2. Joint Meeting of the ERS Board of Trustees and Investment Advisory Committee

March 6, 2019

ERS

Employees Retirement System of Texas

ERS

Public Agenda Item #1.1

Call Meeting to Reconvene the Board of Trustees

March 6, 2019

ERS

Public Agenda Item #1.2

Call Meeting of the Investment Advisory Committee to Order

March 6, 2019

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Public Agenda Item #2.1

Review and Approval of the Minutes to the December 12, 2018 Joint Meeting of the Board of Trustees and Investment Advisory Committee – (Action)

March 6, 2019

ERS

Questions?

Action Item

ERS

Public Agenda Item #*3.1

Review and Discussion of the ERS Investment Compliance Program

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March 6, 2019

Aaron Ismail, Investment Compliance Officer

ERS Compliance Program Overview

ERS

Purpose: To ensure compliance with applicable laws, regulations, ERS policies and investment guidelines.

Mission:

- Prevent, detect and address issues of non-compliance.
- Help ERS meet its fiduciary, regulatory and contractual obligations.
- Align policies and procedures with high ethical conduct.
- Effectively educate, train and communicate the program to the organization and Board.

ERS takes its financial responsibility to its beneficiaries seriously.

Compliance Risks

ERS

SEC charges former CALPERS CEO with fraud scheme
(Reuters, 2012)

Atlanta pension funds defrauded by adviser, SEC alleges **(AJC, 2015)**

Ex-New York Pension Director Gets 21 Months for Pay-to-Play
(Bloomberg, 2018)

Compliance Risks

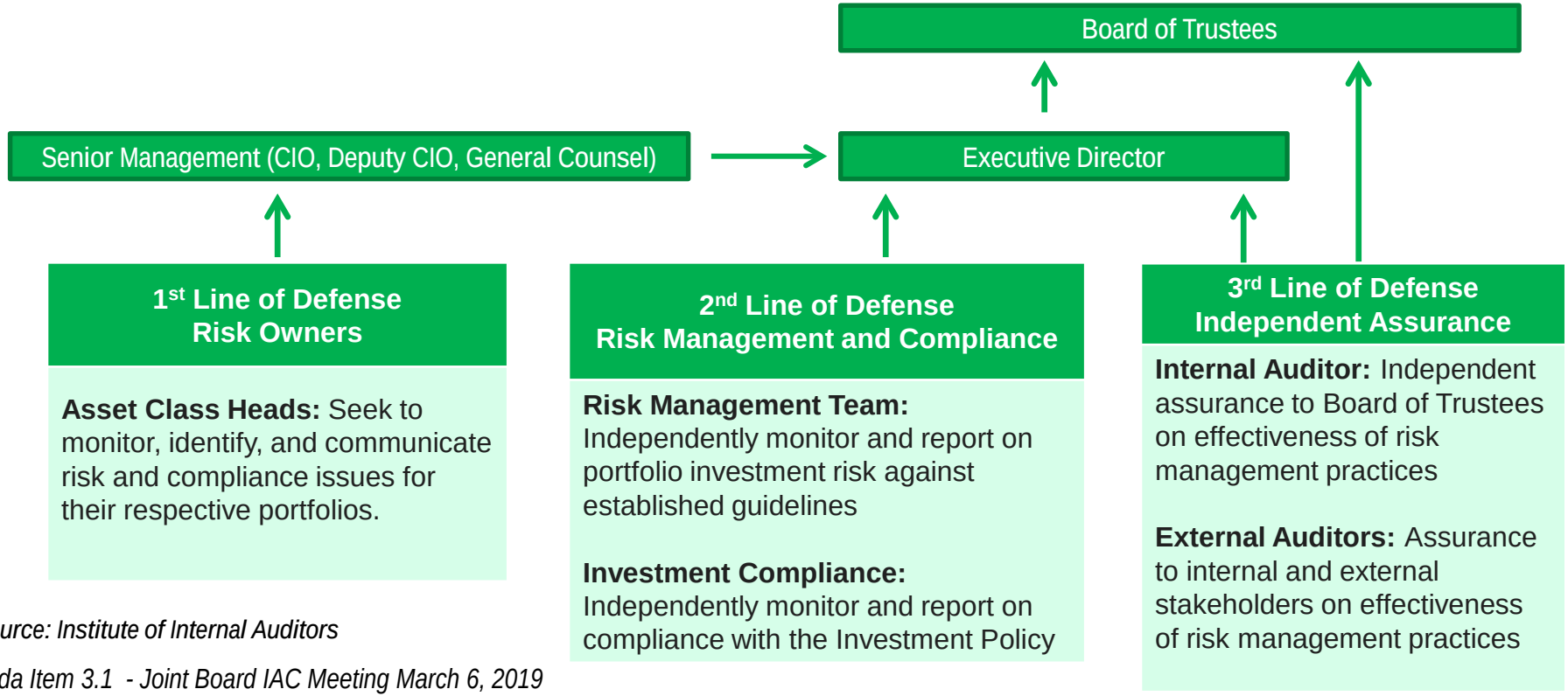
ERS

What are the risks of a weak compliance program?

- Increased statutory and regulatory restrictions
- Reputational risk and negative media coverage
- Investments outside of risk parameters
- Monetary penalties
- Personal liability
- Loss of investment opportunities
- Litigation and legal costs

Three Lines of Defense Model for Risk Governance

ERS



Source: Institute of Internal Auditors

Implementation of an Effective Compliance Program

ERS

Chapter 8 of the U.S. Federal Sentencing Guidelines for organizations outlines seven components of an effective compliance and ethics program:

➢ Implementing written standards, policies and procedures	➢ Program oversight and designation of Compliance Officer
➢ Monitoring and Auditing	➢ Communication, Education and Training
➢ Delegation of Authority	➢ Discipline for Non-Compliance
➢ Investigation and Remediation Measures	

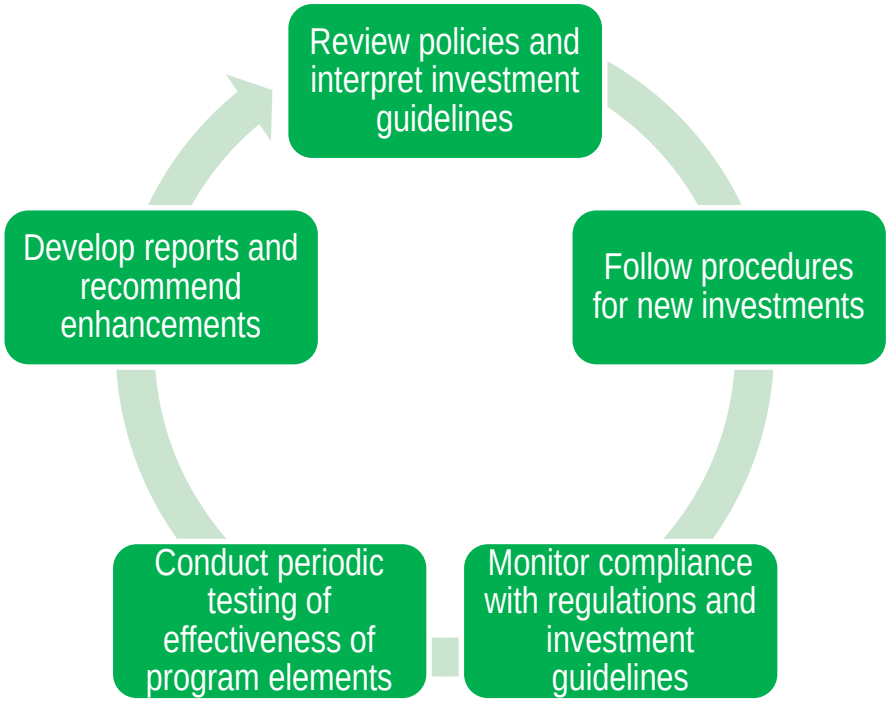
Compliance Program Elements

ERS

- Reviewing and Developing Policies and Procedures
- Investment Compliance Monitoring and Oversight
- Code of Ethics and Personal Trading
- Compliance Reporting and Education
- Advising on Compliance Related Issues
- Alternative Asset Class Investment Committee Compliance & Governance

Annual Compliance Review

- Provides an overview of ERS's compliance infrastructure
- A review of key developments to the program during the Period
- Results of assessments to determine whether any improvements to the program are necessary or desirable.



Compliance Program Roadmap

Key Accomplishments

ERS

Investment Compliance Monitoring

- Transitioned existing monitoring duties from Internal Audit to the Investment Compliance Officer.
- Participated in Alternative Asset Class Investment Committee meetings in an ex-officio capacity to ensure compliance with policy.

Code of Ethics Reporting and Oversight

- Automated personal trading reporting and streamlined review process.
- Developed new procedures to process and review system generated reports.

Review of Policies and Procedures

- Participated in the Investment Policy steering committee.
- Collaborated with legal and investment operations to update procedures related to the Scrutinized Investment Program.

Compliance Reporting & Board Engagement

- Developed a new Quarterly Compliance Report to summarize investment compliance activities and material issues.
- Developed a comprehensive Annual Review report for the Executive Director and Board.

Compliance Program Roadmap

Recommendations and Action Plan

ERS

ERS's compliance policies and procedures are reasonably designed to prevent, detect and cure violations of applicable laws, regulations and policies.

Recommendations:

- Consolidate current ERS Compliance and Ethics Policies and Procedures.
- Continue to promote communication and be a resource for compliance issues.
- Review the ERS Code of Ethics, Personal Trading Policy and Insider Trading Policy and to ensure they reflect current business practice.
- Develop periodic compliance training for ERS staff and Board, including incorporating training into the investment staff onboarding process.

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Questions?

ERS

Public Agenda Item #4.1

Review and Discussion of Eligibility and Compliance for Calendar Year 2019 of the Investment Advisory Committee

March 6, 2019

Tom Tull, CFA, Chief Investment Officer

Eligibility and Compliance for CY 2018

Investment Advisory Committee Skills Assessment

ERS

	Term Exp.	Investment Experience	Global Equity	Fixed Income	Private Equity	Real Estate	Hedge Funds	Infrastructure	Derivatives
IAC Chair, Caroline Cooley CIO - Diversified Funds Crestline Investors, Inc.	12/31/2019	34 years					X		X
IAC Vice-Chair, Bob Alley, CFA Retired from AIM Advisors, Inc. as Chief Fixed Income Officer	8/31/2021	43 years	X	X	X				
James Hille, CFA, CAIA CIO Texas Christian University Endowment	8/31/2020	27 years	X	X	X	X	X		
Mari Kooi Retired – Wolf Asset Management International, LLC as Chief Executive Officer	12/31/2020	31 years	X	X	X		X		X
Gene L. Needles, Jr. Chairman, President and CEO American Beacon Advisors	5/31/2020	25 years	X	X	X	X	X		X

Eligibility and Compliance for CY 2018

Investment Advisory Committee Skills Assessment

ERS

	Term Exp.	Investment Experience	Global Equity	Fixed Income	Private Equity	Real Estate	Hedge Funds	Infrastructure	Derivatives
Ken Mindell Sr. VP, Treasurer & Director of Investments Rosewood Management Corporation	5/31/2019	38 years	X	X	X	X	X		X
Dr. Laura Starks Charles E. & Sarah M. Seay Regents Chair in Business Administration Director, AIM Investment Center The University of Texas Austin	8/31/2021	30 years	X	X	X	X	X		
Lenore Sullivan Managing Director (Volunteer) TMV Capital Management Formerly, Partner at Perella Weinberg Partners	2/29/2019	38 years			X	X		X	
Didi Weinblatt, Ph.D., CFA Retired from USAA Investment Management Co. as Vice President, Mutual Fund Portfolios	8/31/2020	38 years	X	X					

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Questions?

ERS

Public Agenda Item #4.2

Investment Advisory Committee Member Recognition

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March 6, 2019

Tom Tull, CFA, Chief Investment Officer

ERS

Public Agenda Item #5.1

Review of Investment Performance for the Fourth Calendar Quarter of 2018

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March 6, 2019

Tom Tull, CFA, Chief Investment Officer
Sharmila Kassam, CPA, Esq., Deputy Chief Investment Officer
Sam Austin & Tim Bruce, NEPC

QUARTERLY PERFORMANCE REPORT

EMPLOYEES RETIREMENT SYSTEM OF TEXAS

March 6, 2019

Sam Austin, Partner
Tim Bruce, Partner

BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

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EXECUTIVE SUMMARY

ERS TRUST DASHBOARD

	CYTD	FYTD
Fund Performance	-1.7%	-5.7%
Policy Benchmark	-4.1%	-7.0%
Excess Return	2.4%	1.3%
3 Yr Tracking Error	1.44%	

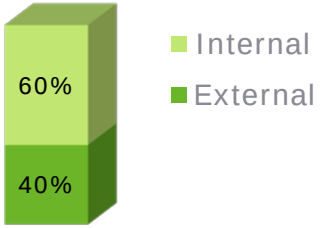
Largest Contributors (Quarter)

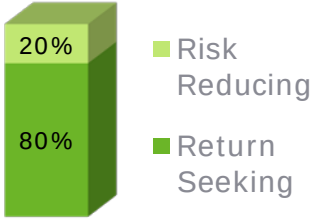
Private Equity outperformed, contributed +2.1% relative to policy benchmark

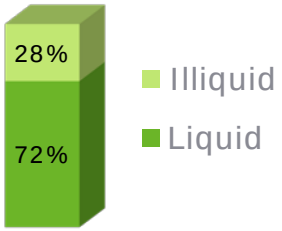
Largest Detractors (Quarter)

Global Public Equity underperformed, detracted -0.5% from relative returns vs. policy

Profile
Market Value at 12/31/2018:
$26.9 Billion
Actuarial Accrued Liability 8/31/18:
$39.0 Billion
Actuarial Assumed Rate of Return:
7.50%
Retirees and Beneficiaries 8/31/2018:
111,361
Retirement Payments Annually 8/31/2018:
$2.4 Billion
ERS Trust Funding Ratio 8/31/2018
70.20%







TOTAL FUND PERFORMANCE DETAIL (NET OF FEES)

	Market Value($)	3 Mo(%)	Fiscal YTD(%)	1 Yr(%)	3 Yrs(%)	5 Yrs(%)	10 Yrs(%)
Total Fund	26,873,073,745.00	-5.8	-5.7	-1.7	6.7	5.4	8.7
Total Fund Policy Index		-7.0	-7.0	-4.1	5.8	4.8	8.4
Long Term Public Index		-10.1	-10.1	-7.7	5.5	3.8	8.3

- **One-year ended December 31, 2018, the Fund outperformed the policy benchmark by 2.4%, returning -1.7%.**
- **The Fund's assets decreased from $28.52 billion to $26.87 billion in the past calendar year which includes a $1.68 billion investment loss in the fourth calendar quarter of 2018.**

Note: Long Term Public Index is comprised of 79% MSCI ACW IMI and 21% Barclays Intermediate Treasury Index. Index Definitions can be found in the appendix.

TOTAL FUND PERFORMANCE DETAIL (NET OF FEES)

3 Years Ending December 31, 2018				
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Sortino Ratio RF
Total Fund	6.66%	5.36%	1.05	1.14
Total Fund Policy Index	5.83%	6.32%	0.76	0.81

5 Years Ending December 31, 2018				
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Sortino Ratio RF
Total Fund	5.40%	5.57%	0.85	1.20
Total Fund Policy Index	4.76%	6.36%	0.65	0.91

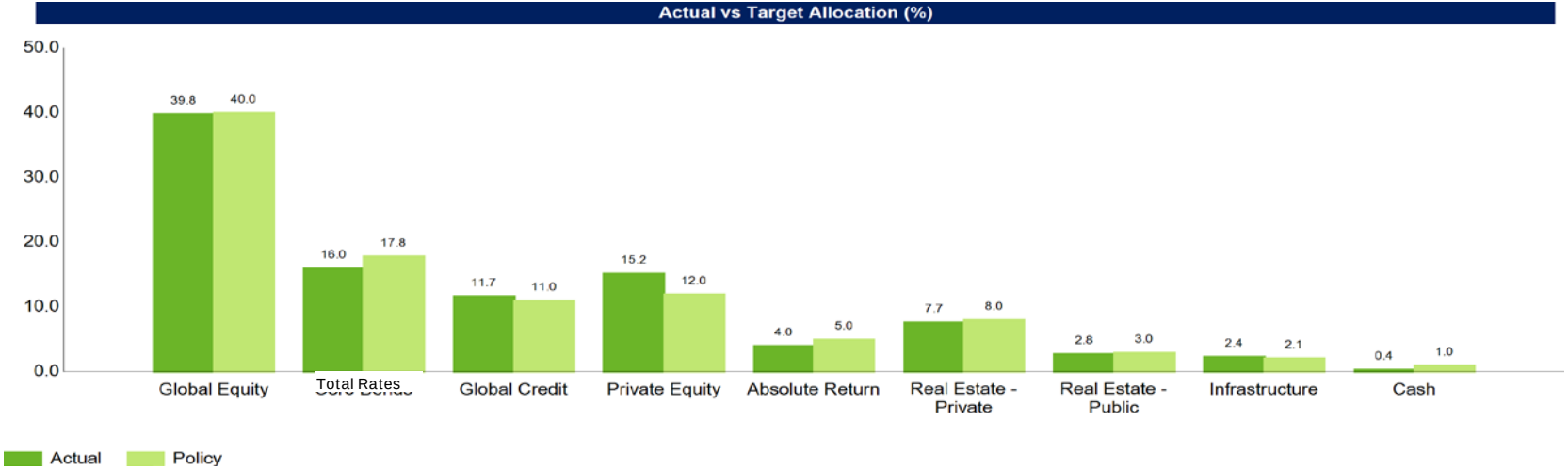
- **Three–year period ended December 31, 2018, the return of 6.7% outperformed the benchmark by 0.8%. On a risk-adjusted basis, the Sharpe and Sortino Ratios over this period indicate active management benefited the Plan.**

- **Five-year period ended December 31, 2018, the Fund returned 5.4% per year and outperformed the policy benchmark by 0.6%. On a risk-adjusted basis, the Fund's Sharpe Ratio (0.85 vs. 0.65) and Sortino Ratio (1.20 vs. 0.91) indicate strong returns per unit of risk taken and strong returns per unit of downside risk experienced relative to the policy benchmark.**

Note: Long Term Public Index is comprised of 79% MSCI ACW IMI and 21% Barclays Intermediate Treasury Index. Index Definitions can be found in the appendix.

Employees Retirement System of Texas

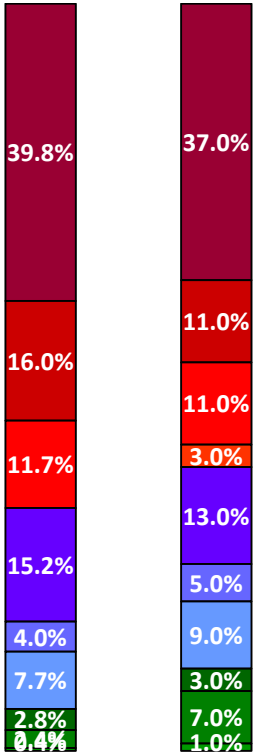
TOTAL FUND ASSET GROWTH SUMMARY



Summary of Cash Flows	Last Three Months	Fiscal Year-To-Date	One Year	Three Years	Five Years
Beginning Market Value	$28,923,385,305	$29,009,798,984	$28,518,822,728	$24,891,929,422	$25,339,892,727
Contributions	$2,396,776,935	$3,479,390,609	$10,388,399,610	$25,688,775,747	$44,295,362,334
Withdrawals	-$2,763,615,162	-$3,963,822,574	-$11,606,785,653	-$28,874,603,228	-$49,730,654,519
Net Cash Flow	-$366,838,227	-$484,431,965	-$1,218,386,043	-$3,185,827,480	-$5,435,292,185
Net Investment Change	-$1,683,473,333	-$1,652,293,274	-$427,362,939	$5,166,971,803	$6,968,473,203
Ending Market Value	$26,873,073,745	$26,873,073,745	$26,873,073,745	$26,873,073,745	$26,873,073,745

4th Quarter 2018

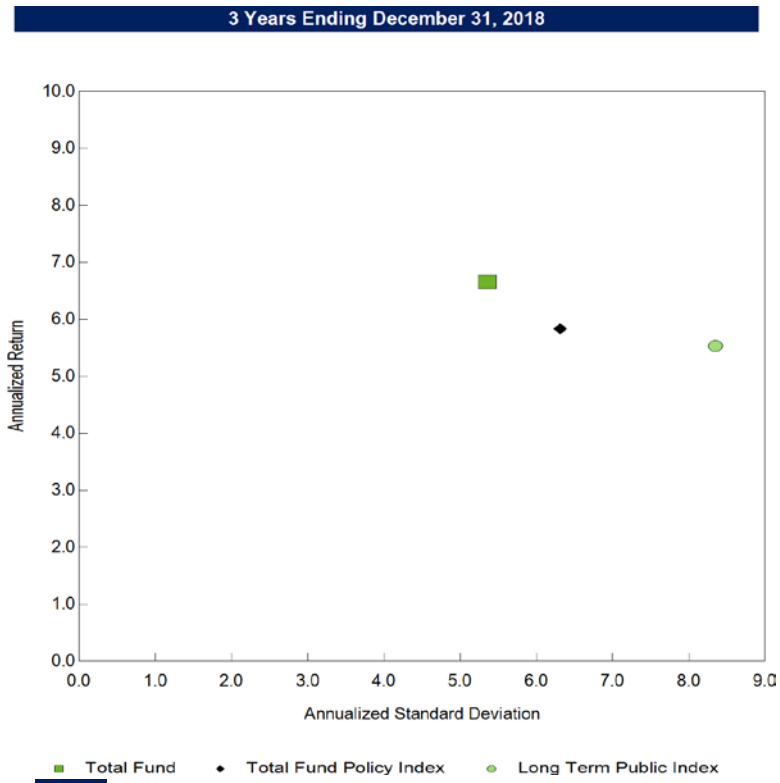
FUND ASSET ALLOCATION VS. POLICY TARGETS

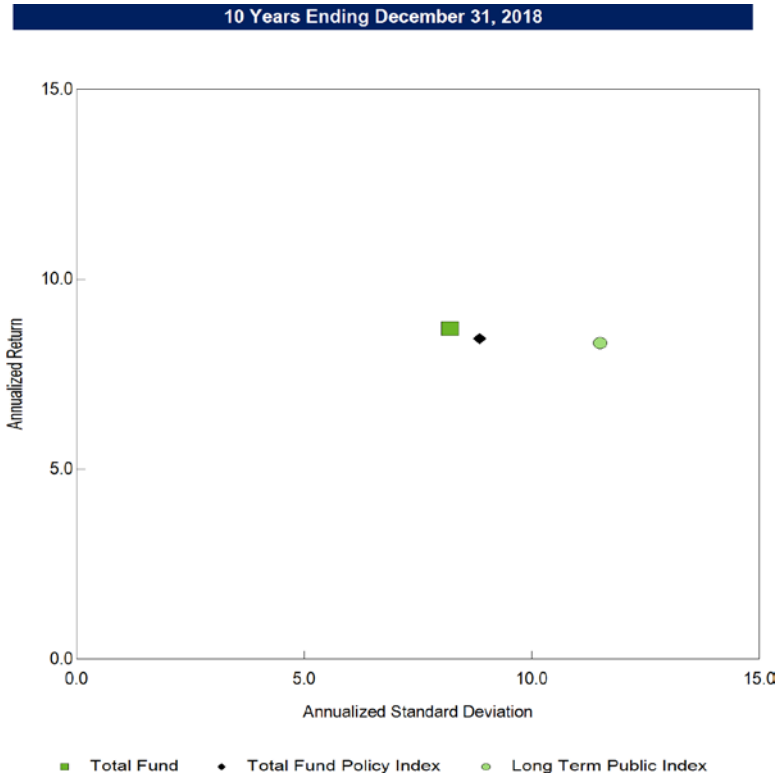


Asset Allocation on December 31, 2018

	Current	Current	Long-Term Target	Long-Term Target Range
Public Equity	$10,698,802,577	39.8%	37.0%	27.0% - 47.0%
Total Rates	$4,306,222,643	16.0%	11.0%	
Global Credit	$3,143,171,285	11.7%	11.0%	1.0% - 21.0%
Opportunistic Credit	-	-	3.0%	0.0% - 8.0%
Private Equity	$4,087,170,359	15.2%	13.0%	8.0% - 18.0%
Absolute Return	$1,085,877,215	4.0%	5.0%	0.0% - 10.0%
Real Estate - Private	$2,056,186,492	7.7%	9.0%	4.0% -14.0%
Real Estate - Public	$757,701,007	2.8%	3.0%	0.0% - 13.0%
Infrastructure	$636,492,952	2.4%	7.0%	2.0% - 12.0%
Cash	$101,449,216	0.4%	1.0%	0.0% - 1.0%
Total	**$26,873,073,745**	**100.0%**	**100.0%**	

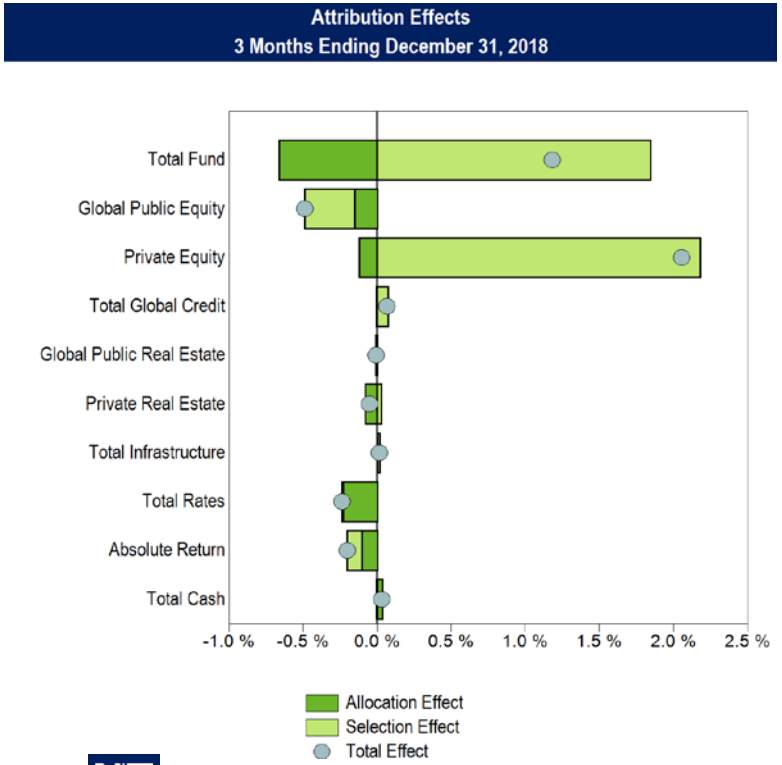
TOTAL FUND RISK / RETURN





Note: Long Term Public Index is comprised of 79% MSCI ACW IMI and 21% Barclays Intermediate Treasury Index.
Index Definitions can be found in the appendix.

TOTAL FUND ATTRIBUTION ANALYSIS

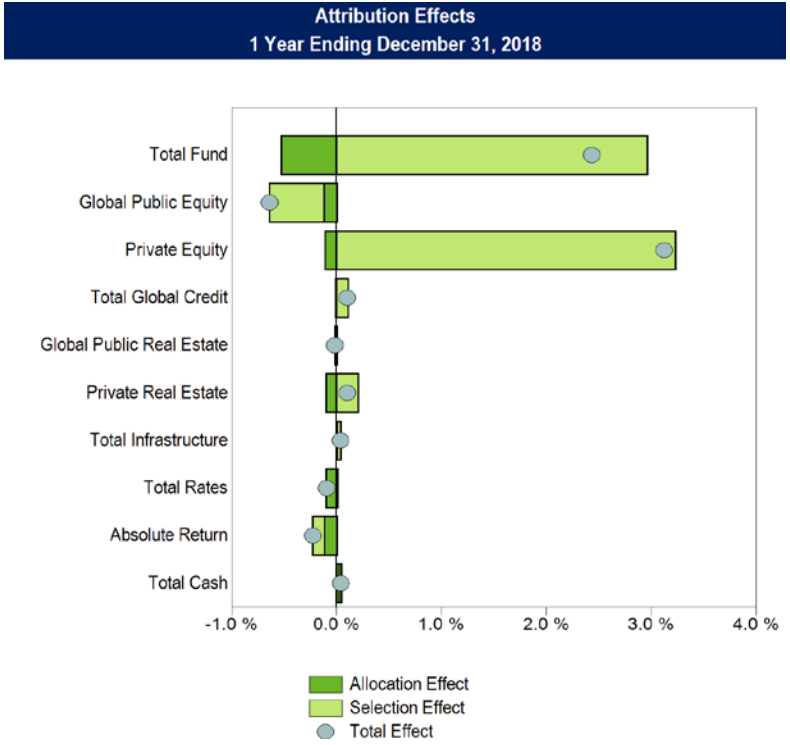


Attribution Summary
3 Months Ending December 31, 2018

	Wtd. Actual	Wtd. Index	Excess Return	Selection Effect	Allocation Effect	Total Effect
Global Public Equity	-13.9%	-13.2%	-0.7%	-0.3%	-0.2%	-0.5%
Private Equity	2.6%	-13.1%	15.7%	2.2%	-0.1%	2.1%
Total Global Credit	-3.9%	-4.5%	0.6%	0.1%	0.0%	0.1%
Global Public Real Estate	-5.6%	-5.5%	-0.1%	0.0%	0.0%	0.0%
Private Real Estate	2.2%	1.9%	0.4%	0.0%	-0.1%	-0.1%
Total Infrastructure	0.6%	0.0%	0.6%	0.0%	0.0%	0.0%
Total Rates	2.2%	2.2%	-0.1%	0.0%	-0.2%	-0.2%
Absolute Return	-1.0%	1.5%	-2.5%	-0.1%	-0.1%	-0.2%
Total Cash	0.4%	0.6%	-0.2%	0.0%	0.0%	0.0%
Total	**-5.8%**	**-7.0%**	**1.2%**	**1.8%**	**-0.7%**	**1.2%**

* Total Fund Attribution Analysis uses policy weights.

TOTAL FUND ATTRIBUTION ANALYSIS



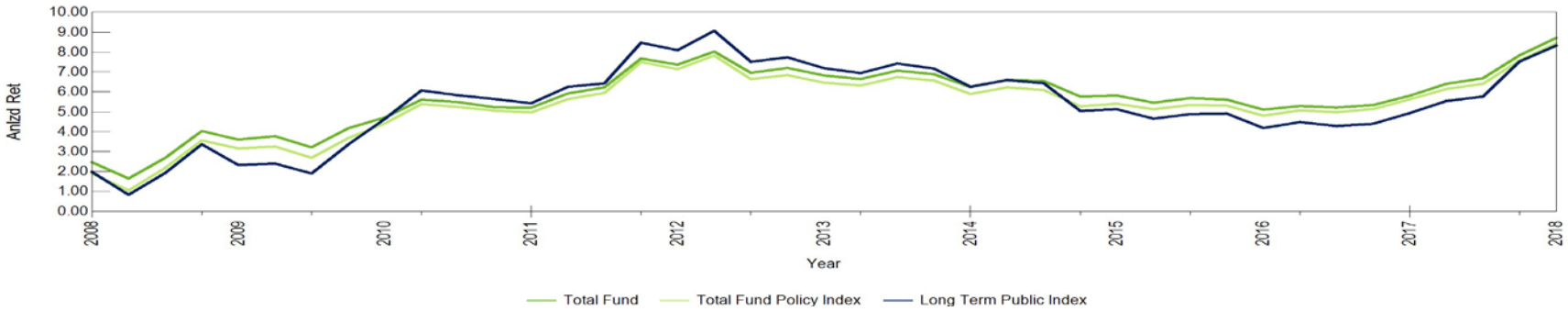
Attribution Summary
1 Year Ending December 31, 2018

	Wtd. Actual	Wtd. Index	Excess Return	Selection Return	Allocation Return	Total Effect
Global Public Equity	-11.0%	-9.8%	-1.1%	-0.5%	-0.1%	-0.6%
Private Equity	15.7%	-9.5%	25.2%	3.2%	-0.1%	3.1%
Total Global Credit	-1.1%	-2.1%	1.0%	0.1%	0.0%	0.1%
Global Public Real Estate	-5.4%	-5.0%	-0.4%	0.0%	0.0%	0.0%
Private Real Estate	10.9%	7.7%	3.2%	0.2%	-0.1%	0.1%
Total Infrastructure	6.2%	4.5%	1.8%	0.0%	0.0%	0.0%
Total Rates	1.4%	1.4%	0.0%	0.0%	-0.1%	-0.1%
Absolute Return	3.0%	5.9%	-2.9%	-0.1%	-0.1%	-0.2%
Total Cash	2.6%	1.9%	0.7%	0.0%	0.0%	0.0%
Total	**-1.7%**	**-4.1%**	**2.4%**	**3.0%**	**-0.5%**	**2.4%**

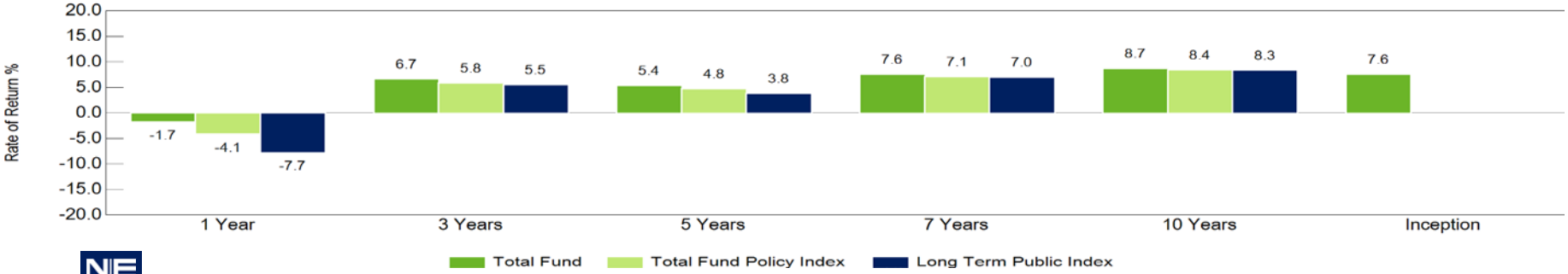
* Total Fund Attribution Analysis uses policy weights.

LONG TERM INVESTMENT RESULTS

Rolling 10 Year Annualized Return (%)



Return Summary
Ending December 31, 2018



Note: Long Term Public Index is comprised of 79% MSCI ACW IMI and 21% Barclays Intermediate Treasury Index.
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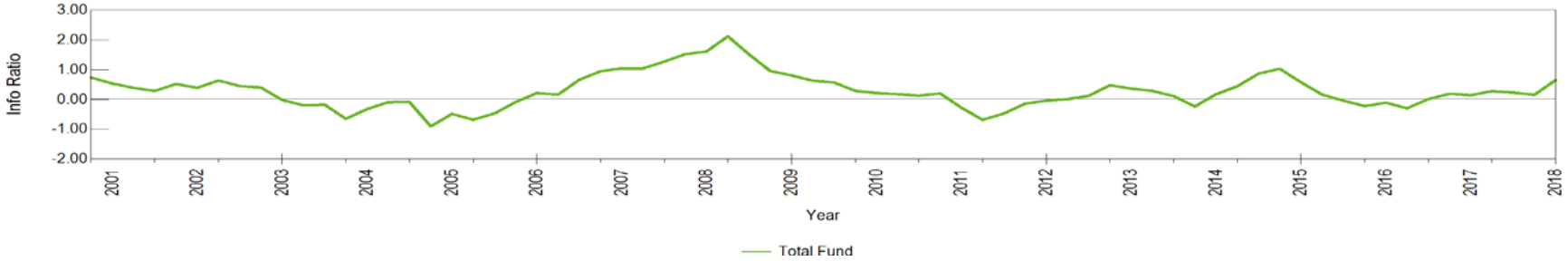
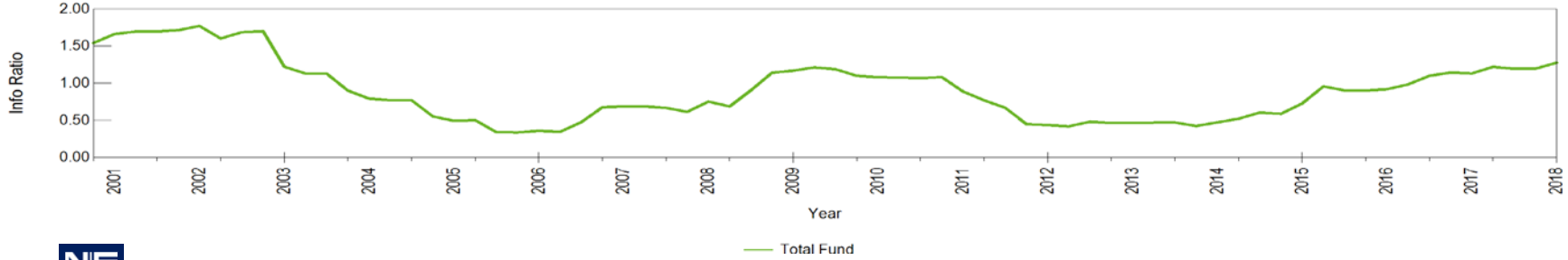
ROLLING INFORMATION RATIO AND TRACKING ERROR

Rolling 3 Year Information Ratio



Rolling 3 Year Tracking Error



SUMMARY PERFORMANCE COMMENTARY

- **Over the past 10 years Total Fund returns have been strong vs. the policy benchmark (+0.3%). Returns have also outperformed the Fund's actuarial rate of return.**

- **In the past one-year period ended December 31, 2018 the Fund experienced strong outperformance (+2.4%) against the policy benchmark.**
  - Private Equity contributed +3.1% to total outperformance vs. the policy benchmark primarily due to strong manager returns
  - Global Public Equity detracted -0.6% from Fund returns vs. the policy benchmark primarily due to underperformance within International Equity
  - Global Credit and Real Assets outperformed contributing +0.2% to returns vs. the policy benchmark

- **In the past one-year portfolio positioning at the asset class level has had a slight negative impact on Total Fund returns vs. policy benchmark; this impact is significantly outweighed by superior manager performance**
  - Over-weights to Global Public Equity and Private Equity contributed negatively (-0.2%) to total fund returns vs. the policy benchmark
  - Under-weight positions in Total Real Assets, Total Rates and Absolute Return contributed negatively (-0.3%) to returns vs. the policy benchmark.

ERS

Questions?

ERS

Public Agenda Item #6.1

Global Public Equity Program
Market Update and Program Overview

March 6, 2019

John Streun, MS, CFA, CPA, Director of Global Public Equity
Chris Tocci, CFA, Deputy Director of Global Public Equity
Lauren Honza, MBA, CFA, External Advisor Portfolio Manager
Michael Clements, CMT, Chief Equity Trader

Global Public Equity Program

ERS

Agenda

- Investment Objective and Global Public Equity Team Update
- 2018 in Review – The Return of Volatility
- 2019 Outlook
- Portfolio Structure and Positioning
- External Advisor Program Update
- Trading Update
- Global Public Equity Initiatives for 2019

Global Public Equity Program
Public Equity Team

ERS

Public Equity Team				
Leadership: John Streun, Chris Tocci, Andrew Hodson, Tim Reynolds, Michael Clements				
Domestic Portfolio Managers:				
S&P 500 Bob Wood MBA, CFA (29)	Large Cap Active Kelley Hewell MBA, CFA (26)	Large Cap Growth Kelley Hewell MBA, CFA (26)	Mid Cap Andrew Hodson MBA, CFA (17)	Small Cap Brent Clukey MBA, CFA (23)
International Portfolio Managers:				
Europe Chris Tocci CFA (27)	Asia Keith Lyons MBA (15)	Emerging Markets Tim Reynolds MS, CFA, CAIA (27)	Canada Stuart Williams MBA, CFA (28)	
Quantitative Stuart Williams, MBA, CFA (28) Kelley Hewell, MBA, CFA (26) John McCaffrey, MBA (4)		Trading Michael Clements, CMT (21) Rob Newhall, CMT (6) Travis Olson, CPA (4) *(years of industry experience)*	External Advisor Team Sharmila Kassam, CPA, Esq. (15) Lauren Honza, MBA, CFA (25) Michael McCrary, MBA (18)	

Global Public Equity Program

Public Equity Team

ERS

Public Equity Structure

Industrials & Materials
John Streun, MS, CFA, CPA (26)
Keith Lyons, MBA (15)
Paul Knight, CFA (17)
Teofilo Bacungan, MBA, CFA (18)
Nancy McCarthy, MBA, CFA (11)
John Taylor, MBA, CFA (12)

Technology & Telecom
Brent Clukey, MBA, CFA (23)
Chris Tocci, CFA (27)
Flavia de la Fuente, MBA (5)
Jake Tisinger, CFA (10)

Consumer
Bob Wood, MBA,CFA (29)
Andrew Hodson, MBA, CFA (17)
Mark Long, MBA, CFA (22)
June Kim (12)

Financial Services
Kelley Hewell, MBA, CFA (26)
Tim Reynolds, MS, CFA, CAIA (27)
Scott Hodgson, MS, CFA (15)

Health Care
Stuart Williams, MBA, CFA (28)
[Open]

Energy & Utilities
Ben Schuman, CFA (13)
Michael Yuan, CFA (21)

Global Public Equity Program

Investment Objective & Strategy

ERS

- **Investment Objective** – Outperform the Global Public Equity benchmark over rolling five-year periods, while maintaining compliance with the active risk budget.

- **Investment Strategy** – Combine lower risk internal strategies with higher risk external strategies to produce a stable excess return with a target tracking error of 150 basis points and an excess return ratio of 25 basis points or better.

2018 Asset Class Performance Highlights

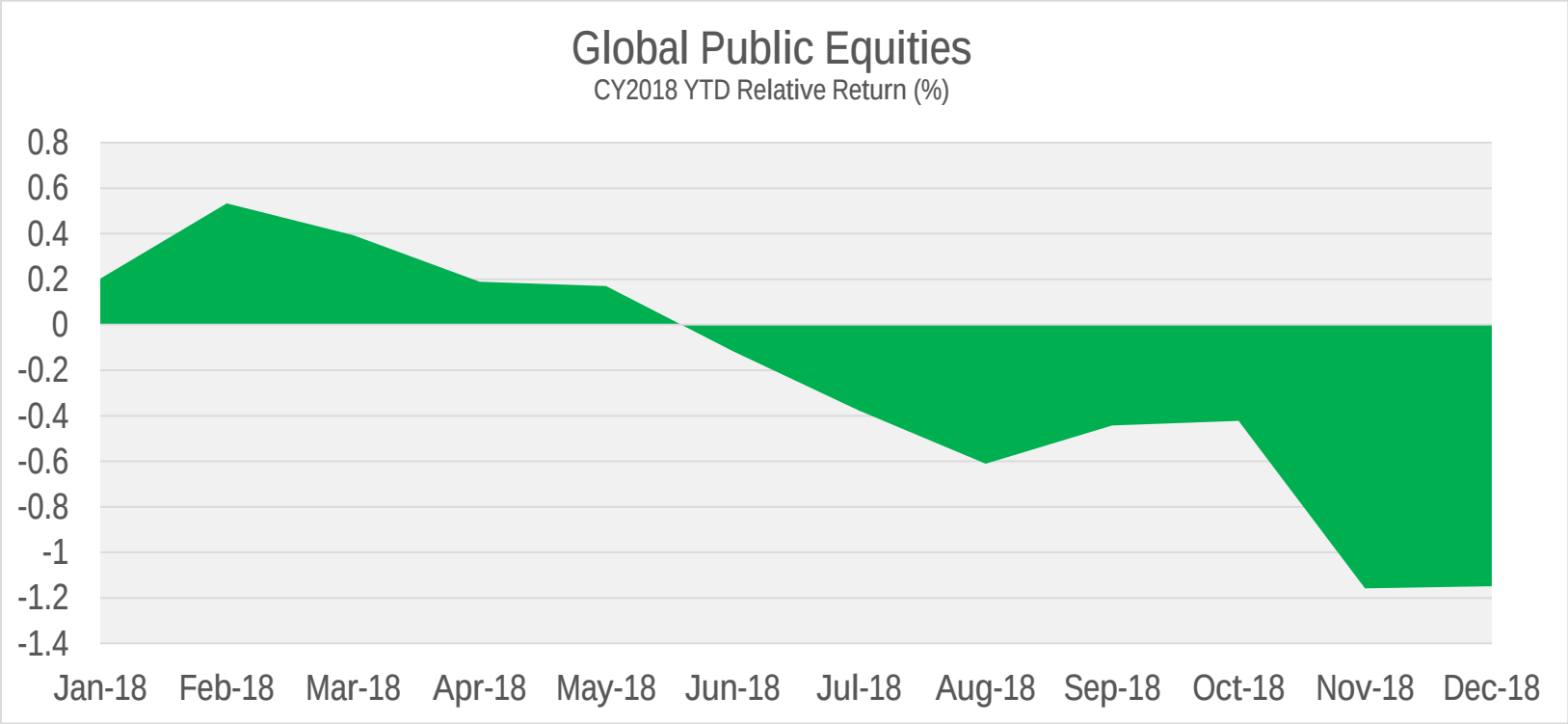
ERS

- Weak absolute returns of -10.96% for Calendar Year 2018.
- Challenged relative performance of -115 basis points.
- 8 out of 12 internal portfolios underperformed their benchmarks.
- 7 out of 10 external portfolios underperformed their benchmarks.
- Stock selection from both internal and external portfolios drove most of the relative underperformance.
- Over weights to U.S. Small cap, Europe, Energy, and Financials detracted from performance. Under weights to yield sensitive sectors (Real Estate and Utilities) also hurt performance.
- The small allocation to cash and the under weight to Japan contributed to performance.

Global Public Equity Program

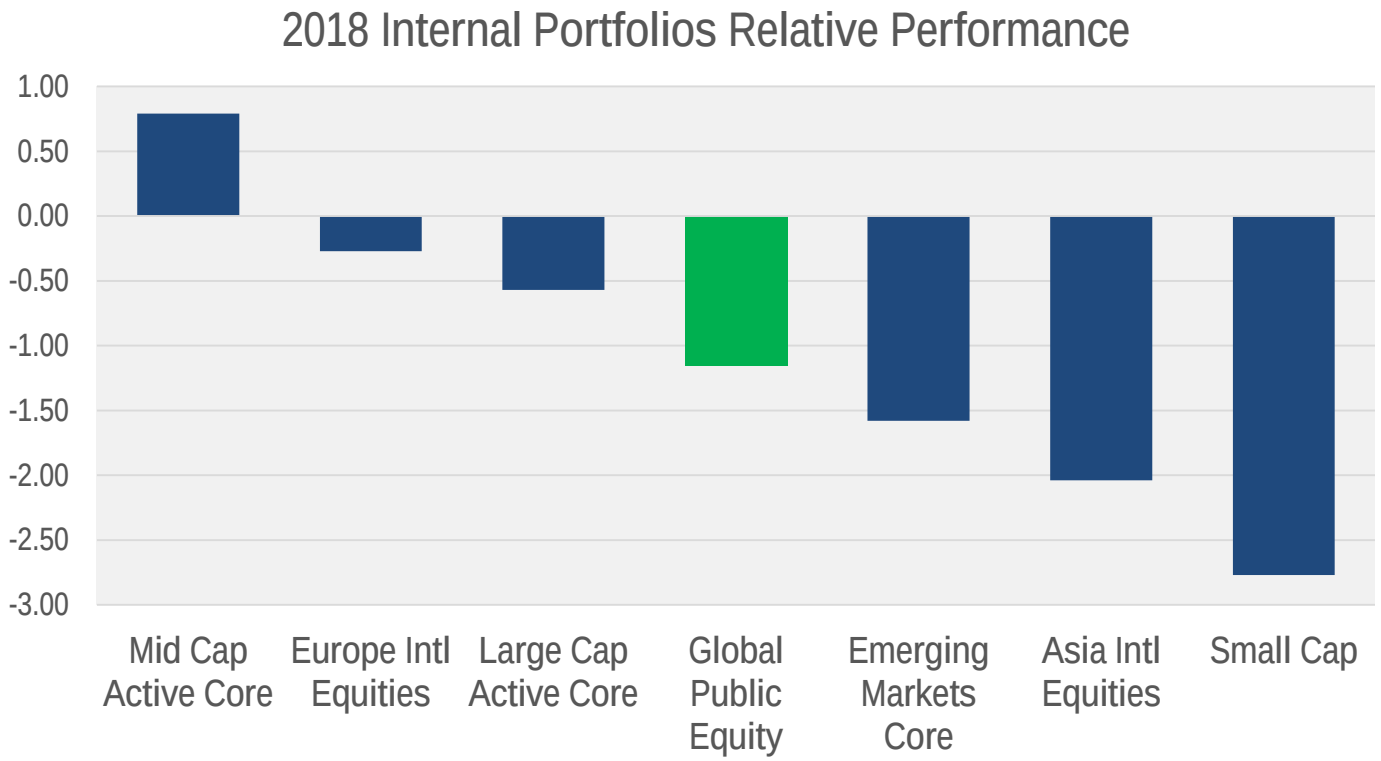
Relative Return – Calendar Year 2018

ERS



Global Public Equity Program

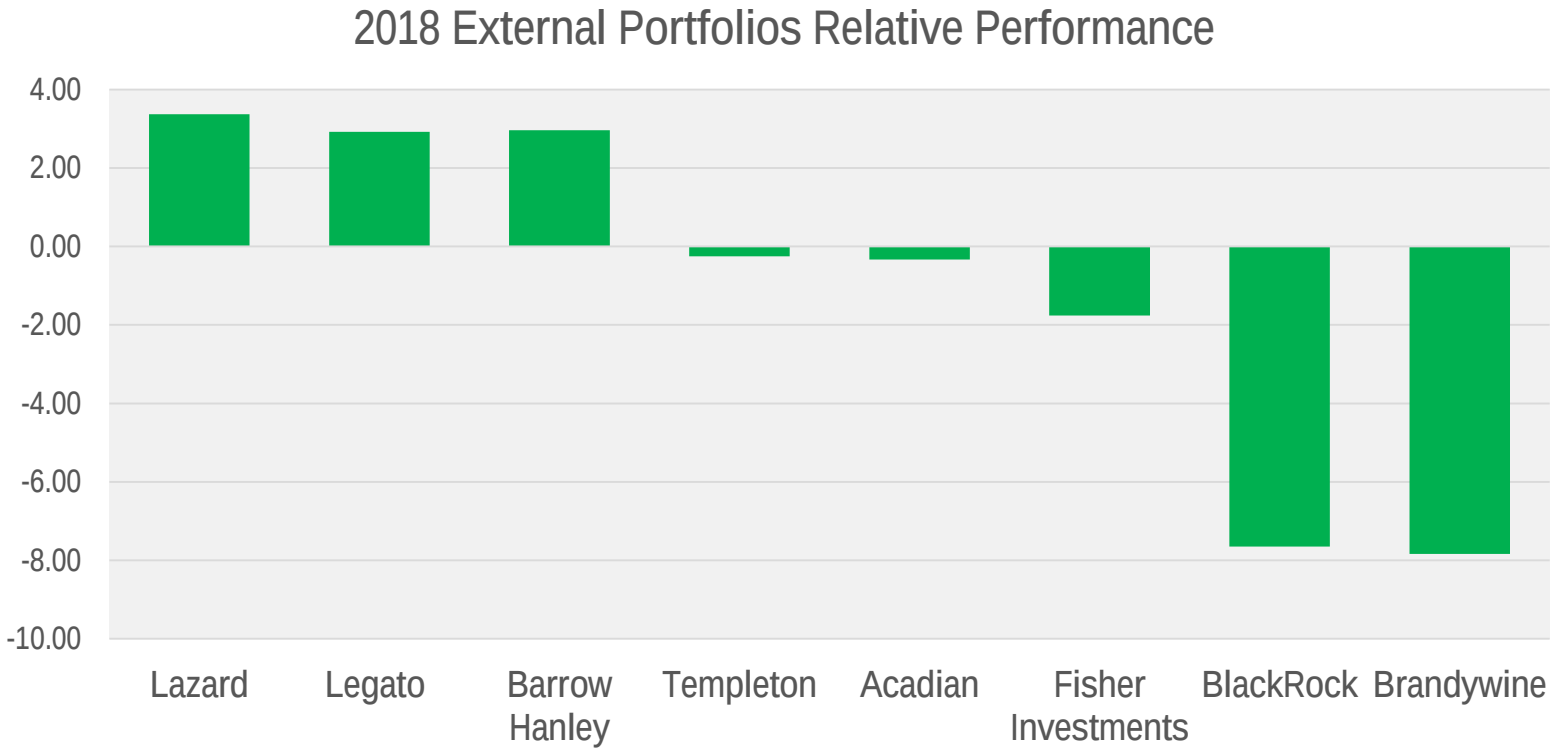
2018 Internal Portfolio Relative Performance



Global Public Equity Program

2018 External Portfolio Relative Performance

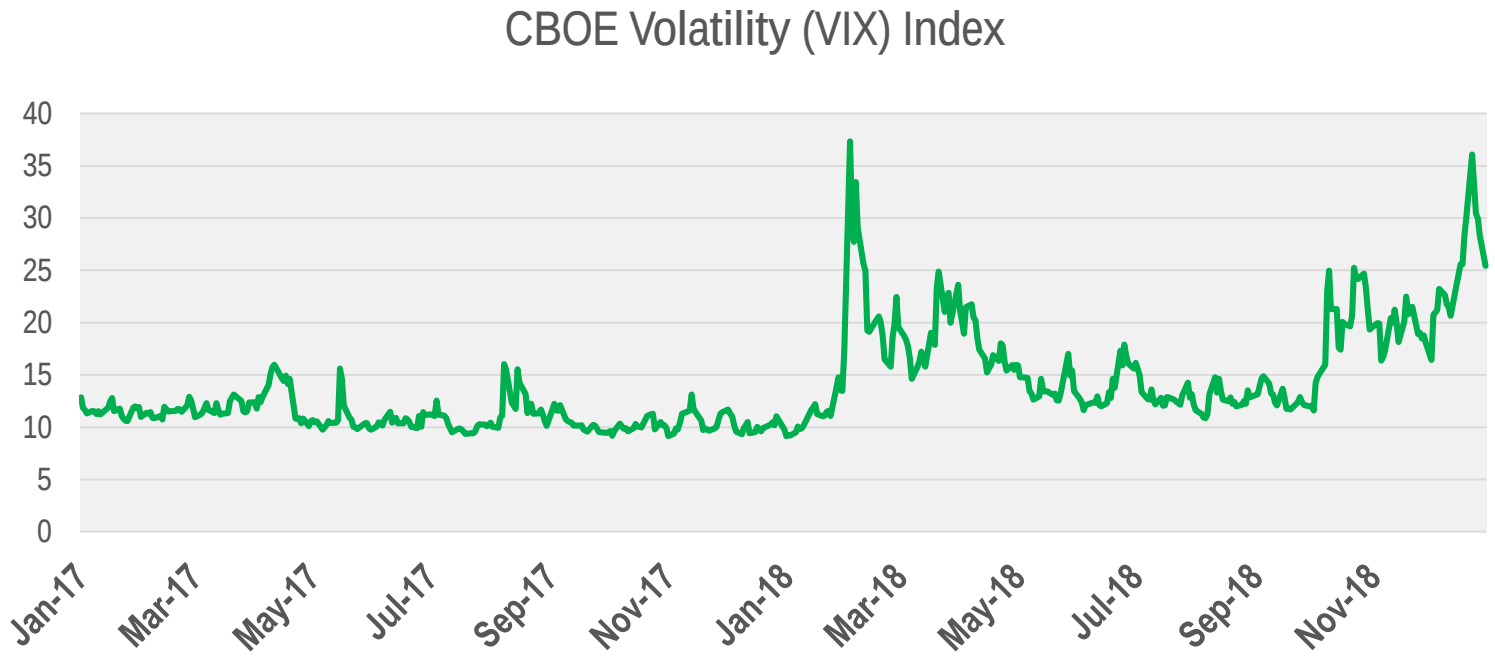
ERS



Global Public Equity Program

2018 in Review: The Reemergence of Volatility

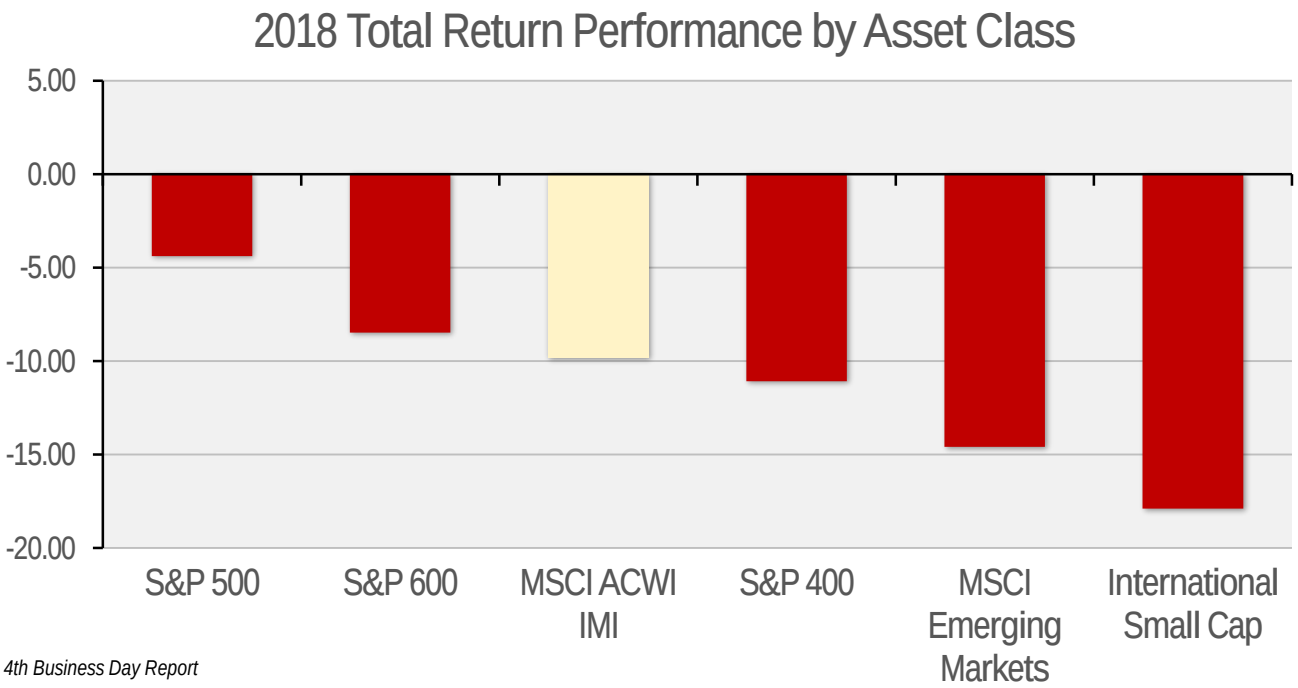
ERS



Data Source: Bloomberg

Global Public Equity Program

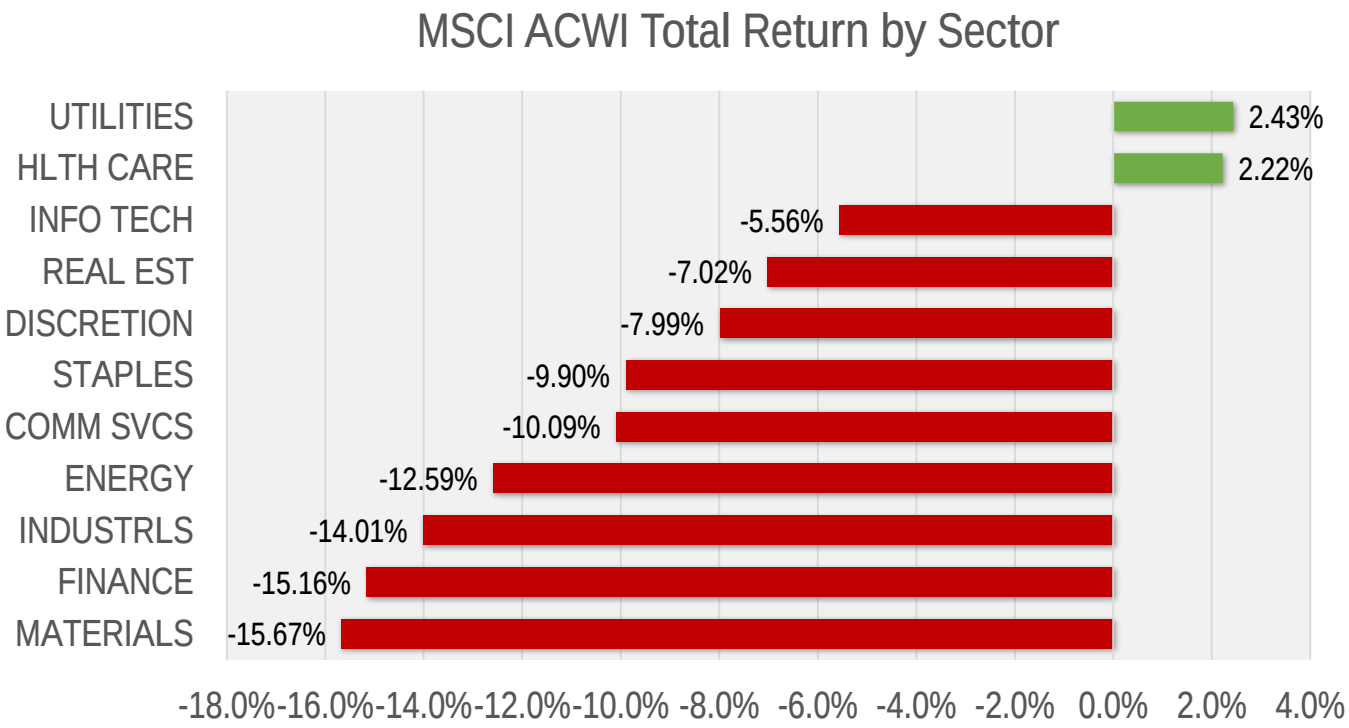
2018 Total Return Performance by Asset Class



Source: ERS 4th Business Day Report

Global Public Equity Program

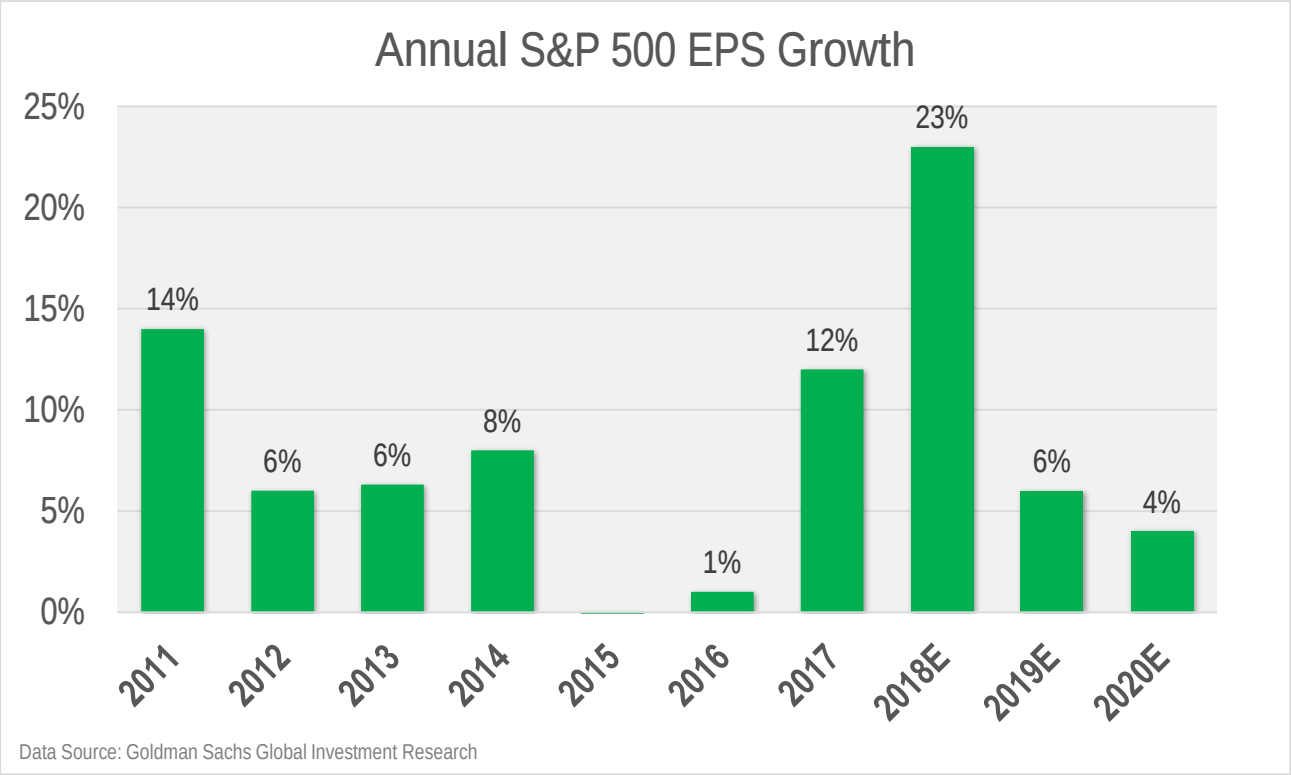
2018 MSCI ACWI Price Returns by Sector



Global Public Equity Program

S&P 500 Earnings Per Share (EPS) Growth

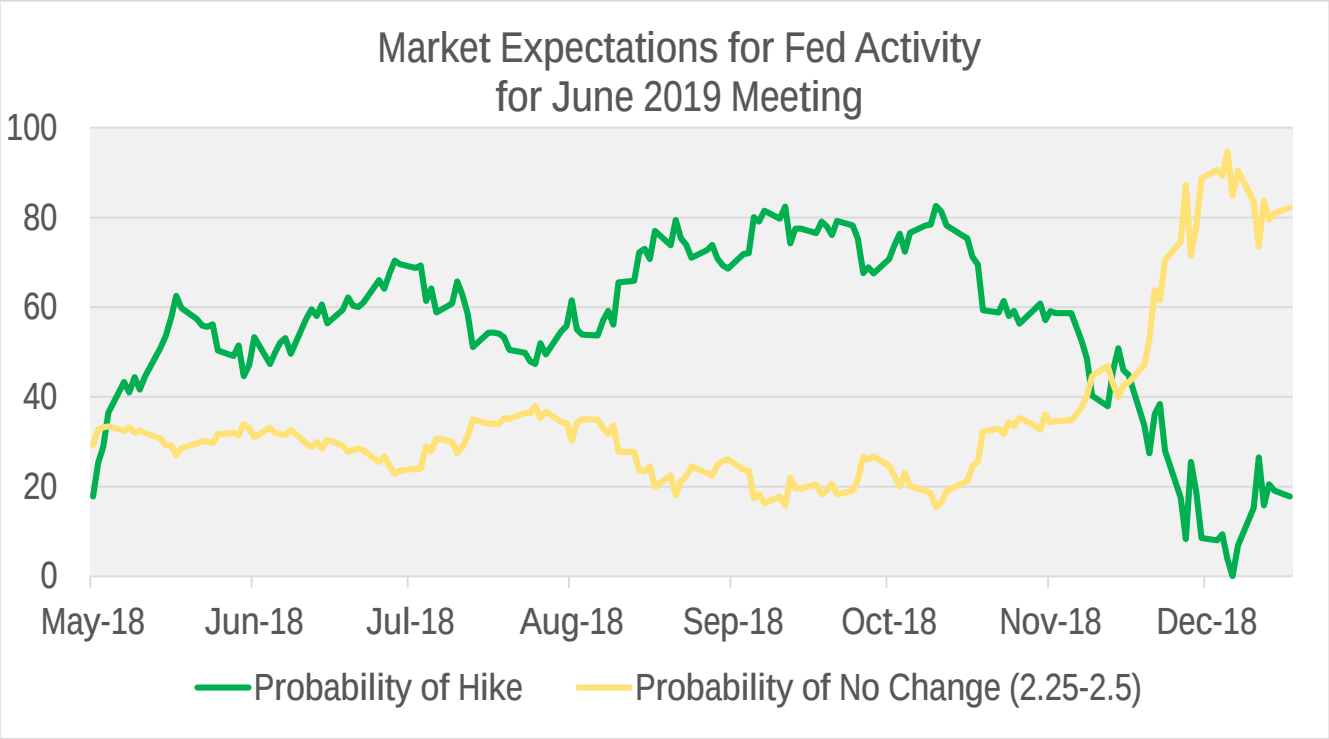
ERS



Global Public Equity Program

Market Expectations for Fed Activity

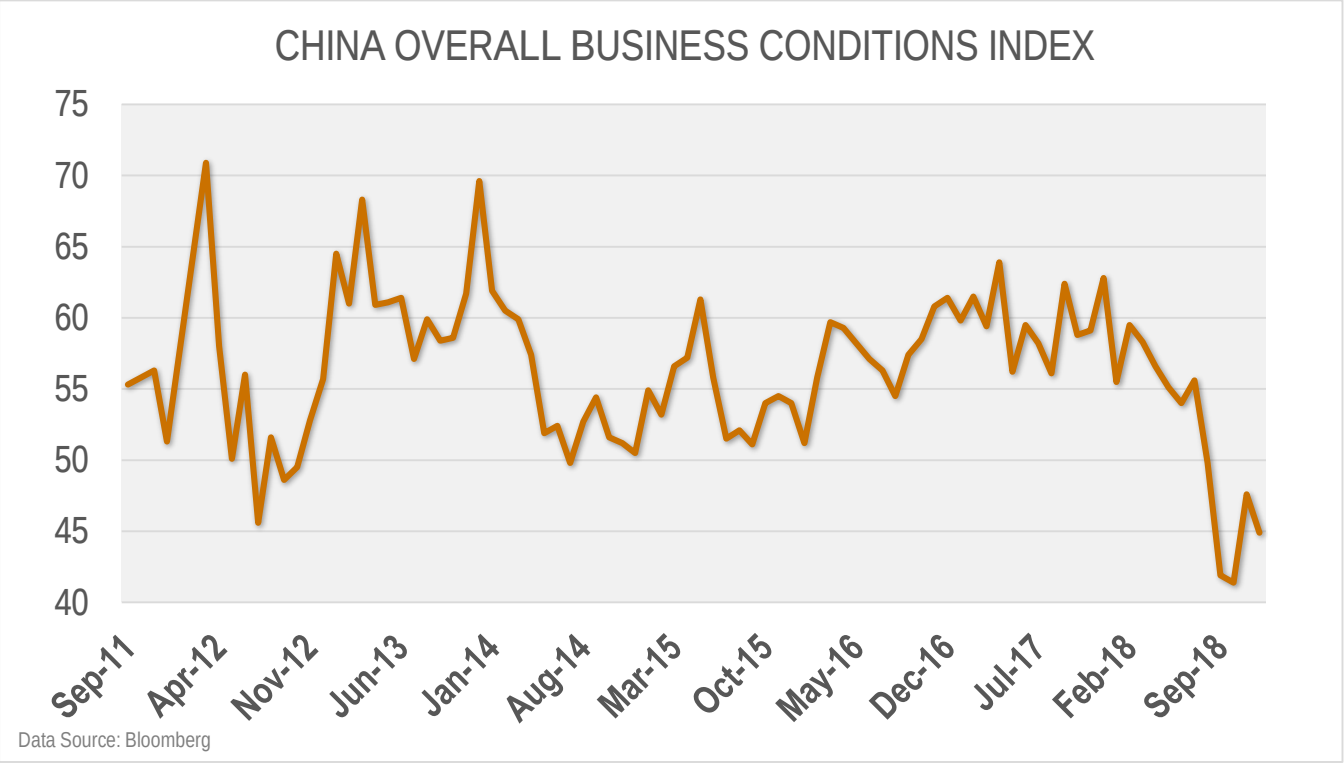
ERS



Global Public Equity Program

China Overall Business Conditions Index

ERS



ERS

ERS Global Public Equity

Portfolio Structure and Positioning

March 6, 2019

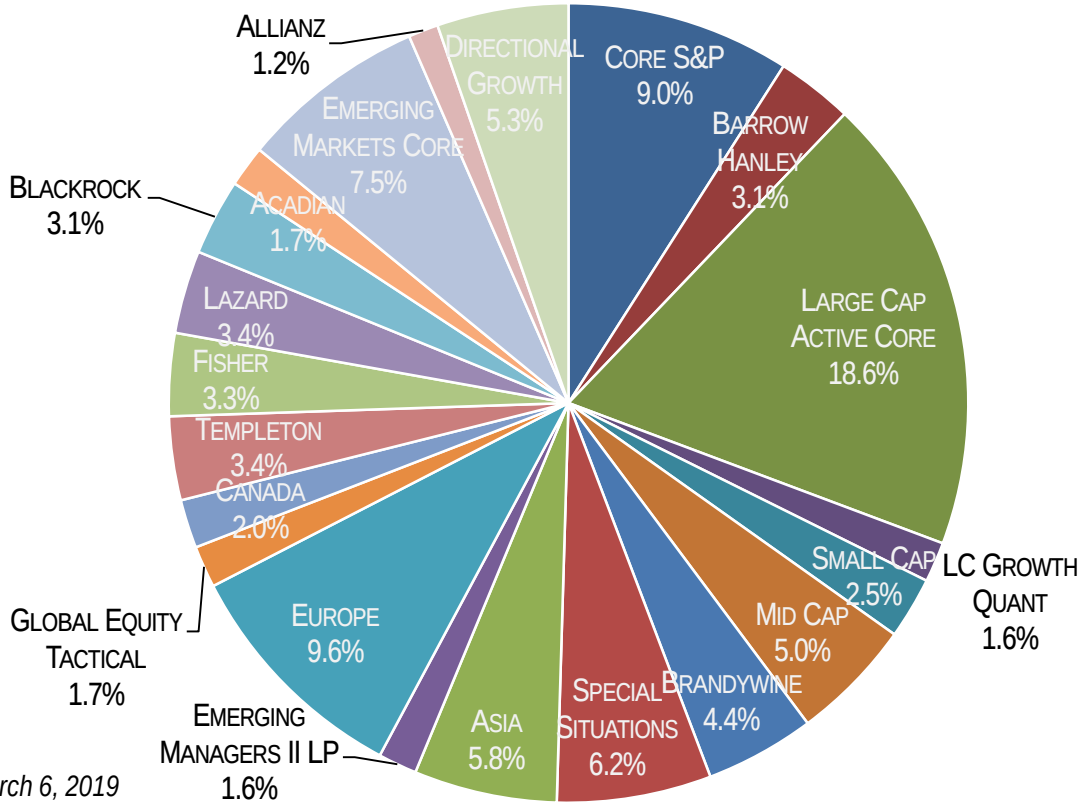
Chris Tocci, CFA, Deputy Director of Global Public Equity

Global Public Equity Program

ERS

Global Portfolio Structure – Dollar Allocation (12/31/2018)

$10.7 Billion
39.8% of Trust

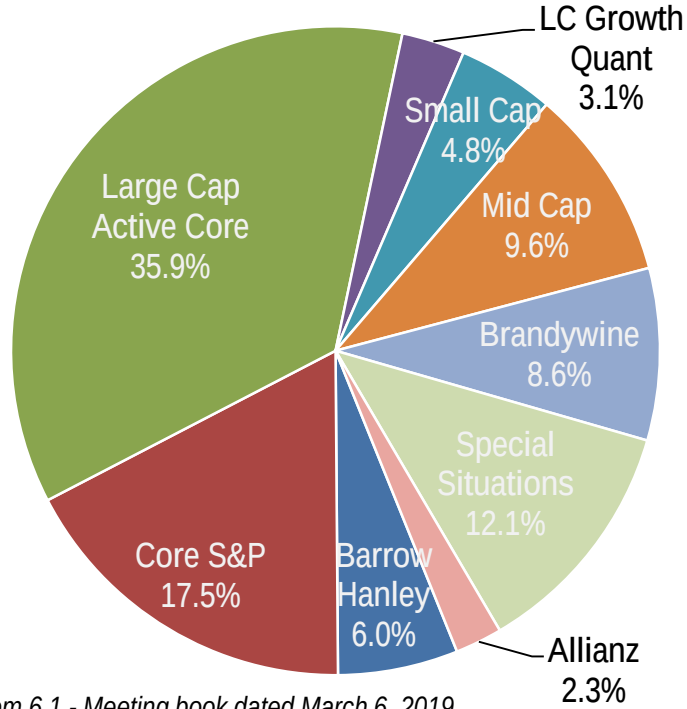


Global Public Equity Program

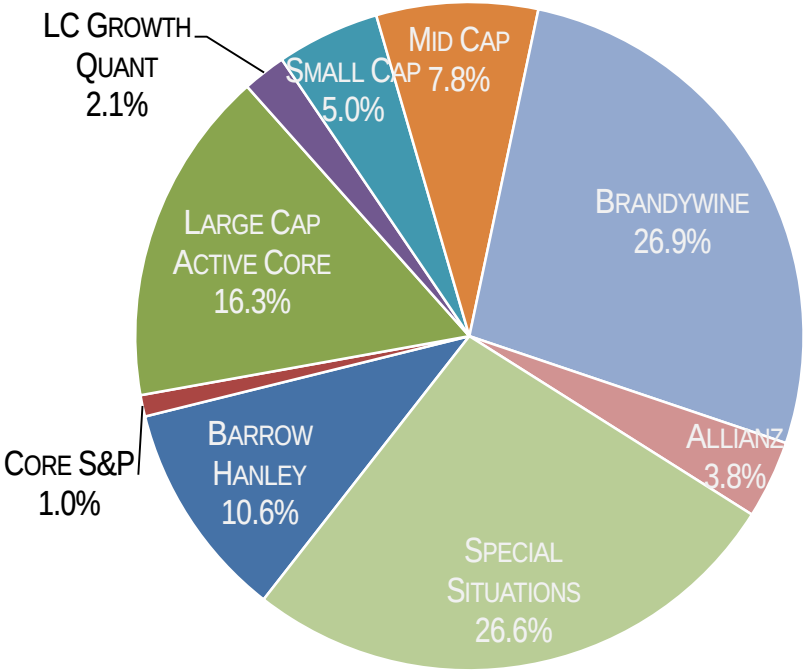
Portfolio Structure and Positioning –Domestic Equity

ERS

Dollar Allocation (12/31/2018)



Contribution to Tracking Error (12/31/2018)

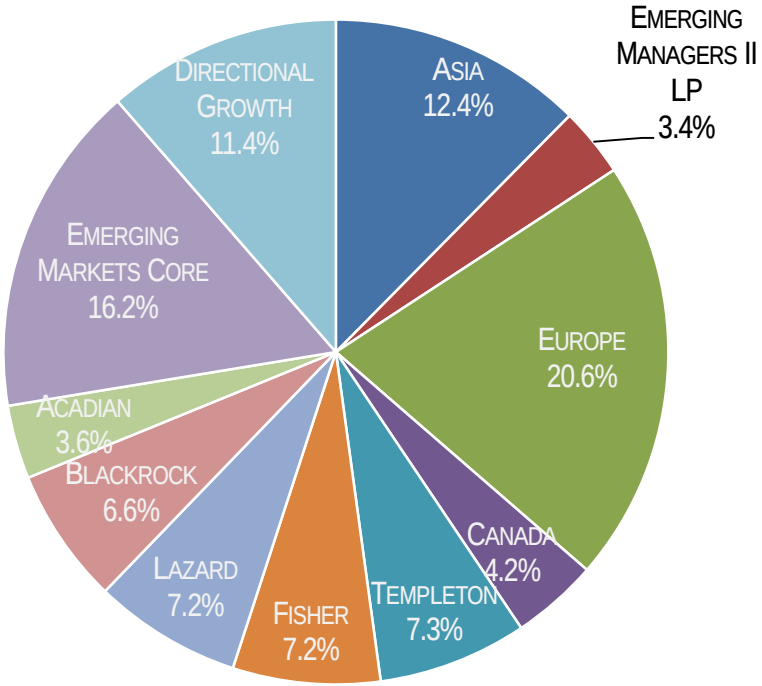


Global Public Equity Program

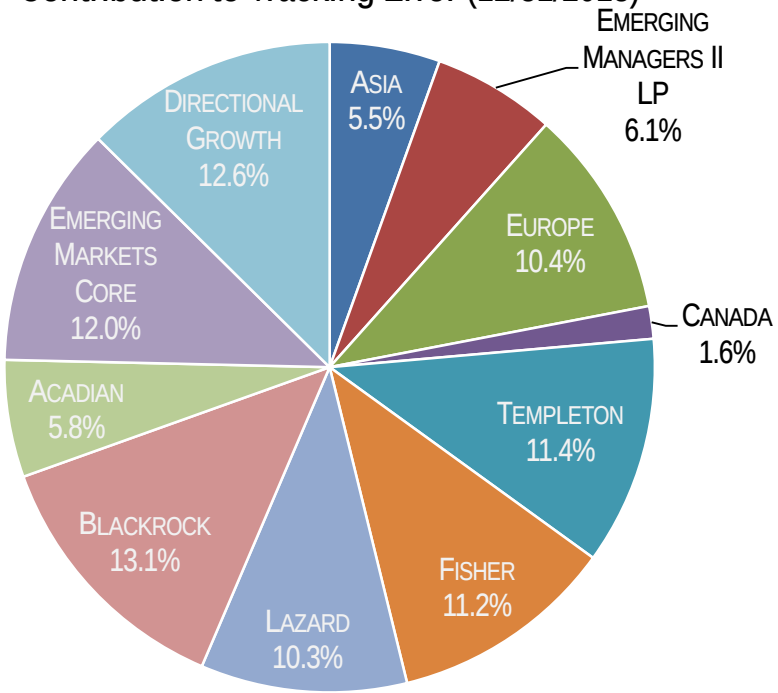
Portfolio Structure and Positioning – International Equity

ERS

Dollar Allocation (12/31/2018)



International Equity
Contribution to Tracking Error (12/31/2018)

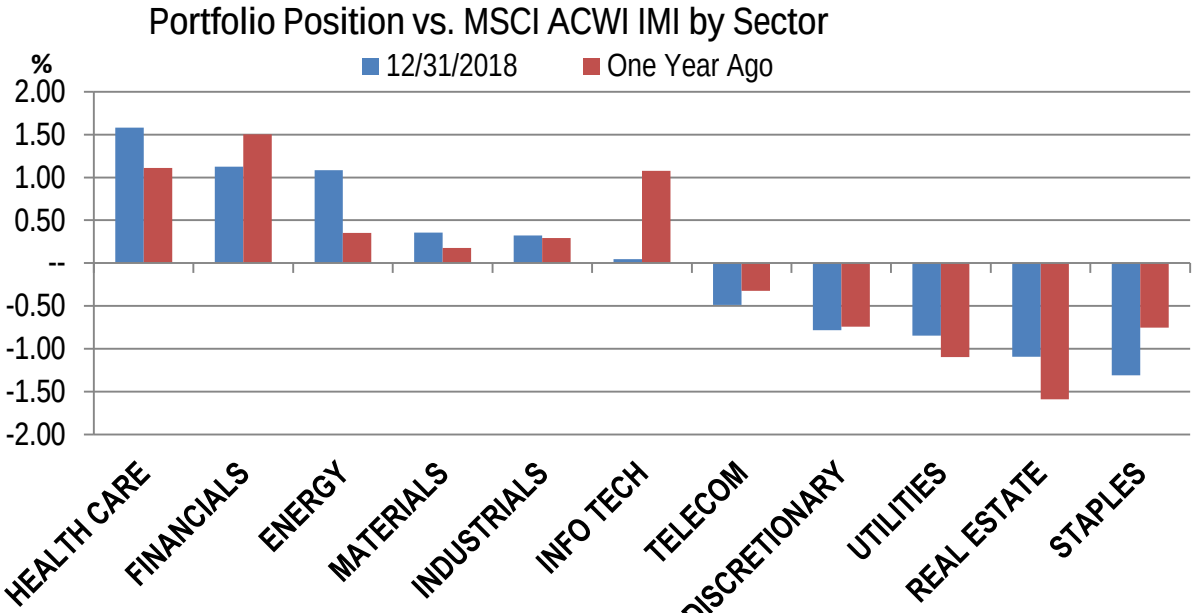


Global Public Equity Program

Portfolio Structure and Positioning – Sector Exposures

ERS

- Healthcare overweight increased, offset by a decrease in Financials.
- Energy overweight increased significantly, offset by a decrease in Info Tech.
- Real Estate, Staples, and Utilities remain persistent underweights.



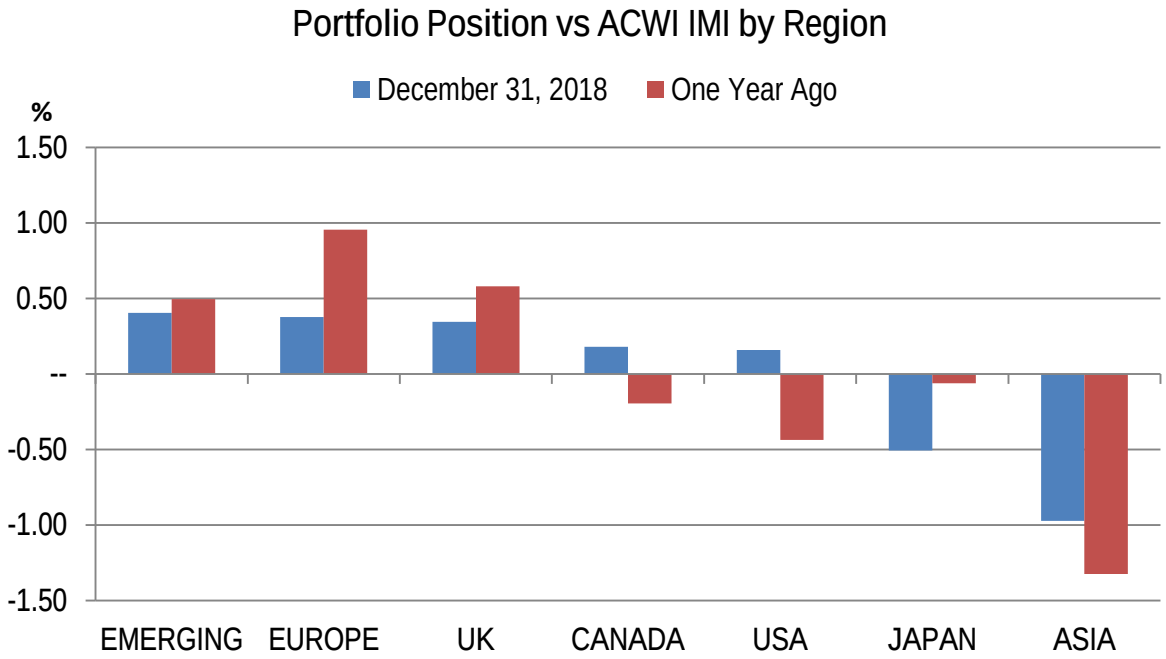
***Securities classified under pre October 2018 GICS Structure for both dates presented

Global Public Equity Program

Portfolio Structure and Positioning – Regional Exposures

ERS

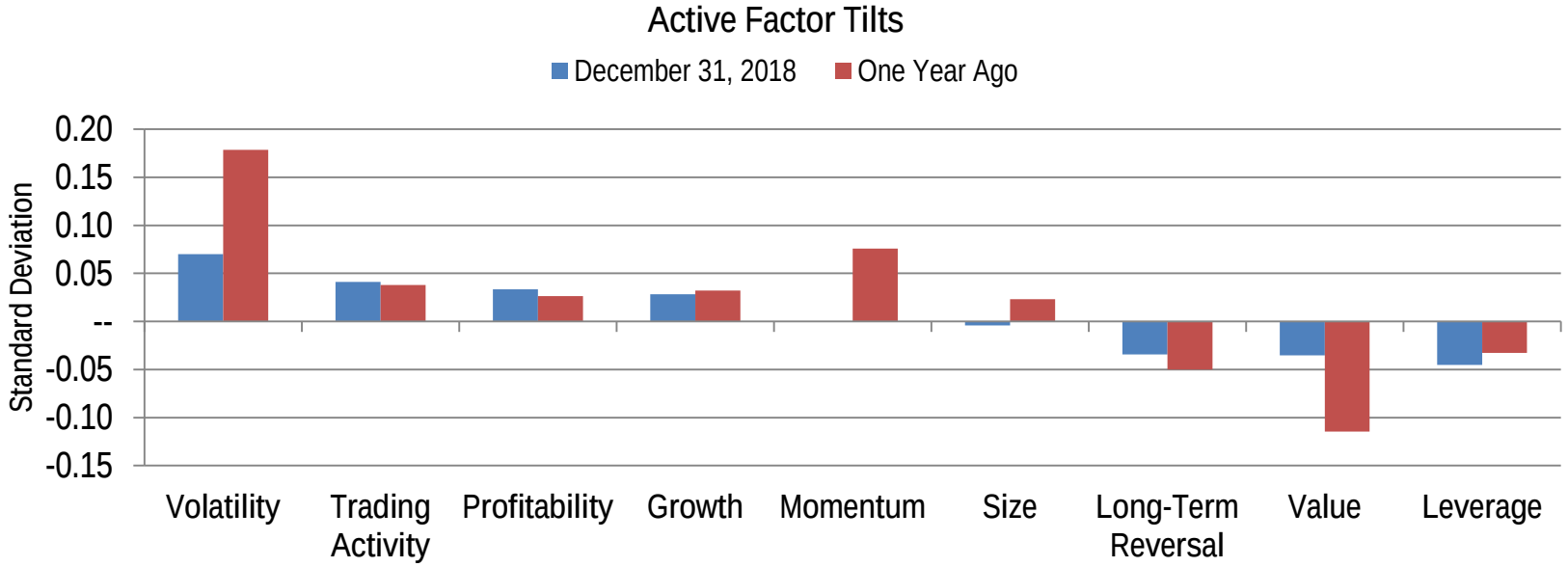
- Regional weights generally became more aligned with the benchmark.
- Consensus underweight of Asia and Japan remained in place.
- USA back to a slight overweight.
- Europe and UK served as a source of funds for the USA , Asia, and Canada.



Global Public Equity Program

Factor Exposures (Portfolio Characteristics)

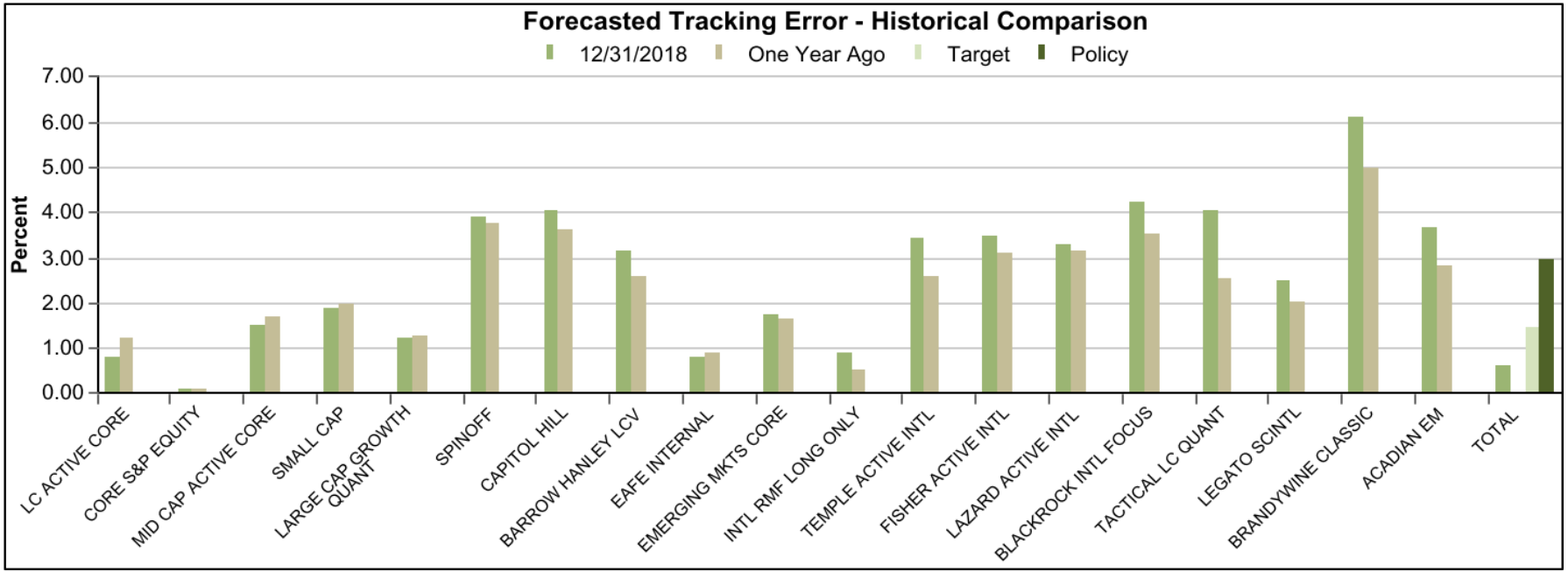
- Factor tilts remain small at the asset class level
- Relative factor exposures generally moderated throughout the year



Global Public Equity Program

Active Risk/Tracking Error

- Forecast risk levels remained within policy limits



ERS

ERS Global Public Equity

Review and Discussion of Global Public Equity External Advisor Program

March 6, 2019

Lauren Honza, MBA, CFA, External Advisor Portfolio Manager

External Advisor Program Update

Funded External Advisors

ERS

Firm	Strategy	Selection Date	Portfolio Inception	Monitoring Status
Acadian Asset Management	Emerging Markets	12/2/2011	11/1/2017	Good
Allianz GI Structured Alpha LC 350	Domestic Large Cap	5/29/2018	8/1/2018	Good
Barrow, Hanley, Mewhinney & Strauss	Large Cap Value	12/2/2010	4/1/2011	Good
BlackRock	International	12/2/2011	3/1/2015	Good
Brandywine GIM	Large Cap Value	12/2/2010	4/1/2017	Good
Fisher Investments	International	1/24/2006	7/1/2008	Good
Lazard Asset Management	International	8/23/2011	12/1/2011	Good
Templeton	International	11/19/2002	4/1/2003	Good
Legato Capital Management	International Small Cap	5/25/2010	2/1/2017	Good

External Advisor Program Update

New Mandate: Allianz Structured Alpha Large Cap 350

ERS

- Philosophy
  - Enhanced U.S. large-cap core equity strategy that pursues outperformance via the listed options market
  - Seeks to outperform the S&P 500 by 350 basis points per annum
- Process
  - Primarily seeks to add performance by collecting income from selling short–duration options
  - In addition to selling options, buys options for hedging and portfolio diversification purposes
  - Approximately 25 to 30 expiration dates held at any given time with new positions laddered in every day
- People
  - Greg Tournant, Chief Investment Officer
  - Trevor Taylor, Portfolio Manager
- Performance as of 1/30/19
  - Month-ending return of 9.51%
  - Inception-to-date return of -4.76%

External Advisor Program Update

RFP: International Small Cap

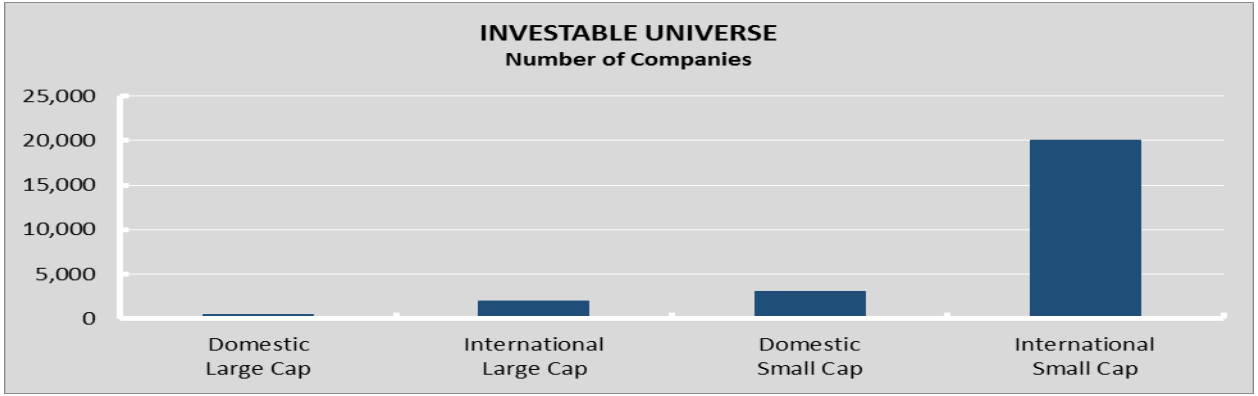
ERS

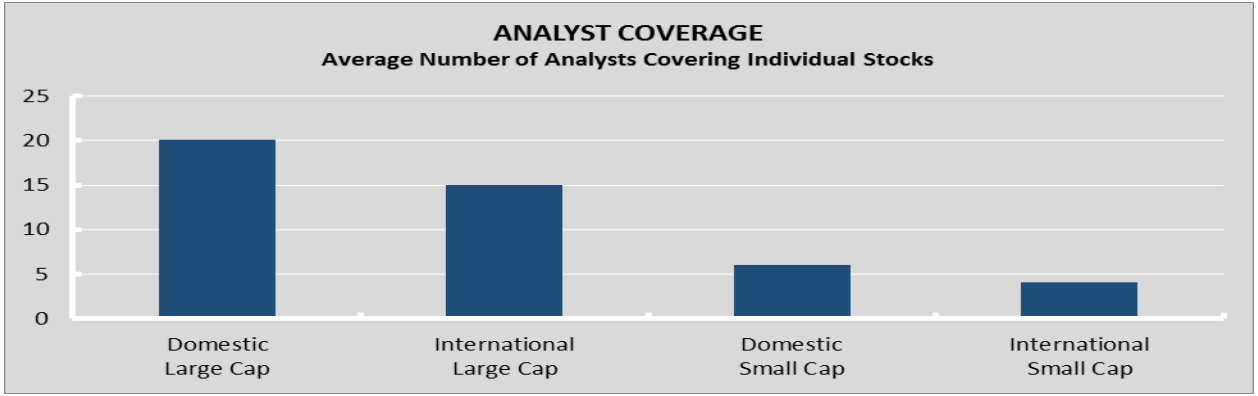
- The Case for International Small Cap (ISC)
  - ISC Stocks Have Historically Outperformed International Large Cap Stocks
  - Small Cap Companies are Poised for Growth
  - ISC Stocks Offer a Larger and Less Efficient Opportunity Set
  - Attractive Valuations for ISC Companies
  - Diversification Benefits
  - Change in asset class benchmark from MSCI ACWI to MSCI ACWI IMI

External Advisor Program Update

RFP: International Small Cap

ERS





External Advisor Program Update

RFP: International Small Cap

ERS

- RFP published on October 4, 2017
  - 94 initial responses received
- ACIC meeting on December 20, 2018
  - 10 strategies approved for the Select Pool

External Advisor Program Update

RFP: International Small Cap

ERS

- Phase I: Minimum Requirements and Short Form Review
- Phase II: Investment DDQ Review
- Phase III: Operational DDQ Review and Contractibility Review Begins
- Phase IV: Onsite Meetings and Reference Checks
- Phase V: Committee Approval
- Phase VI: Contract/Fund

External Advisor Program Update

RFP: International Small Cap

ERS

- Approved for the Select Pool
  - Axiom Investors/Axiom International Small Cap Equity
  - EAM Investors, LLC/International Small Cap Equity
  - Kayne Anderson Rudnick Investment Management, LLC/International Small Cap Equity
  - Algert Global LLC/International Small Cap Equity
  - Ativo Capital Management, LLC /International Small Cap Equity
  - Global Alpha Capital Management Ltd./International Small Cap Equity
  - Strategic Global Advisors, LLC/International Small Cap Equity
  - TimesSquare Capital Management, LLC/International Small Cap Equity
  - Copper Rock Capital Partners LLC/Emerging Markets Small Cap Equity
  - Quantitative Management Associates LLC/Emerging Markets Small Cap Equity

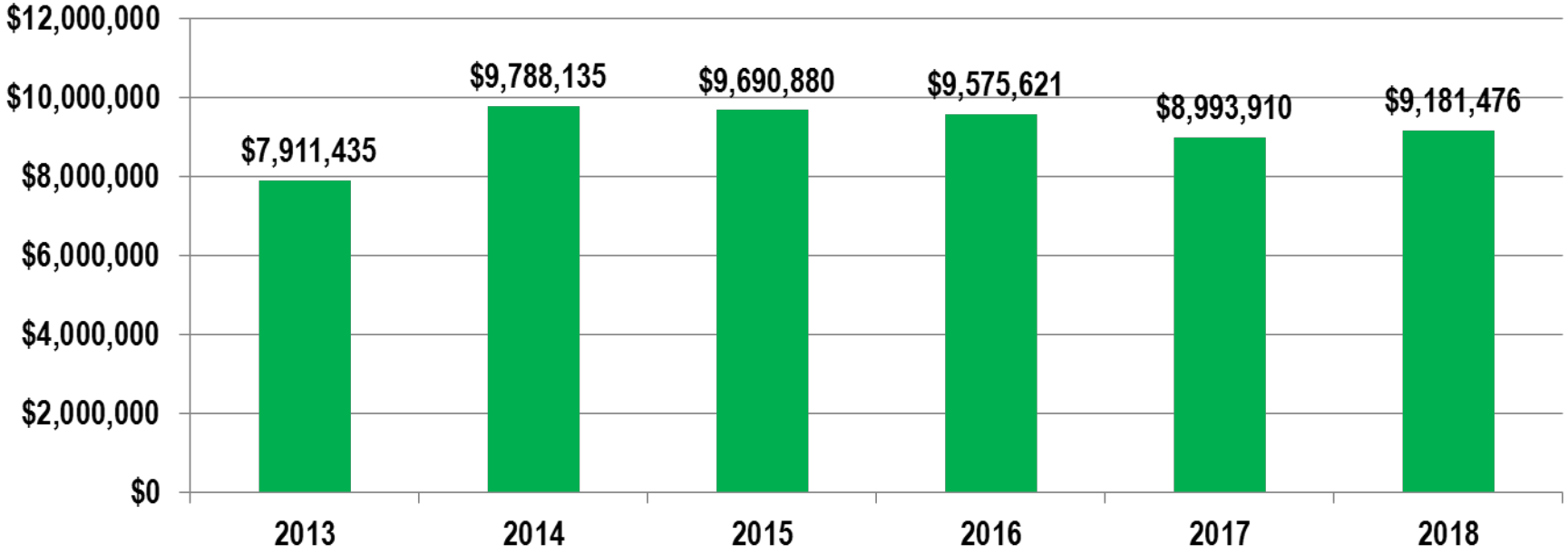
ERS

Trading Update

Michael Clements, CMT, Chief Equity Trader

Global Public Equity Program

Total Commissions

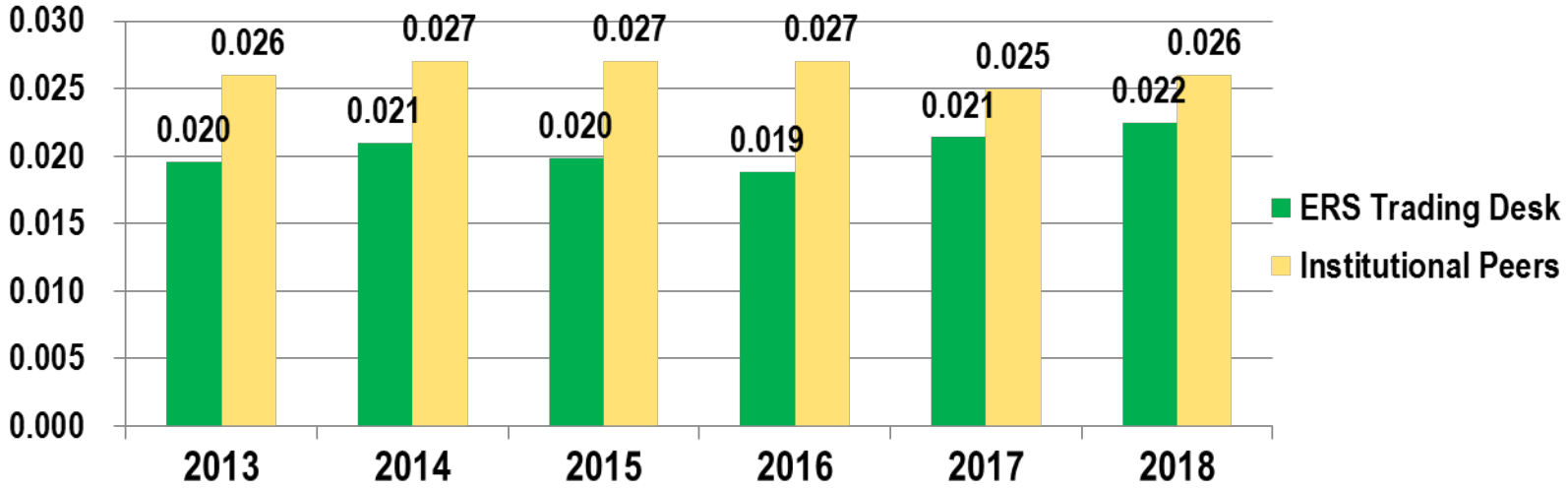


Calendar year 2018 total commissions were 2% more than 2017.

Global Public Equity Program

ERS

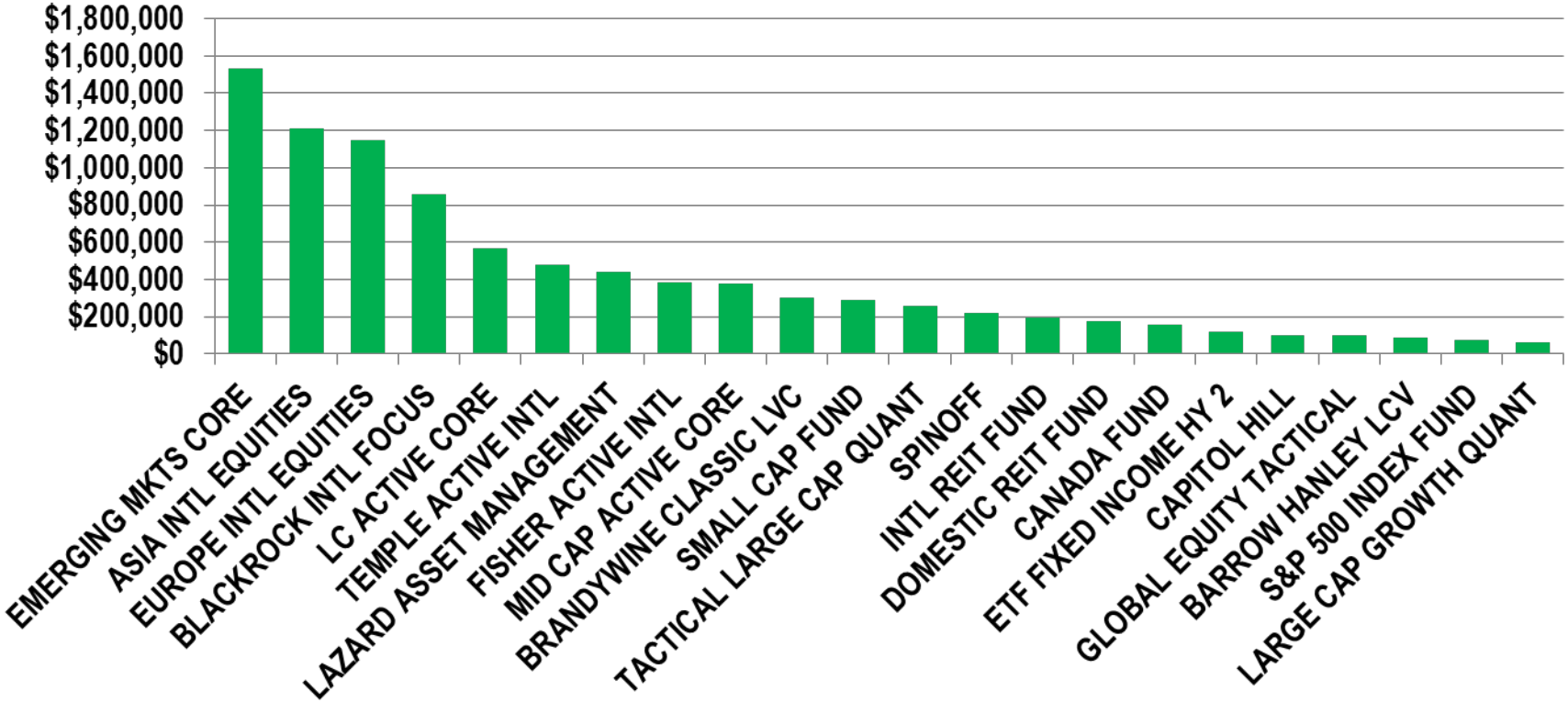
The average "All-In" blended commission rates



- Average "all-in" blended commission rate paid by U.S. institutions to brokers on domestic shares was 2.6 cents-per-share, up from 2.5 cents-per-share in 2017.
  - This average rate takes into account commissions on single-stock, program, and direct-market-access electronic trades.
- ERS' average commission was 2.2 cents-per-share, up from 2.1 cents-per-share in 2017.

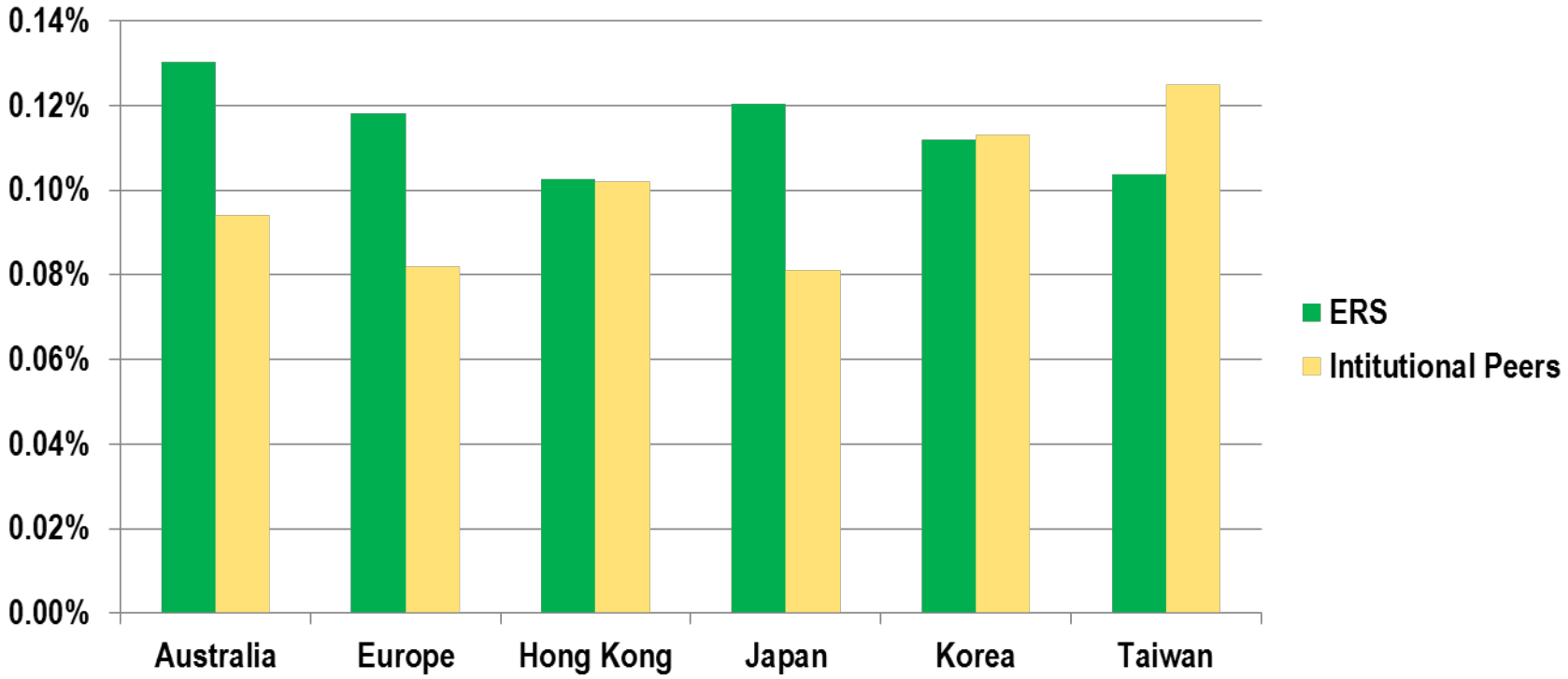
Global Public Equity Program

Commission by Portfolio



Global Public Equity Program

International Commission Rates



ERS

ERS Global Public Equity

Goals and Objectives for 2019

March 6, 2019

John Streun, MS, CFA, CPA, Director of Global Public Equity

Global Public Equity Program

Initiatives for 2019

ERS

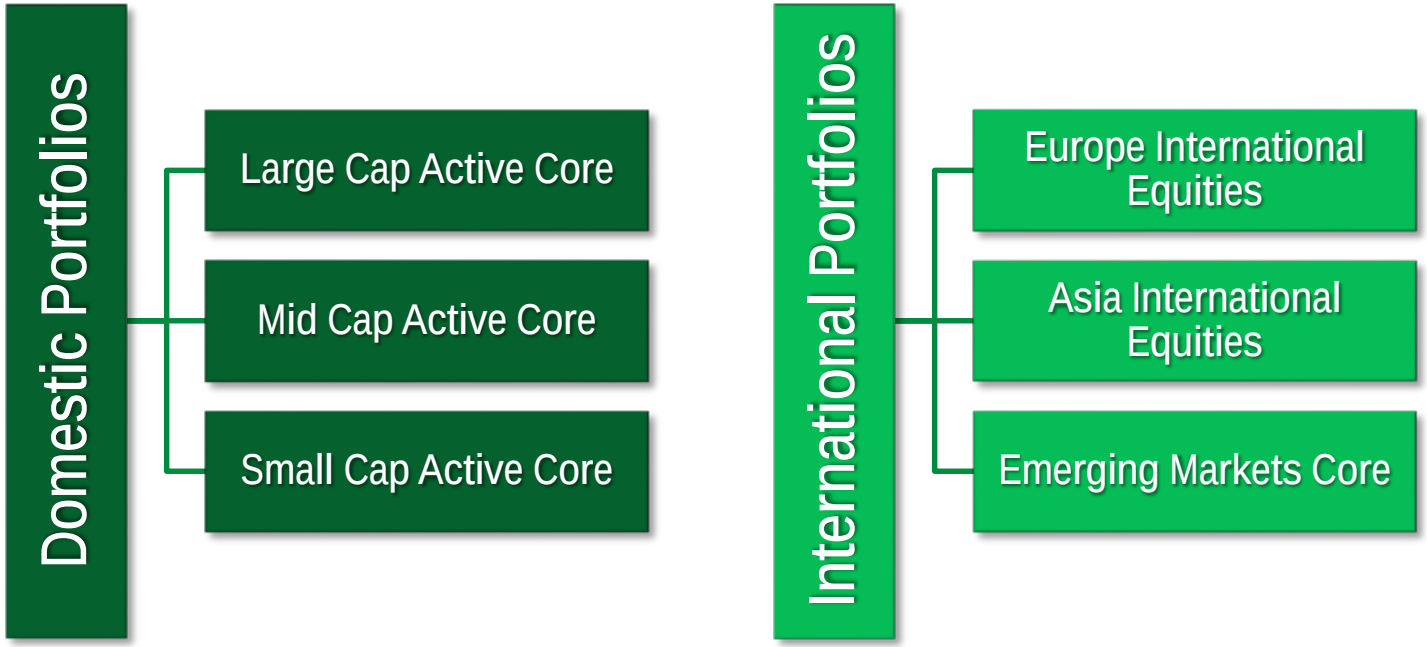
- Continue to buildout Select Pool for the External Advisor Program
- Consolidate internal portfolios by exploring ways to improve decision-making, communication and focus
- Enhance additional training and skills development for staff

Global Public Equities Program

Current Portfolio Structure

ERS

Internal Actively Managed Portfolios

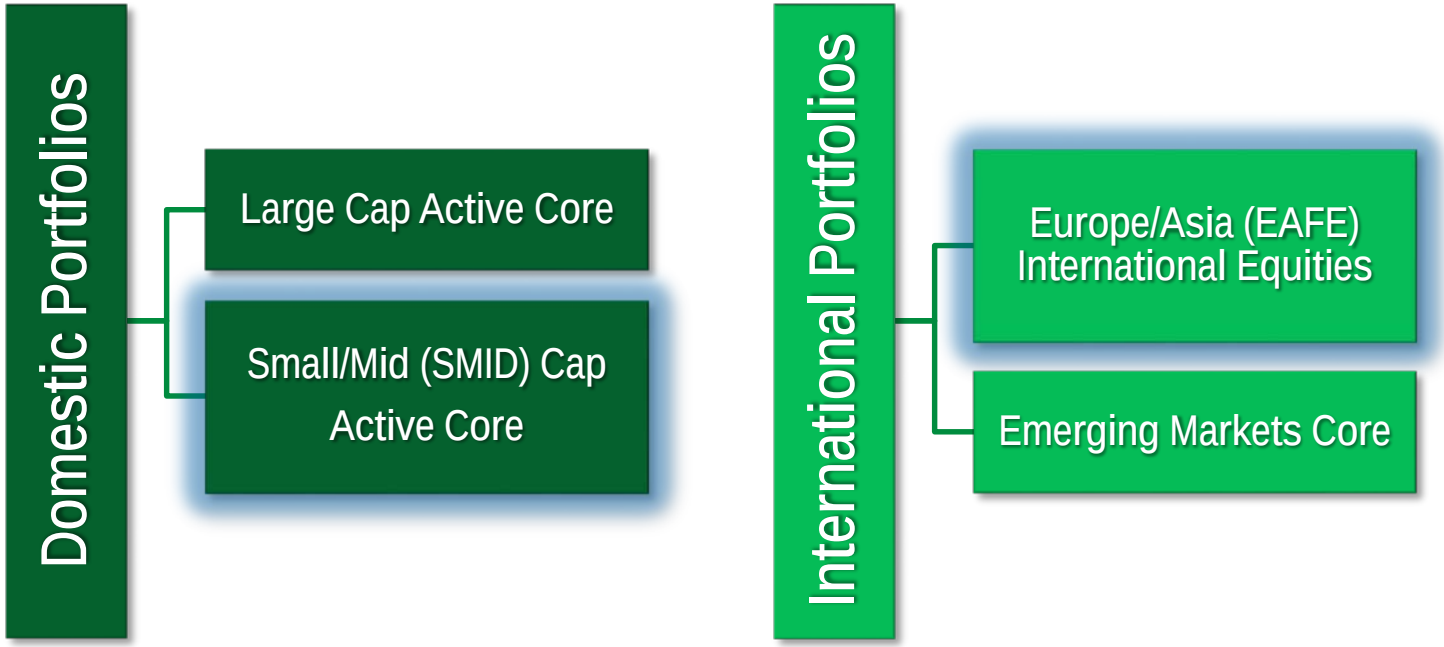


Global Public Equities Program

Potential Portfolio Restructuring

ERS

Internal Actively Managed Portfolios



ERS

Questions?

ERS

Public Agenda Item #6.2

Report on Global Equity Performance Below Benchmark Over Three-Year Period

★

March 6, 2019

Tom Tull, CFA, Chief Investment Officer

Report on Global Equity Performance

ERS

Background:

- Reference Sec. 3, para 3.3 of Investment Policy, reporting requirement by the CIO to the Board of performance below the benchmark over rolling three-year periods
- Asset class three-year period ending 12/31/2018 performance of 5.84%, underperforming by 98 bps
  - Internally managed equities earned 6.57%, underperforming by 80 bps
  - Externally managed equities earned 4.18%, underperforming by 126 bps

Report on Global Equity Performance

ERS

Course of Actions to be Implemented:

- Select Pool Buildout
- Consolidate Internal Portfolios
- Portfolio Management: Refine investment decision-making process
  - Sector Allocation
  - Geographic Allocation
  - Sell Discipline

ERS

Questions?

ERS

Public Agenda Item #7.1

Consideration of Proposed Opportunistic Credit Tactical Plan for Fiscal Year 2019 – (Action)

★

March 6, 2019

Sharmila Kassam, CPA, Esq., Deputy Chief Investment Officer
Anthony Curtiss, CFA, Director of Hedge Funds
John Claisse and Ta Lohachitkul, Albourne America

Opportunistic Credit
Timeline

ERS

August 2017 – Board Approves Asset Liability Study

December 2017 – Staff Recommendation for Asset Class Guidelines

CY 2018 – Research strategies internally and collaborate across asset class teams

March 2019 – Recommend Tactical Plan

2017 → 2018 → 2019 → 3% Allocation

Current Asset Allocation

Introduction of Opportunistic Credit

ERS

Asset Class	Final	Credit Investments	Main Focus - Public/Private
Global Equity	37.0%	n/a	
Private Equity	13.0%	Yes	Private
Global Credit	11.0%	Yes	Public
Real Estate	12.0%	Limited	Private
Infrastructure	7.0%	Limited	
Opportunistic Credit	3.0%	Yes	Private
Total Return-Seeking Assets	83.0%		
Rates	11.0%	Yes	Public
Absolute Return	5.0%	Yes	Both
Cash	1.0%	n/a	
Total Risk-Reducing Assets	17.0%		

Opportunistic Credit

Why does ERS need it?

ERS

- Given the current credit cycle, private opportunities are potentially more attractive relative to public markets.
- Opportunities because of structural issues (i.e. banks not lending and Basel III), and market dislocations.
- Illiquidity premium exists
- Unique opportunities that do not neatly fit into more traditional asset classes.
- Allocation flexes across spectrum of private credit strategies

Opportunistic Credit

What is it?

ERS

- Opportunistic credit is a unique approach for ERS to invest within the credit markets.
- Flexible mandate to identify unique and niche opportunities across the credit spectrum.
- In comparison to liquid market solutions, it could be compared to an unconstrained bond fund.
- Diverse spectrum of strategies that span across traditional asset classes in themes: income producing, asset backed and distressed

Opportunistic Credit

How would ERS invest?

ERS

- Non-traditional portfolio construction because mandate will only be allocated to when compelling opportunities relative to current Trust credit allocations.
- The mandate would be flexibly structured through private market investment vehicles.
- In most instances, capital is committed and drawn over a specified period of time.
- Depending on the strategy, distributions may be periodically received over its life (de-risking the initial investment).
- Expectations are for most investments to be self-liquidating; extension risk would be limited.

Opportunistic Credit

Focus

ERS

Return Profile – On an aggregate basis to target portfolio time-weighted returns of <u>at least</u> 6.5%

J-Curve Mitigation

- Management fees generally paid on invested capital
- Shorter term structures
- Periodic cash distributions

Downside Protection Risk Options

- Self liquidating;
- Senior Secured;
- Emphasis on strategies with consistent cash flows; and/or
- Deals have both covenants and collateral

Opportunistic Credit

Overview

ERS

- Complement existing asset class exposures; not an overflow vehicle
- Facilitate a collaborative effort across different asset class teams
- Underlying investments and structures will be illiquid
- Some strategies have floating rate components reducing sensitivity to rising interest rates
- Emphasis on cash flows with price appreciation as a secondary focus
- Some investments may provide for either equity kickers or have characteristics that resemble equity holdings

Opportunistic Credit

Investment Strategies

ERS

ERS' Opportunistic Credit Guidelines & Procedures provide broad Target Ranges:

Strategy Class	Target Range	
Direct Lending (through funds/managers)	0%	40%
Mezzanine	0%	20%
Distressed & Special Situations	0%	15%
Real Asset Credit	0%	5%
Real Estate Credit	0%	40%
Specialty Finance	0%	50%
Structure Credit	0%	15%

Opportunistic Credit

Expectations for Initial Focus

ERS

- Specialty Finance
- Real Estate Credit
- Cross Asset Manager – tactical flexibility to invest across different credit strategies

TX ERS Opportunistic Credit

March 6, 2019

ALBOURNE

Albourne Private Credit Capabilities

2001
Advising
1st public pension plan on
dedicated credit mandate[1]

>150
Clients
with access to our
private credit research[2]

28
Lead analysts
conducting due diligence[3] on
private credit strategies[4]

>400
Private credit funds
with published
due diligence reports[5]

1. Credit mandate primarily comprising hedge funds. 2. Excludes clients with only access to our hedge fund credit research. 3. Investment and operational due diligence. 4. Excludes lead analysts only focused on credit hedge funds as well as all support analysts, desk based analysts and quantitative due diligence analysts covering private credit strategies. 5. Funds with a published investment or operational due diligence report. Excludes credit hedge funds and quantitative due diligence reports.

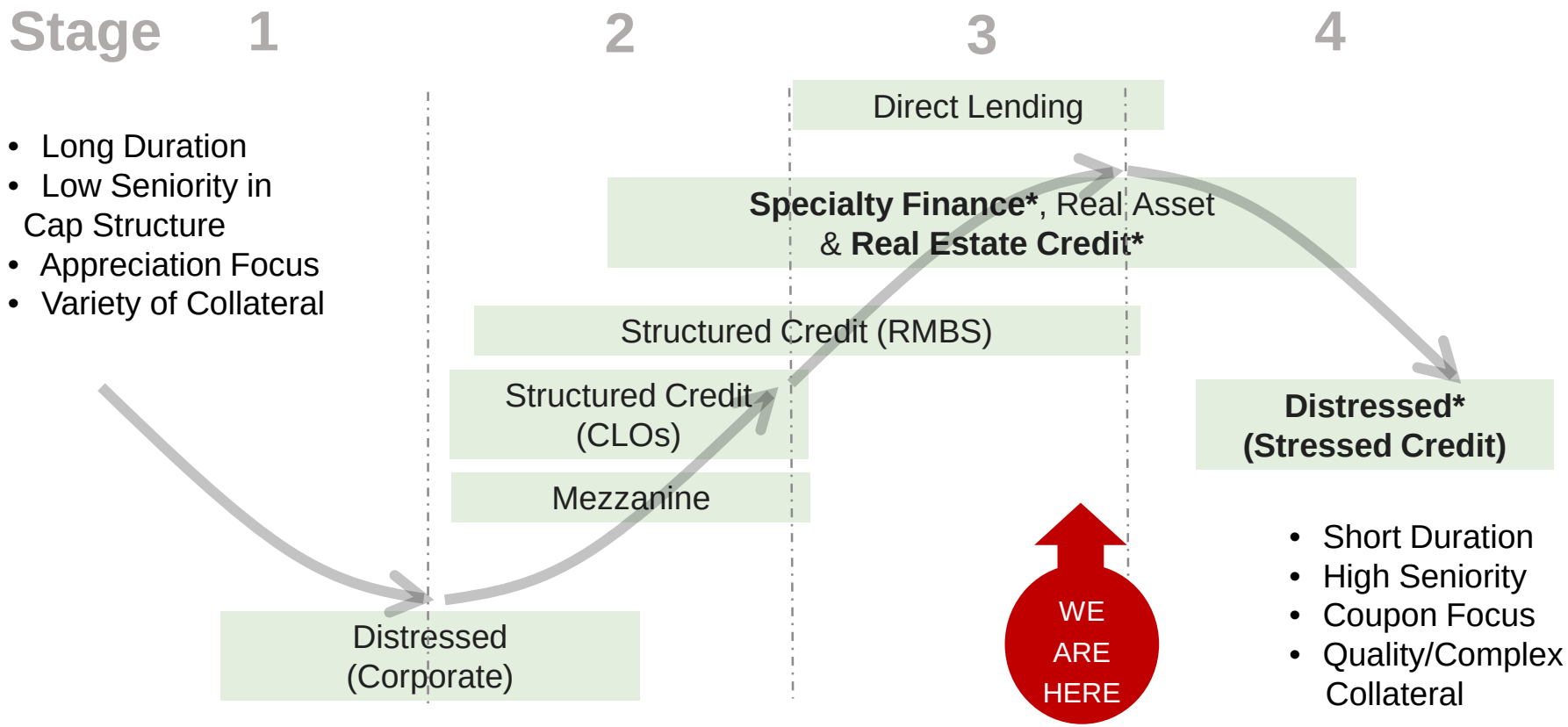
Global Private Credit Team

ALBOURNE

Agenda item 7.1 - Meeting book dated March 6, 2019

Lead investment & operational due diligence analysts only. Excludes support analysts, desk based analysts and quantitative due diligence analysts covering private credit strategies.

Strategies and the Generalized Credit Cycle (*initial focus)



ERS Credit Framework – Current Opportunities

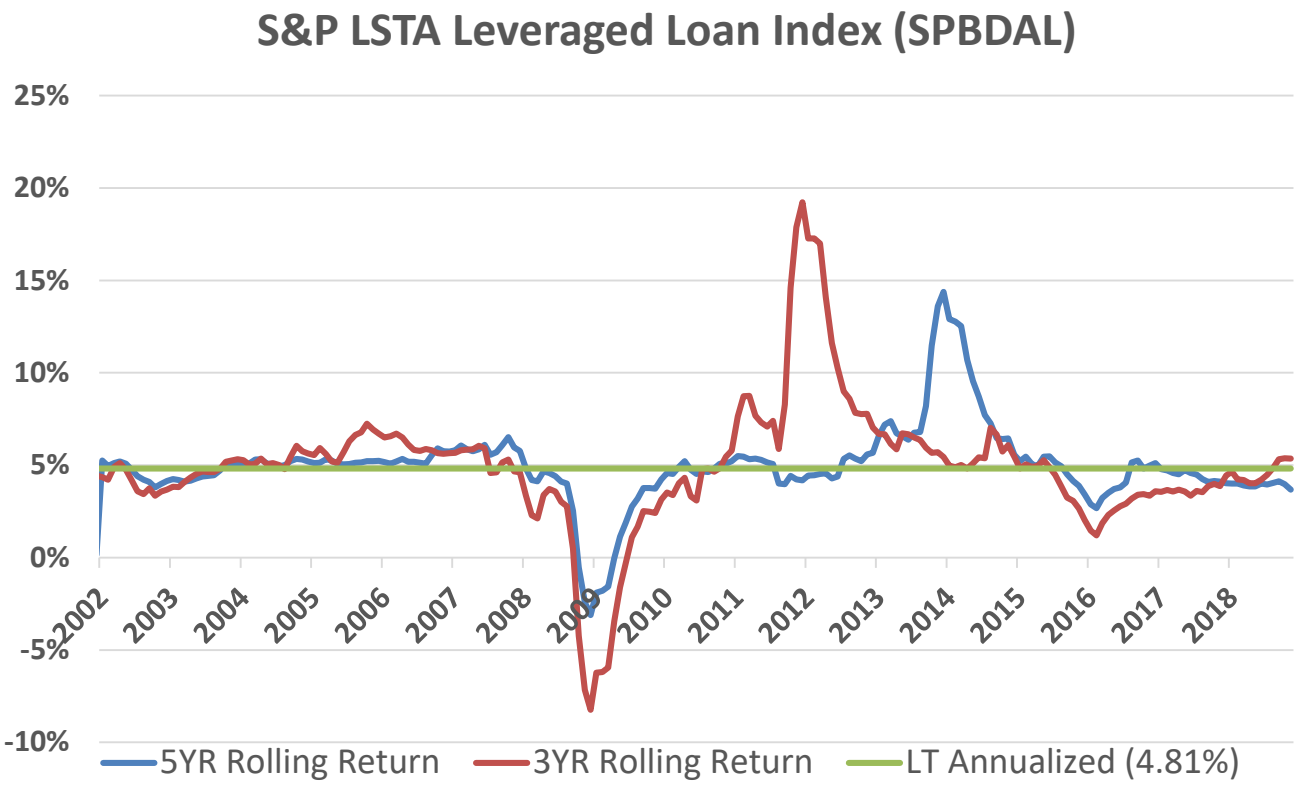
Tactical evaluation of ERS' Opportunistic Credit Framework illustrates current areas of focus:

Direct Lending (through funds/managers)	Emerging Markets Lending	European Direct Lending	Global Middle Market Lending	SBIC Lending	U.S. Direct Lending			
Mezzanine	U.S. Mezzanine	European Mezzanine						
Distressed & Special Situations	Corporate Distressed	Stressed Credit	Real Estate Distressed	Cross-Asset				
Real Asset Credit	Agriculture Credit	Aviation	Energy Credit	Infrastructure Lending	Metal & Mining Finance	Trade Finance		
Real Estate Credit	EM CRE Lending	European CRE Lending	Residential Mortgages	U.S. CRE Lending				
Specialty Finance	Consumer & SME Lending	Factoring & Receivables	Healthcare Lending	Insurance Linked	Merger Appraisal Rights	Regulatory Capital Relief	Royalties	Venture Lending
Structured Credit	CLO	Consumer ABS	CRE	Esoteric ABS	Europe Structured Credit	RMBS	Structured Credit Multi-Sector	

Strategies most likely to present opportunities over the next 12 months.

Strategies least likely to present opportunities over the next 12 months.

Private Credit Policy Benchmark Premium



S&P LSTA (SPBDAL) Annualized Return (as of Dec 31, 2018)	
5YR	3.05%
10YR	8.57%
15YR	4.52%

Albourne supports the proposed 1.5% premium over the S&P LSTA given stated target return of at least 6.5%.

Source: Bloomberg

Past performance is not necessarily indicative of future returns

Opportunistic Credit

Tactical Plan CY2019

ERS

- **Maximum Cap:** Expectations of 0-2 investments for CY2019, lower of 1% of Trust or $270 million
- **Initial Sourcing:** Each of the following teams will have 1% of the allocation to deploy – Hedge Funds, Real Estate and External Global Credit subject to maximum cap
- **Benchmark:** S&P LTSA Leveraged Loan (SPBDAL) + 150 basis points
- Albourne will be primary consultant with other consultants used as needed

ERS

Questions?

Action Item

ERS

Public Agenda Item #8.1

Review of ERS' Investment Policy – (Action)

March 6, 2019

Sharmila Kassam, CPA, Deputy Chief Investment Officer
Sam Austin, NEPC

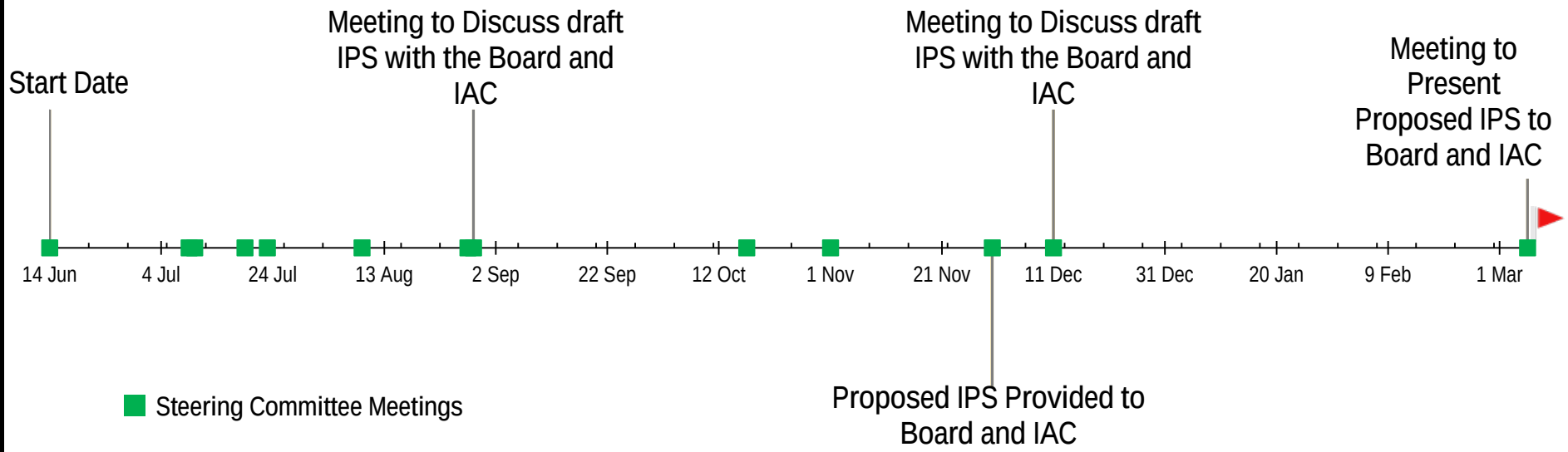
IPS Survey Comments and Findings

ERS

- The common themes below from the IPS survey are consistent with the changes that have been made to the IPS document

Common Theme
1 Reduce redundancies within the IPS
2 Move to a more principles based policy
3 Asset guidelines should be removed
4 The main policy should speak broadly about risk and risk management, and the guidelines should provide detail
5 Create a duty of care and delegation of authority table outlining the roles and responsibilities of the Board, IAC, Staff, and Consultants
6 Document that the Board and IAC will review the IPS annually
7 Creation of a Mission Statement
8 Creation of and Executive Summary

ERS' Investment Policy Statement Development Timeline



- The proposed IPS is the result of significant communication, discussion, and review that took place over a nine month period
- Continued enhancements will be made to the document as part of the annual IPS review

Conclusion

ERS

- The proposed IPS is the result of significant work and communication to reflect the views of the Board, IAC, and Staff
  - The changes align with the IPS Survey responses
- We believe the proposed document is more consistent with best practice and will be more easily used by internal and external stakeholders
- The IPS will continue to be reviewed on an ongoing basis
- Proposed IPS draft is submitted to the Board and IAC for review and input

ERS

Questions?

Action Item

ERS

Public Agenda Item #9.1

Benchmarks
Review and Discussion of Investments Benchmarking

★

March 6, 2019

Sharmila Kassam, CPA, Deputy Chief Investment Officer
Sam Austin and Tim Bruce, NEPC

BENCHMARKING

EMPLOYEES RETIREMENT SYSTEM OF TEXAS

January 2019

Sam Austin, Partner
Tim Bruce, Partner
Mike Malchenko, Senior Analyst

WHAT IS A BENCHMARK?

A benchmark has many definitions:

"A collection of unmanaged assets used to assess the quality of an investor's choices."

"An interpretation of the mix of assets chosen by our Board to reflect our risk tolerance in achieving our goals."

- **How are individual benchmarks constructed?**
  - Assets are grouped using certain criteria to construct a reference point for an investor within a same-or-like asset type
  - Market cap weighted (Russell 3000, MSCI ACWI IMI)
  - Equal weighted; all assets within a group are tracked in equal proportions
  - Style tilted; over-allocate to certain metrics, for example, price-to-book, last 3 months of price movements
  - Universe-based; Private Equity (Cambridge, Burgiss, Preqin; Real Estate (NCREIF ODCE)

- **Not all benchmarks are constructed equally; Investor beliefs play a role in choosing a benchmark**
  - Benchmark providers use definitions and calculations that differ and result in different outcomes
    - Rebalancing frequency, earnings screens, security inclusion rules

- **Staff and NEPC are tasked with assessing the relevance of the current benchmarking regime to ensure best practices and more importantly the Strategic Asset Allocation Policy is properly interpreted and investment program implementation is measured prudently**

THE ROLE OF BENCHMARKS

- **Properly used, a benchmark should be a focal point in the relationship between the firm and the fiduciary body overseeing the prudent management of the assets**

- **Benchmarks are used to measure the performance and risk characteristics from the top down (Total Plan) and bottom-up (Portfolios and Asset Classes) within the investment program**
  - Provides the ability to measure the quality of active or passive decisions within the Plan

- **Investment strategies typically fall into one of three categories:**
  1. **Benchmark Relative**: In this category, investment decisions are made relative to benchmark weights, exposures, and risks. The portfolio may be very similar to the benchmark in this instance (e.g. passive and active index strategies).

  2. **Benchmark Aware**: In this category, benchmark relativity is observed or the benchmark serves as an investable universe. Generally, there will be distinct differences between the portfolio and the benchmark (e.g. concentrated strategies).

  3. **Benchmark Neutral**: In this category, benchmarks are treated more as target returns or hurdles to beat or there is no appropriate benchmark. This is common with absolute return and alternative strategies and for strategies not covered by index providers. In these instances, a predefined target return that is not based on a market index may be used.
     - Measuring risk on a relative basis becomes impeded.

Source: CFA Institute

CONSTRUCTING A TOTAL FUND BENCHMARK

- **Total Fund benchmarking is an outcome of the Board setting a Strategic Asset Allocation; choosing a mix of assets that produces a rate of return at a certain level of risk**
  - Asset Liability Modeling, Actuarial Studies, Investment Policies, Risk Budgeting all play a role in defining the categories of assets invested in
- **The optimal mix of asset weights as identified by investment policy determines the asset mix in a benchmark**
- **Asset allocation models use broad indexes and their characteristics as an input to model expected returns and risk**
  - Consider and assess asset allocation inputs as a means to assess objectives and appropriateness of benchmark selection
- **Public markets or “traditional” investments have largely well-defined and ubiquitously understood benchmarks**
- **Private markets or “alternatives” may create some challenges**
  - Strategy, objective and risk profile may play a role

STANDARDS IN BENCHMARKING - GIPS

- **There are standards; governed by CFA Institute's Global Investment Performance Standards (GIPS)**
  - Ethical standards for the calculation and presentation of investment performance to ensure fair representation and full disclosure of investment performance.
  - Investment managers in public markets are typically GIPS compliant
    - Private market investment managers may be GIPS compliant or produce performance in substitutable best practice methodology

- **Asset owners are voluntarily taking on GIPS compliance**
  - Sets best practices across performance measurement including benchmarking

- **Compliant firms are required to select a benchmark if one is appropriate and present benchmark performance in compliant presentations**
  - The GIPS standards define a benchmark as a point of reference against which the composite's or portfolio's performance and/or risk is compared
  - The benchmarks used by each asset class must be disclosed, along with their weights as of the most recent annual period end as well as general information regarding the investments, structure, and/or characteristics of the benchmarks.

- **ERS of Texas is GIPS compliant**

Source: CFA Institute

BEST PRACTICES IN BENCHMARKING

- **Benchmarks are not model portfolios**
  - but may be in certain efficient asset sectors based on investment beliefs and risk budget
- **Benchmarks should allow for ease of implementation and may facilitate tactical asset allocation**
- **Benchmark returns and characteristics serve as a baseline for risk assessment in the portfolio**
  - Active risk budget, portfolio structure, active implementation and investment manager skill are informed by benchmarks
  - Ex-poste risk adjusted returns use benchmarks as inputs and are key to evaluating implementation quality
  - Ex-ante risk analysis is keyed off of benchmarks
- **Benchmarks may serve as a base-line for compliance monitoring**
- **Benchmarks that are absolute return based pose issues when assessing volatility and or risk, both ex-ante and ex-poste**
- **Evaluate validity using CFA Institute's SAMURAI framework**

FRAMEWORK FOR EVALUATING APPROPRIATE BENCHMARKS

Valid benchmarks (per the CFA Institute) must meet certain criteria. The CFA Institute outlines these requirements as SAMURAI.

Is the benchmark:

Specified in advance: Benchmark is known to all at start of evaluation period

Appropriate: The benchmark should accurately reflect the manager's performance style

Measurable: You must be able to measure the results

Unambiguous: A good benchmark's components should be known

Reflective: Of manager's current investment expertise

Accountable: Manager should agree that the benchmark is an appropriate measure

Investable: You should be able to replicate and invest in a benchmark

ERS TEXAS CURRENT BENCHMARK LINEUP

Asset Class	Benchmark	SAAP Weight	Asset Class Objective	Benchmark Type	Preferred Market Index	Considerations
Public Equity	MSCI ACWI IMI	**37%**	Exposure to growth; across all aspects of the global economy	Broad market; market capitalization weighted index	Yes	-
Private Equity	MSCI ACWI IMI + 3% (Over 10 Yrs)	**13%**	Exposure to growth, illiquidity, complexity	Broad market plus premium	No	Consider peer-based index or evaluate risk premium
Global Credit	Barclays US HY 2%	**11%**	Exposure to global credit capital markets; focus on yield and appreciation	Universe-based index; focus on opportunity cost	Yes	-
Public Real Estate	FTSE EPRA / NAREIT	**3%**	Exposure to global public real estate; focus on floating-yield and asset appreciation	Broad market investable	Yes	

ERS TEXAS CURRENT BENCHMARK LINEUP

Asset Class	Benchmark	SAAP Weight	Asset Class Objective	Benchmark Type	Preferred Market Index	Considerations
Private Infrastructure	CPI + 400 bps	**7%**	Exposure to private infrastructure; focus on contracted income and asset operators	Return target	Yes	
Opportunistic Credit	S&P LSTA Leveraged Loan Index	**3%**	Exposure to credit markets; focus on yield and capital appreciation	Universe-based	Yes	-
Rates	Barclays Inter Treasury	**11%**	Exposure to safe-haven assets	Market-based	Yes	-
Cash	91 Day Treasury bill	**1%**	Liquidity source	Market-based	Yes	-
Abs Return	3-Month T-bill + 4%	**5%**	Exposure to diversifying assets and down-side protection	Return target	No	Consider evaluation of premium

ERS TEXAS BENCHMARKING EVALUATION

Asset Class	Public Equity	Private Equity	Global Credit	Public Real Estate	Private Real Estate	Private Infra.	Opp. Credit	Rates	Cash	Abs. Return
Benchmark	MSCI ACWI IMI	MSCI ACWI IMI + 3% (Over 10 Yrs)	Barclays US HY 2%	FTSE EPRA / NAREIT	NCREIF – ODCE	CPI + 400 bps	S&P LSTA Lev Loan Index	Barclays Inter Treasury	91 Day Treasury bill	3-Month T-bill + 400 bps
Long-Term Target	37%	13%	11%	3%	9%	7%	3%	11%	1%	5%
Specified in Advance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Measurable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unambiguous	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reflective	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Accountable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Investable	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	No

- **Asset classes effectively capture the characteristics of asset classes set by board approved Investment Policy**
- **Risk and/or illiquidity premiums over market benchmarks should be evaluated to ensure forward-looking expectations are appropriate**

INITIAL FINDINGS

- **SAMURAI analysis has not uncovered any significant issues with benchmarks used**

  Initial Findings:
  - **Consider Private Equity asset class benchmark to Wilshire TUCS Peer Universe Benchmark**
  - **Consider Absolute Return asset class benchmark of T-Bills with a premium of 4.0% to 3.50% premium**
  - **Change Public Equity underlying domestic component benchmarks to MSCI US from S&P 500 (does not change policy benchmark)**

- **Public and private markets benchmarks used are broadly in line with industry best practices**
  - Consider better disclosure/ benchmark definitions in reporting

- **Benchmarks are aligned well with Investment Policy objectives**

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Questions?

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Public Agenda Item #10.1

Reminder date for the next Joint Meeting of the Board of Trustees and Investment Advisory Committee, the next meeting of the Board of Trustees, and the next meeting of the Audit Committee

March 6, 2019

Next Meeting Dates

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<u>2019 Meeting Dates</u>

Wednesday, March 6, 2019

Wednesday, May 22, 2019

Wednesday, August 21, 2019

2-Day Workshop:

Tuesday – Wednesday, December 10-11, 2019

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Public Agenda Item #11.1

Adjournment of the Joint Meeting of the Board of Trustees and Investment Advisory Committee

March 6, 2019

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Public Agenda Item #11.2

Recess of the Board of Trustees
Following a temporary recess, the Board of Trustees will reconvene to take up the Board agenda items

March 6, 2019