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# Oregon Public Employees Retirement Fund Investment Benchmarking Results

For the 5 year period ending December 2009

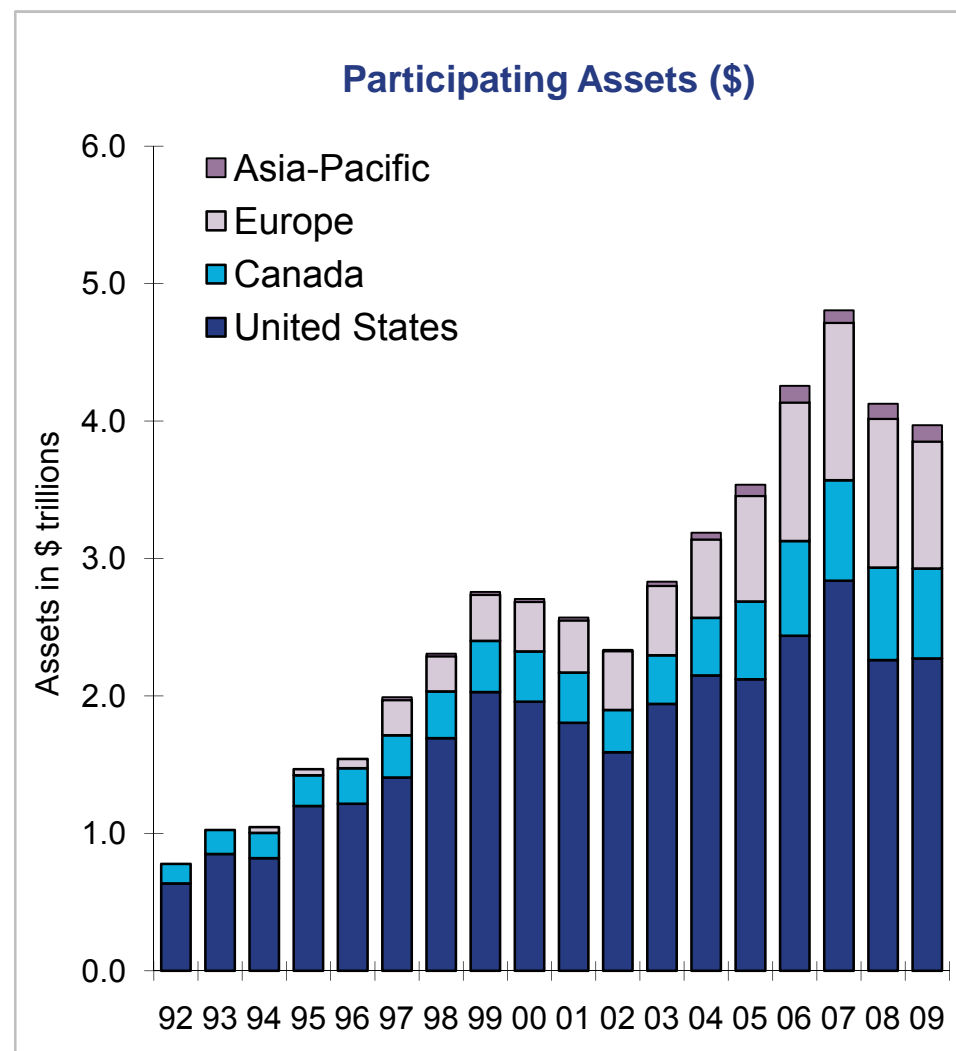
Bruce Hopkins  
CEM Benchmarking Inc



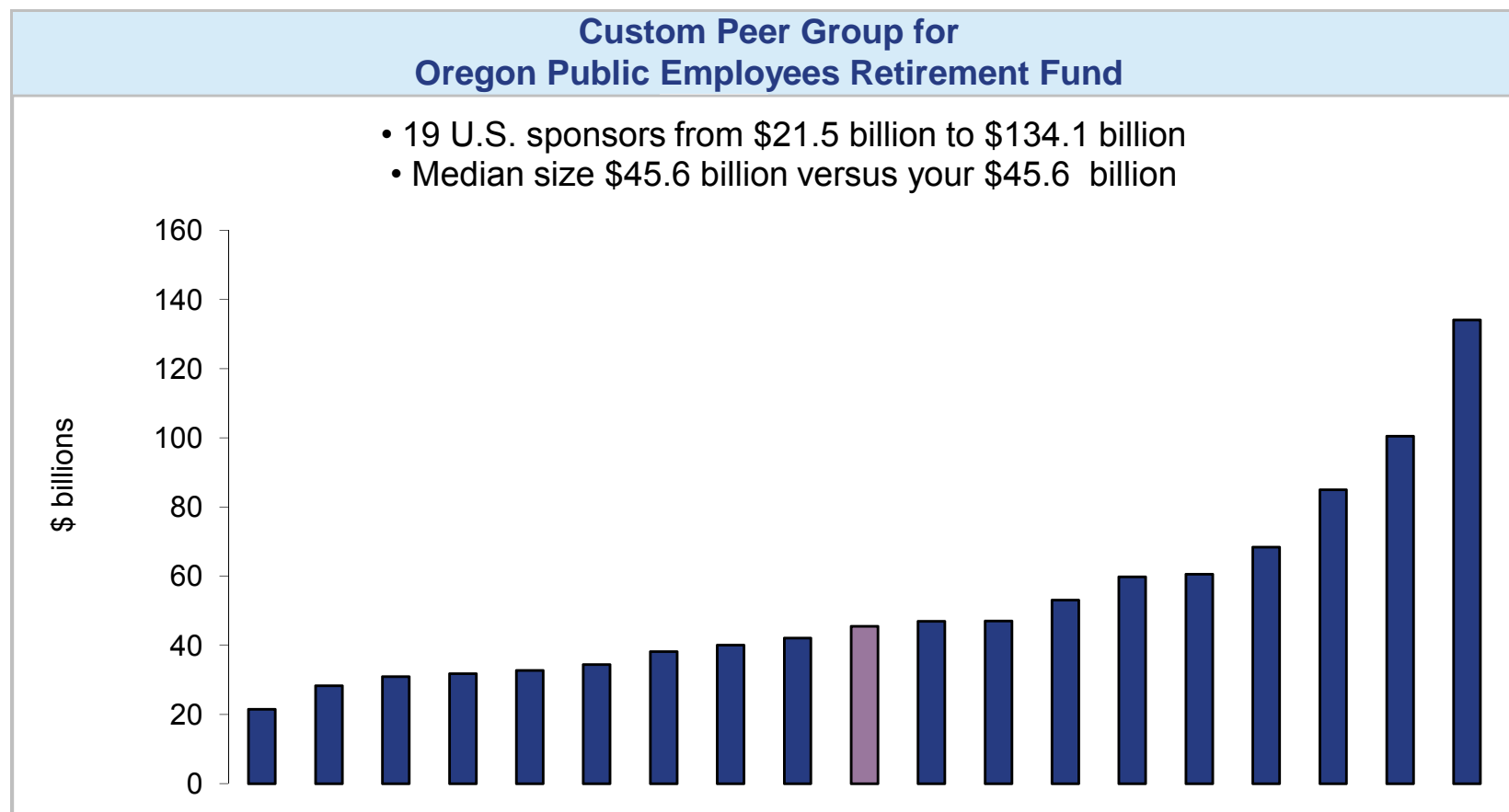
## This benchmarking report compares your cost and return performance to CEM's extensive pension database.

- 189 U.S. pension funds participate with assets totaling \$2.3 trillion.
- 87 Canadian funds participate with assets totaling \$655 billion.
- 46 European funds participate with aggregate assets of \$924 billion. Included are funds from the Netherlands, Norway, Sweden, Finland, France, Denmark, U.K. and Ireland.
- 7 Asia-Pacific funds participate with aggregate assets of \$161 billion. Included are funds from Australia, New Zealand and South Korea.

The most meaningful comparisons for your returns and value added are to the U.S. universe.



## The most valuable comparisons for cost performance are to your custom peer group because size impacts costs.



To preserve client confidentiality, given potential access to documents as permitted by the Freedom of Information Act, we do not disclose your peers' names in this document.

## What gets measured gets managed, so it is critical that you measure and compare the right things:

### 1. Policy Return

How did the impact of your policy mix decision compare to other funds?

### 2. Value Added

Are your implementation decisions (i.e., the amount of active versus passive management) adding value?

### 3. Costs

Are your costs reasonable? Costs matter and can be managed.

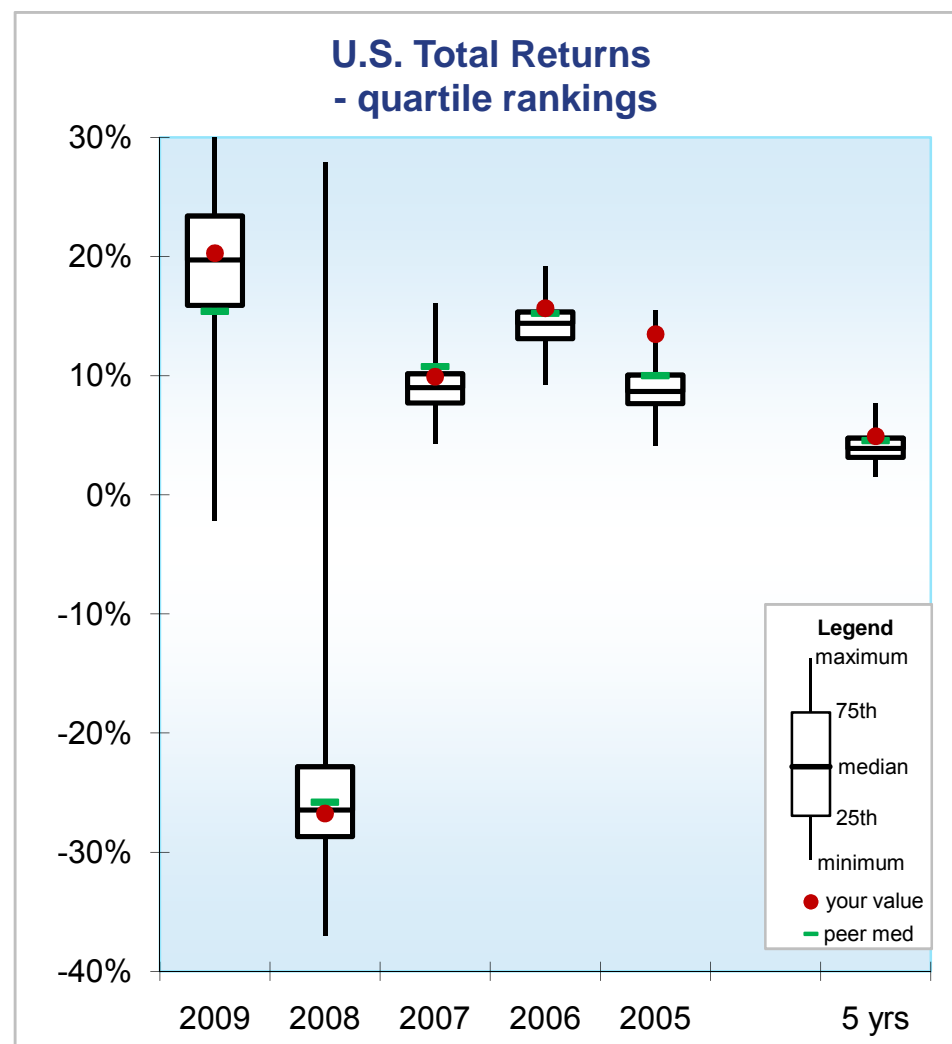
## Your 5-year total return of 4.9% was above the U.S. median of 3.9%.

Total returns, by themselves, provide little insight into the reasons behind relative performance. Therefore, we separate total return into its more meaningful components: policy return and value added.

	<b>Your 5-yr.</b>
Total Fund Return	4.9%
Policy Return	4.4%
Value Added	0.5%

This approach enables you to understand the contribution from both policy mix decisions (which tend to be the board's responsibility) and implementation decisions (which tend to be management's responsibility).

The median 5-year total return of your peers was 4.6%.



## 1. Policy Return

## Your 5-year policy return of 4.4% was above the U.S. median of 3.7%.

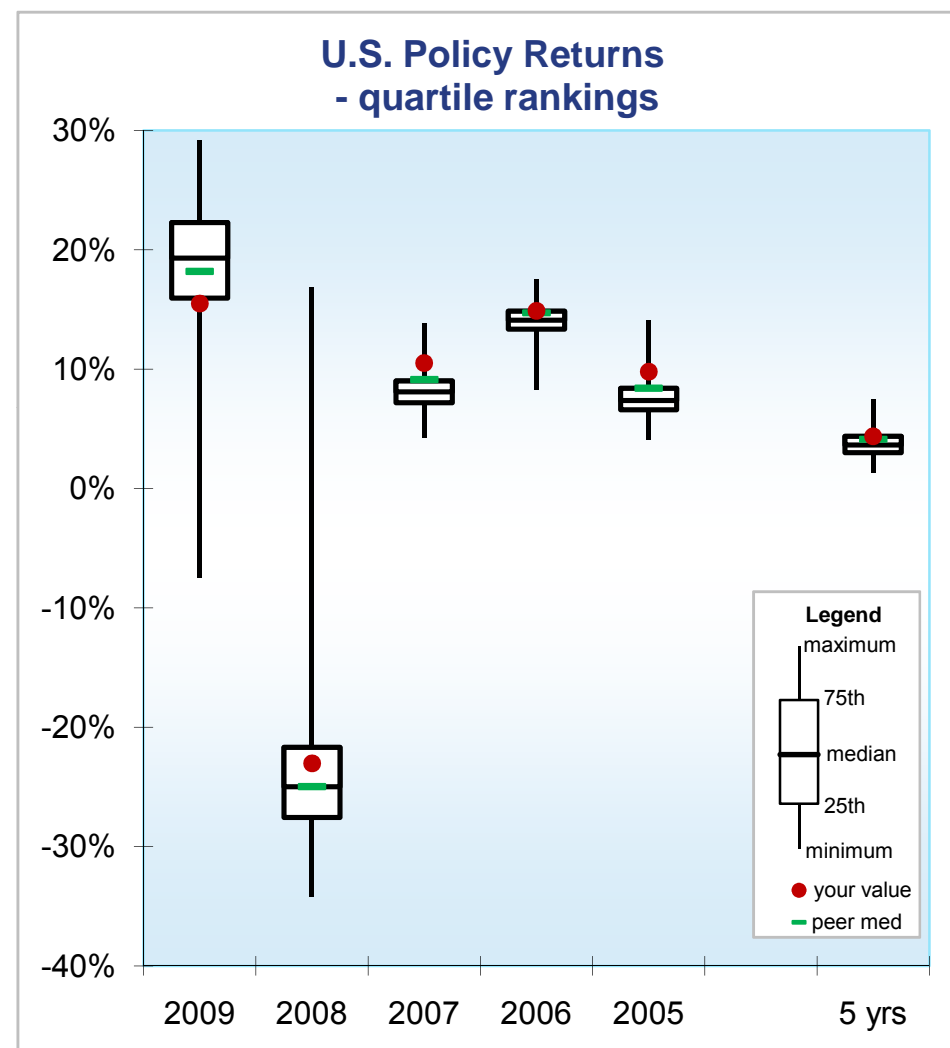
Your policy return is the return you could have earned passively by indexing your investments according to your policy mix.

Having a higher or lower relative policy return is not necessarily good or bad. Your policy return reflects your investment policy, which should reflect your:

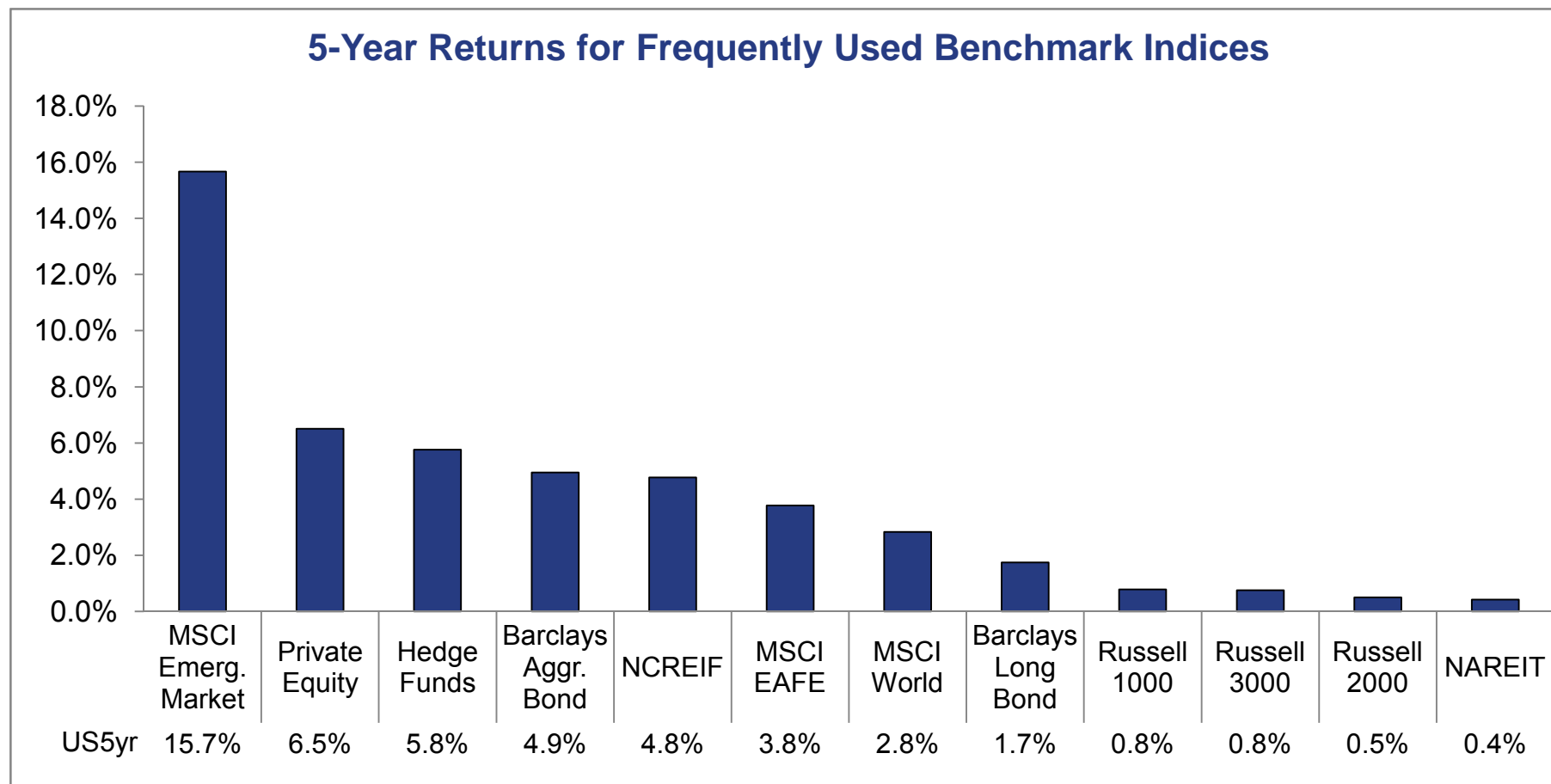
- Long term capital market expectations
- Liabilities
- Appetite for risk

Each of these three factors is different across funds. Therefore, it is not surprising that policy returns often vary widely between funds.

The median 5-year policy return of your peers was 4.1%.



## Differences in policy returns are caused by differences in policy mix and benchmarks.



The private equity and hedge fund benchmark returns shown reflect the average of all benchmarks given by CEM participants.

## Your 5-year policy return was above the U.S. median primarily because of:

- The positive impact of your higher weights in two of the better performing asset classes of the past 5 years: EAFE/global stock and private equity.
- The positive impact of your lower weight in one of the poorer performing asset classes of the past 5 years: U.S. stock.

5-Year Average Policy Mix			
Asset class	Your fund	U.S. avg	Peer avg
U.S. Stock	22%	39%	32%
EAFE/Global Stock	29%	17%	20%
Emerging Mkt Stock	<u>0%</u>	<u>1%</u>	<u>2%</u>
Total Stock	51%	57%	53%
U.S. Bonds	27%	22%	21%
Long Bonds	0%	4%	3%
High Yield Bonds	0%	2%	1%
Inflation Index Bonds	0%	1%	1%
Fixed Income - Other	0%	2%	4%
Cash	<u>0%</u>	<u>1%</u>	<u>1%</u>
Total Fixed Income	27%	31%	31%
Real Assets*	9%	5%	8%
Hedge Funds	0%	2%	2%
Private Equity	13%	4%	7%
Total	100%	100%	100%

\* Includes Real Estate, REITs, Commodities, Infrastructure and Natural Resources

**Your policy mix has changed over the past 5 years. At the end of 2009, it compared to your peers and the U.S. universe as follows.**

Policy Mix	2009			2005
	Your Fund	U.S. Avg	Peer Avg	Your Fund
Asset Class				
U.S. Stock	0%	32%	24%	35%
EAFE/Global Stock	46%	18%	23%	20%
Emerging Mkt Stock	<u>0%</u>	<u>2%</u>	<u>2%</u>	<u>0%</u>
Total Stock	46%	52%	48%	55%
U.S. Bonds	27%	21%	15%	27%
Long Bonds	0%	7%	8%	0%
High Yield Bonds	0%	2%	2%	0%
Inflation Index Bonds	0%	1%	1%	0%
Fixed Income - Other	0%	2%	5%	0%
Cash	<u>0%</u>	<u>1%</u>	<u>1%</u>	<u>0%</u>
Total Fixed Income	27%	34%	32%	27%
Real Assets	11%	6%	8%	8%
Hedge Funds	0%	4%	3%	0%
Private Equity	16%	5%	8%	10%
Total	100%	100%	100%	100%

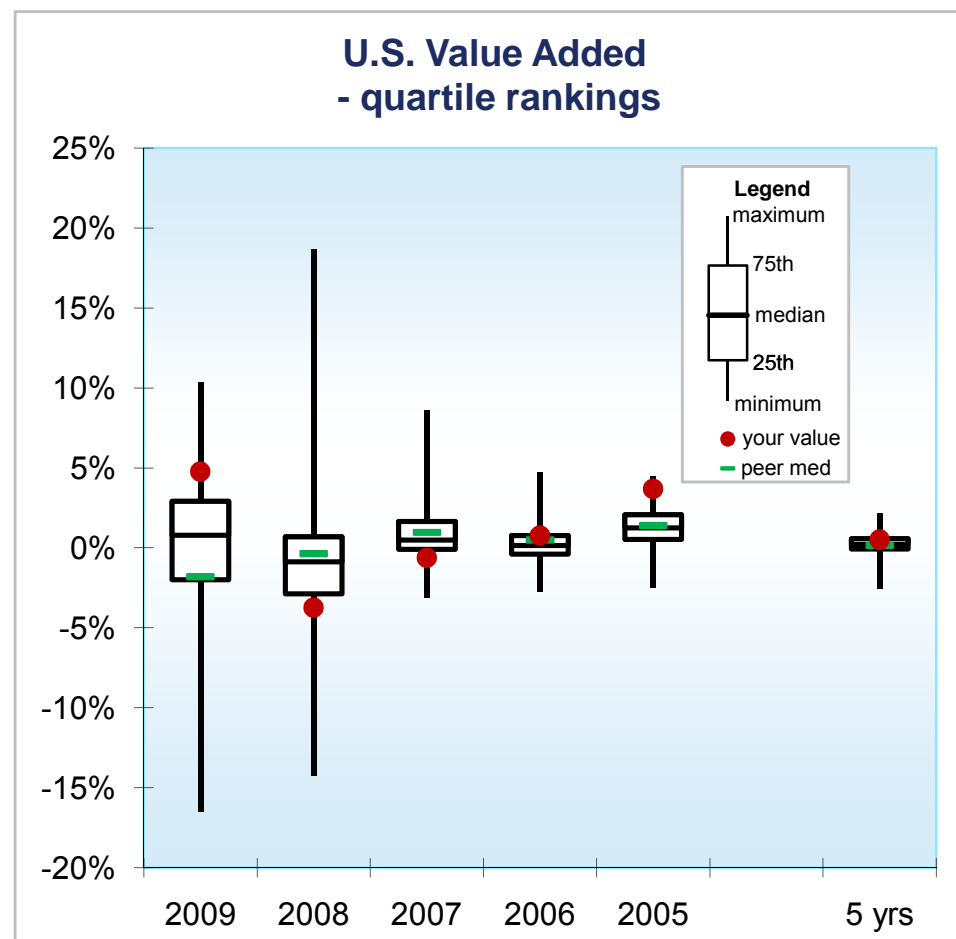
## 2. Value Added

**Value added is the component of your total return from active management. Your 5-year value added of 0.5% was above the U.S. median of 0.2%.**

Value added equals your total return minus your policy return.

Oregon PERF			
Year	Total return	Policy return	Value added
2009	20.3%	15.5%	4.8%
2008	(26.8)%	(23.0)%	(3.7)%
2007	9.9%	10.5%	(0.6)%
2006	15.7%	14.9%	0.8%
2005	13.5%	9.8%	3.7%
5-year	4.9%	4.4%	0.5%

Your 5-year value added of 0.5% compares to a median of 0.2% for your peers and 0.2% for the U.S. universe.



## 3. Costs

**Your asset management costs in 2009 were \$404.6 million or 88.8 basis points.**

Your Investment Management Costs (\$000s)						
	Internal		External			Total
	Passive	Active	Passive	Active: base fees	Active: perform fees	
Stock - All U.S.	78		103	21,970		22,151
Stock - ACWIxU.S.				30,766		30,766
Stock - Global			175	6,081		6,256
Fixed Income - U.S.				20,715		20,715
Cash		225				225
REITs				2,872		2,872
Real Estate ex-REITs				25,160	n/a <sup>2</sup>	25,160
Diversified Private Equity				264,845 <sup>1</sup>	n/a <sup>2</sup>	264,845
Other Private Equity				22,113 <sup>1</sup>	n/a <sup>2</sup>	22,113
Overlay Programs				644	n/a <sup>2</sup>	644
Total investment management costs					86.9bp	395,717

Your Oversight, Custodial and Other Asset Related Costs <sup>3</sup> (\$000s)		
Oversight of the fund		6,519
Trustee & custodial		100
Consulting and performance measurement		2,003
Audit		265
Other		
Total oversight, custodial & other costs		2.0bp
Total asset management costs		88.8bp
		404,604

## Notes

<sup>1</sup> Private equity costs derived from the partnership level detail you provided.

<sup>2</sup> Total cost excludes carry/performance fees for real estate, private equity and overlays. Performance fees are included for the public market asset classes.

<sup>3</sup> Excludes non-investment costs, such as preparing checks for retirees.

## Benchmark cost analysis suggests that your fund was low cost by 7.2 basis points.

Your benchmark cost is an estimate of what your cost would be given your actual asset mix and the median costs that your peers pay for similar services. It represents the cost your peers would incur if they had your actual asset mix.

Your total cost of 88.8 bp was lower than your benchmark cost of 96.0 bp. Thus, your cost savings was 7.2 bp.

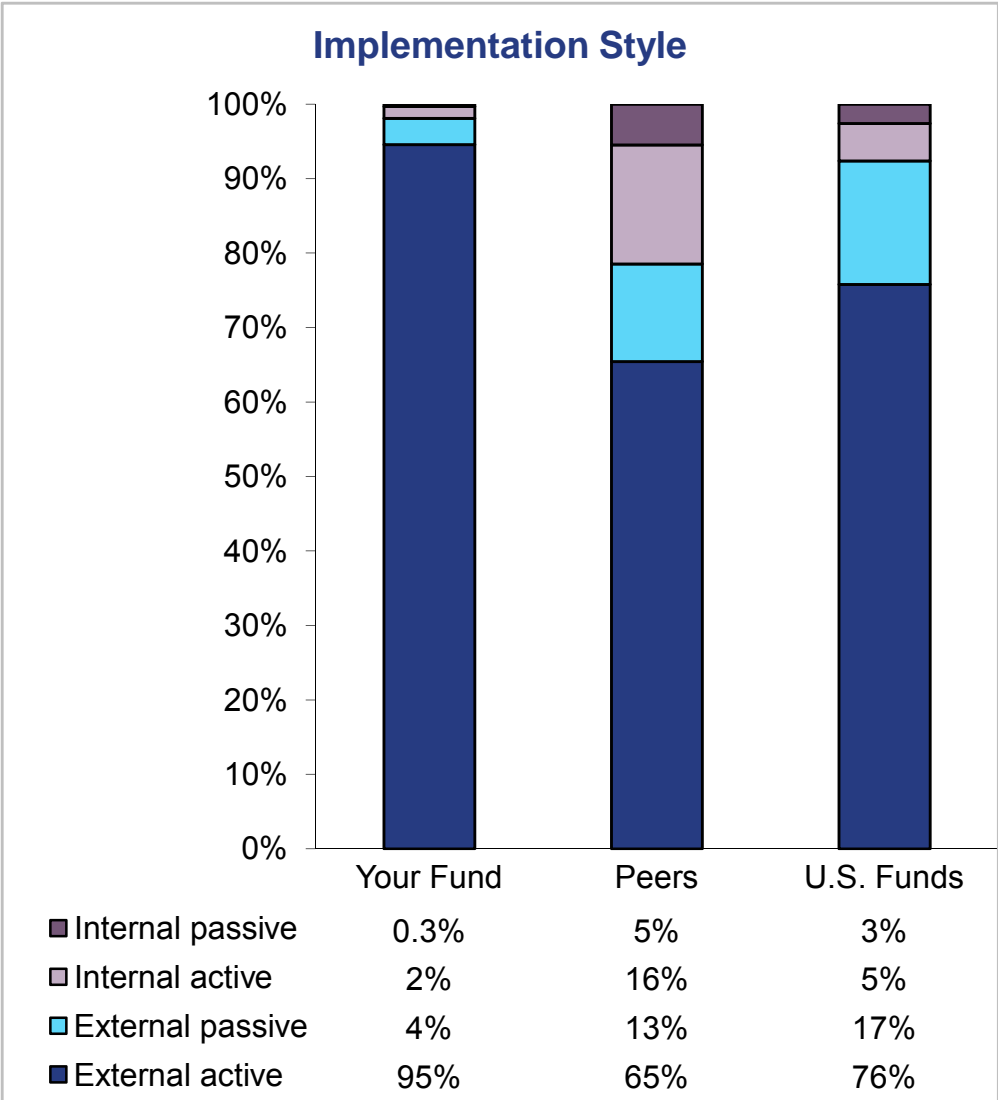
	<b>\$000s</b>	<b>basis points</b>
Your actual cost	404,604	88.8 bp
Your benchmark cost	<u>437,497</u>	<u>96.0 bp</u>
Your excess cost	(32,893)	(7.2) bp

# One key cause of differences in cost performance is often differences in implementation style.

Implementation style is defined as the way in which you implement your asset allocation. It includes internal, external, active and passive styles.

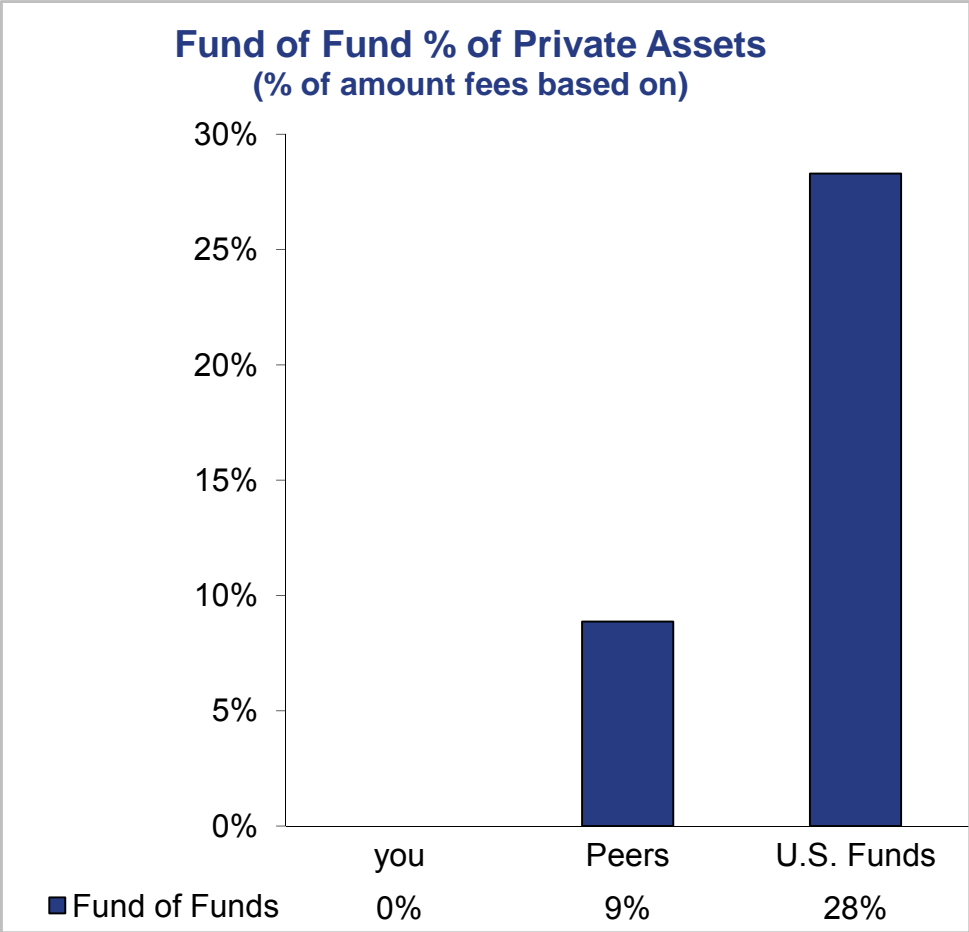
The greatest cost impact is usually caused by differences in the use of:

- External active management because it tends to be much more expensive than internal or passive management. You used more external active management than your peers (your 95% versus 65% for your peers).
- Within external active holdings, fund of funds usage because it is more expensive than direct fund investment. You did not use fund of fund managers (see next page).



# Your private asset implementation style was lower cost. You used less fund of funds.

None of your private assets were in fund of funds, whereas 9% of peers' private assets were in fund of funds (as a % of the amount fees are based upon).



## Differences in implementation style cost you 4.4 bp relative to your peers.

Cost Impact of Differences in Implementation Style						
Asset class	Your avg holdings in (\$mils)	% External Active			Cost <sup>1,2</sup> premium	Cost/ (Savings) in \$000s
		You	Peer average	More/ (less)		
Stock - All U.S.	6,925	77.0%	37.5%	39.4%	36.7 bp	10,019
Stock - ACWIxU.S.	8,855	100.0%	59.1%	40.9%	22.1 bp	7,999
Stock - Global	2,569	100.0%	62.5%	37.5%	N/A	
Fixed Income - U.S.	12,147	100.0%	53.3%	46.7%	14.7 bp	8,355
REITs	987	100.0%	74.3%	25.7%	40.0 bp	1,014
Real Estate ex-REITs	3,407	100.0%	88.8%	11.2%	63.5 bp	2,419
of which Partnerships represent:		0.0%	16.9%	(16.9%)	40.5 bp	(2,339)
Diversified Private Equity	18,600	100.0%	98.2%	1.8%	159.2 bp	5,208
of which Fund of Funds represent:		0.0%	4.9%	(4.9%)	90.0 bp	(8,128)
Other private equity	1,500	100.0%	92.3%	7.7%	N/A	0
<b>Total 94.</b>		<b>6%</b>	<b>65.4%</b>	<b>29.2%</b>		<b>24,547</b>
Total external active style impact in bps						5.4 bp
Impact of differences in the use of lower cost styles <sup>3</sup>						(0.1) bp
Savings from your lower use of portfolio level overlays (your one passive beta hedge)						(0.9) bp
<b>Total style impact</b>						<b>4.4 bp</b>

1. The cost premium is the additional cost of external active management relative to the average of other lower cost implementation styles - internal passive, internal active and external passive.
2. A cost premium of 'N/A' indicates that there was insufficient peer data to calculate the premium.
3. The 'Impact of differences in the use of lower cost styles' quantifies the net impact of your relative use of internal passive, internal active and external passive management.

## The net impact of differences in external investment management costs saved you 11.3 bps.

Impact of Paying More/(Less) for External Investment Management					
	Your avg holdings in \$mils	Cost in bps			Cost/ (Savings) in \$000s
		You	Peer median	More/ (Less)	
Stock - All U.S. - Active	5,330	41.2	40.4	0.9	454
Stock - ACWIxU.S. - Active	8,855	34.7	36.9	(2.1)	(1,869)
Stock - Global - Active	2,569	24.2	44.1	(19.8)	(5,099)
Fixed Income - U.S. - Active	12,147	17.1	17.1	0.0	0
REITs - Active	987	29.1	45.7	(16.6)	(1,638)
Real Estate ex-REITs - Active	3,407	73.8	75.0	(1.2)	(392)
Diversified Private Equity - Active	18,600	142.4	165.0	(22.6)	(42,055)
Other Private Equity - Active	1,500	147.4	N/A	N/A	
	<i>Notional</i>				
Derivatives/Overlays - Passive Beta	2,079	3.1	7.6	(4.5 bp)	(938)
<b>Total external investment management impact</b>				<b>(11.3) bp</b>	<b>(51,563)</b>

'N/A' indicates insufficient peer data to do meaningful comparisons.

## The net impact of differences in internal investment management costs was negligible.

Impact of Paying More/(Less) for Internal Investment Management					
	Your avg holdings in \$mils	Cost in bps			Cost/ (Savings) in \$000s
		You	Peer median	More/ (Less)	
Stock - All U.S. - Passive	289	2.7	1.4	1.3	37
Cash - Active	871	2.6	2.6	0.0	0
Total internal investment management impact				0.0 bp	37

## The net impact of differences in your oversight, custodial & other costs saved you 0.3 bps.

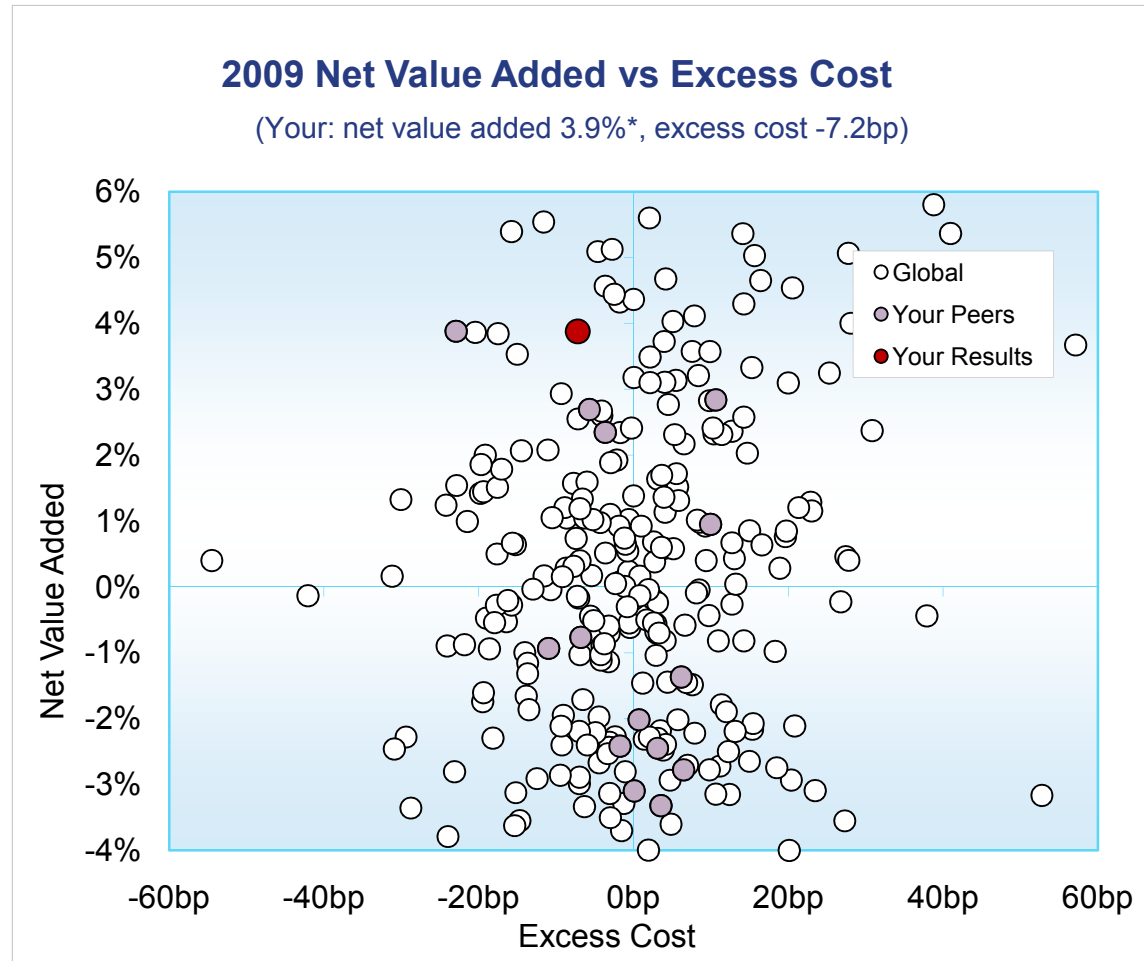
Impact of Differences in Oversight, Custodial & Other Costs					
	Your avg holdings in \$mils	Cost in bps			Cost/ (Savings) in \$000s
		You	Peer median	More/ (Less)	
Oversight	45,560	1.4	1.2	0.2	1,030
Custodial / trustee	45,560	0.0	0.4	(0.4)	(1,802)
Consulting / performance measurement	45,560	0.4	0.5	(0.0)	(76)
Audit	45,560	0.1	0.1	0.0	19
Other	45,560	0.0	0.1	(0.1)	(663)
<b>Total impact</b>				<b>(0.3) bp</b>	<b>(1,493)</b>

**In summary, you were low cost primarily because you paid less for similar mandates.**

<b>Explanation of Your Cost Status</b>		
	<b>Excess Cost/ (Savings)</b>	
	<b>\$000s</b>	<b>bps</b>
<b>1. Higher cost implementation style</b>		
• Higher use of external management	24,547	5.4
• Differences in the use of lower cost styles	(418)	(0.1)
• Lower use of overlays	<u>(4,004)</u>	<u>(0.9)</u>
	20,125	4.4
<b>2. Paying less than your peers</b>		
• External investment management costs	(51,563)	(11.3)
• Internal investment management costs	37	0.0
• Oversight, custodial & other costs	<u>(1,493)</u>	<u>(0.3)</u>
	(53,018)	(11.6)
<b>Total Savings</b>	<b>(32,893)</b>	<b>(7.2)</b>

**Cost  
Effectiveness**

**For 2009 you were in the positive net value added, low cost quadrant of the cost effectiveness chart.**



\* Your 2009 Net implementation value added of 3.9% equals your 4.8% gross impl. value added minus your 0.9% actual cost.

## In summary:

### 1. Policy Return

Your 5-year policy return was 4.4%. This was above the U.S. median of 3.7% and above the peer median of 4.1%.

### 2. Value Added

Your 5-year value added was 0.5%. This was above the U.S. median of 0.2% and above the peer median of 0.2%.

### 3. Costs

Your actual cost of 88.8 bps was below your benchmark cost of 96.0 bps. This suggests that your fund was low cost. You were low cost primarily because you paid less for similar mandates.