



INVESTMENT MANAGEMENT COMMITTEE



June 2014

**TEACHER RETIREMENT SYSTEM OF TEXAS MEETING
BOARD OF TRUSTEES
AND
INVESTMENT MANAGEMENT COMMITTEE**

*(Mr. Barth, Committee Chair; Mr. Colonna; Mr. Corpus; Mr. Kelly; & Ms. Sissney,
Committee Members)*

AGENDA

**June 5, 2014 – 8:00 a.m.
TRS East Building, 5th Floor, Boardroom**

1. Consider the approval of the proposed minutes of the March 27, 2014 committee meeting – Todd Barth.
2. Receive an update and review of Private Equity and Real Assets – Eric Lang, Neil Randall, and Grant Walker.
3. Receive an update on Energy and Natural Resources – Vaughn Brock.
4. Receive an update on the Private Markets Strategic Partnership Network – David Veal and Courtney Villalta.
5. Discuss the Private Market Investment Outlook – George Roberts, KKR.

NOTE: The Board of Trustees (Board) of the Teacher Retirement System of Texas will not consider or act upon any item before the Investment Management Committee (Committee) at this meeting of the Committee. This meeting is not a regular meeting of the Board. However, because the full Investment Management Committee constitutes a quorum of the Board, the meeting of the Committee is also being posted as a meeting of the Board out of an abundance of caution.



Minutes of the Investment Management Committee

March 27, 2014

The Investment Management Committee of the Board of Trustees of the Teacher Retirement System of Texas met on March 27, 2014 in the boardroom located on the Fifth Floor of the TRS East Building offices at 1000 Red River Street, Austin, Texas. The following committee members were present:

Todd Barth, Chair
Joe Colonna
David Corpus
David Kelly
Nanette Sissney

Others present:

Christopher Moss, TRS Trustee
Anita Palmer, TRS Trustee
Dolores Ramirez, TRS Trustee
Karen Charleston, TRS Trustee
Brian Guthrie, TRS
Ken Welch, TRS
Carolina de Onís, TRS
Britt Harris, TRS
Howard Goldman, TRS
Don Green, TRS
Jerry Albright, TRS
Thomas Albright, TRS
Lane Arnold, TRS
Jase Auby, TRS
Mohan Balachandran, TRS
Pat Barker, TRS
Ronnie Bounds, TRS
Bernie Bozzelli, TRS
Chi Chai, TRS
David DeStefano, TRS
Rich Hall, TRS

Janis Hydak, TRS
Dan Junell, TRS
Eric Lang, TRS
Lynn Lau, TRS
Jaime Llano, TRS
Denise Lopez, TRS
Shayne McGuire, TRS
Jared Morris, TRS
Hugh Ohn, TRS
Mike Pia, TRS
Sharon Toalson, TRS
Angela Vogeli, TRS
Tim Wei, TRS
Dale West, TRS
Dr. Keith Brown, Investment Advisor
Steven Huff, Fiduciary Counsel
Brady O'Connell, Hewitt EnnisKnupp
Ann Fickel, Texas Classroom Teachers Association
Philip Mullins, Texas State Employees Union
Ann Fickel, Texas Classroom Teachers Association
Tom Rogers, Texas Retired Teachers Association & Austin Retired Teachers Association

Mr. Barth called the meeting to order at 8:33 a.m. A quorum of the committee was present.

Mr. Barth acknowledged the departure of Rich Hall from TRS and expressed his appreciation to Mr. Hall for his contributions to TRS.

1. Consider the approval of the proposed minutes of the December 12, 2013 committee meeting – Todd Barth.

On a motion by Mr. Kelly, seconded by Mr. Corpus, the committee approved the minutes of the December 12, 2013 meeting as presented.

2. Receive the annual Internal Public Markets review – Chi Chai, Janis Hydak, David DeStefano, and Shayne McGuire.

Mr. Chai described the Internal Public Markets (IPM) Group, including its organization, key policy limits, and portfolio structure and characteristics.

Ms. Hydak provided the 2013 market performance update by region and sector. Mr. DeStefano provided an update on the performance of the Global Best Ideas portfolio, the global equity portfolio managed by Internal Public Markets. Responding to a question from Mr. Barth concerning the factors contributing to the significant outperformance of the GBI Quant strategies in 2013, Ms. Hydak stated that it was a good year for Quant managers and the Quant strategies performed especially well because they emphasize value which was a strong performing factor in 2013. Mr. DeStefano discussed the magnitudes of alpha and volatility involving the Quant strategies and responded to related questions by Mr. Kelly. Mr. Chai noted that staff compared historical volatility levels and current risk models in constructing portfolios and was aware that the volatility of the Quant Portfolio could increase significantly. Responding to a question from Dr. Brown concerning asset allocation decisions made for GBI Quant versus the GBI Core Portfolio, Mr. Chai stated that the Quant strategies depend heavily on factors provided by a research vendor. He said staff would be reviewing whether these strategies rely too much on factors provided by a single vendor.

Mr. McGuire provided an update on the GBI Gold and GBI US High Quality portfolios and the IPM historical timeline.

Mr. Chai concluded the report by presenting the group's accomplishments and priorities. Mr. Barth highlighted the importance of training and evaluation programs in light of recent staff departures.

3. Receive the annual Trading Management Group review – Bernie Bozzelli, Jaime Llano, and Jared Morris.

Mr. Bozzelli provided an overview of the Trading Management Group, including its mandate, team profile, cross-divisional collaboration, trading partner network, and broker certification process. Mr. Llano reviewed the group's 2013 equity trading performance, explaining how the group measures performance. He also discussed an issue related to the foreign exchange benchmark and how the trading desk resolved it to add value. Mr. Morris discussed two corporate action analyses conducted during 2013 that had added value. He also discussed a 2014 priority concerning rolling future positions. Mr. Bozzelli summarized the 2013 and 2014 priorities of the group.

4. Receive report on proxy votes for which TRS' outside advisor provided no recommendation – Janis Hydak and Tim Wei.

Pursuant to the Proxy Voting Policy, Ms. Hydak reported a proxy item in which the independent advisory service, ISS, did not provide a recommendation, and that resulted in an exception vote by the Proxy Committee. She stated that ISS did not make a recommendation in the election by



preferred shareholders of a Brazilian company director and fiscal council member because the service did not know the names of the nominees. Ms. Hydak suggested including any exception vote arising from the lack of a recommendation by the advisory service in the quarterly transparency report. Mr. Colonna and Mr. Barth discussed with Ms. Hydak different approaches TRS could take for voting proxy items in elections in which ISS makes no recommendation, a situation that likely would recur because of timing issues related to the nomination process involving Brazilian companies. Mr. Colonna stated that the matter presented a policy issue, and he wanted staff to provide him more information before bringing it before the Policy Committee for deliberation.

The meeting adjourned at 9:30 a.m.



Private Equity

Eric Lang, Senior Managing Director

Neil Randall, Senior Director

June 2014

Agenda

- I. Executive Summary
- II. Organizational Structure
- III. Portfolio Structure
- IV. Performance
- V. Market Outlook and Conditions
- VI. Summary
- VII. Appendix

Executive Summary

PERFORMANCE ¹			
Asset Class	1-Year TWR	3-Year TWR	10-Year TWR
Private Equity	23.8%	15.2%	17.8%
Policy Benchmark ³	<u>17.9%</u>	<u>12.0%</u>	<u>9.8%</u>
Excess Return	5.9%	3.2%	8.0%
TUCS Peer Comparison	4th	8th	1st

PORTFOLIO GROWTH ²			
PE (millions)	1-Year	3-Year	10-Year
Ending Value	\$14,833	\$14,833	\$14,833
less Starting Value	13,324	9,622	905
less Contributions	2,206	8,140	17,828
plus Distributions	3,589	8,645	12,804
Investment Return	\$2,892	\$5,716	\$8,905

LONG-TERM MARKET RETURN AND RISK EXPECTATIONS				
Style	Portfolio Target Weight	Strategic Goal	Expected Market Return ⁴	Public Risk Proxy ⁵
Buyout	70%	Equity Alpha	13.3%	25.3%
Growth Equity / Venture	15%	Equity Alpha	11.3%	30.9%
Credit / Special Situations	15%	Diversification	11.3%	18.7%
PRIVATE EQUITY TOTAL	100%	Equity Alpha / Diversification	12.7%	25.2%

ALLOCATION SUMMARY						
Style	% of Portfolio			% of Total Trust		
	12/31/2013	12/31/2012	Change	12/31/2013	12/31/2012	Change
Buyout	77.5%	78.8%	-1.3%	8.6%	9.2%	-0.6%
Growth Equity / Venture	9.3%	7.4%	1.9%	1.0%	0.9%	0.1%
Credit / Special Situations	13.2%	13.8%	-0.6%	1.8%	1.6%	0.2%
PRIVATE EQUITY TOTAL	100.0%	100.0%	-	11.4%	11.7%	-0.3%

¹ State Street as of 3/31/13

² State Street as of 12/31/13, 12/31/10, 12/31/03, excludes ENR

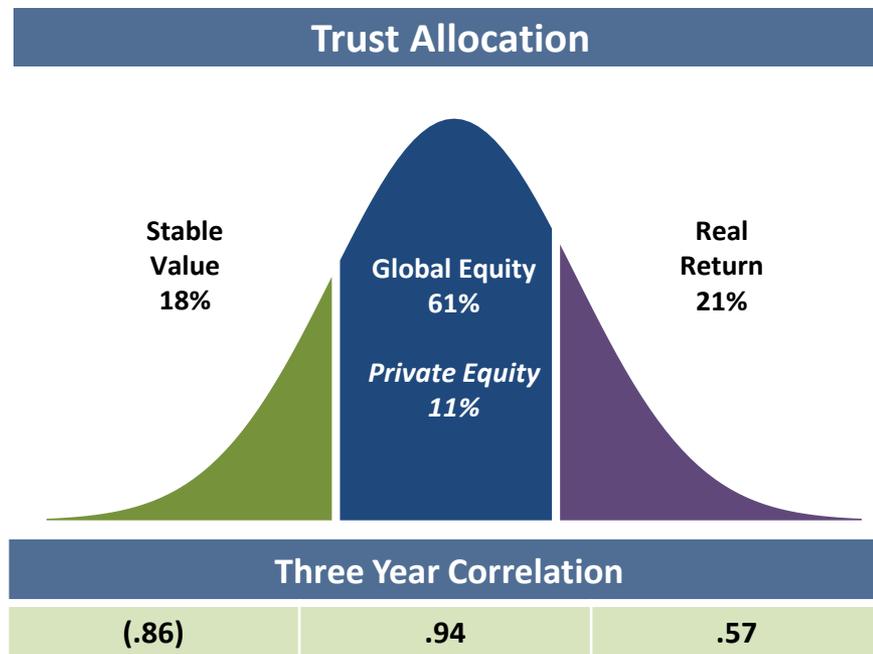
³ Policy benchmark provided by State Street

⁴ Hamilton Lane, 20 years of data ending 12/31/13

⁵ TRS Risk Group/Morgan Stanley. Represents the public markets proxy of de-smoothed private assets as used in the TRS Risk Model. For comparison, S&P 500 is 20.0%.

Executive Summary

Role in the TRS Trust



PRIVATE EQUITY				
Portfolio Target	Portfolio Target Weight	Expected Market Return ¹	Volatility	
			Observed ²	Public Risk Proxy ³
Buyout	70%	13.3%	12.9%	25.3%
Growth Equity / Venture	15%	11.3%	8.7%	30.9%
Credit / Special Situations	15%	11.3%	18.2%	18.7%
PE Total	100%	12.7%	12.8%	25.2%
Performance	IRR ⁴	TWR ⁵	Policy Benchmark	TUCS Rank
1 Year	21.4%	23.8%	17.9%	4 th
3 Years	15.5%	15.2%	12.0%	8 th
10 Years	14.4%	17.8%	9.8%	1 st
Drawdown Risk	Drawdown ⁶			
S&P 500	45.8%			
Russell 2000	47.9%			
TRS Private Equity	29.9%			

¹Hamilton Lane, 20 years of data ending 12/31/13

²TRS private equity portfolio, 2008-2013

³TRS Risk Group/Morgan Stanley. Represents the public markets proxy of de-smoothed private assets as used in the TRS Risk Model. For comparison, S&P 500 is 20.0%.

⁴State Street as of 12/31/13

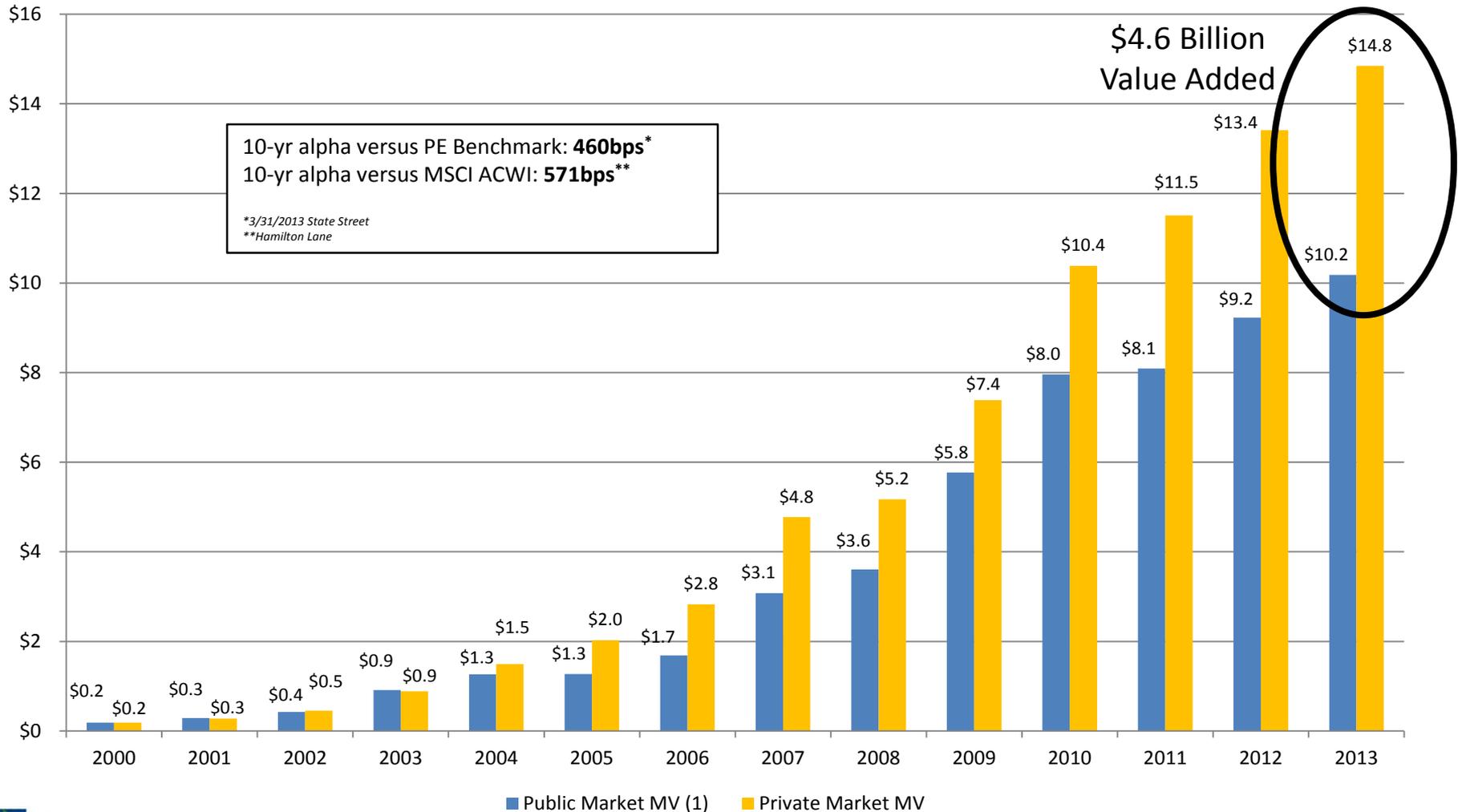
⁵State Street as of 3/31/13

⁶S&P 500 Drawdown 3/31/09; Russell 2000 Drawdown 3/31/09; TRS Private Equity Drawdown 6/30/09

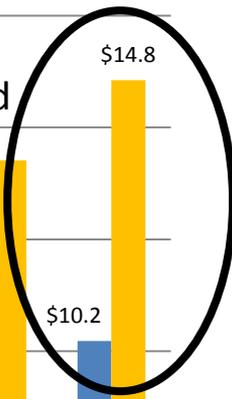
Executive Summary

Private Equity Value Added

- Private equity performance relative to Public Markets and SSPEI Benchmark



\$4.6 Billion Value Added



Hamilton Lane; values through 12/31/2013

Public Market values calculated by assuming investments were made in the MSCI All World index in the same size and timing as TRS Private Equity cash flows

Private Equity Organization Chart



Eric Lang
Managing Director
BBA UT Austin
MBA U. of Houston



Neil Randall
Senior Director
BBA, MS Texas A&M



Brad Thawley
Investment Manager
BBA, Bucknell U.



Allen MacDonell, CFA
Senior Investment Manager
BBA, U. of Georgia
MBA, Georgia State



Michael Lazorik
Director
BBA, UT Austin



Arlen Hodinh
Associate
BA, UT Austin
MBA, Thunderbird
JD, Chicago-Kent



Scott Ramsower
Investment Manager
BBA, Texas A&M



Jeff Edwards
Senior Associate
BBA, U. of Tennessee
MBA, U. of N. Carolina
MSF, Boston College



Blake Holman
Analyst
BA, Texas State
MBA, U. of Colorado



Carter Ware
Analyst
BA, U. of Virginia



Patrick Curby-Lucier
Analyst
BBA, Texas A&M



Melissa Kleihege
Deal Flow Analyst
BS, Texas A&M



Mike Stewart
Analyst
BBA, MS Texas A&M



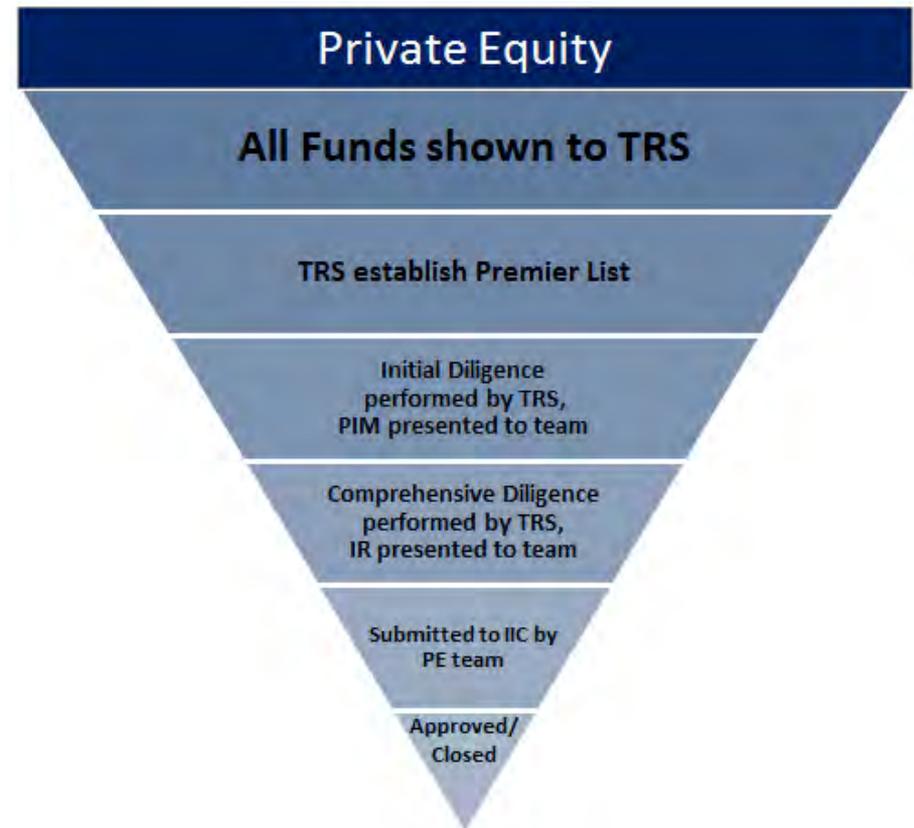
Malorie Harding
Analyst
BBA, Texas A&M

Advisors and Consultants
BlackRock and Hamilton Lane

Portfolio Structure

Private Equity Investment Process

- Develop annual allocation in collaboration with Asset Allocation and Risk Groups, review with IMD Management Committee
- Maintain allocation at target level of 11%
- Achieve long-term target return of 14% (including alpha)



Portfolio Structure

Style, Geography and Representative Managers

	Domestic	International Developed	International Emerging	Total	
	Target / Actual	Target / Actual	Target / Actual	Expected Return ¹	Public Risk Proxy ²
Buyout	40% / 50%	25% / 23%	5% / 5%	13.3%	25.3%
				Actual Total - 78%	
	<p>Encompasses broad spectrum of small buyout managers to global platforms with >\$100 billion in AUM. Emphasis on managers with substantial operational expertise and ability to generate co-investment</p>			70%	
Growth Equity & Venture Capital	8% / 6%	0% / 1%	8% / 2%	11.3%	30.9%
				Actual Total - 9%	
	<p>Emphasis on larger managers (>\$750 million in fund size) investing in the full range of early stage venture to growth capital</p>			15%	
Credit & Special Situations	8% / 7%	5% / 5%	3% / 1%	11.3%	18.7%
				Actual Total - 13%	
	<p>Managers with expertise spanning liquid trading strategies, mezzanine, distress-for-control, and asset purchases</p>			15%	
Total	55% / 64%	30% / 28%	15% / 8%	12.7%	25.2%
				Actual Total - 100%	

¹TRS Risk Group/Morgan Stanley

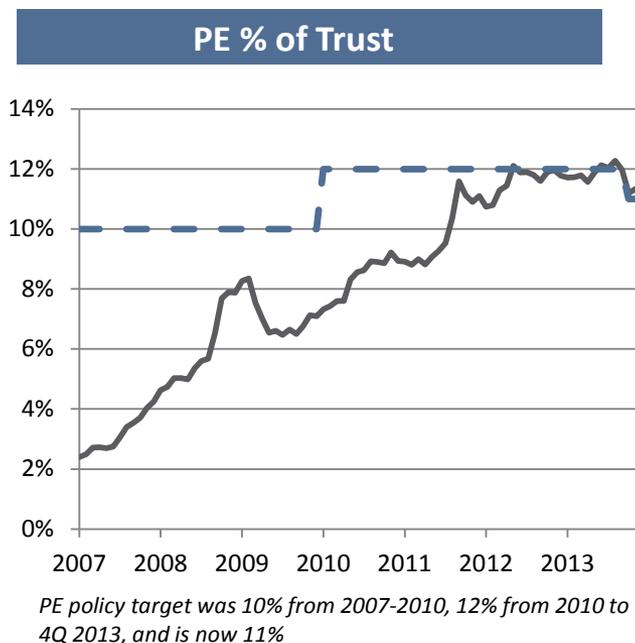
²Hamilton Lane, 20 years of data ending 12/31/13

Performance

Asset Growth, Allocation and Returns

Growth (millions) ¹	1-YR	3-YR	10-YR
Ending Value	\$14,833	\$14,833	\$14,833
less Starting Value	13,324	9,622	905
less Contributions	2,206	8,140	17,828
plus Distributions	3,589	8,645	12,804
Investment Return	\$2,892	\$5,716	\$8,905

Premier List Investments ²	Total	Committed Last 15 Months	Committed Last 27 Months
Number of Premier Managers	34	9	16
Percent Committed in Funds	93%	89%	82%
Percent Committed in Principal Investments	7%	11%	18%



Style	Allocation			Investment Returns			Inception Date ⁵
	2013	2010	2008	1 YR TWR ³	3 YR TWR	SI IRR ⁴	
Buyout	77.5%	77.9%	81.2%	26.1%	15.6%	13.9%	2000
Growth Equity / Venture	9.3%	8.6%	7.7%	19.4%	15.9%	8.9%	2001
Credit / Special Situations	13.2%	13.5%	11.1%	18.2%	13.8%	15.3%	2005
PE Total	100%	100%	100%	23.8%	15.2%	13.6%	2000

¹ State Street as of 12/31/13, 12/31/10, 12/31/03

² Includes investments approved by Investment Committee through 3/31/14 and excludes Emerging Managers

³ State Street as of 3/31/2013

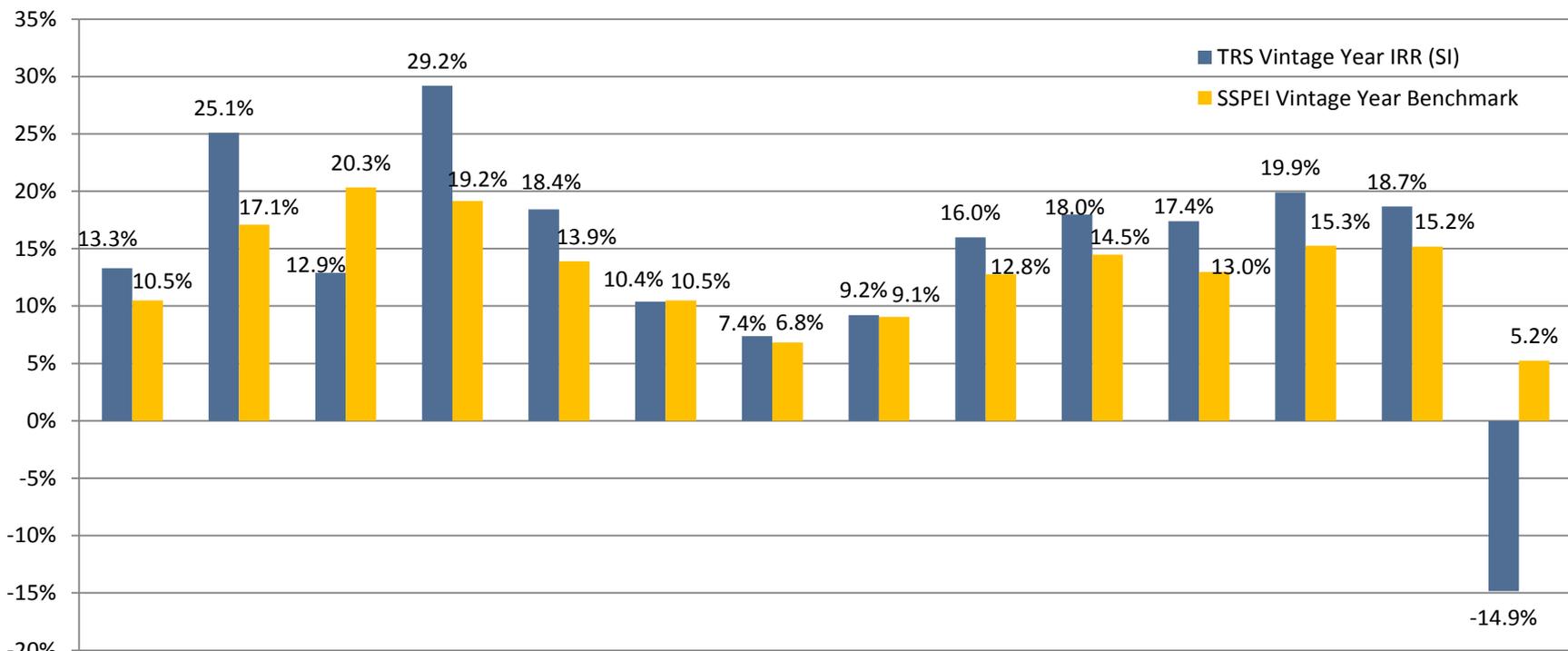
⁴ 12/31/13 since inception IRR per State Street

⁵ Excludes legacy portfolio commitments to Texas Growth Funds and Goldman Sachs Vintage Fund made prior to 2000

Performance

TRS Capital Committed and Invested Segregated by Year Committed

- Outperformed benchmark in all but 2 years since 2000



	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>Total</u>
Committed¹	\$275	\$856	\$238	\$456	\$472	\$751	\$2,368	\$4,576	\$3,854	\$2,840	\$906	\$1,610	\$3,113	\$2,873	\$25,186
Invested¹	<u>270</u>	<u>851</u>	<u>237</u>	<u>444</u>	<u>427</u>	<u>678</u>	<u>2,168</u>	<u>4,147</u>	<u>3,117</u>	<u>2,099</u>	<u>534</u>	<u>850</u>	<u>1,282</u>	<u>287</u>	<u>17,392</u>
Unfunded	5	5	0	12	44	72	200	428	737	740	373	759	1,831	2,586	7,794



Source: State Street as of 12/31/13

Performance

Accomplishments and Priorities

2013 Accomplishments

- Provided 17.8% for 10-year return - **#1 performance in TUCS universe**
- Returned 23.8% and 15.2%, respectively for 1 and 3-year periods – top decile performance for both periods
- Added 1-year alpha of 590 bps and 3-year alpha of 320 basis points
- “Self-funding” portfolio: distributions exceeded contributions by \$1.4 billion in 2013
- Completed 16 Investments
 - \$850 million to five funds
 - \$230 million to two Principal Investments
 - \$1.2 billion to four funds under the SPN
 - \$95 million to five Emerging Managers

2014 Priorities

- Preferred global destination for large, attractive investments
 - Develop long-term resource plan for Principal Investments
- Review sub-allocation within PE portfolio
- Review PE-specific valuation and risk services
- Develop technology road map
- Standardize process for public market equivalent analysis
- Streamline critical processes
- Work towards trust-level goal of increasing productivity and decreasing expenses

Market Conditions

	2013 "Today"	Long-Term Average (excl. 2006-2007)	2007 "Peak"	2002 "Pre-Peak"
Supply of Capital				
Capital Raised (billions)	\$267	\$181	\$372	\$94
Number of Funds Raised	532	543	774	422
Percent of US GDP	1.6%	1.3%	2.5%	0.8%
Demand for Capital				
Total Value of PE-Backed Buyout Transactions (billions)	\$222	\$180	\$812	\$90
Number of Disclosed Deals/Total Number of Deals	797/1,771	856/1,573	1,483/2,972	581/928
Percent of Transactions > \$1 billion	8.3%	6.4%	12.7%	4.0%
Average LBO Size (millions)	\$278	\$203	\$542	\$156
Largest LBO (millions)	\$23,576	\$9,608	\$43,797	\$4,971
Realizations				
Total Value of PE-Backed Exits (billions)	\$314	\$143	\$283	\$23
Number of Companies	1,435	722	1,159	189
Dry Powder				
Total Amount (billions)	\$706	\$546	\$695	\$180
Percent of Dollars Invested	319%	316%	86%	199%
Pricing (EV/EBITDA Multiple)				
Sponsor-Backed Buyouts Average	8.8x	7.8x	9.7x	6.6x
Strategic Buyers Average	8.7x	8.3x	8.7x	7.3x
Public Market Average (MSCI US)	10.2x	11.0x	11.2x	12.0x
Debt				
Debt Availability (1=hard to access; 10=easy to access)	9	5	10	5
Total Leveraged Loan and High Yield Volume (billions)	\$954	\$442	\$701	\$201
Typical Pricing	5.5%	7.6%	8.3%	7.1%
Average Debt/EBITDA Multiple	5.4x	4.7x	6.2x	4.0x
Average % Debt Used in Transactions	64%	63%	69%	63%
Returns				
IRR at Year 5	--	--	5.9%	24.9%
IRR at Year 10	--	--	--	19.6%

Market Conditions

Other Considerations

General Partners

- Slowing investment pace for many GPs
- Advancement in transparency, reporting systems and automated data exchange
- Largest amount of dry powder in history
- Key focus on co-investment programs

Macro Issues

- US corporate profit growth is slowing
- Private valuations are higher and supported by cheap, strong debt markets
- Moderate global economic growth
- Europe recovery is slow
- Emerging market currency issues

Organizational

- Team and leadership transition
- Focused on achieving steady state, long-term sub allocations
- Global equity integration and collaboration
- Collaborating with IPM on pre-IPO opportunities
- Continued focus on principal investments and increasing deal pipeline
- Premier List at long-term steady state

Summary

- Private Equity allocation at long-term target
- Historical Results
 - 1-, 3- and 10- year returns above target and top decile relative to peers
 - Exceeded public markets by 5.7%¹ over 10-year time period
 - Risk and correlations within expectations
- Distributions exceeded contributions in 2013
- General Partner relationships are strong and increasingly focused
- Principal investment capabilities with early results meeting expectations
- Market conditions: Neutral to overvalued from a long-term perspective
- Team is focused and functioning effectively

APPENDIX

Top 10 Relationships

By Exposure (\$ millions) as of December 31, 2013

Manager	Market Value	Unfunded Commitments	Total Exposure	Percent Exposure
1) Apollo Management	\$1,179	\$1,348	\$2,527	11%
2) Kohlberg Kravis Roberts & Co.	1,301	903	2,203	10%
3) Blackstone Group	1,395	695	2,090	9%
4) CVC European Equity Partners	820	195	1,015	4%
5) Carlyle Group	680	320	1,000	4%
6) Credit Suisse	636	327	963	4%
7) Apax Partners	747	161	908	4%
8) TPG Capital	631	233	864	4%
9) Blackrock	431	359	790	3%
10) Oaktree Capital Management	393	233	625	3%
Sub-Total	\$8,212	\$4,773	\$12,986	57%
Remaining Managers	\$6,621	\$3,021	\$9,642	43%
Total	\$14,833	\$7,795	\$22,628	100%

Source: State Street as of 12/31/13 quarterly holdings report





Real Assets

Eric Lang, Senior Managing Director

Grant Walker, Director

June 2014

Agenda

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Executive Summary

PERFORMANCE				PORTFOLIO GROWTH ²			
Asset Class	1-Year Return	3-Year Return	5-Year Return	Real Assets (\$ millions)	1-Year	3-Year	5-Year
Real Assets TWR	12.6%	12.2%	5.4%	Ending Value	\$15,138	\$15,138	\$15,138
Real Assets Benchmark TWR	12.9%	12.5%	5.0%	less Starting Value	13,266	7,654	2,967
TUCS Peer Comparison TWR ¹	25 th	25 th	45 th	less Contributions	2,548	7,635	13,132
Real Assets IRR	12.4%	12.2%	9.7%	plus Distributions	2,439	4,422	5,443
				Investment Return	\$1,763	\$4,271	\$4,482

LONG TERM MARKET RETURN AND RISK EXPECTATIONS				
Style	Portfolio Weight	Strategic Goal	Expected Market Return ³	Public Risk Proxy ⁴
Core	30.0%	Diversification/Beta/Inflation Protection	6.3%	20.3%
Value-Add	10.0%	Return Enhancement/Inflation Protection	7.3%	24.4%
Opportunistic	30.0%	Return Enhancement	9.3%	35.6%
Real Assets Special Situations (RASS)	12.0%	Relative Value	7.3%	21.6%
Other Real Assets	18.0%	Inflation Protection	7.5%	20.0%
REAL ASSETS TOTAL	100.0%	Diversification/Inflation Protection	7.6%	25.6%

ALLOCATION SUMMARY						
Style	% of Portfolio			% of Total Trust		
	12/31/2013	12/31/2012	Change	12/31/2013	12/31/2012	Change
Core	29.5%	31.4%	-1.9%	3.5%	3.5%	0.0%
Value Added	14.5%	13.7%	0.8%	1.7%	1.6%	0.1%
Opportunistic	37.6%	37.1%	0.5%	4.1%	4.0%	0.1%
Real Assets Special Situations (RASS)	9.8%	9.8%	0.0%	1.1%	1.2%	-0.1%
Other Real Assets	7.4%	7.2%	0.2%	1.2%	2.1%	-0.9%
Emerging Managers	1.1%	0.8%	0.3%	0.2%	0.1%	0.1%
REAL ASSETS TOTAL	100.0%	100.0%	-	11.9%	12.7%	-0.8%

¹TUCS Report as of 3/31/14

²State Street reports as of 12/31/13, 12/31/10, and 12/31/08, excluding ENR

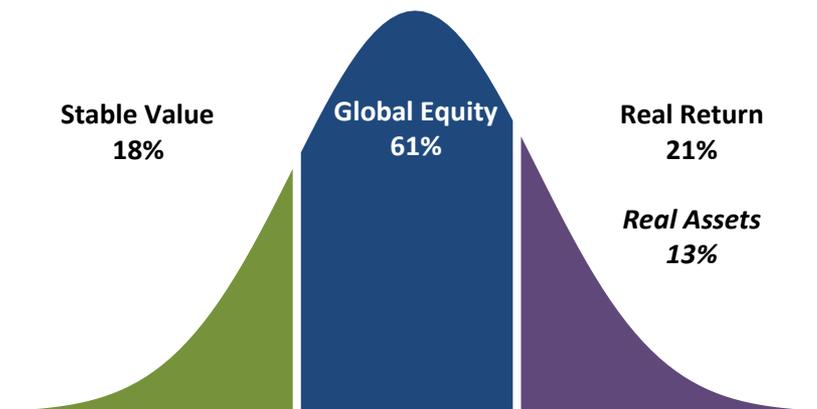
³Townsend

⁴TRS Risk Group

Executive Summary

Role in the TRS Trust

Trust Allocation



Three Year Correlation

(0.53)	0.56	0.48
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Real Assets

Portfolio Target	Portfolio Weight	Expected Market Return ¹	Volatility	
			Observed	Public Risk Proxy ²
Core	30%	6.3%	7.9%	20.3%
Value Added	10%	7.3%	17.3%	24.4%
Opportunistic	30%	9.3%	22.2%	35.6%
RASS	12%	7.3%	20.9%	21.6%
Other Real Assets	18%	7.5%	7.5%	20.0%
Private Real Assets Total	100%	7.6%	14.1%	25.6%
Performance ³	Return	Benchmark	Excess Return	TUCS Rank
1-Year TWR	12.6%	12.9%	-0.3%	25 th
3-Year TWR	12.2%	12.5%	-0.3%	25 th
5-Year TWR	5.4%	5.0%	0.4%	45 th
Drawdown Risk	Drawdown ⁴			
S&P 500	45.8%			
REITs (MSCI US REITs)	66.4%			
TRS Real Assets ⁵	41.5%			

¹Townsend

²TRS Risk Group. Represents the public markets proxy of de-smoothed private assets as used in the TRS Risk Model. For comparison, S&P 500 is 20.0% and MSCI REITs is 34.2%.

³TWR Performance excludes REITs

⁴S&P 500 drawdown date 03/31/09, REITs drawdown date 03/31/09, and TRS Real Assets drawdown date 03/31/10

⁵Prior to the Global Financial Crisis, the largest drawdown was 0.9% (12/31/06, during the ramp up of the RA portfolio)

Real Assets Organization Chart



Eric Lang
Managing Director
BBA, UT Austin
MBA, U. of Houston



Grant Walker
Director
BBA, Baylor
MBA, St. Edwards



Nathan Zinn
Sr. Investment Manager
BA, MBA Northwestern



Jennifer Wenzel
Investment Manager
BBA, UT Austin



Craig Rochette, CFA, CAIA
Investment Manager
BS, U. of Arizona



Brian Baumhover
Investment Manager
BS Iowa State
MBA, UT Austin



Matt Halstead
Associate
BBA, MPA UT Austin



Kimberly Carey
Associate
BBA, Texas A&M



Blake Holman
Analyst
BBA, Texas State
MBA, U. of Colorado



Carter Ware
Analyst
BA, U. of Virginia



Patrick Curby-Lucier
Analyst
BBA, Texas A&M



Malorie Harding
Analyst
BBA, Texas A&M



Michael Stewart
Analyst
BBA, MS Texas A&M



Gracie Marsh
Program Analyst
BA, UC Davis



Melissa Kleihege
Deal Flow Analyst
BS, Texas A&M

Advisors and Consultants
LaSalle and Townsend

Portfolio Structure

Primary Objectives

- Achieve a long-term return of 10%
- To outperform our benchmark by 250 basis points
- Portfolio is a partial hedge to inflationary environments and diversifier to the Trust
- Maintain neutral target allocation of the Trust

Methods Employed

- Bottom-up portfolio allocation framework based on various styles
- Top-down long-term funding plan
- Core Real Estate and Infrastructure styles are the foundation of the portfolio structure
- Value investor based on market environment

Portfolio Structure

Global Diversifiers and Tactical Alpha

Global diversification and tactical/opportunistic returns

- Target (30%)
- Actual (36%)

Foundation Complement

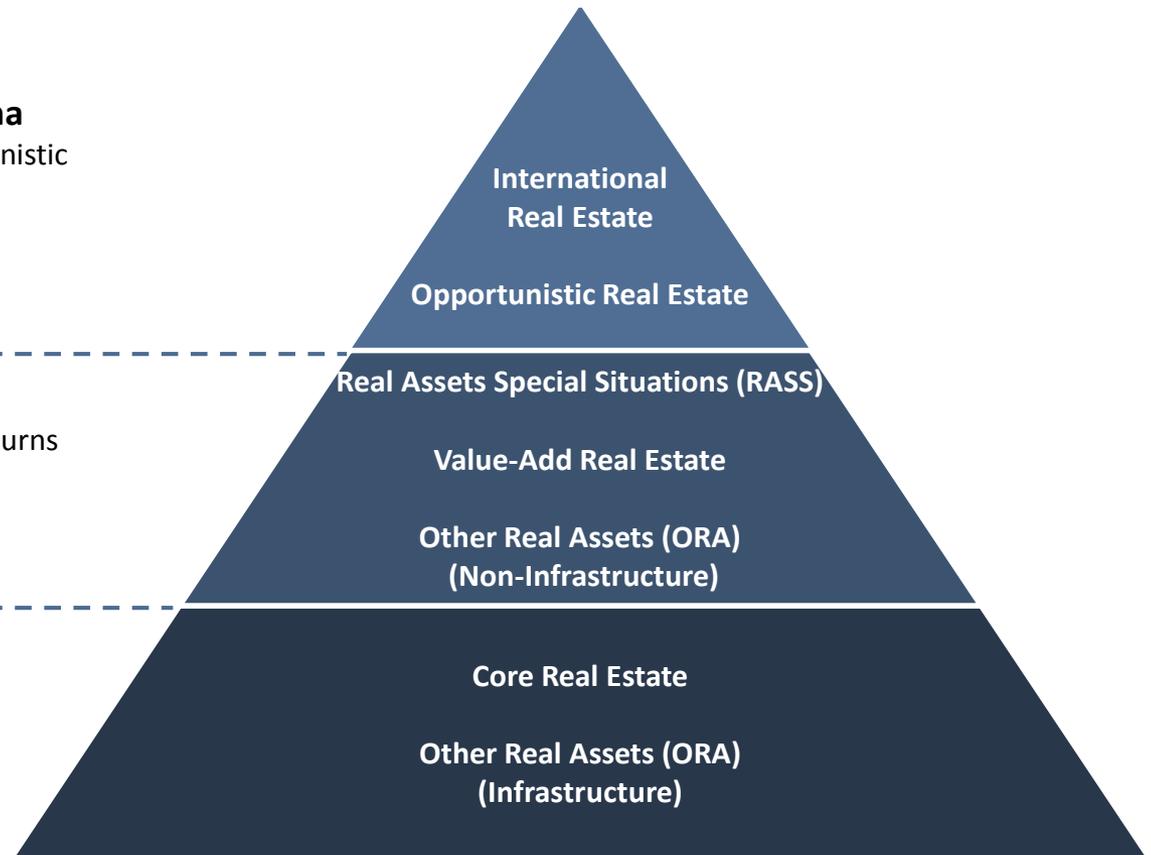
Added diversification and/or enhanced returns

- Target (26%)
- Actual (28%)

Foundation

Stable income with lower volatility, diversification, and inflation sensitivity

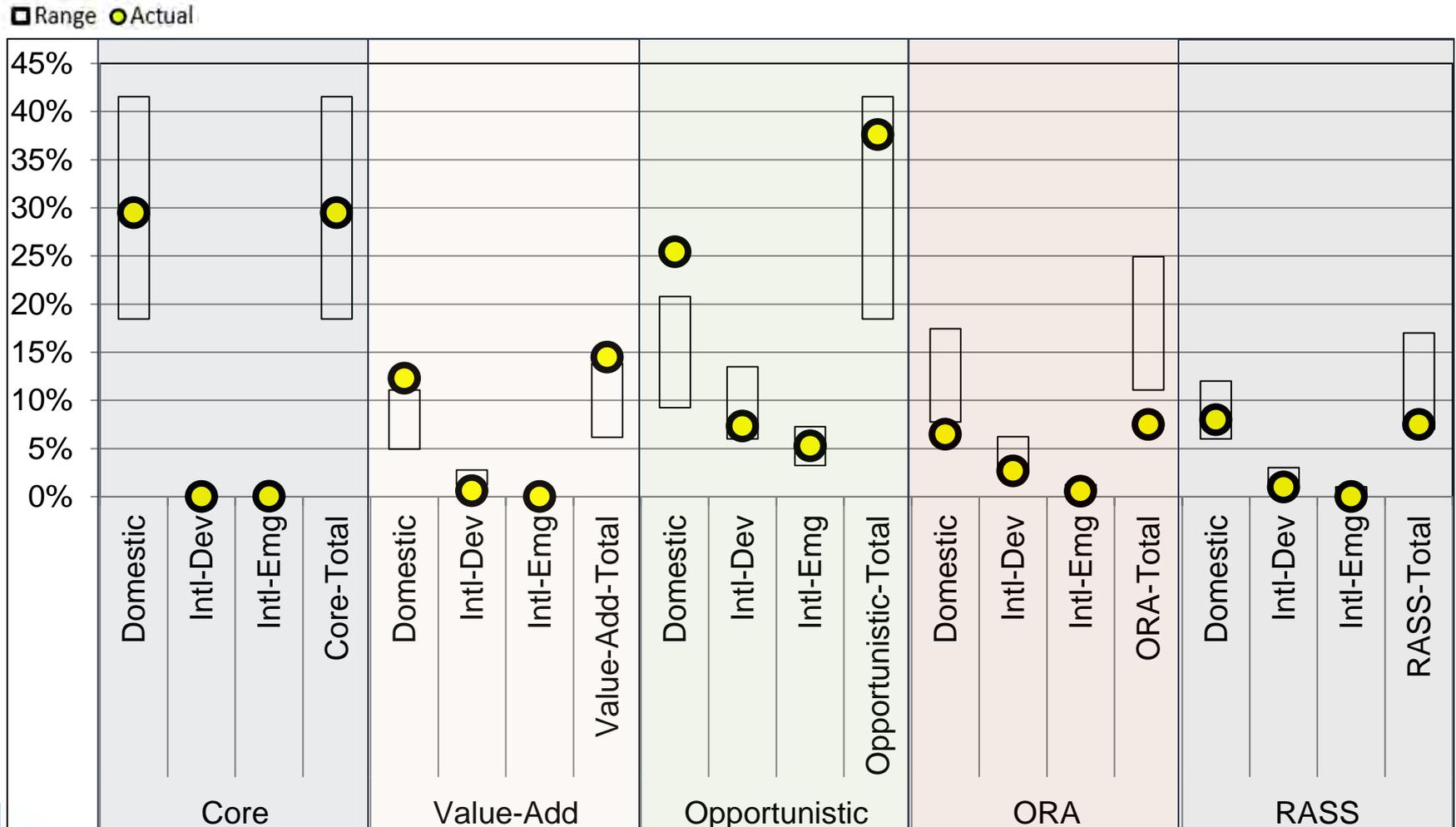
- Target (44%)
- Actual (36%)



Portfolio Structure

Target Allocations by Style and Geographies (Shown as NAV)

- Portfolio is overweight to Domestic Assets¹
- Totals for all investment styles are within current target range with the exception of ORA



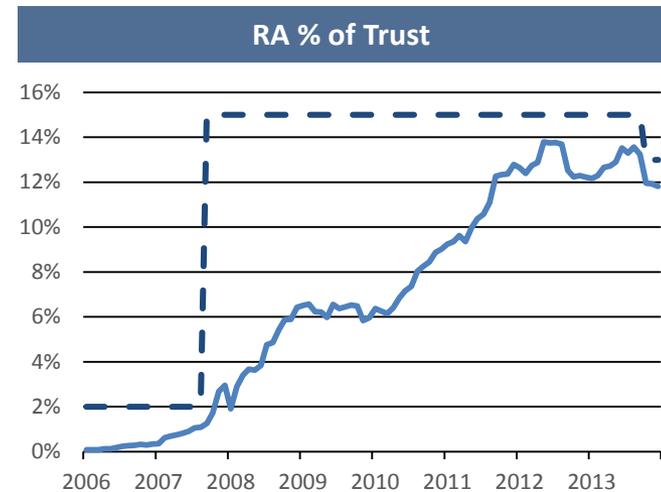
¹The portfolio is overweight Domestic assets by 10.7% in NAV and 5.7% in Exposure

Performance

Asset Growth, Allocation and Returns

Growth (millions)	1-YR	3-YR	5-YR
Ending Value	\$15,138	\$15,138	\$15,138
less Starting Value	13,266	7,654	2,967
less Contributions	2,548	7,635	13,132
plus Distributions	2,439	4,422	5,443
Investment Return	\$1,763	\$4,271	\$4,482

Premier List Investments ¹	Total	Committed Last 15 Months	Committed Last 27 Months
Number of Premier Managers	37	15	21
Percent Invested in Funds	77%	79%	71%
Percent invested in Principal Investments	23%	21%	29%



RA policy target was 2% until 4Q 2007, 15% from 4Q 2007 to 4Q 2013, and is now 13%

Style	TRS Leverage ²	Typical Leverage	Allocation			Investment Returns (TWR) ³			Inception Date
			2013	2011	2009	1-YR	3-YR	5-YR	
Core	34.2%	35% - 50%	29.5%	32.0%	28.0%	12.0%	13.6%	9.0%	2006
Value Added	45.1%	50% - 65%	14.5%	13.0%	14.0%	16.8%	18.6%	-0.1%	2006
Opportunistic	42.7%	65% - 80%	37.6%	34.0%	30.0%	13.8%	10.2%	3.3%	2006
RASS	27.2%	Varies	9.8%	11.0%	16.0%	10.3%	16.5%	N/A	2010
Other Real Assets	28.8%	< 70%	7.4%	10.0%	12.0%	9.0%	7.0%	3.0%	2007
Emerging Managers	50.0%	70%	1.1%	NA	NA	11.9%	NA	NA	2011
Real Assets Total	37.6%		100%	100%	100%	12.6%	12.2%	5.4%	2006

¹ Calendar year 2013 and Q1 2014 approved by IIC

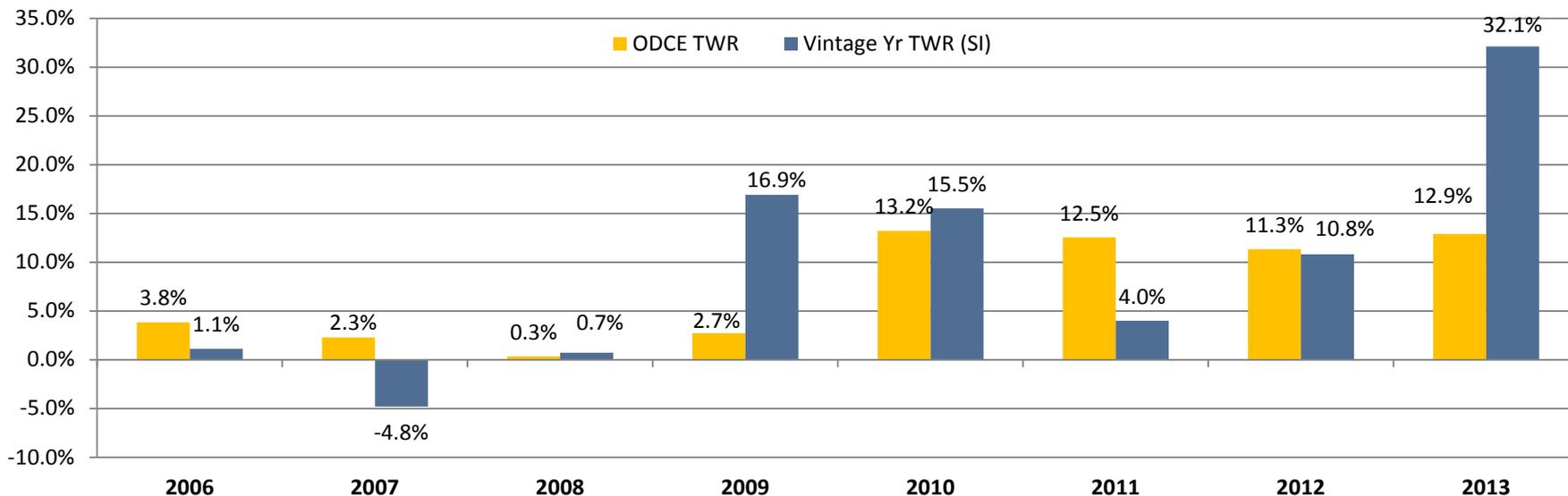
²Townsend

³State Street as of 3/31/2014

Performance

TRS Vintage Year Comparison

- The Real Asset portfolio continues to be positioned with the majority of the investments made after the Global Financial Crisis



	2006	2007	2008	2009	2010	2011	2012	2013
Committed	\$1,428	\$3,359	\$3,787	\$2,631	\$4,012	\$1,411	\$2,297	\$2,776
Invested	1,399	3,136	3,396	2,164	3,232	881	1,119	572
Unfunded	\$29	\$223	\$391	\$467	\$780	\$530	\$1,178	\$2,204

- Cumulative capital invested, segregated by year committed



Returns from State Street as of 3/31/2014

Performance

Accomplishments and Priorities

2013 Accomplishments

- Returned 12.6% and 12.2%, respectively for 1- and 3- year periods
- Collaborated with Risk Group on risk management, monitoring tools, interest rate and currency exposure
- Nominated for 2013 North American Limited Partner of the Year by PERE (won 3 of last 4 years)
- Committed \$3 billion to 22 investments
 - \$1,802 billion to nine funds
 - \$750 million to six principal investments
 - \$350 million to two funds under the SPN
 - \$74 million to four Emerging Managers

2014 Priorities

- Preferred global destination for large, attractive investments
 - Advance the successful principal investments program with a goal of \$575 million in commitments
 - Continue to be a thought-leading limited partner
- Commit up to \$3.8 billion
- Further develop the Real Assets team
- Determine better ways to utilize technology and investment operations to develop stronger pricing skills, valuation systems and disciplines
- Streamline critical processes
- Work toward trust-level goal of increasing productivity and decreasing expenses

Market Conditions

Domestic Only

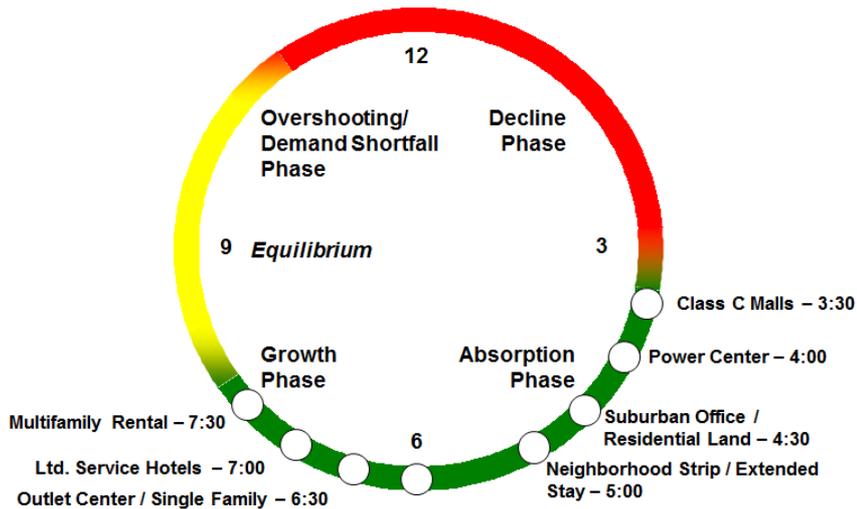
	2013 "Today"	2009 "Trough"	2007 "Peak"	2002 "Pre-Peak"	10 year Average
Capital Flows (billions)					
Total Net Capital Flows	\$189	-\$263	\$308	\$135	\$173
REIT Capital Offerings	\$100	\$45	\$47	\$40	\$55
Fund Dollars Raised	\$40	\$27	\$61	\$10	\$37
Number of Funds	103	100	155	53	105
Transactions (billions)					
All Transactions	\$287	\$55	\$393	\$103	\$222
Percent of US GDP	1.7%	0.4%	2.7%	0.9%	1.5%
Fund Transactions	\$30.5	\$3.7	\$69.6	\$7.6	\$27.0
Institutional Transactions	\$48	\$7	\$62	\$20	\$37
Private Transactions	\$125	\$32	\$176	\$41	\$101
Pricing					
Cap Rates	6.7%	7.6%	6.6%	8.7%	7.0%
Cap Rate Spread to UST	3.8%	4.0%	2.5%	4.6%	3.6%
Debt					
CMBS Issuance	\$93	\$1	\$230	\$52	\$88
Percent Debt	60-65%	65-70%	65-85%	65%	65%-70%
Availability (1=hard to access; 10=easy)	8	2	10	5	5
Terms	Normal Standards	Tight Standards	Covenant Light	Tight Standards	n/a
Interest Rate	3.5% - 5.5%	4.5% - 6.5%	4.5%-6.5%	5.0%-7.0%	

Market Conditions

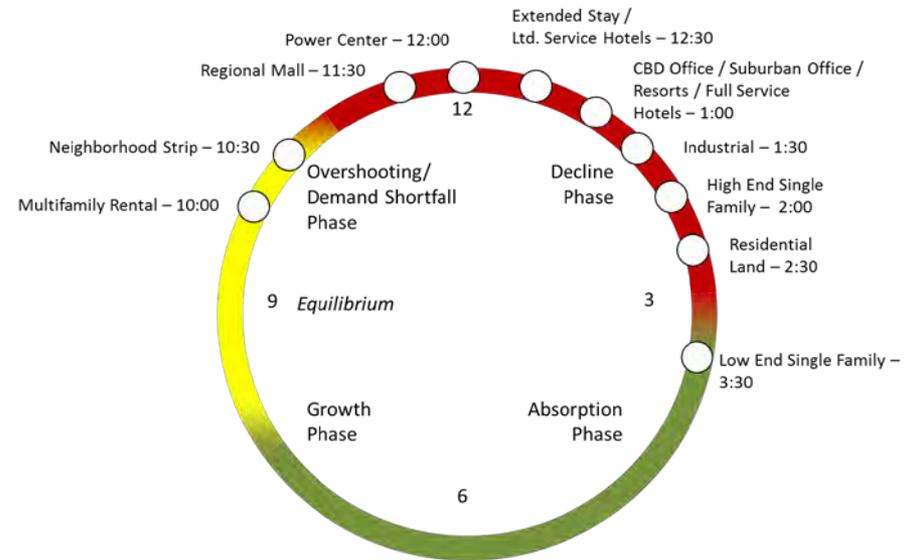
Real Estate Fundamentals

- Supply and demand fundamentals are excellent as continued shortage of new supply has helped keep the market strong

End of Year 2013



End of Year 2009



Market Conditions

- It has taken five to six years for commercial property to recover their values
- More than recovered from peak
- The recovery has been most prevalent in trophy assets

Green Street Commercial Property Price Index



- REITs struggled in 2013 and have recovered in 2014
- REITs are currently valued slightly above NAV

Green Street REIT Valuations



Weighted average (weighted by NAV*shares outstanding) of all US-listed companies in Green Street's coverage universe, excluding Hotels and those without a published opinion. Equally-weighted average prior to Jan '93.

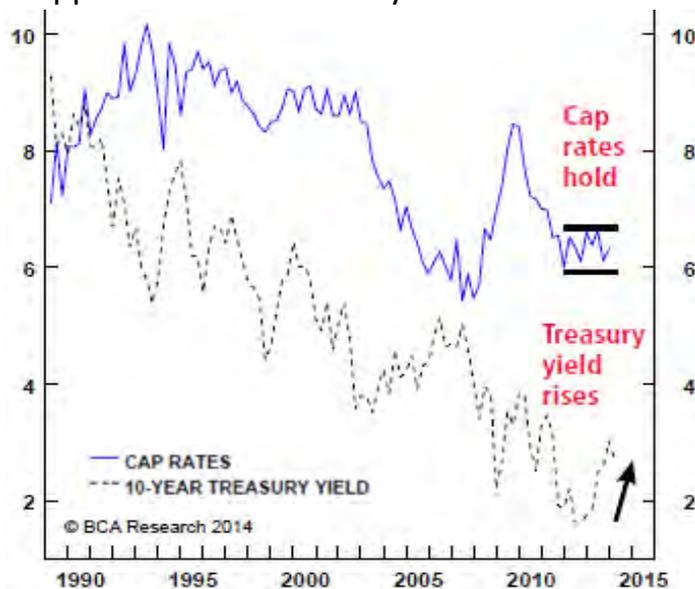
Source: Green Street Advisors as of 3/31/2014

Market Conditions

Other Considerations

Macro Issues

- Unemployment is decreasing and office absorption is increasing
- Difficult to find value in new “Core” real estate acquisitions
- Recent rise in 10-year Treasury yield has compressed the US Treasury to cap rate spread as cap rates have remained relatively unchanged; reflecting investor’s continued appetite for Real Asset yield



General Partners

- Working on data delivery standardization methods
- Top managers have raised significant capital
- Increasing focus on Premier List Firms
- No shortage of capital in the market
- Large Canadian and European investors are increasingly turning to direct transactions

Organization

- Team leadership transition
- Addition of new team members
- As the portfolio matures, the team has a greater focus on portfolio and asset management
- Continuing focus on principal investments and unique vehicles

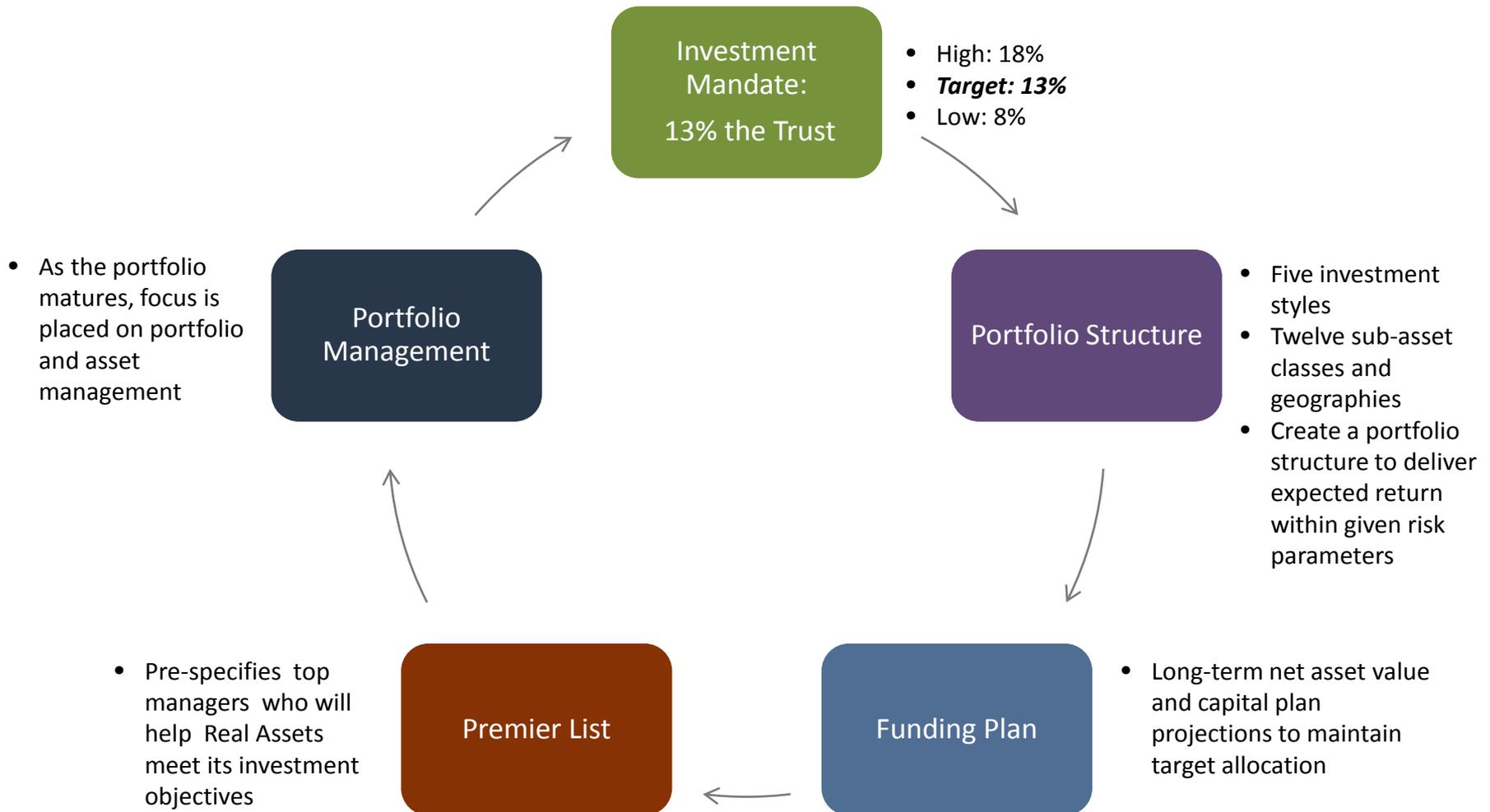
Summary

- Real Asset allocation is projected to reach long-term neutral target (13%) by 2015
 - Strong Trust growth may delay reaching target allocation
- Performance on a one- and three-year basis are above long-term target
- Real Assets is becoming self-funding
- Principal Investment capabilities are rising and results are excellent
- Market conditions are neutral to fully-priced, difficult to find value
- General Partner relationships strong and increasingly focused
- Strategic Partnerships functioning well
- Seller of “core” real estate

APPENDIX

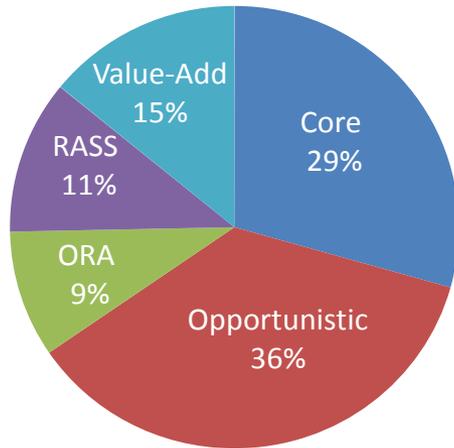
Portfolio Structure

Investment Process

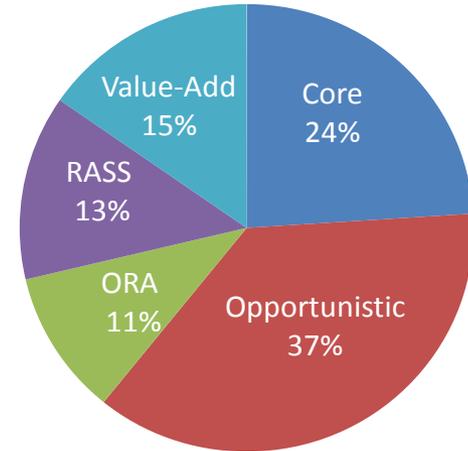


Real Assets Portfolio Composition

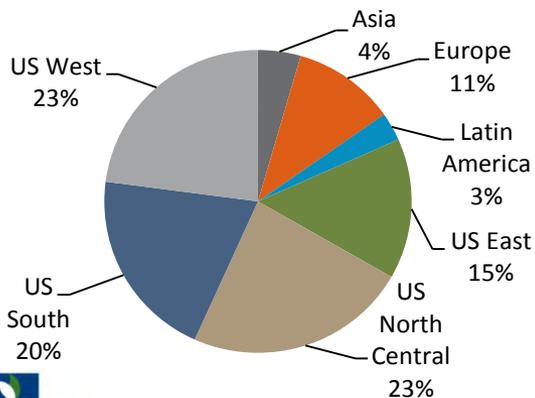
Market Value by Strategy



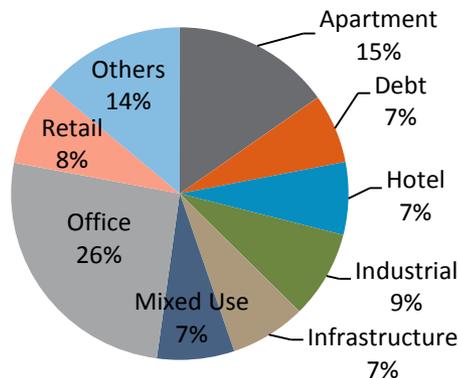
Exposure by Strategy



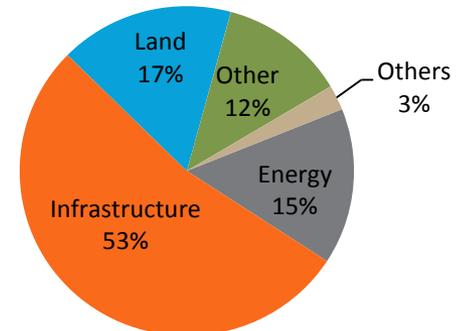
Private Real Estate – Region by Property Diversification by Market Value



Private Real Estate – Property Type Diversification by Market Value



Other Real Assets Diversification by Market Value



Note: All Real Asset compositions include Energy Natural Resources (ENR) and Emerging Manager (EM) allocations

Top 10 Relationships

By Exposure (millions), as of December 31, 2013

Manager	Market Value	Unfunded Commitments	Total Exposure	Percentage Exposure
1) Blackstone Group	\$1,243	\$433	\$1,677	8%
2) Principal Real Estate Investors	778	528	1,307	6%
3) LaSalle	771	346	1,118	5%
4) Prudential Realty Advisors	778	49	827	4%
5) JP Morgan Investment Management	809	13	822	4%
6) Brookfield Asset Management	384	422	806	4%
7) Stockbridge Capital Group	682	115	797	4%
8) USAA Real Estate Company	723	5	729	3%
9) CB Richard Ellis Investors	474	144	619	3%
10) AEW Capital Management	488	119	607	3%
Sub-Total	7,131	2,174	9,306	44%
Remaining Managers	8,007	3,626	11,632	56%
Real Assets Total	\$15,138	\$5,800	\$20,939	100%

Real Asset Strategy Definitions

Core

- Institutional quality, best-located and best-leased assets in the market in each of the traditional property types (office, multifamily, retail, industrial)
- Leverage limit is 50% loan-to-value (LTV)

Value-Add

- Return-enhancing strategies executed at the property level designed to enhance value through execution of one or more of the following strategies: lease-up, rehabilitation, repositioning
- Typical leverage is 50% to 65% LTV

Opportunistic

- Broad range of risk and return via opportunity funds, specialized investments, and mezzanine debt or equity with the majority of strategies involving some level of development or distress
- Leverage is usually 70% LTV and higher

Real Assets Special Situations (RASS)

- Publicly traded shares of listed REITs (Real Estate Investment Trusts) and REOCs (real estate operating companies) or other real asset related entities, public or private real asset debt, energy MLPs (Pipelines)

Other Real Assets (ORA)

- Infrastructure, commodities, agricultural real estate, timber, and other opportunistic investments providing value enhancement with relatively low expected volatility

Types of Principal Investments

Co-Investment (Alongside a Fund)	Direct (Two Types)	Single Limited Partnership (LP) Fund	Sidecar (Two Types)
<p>What: A specific investment opportunity that is brought to TRS by an existing manager</p> <p>Why: Manager needs more capital than is available in the main fund (due to size, concentration, etc.)</p> <ul style="list-style-type: none"> • TRS equity invests alongside main fund and GP serves as fiduciary of the co-investment vehicle • RA terms are usually negotiated as half (50% discount) compared to the main fund fees/promote, PE terms are '0%/0%' • Typically in/out on same timing & terms as GP 	<p>What: A specific investment that can be underwritten and evaluated immediately</p> <p>Why: Allows TRS to capitalize on a specific investment opportunity in real-time</p> <p><u>With a Manager</u></p> <ul style="list-style-type: none"> • Majority of capital comes from TRS • TRS underwrites the investment alongside manager • Unlike a Co-Investment – TRS may have the ability to control hold period and exit decision <p><u>Without a Manager</u></p> <ul style="list-style-type: none"> • All capital comes from TRS • TRS underwrites the investment and receives a prudent investor letter from external advisors • Unlike a Co-Investment – TRS has ability to control hold period and exit decision 	<p>What: Fund created with a specific strategy to invest over an Investment period. No pre-specified assets.</p> <p>Why: Create a vehicle to target a specific strategy and invest over a period of time</p> <ul style="list-style-type: none"> • Usually 100% TRS capital • TRS has opt-out rights (negative control) and reviews each investment • Can be open-ended and recycle capital • Terms are market driven (but less than a commingled fund) • TRS has ability to control hold period and exit decision 	<p>What: Fund created alongside a main fund</p> <p>Why: Fees and/or promote are lower than main fund and negotiated in advance</p> <p><u>TRS Control (PI)</u> – TRS has opt-out rights and more control over which deals are put into the sidecar</p> <ul style="list-style-type: none"> • TRS controls decision to invest in a specific investment alongside the fund • Gives manager pre-committed co-investment capital for deals with short time-lines <p><u>Manager Controlled (Non-PI)</u> – Manager has discretion for when to allocate sidecar capital to opportunities – either pro-rata in every deal or manager drives investment decision</p> <ul style="list-style-type: none"> • Purpose: Lower overall blended fee drag for TRS



Energy & Natural Resources

Vaughn Brock

Director

June 2014

Agenda

- I. Executive Summary
- II. Organizational Structure
- III. Portfolio Structure
- IV. Performance
- V. Market Outlook and Conditions
- VI. Summary
- VII. Appendix

Executive Summary

PERFORMANCE ¹				PORTFOLIO GROWTH ¹			
Asset Class	1-Year TWR	3-Year TWR	5-Year TWR	ENR (\$ in millions)	1-Year	3-Year	ITD ¹
ENR	NA	NA	NA	Ending Value	\$2,128	\$2,128	\$2,128
Cambridge/ CPI Blended Index ⁴	<u>6.4%</u>	<u>9.2%</u>	<u>4.6%</u>	less Starting Value	1,713	734	0
Excess Return	NA	NA	NA	less Contributions	506	1,716	2,536
				plus Distributions	180	549	750
				Investment Return	\$88	\$227	\$342
LONG-TERM MARKET RETURN AND RISK EXPECTATIONS							
Style	Target Portfolio Weight	Strategic Goal	Expected Market Return ²	Public Risk Proxy ³			
Zone 2	16%	Hi inflation Beta	8-12%	15%			
Zone 3	32%	Hi inflation Beta	12-16%	18%			
Zone 4	32%	Hi inflation Beta	16%+	28%			
Zone 7	10%	Lo Inflation Beta	12-16%	11%			
Zone 8	10%	Lo Inflation Beta	16%+	20%			
ENR TOTAL	100%	Equity Alpha / Diversification	15.9%	22.6%			
ALLOCATION SUMMARY							
Style	% of Portfolio ¹			% of Total Trust ¹			
	<u>12/31/2013</u>	<u>12/31/2012</u>	<u>Change</u>	<u>12/31/2013</u>	<u>12/31/2012</u>	<u>Change</u>	
Zone 2	32.5%	26.6%	5.9%	0.5%	0.4%	0.2%	
Zone 3	15.6%	15.4%	0.2%	0.3%	0.2%	0.0%	
Zone 4	31.6%	42.0%	-10.5%	0.5%	0.6%	-0.1%	
Zone 7	6.6%	4.9%	1.7%	0.1%	0.1%	0.0%	
Zone 8	<u>13.8%</u>	<u>11.1%</u>	2.7%	<u>0.2%</u>	<u>0.2%</u>	<u>0.1%</u>	
ENR TOTAL	100.0%	100.0%		1.7%	1.5%	0.2%	

¹ENR Officially became a portfolio 9/30/2013, legacy investments included here with NAV as of 12/31/2013

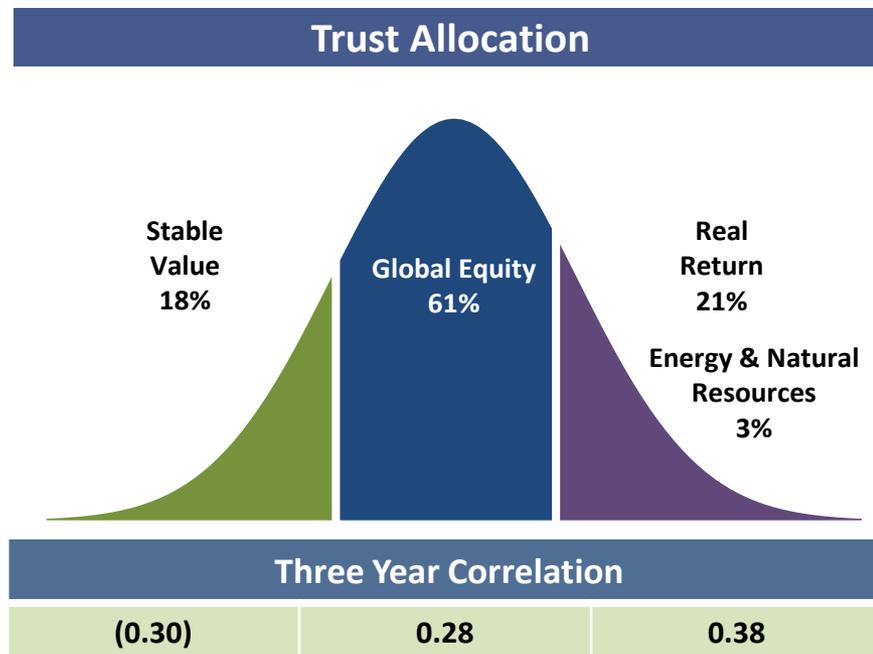
²Targeted risk / return profile of zone.

³ TRS Risk Group/Morgan Stanley based on S&P 500 Energy Sector, still in process of refining proxy

⁴75% Cambridge Natural Resources Index (reweighted), 25% CPI

Executive Summary

Role in the TRS Trust



Energy & Natural Resources					
Portfolio Target	Portfolio Weight	Expected Market Return ¹	Inflation Beta	Volatility	
				Observed	Public Risk Proxy ²
Zone 2	16%	8-12%	>1	9.6%	15%
Zone 3	32%	12-16%	>1	15.8%	18%
Zone 4	32%	16%+	>1	12.6%	28%
Zone 7	10%	12-16%	.5>beta<1	15.9%	11%
Zone 8	10%	16%+	.5>beta<1	30.9%	20%
ENR Total	100%	15.9%	Target >1	9.5%	22.6%
Performance	IRR ⁴	TWR ⁴	Policy Benchmark		
Since Inception ³	NA	-0.01%	NA		
Drawdown Risk	Drawdown ⁵				
S&P 500	45.8%				
S&P 500 Energy Sector	53.8%				
ENR Benchmark	19.0%				
Cambridge Re-Weight	24.8%				

¹Targeted risk / return profile of zone

²TRS Risk Group

³ENR Officially became a portfolio 9/30/2013, legacy investments included here with NAV as of 12/31/2013

⁴State Street report as of 03/31/2014

⁵S&P 500 & S&P 500 Energy Sector Drawdown - 3/31/09 - ENR Benchmark & Cambridge Re-Weighted Index Drawdown - 6/30/09

ENR Organization Chart



Vaughn Brock
Director
BS University of Oklahoma
MBA Harvard



John Ritter, CFA
Director
BBA, MBA, JD
UT Austin



Carolyn Hansard
Senior Associate
BS, MBA UT Austin



Blake Holman
Analyst
BBA Texas State
MBA U of Colorado



Carter Ware
Analyst
BA U. of Virginia



Malorie Harding
Analyst
BBA Texas A&M



Patrick Curby-Lucier
Analyst
BBA Texas A&M



Michael Stewart
Analyst
BBA, MS Texas A&M

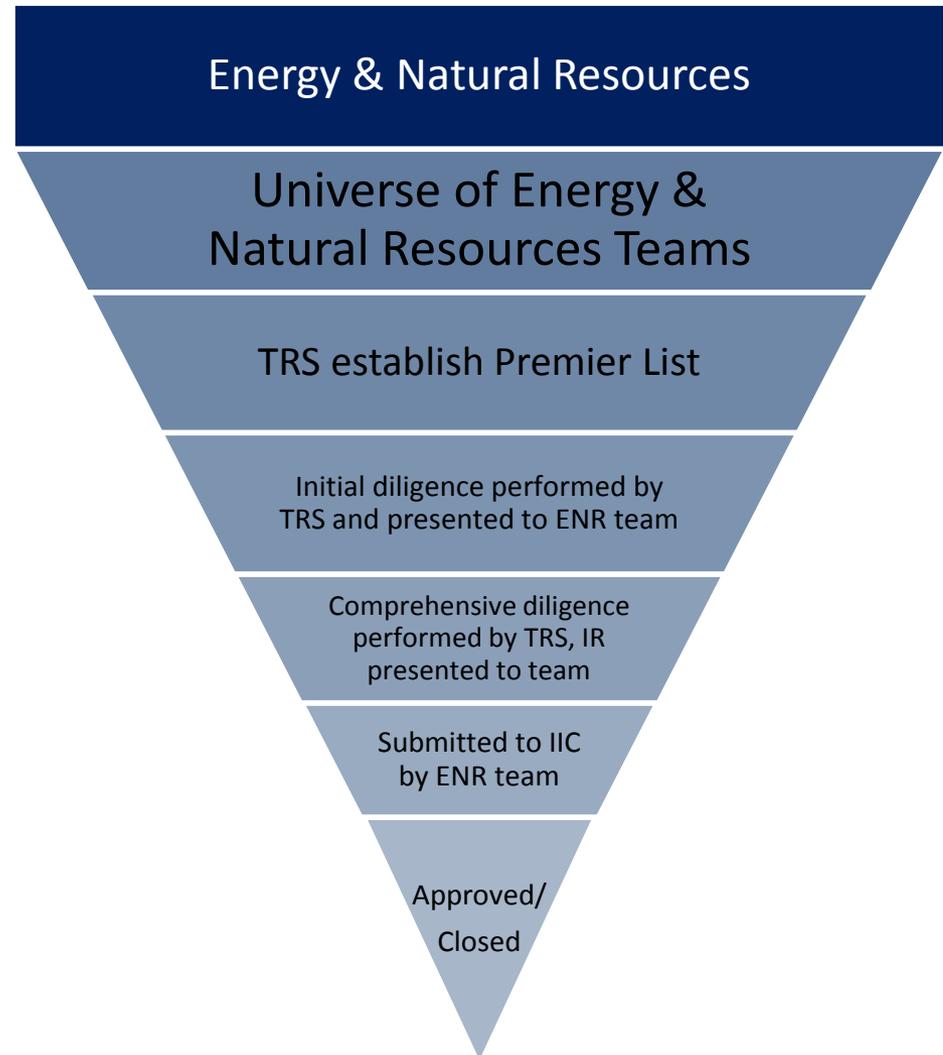
Advisors and Consultant
Hamilton Lane (Fund Advisors)
Tudor Pickering & Holt (Principal Investments)

Internal Advisory Team
Ashley Baum, Asset Allocation
Brian Baumhover, Real Assets
Mark Cassens, Internal Public Markets
Mike Lazorik, Private Equity
Ralph Linn, Internal Public Markets
Shayne McGuire, Internal Public Markets
Scott Ramsower, Private Equity

Portfolio Structure

ENR Investment Process

- Allocation set at 3% of trust
- Initial review of Energy and Natural Resource investment landscape
- Review of existing portfolio
- Established target portfolio zone allocations
- Working toward achieving:
 - Sustained portfolio at 3% of Trust
 - Long-term target returns of 15.9%



Energy & Natural Resources Zones

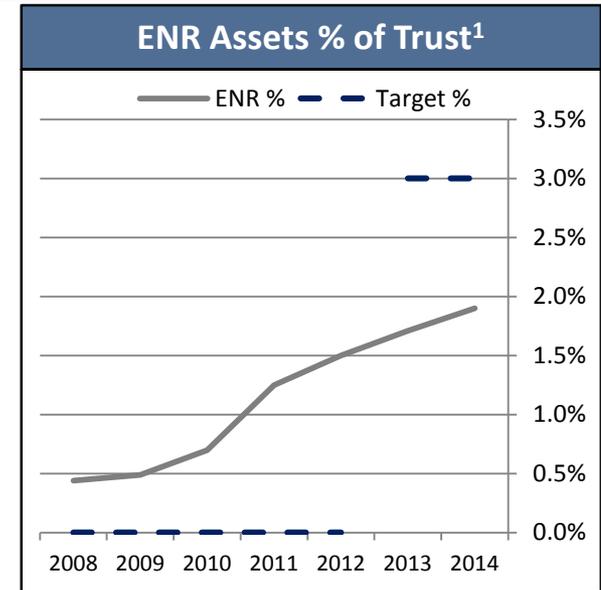
		Returns			
		4%-8%	8%-12%	12%-16%	16%+
Inflation Sensitivity	High (Inflation Beta > 1.0)	Zone 1	Zone 2	Zone 3	Zone 4
			16% / 32% Target/Current Agriculture Timber Proven Reserves	32% / 16% Target/Current Enhanced Reserves Upstream Financing Aggregates	32% / 31% Target/Current Upstream PE Services & Tech
	Medium (0.5 < Inflation Beta < 1.0)	Zone 5	Zone 6	Zone 7	Zone 8
				10% / 7% Target/Current Contracted Midstream Power Generation MLPs Refining	10% / 14% Target/Current Midstream and Power Development

Performance

Asset Growth, Exposures and Returns

Growth (\$ in millions) ¹	1-Year	3-Year	ITD ¹
Ending Value	\$2,128	\$2,128	\$2,128
less Starting Value	1,713	734	0
less Contributions	506	1,716	2,536
plus Distributions	180	549	750
Investment Return	\$88	\$227	\$342

Premier List Investments ²	Since 09/30/2013	
	ENR Inception ¹	Total
Number of Premier Managers	5	19
Percent Invested in Funds	100%	74%
Percent Invested in Principal Investments	0%	26%



Style	NAV ¹			Investment Returns			Inception Date
	2013	2010	2008	1-Year	3-Year	5-Year	
Zone 2	32.5%	16.1%	0.0%	New Portfolio			10/1/2013
Zone 3	15.6%	0.0%	0.0%				
Zone 4	31.6%	68.0%	100.0%				
Zone 7	6.6%	-0.5%	0.0%				
Zone 8	13.8%	16.4%	0.0%				
ENR Total	100%	100%	100%				

¹ENR Officially became a portfolio 9/30/2013, legacy investments included here with NAV as of 12/31/2013

²Excludes Emerging Managers

Performance

Accomplishments and Priorities

2013 Accomplishments

- Met with all existing ENR Managers and reviewed all 145 portfolio companies in detail
- Developed ENR Premier List
- Established ENR Benchmark
- Committed \$865 million
 - \$650 million to four funds
 - \$200 million to one fund under the SPN
 - \$15 million to one Emerging Manager
- Collaborated with Risk Group to develop risk management and monitoring tools
- Approved Co-Investment Manager and Advisor

2014 Priorities

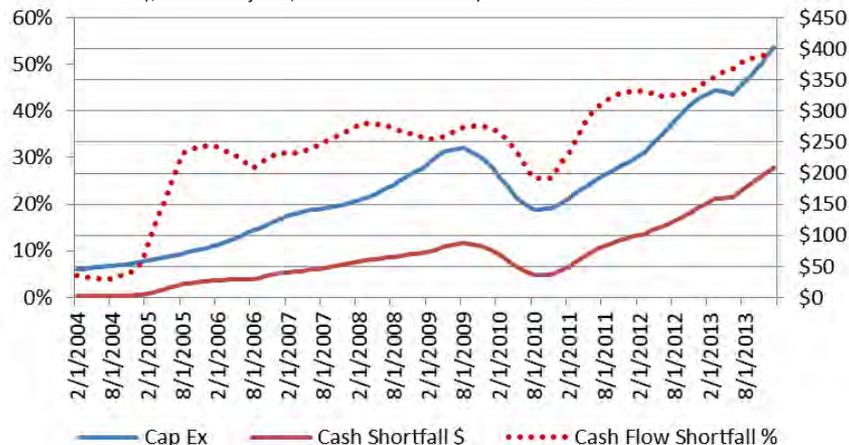
- Preferred global destination for large, attractive investments
 - Enhance Principal Investments impact and strategy by visiting top managers and industry operators
- Complete up to \$1 billion of commitments
- Host ENR Symposium and learn best practices of peers
- Strengthen relationships with managers
- Develop better cash flow model based on fund manager outlooks
- Refine bi-monthly report with standardized data
- Analysis of manager diligence process and value creation methods
- Continue to streamline critical processes, legal review and approval process

Market Conditions

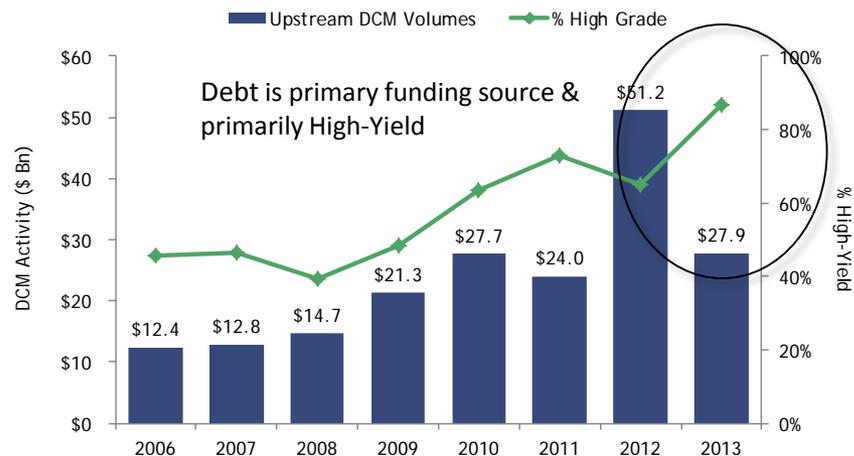
Capital Need and Availability

Large funding gap continues between Cap-Ex and Cash Flows

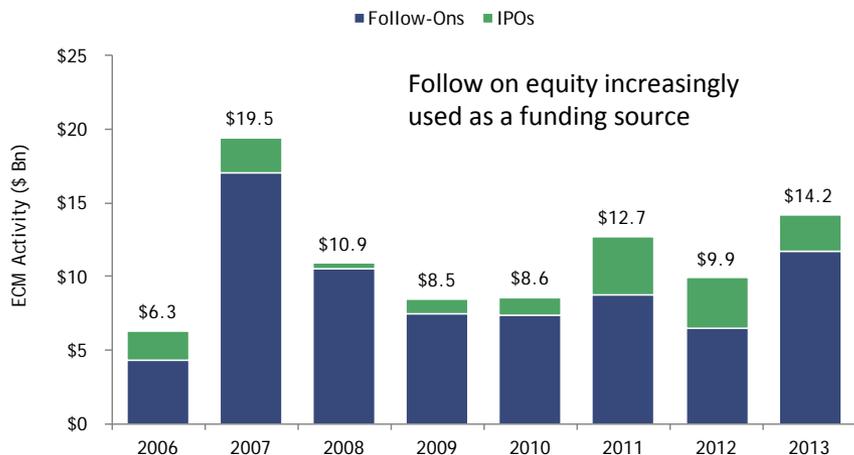
(\$ in billions of USD, unless otherwise noted)



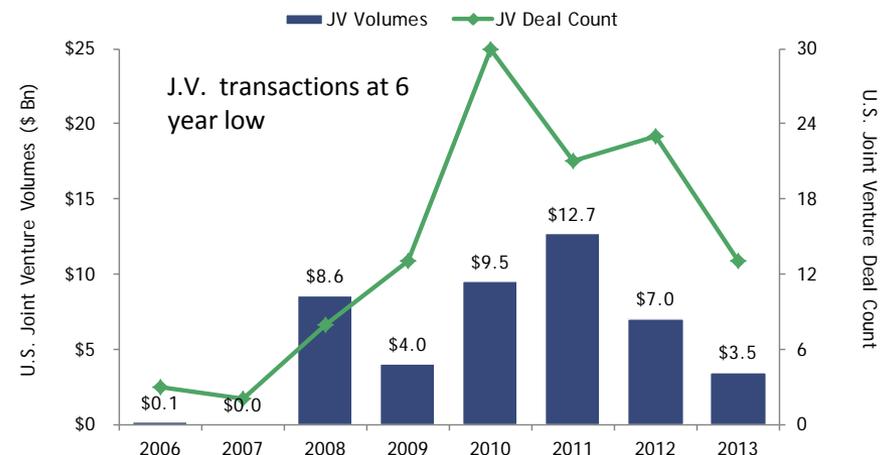
US Upstream Debt Come to Market (Investment Grade & High Yield)



US Upstream Equity Come to Market



US Upstream Joint Venture Capital¹



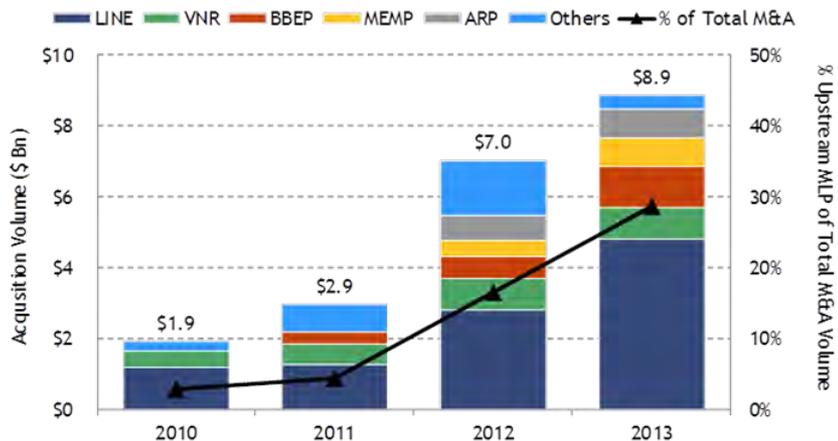
Source: Dealogic; Preqin; and, Tudor, Pickering, Holt & Co.

¹Reflects only total consideration (cash + drilling carry) disclosed

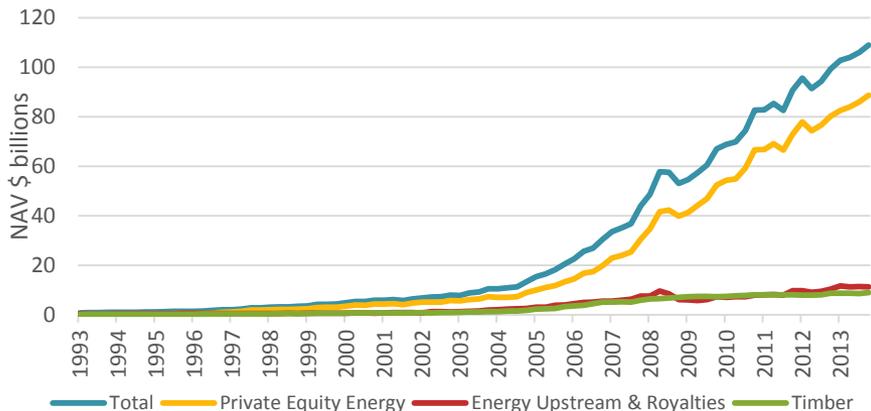
Market Conditions

Exits Analysis

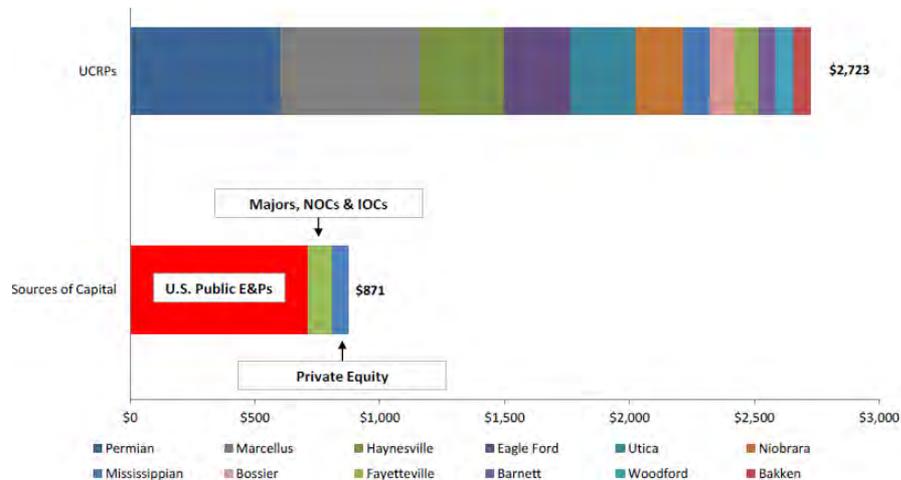
Upstream MLPs playing larger and larger role in A&D market



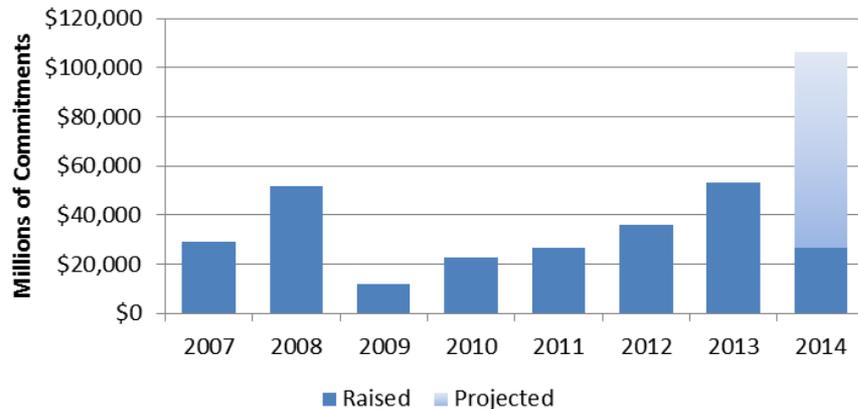
ENR related NAV continues to move higher funded mostly by PE related funds



Upstream capital deployed by basin and source of capital



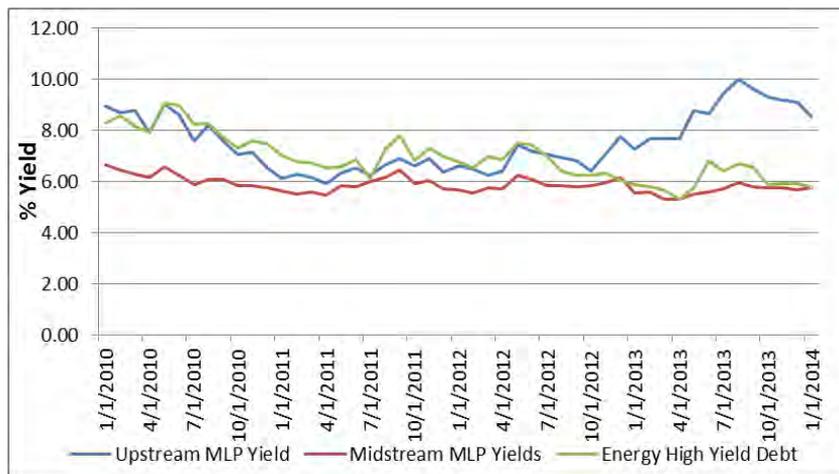
PE Fund raising for ENR funds at an all time high in 2013



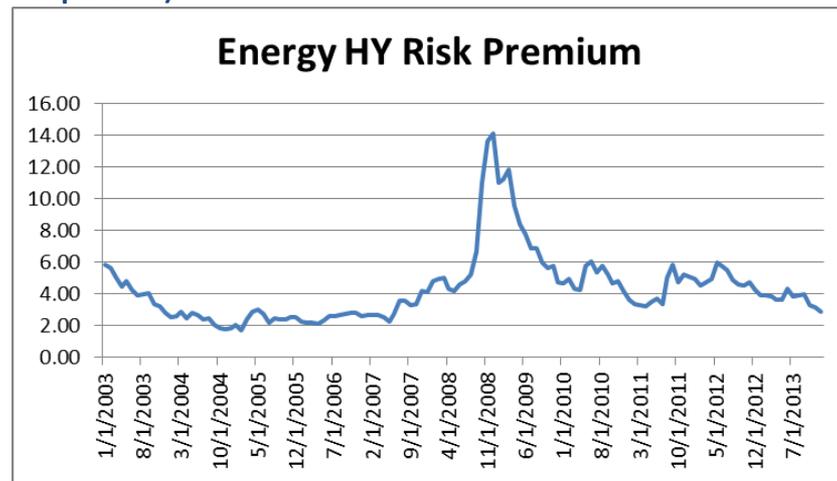
Market Conditions

Energy Valuation Metrics

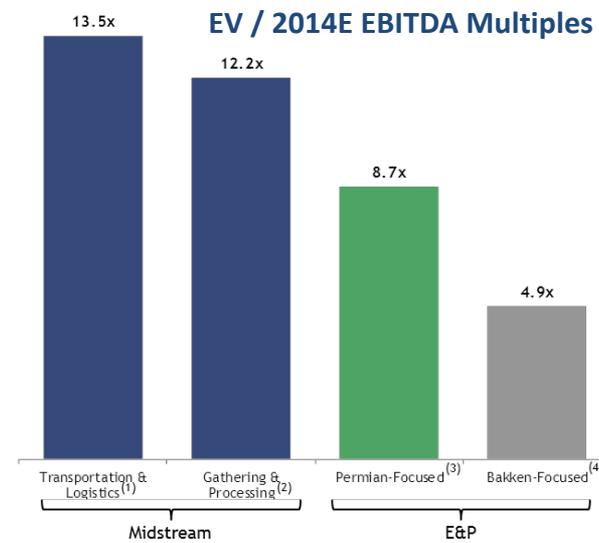
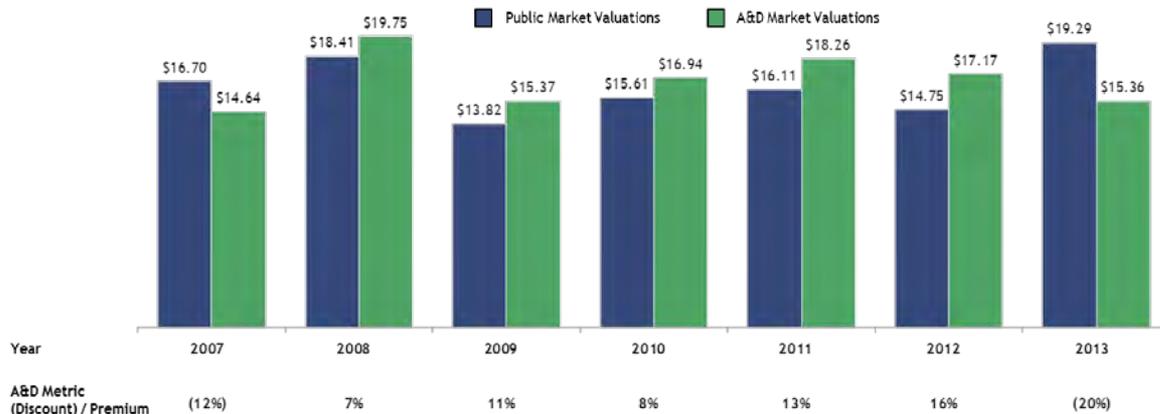
Gap opening between Upstream MLP yields and the cost of High-Yield debt, favors upstream relative value



Energy HY risk premium close to lows (group potentially expensive)



Public market valuations are higher than A&D comps (value of the underlying assets)



Source: Bloomberg; Tudor, Pickering & Holt

Summary

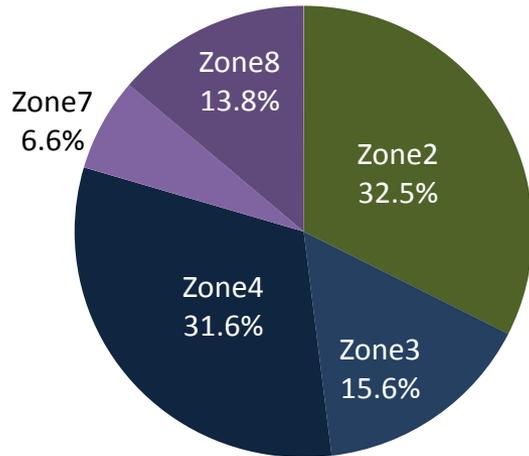
- Energy & Natural Resources portfolio still in development stage
- Portfolio is too young for meaningful historical results
- Principal investment program has been established and in early stages
- Market conditions: positive from a long-term perspective

APPENDIX

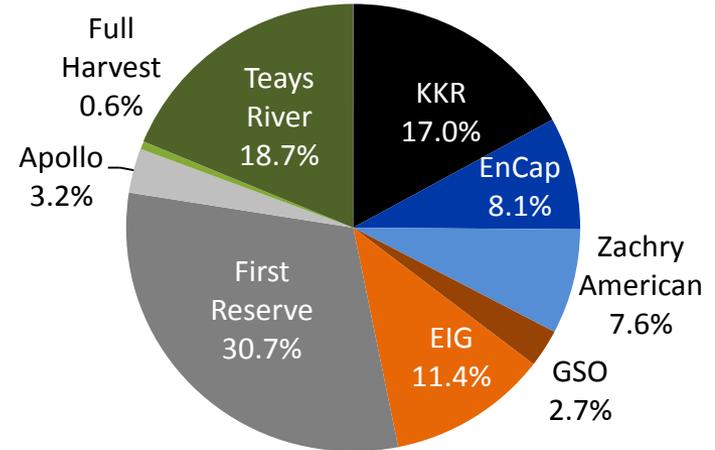
Portfolio Composition

ENR Snapshot of Quarterly Holdings

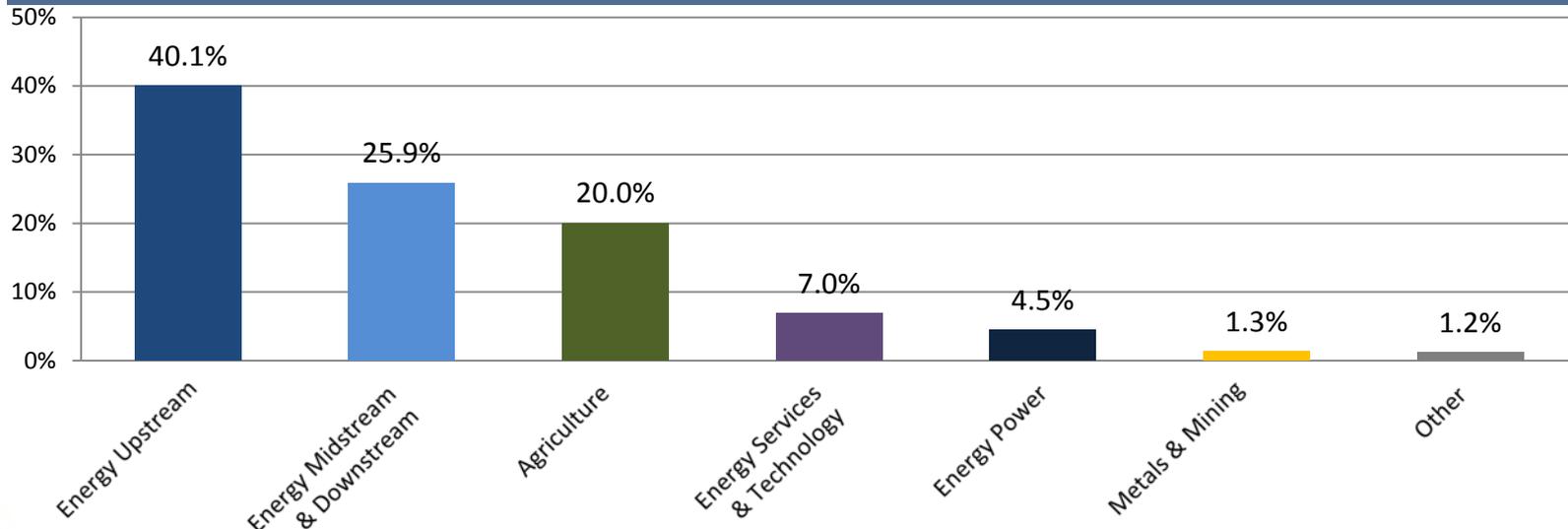
Market Value by Zone



Market Value by Manager



Market Value by Natural Resources Industry Subsector



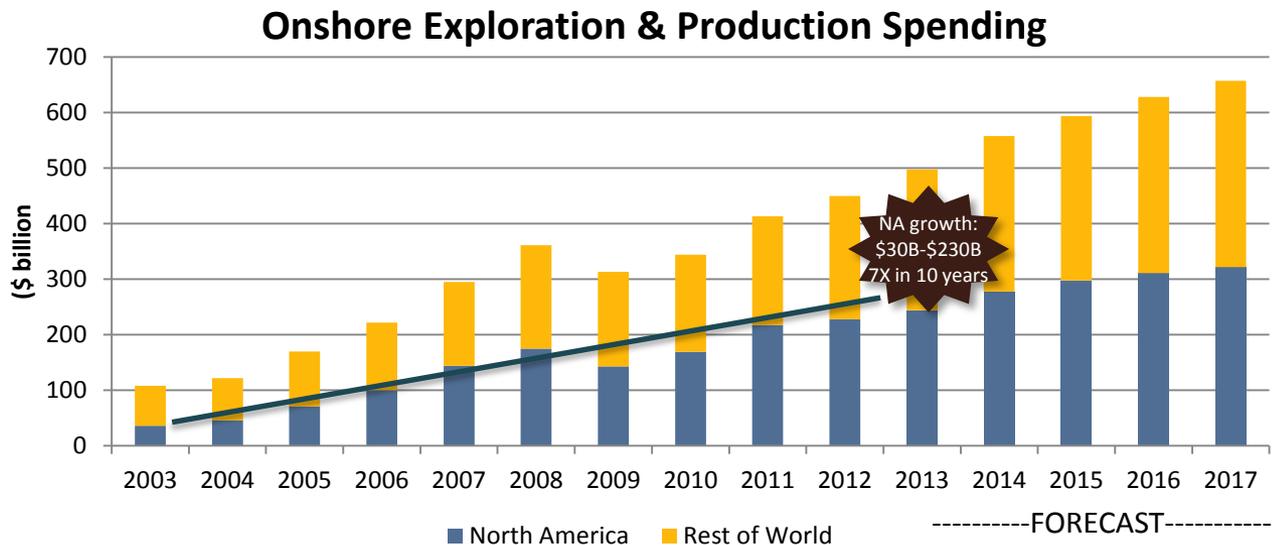
Source: State Street Portfolio Data as of December 31, 2013
 Portfolio started September 30, 2013. Legacy assets included, NAV as of December 31, 2013

ENR Zone Definitions

- Zone 2
 - Agriculture and farmland, timber, proven reserves, and gold mining
 - High inflation sensitivity (inflation beta > 1.0), 8-12% gross expected IRR
- Zone 3
 - Enhanced reserves and upstream mezzanine funds
 - High inflation sensitivity (inflation beta > 1.0), 12-16% gross expected IRR
- Zone 4
 - Upstream energy E&P, energy services and technology
 - High inflation sensitivity (inflation beta > 1.0), 16%+ gross expected IRR
- Zone 7
 - Stabilized midstream, power generation, MLPs, and refining
 - Moderate inflation sensitivity (inflation beta between 0.5 and 1.0), 12-16% gross expected IRR
- Zone 8
 - Development strategies in midstream and power subsectors
 - Moderate inflation sensitivity (inflation beta between 0.5 and 1.0), 12-16% gross expected IRR

Energy Market Opportunity

Historical Evolution: Three Distinct Time Periods in North America



	Conventional Era	Unconventional "Land Grab"	Execution Phase
RESOURCE	Flat to Declining	PUD - Significant discovery, but economics are uncertain	PDP - Technical Data available to validate tremendous resource potential
CAPITAL REQUIREMENTS	Less Capital Intensive	Significant capital for high land prices and drilling cost	Significant capital needed to develop identified resource
SOURCES OF CAPITAL	Cash Flow Public Equity Traditional Debt	High Yield Debt Public Equity Joint Ventures (eg Sovereign Wealth) Asset Sales	Conventional Asset Sales Mezzanine High Yield Joint Ventures



Private Markets Strategic Partnership Network

David Veal, Director of Strategic Partnerships & Research
Courtney Villalta, Senior Investment Manager
June 2014

Agenda

- I. Overview of Private Markets Strategic Partnership Network (SPN)
- II. Current Investments / Pipeline
- III. Diversification Framework
- IV. Fee Savings to Date
- V. Growth of Private Markets SPN
- VI. Appendix

Other Initiatives

Training

- Developed and institutionalized training program via collaboration with IMD Professional Development Team
- Two investment professionals participated in 2013 Exchange Program
- Three candidates selected for 2014 Exchange Program

Research

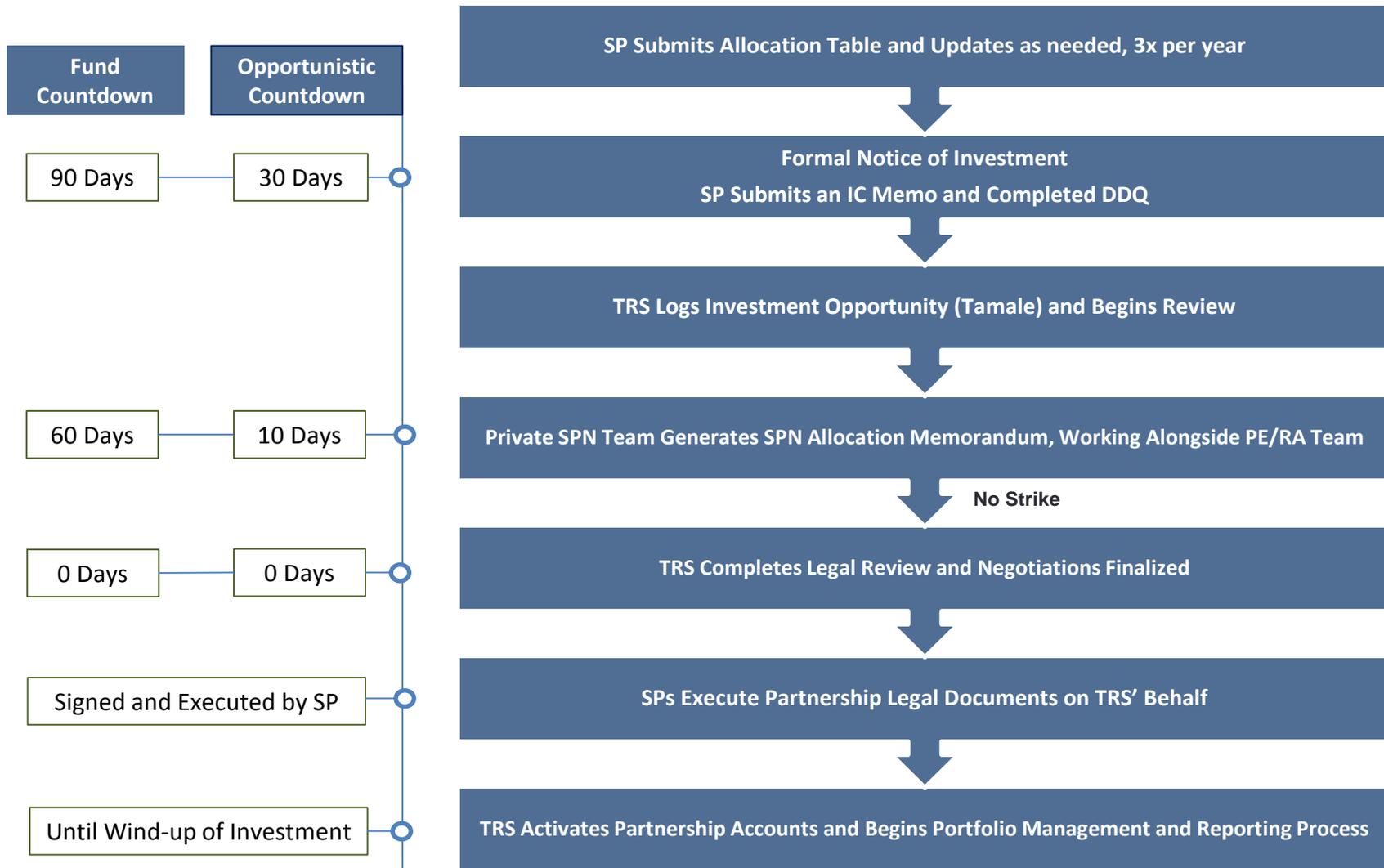
- Each SP provides two value-add research projects per calendar year
- Research process codified and endorsed by CIO
- Research menu established annually with buy-in from IMD Management Committee, with a senior manager as sponsor of research project
- Project Sponsor works with SPR Team to guide SPs with final deliverables presented to the IMD Management Committee

Summits

- Held three times per year (once in New York, twice in Texas)
- Two Austin Summits in 2014 will be held on April 2nd and November 5th
- Second annual Public/Private Joint Summit to be held on July 23 in New York

Appendix

Private Markets SPN Investment Process



Global Private Markets Opportunities

June 2014

Background material prepared for and at the request of:
Teacher Retirement System of Texas

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