



TEXAS TECH UNIVERSITY SYSTEM™

TTUS Board of Regents,

TTFI Board of Directors & ASU

Foundation Joint Meeting Report

August 2016

Texas Tech University Endowment

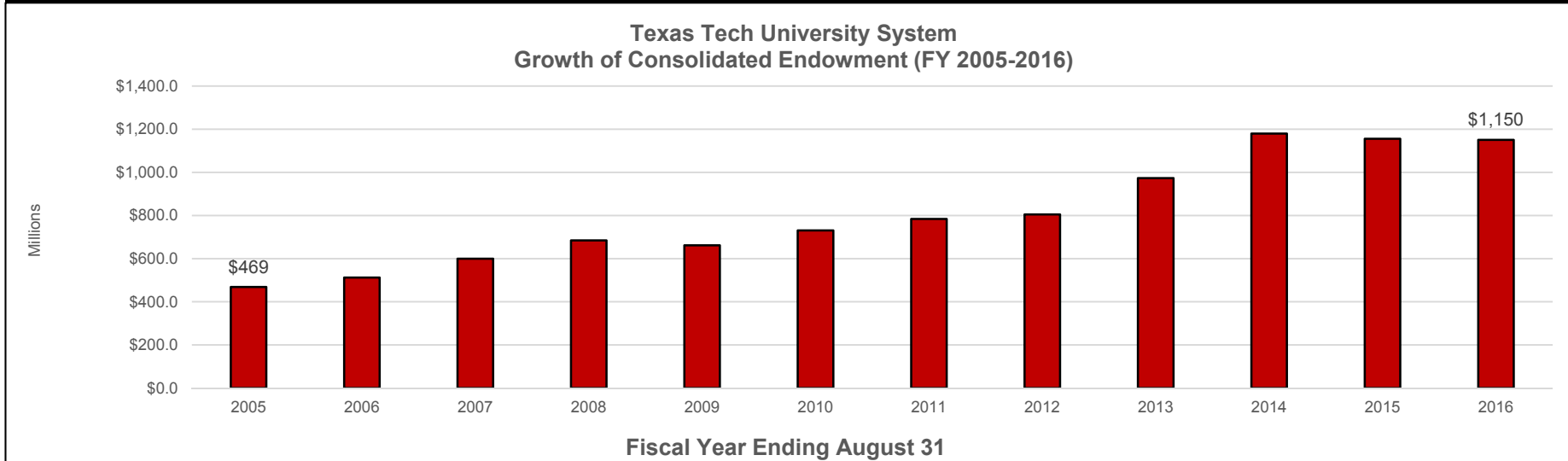
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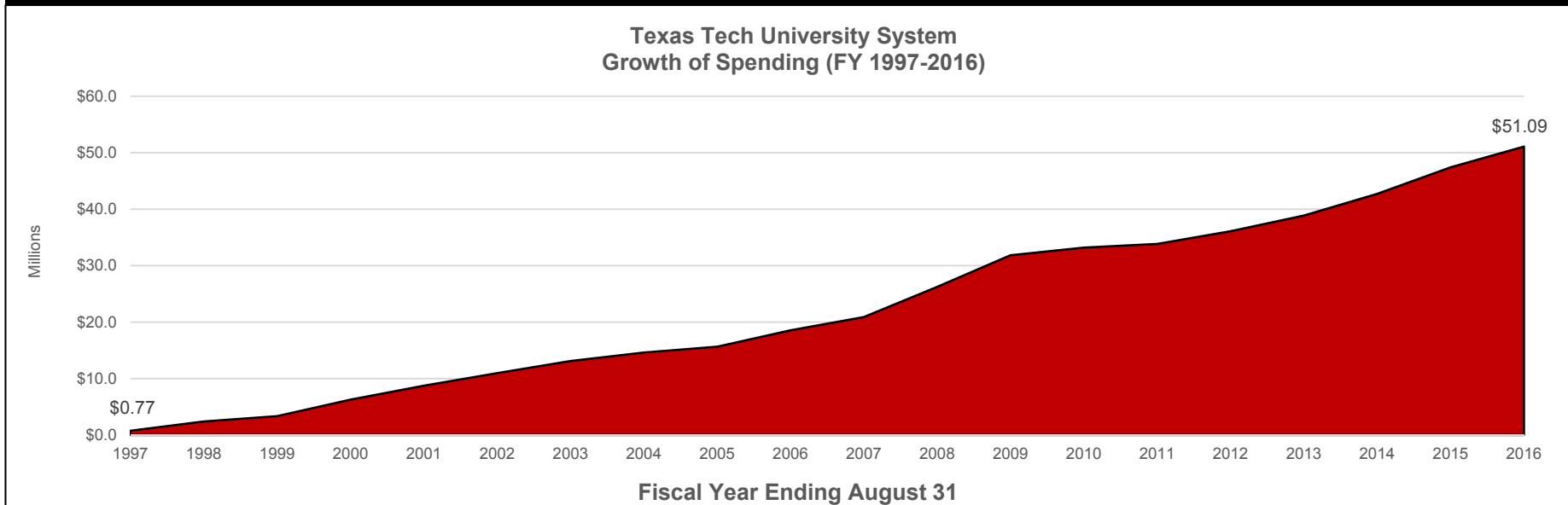
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Endowment Data

HISTORICAL MARKET VALUE (Fiscal Year)



HISTORICAL SPENDING (Fiscal Year)



The 4.5% distribution rate has been realized every year since inception.

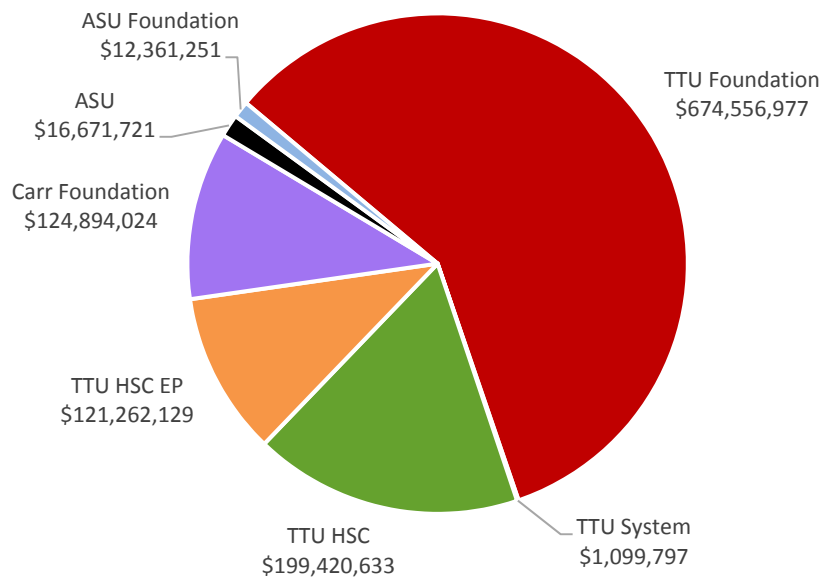


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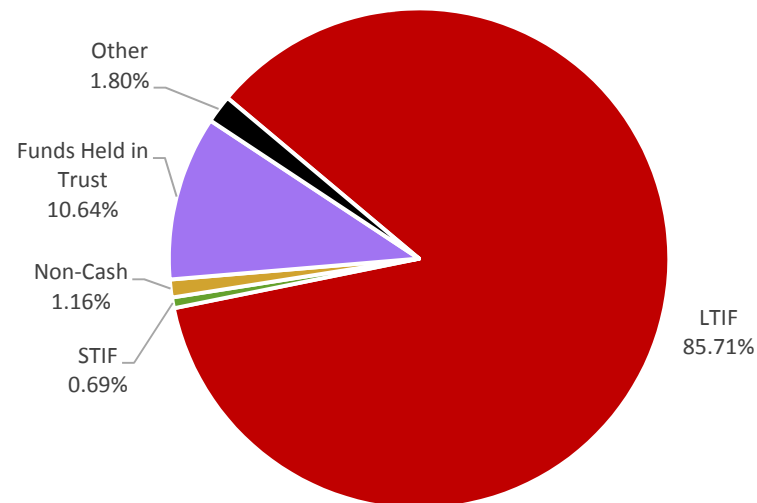
Endowment Data (cont.)

TOTAL ENDOWMENT (Fiscal Year 2016)

**Texas Tech University System
Endowment Breakout
by Institution**



**Texas Tech University System
Endowment Breakout
by Pool**



Summary of Endowment

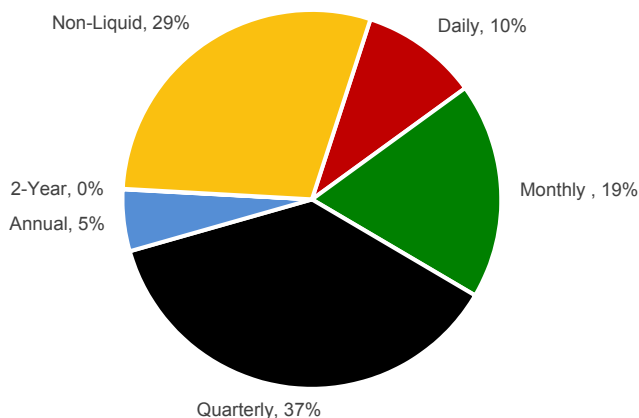
	TTU Foundation	TTU System	TTU HSC	TTU HSC EP	Carr Foundation	ASU	ASU Foundation	Total
LTIF	\$611,180,017	\$1,099,797	\$136,082,077	\$90,866,446	\$118,056,190	\$16,271,854	\$12,361,251	\$985,917,631
STIF	\$5,037,791	\$0	\$2,521,431	\$242	\$0	\$399,575	\$0	\$7,959,038
Non-Cash	\$5,037,564	\$0	\$1,439,974	\$0	\$6,837,834	\$0	\$0	\$13,315,372
Funds Held in Trust	\$32,607,123	\$0	\$59,377,151	\$30,395,442	\$0	\$0	\$0	\$122,379,716
Other	\$20,694,482	\$0	\$0	\$0	\$0	\$292	\$0	\$20,694,774
Total	\$674,556,977	\$1,099,797	\$199,420,633	\$121,262,129	\$124,894,024	\$16,671,721	\$12,361,251	\$1,150,266,531



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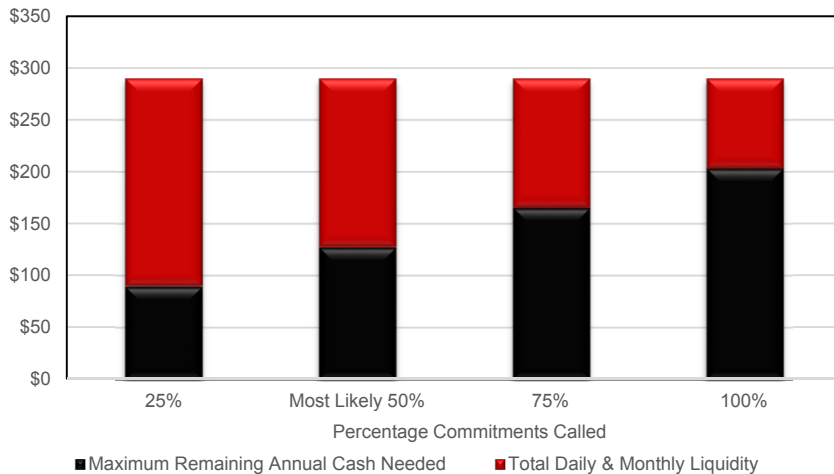
LTIF Liquidity

LTIF Liquidity



LTIF		Liquidity
Daily	\$102,868,655	10.0%
Monthly	\$189,939,652	18.5%
Quarterly	\$381,888,704	37.1%
Annual	\$54,063,062	5.3%
2-Year	\$501,761	0.0%
Non-Liquid	\$299,379,584	29.1%
Total LTIF	\$1,028,641,417	100%

Liquidity Sensitivity



	<u>Commitment</u>	<u>Capital Called</u>	<u>Distributions</u>	<u>Account Balance</u>	<u>Remaining Commitment</u>
Private Equity	\$263,500,000	\$160,805,601	\$152,213,284	\$72,129,888	\$102,694,399
Private Credit	\$218,103,248	\$180,572,612	\$120,283,679	\$103,970,455	\$37,530,636
Private Real Assets	\$291,585,500	\$259,788,788	\$236,036,179	\$118,258,014	\$31,796,712
Total Illiquid Assets	\$773,188,748	\$601,167,001	\$508,533,142	\$294,358,357	\$172,021,747
			Annual Spending		\$57,500,000
			Total Committed Funds		\$229,521,747

Unfunded Commitments - Sensitivity Analysis

Maximum Remaining Annual Cash Needed
 Percentage of Daily & Monthly Liquidity

	<u>25% Called</u>	<u>Most Likely 50% Called</u>	<u>75% Called</u>	<u>100% Called</u>
Maximum Remaining Annual Cash Needed	\$100,505,437	\$143,510,874	\$186,516,310	\$229,521,747
Percentage of Daily & Monthly Liquidity	34%	49%	64%	78%

31st August 2016**Market Data**

Benchmarks	Underlying	Weight	MTD Perf.	3 Mo. Perf.	Calendar YTD	Fiscal YTD	Nacubo YTD	1 Year Perf.	3 Year Perf.	5 Year Perf.
Policy Benchmarks			0.05%	1.82%	5.27%	6.67%	1.82%	6.67%	7.01%	7.07%
Equity	MSCI AC World IMI (Net)	35%	0.34%	4.80%	6.23%	7.37%	4.80%	7.37%	6.84%	8.46%
Debt	Barclays Global Aggregate	25%	-0.49%	0.26%	9.25%	8.79%	0.26%	8.79%	2.64%	1.15%
Liquid Real Assets	CPI + 4%	10%	0.53%	0.82%	3.62%	5.13%	0.82%	5.13%	4.52%	4.97%
Private Investments	VE All PE Qtr Lag	27%	0.00%	0.00%	0.72%	3.10%	0.00%	3.10%	10.67%	10.75%
Private Investments	NCREIF	3%	0.00%	0.00%	4.28%	10.64%	0.00%	10.64%	11.60%	11.51%
Other Benchmarks										
Equity	S&P 500 Total Return		0.14%	3.83%	7.82%	12.55%	3.83%	12.55%	12.30%	14.69%
Equity	MSCI EAFE (Net)		0.07%	5.14%	0.49%	-0.12%	5.14%	-0.12%	2.47%	5.00%
Equity	MSCI EMF (Net)		2.49%	7.64%	14.55%	11.83%	7.64%	11.83%	1.12%	-0.42%
Debt	JP Morgan EM Bond Index		1.80%	3.38%	14.65%	14.82%	3.38%	14.82%	8.26%	6.43%
Cash & Alpha Pool	90 Day T-Bills		0.03%	0.05%	0.19%	0.22%	0.05%	0.22%	0.10%	0.08%
Hedge Funds	HFRI FOF Composite		0.41%	1.93%	-0.70%	-1.80%	1.93%	-1.80%	2.47%	2.49%
Private Investments	Private Market Index (90% VE, 10% NCREIF)		0.00%	0.00%	1.08%	3.85%	0.00%	3.85%	10.76%	10.83%

CIO NOTES:

The first half of 2016 was volatile with the first quarter risk off trade and culminating with the impact of Brexit in June. July and August were more favorable with equity markets providing needed relief. Over the last three months, emerging markets and European markets outperformed US equity markets.

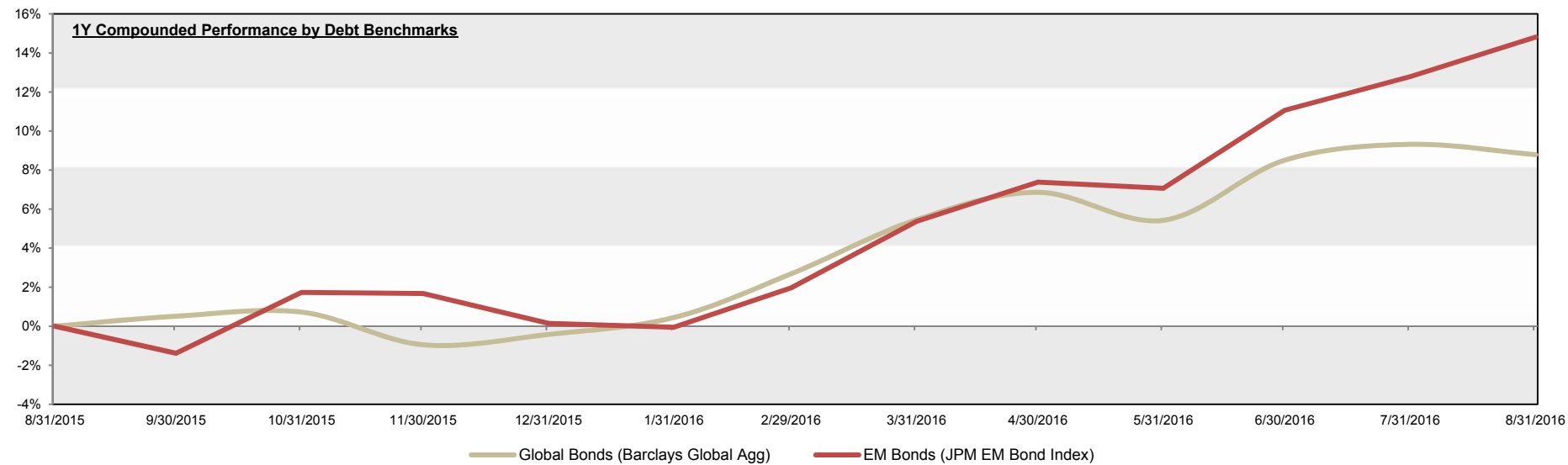
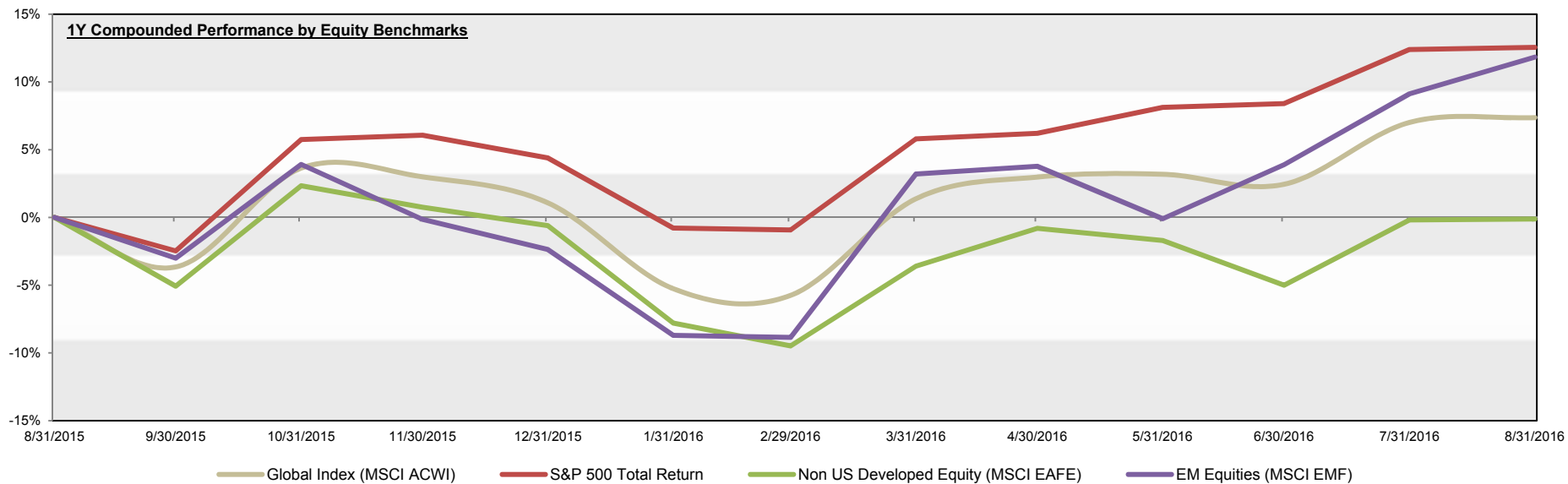
The LTIF outperformed the over the month and quarter to date, 1.11% vs. .05% and 3.43% vs. 1.82%, respectively. On a calendar year basis, the LTIF is gaining ground on the policy benchmark, trailing only 1.27%.

The IAC and staff are excited about the positioning of the portfolio and a number of the strategies we put in place are beginning to perform. We are equally excited to introduce our new team members today and discuss the improving performance of the LTIF.



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Market Data (cont.)

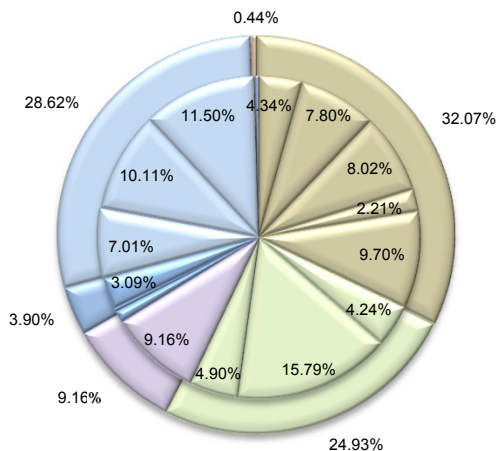




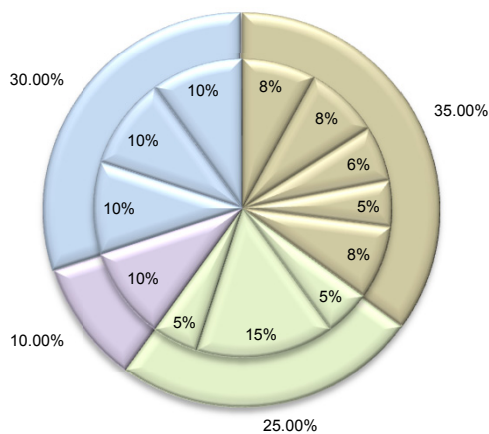
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Asset Class Allocation: Actual vs. Target

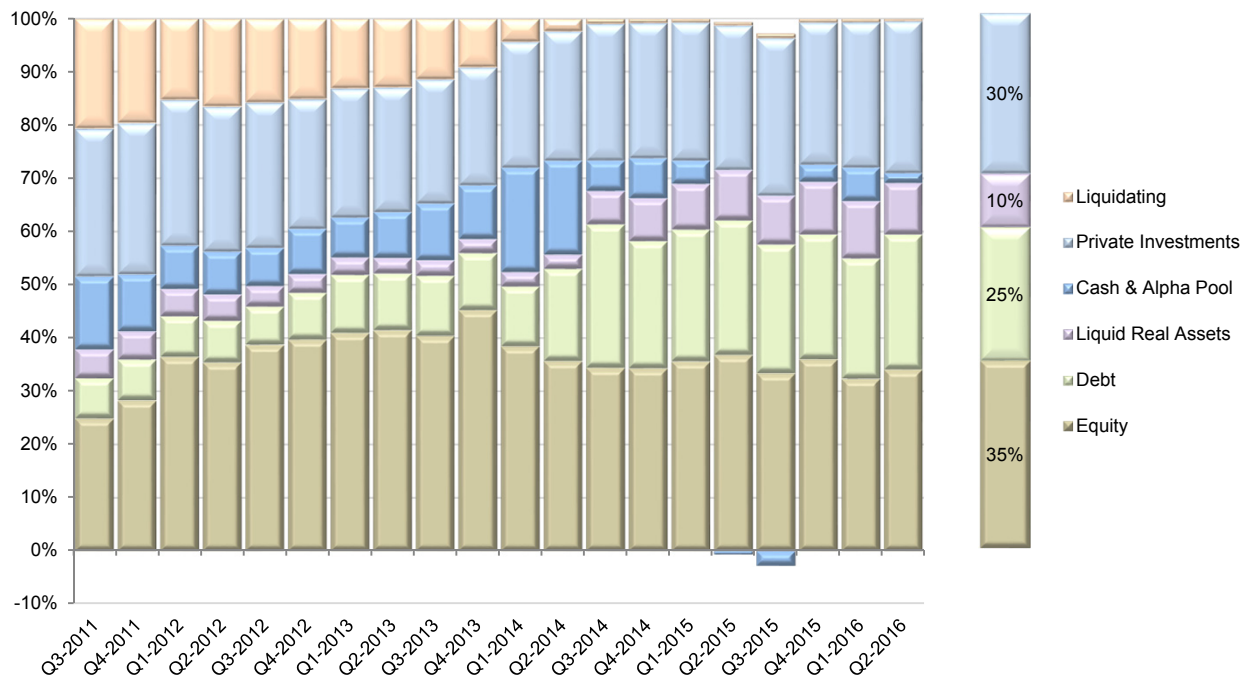
Actual Allocation



Target Allocation



Asset Class	Actual \$ Allocation			Total % Allocation	Target % Allocation	Target Range
	Physical	Synthetic	Total			
Equity	219,373,313	110,511,985	329,885,298	32.07%	35%	30% - 40%
Debt	212,792,864	43,662,500	256,455,364	24.93%	25%	20% - 30%
Liquid Real Assets	83,743,286	10,468,271	94,211,556	9.16%	10%	5% - 15%
Cash & Alpha Pool	213,896,769	-173,769,387	40,127,382	3.90%	0%	0% - 10%
Private Investments	294,358,357	0	294,358,357	28.62%	30%	10% - 55%
Liquidating	4,476,828	0	4,476,828	0.44%	0%	
Portfolio Hedge	0	9,126,631	9,126,631	0.89%	0%	
Total	1,028,641,417	0	1,028,641,417	100%	100%	

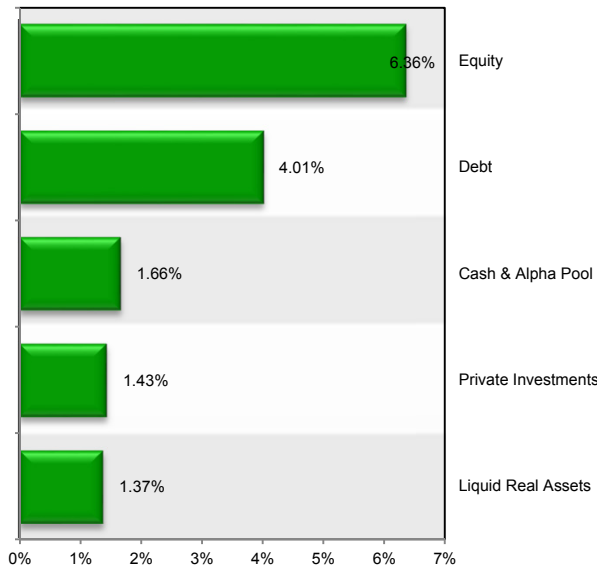




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Asset Class Performance: Actual vs. Policy

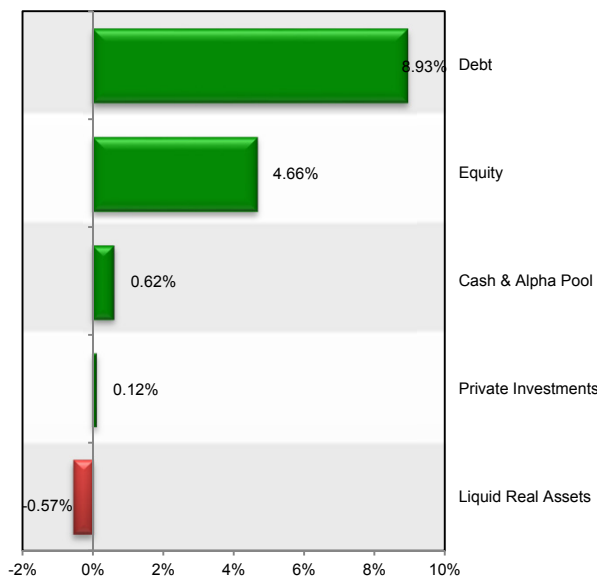
QTD Performance



Asset Class	Month				
	Physical Return	Synthetic Overlay	Alpha Pool + Cash	Total Return	Policy
Equity	1.24%	-0.15%	1.08%	1.12%	0.34%
Debt	2.26%	-0.22%	1.08%	2.02%	-0.49%
Liquid Real Assets	1.02%	-3.49%	1.08%	0.63%	0.53%
Cash & Alpha Pool	1.02%			1.02%	
Private Investments	0.50%			0.50%	0.00%
Portfolio Hedge Contr.	-0.09%			-0.09%	
Total	1.18%	-0.37%	1.08%	1.11%	0.05%

Asset Class	QTD				
	Physical Return	Synthetic Overlay	Alpha Pool + Cash	Total Return	Policy
Equity	6.31%	4.61%	1.74%	6.36%	4.80%
Debt	4.63%	-0.37%	1.74%	4.01%	0.26%
Liquid Real Assets	0.81%	4.67%	1.74%	1.37%	0.82%
Cash & Alpha Pool	1.66%			1.66%	
Private Investments	1.43%			1.43%	0.00%
Portfolio Hedge Contr.	-0.18%			-0.18%	
Total	3.10%	3.46%	1.74%	3.43%	1.82%

One Year Performance



Asset Class	Calendar YTD				
	Physical Return	Synthetic Overlay	Alpha Pool + Cash	Total Return	Policy
Equity	3.35%	1.88%	3.36%	4.64%	6.23%
Debt	10.33%	0.69%	3.36%	9.49%	9.25%
Liquid Real Assets	-4.55%	15.15%	3.36%	-2.79%	3.62%
Cash & Alpha Pool	3.47%			2.01%	
Private Investments	3.89%			3.89%	1.08%
Portfolio Hedge Contr.	n/a			n/a	
Total	4.21%	2.17%	3.36%	4.00%	5.27%

Asset Class	1 Year				
	Physical Return	Synthetic Overlay	Alpha Pool + Cash	Total Return	Policy
Equity	2.79%	4.35%	1.67%	4.66%	7.37%
Debt	10.42%	0.36%	1.67%	8.93%	8.79%
Liquid Real Assets	-4.53%	37.09%	1.67%	-0.57%	5.13%
Cash & Alpha Pool	2.00%			0.62%	
Private Investments	0.12%			0.12%	3.85%
Portfolio Hedge Contr.	n/a			n/a	
Total	2.64%	5.20%	1.67%	3.68%	6.68%

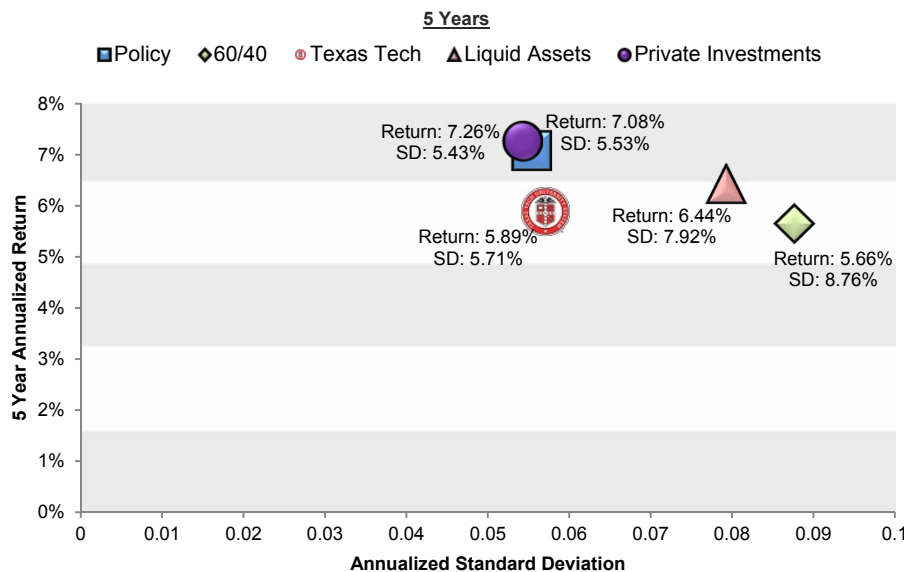
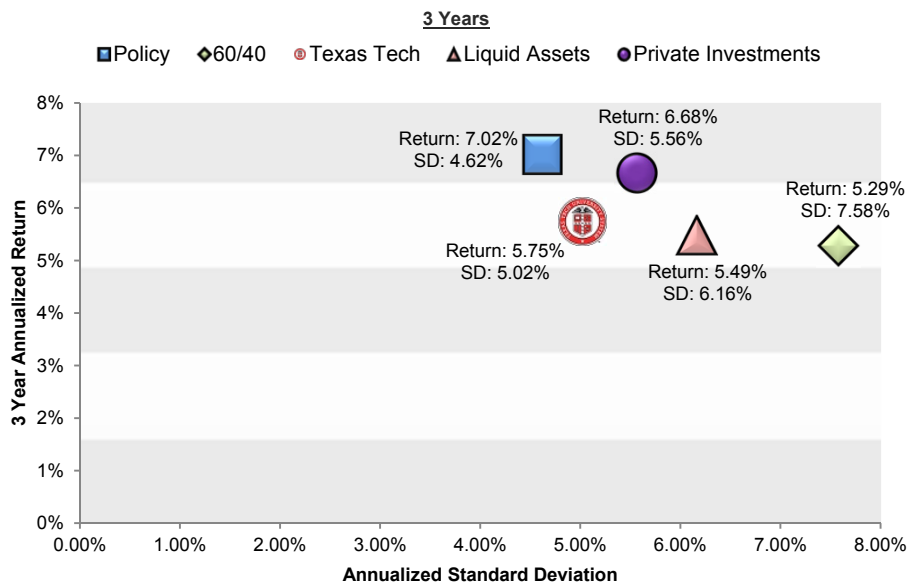
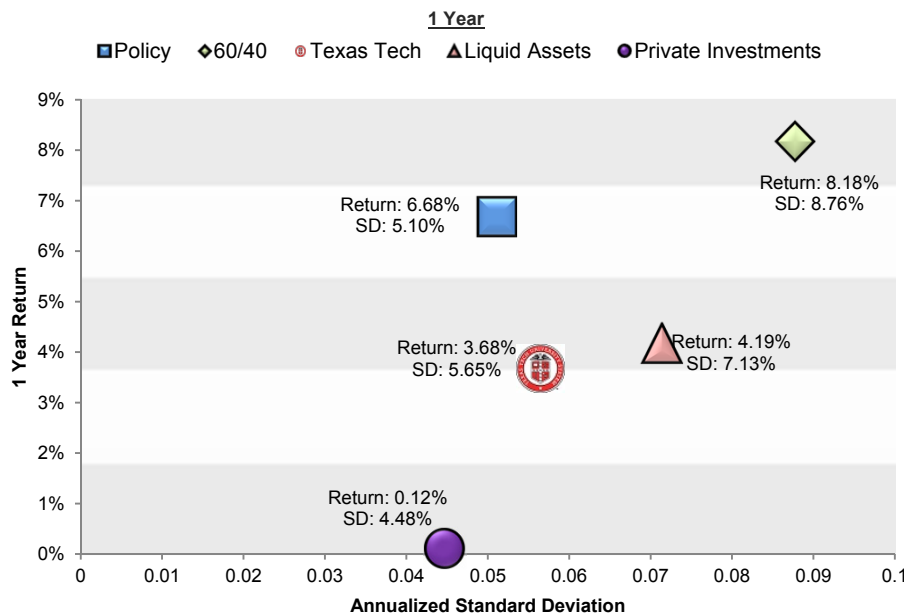


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Long Term Risk/Return of Endowment vs. 60/40 Portfolio & Policy Returns

Commentary

- The Texas Tech portfolio is less volatile than the 60/40 portfolio over all time horizons.
- The Texas Tech portfolio outperforms the 60/40 portfolio over a 2 year, and 5 year time horizon.
- Volatility (measured by standard deviation) on the Texas Tech portfolio has decreased over the past 12 months compared with the annualized 5 year volatility.



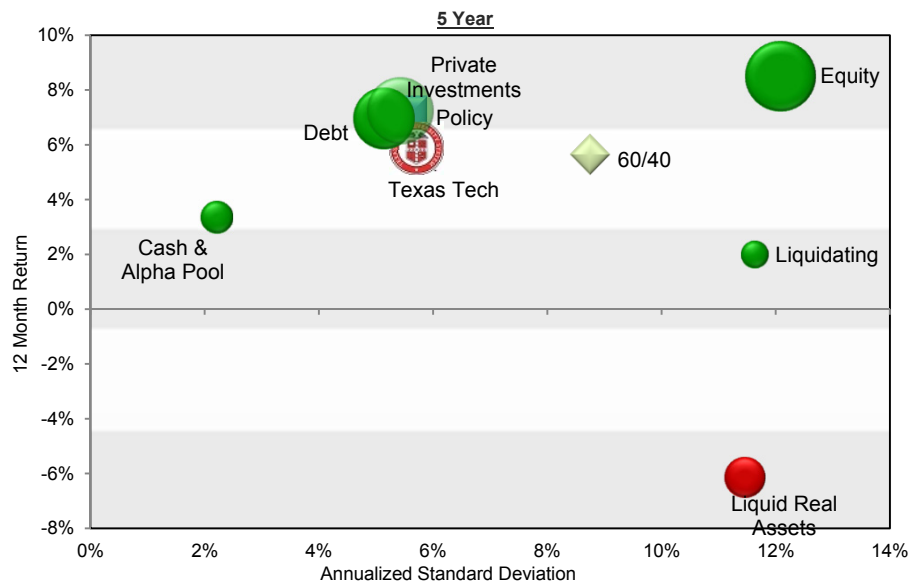
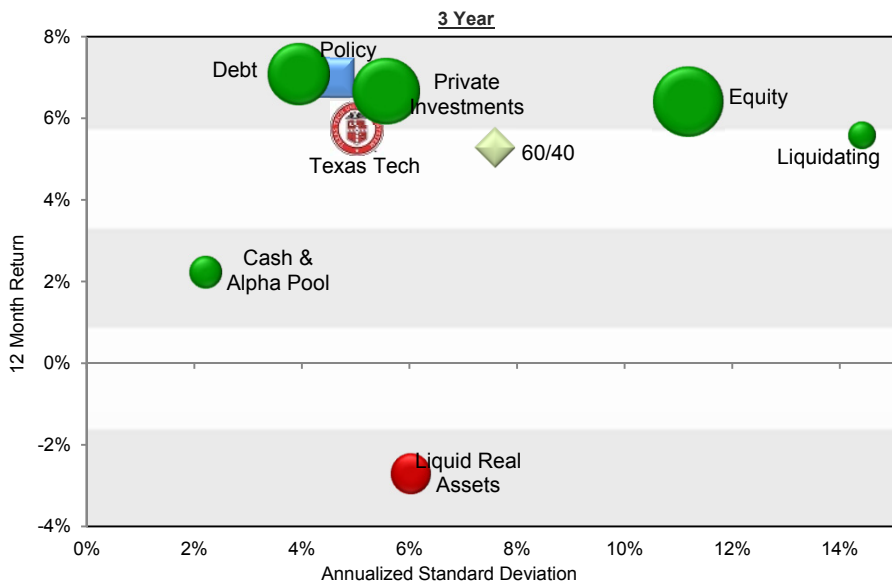
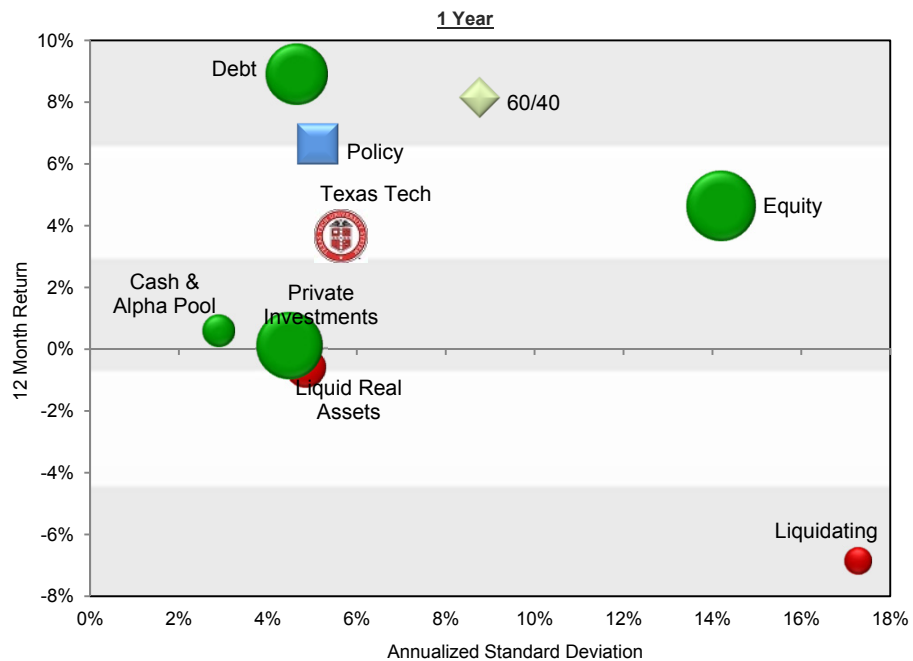


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Risk Profile

Commentary

- EM Debt, Liquidating, and Credit have provided the highest risk adjusted returns over the last 12 months
- Private Real Assets, Liquid Real Assets, and Non US Developed Equity have generated the lowest risk adjusted returns over the last 12 months.



31st August 2016**Appendix I – Sub-Asset Detail**

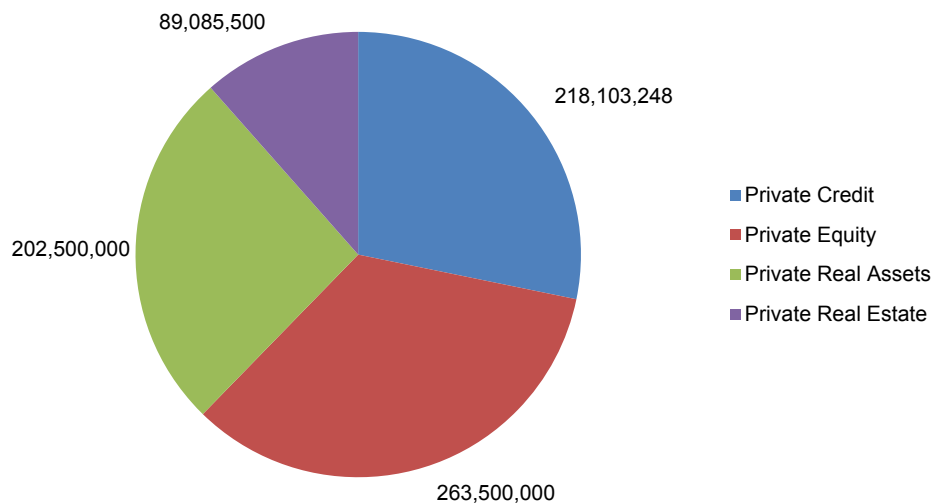
Fund	Current Exposure	MTD Perf.	QTD Perf.	Calendar YTD	Fiscal YTD	Nacubo YTD	1 Year Perf.	3 Year Perf.	5 Year Perf.
TOTAL	1,028,641,417	1.11%	3.43%	4.00%	3.68%	3.43%	3.68%	5.75%	5.89%
Policy		0.05%	1.82%	5.27%	6.68%	1.82%	6.68%	7.02%	7.08%
Portfolio Hedge	9,126,631	-0.09%	-0.18%	n/a	n/a	-0.18%	n/a	n/a	n/a
Equity	329,885,298	1.12%	6.36%	4.77%	4.90%	6.36%	4.90%	6.50%	8.57%
Equity Policy Benchmark (MSCI ACWI)		0.34%	4.80%	6.23%	7.37%	4.80%	7.37%	6.84%	8.46%
US Equity	44,620,537	-0.10%	5.30%	12.66%	14.93%	5.30%	14.93%	10.63%	12.79%
<i>Benchmark: S&P 500 Total Return</i>		0.14%	3.83%	7.82%	12.55%	3.83%	12.55%	12.30%	14.69%
Global Equity	80,221,810	1.70%	7.13%	4.56%	4.30%	7.13%	4.30%	10.28%	14.50%
<i>Benchmark: MSCI ACWI (Net)</i>		0.34%	4.80%	6.23%	7.37%	4.80%	7.37%	6.84%	8.46%
Non US Developed Equity	82,471,934	1.25%	6.80%	-0.07%	-0.42%	6.80%	-0.42%	1.99%	4.71%
<i>Benchmark: MSCI EAFE (Net)</i>		0.07%	5.14%	0.49%	-0.12%	5.14%	-0.12%	2.47%	5.00%
Non US Emerging Markets Equity	22,768,248	2.49%	8.51%	11.75%	14.28%	8.51%	14.28%	4.17%	2.27%
<i>Benchmark: MSCI EMF (Net)</i>		2.49%	7.64%	14.55%	11.83%	7.64%	11.83%	1.12%	-0.42%
Alternative Equity	99,802,770	0.77%	5.27%	0.83%	-0.41%	5.27%	-0.41%	3.46%	7.82%
<i>Benchmark: MSCI ACWI (Net)</i>		0.34%	4.80%	6.23%	7.37%	4.80%	7.37%	6.84%	8.46%
Debt	256,455,364	2.02%	4.01%	9.53%	8.91%	4.01%	8.91%	7.12%	7.00%
Debt Policy Benchmark (Barclays Global Agg)		-0.49%	0.26%	9.25%	8.79%	0.26%	8.79%	2.64%	1.15%
Sovereign/Investment Grade Bonds	43,662,500	0.85%	1.36%	4.09%	2.21%	1.36%	2.21%	3.86%	3.21%
<i>Benchmark: Barclays Global Aggregate</i>		-0.49%	0.26%	9.25%	8.79%	0.26%	8.79%	2.64%	1.15%
Credit	162,377,426	2.77%	5.18%	8.43%	7.45%	5.18%	7.45%	5.89%	9.70%
<i>Benchmark: Barclays Global Aggregate</i>		-0.49%	0.26%	9.25%	8.79%	0.26%	8.79%	2.64%	1.15%
Emerging Markets Debt	50,415,439	0.76%	3.04%	14.76%	17.84%	3.04%	17.84%	9.30%	7.48%
<i>Benchmark: JP Morgan EM Bond Index</i>		1.80%	3.38%	14.65%	14.82%	3.38%	14.82%	8.26%	6.43%
Liquid Real Assets	94,211,556	0.63%	1.37%	-2.55%	-0.73%	1.37%	-0.73%	-2.71%	-6.13%
<i>Benchmark: CPI + 4%</i>		0.53%	0.82%	3.62%	5.13%	0.82%	5.13%	5.06%	5.30%
Cash & Alpha Pool	40,127,382	1.02%	1.66%	3.47%	2.00%	1.66%	2.00%	3.17%	3.95%
Cash	28,015,595	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.21%
Cash Collateral	17,136,898	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	n/a	n/a
Collateral Held Elsewhere	5,240,000	0.00%	0.00%	0.00%	n/a	0.00%	n/a	n/a	n/a
Adjustments for Synthetic Exposure	(173,769,387)								
Alpha Pool	163,504,276	1.34%	2.17%	4.47%	2.47%	2.17%	2.47%	4.37%	5.79%
<i>Benchmark: HFRI FOF Index</i>		0.41%	1.93%	-0.70%	-1.80%	1.93%	-1.80%	2.47%	2.49%
Liquidating	4,476,828	1.36%	1.98%	0.27%	-6.84%	1.98%	-6.84%	5.60%	2.02%
Private Investments	294,358,357	0.50%	1.43%	3.89%	0.12%	1.43%	0.12%	6.68%	7.26%
<i>Benchmark: Private Market Index (90% VE, 10% NCREIF)</i>		0.00%	0.00%	1.08%	3.85%	0.00%	3.85%	10.76%	10.83%
Private Equity	72,129,888	-0.28%	-0.82%	2.34%	-1.68%	-0.82%	-1.68%	7.68%	7.46%
Private Credit	103,970,455	1.04%	1.65%	7.57%	4.45%	1.65%	4.45%	7.33%	7.65%
Private Real Assets	118,258,014	0.53%	2.71%	1.37%	-3.06%	2.71%	-3.06%	4.93%	6.55%



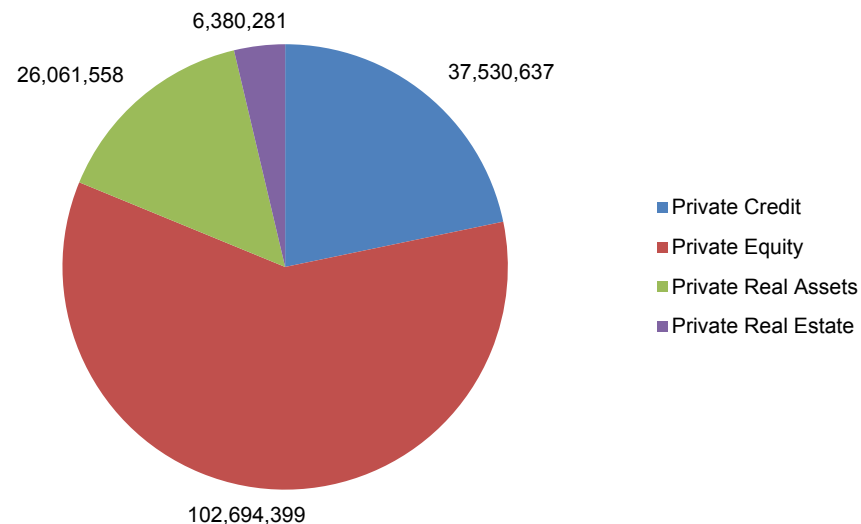
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Appendix II - Private Markets Report (as of August 2016) - Total Commitment

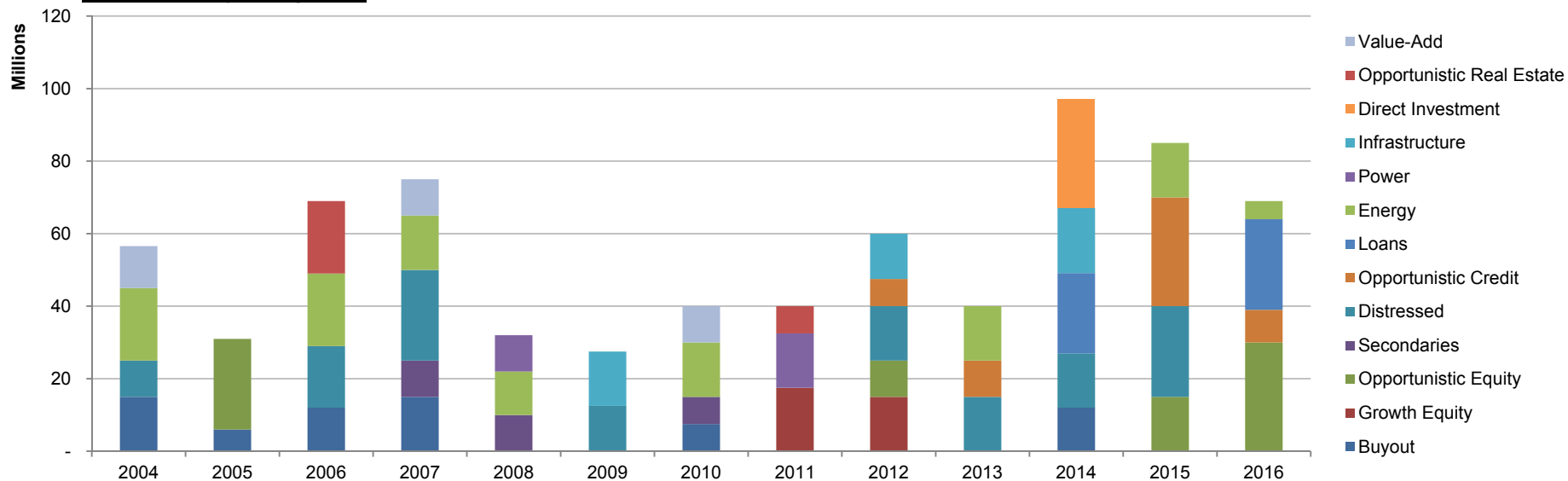
Total Commitment



Total Unfunded



Commitment by Vintage Year



Data provided by Texas Tech University System
 Reported valuations use latest available statements ranging from December 31st, 2015 to August 31st, 2016.
 Adjusted Valuations include all cashflows through August 2016

31st August 2016**Appendix II - Private Markets Report (as of August 2016) - Performance Analysis by Strategy Type & Asset Class****Performance by Asset Class**

Asset Class	# of Funds	Commitment	Funded	Paid-In Capital	Distributions	% Drawn	Reported Valuation	Adjusted Valuation	IRR	MOC
Private Equity	21	\$263,500,000	\$160,805,601	\$170,220,621	\$152,213,284	65%	\$78,560,452	\$79,161,137	9.77%	1.36
Private Credit	19	\$218,103,248	\$180,572,611	\$184,375,547	\$120,283,679	85%	\$107,099,049	\$112,332,377	10.32%	1.26
Private Real Assets	14	\$202,500,000	\$177,083,568	\$188,022,803	\$183,525,911	93%	\$63,373,460	\$64,684,406	21.10%	1.32
Private Real Estate	7	\$89,085,500	\$82,705,219	\$85,364,893	\$52,510,268	96%	\$46,968,411	\$51,306,397	4.98%	1.22
Total	61	\$773,188,748	\$601,166,999	\$627,983,864	\$508,533,142	81%	\$296,001,372	\$307,484,317	10.79%	1.30

Performance by Strategy Type

Asset Class	Strategy	# of Funds	Commitment	Funded	Paid-In Capital	Distributions	% Drawn	Reported Valuation	Adjusted Valuation	IRR	MOC
Private Equity	Buyout	7	\$73,500,000	\$61,254,338	\$67,078,001	\$105,302,869	91%	\$7,105,132	\$7,687,250	15.09%	1.68
	Distressed	1	\$25,000,000	\$5,625,000	\$5,625,000	\$473,170	23%	\$5,293,086	\$5,293,086	5.31%	1.03
	Growth Equity	2	\$32,500,000	\$19,436,196	\$21,760,314	\$3,269,710	67%	\$21,201,906	\$20,660,945	4.72%	1.10
	Opportunistic Equity	7	\$80,000,000	\$51,541,487	\$51,735,271	\$21,828,850	65%	\$36,493,166	\$37,451,640	3.93%	1.15
	Secondaries	3	\$27,500,000	\$21,953,580	\$23,022,035	\$21,338,685	84%	\$7,535,899	\$7,136,953	5.29%	1.24
	Venture Capital	1	\$25,000,000	\$995,000	\$1,000,000	\$0	4%	\$931,263	\$931,263	-6.87%	0.93
	Total	21	\$263,500,000	\$160,805,601	\$170,220,621	\$152,213,284	65%	\$78,560,452	\$79,161,137	9.77%	1.36
Private Credit	Distressed	11	\$114,500,000	\$105,799,892	\$106,015,268	\$111,129,460	93%	\$32,833,768	\$32,446,593	10.70%	1.35
	Loans	3	\$47,103,248	\$47,024,589	\$47,582,673	\$4,126,000	101%	\$50,512,420	\$50,092,420	8.76%	1.14
	Opportunistic Credit	5	\$56,500,000	\$27,748,130	\$30,777,606	\$5,028,219	54%	\$23,752,861	\$29,793,364	8.60%	1.13
	Total	19	\$218,103,248	\$180,572,611	\$184,375,547	\$120,283,679	85%	\$107,099,049	\$112,332,377	10.32%	1.26
Private Real Assets	Energy	9	\$132,000,000	\$116,127,137	\$120,929,412	\$135,494,119	92%	\$32,479,663	\$32,353,739	24.19%	1.39
	Infrastructure	3	\$45,500,000	\$39,349,171	\$44,669,385	\$39,281,156	98%	\$21,659,110	\$23,095,980	28.73%	1.40
	Power	2	\$25,000,000	\$21,607,260	\$22,424,006	\$8,750,636	90%	\$9,234,687	\$9,234,687	-8.70%	0.80
	Total	14	\$202,500,000	\$177,083,568	\$188,022,803	\$183,525,911	93%	\$63,373,460	\$64,684,406	21.10%	1.32
Private Real Estate	Direct Investment	1	\$30,000,000	\$29,603,899	\$31,767,923	\$984,445	106%	\$34,654,392	\$39,167,378	18.93%	1.26
	Opportunistic Real Estate	3	\$27,500,000	\$24,615,423	\$24,976,740	\$17,987,888	91%	\$3,924,722	\$3,924,722	-2.35%	0.88
	Value-Add	3	\$31,585,500	\$28,485,897	\$28,620,230	\$33,537,935	91%	\$8,389,297	\$8,214,297	7.33%	1.46
	Total	7	\$89,085,500	\$82,705,219	\$85,364,893	\$52,510,268	96%	\$46,968,411	\$51,306,397	4.98%	1.22



31st August 2016

Appendix III – Glossary

Major Asset Classes

Alpha Pool: Investments that tend to be uncorrelated with “traditional” stock and bond investments. Not technically an asset class, but rather an investment construct within a *portable alpha framework

Cash & Equivalents: Cash and short term investments held in lieu of cash and readily converted into cash within a short time span (i.e., CDs, commercial paper, Treasury bills, etc.)

Global Debt: Investments in debt instruments located in developed markets, may include various credit, mortgage-backed and emerging markets debt securities

Global Equity: Investments in companies domiciled in developed market countries and may include opportunistic investments in emerging market countries

Liquidating: The residual investment in terminated managers

Liquid Real Assets: Liquid investments in strategies whose values are sensitive to inflation

Private Equity: Investments in equity securities and debt in operating companies that are not publicly traded on a stock exchange

Private Real Assets: Investments in equity securities and debt in operating companies that are not publicly traded on a stock exchange and whose strategies are sensitive to inflation

Sub-Asset Classes

Alternative Equity: Investments in companies globally through both long and short positions and may include non-equity instruments such as fixed income, commodities, CDS, options, etc.

Credit: Investments in companies, often stressed or distressed, principally through the debt portion of capital structure

Emerging Market Debt: Investments in debt securities in emerging market countries, primarily in three categories - external sovereign, local sovereign, and corporate debt

Emerging Market Equity: Investments in companies located in emerging market countries

Investment Grade Bonds: Investments in investment grade rated debt securities

Non-US Developed Equity: Investments in companies domiciled in developed market countries

US Equity: Investments in companies domiciled in the US