

Pension Fund Challenges in the Current Market

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Introduction

- Terms and definitions
- Pension overview
- Pension challenges
- Pension fund strategic positioning
- Implications

Terms and Definition

- Pension Plan
 - Defined benefit (DB)
 - Discounting & liability modeling
 - Defined contribution (DC)
- Funded Ratios
- Actuarial vs. Financial Accounting
 - GASB 25 vs. GASB 67

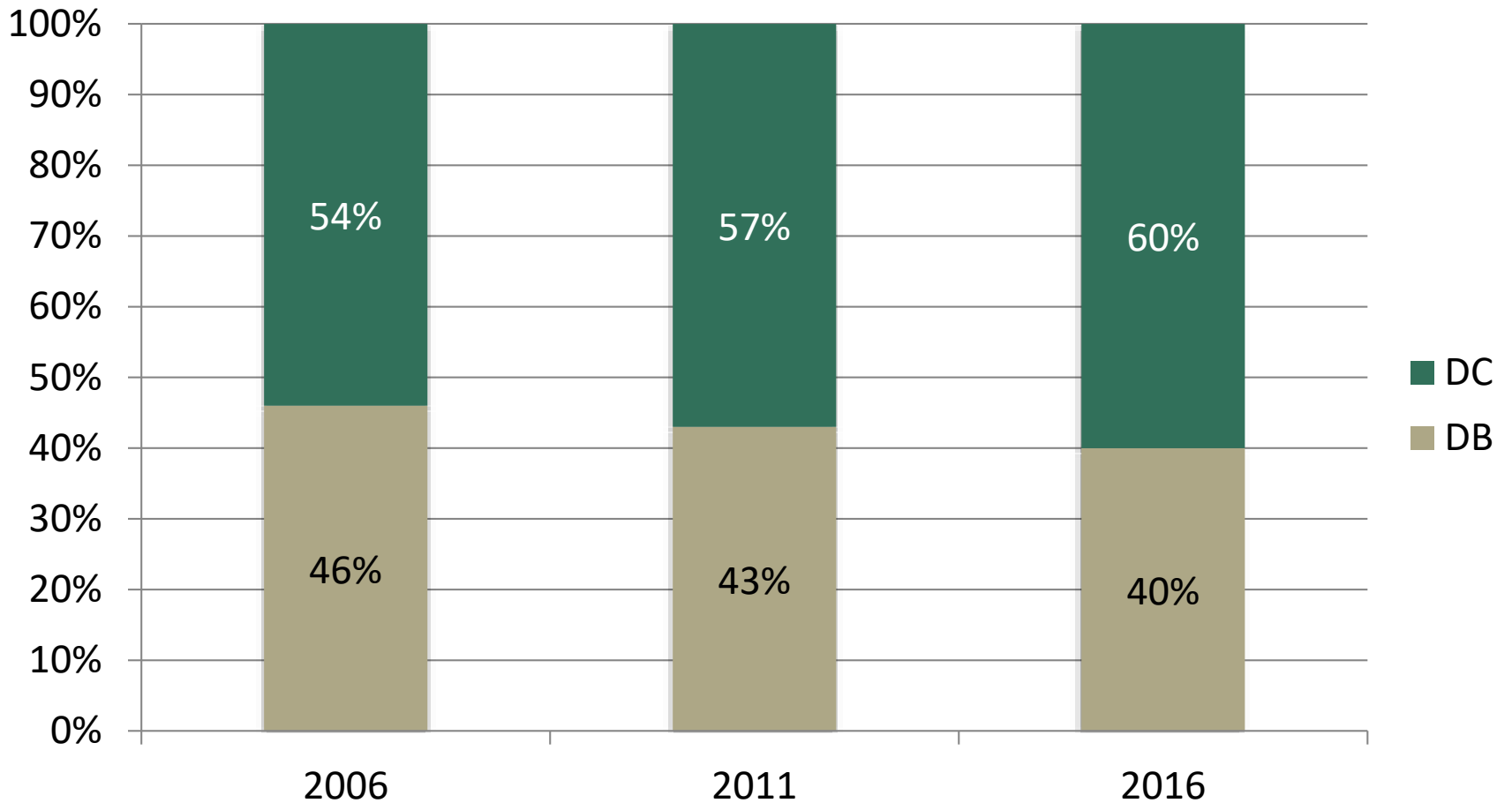
U.S. Pension Overview

Public Sector Pension Data

- About 4,000 U.S. public pension schemes
 - 227 state administered
 - 3,771 locally administered
- \$3.86 trillion in assets
- 14.7 millions working members, 9.9 million retirees

DB vs. DC

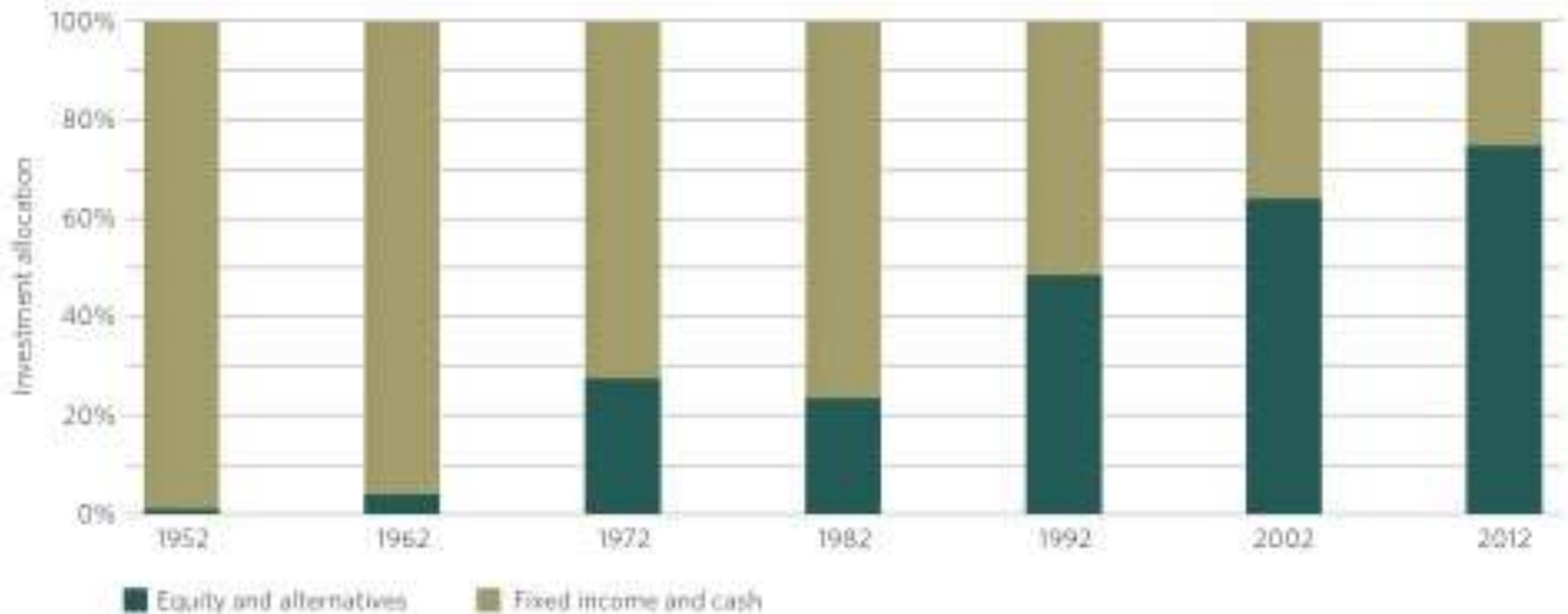
Figure 1. U.S. Pension DB/DC Split



Source: Willis Towers Watson

Asset Allocation

Figure 2. Public Pension Investments, 1952-2012



Source: U.S. Board of Governors of the Federal Reserve System, *Financial Accounts of the United States, 1952 to 2012*; Pew Analysis of State Financial Reports

Source: The Pew Charitable Trusts and the Laura and John Arnold Foundation

Asset Allocation

Figure 3. Public Pension Include More Alternative Investments

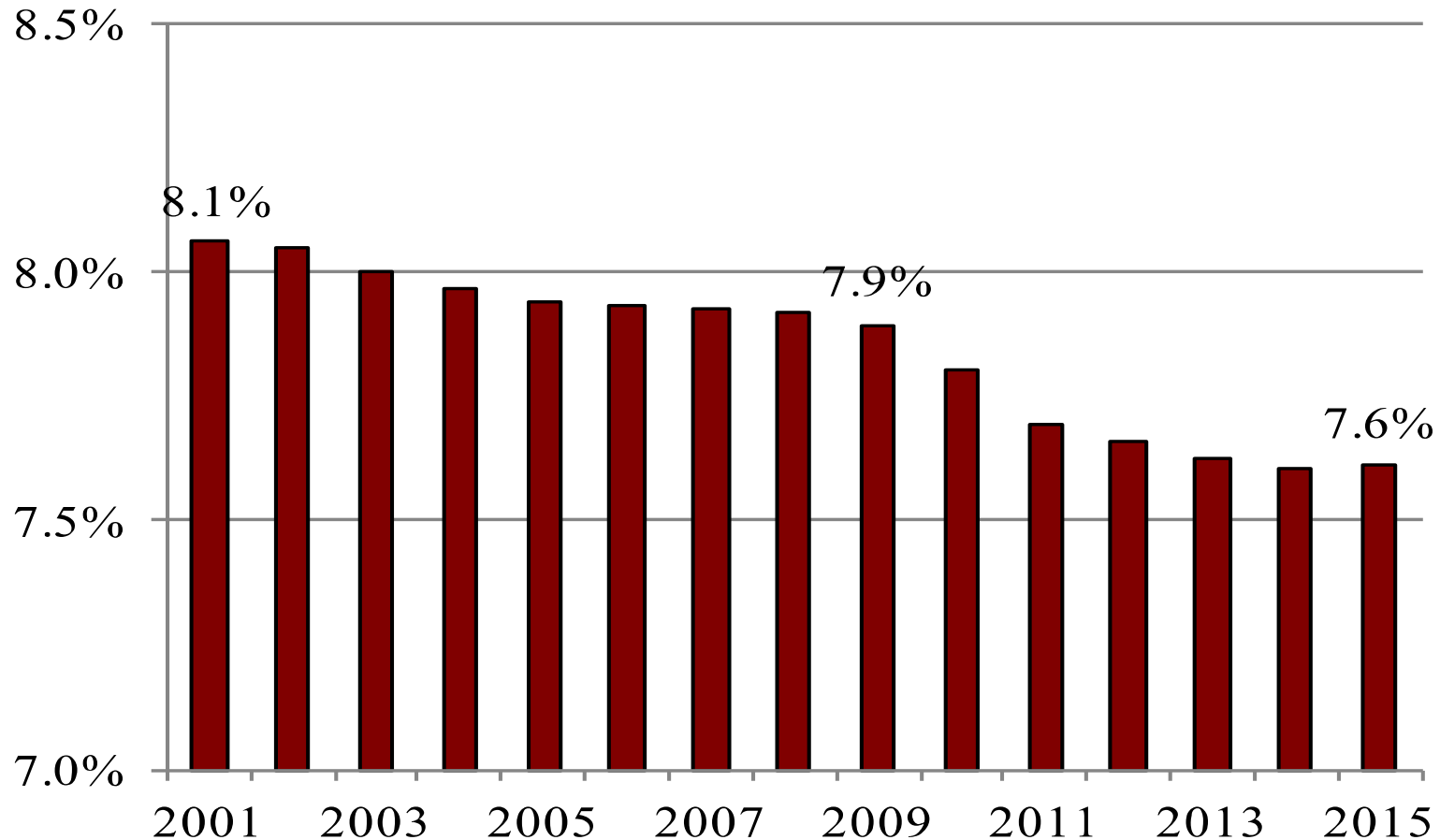


Source: Analysis by The Pew Charitable Trusts of State Comprehensive Annual Financial Reports, Public 100, and the Federal Reserve Financial Accounts of the United States

Source: The Pew Charitable Trusts and the Laura and John Arnold Foundation

Assumed Rates of Return

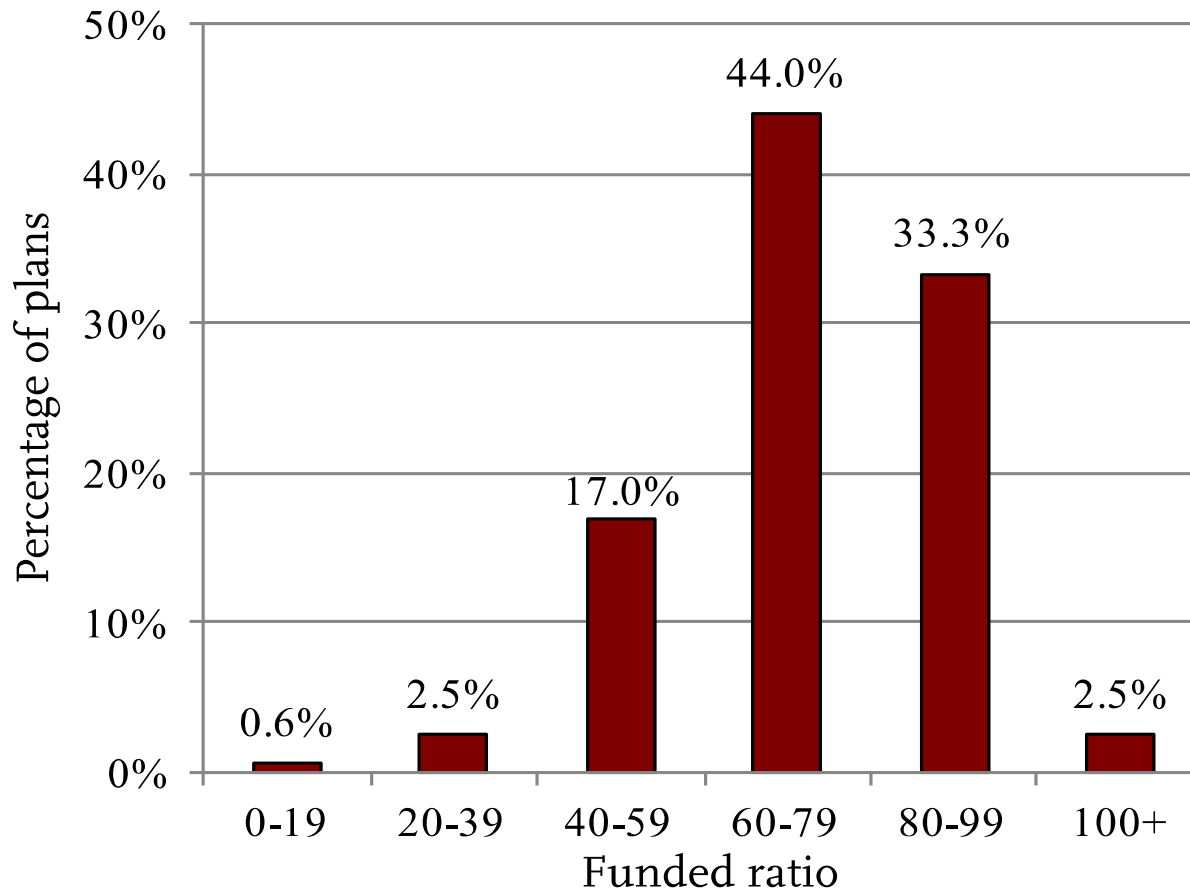
Figure 4. Discount Rates For Public Plans Under Traditional Rules, FY 2001-2015



Source: Center for Retirement Research

Funded Ratios

Figure 5. Distribution of Funded Ratios For Public Plans Under Traditional Rules, FY 2015



Source: Center for Retirement Research

Pension Challenges

Funded Status Sensitivity

Figure 6. Aggregate State and Local Pension Measures Under Alternative Discount Rates, FY 2015 (trillions of dollars)

Measure	Discount rate				
	7.6%	7%	6%	5%	4%
Total liability	\$4.5	\$5.1	\$5.8	\$6.6	\$7.5
Actuarial assets	3.4	3.4	3.4	3.4	3.4
Unfunded liability	1.2	1.8	2.5	3.3	4.1
Percent funded (Traditional rules)	74%	65%	58%	51%	45%

Source: Center for Retirement Research

Funded Status Sensitivity

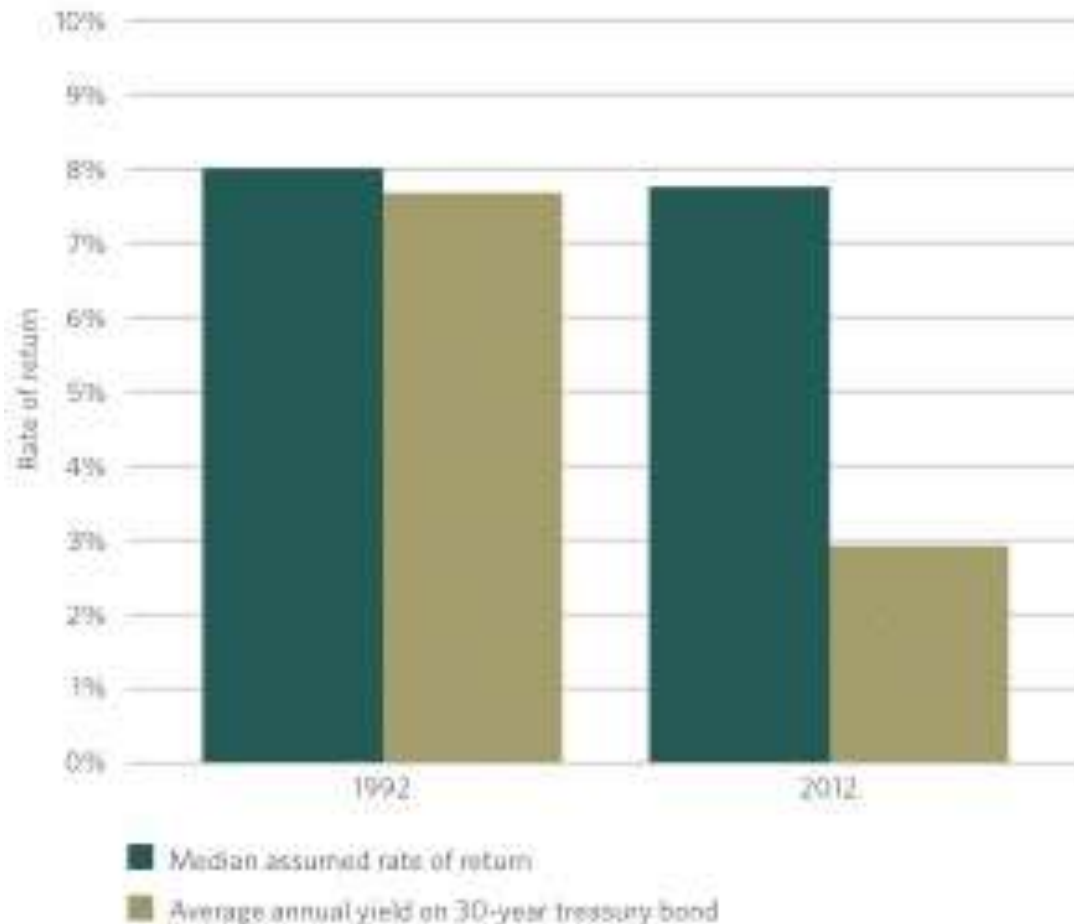
Figure 7. Plans Adopting A Significantly Lower GASB 67 Blended Rate, 2015

Plan	Rate		Funded status	
	Actuarial	GASB 67	Actuarial	GASB 67
Cincinnati ERS	7.5%	5.6%	64.3%	57.5%
Cook County Employees	7.5	4.5	57.6	41.4
Dallas Police & Fire	7.3	4.5	63.8	38.2
Duluth Teachers	8.0	5.4	56.9	46.8
Kentucky Teachers	7.5	4.9	55.3	42.5
New Jersey PERS	7.9	4.9	59.5	38.2
New Jersey Police & Fire	7.9	6.3	72.6	52.8
New Jersey Teachers	7.9	4.7	51.1	28.7
Texas ERS	8.0	6.9	76.3	64.4
Texas LECOS	8.0	5.0	72.0	47.8

Source: Center for Retirement Research

Low Yield

Figure 8. Public Pension Plan Median Assumed Rate of Return Versus 30-Year Treasury Bond Yields in 1992 and 2012



Source: The Pew Charitable Trusts and the Laura and John Arnold Foundation

Changing Demographics

Table 1.

Projections of Life Expectancy at Ages 0, 65, and 85 by Sex, Race, and Hispanic Origin: 2012 and 2050

Age and year	Group 1: Non-Hispanic White and Asian or Pacific Islander		Group 2: Non-Hispanic Black and American Indian or Alaska Native		Group 3: Hispanic (of any race)	
	Males	Females	Males	Females	Males	Females
Age 0						
2012.....	77.1	81.7	71.7	78.0	78.9	83.7
2050.....	82.2	86.2	79.0	83.5	82.2	86.2
Age 65						
2012.....	18.1	20.7	16.3	19.5	19.5	22.1
2050.....	20.6	23.5	19.2	22.3	20.6	23.5
Age 85						
2012.....	6.0	7.1	6.3	7.4	7.1	8.0
2050.....	7.0	8.5	7.0	8.4	7.0	8.5

Source: U.S. Census Bureau, 2012 National Projections.

Governance

- Agency Issues
 - Qualifications
 - Return seeking vs. contribution avoidance

Governance

Figure 12. Lowest-Scoring Statements in KPA Governance Survey

GOVERNANCE

	Mean Score 1997 Rank	Mean Score 2005 Rank	Mean Score 2014 Rank
Lowest agreement over 3 surveys			
Compensation levels in our organization are competitive.	18	18	20
My governing fiduciaries examine and improve their own effectiveness on a regular basis.	20	20	17
I have the authority to retain and terminate investment managers.	22	21	19
Our fund has an effective process for selecting, developing and terminating its governing fiduciaries.	21	22	22
Performance based compensation is an important component of our organizational design.	23	23	23

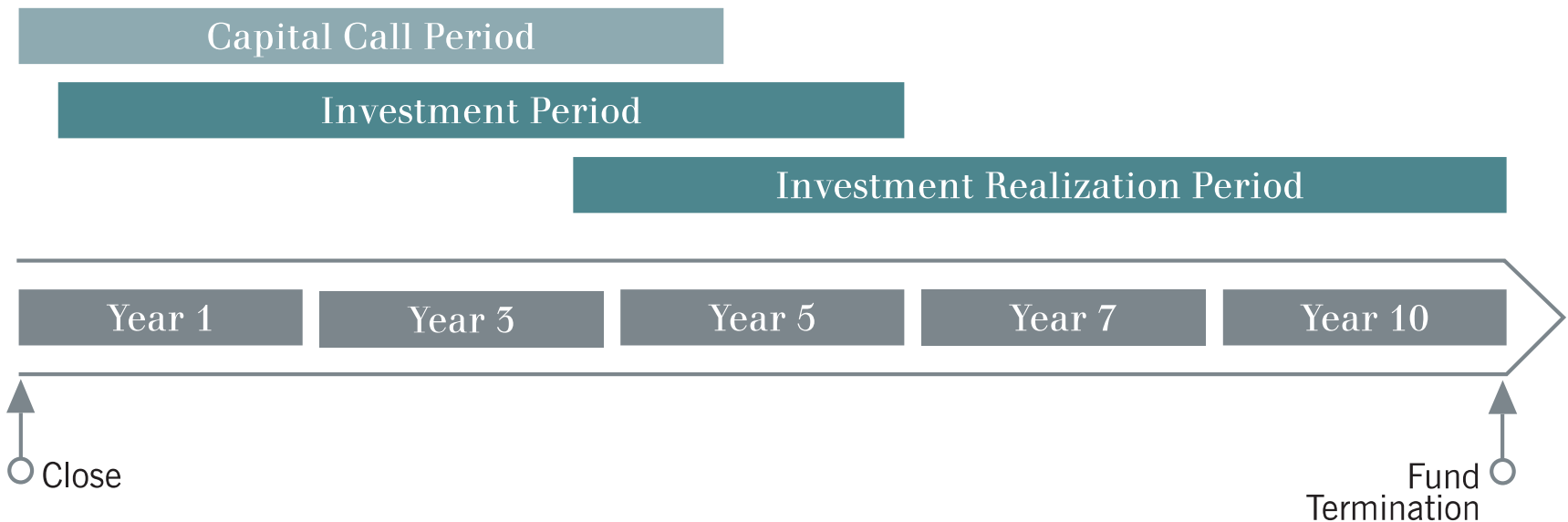
Strategic Positioning/Challenge Response

Risk Management vs. Risk Transfer

- Terminate plan
- Reduce benefits
- Freeze plan
- Plan buy-out
- Longevity Insurance

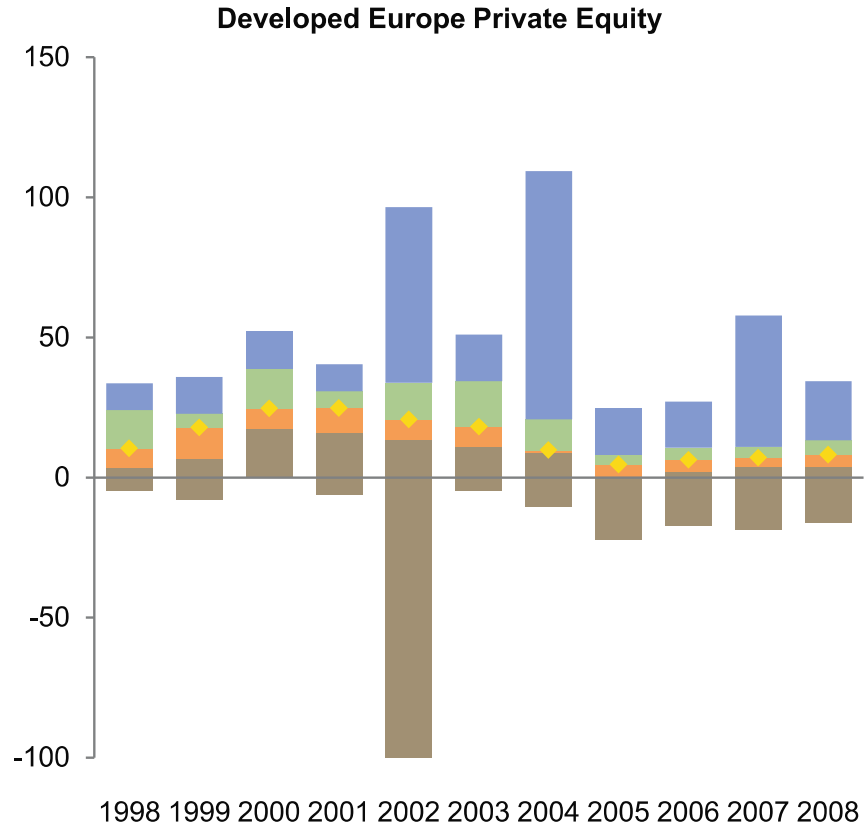
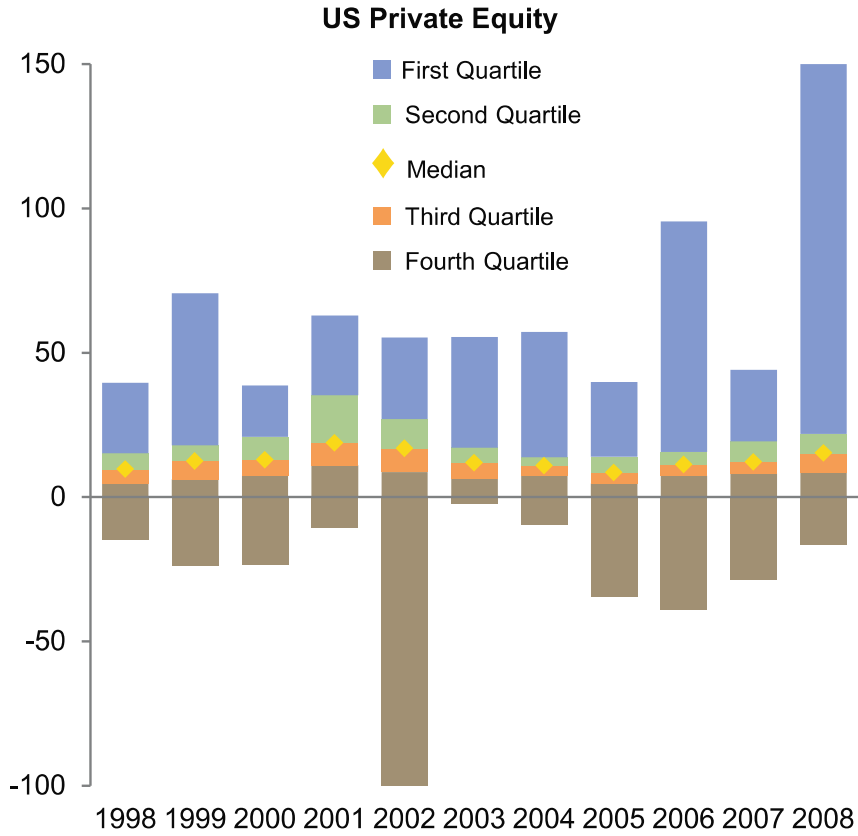
Private Equity

Exhibit 1 Illustration of Private Equity Funding Timeline



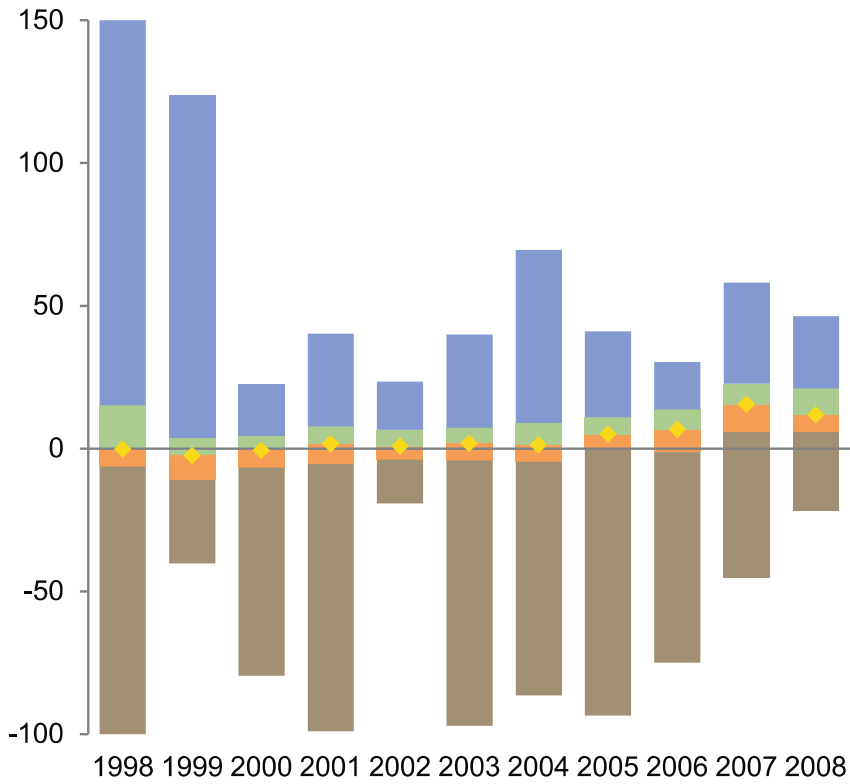
Source: PAAMCO

Figure 1. Manager Dispersion in Private Investments
 Vintage Years 1998–2008 • As of December 31, 2014 • US Dollar • Internal Rate of Return (%)

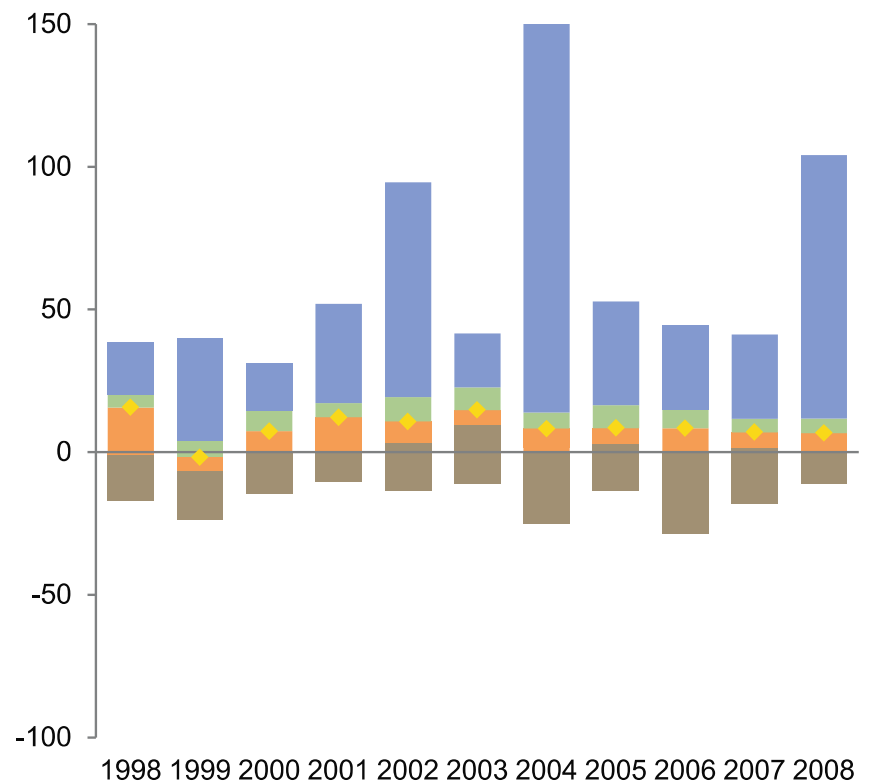


Source: Cambridge Associates

US Venture Capital



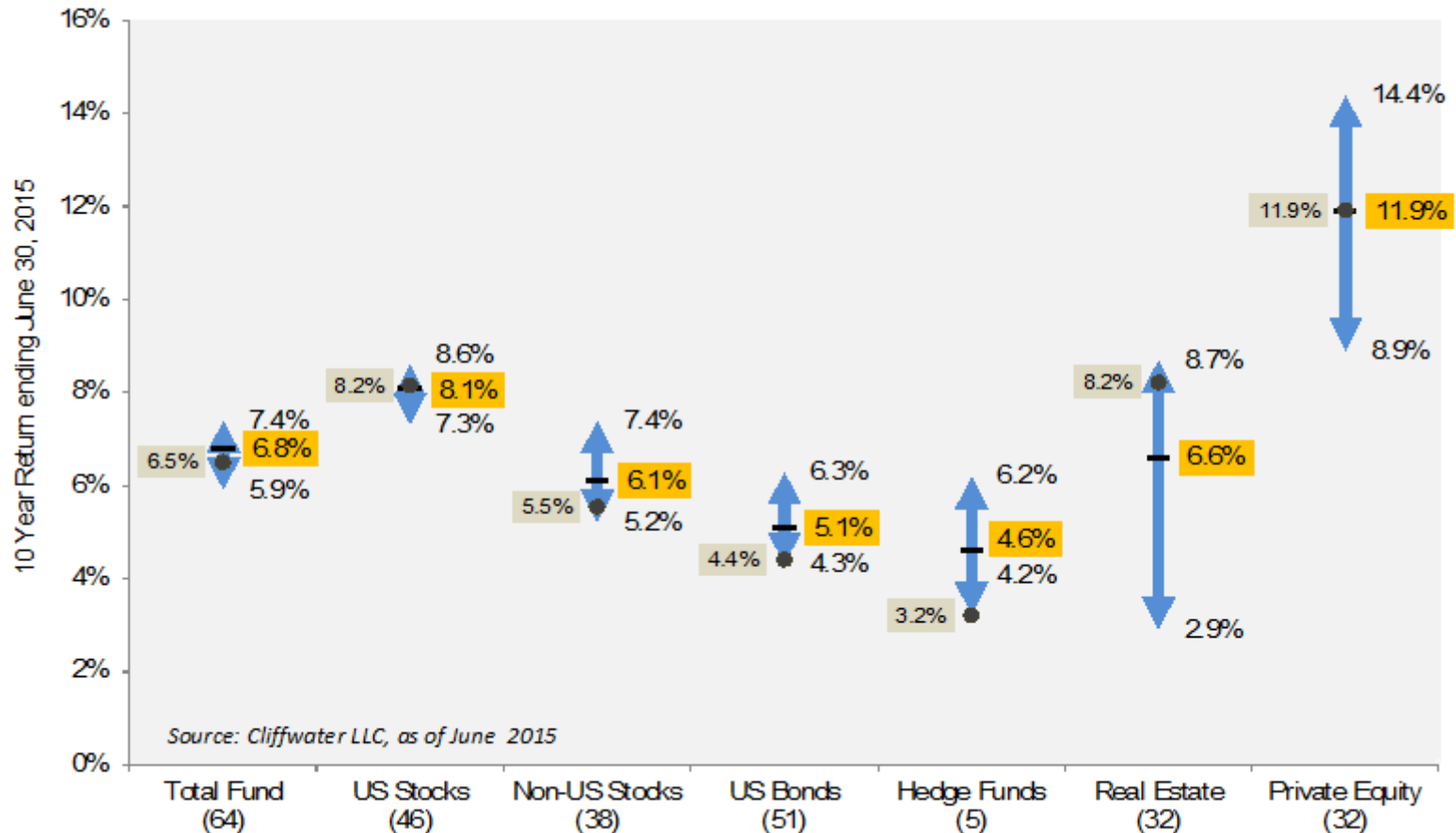
Emerging Markets Private Equity/Venture Capital



Source: Cambridge Associates

Hedge Funds

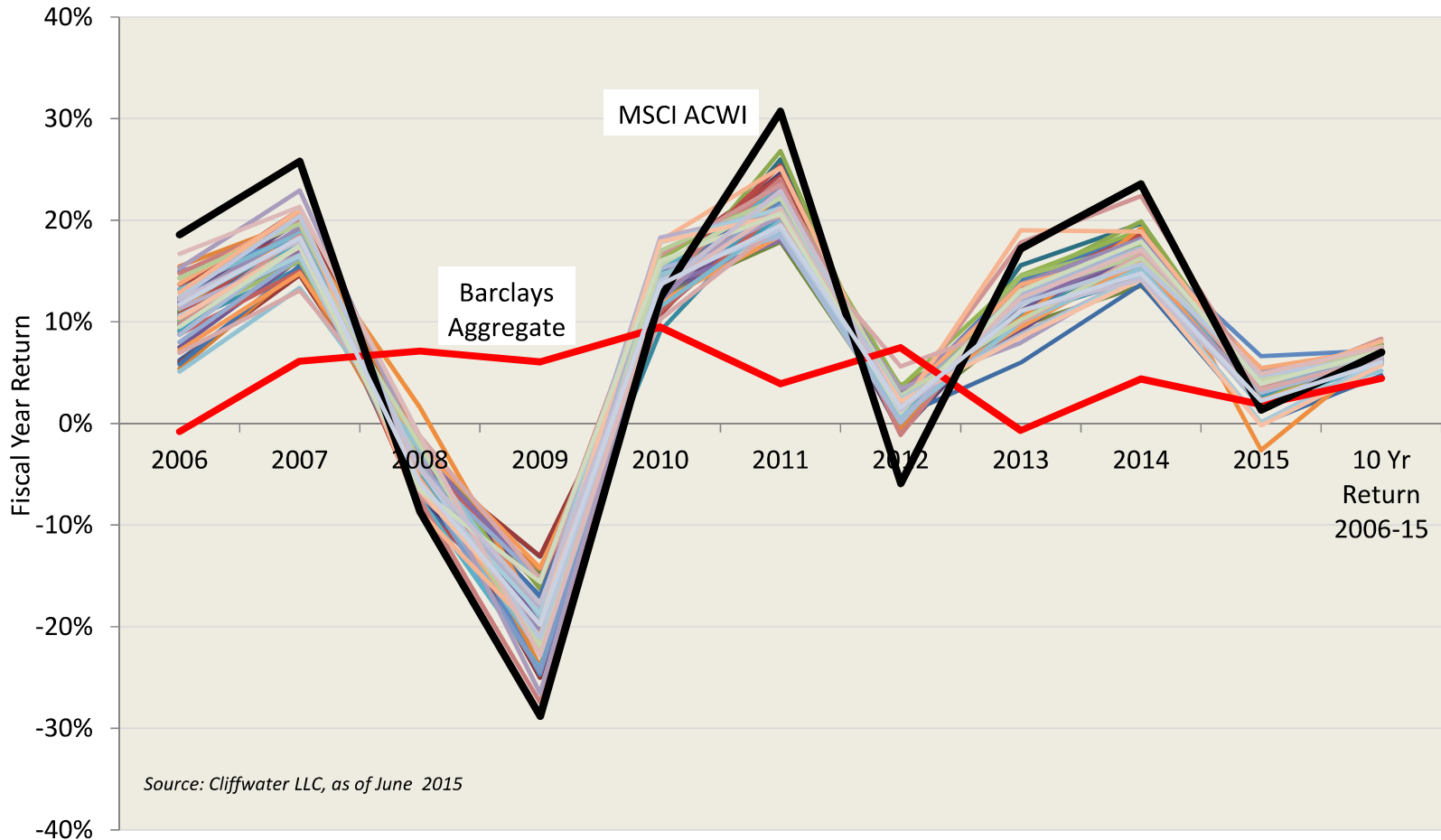
Figure 16. 5th to 95th Percentile Distribution of State Fund Returns (10 Years ended June 30, 2015)



Implications

Risk Metrics

Figure 17. State Pension Return Distributions for FY2006-2015 and 10-Year Annualized Returns



Additional Implications

- DB/DC trends
- Allocation trends
- Agency issues

Sources

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