



TEXAS TECH UNIVERSITY SYSTEM™

TTUS Board of Regents,

TTFI Board of Directors

&

ASU Foundation

Joint Meeting Report

as of August 2017

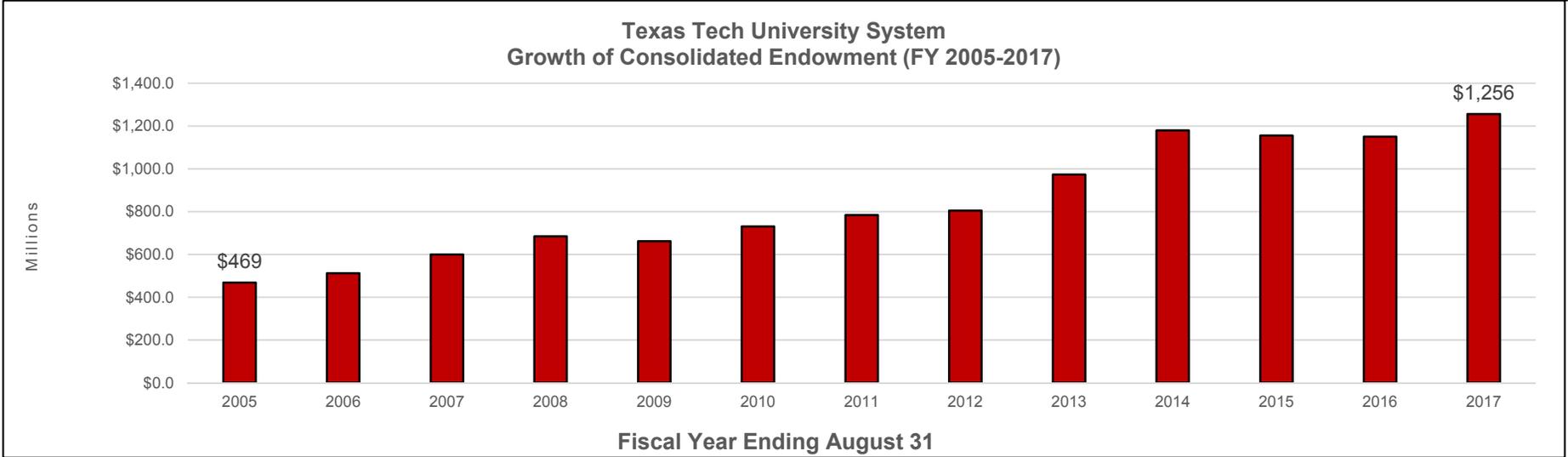
Texas Tech University System Endowment

<u>Contents</u>	<u>Page</u>
Endowment Data	3
Endowment Liquidity	5
Market Data	6
Asset Class Allocation: Actual vs. Target	8
Asset Class Performance: Actual vs. Policy	9
Long Term Risk/Return of Endowment vs. 60/40 Portfolio and Policy Returns	10
Risk Profile	11
Appendix I – Sub-Asset Detail	12
Appendix II – Private Market Reports	13
Appendix III – Glossary	15

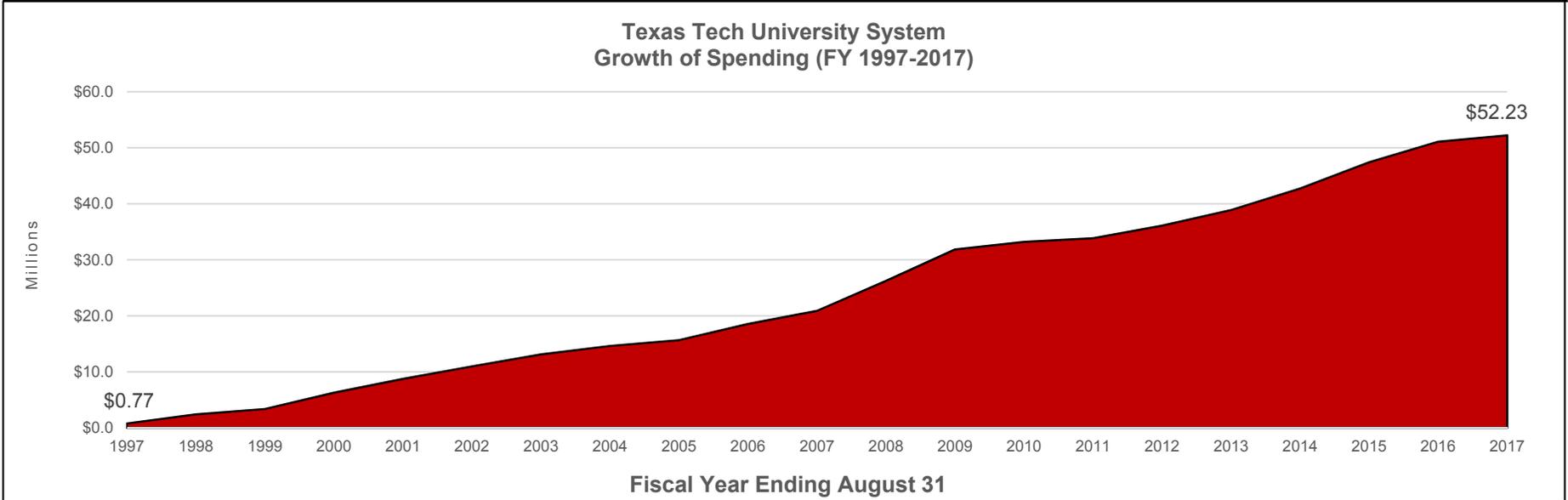


Endowment Data

HISTORICAL MARKET VALUE (Fiscal Year)



HISTORICAL SPENDING (Fiscal Year)

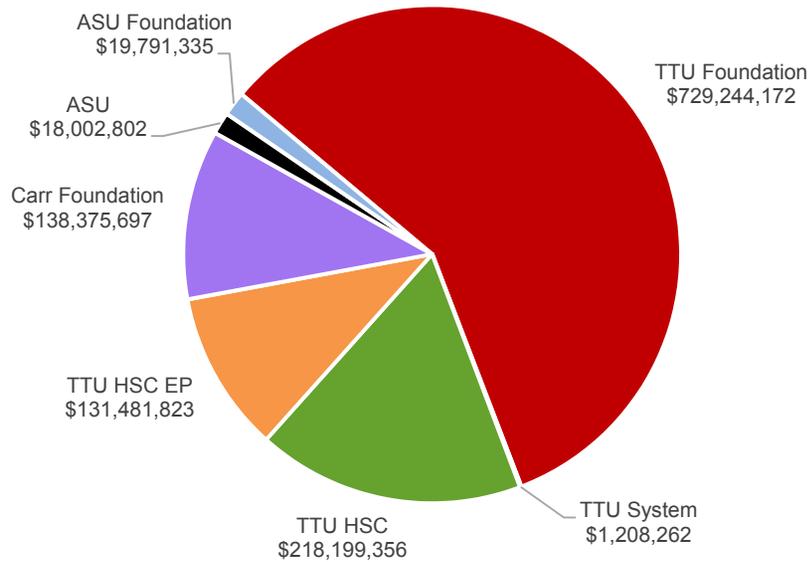


The 4.5% distribution rate has been realized every year since inception.

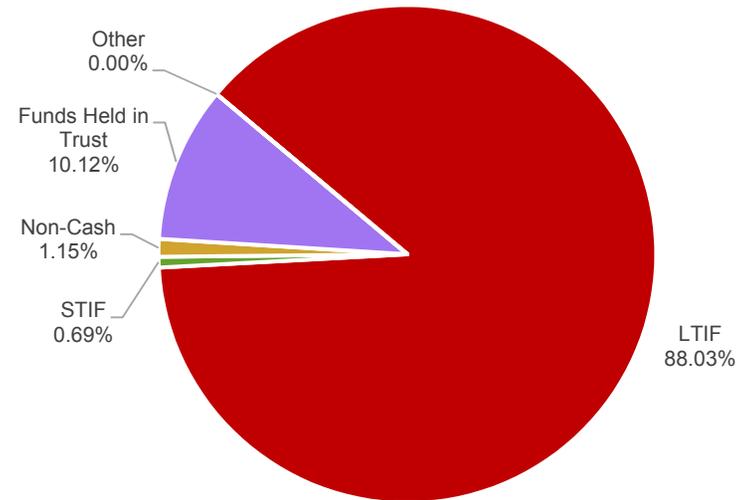
Endowment Data (cont.)

TOTAL ENDOWMENT (Fiscal Year 2017)

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



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



Summary of Endowment

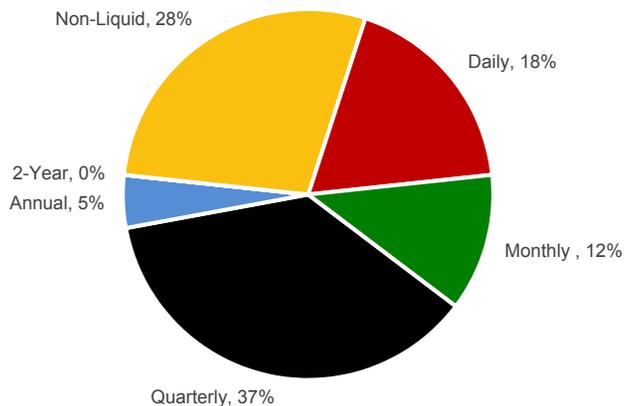
	TTU Foundation	TTU System	TTU HSC	TTU HSC EP	Carr Foundation	ASU	ASU Foundation	Total
LTIF	\$687,760,779	\$1,206,968	\$150,718,941	\$99,179,359	\$129,712,531	\$17,609,135	\$19,791,335	\$1,105,979,048
STIF	\$5,356,790	\$1,294	\$2,890,601	\$188	\$0	\$393,469	\$0	\$8,642,342
Non-Cash	\$4,326,880	\$0	\$1,502,725	\$0	\$8,663,166	\$198	\$0	\$14,492,969
Funds Held in Trust	\$31,799,723	\$0	\$63,087,089	\$32,302,276	\$0	\$0	\$0	\$127,189,088
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$729,244,172	\$1,208,262	\$218,199,356	\$131,481,823	\$138,375,697	\$18,002,802	\$19,791,335	\$1,256,303,447



31st August 2017

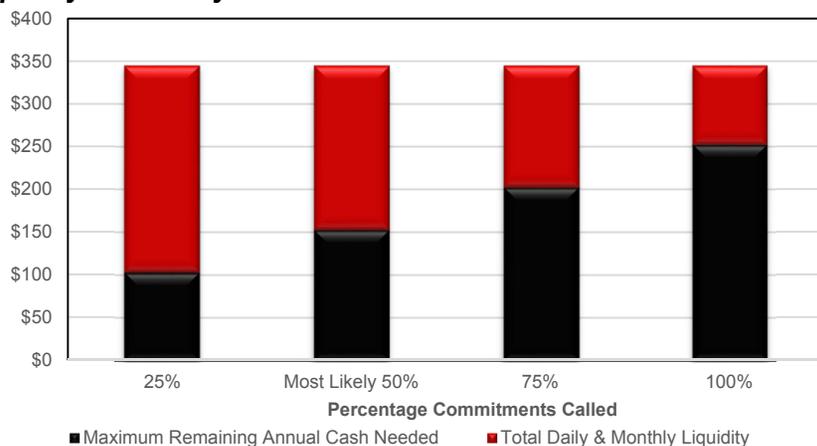
LTIF Liquidity

LTIF Liquidity



LTIF		Liquidity
Daily	\$208,386,080	18.3%
Monthly	\$136,646,610	12.0%
Quarterly	\$419,049,604	36.8%
Annual	\$52,381,200	4.6%
2-Year	\$0	0.0%
Non-Liquid	\$322,258,255	28.3%
Total LTIF	\$1,138,721,749	100%

Liquidity Sensitivity



	<u>Commitment</u>	<u>Capital Called</u>	<u>Distributions</u>	<u>Account Balance</u>	<u>Remaining Commitment</u>
Private Equity	\$261,500,000	\$149,853,303	\$67,122,481	\$110,139,808	\$111,646,697
Private Credit	\$168,353,805	\$110,440,868	\$31,546,906	\$105,028,141	\$57,912,937
Private Real Assets	\$256,163,450	\$226,168,772	\$188,881,299	\$124,559,535	\$29,994,678
Total Illiquid Assets	\$686,017,255	\$486,462,943	\$287,550,686	\$339,727,484	\$199,554,312
			Annual Spending		\$53,600,000
			Total Committed Funds		\$253,154,312

Unfunded Commitments - Sensitivity Analysis

	<u>25% Called</u>	<u>Most Likely 50% Called</u>	<u>75% Called</u>	<u>100% Called</u>
Maximum Remaining Annual Cash Needed	\$103,488,578	\$153,377,156	\$203,265,734	\$253,154,312
Percentage of Daily & Monthly Liquidity	30%	45%	59%	74%

Market Data

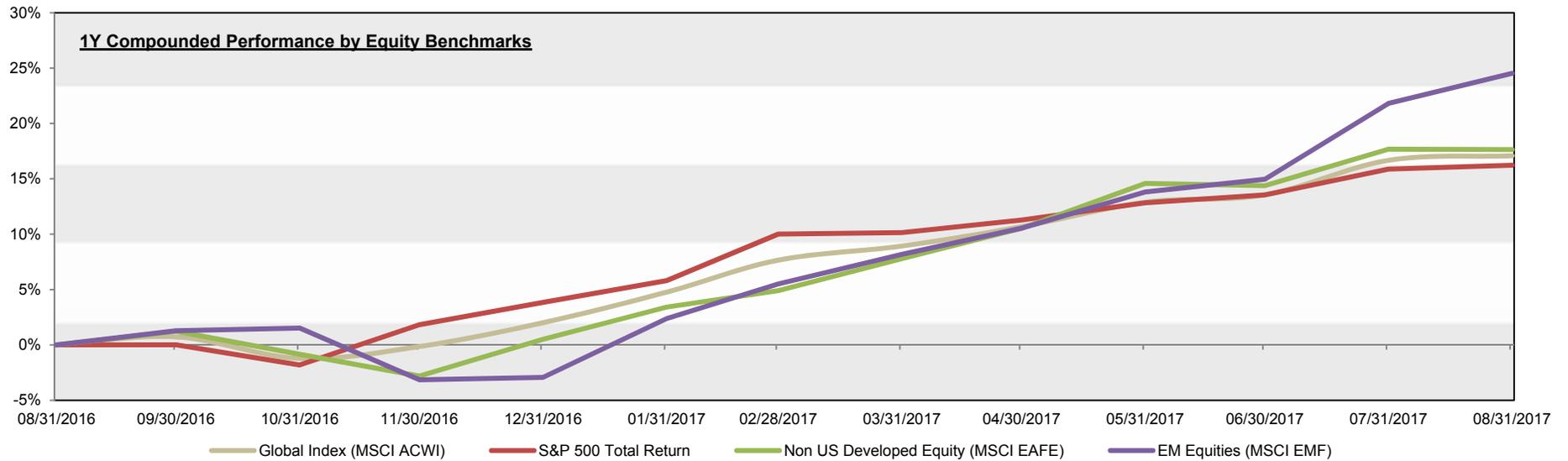
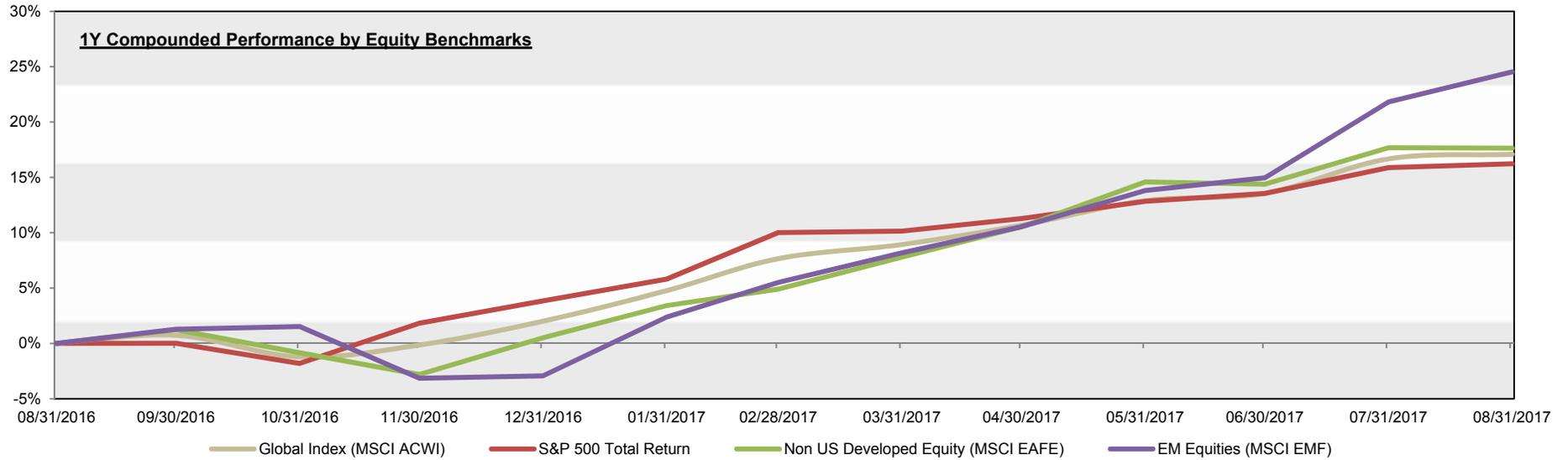
Benchmarks	Underlying	Weight	MTD Perf.	QTD Perf.	Calendar YTD	Fiscal YTD	Nacubo YTD	1 Year Perf.	3 Year Perf.	5 Year Perf.
Policy Benchmarks			0.40%	1.79%	9.33%	10.97%	1.79%	10.97%	5.73%	8.31%
Equity	Global Index (MSCI ACWI)	35%	0.35%	3.11%	14.78%	17.09%	3.11%	17.09%	5.68%	10.66%
Debt	Global Bonds (Barclays Global Agg)	25%	0.99%	2.69%	7.22%	0.19%	2.69%	0.19%	0.65%	0.91%
Diversifying Assets	HFRX Global Hedge Fund	10%	0.29%	1.22%	3.81%	6.37%	1.22%	6.37%	5.24%	5.10%
Private Investments	VE All PE Qtr Lag	27%	0.00%	0.00%	9.01%	17.79%	0.00%	17.79%	10.32%	12.26%
Private Investments	NCREIF	3%	0.00%	0.00%	3.32%	6.97%	0.00%	6.97%	10.16%	10.48%
Other Benchmarks										
Equity	S&P 500 Total Return		0.31%	2.37%	11.93%	16.23%	2.37%	16.23%	9.54%	14.34%
Equity	Non US Developed Equity (MSCI EAFE)		-0.04%	2.85%	17.05%	17.64%	2.85%	17.64%	2.83%	8.48%
Equity	EM Equities (MSCI EMF)		2.23%	8.32%	28.29%	24.53%	8.32%	24.53%	2.38%	5.30%
Debt	EM Bonds (JPM EM Bond Index)		1.73%	2.40%	8.74%	4.52%	2.40%	4.52%	5.20%	4.63%
Cash & Alpha Pool	90 Day T-Bills		0.09%	0.18%	0.55%	0.69%	0.18%	0.69%	0.31%	0.21%
Hedge Funds	HFRI FOF Composite		0.97%	2.00%	5.27%	6.53%	2.00%	6.53%	2.07%	3.97%
Private Investments	Private Market Index (90% VE, 10% NCREIF)		0.00%	0.00%	8.44%	16.70%	0.00%	16.70%	10.30%	12.09%

CIO NOTES:

Commentary will be presented at the meeting.



Market Data (cont.)

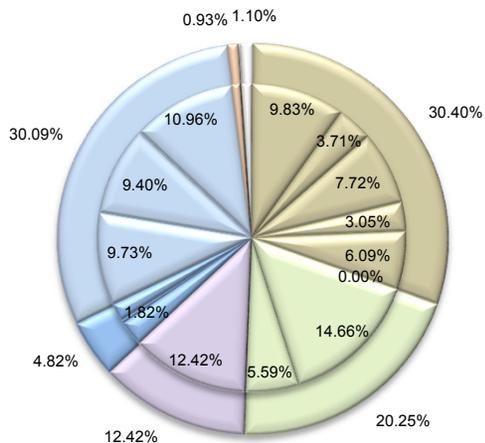




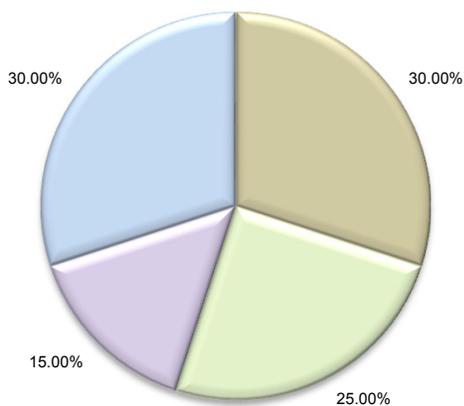
31st August 2017

Asset Class Allocation: Actual vs. Target

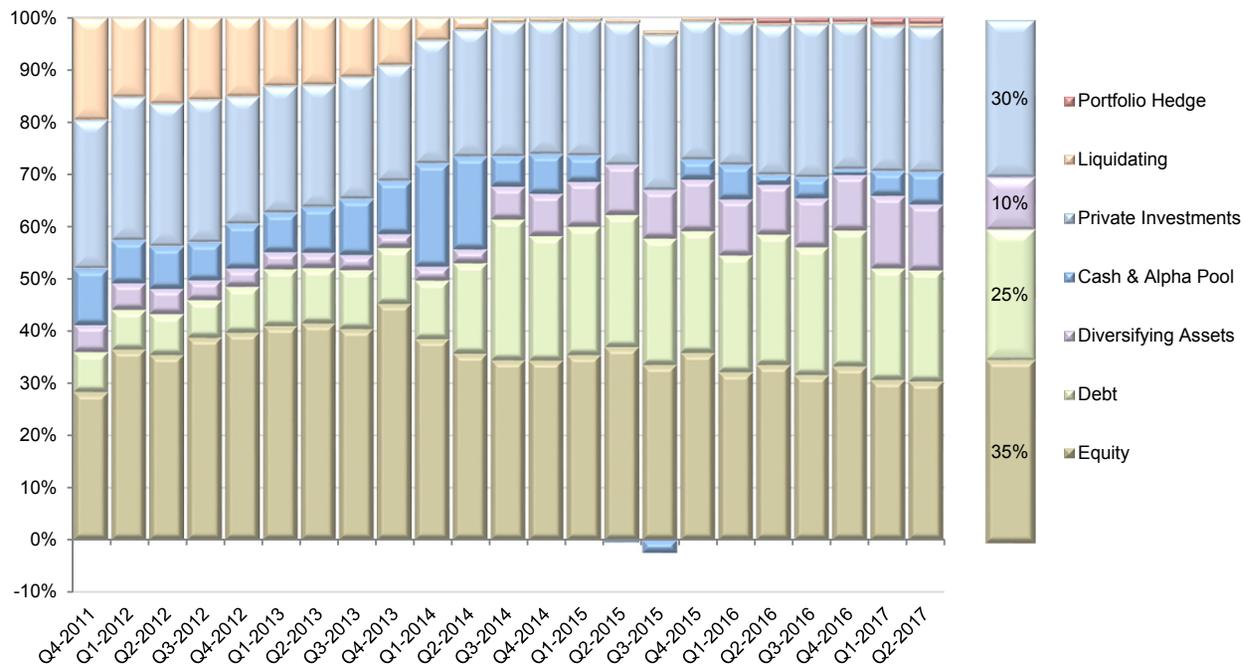
Actual Allocation



Target Allocation

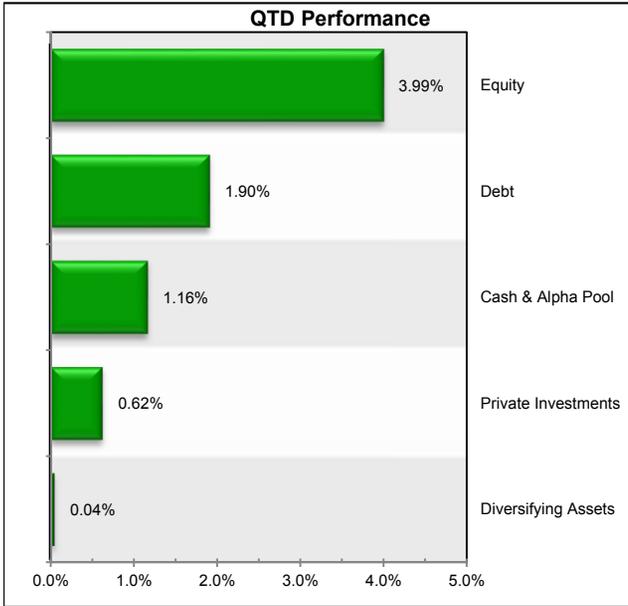


Asset Class	Actual \$ Allocation			Total % Allocation	Target % Allocation	Target Range
	Physical	Synthetic	Total			
Equity	128,623,511	217,520,169	346,143,680	30.40%	30%	30% - 40%
Debt	230,559,876	0	230,559,876	20.25%	25%	20% - 30%
Diversifying Assets	107,122,512	34,314,803	141,437,316	12.42%	15%	5% - 15%
Cash & Alpha Pool	312,730,901	-257,858,289	54,872,612	4.82%	0%	0% - 10%
Private Investments	342,607,548	0	342,607,548	30.09%	30%	10% - 55%
Liquidating	10,629,448	0	10,629,448	0.93%	0%	
Portfolio Hedge	6,447,953	6,023,317	12,471,270	1.10%	0%	
Total	1,138,721,749	0	1,138,721,749	100%	100%	



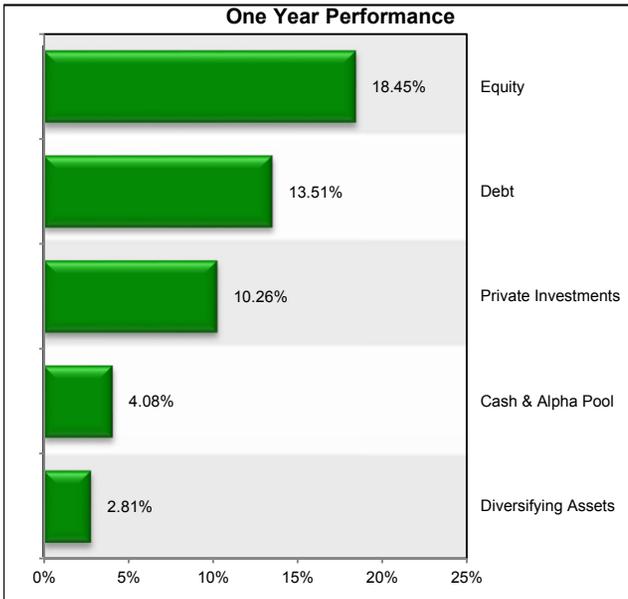


Asset Class Performance: Actual vs. Policy



Asset Class	Month				
	Physical Return	Synthetic Overlay	Alpha Pool + Cash	Total Return	Policy
Equity	0.80%	0.18%	0.64%	0.82%	0.35%
Debt	0.00%			0.00%	0.99%
Diversifying Assets	0.05%	-1.07%	0.64%	-0.07%	0.29%
Cash & Alpha Pool	0.57%			0.57%	
Private Investments	0.38%			0.38%	0.00%
Portfolio Hedge Contr.				0.03%	
Total	0.35%	0.04%	0.64%	0.44%	0.40%

Asset Class	QTD				
	Physical Return	Synthetic Overlay	Alpha Pool + Cash	Total Return	Policy
Equity	3.97%	2.65%	1.33%	3.99%	3.11%
Debt	1.90%			1.90%	2.69%
Diversifying Assets	0.26%	-1.96%	1.33%	0.04%	1.22%
Cash & Alpha Pool	1.16%			1.16%	
Private Investments	0.62%			0.62%	0.00%
Portfolio Hedge Contr.				-0.01%	
Total	1.47%	2.03%	1.33%	1.82%	1.79%



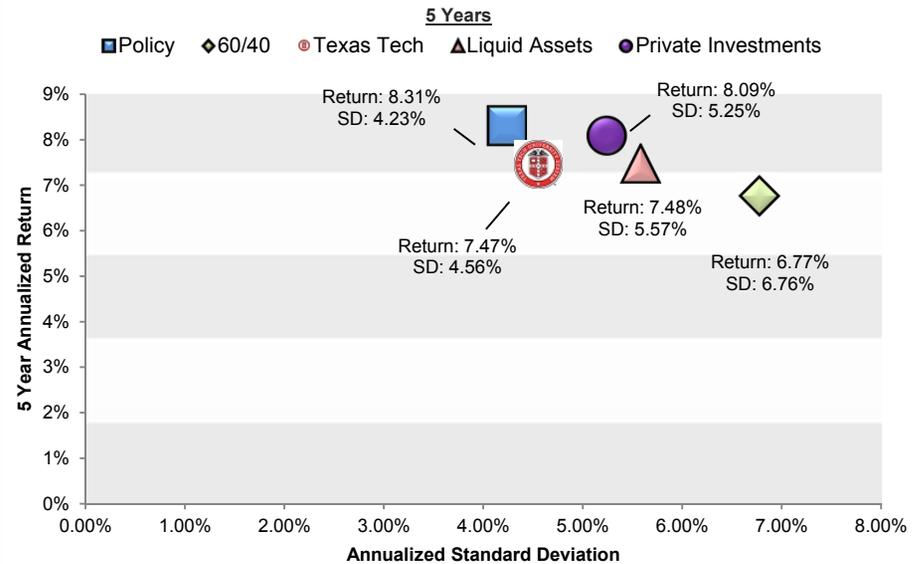
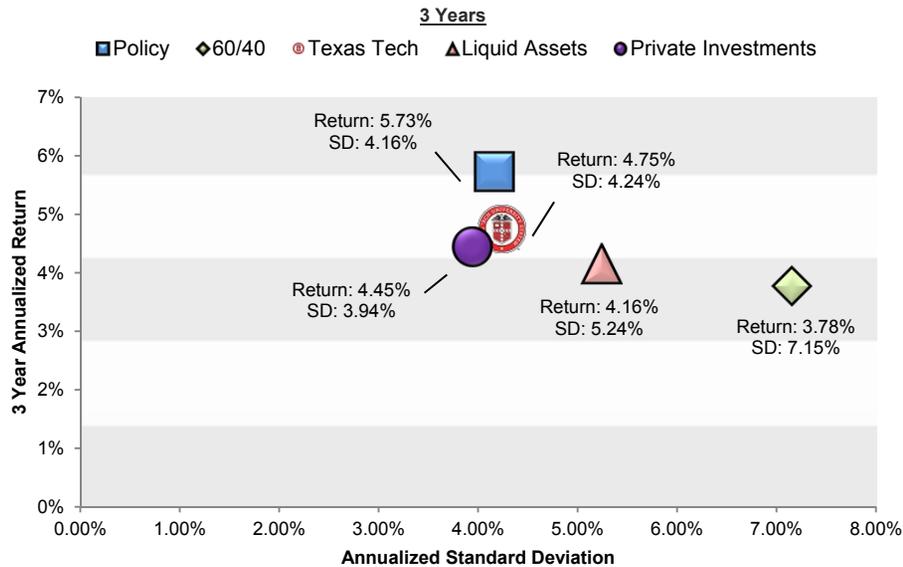
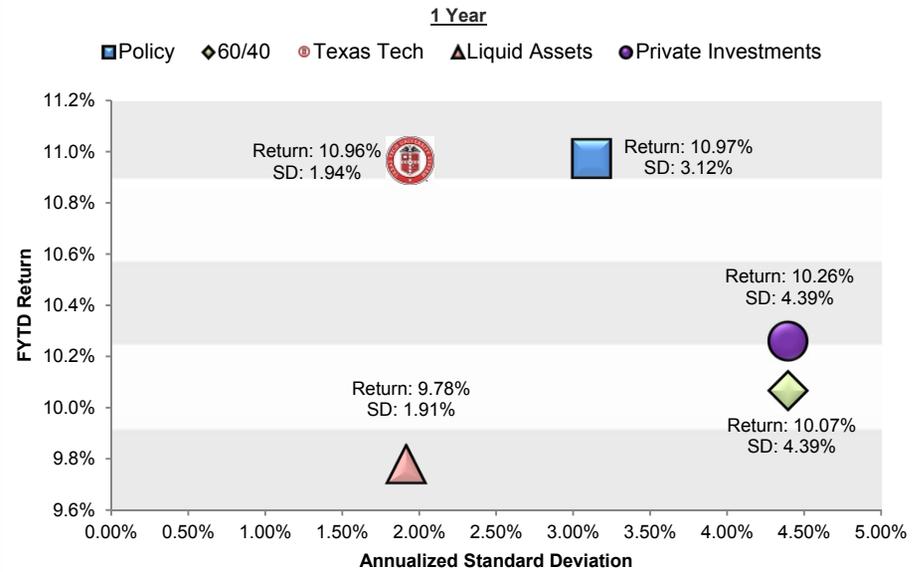
Asset Class	Calendar YTD				
	Physical Return	Synthetic Overlay	Alpha Pool + Cash	Total Return	Policy
Equity	14.97%	13.77%	2.19%	15.70%	14.78%
Debt	7.35%	-0.07%	0.32%	6.88%	7.22%
Diversifying Assets	-0.48%	6.26%	2.19%	1.06%	3.81%
Cash & Alpha Pool	1.86%			1.86%	
Private Investments	1.87%			1.87%	8.44%
Portfolio Hedge Contr.				-0.18%	
Total	5.22%	11.57%	2.19%	6.55%	9.33%

Asset Class	1 Year				
	Physical Return	Synthetic Overlay	Alpha Pool + Cash	Total Return	Policy
Equity	16.52%	15.54%	4.44%	18.45%	17.09%
Debt	15.16%	-0.60%	4.44%	13.51%	0.19%
Diversifying Assets	0.95%	10.02%	4.44%	2.81%	6.37%
Cash & Alpha Pool	4.08%			4.08%	
Private Investments	10.26%			10.26%	16.70%
Portfolio Hedge Contr.				-0.28%	
Total	10.15%	13.08%	4.44%	10.96%	10.97%

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

Commentary

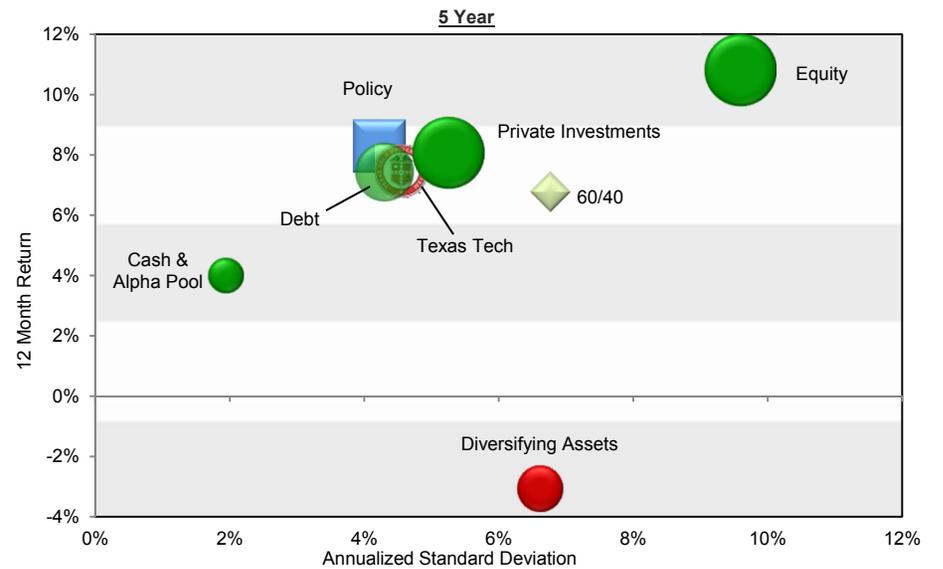
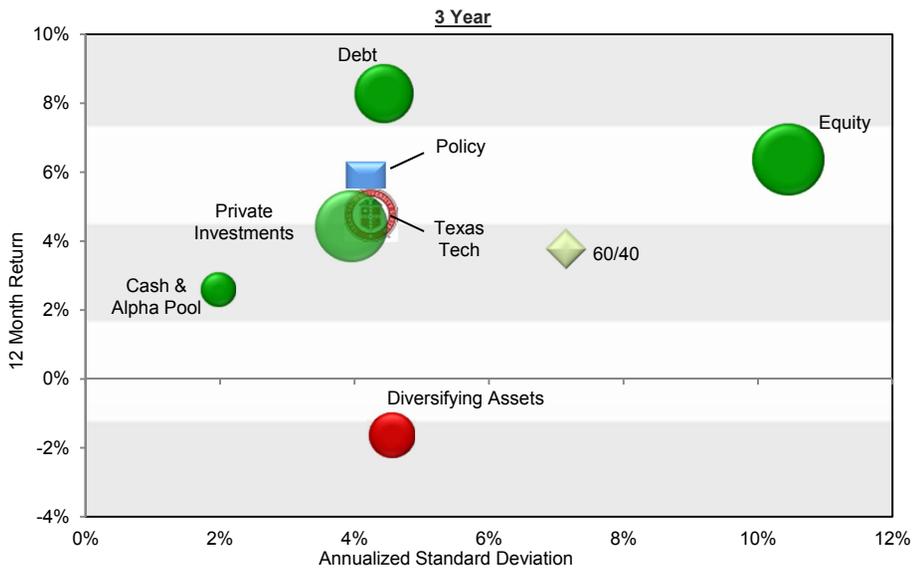
- The Texas Tech portfolio is less volatile than the 60/40 portfolio over all time horizons.
- The Texas Tech portfolio outperforms the 60/40 portfolio over all time horizons.
- Volatility (measured by standard deviation) on the Texas Tech portfolio has decreased over the past 12 months compared with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



Risk Profile*

Commentary

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



*Excluding Liquidating investments.



Appendix I – Sub-Asset Detail

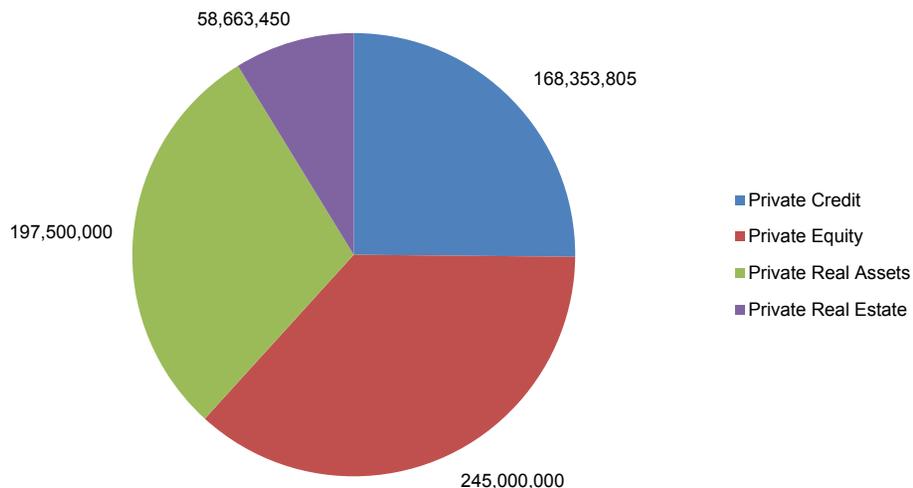
Fund	Current Exposure	MTD Perf.	QTD Perf.	Calendar YTD	Fiscal YTD	Nacubo YTD	1 Year Perf.	3 Year Perf.	5 Year Perf.
TOTAL	1,138,721,749	0.44%	1.82%	6.55%	10.96%	1.82%	10.96%	4.75%	7.47%
Policy		0.40%	1.79%	9.33%	10.97%	1.79%	10.97%	5.73%	8.31%
Portfolio Hedge Contribution	12,471,270	0.03%	-0.01%	-0.18%	-0.28%	-0.01%	-0.28%	n/a	n/a
Equity	346,143,680	0.82%	3.99%	15.70%	18.45%	3.99%	18.45%	6.39%	10.83%
Equity Policy Benchmark (MSCI ACWI)		0.35%	3.11%	14.78%	17.09%	3.11%	17.09%	5.68%	10.66%
US Equity	111,963,750	0.72%	3.37%	13.47%	19.69%	3.37%	19.69%	10.27%	14.07%
<i>Benchmark: S&P 500 Total Return</i>		0.31%	2.37%	11.93%	16.23%	2.37%	16.23%	9.54%	14.34%
Global Equity	42,233,621	1.01%	3.96%	18.09%	15.94%	3.96%	15.94%	7.58%	13.43%
<i>Benchmark: MSCI ACWI (Net)</i>		0.35%	3.11%	14.78%	17.09%	3.11%	17.09%	5.68%	10.66%
Non US Developed Equity	87,927,085	0.50%	3.47%	15.01%	19.23%	3.47%	19.23%	2.79%	9.13%
<i>Benchmark: MSCI EAFE (Net)</i>		-0.04%	2.85%	17.05%	17.64%	2.85%	17.64%	2.83%	8.48%
Non US Emerging Markets Equity	34,714,911	3.23%	10.04%	33.68%	33.42%	10.04%	33.42%	7.56%	8.77%
<i>Benchmark: MSCI EMF (Net)</i>		2.23%	8.32%	28.29%	24.53%	8.32%	24.53%	2.38%	5.30%
Alternative Equity	69,304,314	-0.05%	2.40%	9.75%	14.40%	2.40%	14.40%	7.04%	8.81%
<i>Benchmark: MSCI ACWI (Net)</i>		0.35%	3.11%	14.78%	17.09%	3.11%	17.09%	5.68%	10.66%
Debt	230,559,876	0.00%	1.90%	6.88%	13.51%	1.90%	13.51%	8.28%	7.45%
Debt Policy Benchmark (Barclays Global Agg)		0.99%	2.69%	7.22%	0.19%	2.69%	0.19%	0.65%	0.91%
Sovereign/Investment Grade Bonds	-	0.00%	0.00%	0.25%	1.91%	0.00%	1.91%	2.54%	1.95%
<i>Benchmark: Barclays Global Aggregate</i>		0.99%	2.69%	7.22%	0.19%	2.69%	0.19%	0.65%	0.91%
Credit	166,930,438	-0.88%	1.20%	6.94%	14.34%	1.20%	14.34%	8.29%	9.91%
<i>Benchmark: Barclays Global Aggregate</i>		0.99%	2.69%	7.22%	0.19%	2.69%	0.19%	0.65%	0.91%
Emerging Markets Debt	63,629,439	2.36%	3.76%	8.59%	17.73%	3.76%	17.73%	10.26%	8.38%
<i>Benchmark: JP Morgan EM Bond Index</i>		1.73%	2.40%	8.74%	4.52%	2.40%	4.52%	5.20%	4.63%
Diversifying Assets	141,437,316	-0.07%	0.04%	1.06%	2.81%	0.04%	2.81%	-1.63%	-3.05%
<i>Benchmark: HFRXGL Index</i>		0.29%	1.22%	3.81%	6.37%	1.22%	6.37%	5.24%	5.10%
Cash & Alpha Pool	54,872,612	0.57%	1.16%	1.86%	4.08%	1.16%	4.08%	2.60%	4.02%
Cash	15,959,894	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
Cash Collateral	64,742,298	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	n/a
Collateral Held Elsewhere	9,790,000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	n/a	n/a
Adjustments for Synthetic Exposure	(257,858,289)								
Alpha Pool	222,238,710	0.80%	1.67%	2.74%	5.56%	1.67%	5.56%	3.47%	5.64%
<i>Benchmark: HFRI FOF Index</i>		0.97%	2.00%	5.27%	6.53%	2.00%	6.53%	2.07%	3.97%
Liquidating	10,629,448	-1.31%	11.68%	201.68%	194.46%	11.68%	194.46%	48.95%	28.21%
Private Investments	342,607,548	0.38%	0.62%	1.87%	10.26%	0.62%	10.26%	4.45%	8.09%
<i>Benchmark: Private Market Index (90% VE, 10% NCREIF)</i>		0.00%	0.00%	8.44%	16.70%	0.00%	16.70%	10.30%	12.09%
Private Equity	110,824,040	0.28%	0.32%	-0.46%	7.38%	0.32%	7.38%	4.41%	8.33%
Private Credit	107,026,998	0.46%	0.32%	3.04%	7.73%	0.32%	7.73%	4.27%	9.34%
Private Real Assets	124,756,510	0.40%	1.13%	2.50%	14.51%	1.13%	14.51%	3.92%	6.74%



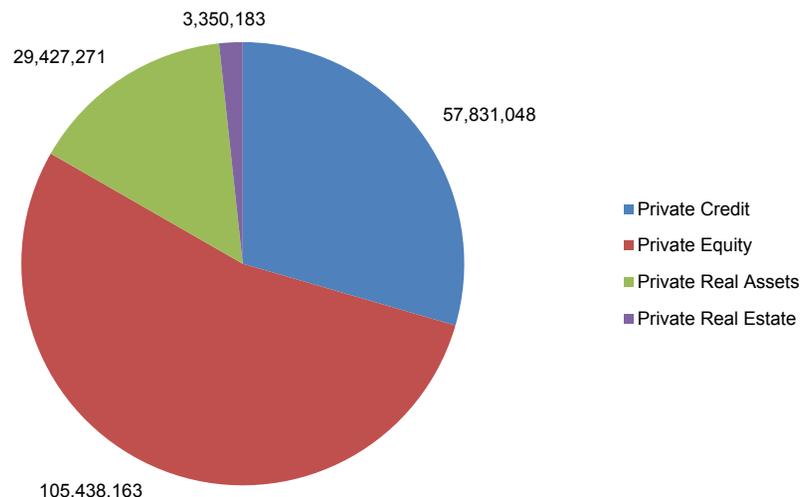
31st August 2017

Appendix VII - Private Markets Report (as of August 2017) - Total Commitment

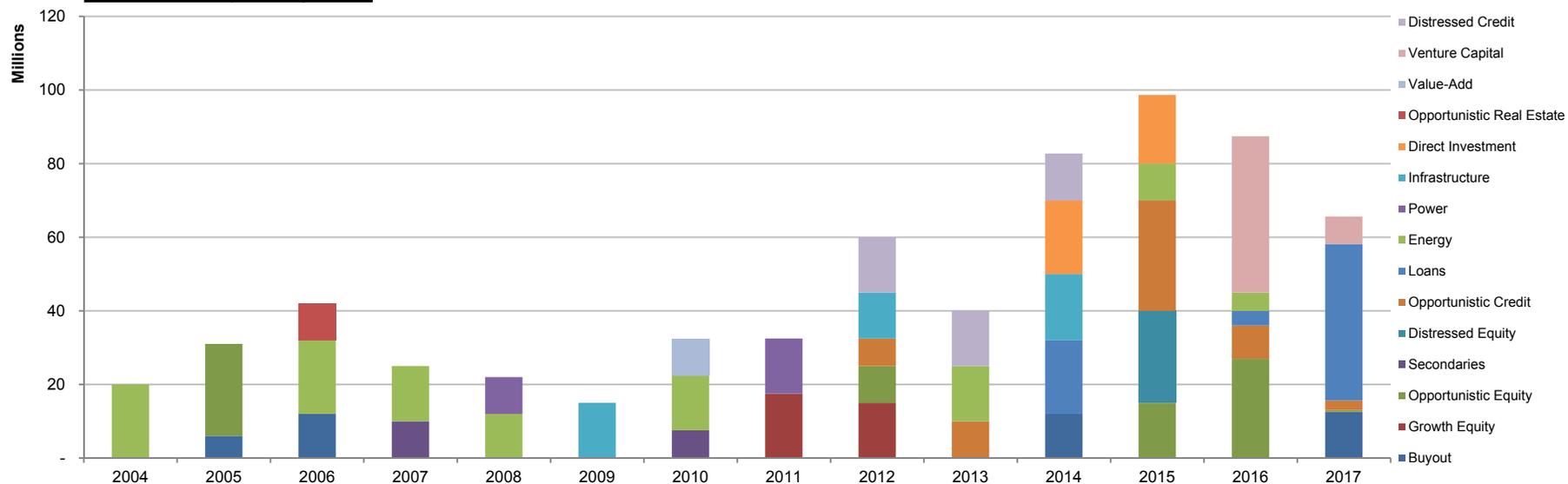
Total Commitment



Total Unfunded



Commitment by Vintage Year



Data provided by Texas Tech University System
 Reported valuations use latest available statements ranging from June 2016 to August 2017
 Adjusted Valuations include all cashflows through August 2017



Appendix VII - Private Markets Report (as of August 2017) - Performance Analysis by Asset Class & Strategy Type

Performance by Asset Class

Asset Class	# of Funds	Commitment	Funded	Paid-In Capital	Distributions	% Drawn	Reported Valuation	Adjusted Valuation	IRR	MOC
Private Equity	19	\$245,000,000	\$149,853,304	\$156,069,817	\$67,122,480	64%	\$82,981,965	\$109,783,253	4.33%	1.15
Private Credit	14	\$168,353,805	\$110,522,757	\$114,652,155	\$31,628,794	68%	\$100,824,488	\$104,325,689	7.55%	1.19
Private Real Assets	14	\$197,500,000	\$168,904,282	\$184,027,939	\$171,941,844	93%	\$70,047,229	\$72,568,758	14.15%	1.31
Private Real Estate	4	\$58,663,450	\$57,264,491	\$58,712,804	\$15,458,381	100%	\$53,234,180	\$51,782,282	4.16%	1.15
Total	51	\$669,517,255	\$486,544,834	\$513,462,715	\$286,151,499	77%	\$307,087,862	\$338,459,982	8.11%	1.22

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	4	\$42,500,000	\$34,665,085	\$36,349,480	\$20,205,286	86%	\$9,994,536	\$21,615,637	5.61%	1.24
	Distressed Equity	1	\$25,000,000	\$4,524,992	\$4,524,992	\$1,004,850	18%	\$5,181,516	\$5,181,516	26.73%	1.37
	Growth Equity	2	\$32,500,000	\$22,710,709	\$25,986,287	\$4,482,966	80%	\$24,210,518	\$24,048,392	3.79%	1.10
	Opportunistic Equity	7	\$77,500,000	\$62,938,545	\$63,288,169	\$27,835,509	82%	\$34,361,198	\$45,156,487	4.23%	1.15
	Secondaries	2	\$17,500,000	\$16,409,849	\$17,074,890	\$13,593,869	98%	\$5,426,437	\$5,048,462	2.07%	1.09
	Venture Capital	3	\$50,000,000	\$8,604,124	\$8,845,999	\$0	18%	\$3,807,760	\$8,732,759	-2.34%	0.99
	Total	19	\$245,000,000	\$149,853,304	\$156,069,817	\$67,122,480	64%	\$82,981,965	\$109,783,253	4.33%	1.15
Private Credit	Distressed Credit	3	\$42,750,000	\$40,119,345	\$40,248,413	\$15,674,453	94%	\$32,656,467	\$32,112,516	5.81%	1.19
	Loans	5	\$66,452,805	\$33,881,949	\$34,478,994	\$6,799,921	52%	\$36,574,258	\$35,911,087	11.22%	1.24
	Opportunistic Credit	6	\$59,151,000	\$36,521,463	\$39,924,748	\$9,154,420	67%	\$31,593,763	\$36,302,086	7.14%	1.14
	Total	14	\$168,353,805	\$110,522,757	\$114,652,155	\$31,628,794	68%	\$100,824,488	\$104,325,689	7.55%	1.19
Private Real Assets	Energy	8	\$112,000,000	\$105,968,776	\$112,487,451	\$114,426,098	100%	\$32,700,460	\$34,171,989	13.89%	1.30
	Infrastructure	3	\$45,500,000	\$37,773,107	\$45,517,199	\$48,765,110	100%	\$24,638,158	\$24,638,158	31.06%	1.61
	Power	2	\$25,000,000	\$21,862,399	\$22,723,289	\$8,750,636	91%	\$10,460,890	\$10,460,890	-5.34%	0.85
	Opportunistic Real Assets	1	\$15,000,000	\$3,300,000	\$3,300,000	\$0	22%	\$2,247,721	\$3,297,721	0.00%	0.00
	Total	13	\$197,500,000	\$168,904,282	\$184,027,939	\$171,941,844	93%	\$70,047,229	\$72,568,758	14.15%	1.31
Private Real Estate	Direct Investment	2	\$38,663,450	\$39,709,817	\$41,101,630	\$9,342,109	106%	\$40,795,042	\$40,612,280	11.03%	1.22
	Opportunistic Real Estate	1	\$10,000,000	\$10,000,000	\$10,000,000	\$0	100%	\$3,914,449	\$3,914,449	-11.47%	0.39
	Value-Add	1	\$10,000,000	\$7,554,674	\$7,611,174	\$6,116,272	76%	\$8,524,689	\$7,255,553	12.45%	1.76
	Total	4	\$58,663,450	\$57,264,491	\$58,712,804	\$15,458,381	100%	\$53,234,180	\$51,782,282	4.16%	1.15



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