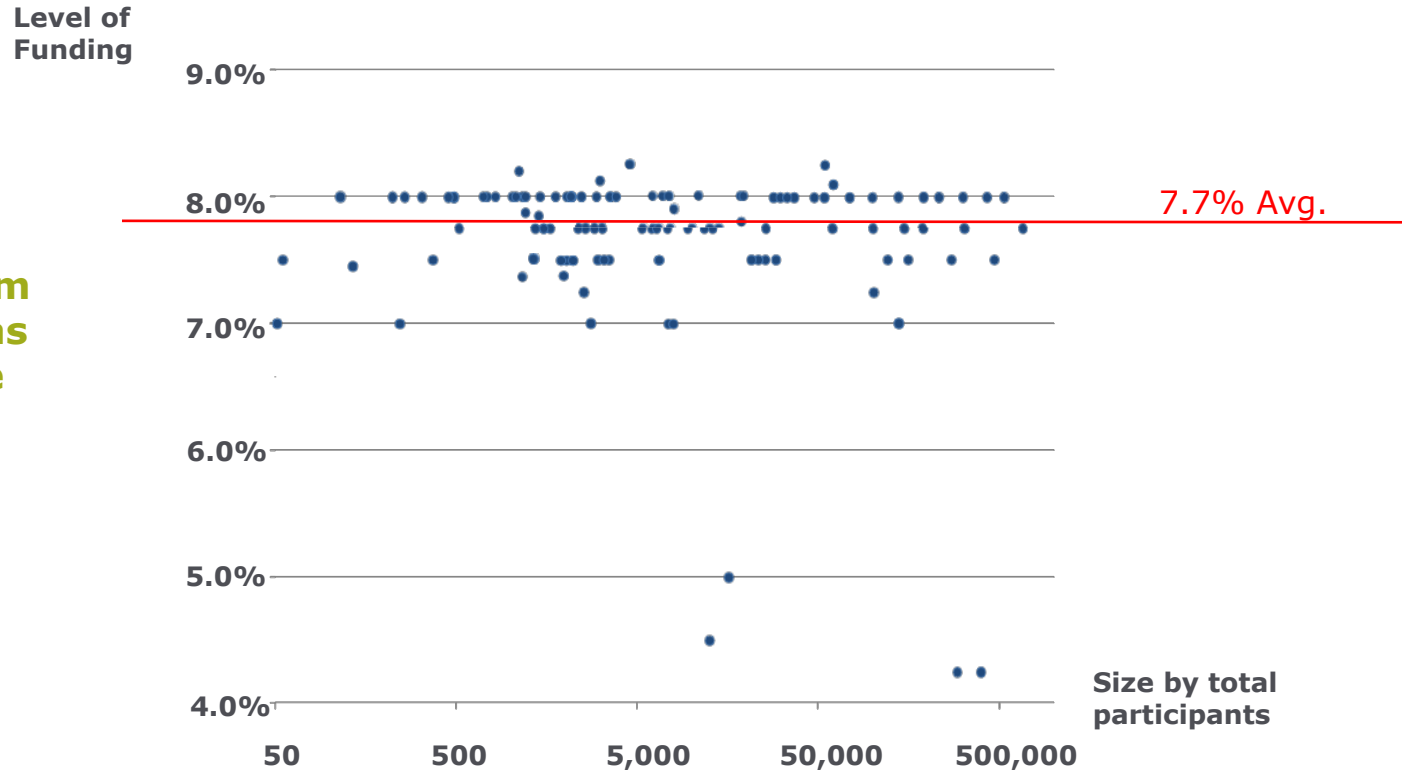
2012 Plan Expense by Fund Size



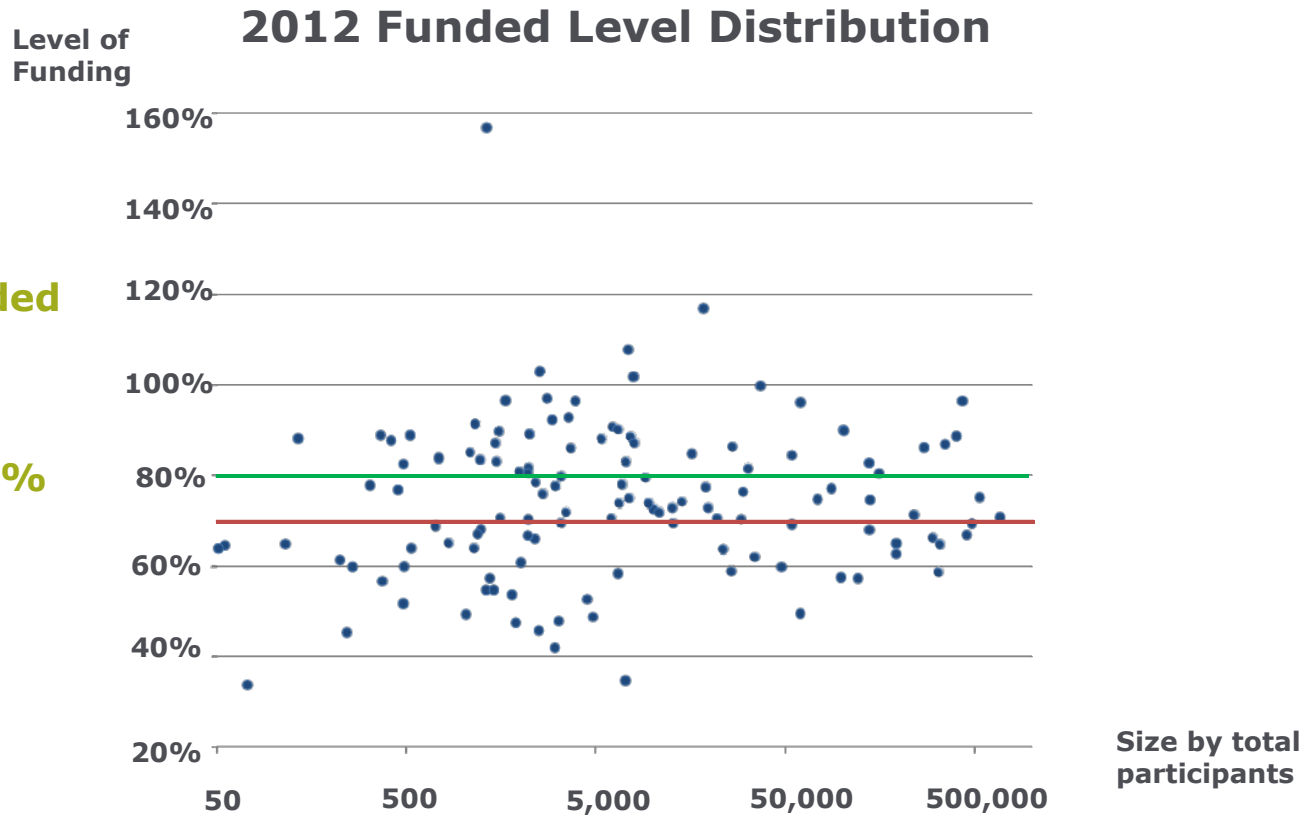
Source: NCPERS 2012 Fund Study

Investment Return Assumption

The Average Investment Assumption from respondents was 7.7%, the same as in 2011



Source: NCPERS 2012 Fund Study



The Average funded level from 2012 respondents was 74.9%, slightly down below 76.1% in 2011

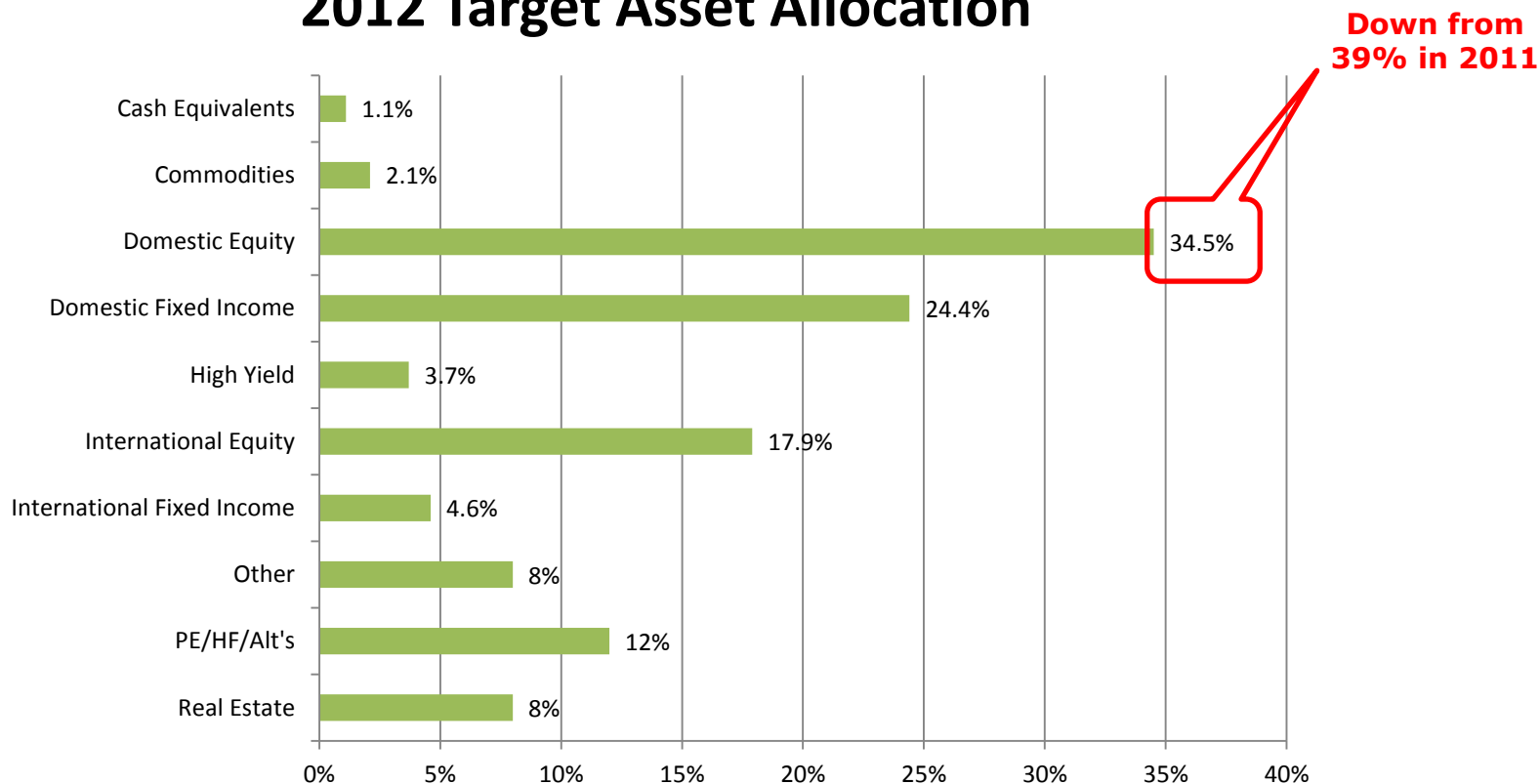
Green Line: denotes 80% funding target identified by the Government Accountability Office

Red Line: denotes 70% funding target that Fitch Ratings considers to be adequate

Source: NCPERS 2012 Fund Study

- **Consistent theme of reducing equity and increasing alternatives such as private equity, real estate, hedge funds & commodities**
 - 2011 Current Equity Allocation was 39%

2012 Target Asset Allocation



Other: Investments including but not limited to GAA, Timber, TIPS, Real Assets, Risk Parity, Infrastructure, MLP's, Natural Resources, and Opportunistic

Source: NCPERS 2012 Fund Study