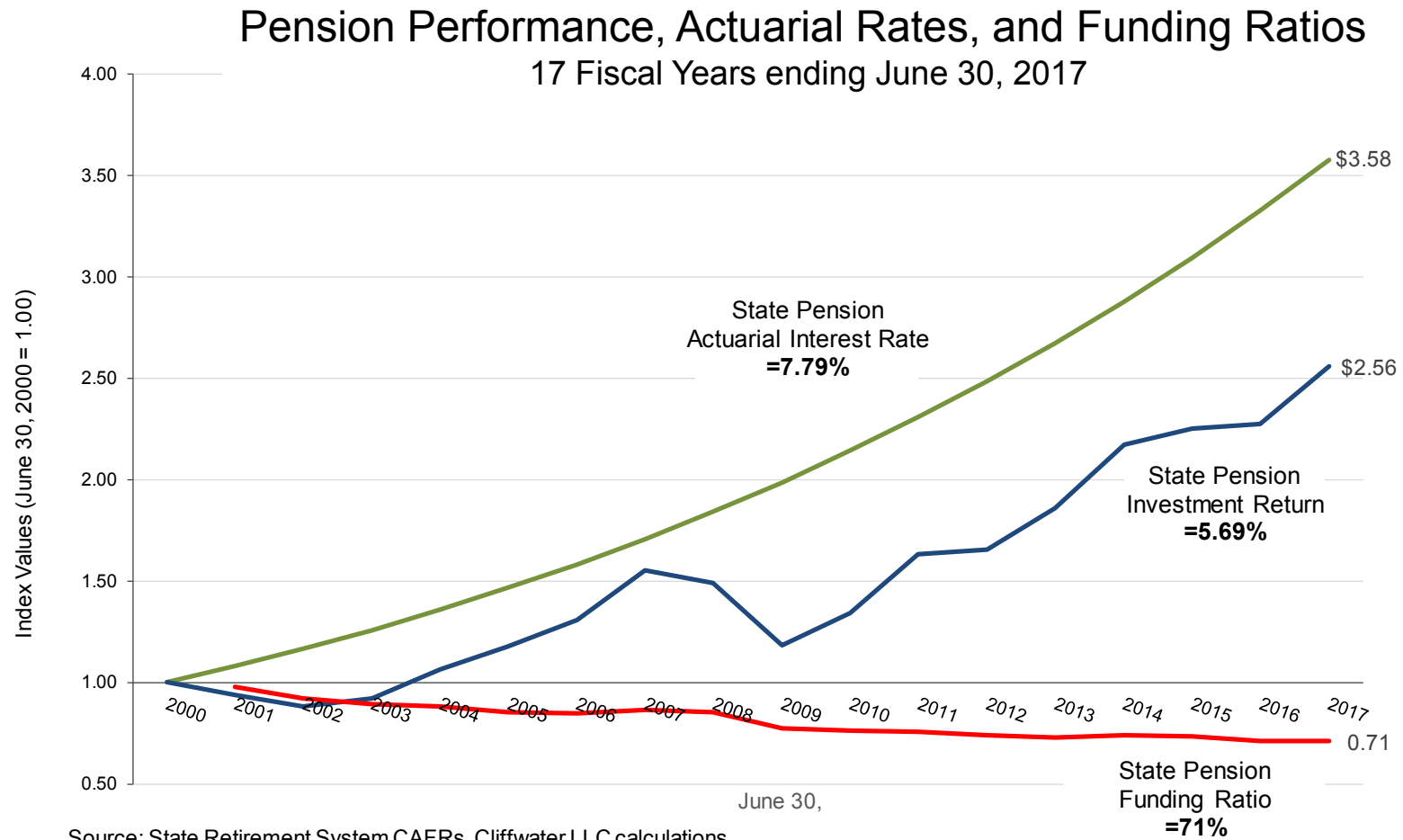




# 1. The Inconvenient Truth in Public Pensions



## 2. Asset Allocation

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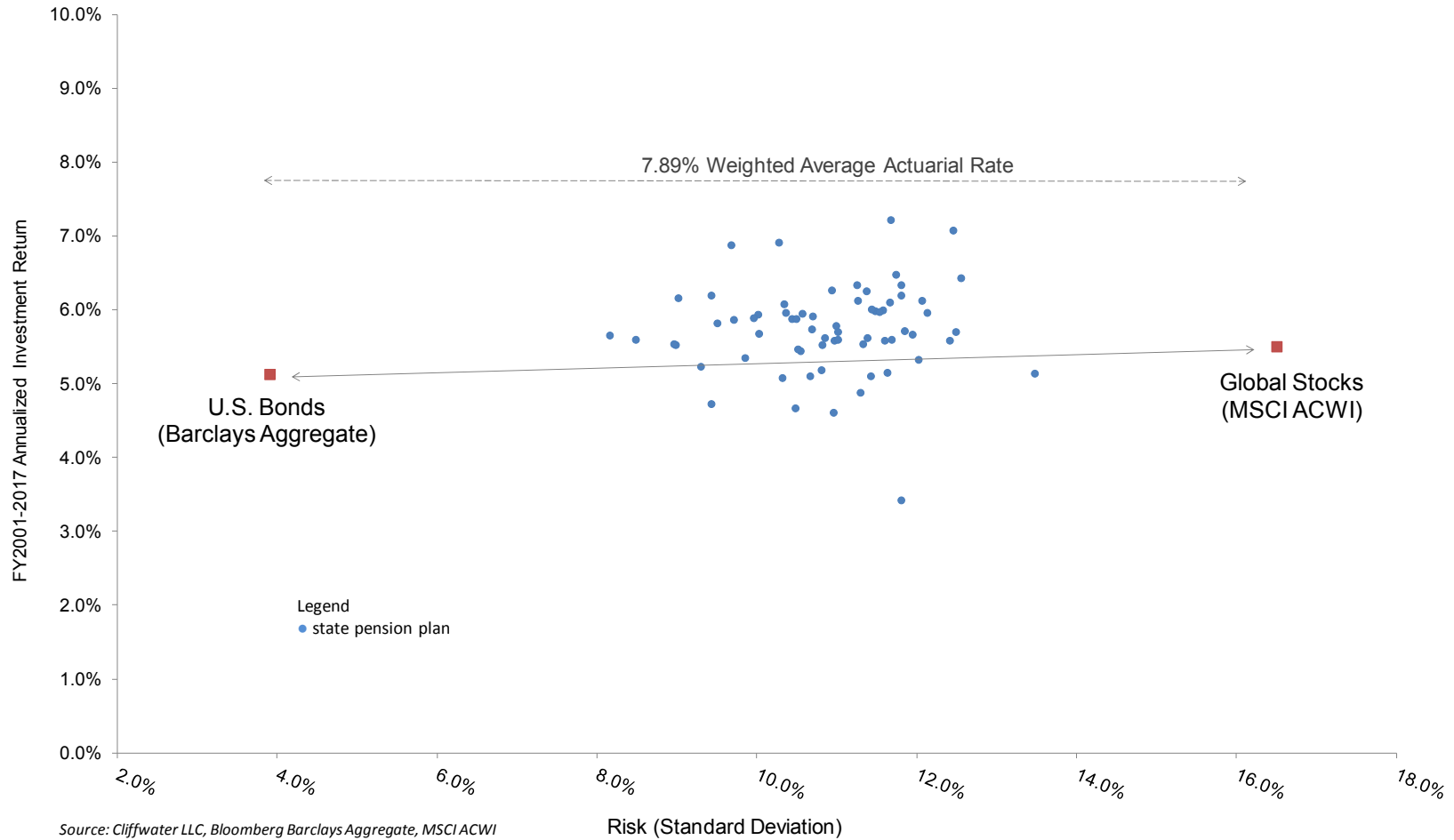
### *Best practices*

- Set long-term target asset class weights; resist change
- Diversify, diversify, diversify
- Don't market-time, rebalance
- Revisit every 3-5 years

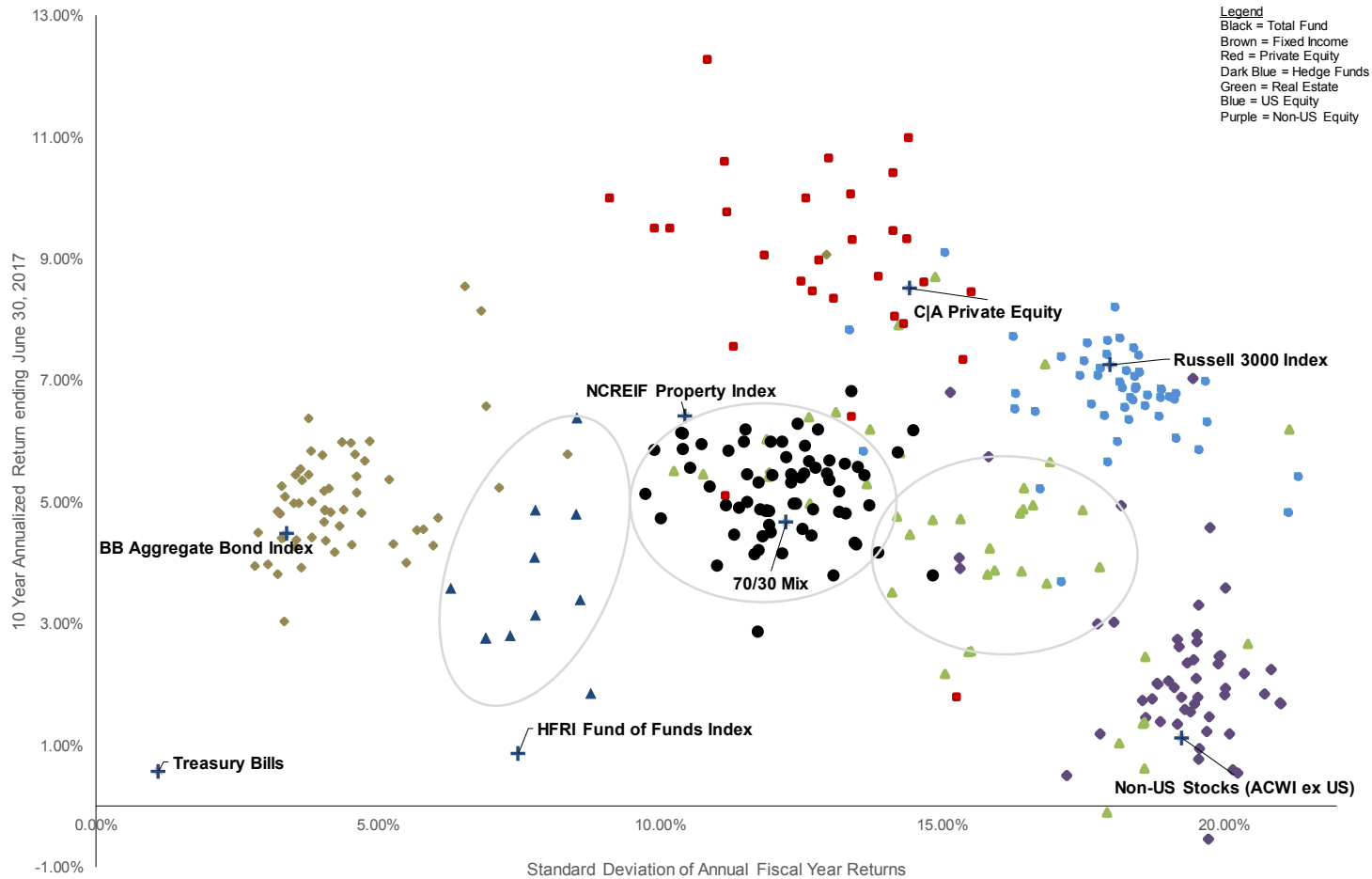
### *Industry experience*

- Most public pensions “cluster” with similar allocations
  - General consensus on methodology and assumptions
  - A few “allocators” drive the process
  - Liabilities ignored
  - Different risk levels across DC, public DB, endowments
-

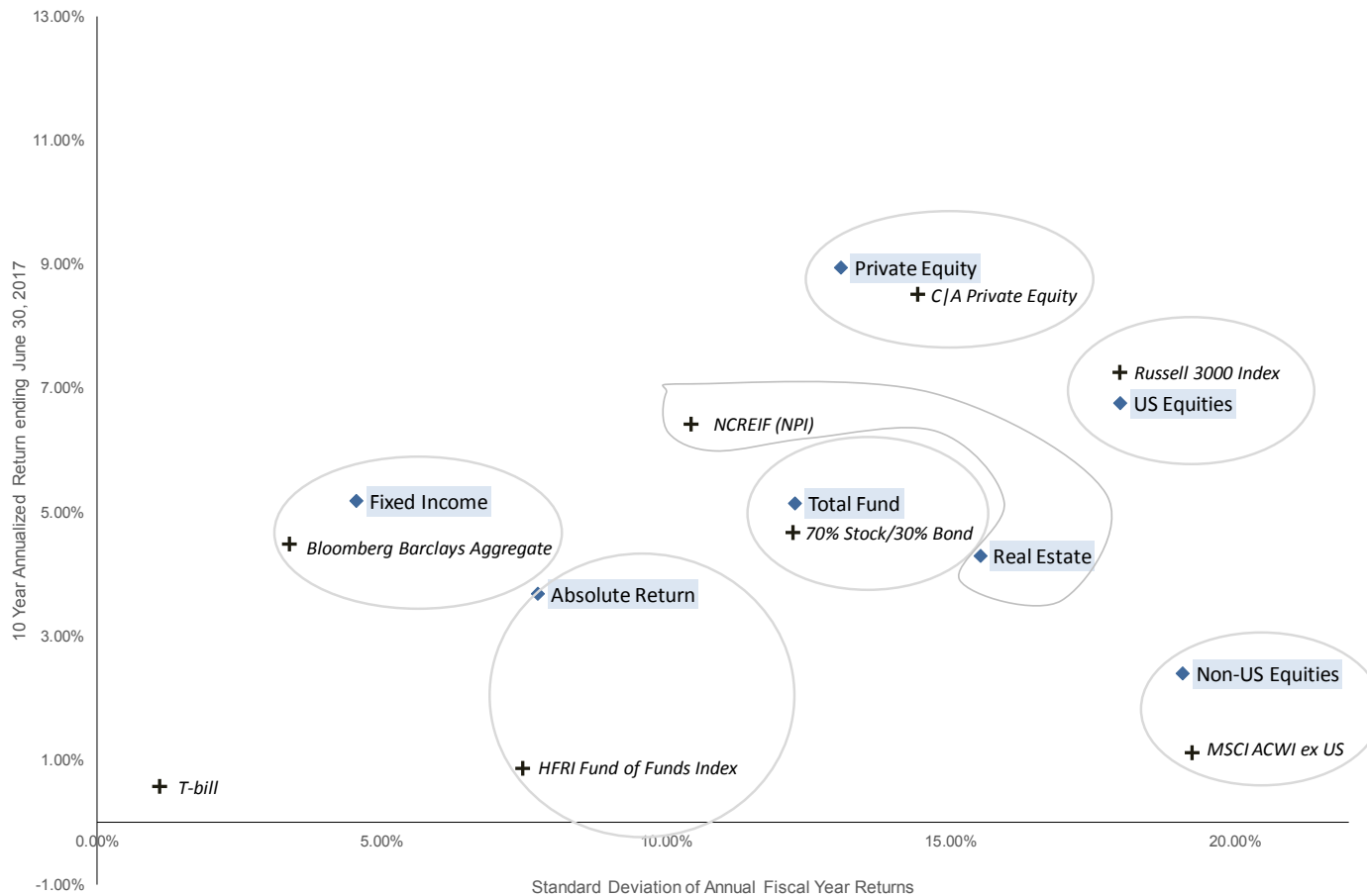
# 3. State Pension Return & Risk, FY2001 to FY2017



# 4. State Pension Asset Class Return & Risk 10 Fiscal Years ending FY2017



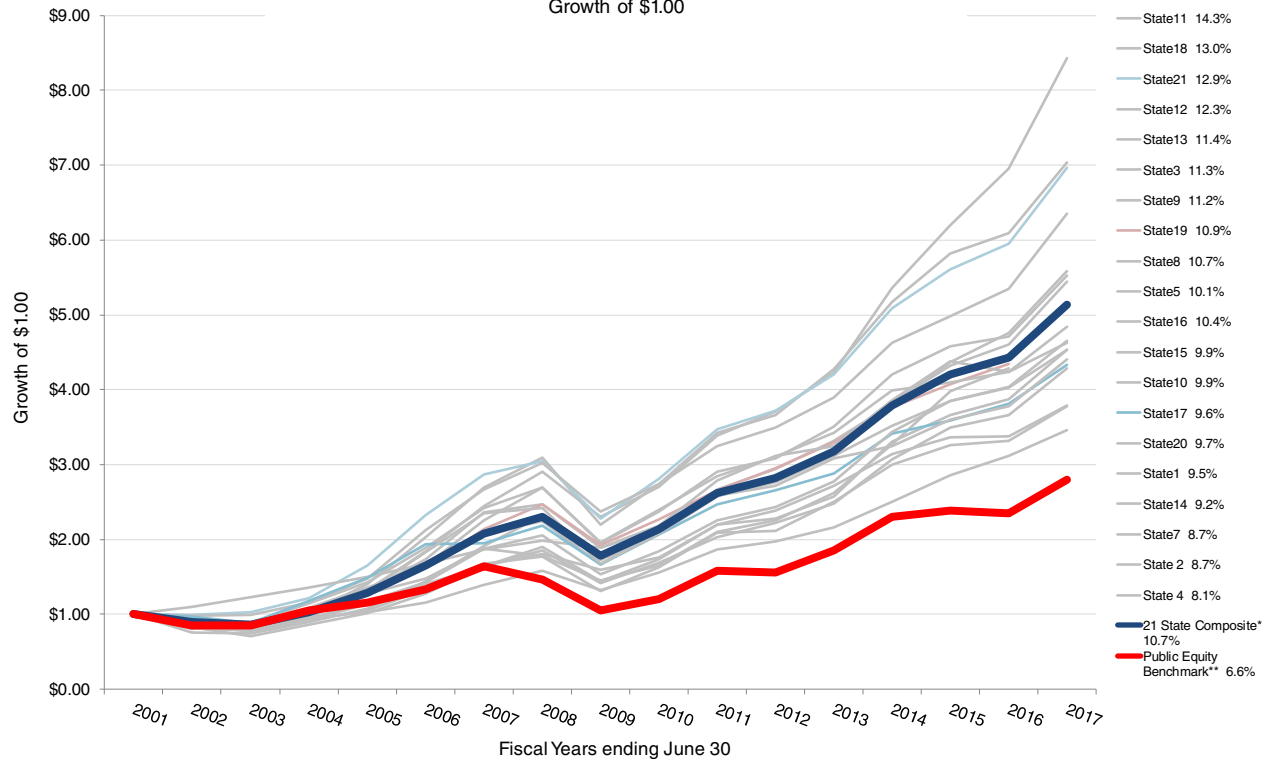
# 5. State Pension Asset Class Return & Risk 10 Fiscal Years ending FY2017 (continued)



# 6. State Pension Private Equity Performance 16 Fiscal Years ending FY2017

## Private Equity Performance among State Pension Funds

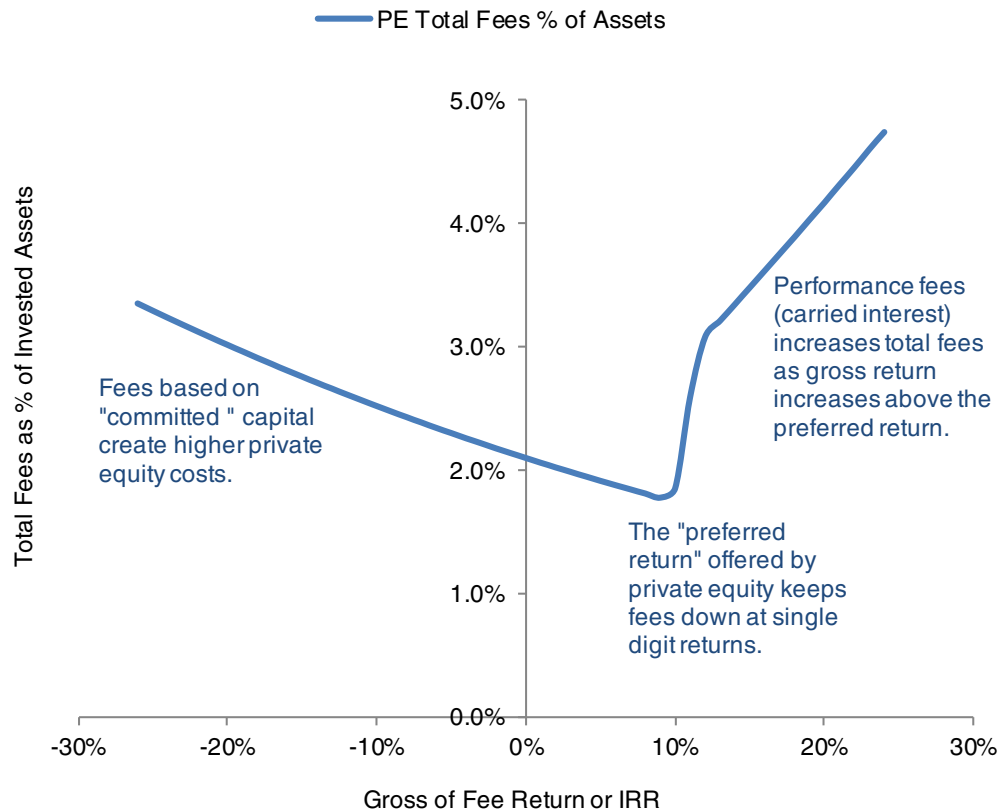
Covering 16 Years ending June 30, 2017  
Growth of \$1.00



\* An equal-weighted average of all 20 state funds who reported private equity returns in annual CAFRs for June 30 fiscal years 2002-2017.

\*\* A public equity benchmark weighted 70% to the Russell 3000 Index (6.8% annualized return) and 30% to the MSCI ACWI ex US Index (5.9% annualized return), with assigned weights reflecting Cliffwater's judgement of the US and non-US content of a diversified private equity portfolio.

# 7. Private Equity Fees & Gross-of-Fee Performance



## Fund Assumptions

Total Commitments (\$m)	\$1,000
Investment Period (yrs)	5
Fund Life (yrs)	10
Max % Funded	90%
Expected Return	15%
Standard Deviation	9%

## Investment Assumptions

Avg. Holding Period	5
Average IRR	20.0%
<i>Implied TVPI</i>	<i>2.49x</i>

## Fee Assumptions

Carry Percentage	20%
LP Preferred Return	8.0%
GP Catchup	80%
Mgmt Fee (Investment Period)	1.5%
Mgmt Fee (Post-Investment Period)	1.0%
Committed Fee Basis	<input type="checkbox"/>
Transaction Fees % of TEV	0.5%
Monitoring Fees % of Invested Capita	0.25%
Fee Offset %	80.0%

*Expected private equity fee = 3.73% of net assets, 25% of gross profits*