



Office of Investments

Joint Annual Meeting

Tim Barrett, CFA - CIO

Tim Bruce, Partner - NEPC

October 4th 2019

Agenda



- I. Market Overview**
- II. TTUS Performance**
- III. Overview of investment office/changes from last year**
- IV. Overview of the IAC**
- V. Conclusions**

I. Market Overview

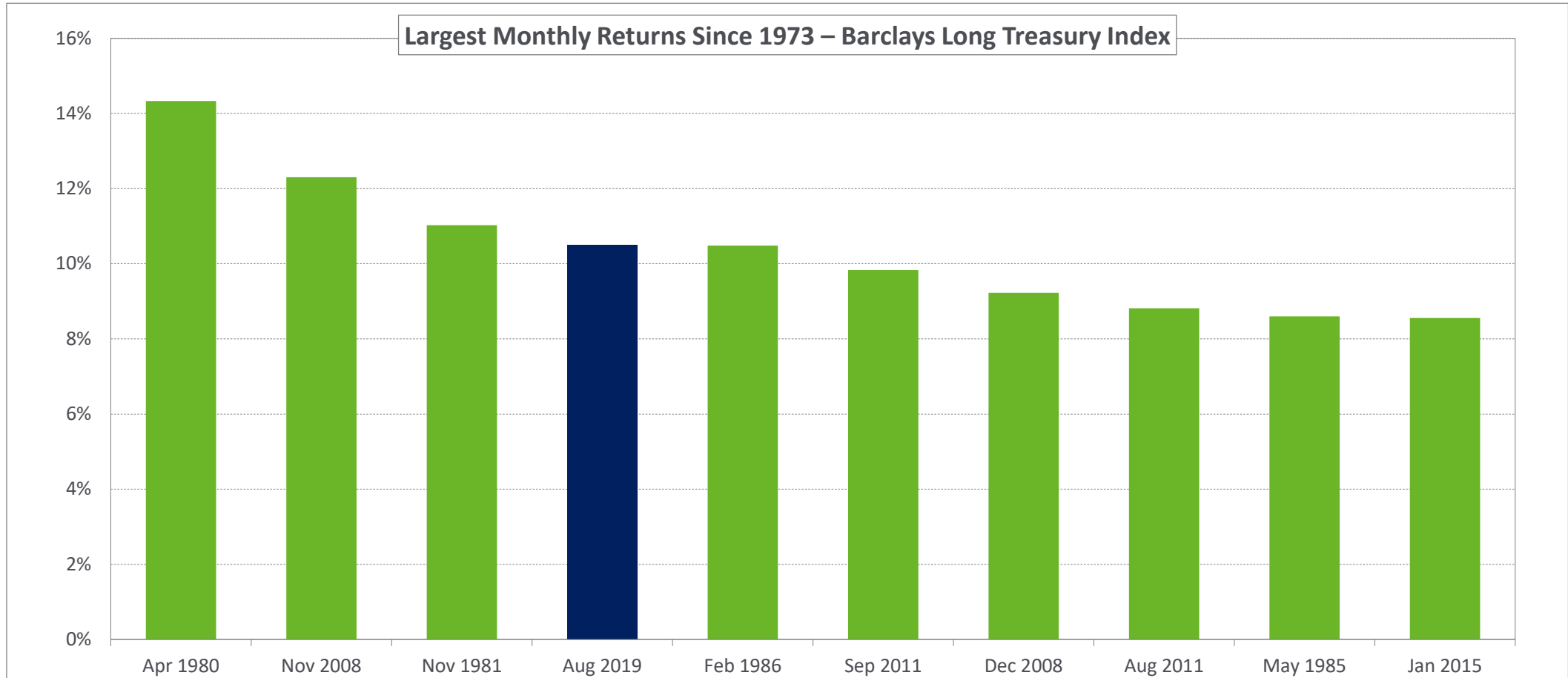
Periods of Inadequate Returns Using Only Equities and Bonds



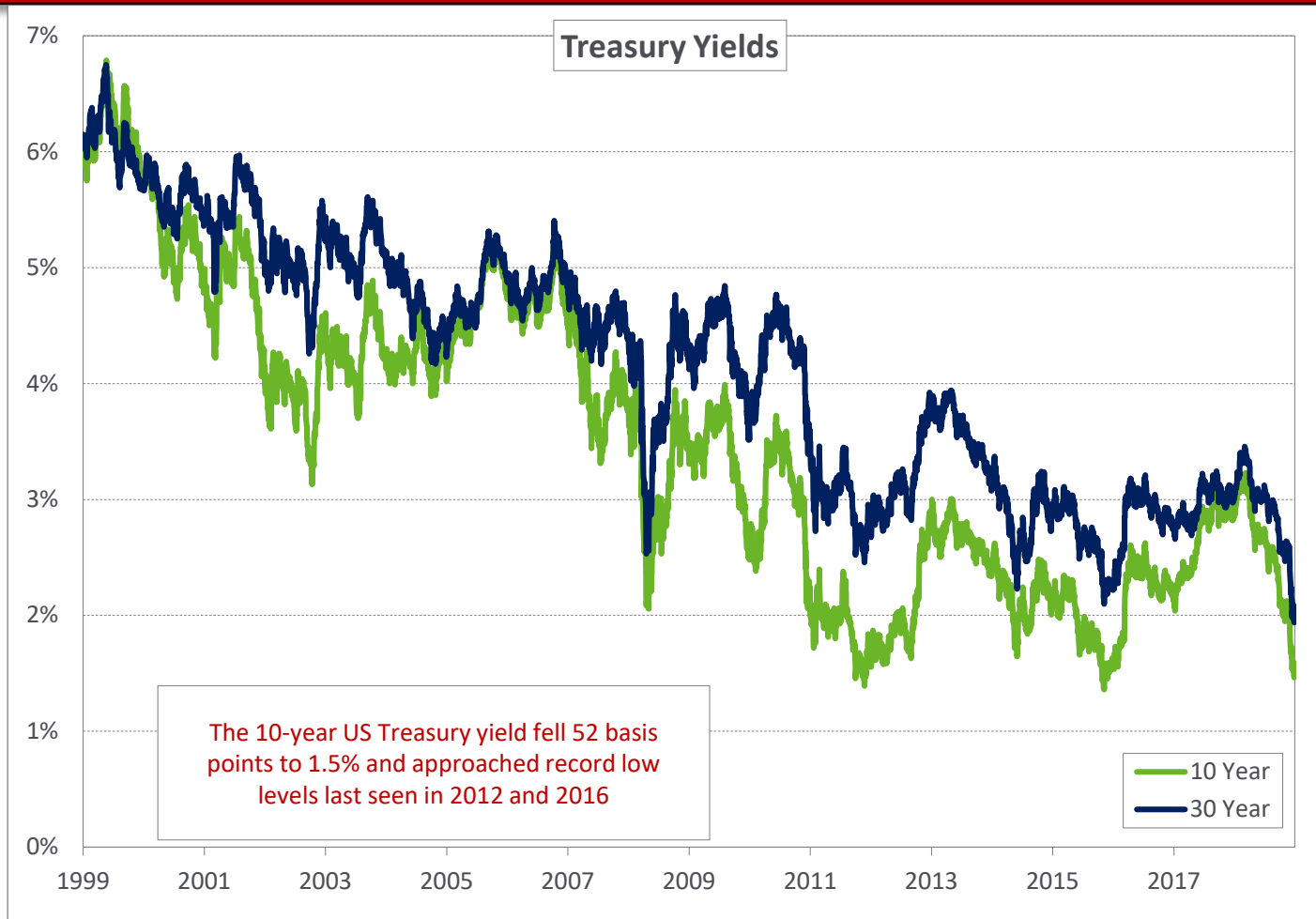
Asset Class	2010	2011	2012	2013	2014	2015	2016	2017	2018	Aug	YTD
Equities and Bonds											
MSCI ACWI (Equities)	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	-2.4%	13.8%
BC Global Agg (Bonds)	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	2.0%	7.4%
Other Diversifying Assets											
Private Equity	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	-	4.9%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	0.4%	11.0%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	6.0%	23.7%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	0.7%	13.5%

Source: FactSet, Barclays, Thomson One
 *Private Equity return represents calendar year pooled IRR and is subject to a one quarter lag

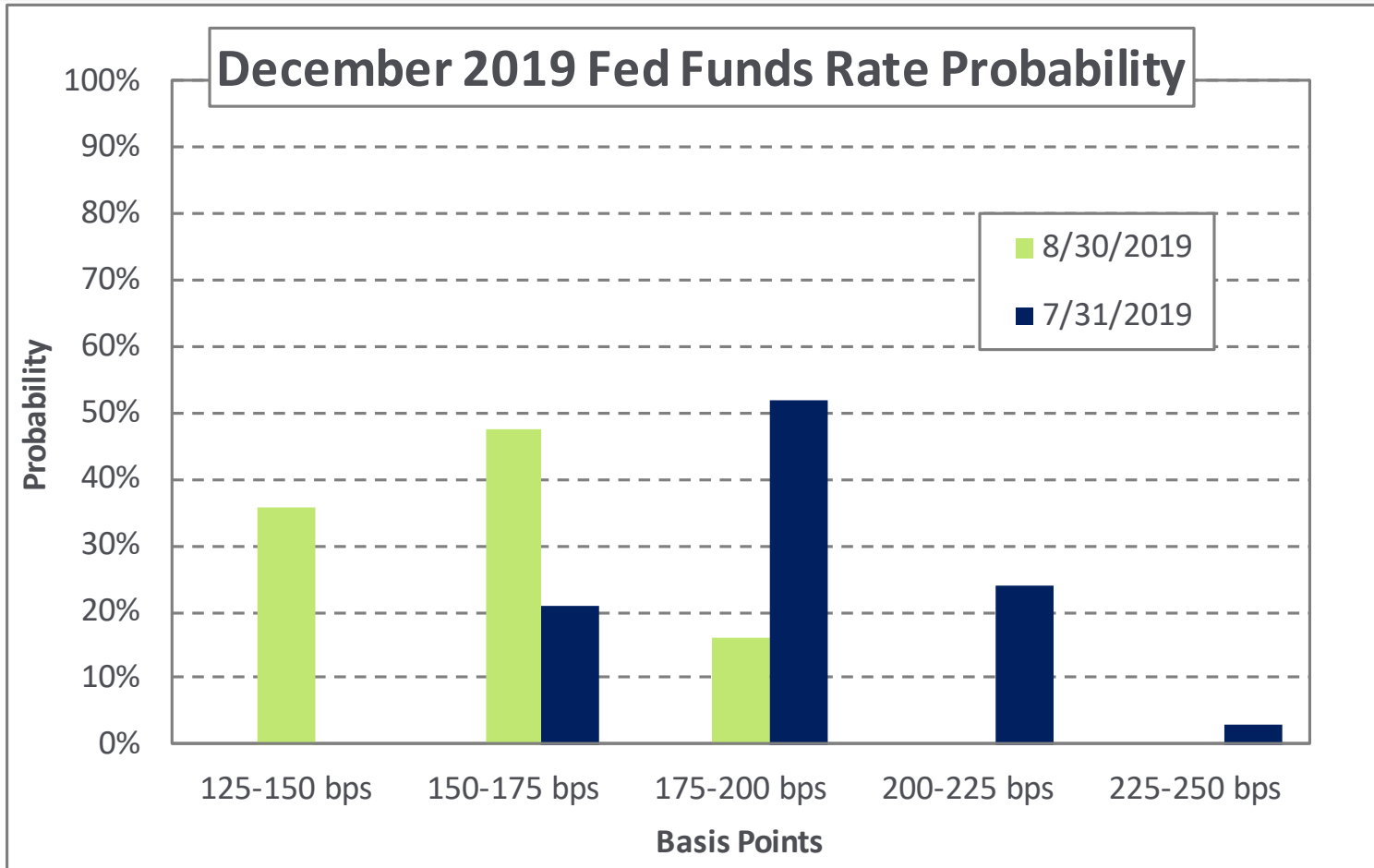
Historic Move for Long Treasuries



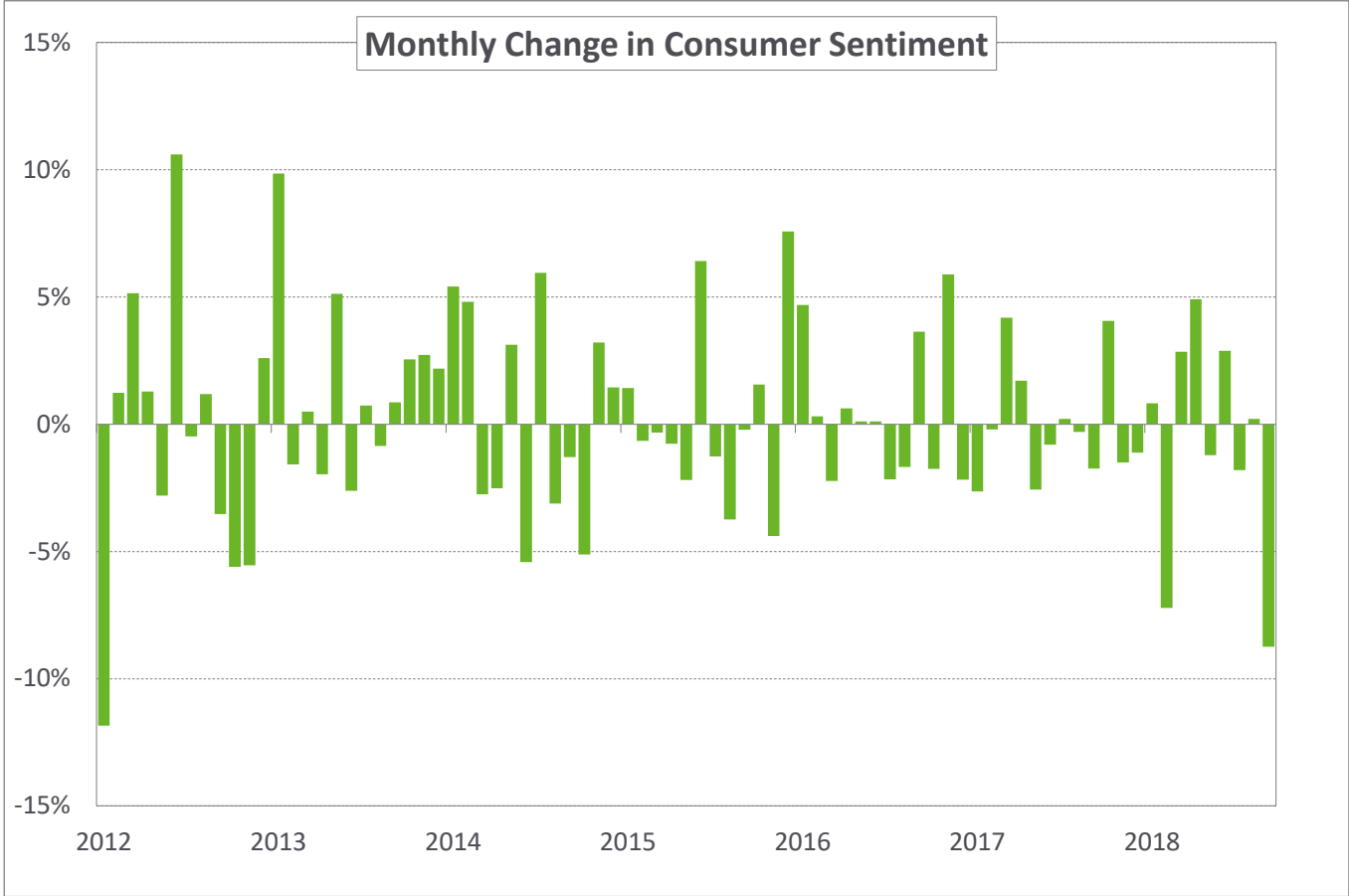
30Y Treasury Yield Fell to Record Low



Market Expects Further Rate Cuts

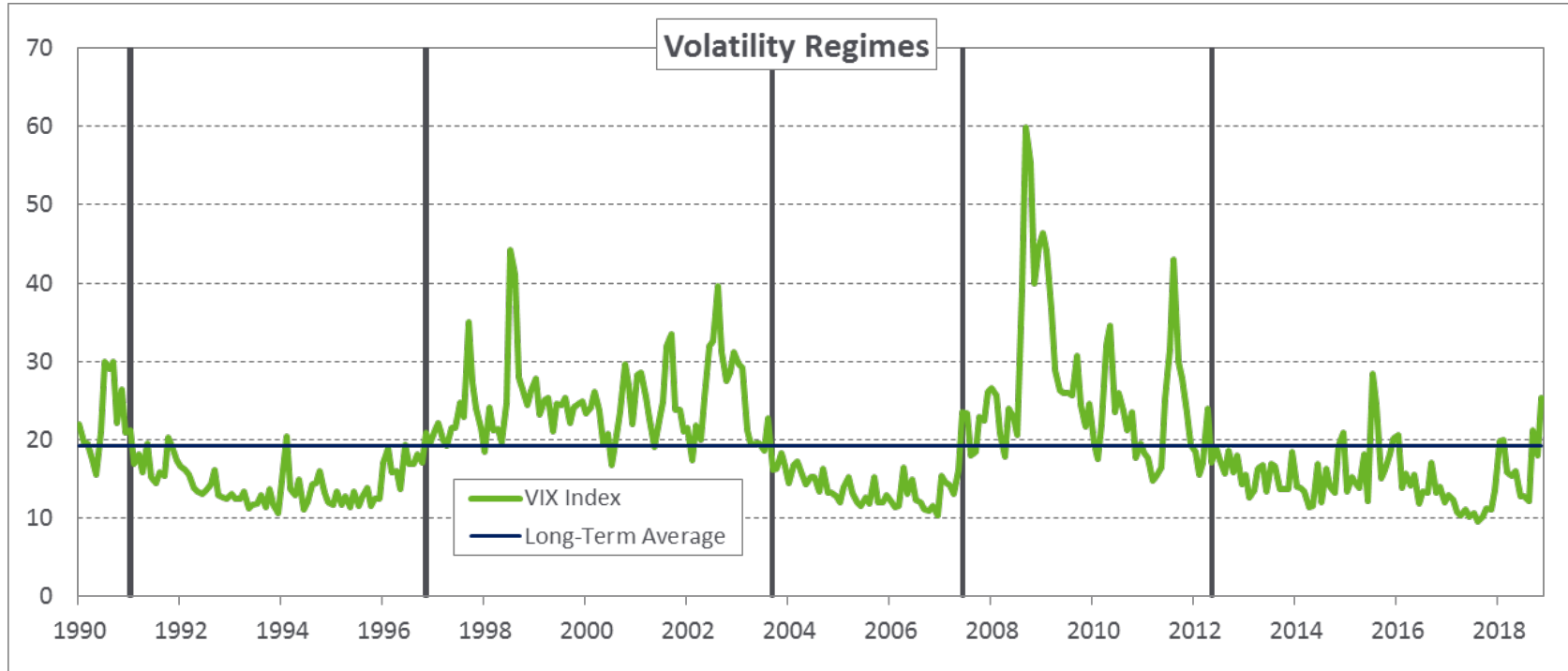


Tariffs Weigh on US Consumer Sentiment



Source: University of Michigan, FactSet

Higher Volatility





Market Outlook Summary

- With low yields and high equity valuations, these are challenging times to invest
- We remain focused on building a portfolio that can weather these times
- Volatility regimes tend to move in cycles and we need to be conscious of how investments will perform in a higher volatility environment
- Sentiment and Fed action seems to have an outsized impact on markets today and likely going forward

II. TTUS Performance

Update



Today's update is a broad overview, especially for the new faces in the room. I will cover:

1. Objectives of the investment pools
2. Performance from an absolute, relative and peer perspective
3. Investments in our team and systems
4. Role and makeup of the IAC

TTUS Investment Pools



Objective: **Long Term Investment Fund (LTIF)**

Provide a consistent, growing, inflation adjusted revenue stream for the Regents, Chancellor and Presidents to provide funding for student scholarships and academic chairs.

Objective: **Intermediate Term Investment Fund (ITIF)**

Provide a consistent, growing, inflation adjusted revenue stream for the TTUS CFO and Component Institution CFO's to manage the day to day operations of the institutions.

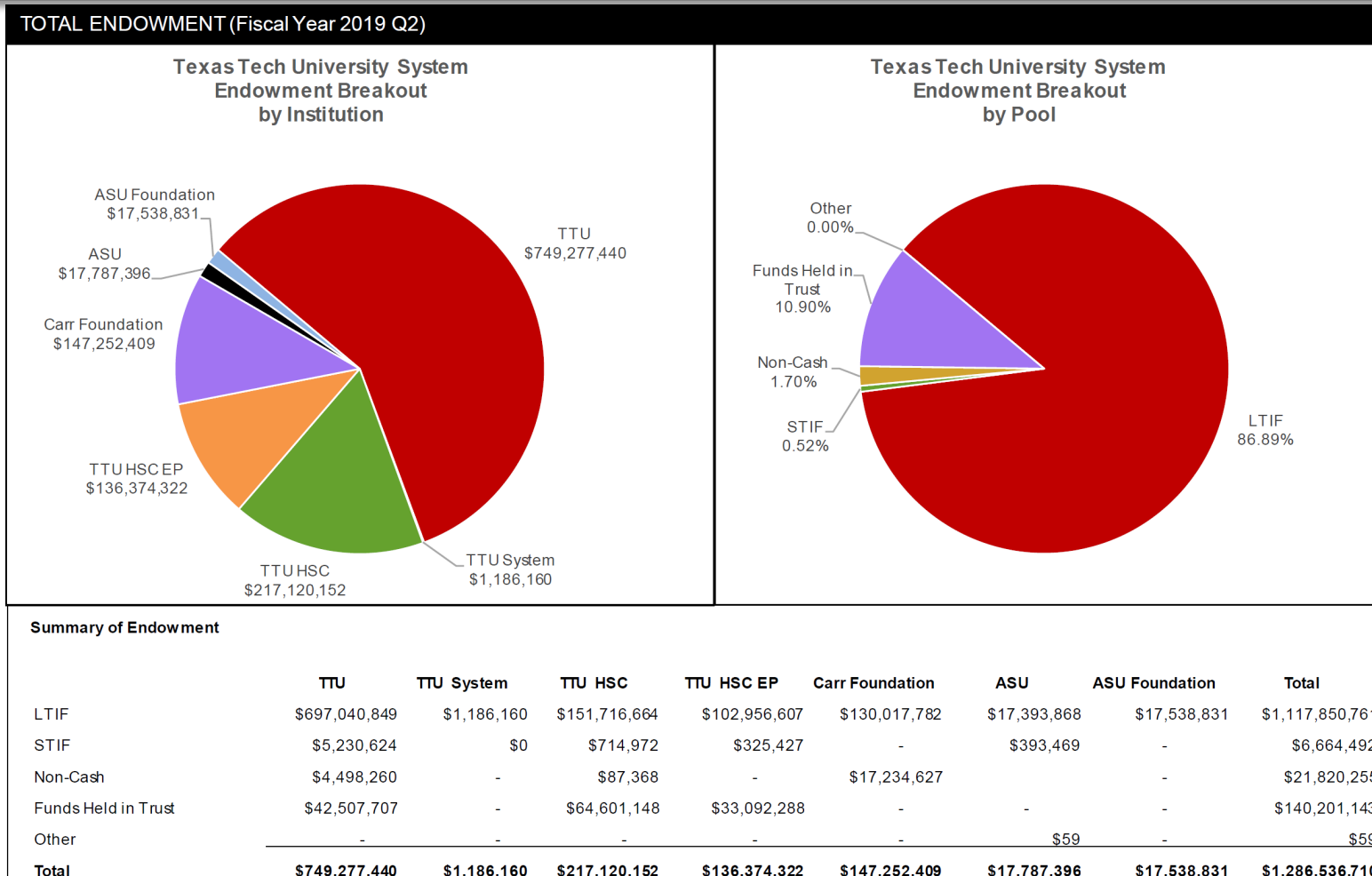
LTIF and ITIF Allocations



Allocation Targets		
	LTIF	ITIF
Public Equity	30%	25%
Public Debt	20%	25%
Public Diversifying	20%	30%
Private Equity	10%	0%
Private Credit	10%	20%
Private Diversifying	10%	0%

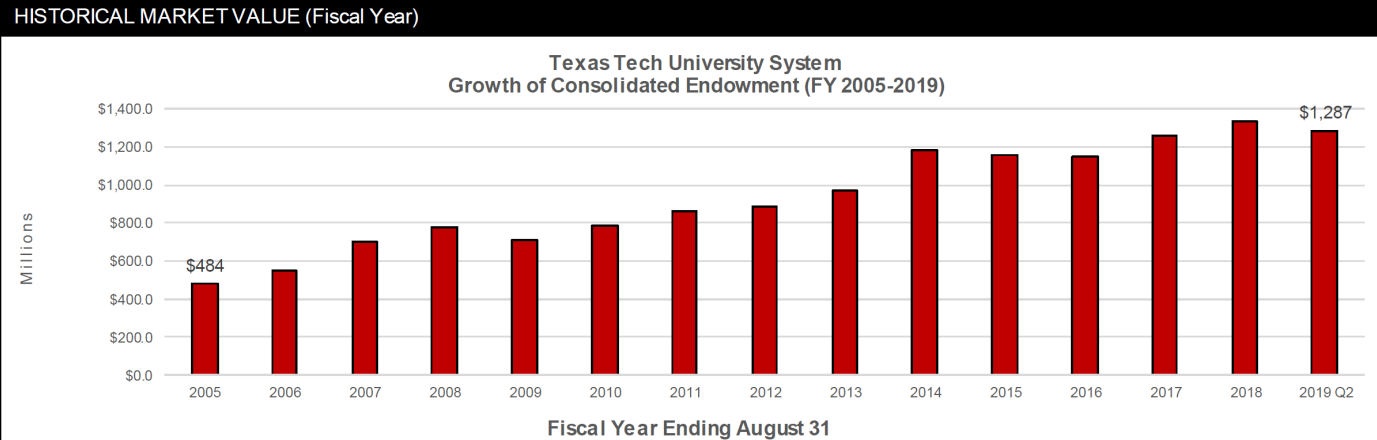
While both LTIF and ITIF have similar objectives, the ITIF liquidity requirements mandate less private capital strategies. This can be seen in the allocations to Private Equity and Private Diversifying Assets which are illiquid in nature.

Total Endowment (Fiscal Year 2019 thru Q2)

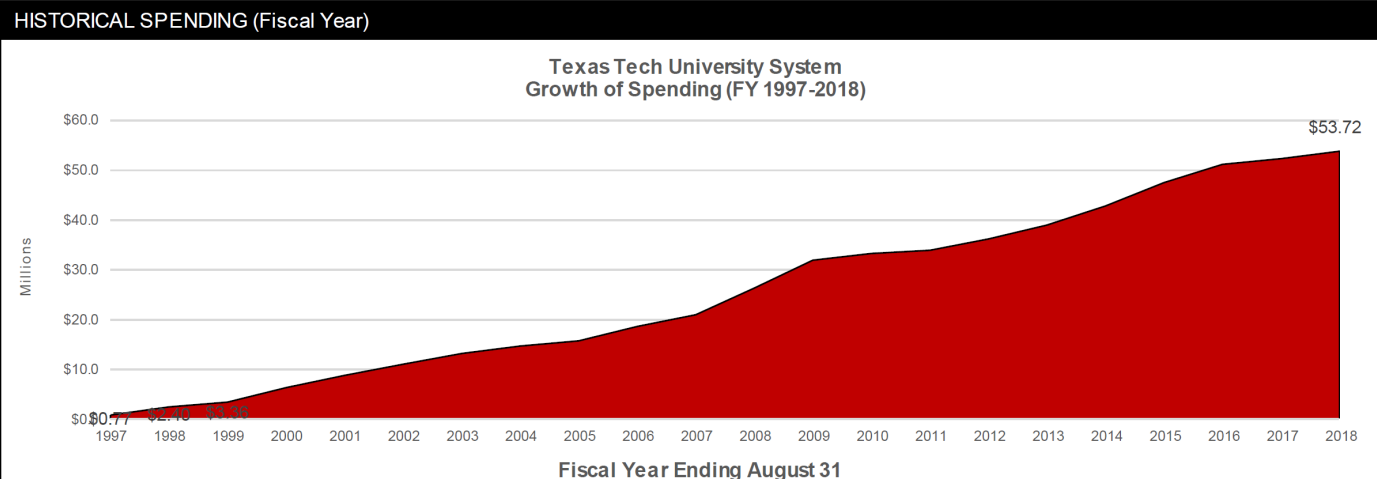


Endowment Size & Spending

(Fiscal Year 2019 thru Q2)



Fiscal Year	Additions (mm)	Distributions (mm)
2015	\$50.45	\$47.42
2016	\$33.78	\$51.09
2017	\$38.44	\$52.23
2018	\$35.37	\$53.72



- Paid to institution since inception: **\$561.80 mm**
- Spending/Distribution rate: **4.5%**
- The 4.5% distribution rate has been realized every year since inception.



Asset Allocation Overview

Public Equity (30%)

- Liquid
- Efficient market
- Passive exposure
- Equity risk premium

Private Equity (10%)

- High dispersion
- Persistent returns
- Focus on Venture
- Long term growth

Debt (20%)

- Liquid
- Moderate cash flow
- Focus on active managers

Private Credit (10%)

- High cash flow
- Bank replacement creates lending opportunities

Diversifying (20%)

- Liquid
- Moderate cash flow
- Opportunistic

Private Real (10%)

- Inflation protection
- Infrastructure and real estate
- Energy

Alpha Pool (25%)

- Liquid
- Non-Correlated
- Lower Volatility
- Cash efficient
- Improve risk adjusted returns

LTIF Policy Performance

(As of August 31, 2019)



Benchmarks	Underlying	Weight	MTD Perf.	QTD Perf.	Calendar YTD	Fiscal YTD	Nacubo YTD	1 Year Perf.	3 Year Perf.	5 Year Perf.
Policy Benchmarks			-0.21%	-0.02%	7.85%	3.56%	-0.02%	3.56%	7.46%	5.74%
Equity	Global Index (MSCI ACWI with USA Gross)	30%	-2.33%	-2.01%	14.26%	0.28%	-2.01%	0.28%	9.56%	5.80%
Debt	Global Bonds (Barclays Global Agg)	20%	2.03%	1.75%	7.42%	7.77%	1.75%	7.77%	2.12%	1.63%
Diversifying Assets	HFRX Global Hedge Fund	20%	0.38%	1.16%	5.43%	-1.12%	1.16%	-1.12%	2.22%	3.20%
Private Investments	Private Market Composite	30%	0.00%	0.00%	3.11%	6.40%	0.00%	6.40%	12.66%	10.47%
Other Benchmarks										
Equity	S&P 500 Total Return		-1.58%	-0.17%	18.34%	2.92%	-0.17%	2.92%	12.70%	10.11%
Equity	Non US Developed Equity (MSCI EAFE)		-2.59%	-3.83%	9.66%	-3.26%	-3.83%	-3.26%	5.91%	1.89%
Equity	EM Equities (MSCI EMF)		-4.88%	-6.04%	3.90%	-4.36%	-6.04%	-4.36%	5.76%	0.38%
Debt	EM Bonds (JPM EM Bond Index)		0.55%	1.70%	12.49%	13.11%	1.70%	13.11%	4.08%	4.66%
Cash & Alpha Pool	90 Day T-Bills		0.17%	0.35%	1.55%	2.34%	0.35%	2.34%	1.54%	0.97%
Hedge Funds	HFRX FOF Composite		-0.59%	-0.30%	5.85%	0.42%	-0.30%	0.42%	3.48%	2.03%
Private Investments	Private Market Composite		0.00%	0.00%	3.11%	6.40%	0.00%	6.40%	12.66%	10.47%

CIO NOTES:

Equity markets lagged in August as trade tensions between the US and China resurfaced and investors fretted over slowing global economic growth. The S&P 500 Index declined 1.6% last month as the US manufacturing sector grew at its slowest pace since 2009, according to Markit's Manufacturing Purchasing Managers' Index. The MSCI EAFE Index lost 2.6%, while the MSCI Emerging Market Index fell 4.9% as currency weakness in China put a damper on the rest of the EM Index.

Global bond yields continued to decline as demand for safe-haven assets rose. In the US, 30- and 10-year Treasury yields dropped 57 and 52 basis points, respectively, causing the yield curve to fully invert. As a result, the Barclays US Long Treasury Index shot up 10.5%, its fourth-highest monthly return since inception in 1973. In emerging markets, a stronger US dollar caused hard-currency bonds to outperform local-currency debt, resulting in a 0.7% gain in the JPM EMBI Global Diversified Index and a loss of 2.6% in the JPM GBI-EM Global Diversified Index.

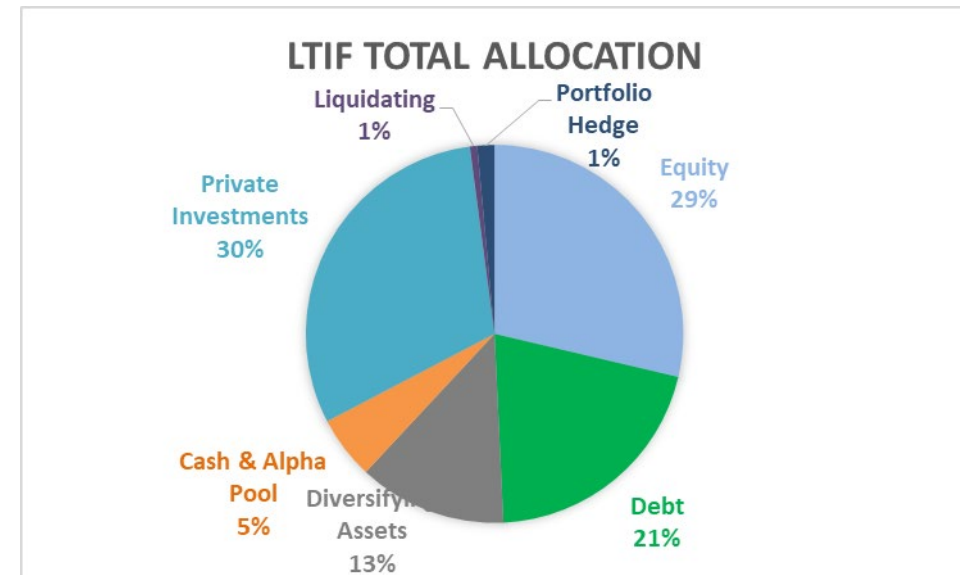
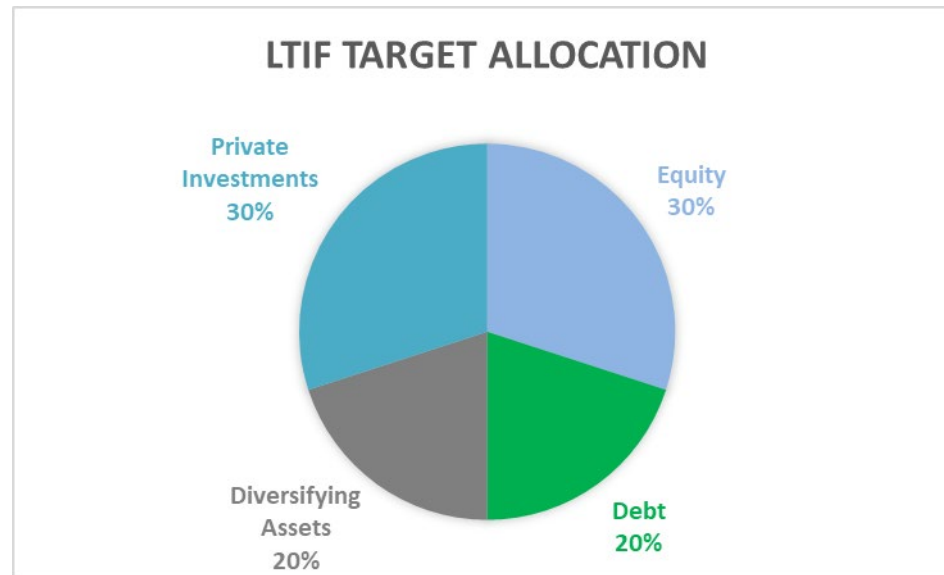
Meanwhile, in real assets, gold prices got a shot in the arm, rising 7.5% in August, amid concerns around global growth and a lower-yield environment. Additionally, spot WTI crude oil fell 5.9% to \$55.06 per barrel but remains up 21.9% for the year.

Performance & Asset Allocation

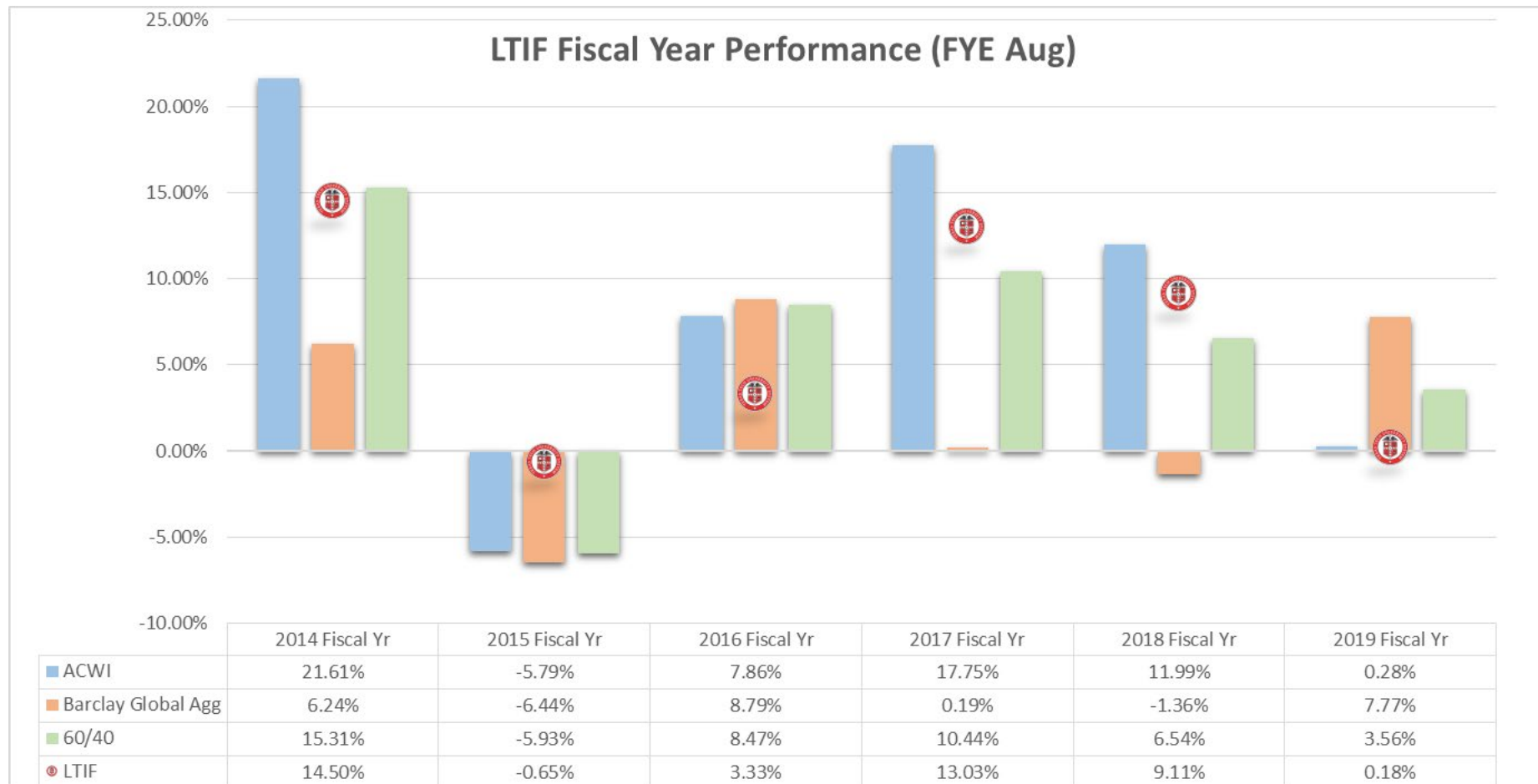
(As of August 31, 2019)



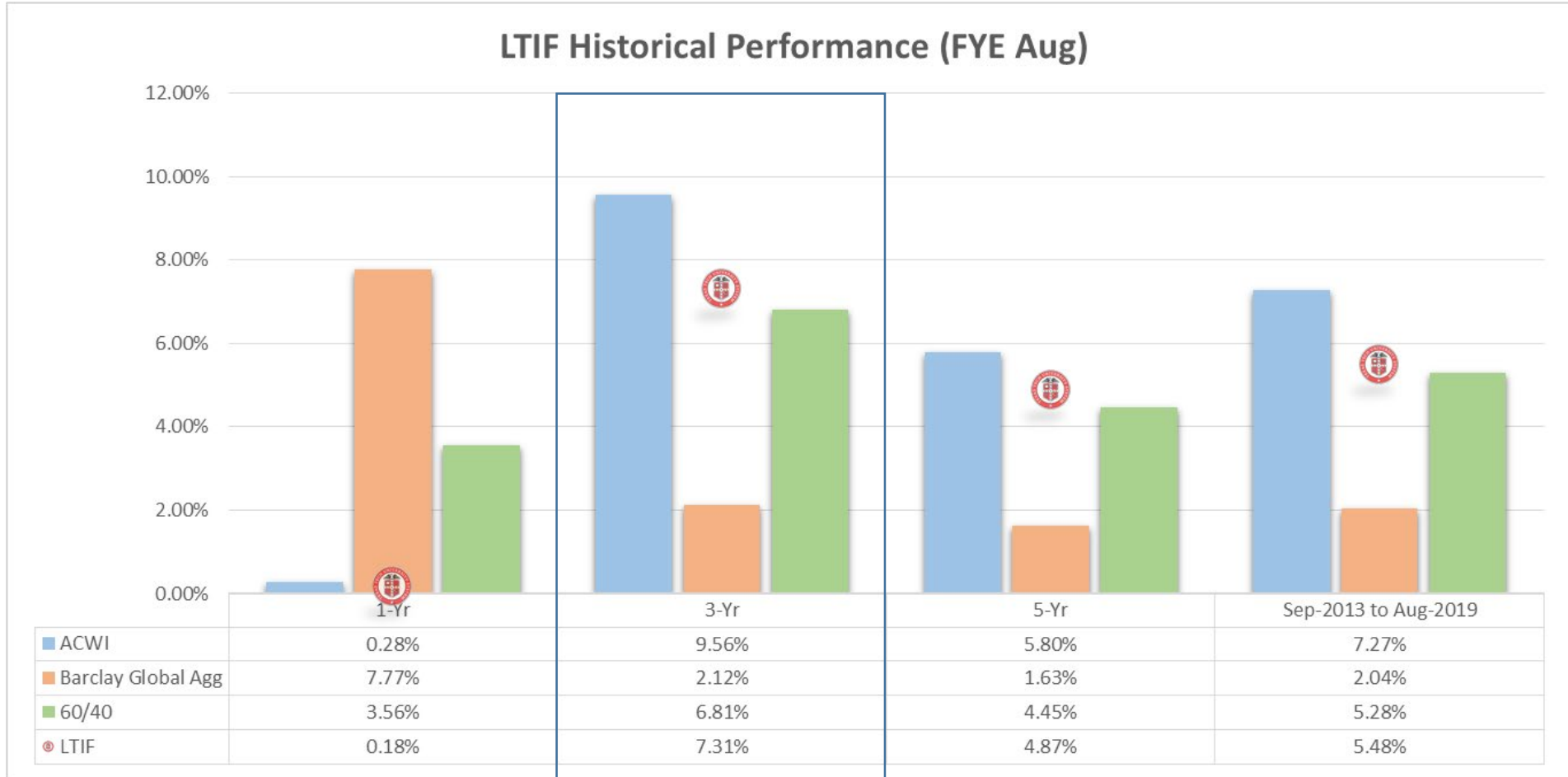
Asset Class	MTD Perf.	3 Mo. Perf.	Calendar YTD	Fiscal YTD	Nacubo YTD	1 Year Perf.	3 Year Perf.	5 Year Perf.
Equity	-2.62%	4.34%	14.00%	-0.21%	-2.38%	-0.21%	10.59%	6.40%
Debt	-0.11%	0.08%	2.58%	-4.36%	-0.08%	-4.36%	5.27%	5.35%
Diversifying Assets	-0.07%	0.73%	2.85%	1.26%	0.02%	1.26%	4.01%	0.85%
Alpha Pool & Collateral	0.11%	0.95%	3.67%	4.65%	0.64%	4.65%	4.24%	3.55%
Cash	0.21%	0.69%	1.48%	2.66%	0.43%	2.66%	1.65%	-2.97%
Private Investments	0.07%	0.78%	3.09%	4.88%	-0.12%	4.88%	7.84%	5.32%
TOTAL LTIF	-0.60%	1.94%	6.43%	0.18%	-0.64%	0.18%	7.31%	4.87%



Annual Performance History (FYE Aug)



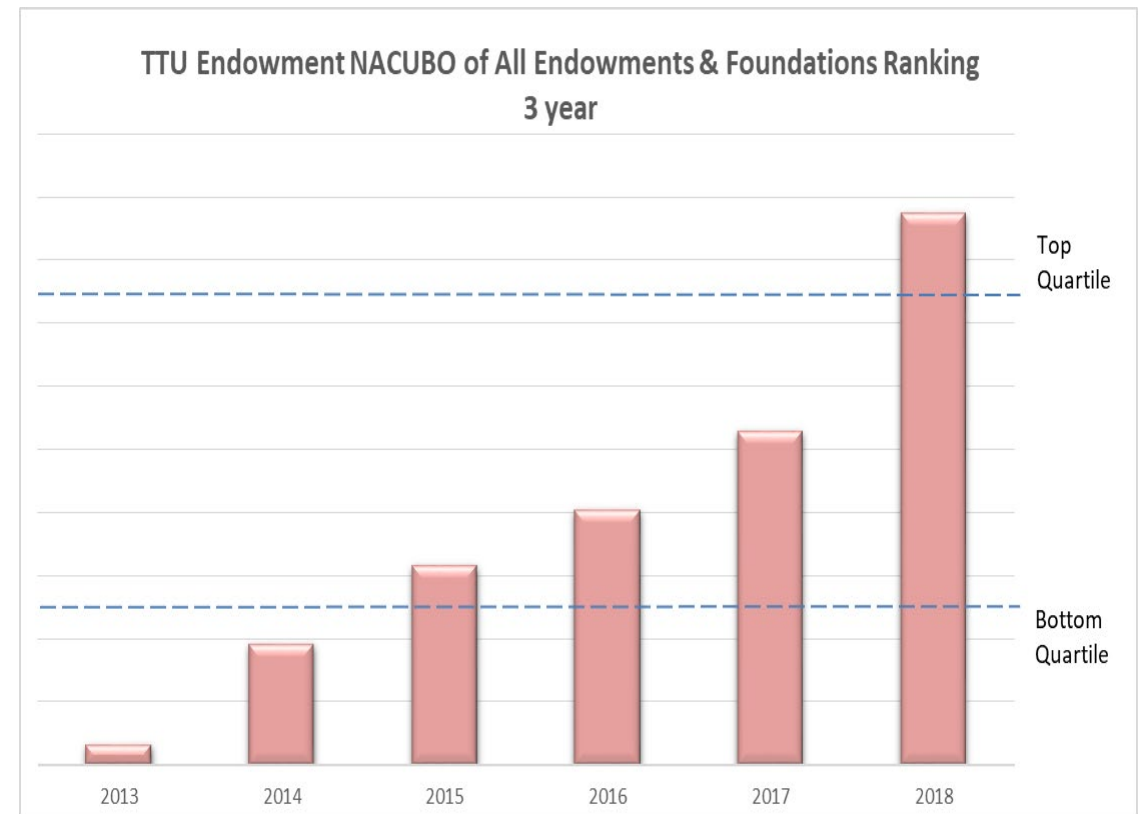
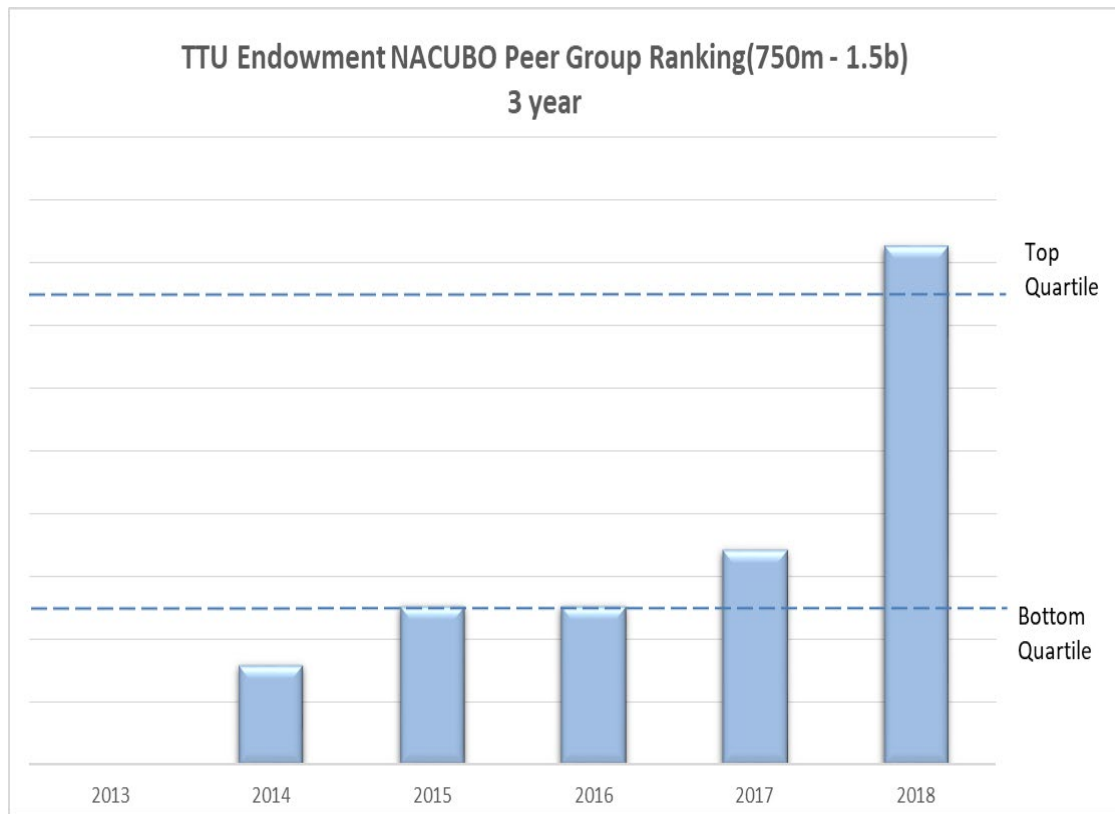
Performance History (FYE Aug)



Strong Improvement in Performance vs Peers



> 80% Improvement since 2013



III. Overview of Investment Office Changes Since Last Year

Investing in our Team & Systems



1. The Intermediate-Term Pool of Assets Moved to the Office of Investments

- Given the ample liquidity of the Texas Tech University System, it was decided to invest these assets alongside the LTIF in order to seek incrementally higher returns
- These assets have their own investment policy, governance structure, and liquidity mandate, which is key since these assets have a different risk and return profile than LTIF
- Investing alongside LTIF, these assets will benefit from lower fees and a higher return profile, which will help grow the corpus

2. Established an Intern program with the Rawls College of Business

- We developed a formal intern program and had our first Texas Tech intern spend the summer working alongside the research team
- This will be an ongoing summer program in conjunction with the Rawls College of Business.
- A special thanks to Dr. Jeff Mercer, Senior Associate Dean, Jack Cooney, Area Coordinator in Finance & Lynn Alexander, Chair of the IAC for driving this initiative.

3. Staff Additions

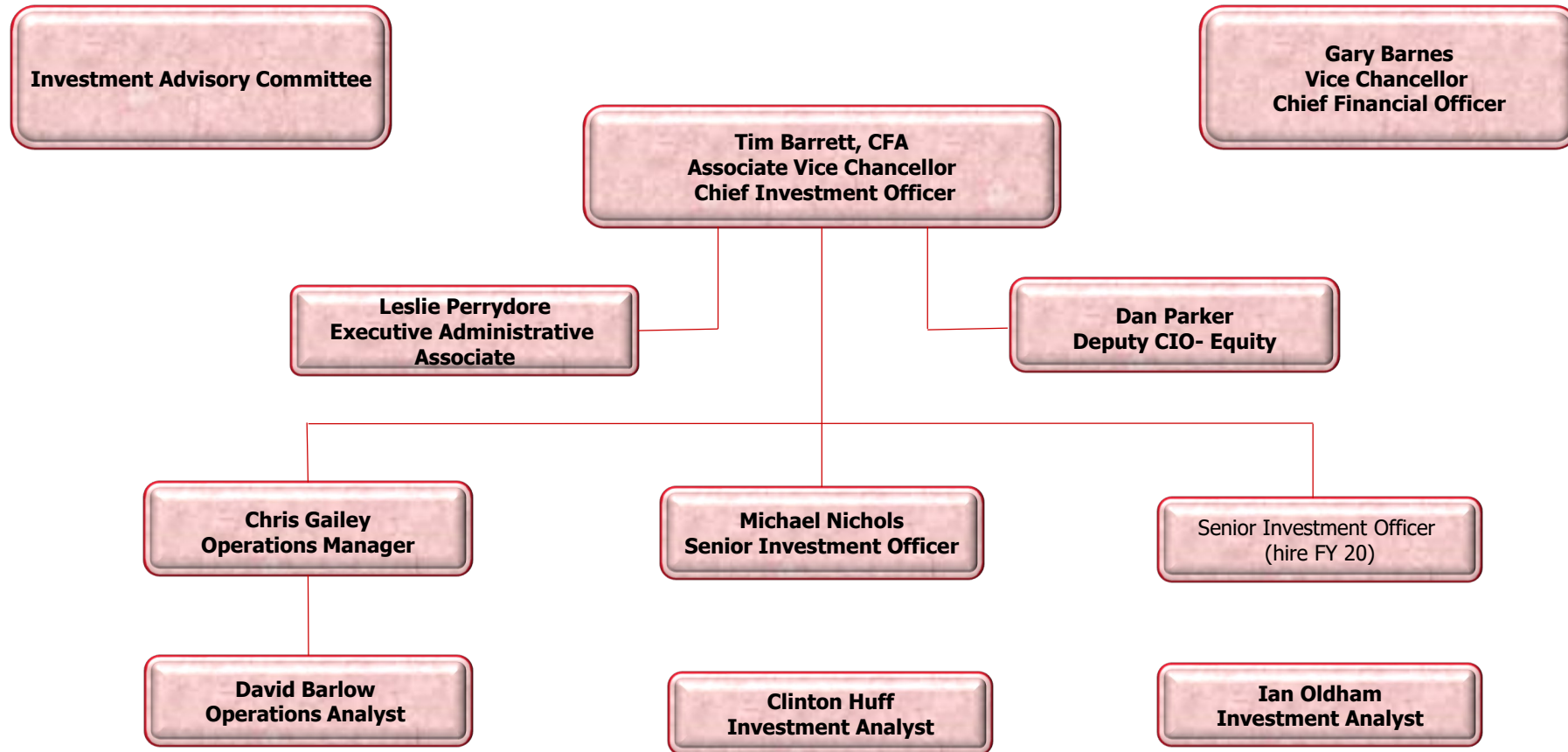
- With the growth in the assets being managed by the Office of Investments, there were two additional staffing hires to assist in the research and operations of the Office
- We show an updated org chart on the following slide

4. Operations – System additions

- Implemented a cloud based document management and due diligence platform.
- Implemented a cloud based performance tracking software platform.



Staff Organization Chart



IV. Overview of the IAC



Role of the IAC

- The IAC is central to the governance structure of the Office of Investments
- The Advisory Council formally meets each quarter to review investment performance, monitor changes to the portfolio, set investment policy, and ensures the investment pools are in line with the risk and return objectives of the Texas Tech University System
- Less formally, the IAC serves as a resource to the Office of Investment in sourcing, vetting, and reviewing investments for the Fund
- We show the current compositions of the IAC on the following slide as well a summary of the governance structure and roles and responsibilities as outlined in the investment policy statements

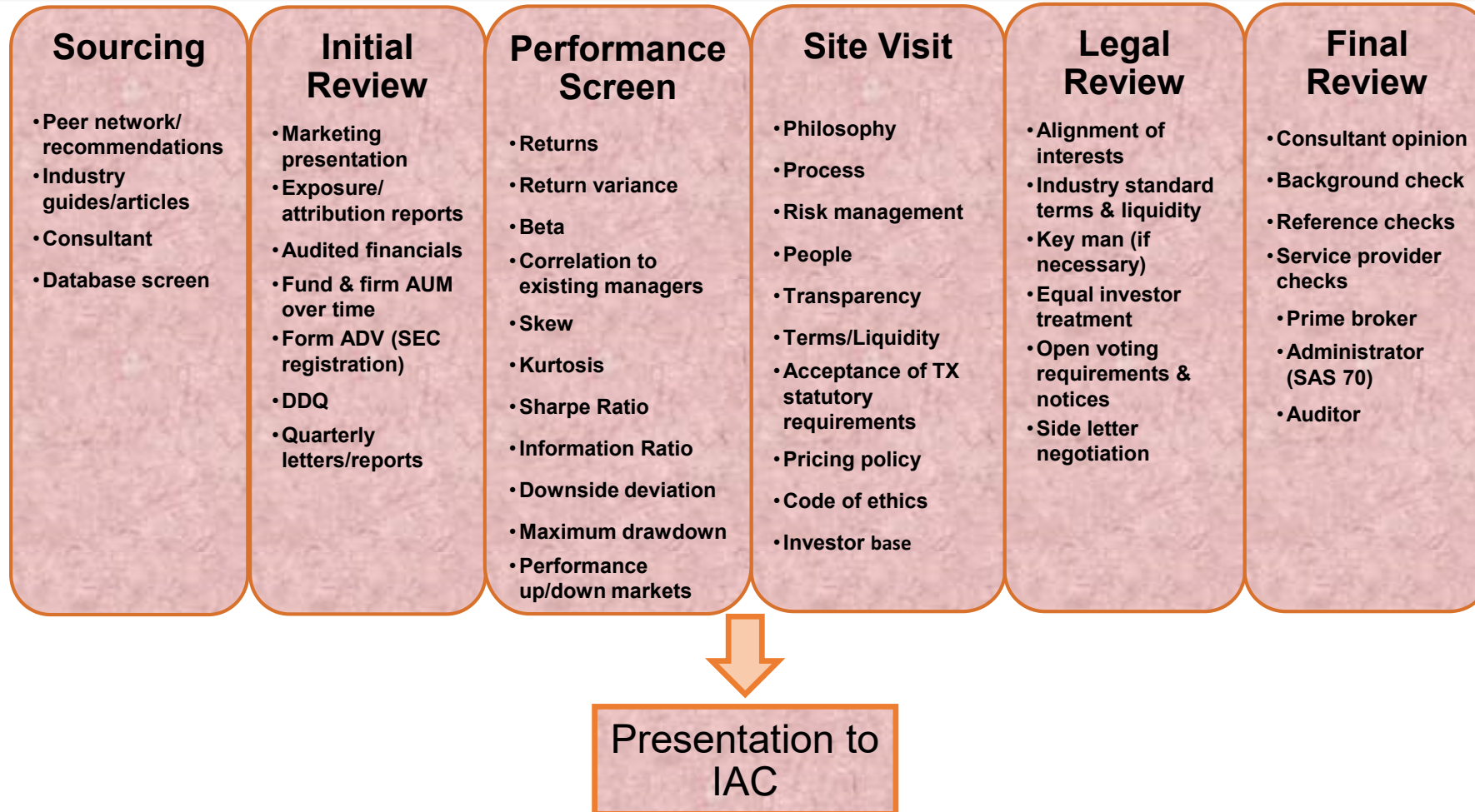
Current Members of the IAC



IAC MEMBER	EXPERTISE	COMPANY	APPOINTED BY	TERM EXPIRES	LAST TERM EXPIRES	RE-APPOINTMENT ELIGIBILITY
Lynn Alexander- Chair	Private Equity	Kelso & Company	Board Chair	1/31/2021	1/31/2021	2nd Term - Not eligible for reappointment
Langston Turner	Fin'l markets/derivatives	UBS Financial Services, Inc.	Chancellor	1/31/2021	1/31/2021	2nd Term - Not eligible for reappointment
J. Michael Lewis	Energy	Wellspring Royalties Ltd	Board Chair	1/31/2021	1/31/2021	2nd Term- Not eligible for reappointment
David C. Graves	Real estate	State Farm Real Estate (formerly)	Chancellor	1/31/2020	1/31/2024	1st Term - Can be reappointed
Benton Hyatt	Credit	Hillwood Development Company, LLC	Chancellor - via recommendation from Foundation Board ³	1/31/2021	1/31/2025	1st Term - Can be reappointed
Christopher S. Loveless	Asset management	O'Shaughnessy Asset Management	Chancellor	1/31/2022	1/31/2026	1st Term - Can be reappointed
R. Burns McKinney	Public Fin'l markets	Allianz Global Investors	Board Chair	1/31/2023	1/31/2027	1st Term - Can be reappointed
Michelle McCloskey	Asset management	Man Group	Chancellor - via recommendation from Foundation Board ³	1/31/2023	1/31/2027	1st Term - Can be reappointed
Tom Mathiasmeier	Energy	Conoco Phillips	Foundation Board	1/31/2023	1/31/2027	1st Term - Can be reappointed



Due Diligence Flow Chart



Outside Investment Consultant



Extension of staff & independent third-party

NEPC Consulting (100% Employee Owned)

- Headquarters: Boston, MA
- Additional offices in Atlanta, Charlotte, Detroit, Las Vegas, San Francisco, Chicago, Portland
- Over 300 clients, with aggregate assets over \$1 Trillion
- Over 100 endowment & foundation clients
- Over 300 employees

V. Conclusions



Conclusions

1. Performance against peers has improved remarkably through the Regents and IAC's realized vision to build a professional investment team with CIO authority to manage the portfolio.
2. We have incorporated the intermediate term pool into the Office of Investments with the objective of reducing fees and increasing returns.
3. We have invested in the team and systems that will ultimately improve productivity and is expected to lower costs.
4. The Regents, IAC and Foundation Boards have built an Investment Advisory Committee with professional, distinct experience that provides invaluable expertise to the investment team in managing the program.
5. Our balanced allocation is the correct positioning given where we are in the cycle coupled with the inherent political risks globally.

Appendix



Staff Bios

	Name	Title	Responsibilities	Educational Qualifications	Professional Qualification	Years of Experience
Investments	Tim Barrett	Associate Vice Chancellor & Chief Investment Officer	Hired in 2013. Responsibilities include investment oversight for \$1 billion total return pool of endowments. Work with the IAC to set risk profile, benchmarks and asset allocation; supervises the team's identification of external investment managers. Prior experience includes serving as CIO for a large public pension and a large corporate pension.	BS - University of Montana MSBA - San Diego State University	CFA	21
	Dan Parker	Deputy CIO	Hired in 2016. He shares broad responsibility across the portfolio and focuses on public and private equity. Prior experience includes a large endowment, a top-tier asset manager and bulge-bracket investment banking.	BA - Tulane University MBA - William & Mary		18
	Michael Nichols	Senior Investment Officer	Hired in 2010. Responsibilities include credit investments and derivatives. Prior experience includes software and electrical engineering.	BS - University of Texas in Dallas Masters - Texas Tech University	CAIA	8
	Clint Huff	Investment Analyst	Hired in 2019. Performs analysis and due diligence on current and prospective investments with a focus on Public Diversifying Assets, Public Credit, and Private Credit.	BA – University of Texas at Austin JD – Southern Methodist University		6
	Ian Oldham	Investment Analyst	Hired in 2019. Assists in analysis, due diligence, and monitoring on current and prospective investments across public and private assets.	BS- Texas A&M MS Finance- Texas A&M	CFA	3
Operations	Chris Gailey	Operations Manager	Hired in 2003. Oversees all aspects of cash management, contracting and administration of the LTIF, including Operational Due Diligence, relationships with custodian, consultant, performance reporting and legal counsel.	BS - Texas Tech University		20
	David Barlow	Senior Analyst	Hired in 2012. Performs analysis and due diligence on current and prospective investments. Assists in monitoring investments across public and private equity and private real assets. Maintains many of the back office processes.	BA - University of Texas in Austin Masters - University of North Texas	CAIA	6
	Leslie Perrydore	Executive Administrative Associate	Hired in 2014. Provides executive and administrative assistance to the Chief Investment Officer and the Office of Investments to ensure the smooth operation and functioning of the office.			12



Performance vs. Peers

TTUS NACUBO Percentile Ranking - 750M-1.5B				
	1 Year	3 Year	5 Year	10 Year
2018	37.10%	13.20%	47.10%	56.90%
2017	51.50%	65.60%	81.30%	62.90%
2016	50.80%	74.60%	88.10%	66.00%
2015	63.10%	74.60%	92.30%	42.90%
2014	68.80%	84.10%	93.70%	29.30%
2013	77.40%	100.00%	76.90%	45.10%

TTUS NACUBO Percentile Ranking - All E&F				
	1 Year	3 Year	5 Year	10 Year
2018	22.70%	12.50%	31.30%	49.50%
2017	47.60%	47.10%	64.50%	53.10%
2016	43.80%	59.60%	72.10%	54.90%
2015	52.30%	68.40%	90.60%	32.60%
2014	66.00%	80.80%	89.20%	18.60%
2013	68.60%	96.80%	84.50%	28.50%

- 3-year rankings, our internal focus, have improved by 86.8% and 84.3% since 2013 in the Peer Group and All E&F universes, respectively.
- Rankings in all time periods, in both Peer Group and All E&F, improved substantially.