

CIOs need to do more because they have less

Manager's challenge

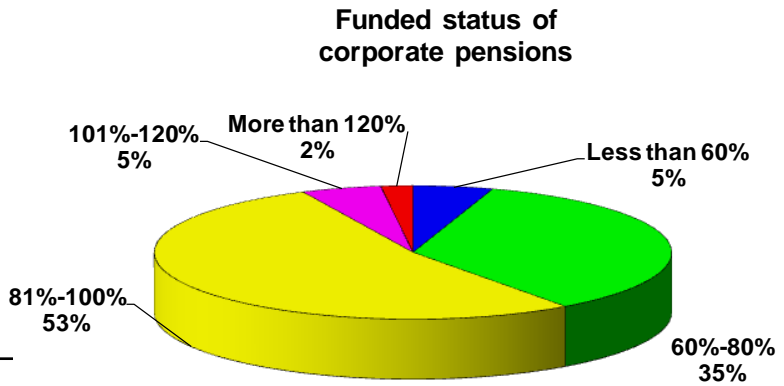
Spending: 5%

Inflation: 3%

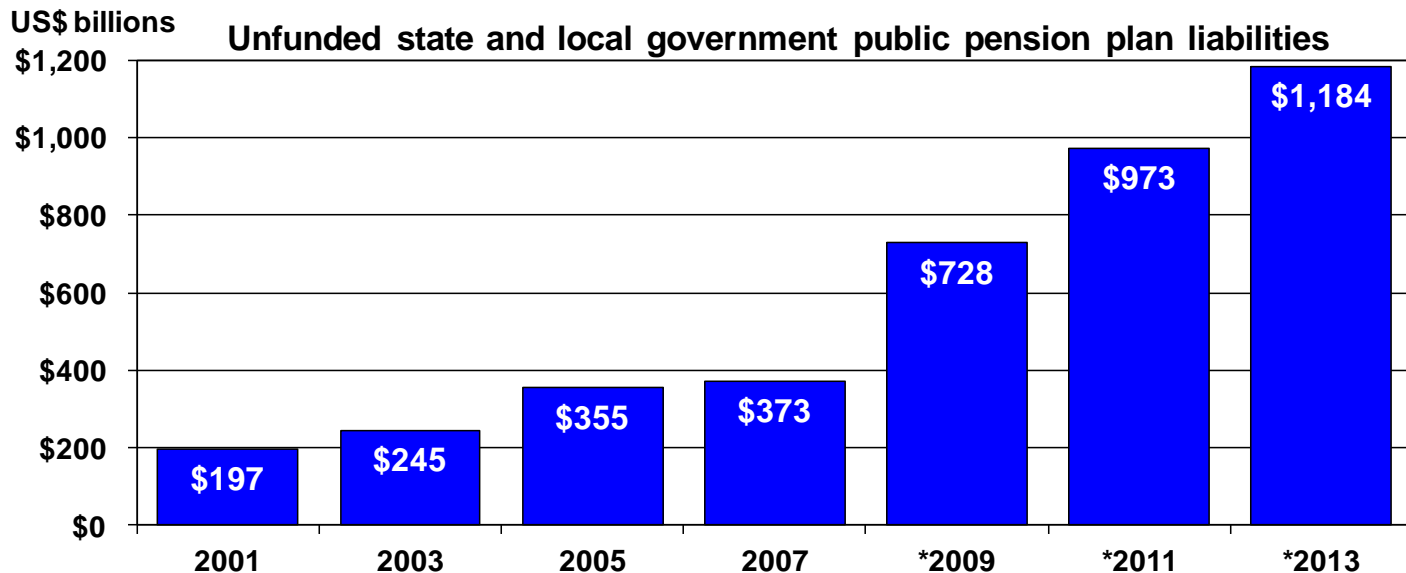
Expenses: 2%

Donations: (2%)

Required return: 8%



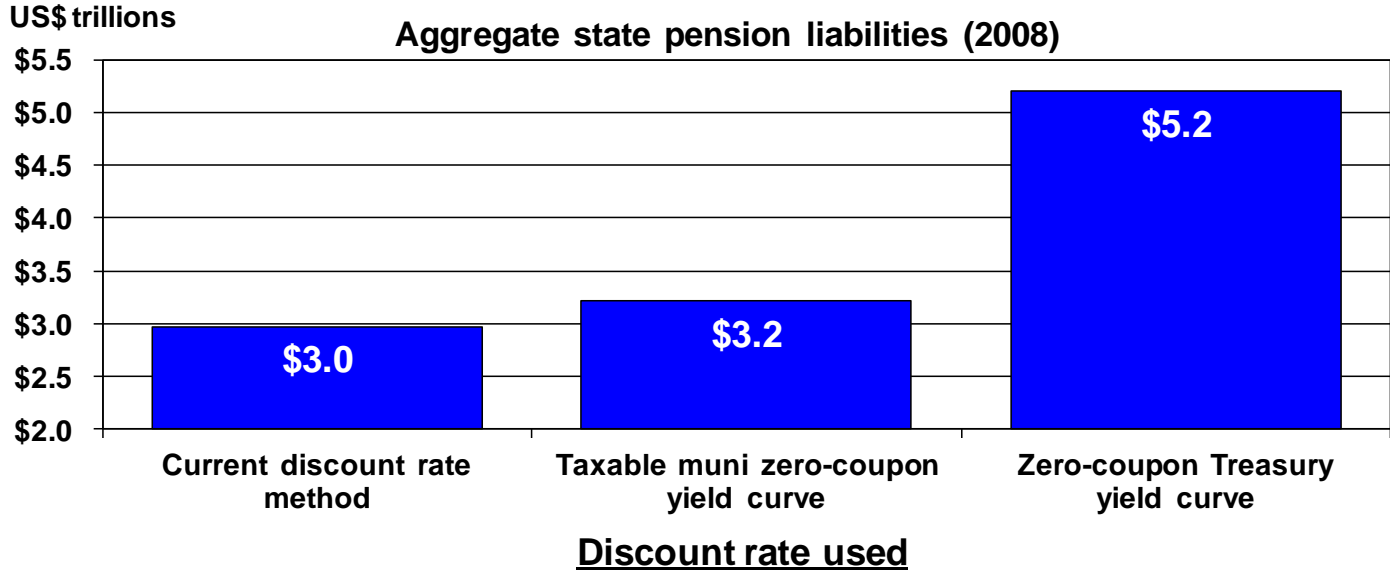
Unfunded liabilities of state and local government pension plans continue to rise



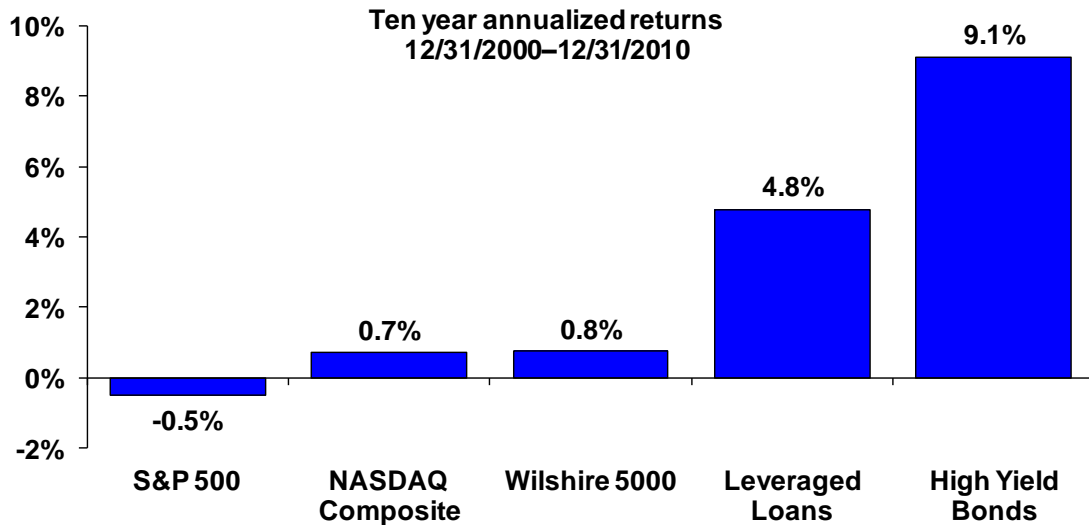
Source: Boston College Center for Retirement Research (April 2010).

*projections

Already-promised state pension liabilities rise significantly with lower return assumptions



Actual results are disappointing



Source: Bloomberg.



Manager selection drives outperformance

<u>Trailing 10-Year Period Ending 12/31/10</u>				
<u>Asset Class</u>	<u>First Quartile</u>	<u>Median</u>	<u>Third Quartile</u>	<u>Range</u>
US Fixed Income	6.7%	6.0%	4.9%	1.8%
US Large Cap Equity	4.6%	3.1%	1.6%	3.0%
International Equity	7.8%	5.9%	4.2%	3.6%
US Small Cap Equity	10.7%	8.5%	5.9%	4.7%
Hedge Funds	11.8%	8.6%	5.5%	6.3%
Real Estate ¹	25.5%	14.2%	-2.4%	27.9%
Leveraged Buyouts ²	18.9%	6.0%	-0.2%	19.1%
Venture Capital ²	4.2%	-1.1%	-5.1%	9.3%

*Source: Traditional = eVestment Alliance; Hedge Funds = HFN

Real estate, leveraged buyout, and venture capital data represent returns on funds formed between 2000 and 2004.

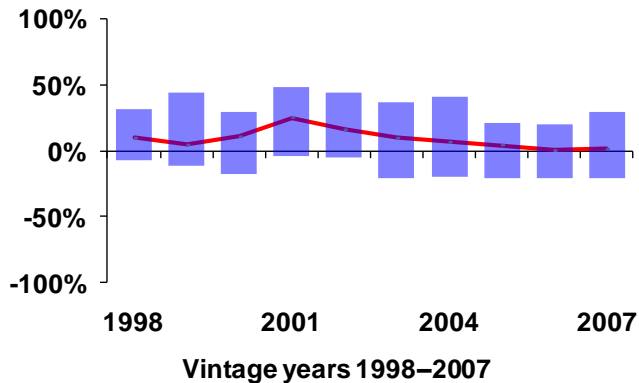
¹Source: Thompson Reuters. For the periods ending 30 June 2010

²Source: Thompson Reuters. For the periods ending 30 September 2010.

PE performance: Max-Min analysis

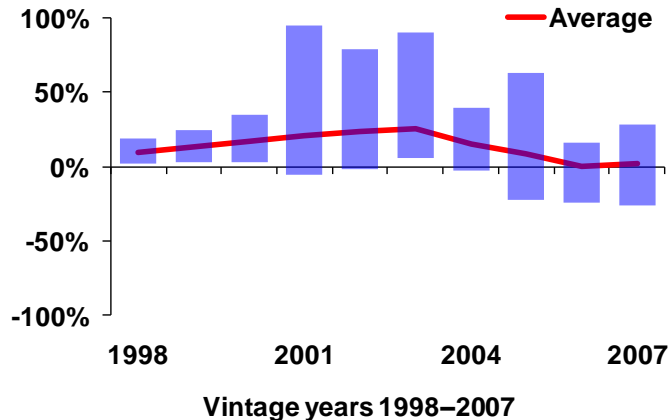
**CalSTERS PE performance:
Max-Min-Average fund analysis**

Reported returns (IRRs)



**CalPERS AIM PE performance:
Max-Min-Average analysis**

Reported returns (IRRs)

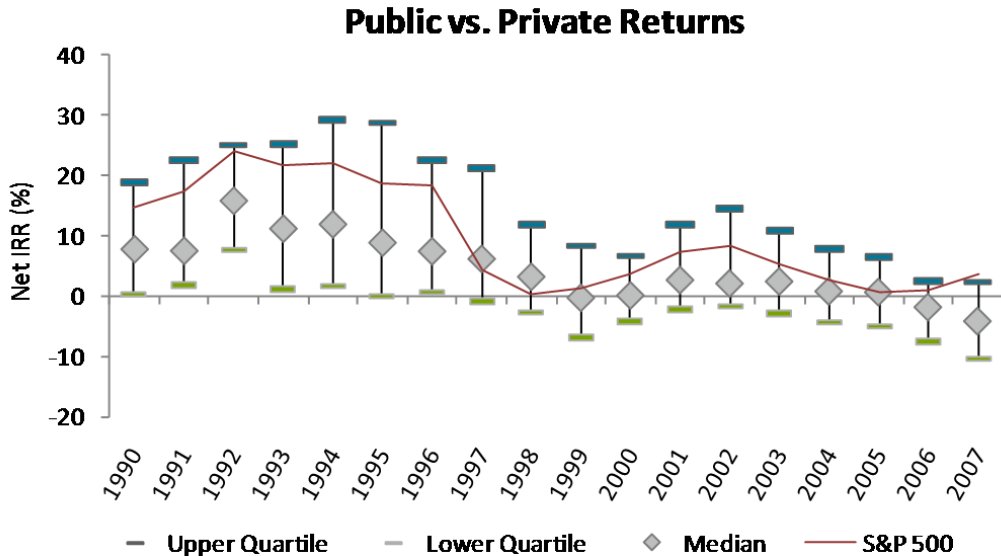




What can we expect?

- Allocations to alternative assets will increase
 - More competition for deals, access to GPs
 - Investor base will not necessarily be more sophisticated
- **Average** private equity returns may continue to underwhelm
- Manager selection will continue to determine winners
 - Where/when to “re-up”
 - Whom to add
 - Which groups to seed
- Due diligence practices must evolve
 - Deeper dives at portfolio level
 - Incorporate deal level analysis too

Only top-quartile funds beat S&P 500 and compensate investors for PE risks



Source: Thomson Reuters, April 2011.

Time weighted S&P 500 returns have been converted to dollar weighted internal rate of return ("IRR") for consistency.

Is there more than one way to define a good result?



Distribution of 10-year annualized PE returns for state pensions

	10-year return	Russell 3000	Excess return	Fees	End date
State Fund 1	16.1%	-1.5%	17.6%	Net	6/30/09
State Fund 2	12.1%	-1.5%	13.6%	Net	6/30/09
State Fund 3	11.9%	-0.8%	12.7%		12/31/09
State Fund 4	11.8%	-1.5%	13.3%	Gross	6/30/09
State Fund 5	11.5%	-1.5%	13.0%		6/30/09
State Fund 6	11.2%	-0.2%	11.4%	Net	12/31/09
State Fund 7	11.1%	-1.5%	12.6%	Net	6/30/09
State Fund 8	10.4%	-2.3%	12.7%		3/31/09
State Fund 9	9.4%	-0.8%	10.2%	Net	12/31/09
State Fund 10	8.9%	-1.5%	10.4%	Net	6/30/09
State Fund 11	8.2%	-1.5%	9.7%		6/30/09
State Fund 12	7.3%	0.7%	6.6%		9/30/09
State Fund 13	7.3%	0.7%	6.6%		9/30/09
State Fund 14	7.3%	0.7%	6.6%		9/30/09
State Fund 15	7.2%	-1.5%	8.7%	Net	6/30/09
State Fund 16	6.8%	-1.5%	8.3%	Net	6/30/09
State Fund 17	5.1%	-1.5%	6.6%		6/30/09
State Fund 18	4.4%	-1.5%	5.9%	Gross	6/30/09
State Fund 19	3.9%	-1.5%	5.4%	Net	6/30/09

Source: "Alternative investments: Are they worth the price?" by State Nesbitt, Cliffwater LLC, 2010.

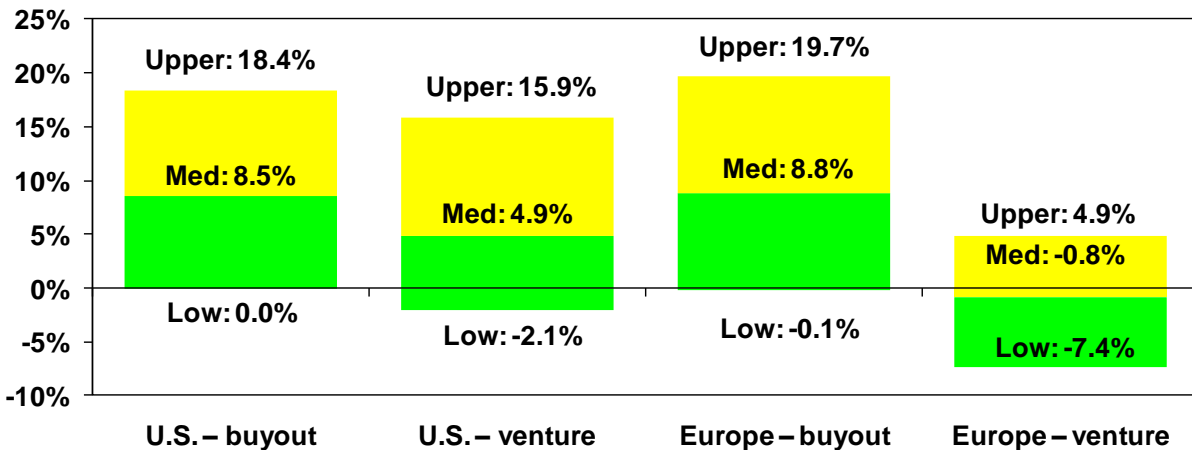
Choice of managers is critical

U.S. and Europe private equity returns, 1969 to 2007



MILKEN INSTITUTE

Net IRR



Source: Venture Economics, data to Dec. 31, 2007, captured Aug. 20, 2008.

Early returns can be misleading

Probability a reported top quartile
fund finishes top quartile

Years Into Vintage	Venture Economics probabilites
1	26.0%
2	36.0%
3	47.0%
4	54.0%
5	66.0%
6	74.0%
7	77.0%
8	90.0%
9	93.0%
10	100.0%



“Vintage Year” comparisons are fuzzy

- Based on a sample of 500 funds, 66% can claim to be “top quartile” according to at least one data source for their actual vintage year
- With flexibility (i.e., +/- one year) on choice of vintage year, this percentage increases to 77%
- Being in the “top quartile” somewhere is not a meaningful criterion to assess the quality of a GP



Limitations of benchmark data

- Sample bias
- Category definition
 - Buyout versus VC
 - Geographic region
 - First-time fund versus seasoned GP
 - Fund size
 - Deal size
 - Investment strategy
 - Management style

Alternative performance benchmarks

- | | |
|----------------------------|--|
| 1. Annualized buy and hold | Simple, but ignores timing of cash flows |
| 2. Public market | PME comparison to public index/indices |
| 3. Public peers: | PME comparison of peer company group |
| 4. Leveraged public peers: | Similar to #2, but with impact of leverage |
| 5. Vintage-year | Compare to average PE firm of that year |
| 6. Other approaches | Performance drivers, variability of returns, loss ratios, trimmed means, J-curve |

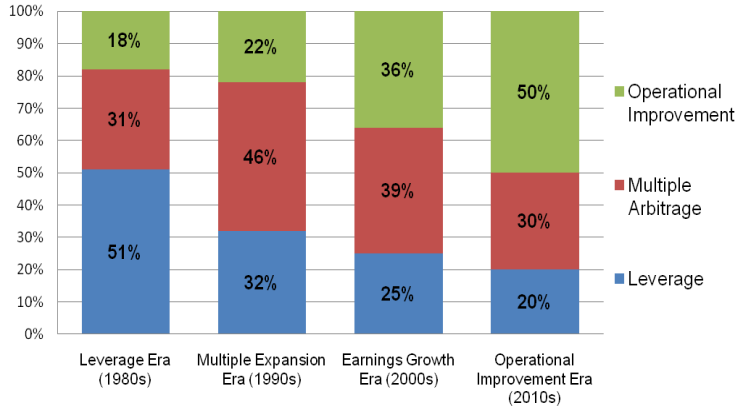
HEC – Dow Jones PE “fitness” rankings

	Criterion	Direction	Reason	How Calculated
1	Recent Variance in Deal Size	Positive	Flexibility with respect to deal size helps returns	Coefficient of variance in the amount of equity invested for all investments made by firm in last 5 years.
2	Avg BAA Yield	Negative	Access to cheap financing helps	Avg 1-year yield on BAA bonds over all investments, measured when deal is made.
3	Industry Focus	Positive	Specialization facilitates value creation	Level of industry concentration (as a Herfindahl-type measure based on equity) for all investments made by firm.
4	Market Timing	Positive	Ability to benefit from market trends	Avg percentage difference between S&P 500 on entry date and exit date - over all investments made by firm.
5	Exit Timing	Positive	Ability to time exits	Avg. percentage difference between S&P 500 on exit over the avg. level of S&P 500 +/- 182 days from exit - over all investments made by firm.
6	5-Year Change in Industry Focus	Positive	Strategy drift hurts returns	Difference in industry concentration (using Herfindahl-type measure) for deals 6-11 years ago and in last 5 years.
7	Active Portfolio Size	Negative	Smaller portfolios allow for focused value creation	Joint size of all companies in current portfolio measured as equity invested.
8	Procyclicality	Negative	Steady deal flow, even during "slow" times	Correlation coefficient in amount invested per month between firm examined and all PE firms.
9	Strategic Overlap	Negative	Suggests firm doesn't chase hot sectors	Percent of activity in each strategic cell for firm examined and all firms. A "1" means the firm invests like all firms.
10	Increase in Scale	Positive	An indication of strong deal flow	Difference between number of active investments today versus 5 years ago.

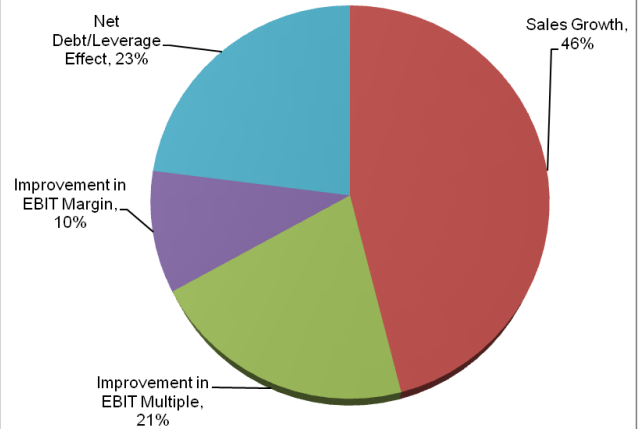
Traditional sources of PE value creation are in decline



Sources of Return in LBOs

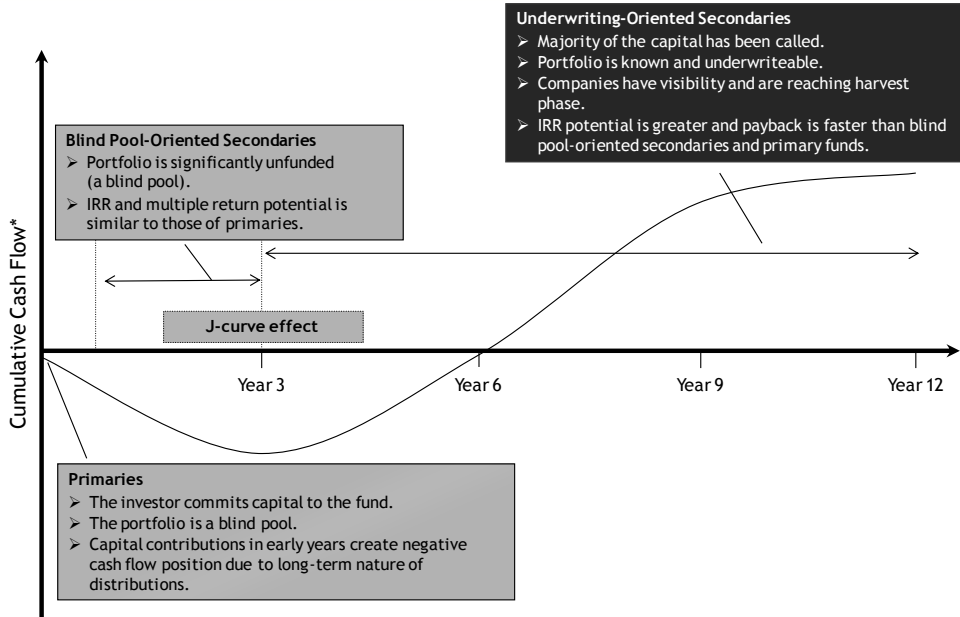


Drivers of Deal Value Creation



Source: Brigl, M. et. Al. "The advantage of persistence – How the best private equity beat the fade." The Boston Consulting Group and IESE Business School, 2008

PE J-curve



*Cumulative Cash Flow = Capital Called less Distributions



Performance is measured in several ways

Choose the best return at year five of the portfolio:

- A. Size: 22% IRR; 0.1x MOIC
- B. Rapid: 20% IRR; 0.5x MOIC
- C. Return: 18% IRR; 0.6x MOIC
- D. All of the above



Returns can change when economy does

If a recession hit, how would the investments rank by IRR (from highest to lowest)?

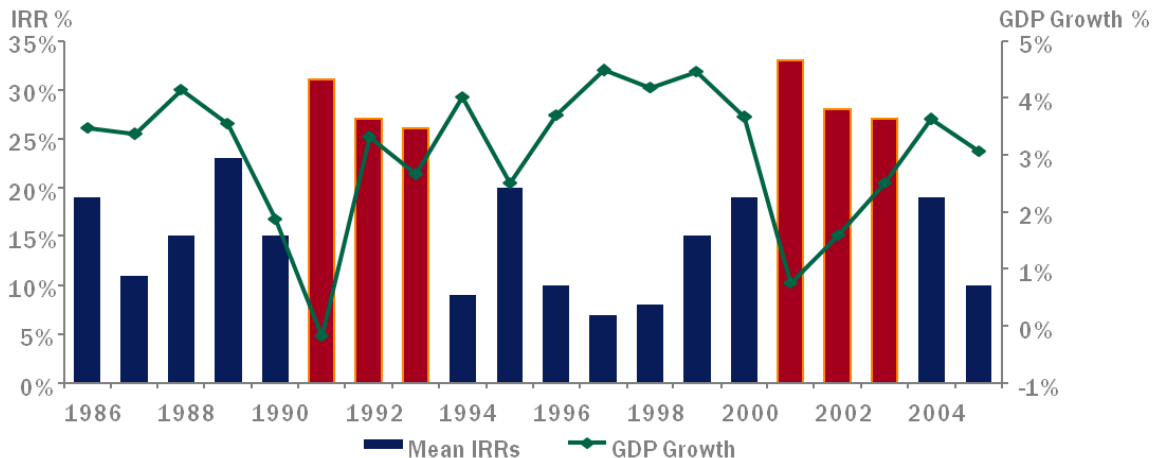
1. Size, Rapid and Return
2. Return, Rapid and Size
3. Rapid, Return and Size
4. Rapid, Size and Return

Interim results may not equal final outcome

	Pre-Recession Results			After Recession
	IRR	MOIC		IRR
Size	22%	0.1x		14%
Rapid	20%	0.5x		18%
Return	18%	0.6x		16%



PE returns are countercyclical



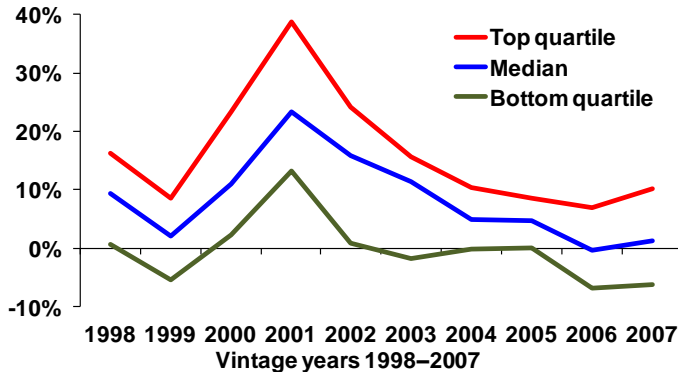
Source: Cambridge Associates U.S. Private Equity, pooled mean net IRR to limited partners by vintage year as of March 31, 2008.
GDP data source: EconStats, Global Economic Data.



PE results – Quartile Trending

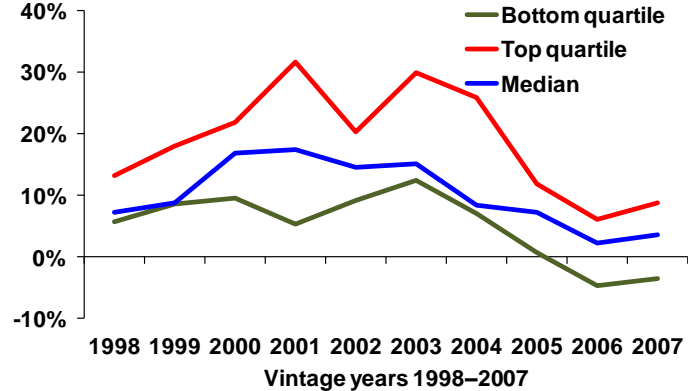
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Reported returns (IRRs)



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Sources: CalSTERS, CalPERS.