

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

August 25, 2021



Public Agenda #6

Call Meeting of the Board of Trustees to Order

August 25, 2021

Public Agenda #7

*Call Meeting of the Investment Advisory Committee
to Order*

August 25, 2021

Public Agenda #8

*Consideration of the Minutes to the
May 26, 2021 Joint Meeting of the Board of Trustees and
Investment Advisory Committee – (Action)*

August 25, 2021

Questions?
Action Item

Public Agenda Item #9

Introduction of Incoming Chief Investment Officer

August 25, 2021

Porter Wilson, Executive Director

Introduction of Incoming Chief Investment Officer



David Veal brings significant investment and leadership experience to ERS:



- Graduate of Auburn University with honors
- Graduate of University of Michigan with an MBA with high distinction
- 5 years as Chief Investment Officer for the City of Austin Employees' Retirement System
- Global Strategist and Portfolio Manager for Emerging Markets at ERS of Texas
- Chief of Staff and Director of Strategic Partnerships & Research at TRS of Texas
- 10 years with Morgan Stanley (New York) as an Equity Research Analyst
- 6 years as a U.S. Navy Officer, twice decorated with the Navy Commendation Medal

Questions?

Public Agenda Item #10

Consideration of Opportunistic Credit Asset Allocation – (Action)

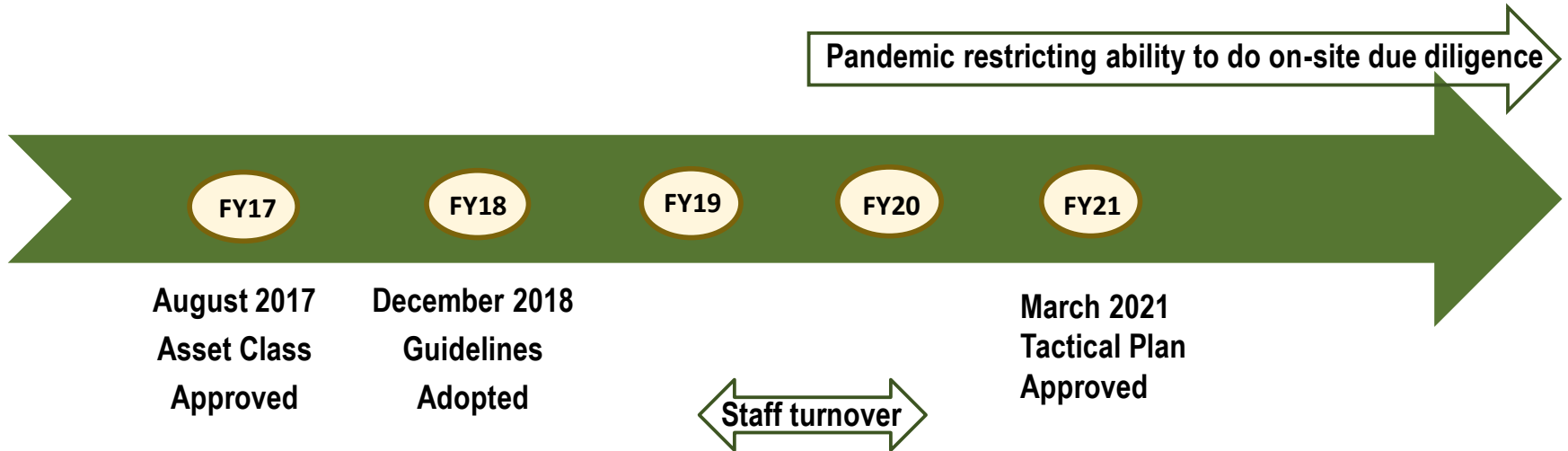
August 25, 2021

Tom Tull, CFA, Chief Investment Officer

Opportunistic Credit Asset Allocation



Opportunistic Credit Timeline



Opportunistic Credit Asset Allocation






Staff Recommendations

Staff recommends the removal of Opportunistic Credit as an independent asset class under Chapter IV of the ERS Investment Policy Statement

- Implementation constraints due to internal team restructuring
- COVID-19 due diligence efforts were constrained during the time period involved
- Lower than expected rates of return by the time the Trust was able to invest
- Current duplication of effort with the current Fixed Income team
- Current 3% asset allocation would be divided, 2% to Fixed Income and 1% to Special Situations
- Adjustment in asset allocation will have a negligible effect on Trust return assumptions

Opportunistic Credit Asset Allocation

2020 & 2021 Total Fund Capital Market Assumptions

| | Asset Class | Current Policy Modeling as of 3/31/2021 | Modeling Without Credit Opp. As of 3/31/2021 |
|--------------|----------------------------|-----------------------------------------|----------------------------------------------------------------------------------------|
| Risk Seeking | Global Equity | 37 | 37 |
| | Private Equity | 13 | 13 |
| | Total Global Global Equity | 50 | 50 |
| | Global Credit | 11 | 13  |
| | Opportuistic Credit | 3 | 0  |
| | REITs | 3 | 3 |
| | Infrastructure | 7 | 7 |
| | Private Real Estate | 9 | 9 |
| | Real Assets | 19 | 19 |
| | Special Situations | | 1  |

| | | |
|-------------------------|-------|-------|
| Expected Return (10 Yr) | 5.63% | 5.61% |
| Expected Return (30Yr) | 6.78% | 6.76% |

Questions?
Action Item

*Public Agenda Item #11

Consideration of Asset Class Investment Committee Charter – (Action)

August 25, 2021

Tom Tull, CFA, Chief Investment Officer

Asset Class Investment Committee (ACIC)



Background

- Review prospective investment's alignment with Policy objectives
- Approve investment strategy based on business merits
- Voting Member of ACIC

- Provides expertise in the relevant asset class
- Voting Member of ACIC

- Conduct Due Diligence
- Portfolio Construction and Fit
- Review of risk management issues
- Review Company/Manager Operations
- Formal investment recommendation

- Conduct Parallel due diligence
- Independent Manager and/or portfolio company assessment
- Independent investment recommendation

- Assessment and negotiation of investment terms and legal issues
- Ensure compliance with ERS Investment Policy

Executive Director, CIO,
Senior Investment Staff

IAC Member

ERS Investment Staff

Investment Consultant

ERS Legal &
Investment Compliance

ACIC

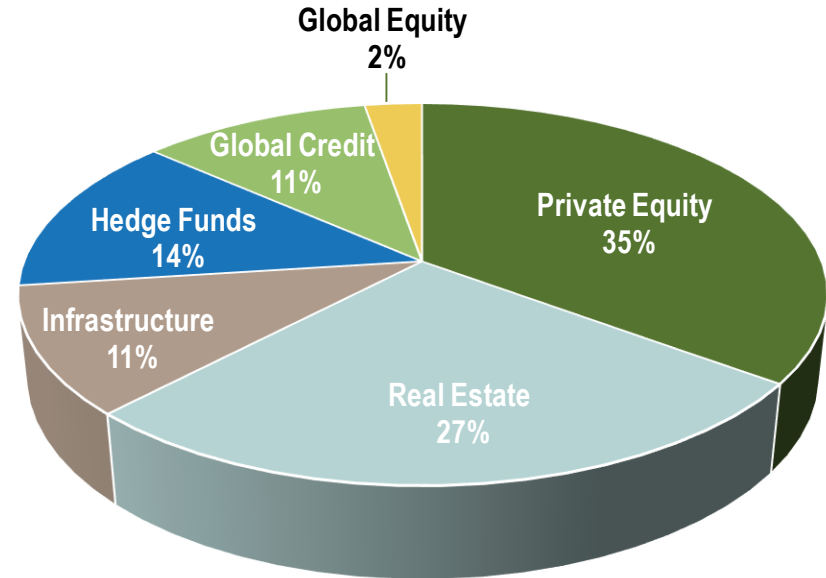
Asset Class Investment Committee (ACIC)

Background

During FY21:

- 37 ACIC meetings held
- \$1.6 billion in commitments

ACIC Meetings by Asset Class



Asset Class Investment Committee (ACIC)



Statutory Requirements

- **Texas Government Code 815.3016**
 - Procedures for Approval of certain “Alternative Investments” (as defined in Sec. 815.3015).
 - Alternative Investments exceeding the threshold of 0.6 of the total Trust market value as of the last fiscal year end requires the Board of Trustees to approve the investment in either a regularly scheduled board meeting or executive session.

Asset Class Investment Committee (ACIC)



ACIC Charter

Elements of the Charter include:

- Purpose
- Authority and Responsibilities
- Meeting Procedures
- Composition
- Approval
- Conflicts of Interests

The purpose of the ACIC Charter is a record of the responsibilities, structure, and authority of the ACIC, and establishes written procedures that foster prudent investment practices and active participation by ACIC members.

Asset Class Investment Committee (ACIC)

ACIC Charter Review



Annual review of the Charter by Executive Office, Investment Compliance, OGC and the CIO.

Investment Committee Best Practices

- ❖ Meeting Fiduciary Requirements
- ❖ Building and conducting effective committee meetings
- ❖ Conducting an effective meeting
- ❖ Overcoming Committee behavioral hurdles
- ❖ Focusing on the fundamentals of Investing

Asset Class Investment Committee (ACIC)

Proposed Changes to the ACIC Charter



- Remove the Opportunistic Asset Class
- Clarifies the role of non-voting ACIC members
- Increase threshold from \$15 million to \$25 million for approval via email
- Contribute to efficient management of assets involved, investment management flexibility in time-sensitive opportunities
- Adds process for compliance with Texas Government Code 815.3015

Questions?
Action Item

*Public Agenda Item #12

Consideration of ERS' Investment Policy – (Action)

August 25, 2021

Tom Tull, CFA, Chief Investment Officer

ERS Investment Policy Overview



The ERS Investment Policy Statement (IPS) is intended to ensure that the Board's investment objectives and constraints are clearly communicated for managing Trust assets.

Staff recommends changes to the Investment Advisory Committee (IAC) and Board and seeks to:

- Align the IPS with new strategic decisions such as asset allocation, asset class benchmarks, and risk limits.
- Reflect changes in business processes and organization of the ERS investment program.
- Develop a more “principles based” policy that is practical and understandable for the reader.

IPS Proposed Changes



1. **Chapter IV: Asset Allocation; B. Transition of Assets**
 - a) Removal of Opportunistic Credit as an independent asset class and calculation methodology for purposes of Total Fund benchmark calculation.
 - b) Special Situations clarification

2. **Chapter VII: Code of Ethics; A. Personal Transactions**
 - Clarifying definition of a security, for pre-clearance for personal transactions, direct investments in digital assets or cryptocurrencies and restricted securities.

3. **Addendum V: Insider Trading and Confidentiality Policy**
 - Definition of restricted list - ERS covered persons are prohibited from trading either on behalf of the portfolios or in their personal accounts due to possession of material non-public information and clarification of protocol in determining if a security should be placed on the restricted list.

Proposed changes have been reviewed in collaboration with the Executive Office, Investments, and the Office of the General Counsel.

Questions?
Action Item

Public Agenda Item #13

Consideration of the ERS Incentive Compensation Plan for Investment Professionals and Leadership Employees – (Action – Board Only)

August 25, 2021

DeeDee Sterns, Director of Human Resources
Jamey Pauley, ICP Program Specialist

Review and Consideration of the ERS Incentive Compensation Plan (ICP)



Follow-up To May Meeting

- Annual review and approval is required for ICP before each plan year.
- Staff presented a draft of the ICP at the Board and IAC joint meeting in May.
- Staff subsequently provided the Board and IAC members with information regarding the benchmarks and supplemental metrics used for ICP.
- Board and IAC members were given an opportunity to review this information and respond with any feedback or questions.

Review and Consideration of the ERS Incentive Compensation Plan (ICP)



Governance Process – benchmarks & supplemental metrics

1. The Board sets and approves the benchmarks at the asset class level.
2. The Chief Investment Officer (CIO) with input from Investments Division leadership recommends, to the Executive Director (ED), the reported benchmarks and ICP supplemental metrics with benchmarks for the portfolio level and portfolio composite level.
3. The trust fund consultant (currently NEPC) and the individual asset class consultants review the respective reported benchmarks and ICP supplemental metrics and provide input and guidance in formulating the above recommendations, as appropriate.
4. The ED (or the Asset Class Investment Committee, as appropriate) approves all portfolio-level benchmarks before they are established. The ED approves any subsequent changes.

Review and Consideration of the ERS Incentive Compensation Plan (ICP)



Governance Process – going forward

- Staff intends to periodically provide benchmark and supplemental metric information to the Board and IAC members.
- Continue to seek feedback and guidance from the Board and IAC members.

Review and Consideration of the ERS Incentive Compensation Plan (ICP)



ERS Incentive Compensation Plan

- The Board of Trustees reviews and considers the ICP on an annual basis in a public meeting.
- Staff annually reviews the Plan and related processes to make recommendations to the Board.
- A draft Plan document for FY22 was presented during the May Board meeting.
- Periodic updates have occurred to conform with the labor market and compensation standards, and to achieve the Plan's purpose.
- The Board most recently amended and approved the ICP on August 19, 2020.

Incentive Compensation Plan

Fiscal Year 2022 - recommended changes



- Based on a recent market compensation study conducted internally, staff recommends adjusting the Maximum Incentive Award Percentages for certain Plan Groups in Fiscal Year 2022.
- The changes to the max percentages align the plan more closely to a peer universe of public pension systems, selected based on their similarity to ERS in investment operations.
- One additional change, since the review at the May meeting, is the removal of the Private Infrastructure Cost Savings metric on Appendix B.
- Staff is not recommending any further changes for Fiscal Year 2022.

Incentive Compensation Plan

Fiscal Year 2022 – recommended changes to Appendix A



APPENDIX A

ELIGIBLE EMPLOYEE POSITIONS WITH
MAXIMUM INCENTIVE AWARD PERCENTAGES AND PAYMENT SCHEDULES

| Plan Groups | Maximum Incentive Award Percentages | Payment Schedules (Year 1/2/3, see Section 6.2) |
|---------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------|
| Executive Director | 100% | 50/25/25 |
| Chief Investment Officer | 100% | 50/25/25 |
| Deputy Chief Investment Officer (Performance Goal weightings based on Public Equity under Ex.8) | 100% | 50/25/25 |
| Asset Class Director | 100% | 50/25/25 |
| Director of Risk Management & Applied Research | 100% | 50/25/25 |
| Director of Investment Services (Performance Goal weightings based on Inv Ops under Ex.8) | 90% | 50/25/25 |
| Supervising Portfolio Manager | 80% | 50/25/25 |
| Portfolio Manager I, II, III, IV, V & VI | 70% | 50/25/25 |
| Chief Trader I & II | 70% | 50/25/25 |
| Trader I, II & III | 65% | 50/25/25 |
| Investment Analyst III, IV & V | 58% | 50/25/25 |
| Investment Operations Manager | 50% | 50/25/25 |
| Investment Analyst I & II | 35% | 50/25/25 |
| Financial Analyst I, II, III & IV (Investment Operations Specialist and Operational Due Diligence Specialist) | 25% | 50/50 |
| Investment Administrative Support | 5% | 100 |
| General Counsel (Performance Goal weightings based on Legal Services under Ex. 8) | 65% | 50/25/25 |
| Investments and Securities, Attorney (Performance Goal weightings based on Legal Services under Ex. 8) | 65% | 50/25/25 |
| Investments and Securities, Paralegal (Performance Goal weightings based on Legal Services under Ex. 8) | 35% | 50/25/25 |

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| Plan Groups | Maximum Incentive Award Percentages | Payment Schedules (Year 1/2/3, see Section 6.2) |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------|
| Supervising Portfolio Manager | 80% <u>90%</u> | 50/25/25 |
| <u>Portfolio Manager IV, V & VI</u> | <u>80%</u> | <u>50/25/25</u> |
| Portfolio Manager I, II, III, IV, V & VI | 70% | 50/25/25 |
| Chief Trader I & II | 70% | 50/25/25 |
| <u>Investment Analyst V</u> | <u>70%</u> | <u>50/25/25</u> |
| Trader I, II & III | 65% | 50/25/25 |
| Investment Analyst III, IV & V | 58% | 50/25/25 |
| Investment Operations Manager | 50% | 50/25/25 |
| <u>Operational Due Diligence Manager</u> | <u>50%</u> | <u>50/25/25</u> |
| Investment Analyst I & II | 35% | 50/25/25 |
| <u>Performance Specialist</u> | <u>35%</u> | <u>50/25/25</u> |
| Financial Analyst I, II, III & IV (Investment Operations Specialist and Operational Due Diligence Specialist) | 25% | 50/50 |

Incentive Compensation Plan

Fiscal Year 2022 – recommended changes to Appendix B



APPENDIX B

(Page 1 of 2)

PERFORMANCE GOAL WEIGHTINGS FOR INVESTMENT PROFESSIONALS AND LEADERSHIP EMPLOYEES

Any variations of these weightings from the preceding Plan Year shall be approved by the Executive Director.

APPENDIX B
(Page 1 of 2)
PERFORMANCE GOAL WEIGHTINGS FOR INVESTMENT PROFESSIONALS AND LEADERSHIP EMPLOYEES
Any variations of these weightings from the preceding Plan Year shall be approved by the Executive Director.

| Main Category Weights | Main Category | Sub Category | Exec Director | CIO | Deputy CIO | Fixed Income | Hedge Funds | Infra-structure | Private Equity | Public Equity | Real Estate | Risk Mgt. & Appl. Res. | Trading | Inv. Services | Legal Services |
|-----------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----|------------|--------------|-------------|-----------------|----------------|---------------|-------------|------------------------|---------|---------------|----------------|
| 25% Maximum | Discretionary | | NA | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% |
| 25% Minimum | Relative Global Composite Performance | | 50% | 75% | 25% | 25% | 25% | 25% | 25% | 25% | X | 25% | 75% | 25% | |
| 50% Maximum | | A combination of one or more of the following, as indicated below (1): | | | | | | | | | | | | | |
| | | Overall agency leadership, management, communications, policy matters, staff development, and the implementation of agency strategic initiatives (6) | 50% | | | | | | | X | X | | | | |
| | | Global Public Equity | | | | | | | | X | X | | | | |
| | | Internal Global Public Equity | | | | | | | | X | X | | | | |
| | | Portfolio | | | | | | X | | | | | | | |
| | | Individual Research Coverage | | | | | | | | | | | | | |
| | | Internally Traded Portfolios | | | | | | | | | | | 30% | | |
| | | Trading Performance | | | | | | | | | | | 20% | | |
| | | Credit – Internal | | | | X | | | | | | | | | |
| | | Credit – External | | | | X | | | | | | | | | |
| | | Rates | | | | X | | | | | | | | | |
| | | Private Equity Public Market Equivalent (2) | | | | | | | 10% | | | | | | X |
| | | Private Equity Peer Comparison (2) | | | | | | | 40% | | | | | | X |
| | | Private Real Estate Public Market Equivalent (2) (4) | | | | | | | | X | | | | | X |
| | | Public RBT(s) | | | | | | | | | X | | | | |
| | | Private Infrastructure Cost-Savings (5) | | | | | | | | | | | | | X |
| | | Private Infrastructure Public Market Equivalent (2) | | | | | | | | | | | | | X |
| | | Alternative Return | | | | | X | | | X | | | | | |
| | | Global Equity External Advisor Program | | | | | | | | | X | | | | |
| | | Opportunistic Credit | | | | X | X | | | | | | | | |

| Main Category Weights | Main Category | Sub Category | Exec Director | CIO | Deputy CIO | Fixed Income | Hedge Funds | Infra-structure | Private Equity | Public Equity | Real Estate | Risk Mgt. & Appl. Res. | Trading | Inv. Services | Legal Services |
|-----------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----|------------|--------------|-------------|-----------------|----------------|---------------|-------------|------------------------|---------|---------------|----------------|
| 25% Maximum | Discretionary | | NA | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% |
| 25% Minimum | Relative Global Composite Performance | | 50% | 75% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | X | 25% | 75% | 25% |
| 50% Maximum | | A combination of one or more of the following, as indicated below (1): | | | | | | | | | | | | | |
| | | Overall agency leadership, management, communications, policy matters, staff development, and the implementation of agency strategic initiatives (6.5) | 50% | | | | | | | | | | | | |
| | | Private Real Estate-Public Market Equivalent (2) (4) | | | | | | | | | X | | | | X |
| | | Public RBT(s) | | | | | | | | | X | | | | |
| | | Private Infrastructure Cost-Savings (5) | | | | | | X | | | | | | | X |
| | | Private Infrastructure Public Market Equivalent (2) | | | | | | X | | | | | | | X |

Review and Consideration of the ERS Incentive Compensation Plan (ICP)



Staff Recommendation:

- Staff recommends that the Board consider and approve the ERS Incentive Compensation Plan for FY22.
- Staff also recommends that the Board approve the proposed ICP document, as presented in Exhibit A.

Questions?
Action Item (Board Only)

Public Agenda Item #14

Review of 87th Legislative Session

August 25, 2021

Porter Wilson, Executive Director

87th Legislative Session Update



- 87th Legislative Session commenced on January 12, 2021 and adjourned on May 31, 2021
- With approaching depletion dates, there was significant focus on strategies to return ERS plans to actuarial soundness
- In addition, ERS tracked over 200 pieces of legislation related to ERS Board of Trustees, agency operations, trust fund investments and health care benefits programs

87th Legislative Update

Legislation Impacting ERS Board of Trustees



- **HB 917** - permits an ERS retiree to serve as one of the three elected members of the Board of Trustees
 - The legislation goes into effect on September 1, 2021
 - Applies to the 2023 ERS Board of Trustees election

87th Legislative Update



Legislation Impacting Certain Investments & Contracts

- **SB 13** – prohibits statewide pension plans and Permanent School Fund from directly investing in and governmental entities from contracting with companies that boycott certain energy companies
 - Comptroller will create the list of companies
 - Legislation includes fiduciary duty language
- **SB 19** - prohibits governmental entities from contracting with companies that discriminate against the firearm or ammunition industries
 - Applies to non-sole source contracts greater than \$100,000
 - Requires all vendors to sign an attestation related to the provision

87th Legislative Update



Legislation Impacting ERS Group Benefits Programs

- **SB 1** – the Legislature maintained funding levels for state employee, retiree and dependent health coverage
- **SB 827** - limits member cost share for insulin to \$25 per prescription / per month
- **SB 1065** - requires ERS health plans to cover diagnostic imaging (mammograms, ultrasound and MRI) to detect breast cancer and abnormalities in the breast for those with a personal history of breast cancer

87th Legislative Update

Legislation Impacting ERS Retirement Programs



- **SB 1071** – related to occupational disability retirements
 - Adjusts the formula to determine an occupational disability retirement annuity for certain state agency peace officers
 - Recalculates the current annuities for members with occupational retirement benefits
- **SB 483** - requires ERS to include additional information related to investment returns in the actuarial valuation prior to each session

87th Legislative Update



Legislation Impacting ERS Retirement Programs

- **SB 321 is historic legislation that protects the long-term stability of the ERS pension plan for all employees and retirees and addresses the state's unfunded pension liabilities**
- Two critical parts to SB 321:
 - **Stabilizes all current and future ERS plan retirement benefits**
 - Establishes an annual, actuarially determined **Legacy Payment Schedule** that fully pays down the current unfunded liability within 33 years
 - **Mitigates future unfunded liabilities and modernizes state pension benefit**
 - Creates a **Group 4 Cash Balance** benefit structure for new state employees starting on/after 9/1/2022

87th Legislative Update

SB 321 – Legacy Payments



- SB 321 established a state payment schedule to address the current unfunded liabilities by at least Fiscal Year 2054
- This is in addition to the current 10% of payroll state contributions
- Prior to each legislative session, ERS retirement actuaries will calculate the actuarially determined payments levels for the next biennium
- The FY23 – 24 payment level was \$510m each year of the biennium
- The full funding was included in HB 2, Supplemental Appropriations bill

87th Legislative Update



SB 321 – Group 4 Cash Balance Benefit

- Establishes a new group for state employees beginning their employment on or after September 1, 2022
- These future employees will be enrolled in a different type of defined benefit retirement structure known as a cash balance benefit which will be referred to as “Group 4”

87th Legislative Update



SB 321 - Group 4 Cash Balance Benefit

- Guarantees a lifetime annuity in retirement
- Lower active employee contribution (6% of pay vs 9.5%)
- Five-year vesting period (vs current 10 year)
- Retirement eligibility
 - Rule of 80 or
 - 65 years of age with 5 years of service
- Maintains enhanced Law Enforcement and Custodial Officers benefit
- Provides death benefits
- Provides disability benefits
- Maintains Proportionate Retirement Program

87th Legislative Update

SB 321 - Group 4 Cash Balance Benefit



- **Annual Interest**

- Guaranteed 4% annual interest on member account

- **Gain Share**

- In years when the ERS Trust Fund has investment earnings greater than 4% over a five-year average, half is shared with members and retirees through gain share
 - Not less than 0% and capped at 3%
 - Gain share credited to member account annually
 - Future Group 4 retirees may receive annual annuity increase based on gain share

87th Legislative Update

SB 321 - Group 4 Cash Balance Benefit



- **State Match**

- For every \$1 in the employee's cash balance account, the state matches \$1.50 to be set aside until retirement

- **Annuity**

- The total accumulated member account -- contributions, interest, gain sharing and state match -- is used to determine the member's lifetime annuity

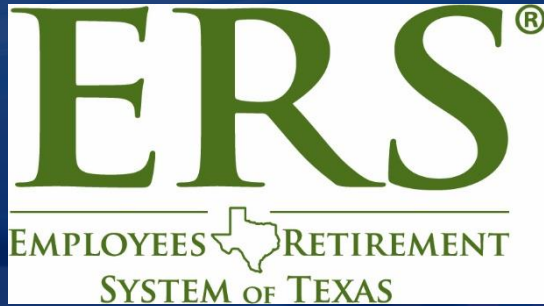
Questions?

*Public Agenda Item #15

Review of Investment Performance for the 2nd Quarter of 2021 and Risk Update

August 25, 2021

Tom Tull, CFA, Chief Investment Officer
Carlos Chujoy, CFA, Director of Risk Management and Applied Research
Sam Austin, Partner, NEPC



QUARTERLY PERFORMANCE REPORT

EMPLOYEES RETIREMENT SYSTEM OF TEXAS

AUGUST 25, 2021

Sam Austin, Partner
Michael Malchenko, Sr. Client Specialist



TABLE OF CONTENTS

- Executive Summary
- Total Fund Performance Summary
- Appendix and Disclosures



EXECUTIVE SUMMARY

ERS TRUST DASHBOARD

| | CYTD | FYTD 2021 |
|----------------------------|-------|-----------|
| Fund Performance | 12.2% | 21.0% |
| Policy Benchmark | 8.2% | 14.9% |
| Excess Return | 4.0% | 6.1% |
| 3 Yr Tracking Error | 2.45% | |
| 5 Yr Sharpe Ratio | 1.43 | |
| 5 Yr Sortino Ratio | 1.46 | |

Largest Contributors (Quarter)

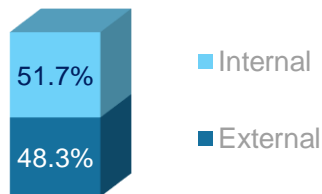
Private Equity (+1.6%), Total Global Credit (+0.2%) and Private Real Estate (+0.2%) contributed positively versus the policy benchmark

Largest Detractors (Quarter)

Global Public Equity contributed -0.1% versus the policy benchmark

| Profile |
|--------------------------------------------------------|
| Market Value at June 30, 2021: |
| \$33.90 Billion |
| Actuarial Accrued Liability August 31, 2020 : |
| \$43.2 Billion |
| Actuarial Value of Assets August 31, 2020 : |
| \$28.5 Billion |
| ERS Trust Funded Ratio August 31, 2020 |
| 66.0% |
| Actuarial Assumed Rate of Return: |
| 7.00% |
| Retirees and Beneficiaries August 31, 2020: |
| 117,996 |
| Retirement Payments Year Ended August 31, 2020: |
| \$2.70 Billion |

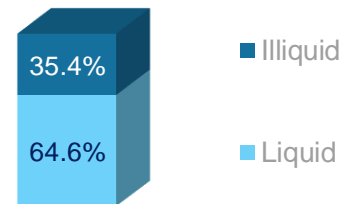
Management



Allocation



Liquidity





PERFORMANCE SUMMARY



TOTAL FUND PERFORMANCE DETAIL (NET OF FEES)

| | Market Value | 3 Mo | Fiscal YTD | 1 Yr | 3 Yrs | 5 Yrs | 10 Yrs |
|--------------------------------|-------------------------|-------------|--------------|--------------|--------------|--------------|-------------|
| Total Fund | \$33,902,876,972 | 7.0% | 21.0% | 29.1% | 10.9% | 11.0% | 8.5% |
| <i>Total Fund Policy Index</i> | | 4.7% | 14.9% | 20.0% | 9.5% | 9.7% | 7.9% |
| <i>Long Term Public Index</i> | | 6.1% | 19.7% | 30.6% | 12.6% | 12.1% | 8.6% |

- **One-year ended June 30, 2021, the Fund outperformed the policy benchmark by 9.1%.**
- **The Fund's assets increased from \$27.4 billion to \$33.9 billion in the calendar year which includes a \$7.83 billion investment gain in the calendar year and a \$2.22 billion investment gain in the second calendar quarter of 2021.**

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 June 30, 2021

| | Anlzd Ret | Anlzd Std Dev | Sharpe Ratio | Sortino Ratio RF |
|-------------------------|-----------|---------------|--------------|------------------|
| Total Fund | 10.87% | 8.53% | 1.13 | 1.26 |
| Total Fund Policy Index | 9.52% | 9.00% | 0.92 | 1.08 |

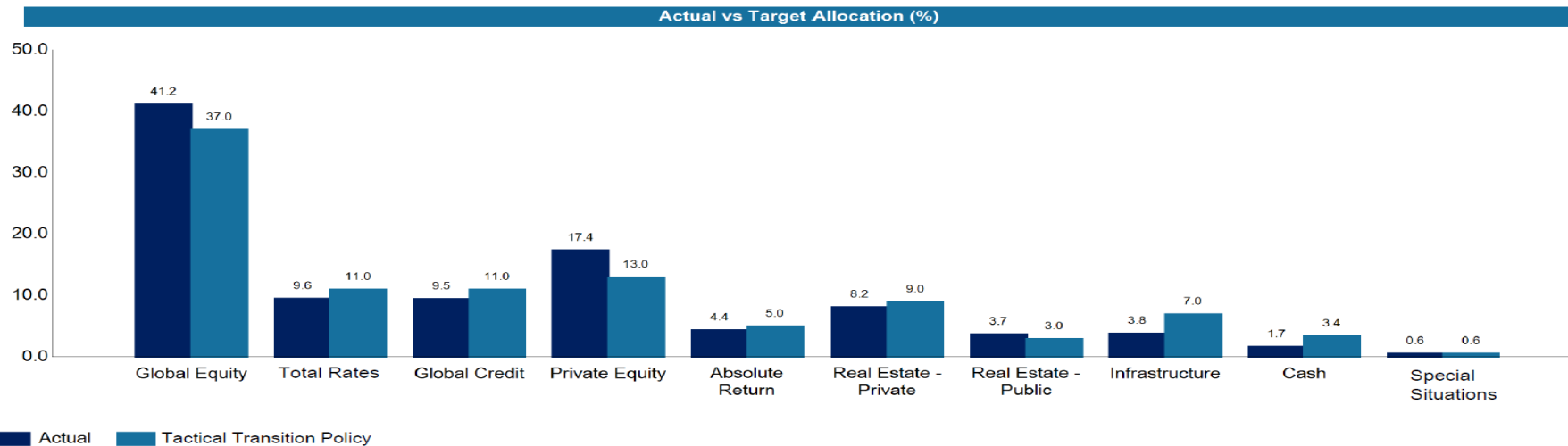
5 Years Ending June 30, 2021

| | Anlzd Ret | Anlzd Std Dev | Sharpe Ratio | Sortino Ratio RF |
|-------------------------|-----------|---------------|--------------|------------------|
| Total Fund | 10.98% | 6.92% | 1.43 | 1.46 |
| Total Fund Policy Index | 9.68% | 7.43% | 1.15 | 1.25 |

- **Three-year period ended June 30, 2021, the return of 10.87% outperformed the benchmark by 1.35%. On a risk-adjusted basis, the Sharpe and Sortino Ratios over this period outperformed the benchmark.**
- **Five-year period ended June 30, 2021, the Fund returned 10.98% and outperformed the policy benchmark by 1.30%. On a risk-adjusted basis, the Fund's Sharpe and Sortino Ratios outperformed the benchmark and indicate that active management benefitted the Plan.**
- **The three-year and five-year Fund returns have outperformed the actuarial rate of return.**



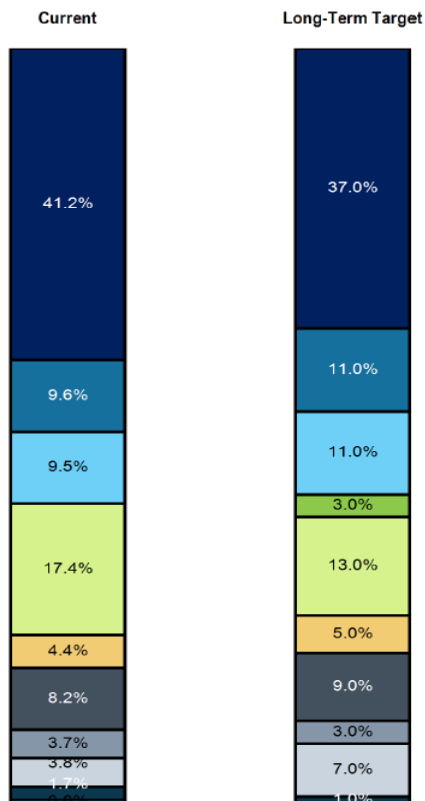
TOTAL FUND ASSET GROWTH SUMMARY



| | Summary of Cash Flows | | | | | |
|------------------------|-----------------------|-------------------|---------------------|-------------------|-------------------|-------------------|
| | Last Three Months | Year-To-Date | Fiscal Year-To-Date | One Year | Three Years | Five Years |
| Beginning Market Value | \$32,023,039,283 | \$30,865,543,933 | \$29,076,050,354 | \$27,435,810,375 | \$28,499,395,903 | \$24,886,299,910 |
| Contributions | \$7,393,972,108 | \$10,310,709,593 | \$13,853,827,121 | \$16,249,705,841 | \$43,864,807,281 | \$60,232,246,351 |
| Withdrawals | -\$7,735,475,728 | -\$11,001,970,633 | -\$15,009,607,232 | -\$17,608,725,461 | -\$47,815,351,034 | -\$66,263,770,311 |
| Net Cash Flow | -\$341,503,620 | -\$691,261,039 | -\$1,155,780,112 | -\$1,359,019,620 | -\$3,944,066,970 | -\$6,019,404,412 |
| Net Investment Change | \$2,221,341,310 | \$3,728,594,079 | \$5,982,606,730 | \$7,826,086,218 | \$9,347,548,039 | \$15,035,981,474 |
| Ending Market Value | \$33,902,876,972 | \$33,902,876,972 | \$33,902,876,972 | \$33,902,876,972 | \$33,902,876,972 | \$33,902,876,972 |



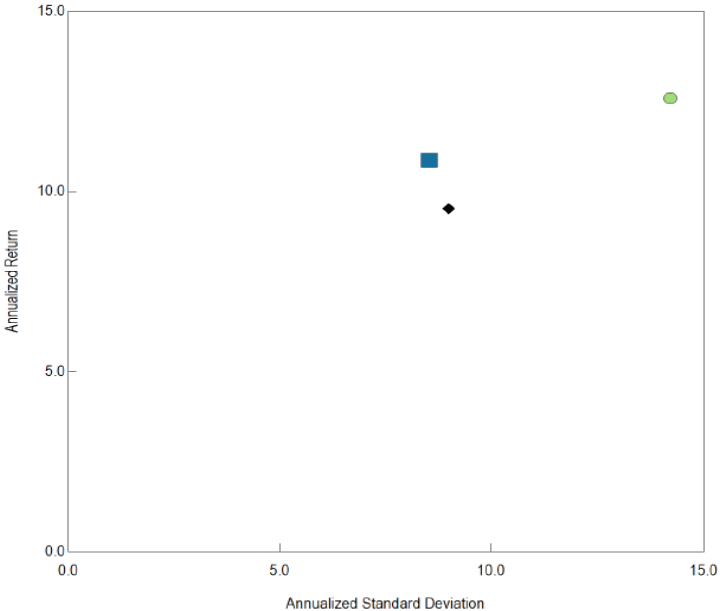
FUND ASSET ALLOCATION VS. POLICY TARGETS



| Asset Allocation vs. Target | | | | |
|-----------------------------|-------------------------|---------------|------------------|---------------|
| | Current | Current | Long-Term Target | Policy Range |
| Global Equity | \$13,958,681,625 | 41.2% | 37.0% | 27.0% - 47.0% |
| Rates | \$3,238,779,494 | 9.6% | 11.0% | 11.0% - 22.0% |
| Global Credit | \$3,207,029,498 | 9.5% | 11.0% | 1.0% - 21.0% |
| Opportunistic Credit | -- | -- | 3.0% | 0.0% - 8.0% |
| Private Equity | \$5,901,110,449 | 17.4% | 13.0% | 8.0% - 18.0% |
| Absolute Return | \$1,483,685,142 | 4.4% | 5.0% | 0.0% - 10.0% |
| Real Estate - Private | \$2,775,056,198 | 8.2% | 9.0% | 4.0% - 14.0% |
| Real Estate - Public | \$1,269,062,030 | 3.7% | 3.0% | 0.0% - 13.0% |
| Infrastructure | \$1,299,312,467 | 3.8% | 7.0% | 2.0% - 12.0% |
| Cash | \$576,940,589 | 1.7% | 1.0% | 0.0% - 7.0% |
| Special Situations | \$193,219,480 | 0.6% | -- | 0.0% - 5.0% |
| Total | \$33,902,876,972 | 100.0% | 100.0% | |

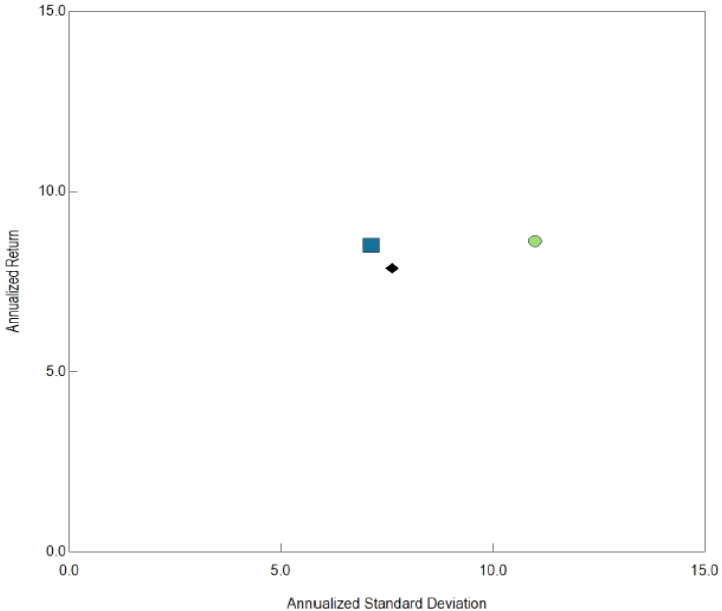
TOTAL FUND RISK/ RETURN

3 Years Ending June 30, 2021



- Total Fund
- ◆ Total Fund Policy Index
- Long Term Public Index

10 Years Ending June 30, 2021



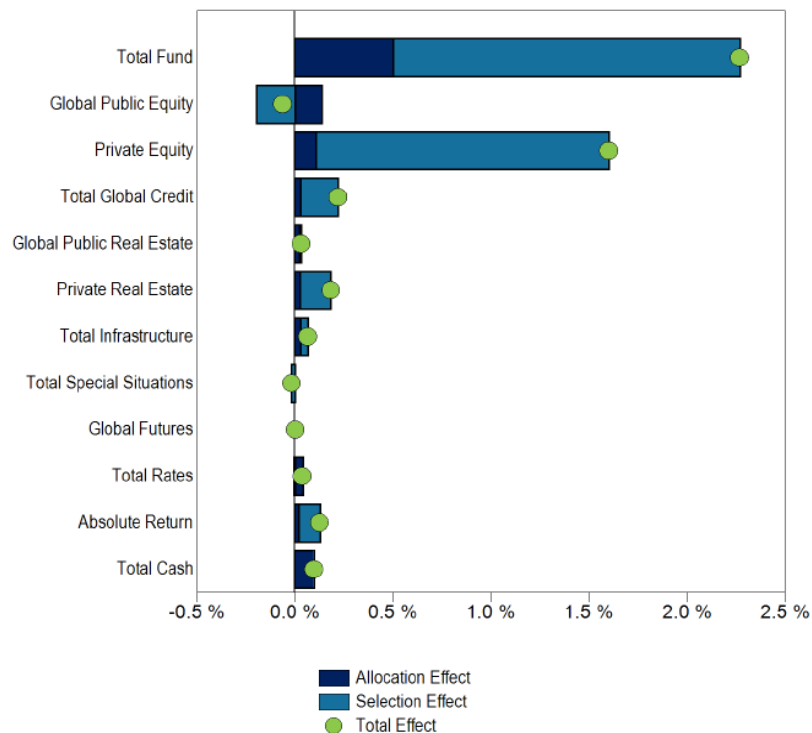
- Total Fund
- ◆ Total Fund Policy Index
- Long Term Public Index



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 Effects 3 Months Ending June 30, 2021



Attribution Summary 3 Months Ending June 30, 2021

| | Wtd. Actual Return | Wtd. Index Return | Excess Return | Selection Effect | Allocation Effect | Total Effects |
|---------------------------|--------------------|-------------------|---------------|------------------|-------------------|---------------|
| Global Public Equity | 6.8% | 7.2% | -0.5% | -0.2% | 0.1% | -0.1% |
| Private Equity | 16.5% | 7.2% | 9.4% | 1.5% | 0.1% | 1.6% |
| Total Global Credit | 4.7% | 2.7% | 2.0% | 0.2% | 0.0% | 0.2% |
| Global Public Real Estate | 9.5% | 9.3% | 0.2% | 0.0% | 0.0% | 0.0% |
| Private Real Estate | 3.8% | 1.9% | 1.9% | 0.2% | 0.0% | 0.2% |
| Total Infrastructure | 4.3% | 3.4% | 1.0% | 0.0% | 0.0% | 0.1% |
| Total Special Situations | 0.4% | 3.6% | -3.2% | 0.0% | 0.0% | 0.0% |
| Global Futures | -- | -- | -- | -- | -- | -- |
| Total Rates | 0.6% | 0.6% | 0.0% | 0.0% | 0.0% | 0.0% |
| Absolute Return | 3.2% | 0.9% | 2.3% | 0.1% | 0.0% | 0.1% |
| Total Cash | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.1% |
| Total | 7.0% | 4.7% | 2.3% | 1.8% | 0.5% | 2.3% |

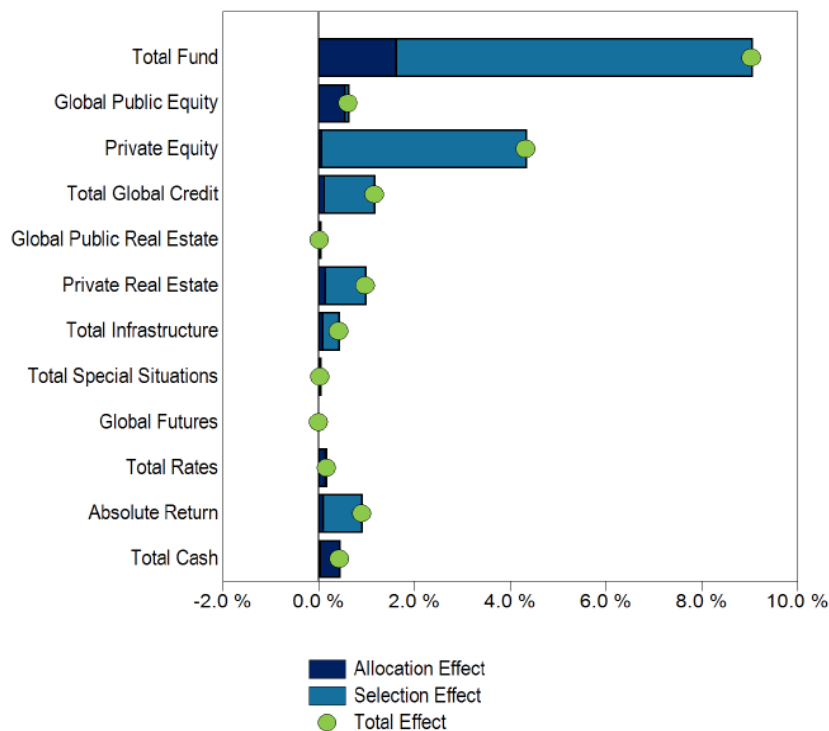
Note: Not all assets are valued through June 30, 2021 within Private Equity, Total Global Credit, Private Real Estate, Total Infrastructure and Absolute Return.

*Total Fund Attribution Analysis uses policy weights.



TOTAL FUND ATTRIBUTION ANALYSIS

Attribution Effects
1 Year Ending June 30, 2021



Attribution Summary
1 Year Ending June 30, 2021

| | Wtd. Actual Return | Wtd. Index Return | Excess Return | Selection Effect | Allocation Effect | Total Effects |
|---------------------------|--------------------|-------------------|---------------|------------------|-------------------|---------------|
| Global Public Equity | 41.5% | 41.3% | 0.2% | 0.1% | 0.5% | 0.6% |
| Private Equity | 45.1% | 15.9% | 29.1% | 4.3% | 0.1% | 4.3% |
| Total Global Credit | 25.3% | 15.3% | 10.0% | 1.0% | 0.1% | 1.2% |
| Global Public Real Estate | 34.6% | 34.4% | 0.2% | 0.0% | 0.0% | 0.0% |
| Private Real Estate | 10.1% | 1.5% | 8.6% | 0.8% | 0.2% | 1.0% |
| Total Infrastructure | 17.4% | 9.2% | 8.2% | 0.3% | 0.1% | 0.4% |
| Total Special Situations | 12.8% | 7.7% | 5.2% | 0.0% | 0.0% | 0.0% |
| Global Futures | -- | -- | -- | -- | -- | -- |
| Total Rates | -1.0% | -1.2% | 0.1% | 0.0% | 0.1% | 0.2% |
| Absolute Return | 20.0% | 3.6% | 16.4% | 0.8% | 0.1% | 0.9% |
| Total Cash | 0.0% | 0.1% | -0.1% | 0.0% | 0.4% | 0.4% |
| Total | 29.0% | 20.0% | 9.0% | 7.4% | 1.6% | 9.0% |

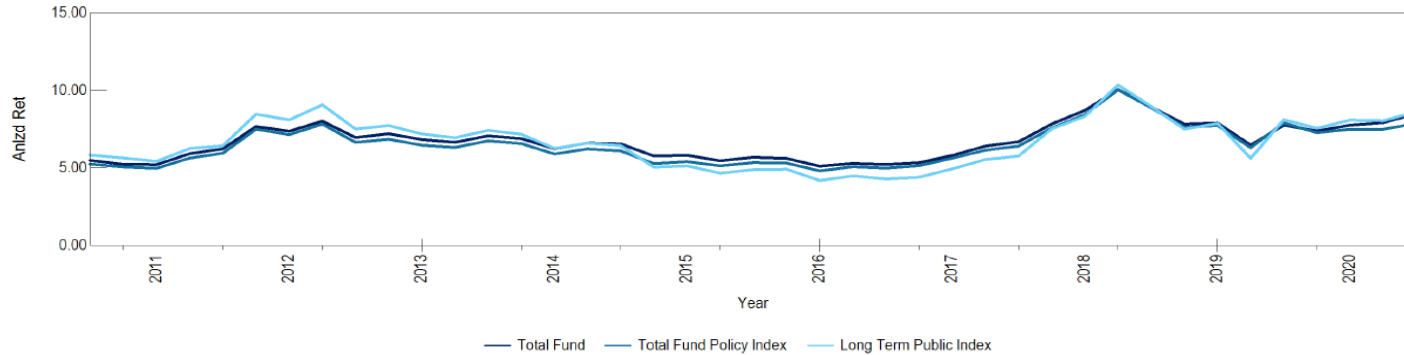
Note: Not all assets are valued through June 30, 2021 within Private Equity, Total Global Credit, Private Real Estate, Total Infrastructure and Absolute Return.

* Total Fund Attribution Analysis uses policy weights.

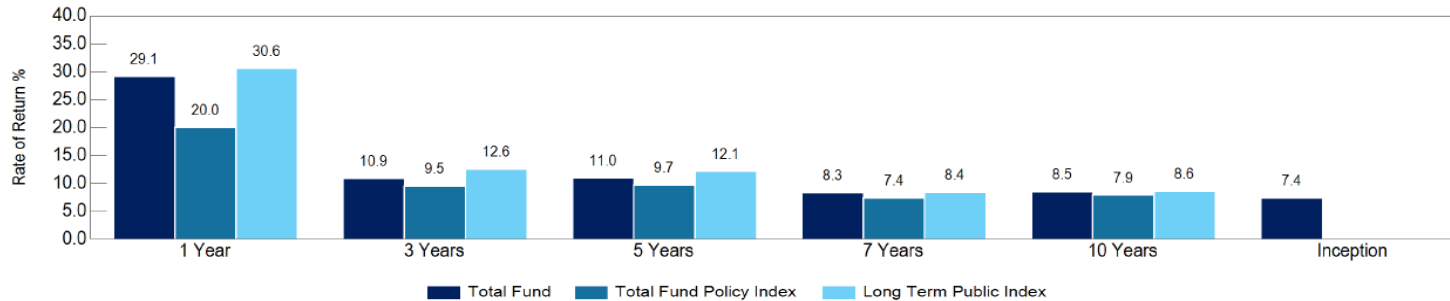


LONG TERM INVESTMENT RESULTS

Rolling 10 Year Annualized Return (%)



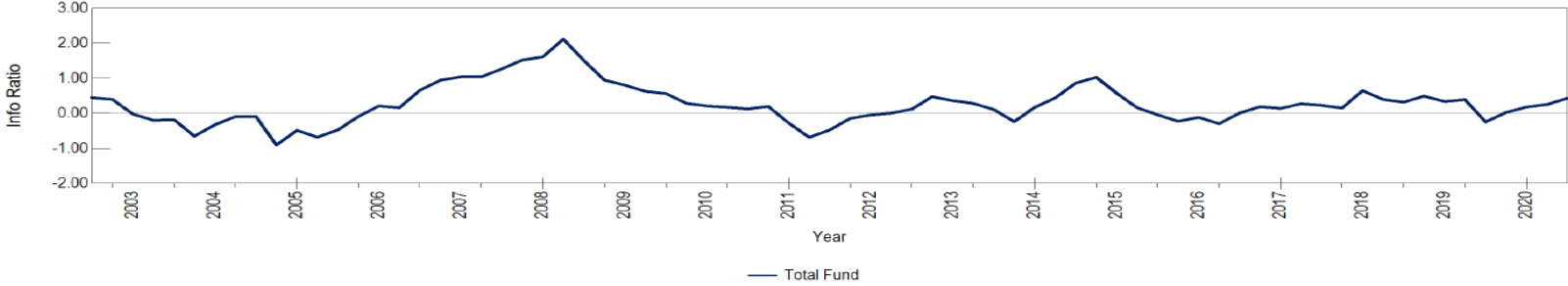
Return Summary
Ending June 30, 2021



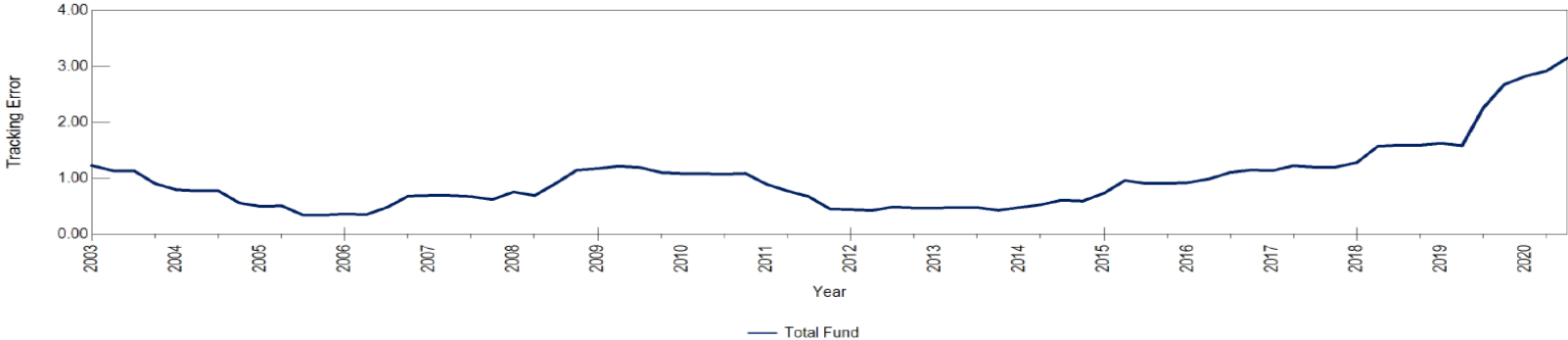
Note: Long Term Public Index is comprised of 79% MSCI ACW IMI and 21% Barclays Intermediate Treasury Index. Index definitions can be found in the appendix.

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 outperformed the policy benchmark by 0.6% and outperformed the Plan's actuarial rate of return (currently 7.0%).**
- **In the one-year ended June 30, 2021 the Fund outperformed the policy benchmark by 9.1%.**
 - Private Equity contributed +4.3%, Global Credit contributed +1.2%, Private Real Estate contributed +1.0% and Absolute Return contributed +0.9% to returns vs. the policy benchmark.
- **In the past one-year, portfolio positioning at the asset class level contributed +1.6% to Total Fund returns vs. policy benchmark.**
 - An over-weight position to Public Equity contributed positively (+0.5%) to total fund returns vs. the policy benchmark.
 - An under-weight position to Cash contributed positively (+0.4%) to total fund returns versus the policy benchmark.
 - An under-weight position to Private Real Estate contributed positively (+0.2%) to total fund returns vs. the policy benchmark.



Risk Management & Applied Research Risk Update

August 25, 2021

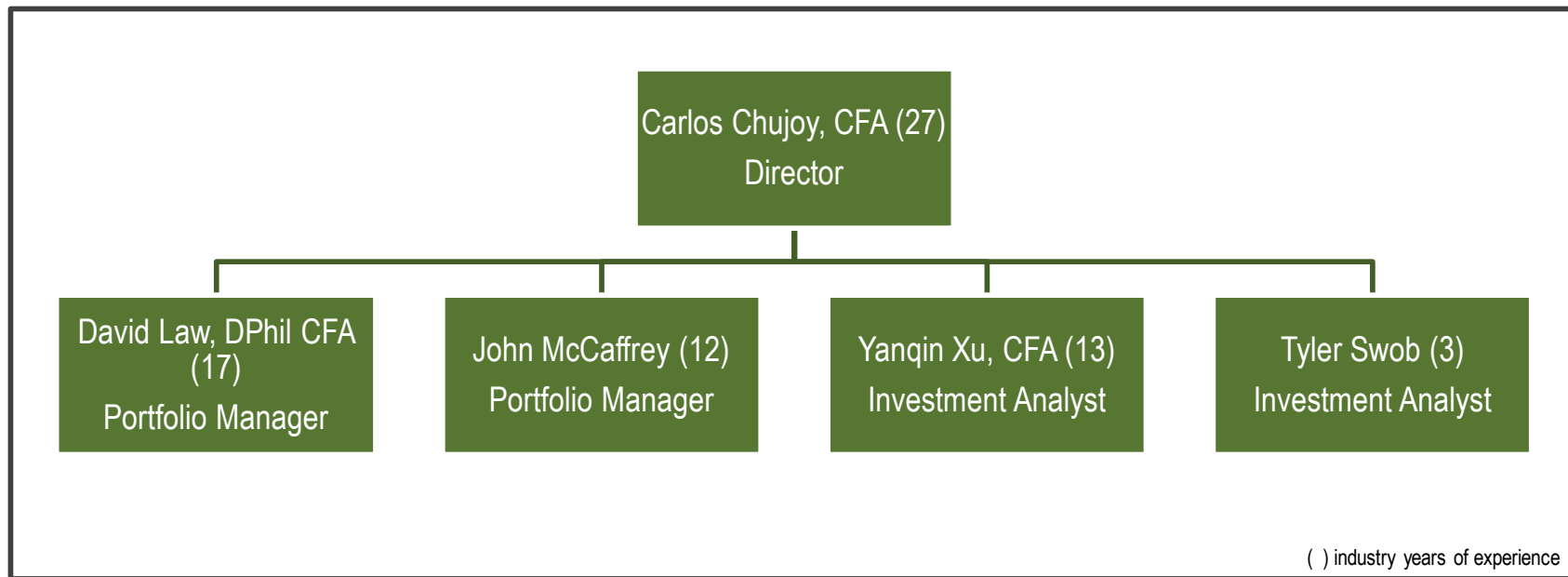
Carlos Chujoy, CFA, Director of Risk Management & Applied Research

Agenda

- Team Update
- Headwinds and Tailwinds
- Heatmap of Market Stress
- Importance of Portfolio Diversification
- Summary

Risk Update

Team Composition



Risk Update

2Q2021 Update



Headwinds

- Concerns regarding higher inflation expectations, rising interest rates and rising taxes
- Supply chain dislocations impacting end markets
- Stretched market valuations
- Shift in sentiment within the FED regarding timing and number of interest hikes
- Shift in the Business Cycle

Tailwinds

- Continued reopening of the economy
- Rising inflation may prove temporary
- FED rate increases are still far out
- Ample liquidity
- Fundamentals supportive of continued growth
- Markets pricing low expectations for a tail risk event

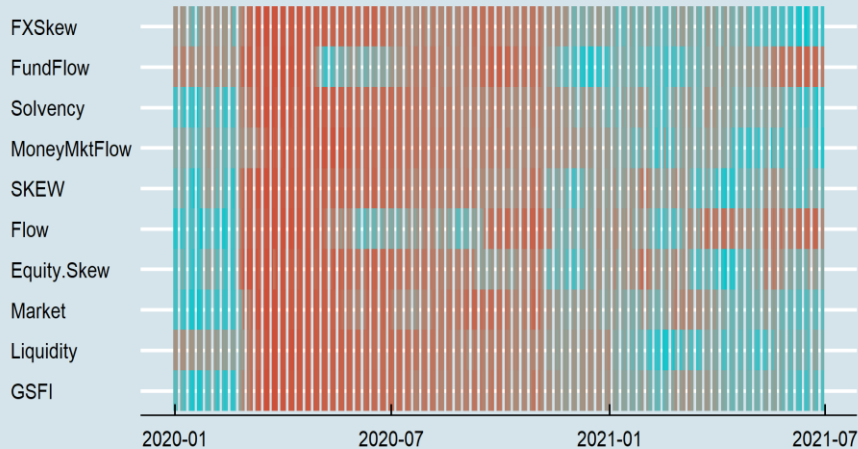
Market Stress

Global Financial Stress Indicators and Cross Asset Class Implied Risk



Heatmap of Global Stress Financial Indicators-GSFI

Over the preceding 18-month period ending June 2021.



Source: ERS, Bloomberg, Bank of America

Heatmap of Cross Asset Class Implied Risk

Over the preceding 18-month period ending June 2021.



Source: ERS, Bloomberg

- GSFI reflects low levels of stress. However, momentum in flows slowed down and less ebullient relative to start of year
- Concerns about rising inflation expectations a driver of increased implied treasury rate volatility

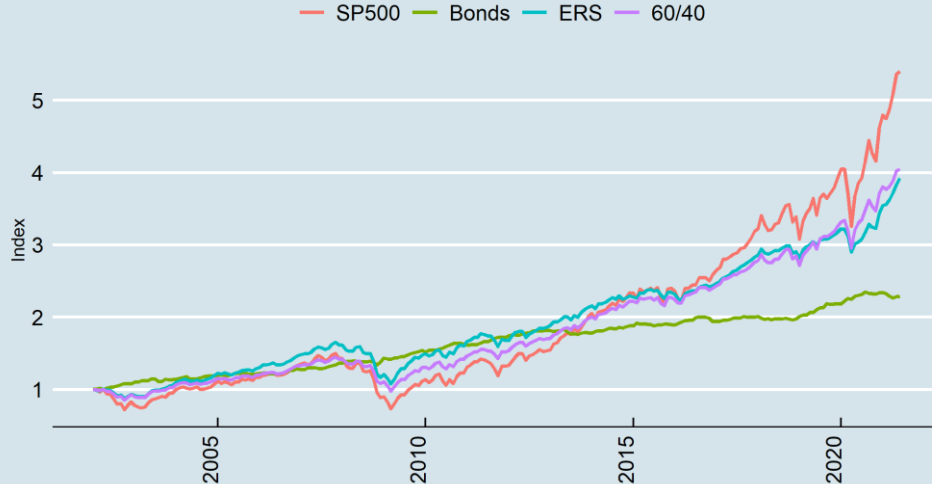
Performance



Past 20 years have been favorable for risk-on assets...

Historical Returns

S&P500, Bonds, 60/40 and ERS



Source: ERS, Bloomberg

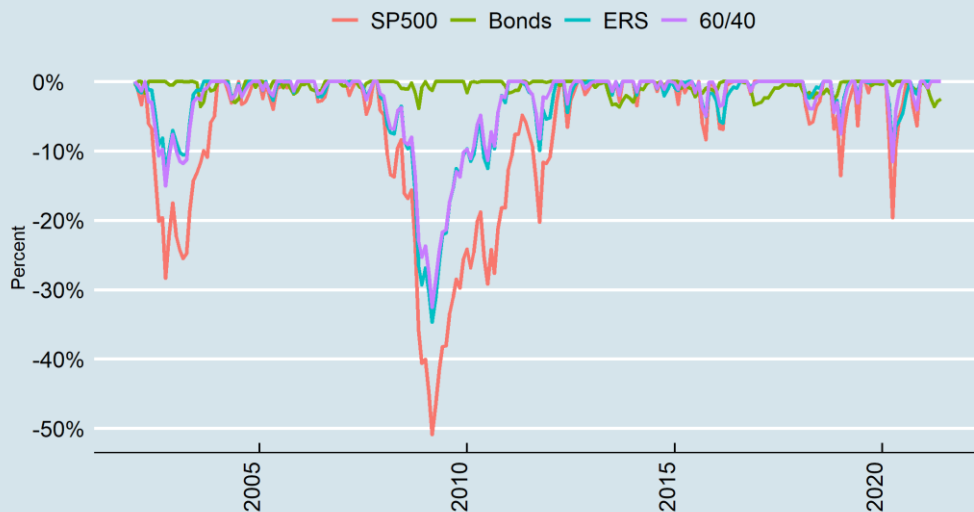
- Over the past 20-year period, the ERS portfolio delivered returns commensurate with those of a 60/40 equity/bond allocation.
- It also outperformed the 60/40 over the majority of the time.
- The S&P500 as the riskiest asset in the mix, posted both the best cumulative returns and the worst drawdown.
- Risk diversification is an important consideration for a plan like ERS.
- ERS's average net annual cash outflow approx. \$1.4B vs \$0 for the market index as represented by the S&P500.

Drawdown

...but it has also come in at a cost

Drawdown

S&P500, Bonds, 60/40 and ERS



Source: ERS, Bloomberg

- In all market pull backs, the S&P500 posted the largest drawdowns. During the Technology bubble, the S&P500 suffered close to a 30% drop while during the Great Financial Crisis of 2008, the index collapsed over 50%.
- Drawdowns by the ERS portfolio equaled those of a 60/40. They were both lower than those of the S&P500 and shorter-lived as well.
- More recently, drawdown recoveries have been less damaging and have endured a shorter time span.

Drawdown Analysis

Large losses are most prominent in a single asset portfolio



SP500

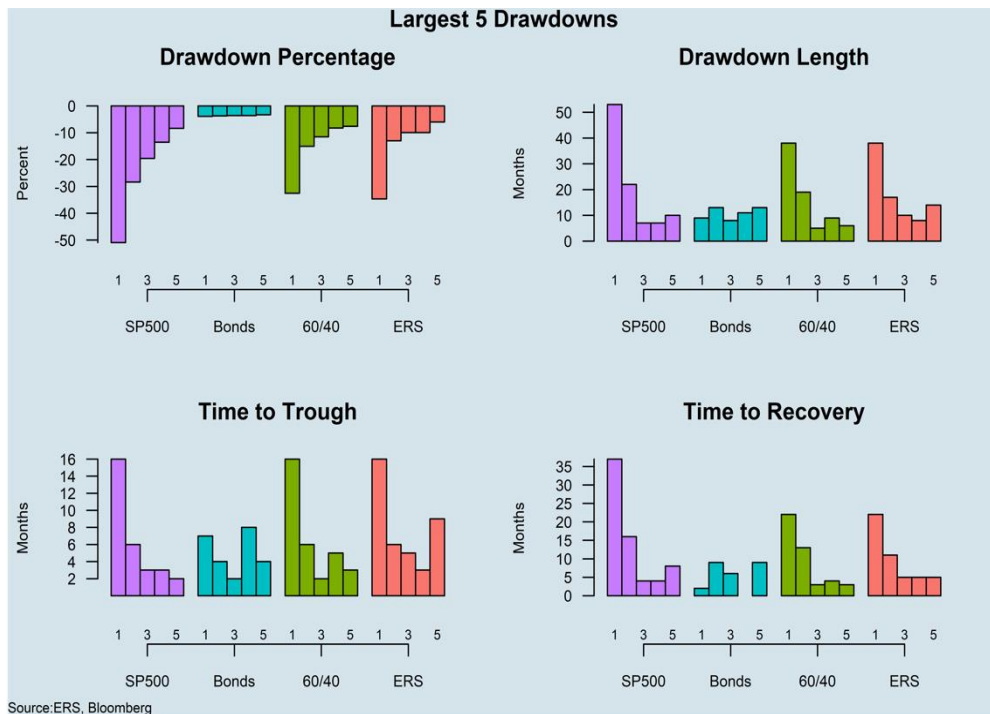
| From | Trough | To | Depth | Length | To Trough | Recovery |
|-------------|---------------|------------|--------------|---------------|------------------|-----------------|
| 2007-11-30 | 2009-02-28 | 2012-03-31 | -0.5091 | 53 | 16 | 37 |
| 2002-04-30 | 2002-09-30 | 2004-01-31 | -0.2836 | 22 | 6 | 16 |
| 2020-01-31 | 2020-03-31 | 2020-07-31 | -0.1960 | 7 | 3 | 4 |
| 2018-10-31 | 2018-12-31 | 2019-04-30 | -0.1352 | 7 | 3 | 4 |
| 2015-08-31 | 2015-09-30 | 2016-05-31 | -0.0835 | 10 | 2 | 8 |

ERS

| From | Trough | To | Depth | Length | To Trough | Recovery |
|-------------|---------------|------------|--------------|---------------|------------------|-----------------|
| 2007-11-30 | 2009-02-28 | 2010-12-31 | -0.3465 | 38 | 16 | 22 |
| 2002-04-30 | 2002-09-30 | 2003-08-31 | -0.1297 | 17 | 6 | 11 |
| 2011-05-31 | 2011-09-30 | 2012-02-29 | -0.0995 | 10 | 5 | 5 |
| 2020-01-31 | 2020-03-31 | 2020-08-31 | -0.0994 | 8 | 3 | 5 |
| 2015-06-30 | 2016-02-29 | 2016-07-31 | -0.0599 | 14 | 9 | 5 |

Drawdown Analysis

It takes longer to recover than to reach a trough



Source: ERS, Bloomberg

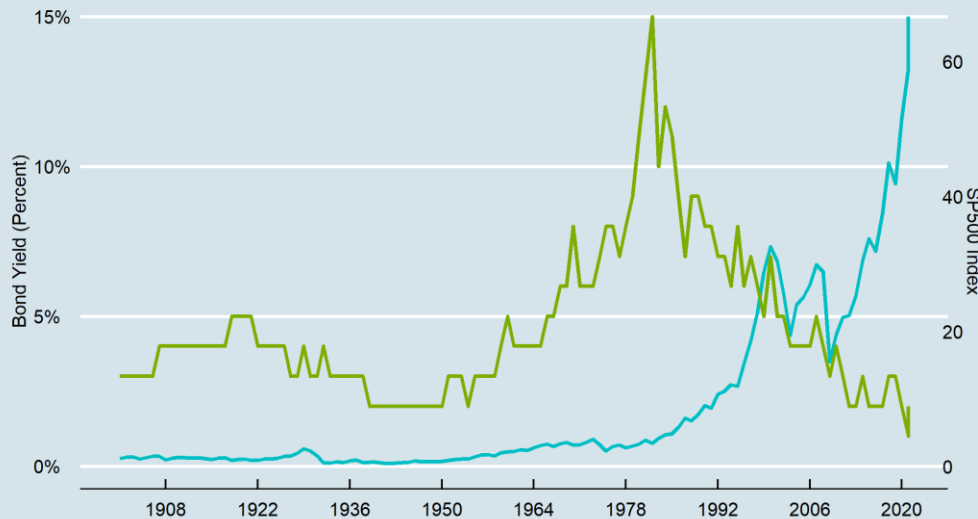
- The graph shows the largest 5 drawdowns for the S&P500, Bonds, 60/40 Composite and the ERS Fund since 09/98.
 - It shows that drawdowns have been more severe in the S&P500 relative to the other assets. In particular, this index lost over 50% of its value during the GFC.
 - Worth highlighting is that the length of time taken by each subsequent drawdown has reduced.
 - In addition, market pullbacks take less time than recoveries do.

Strong Equity Performance

Propelled by low interest rates

A Long Term Perspective Between Stocks and Bond Yields

(SP500 Returns vs 10Yr Bond Yield)



Source: ERS, multipl.com

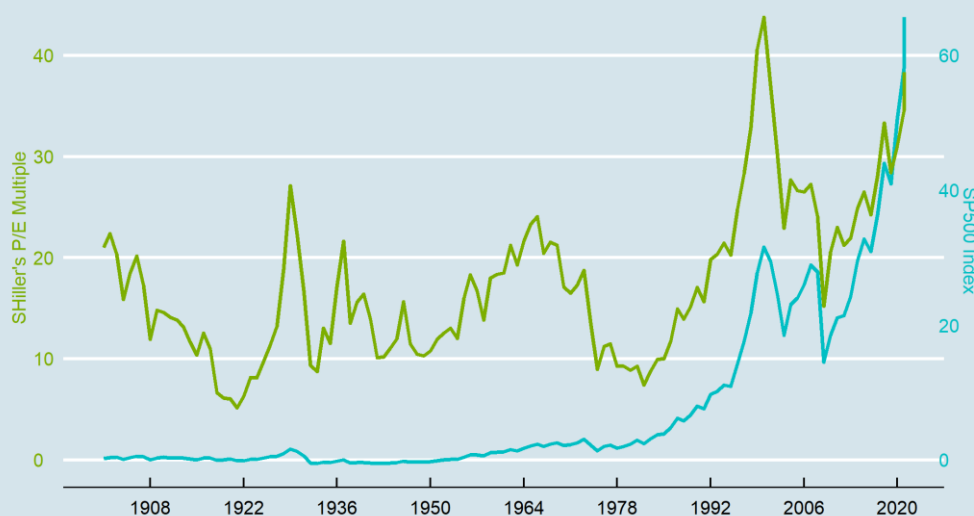
- A negative relationship between the SP500 and Bond yield began in the early 70's; a time that reflected a continuation of a rise in nominal yields that started a couple of decades earlier. Yields peaked at 15% during the mid-eighties; a time that coincided with the trough in the returns of the SP500 inflation adjusted time series.
- The 80's marked a shift in policy and since then US has been in a consistently lower interest environment; a tailwind for risk-on assets such as the SP500.

Equity Market Valuation

Levels trading rich relative to history

Market Performance and Valuation Levels

(S&P500 and Shiller PE Ratio)

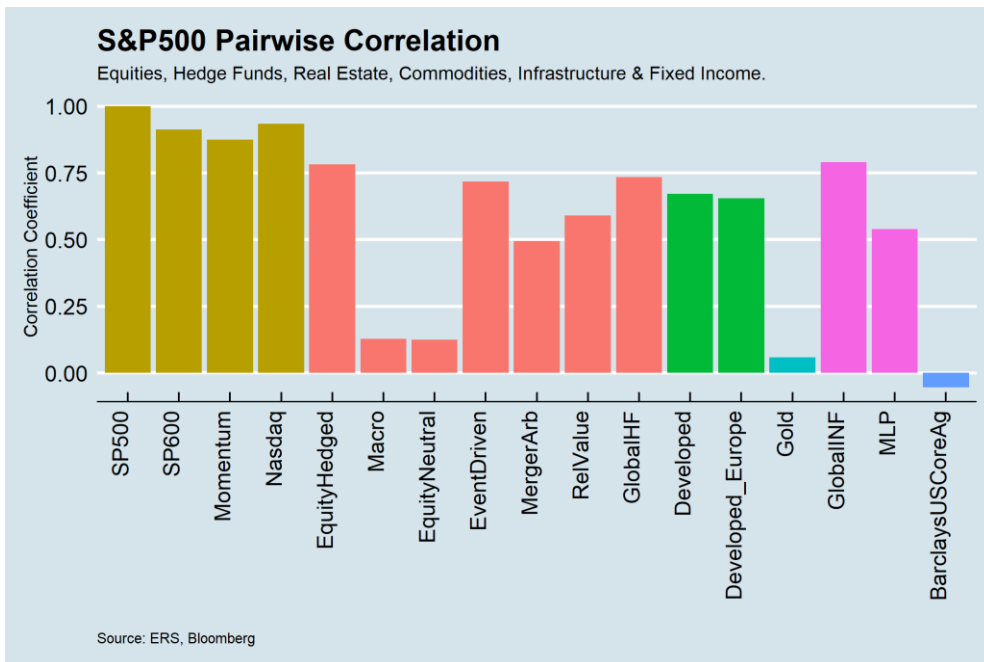


Source: ERS, Bloomberg

- Building exposure to risk-on assets such as the S&P500 over time has been a good call. In fact, the ERS portfolio has had exposure to the S&P500 and currently maintains exposure to markets similar to it. In addition, the ERS portfolio keeps exposure to other market segments that promote capital growth for the fund as well.
- The green line reflects the S&P500 valuation as measured by the cyclically adjusted price to earnings ratio – (CAPE).
- It shows that current readings are elevated and are currently at the second highest level since the TMT bubble in 1999.

Risk Concentration

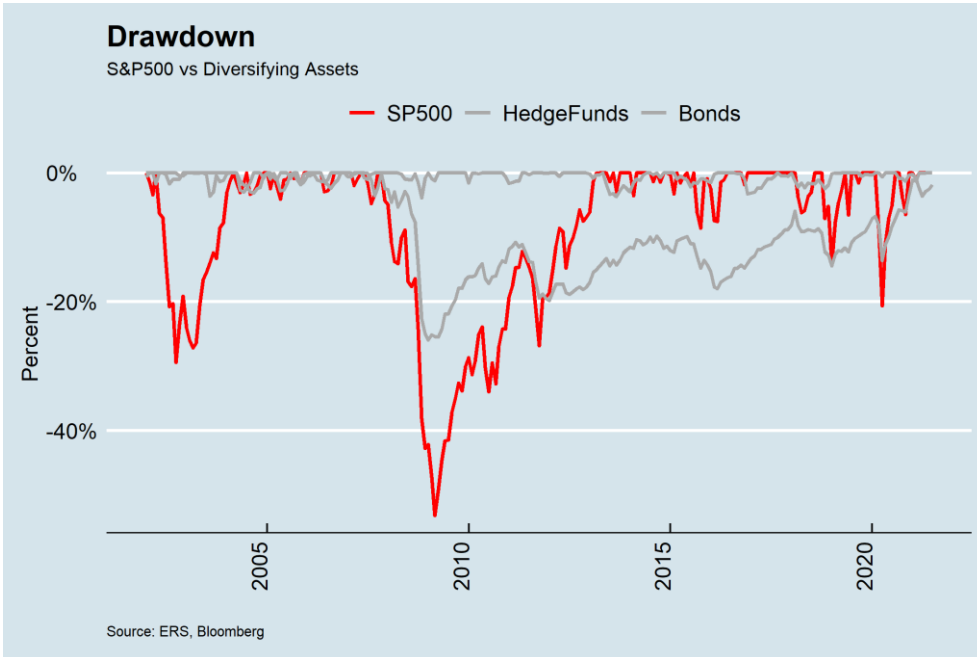
Portfolio diversification is attained by including assets outside of Equities



- Concentration risk is mitigated by allocating away from the asset class contributing the most to total portfolio risk as is the case with the most volatile asset class such as equities.
- Risk diversifiers include Hedge Funds, defensive assets such as Gold and Fixed Income.

Risk Diversification

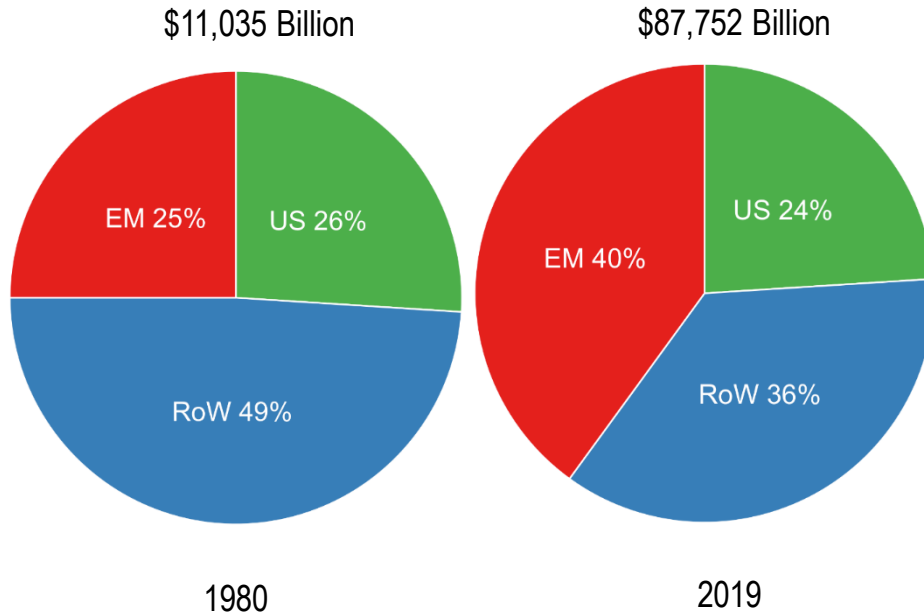
Diminishes the risk of large market drawdowns



- Total portfolio drawdowns are reduced by incorporating risk diversifying assets as shown on the graph.
- This is an important aspect that helps in the compounding of returns for a plan such as ERS.
- This importance stems from the need to not just have the ability to grow assets in a prudent manner but also in the ability to take advantage of market dislocations and in being able to meet monthly payment requirements.

Risk Diversification

World GDP – Major Markets

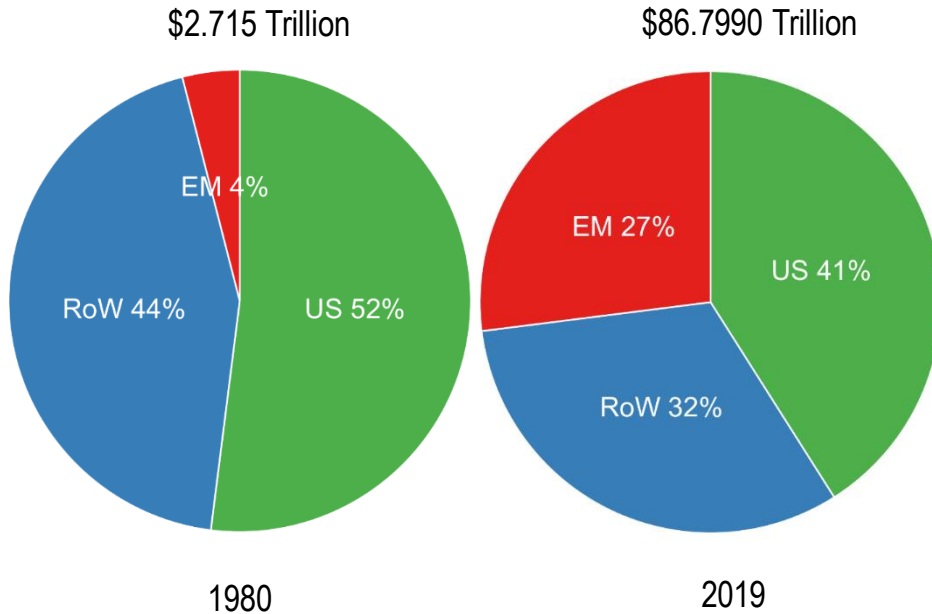


Source: Wilshire, MSCI, World Bank, Bloomberg

- US is becoming less important in terms of Total GDP.
- Fastest relative economic growth is found in Emerging Markets and other parts of the world relative to the US.
- Emerging Market GDP has grown from 25% in 1980 to 40% in 2019.
- Over the past 4 decades, the rest of the world grew faster than the US and their share as a percentage of Total GDP grew by an incremental 2%.

Risk Diversification

World Market Capitalization – Major Markets



Source: Wilshire, MSCI, IMI, Bloomberg

- International markets are gaining a larger presence and increasing the opportunity set for global investors such as ERS.
- Emerging Markets Market Cap has grown from 4% in 1980 to 27% in 2019.

Risk Update

Summary



- Major headwinds during the quarter included concerns about higher inflation expectations and higher interest levels; concerns that prompted investors to shift their views about the timing of future interest hikes and leading to portfolio reallocations. Tailwinds included the continuation of the reopening of the economy, a transitory but temporary inflationary process and rate increases expected far out into the future resulting in continued prosperity.
- Despite the state of flux in the markets, the global stress financial indicator remained calmed; a condition that implied low market expectations for adverse risk events. Risk-on assets continued their ascending trajectory.
- An analysis of portfolio diversification showed that investing in a single asset such as the S&P500 would have resulted in the best investment but also the worst in terms of drawdowns (losses) relative to an investment in bonds, a 60/40 portfolio or a multi asset class portfolio such as ERS'.

Risk Update

Summary (Cont.)



- Given the risk of large losses in single asset investing, risk diversification is paramount for a negative cash flow operating entity such as ERS. Investing in low correlated assets to equities yielded improvements in portfolio drawdowns and lower losses.
- International markets have gained considerable importance relative to domestic markets in terms of economic growth and market capitalization and thus becoming a source for new investment opportunities.
- For most of the past 20 years, the ERS portfolio has delivered results superior to a domestic 60/40 portfolio (which has been very tough to beat) using a global multi-asset class approach that is structured to take advantage of a larger opportunity set.

Questions?

*Public Agenda Item #16

Consideration of Hedge Funds - (Action)

August 25, 2021

Anthony Curtiss, CFA, Director - Hedge Funds

John Claisse, Albourne America

Hedge Fund Program Overview



Agenda

- **Staffing Update**
- **Hedge Fund Portfolio Overview**
 - Absolute Return Portfolio
 - Directional Growth Portfolio
 - Other Hedge Fund Allocations
- **Industry Review & Topical Issues presented by Albourne Partners**
- **ERS Absolute Return Portfolio Tactical Plan**

Hedge Fund Program Overview



Staffing Update

- **Current Staff**

- Anthony Curtiss – Senior Managing Director – Hedge Funds
- Panayiotis Lambropoulos – Portfolio Manager – Hedge Funds
- Nick Maffeo – Portfolio Manager – Hedge Funds
- Courtney Dunn – Investment Analyst – Hedge Funds
- Andrew Moore – Investment Analyst – Hedge Funds

- **Consultant**

- Albourne Partners (rehired in 2019)

Hedge Fund Program Overview



Hedge Fund Portfolios

- **Absolute Return Portfolio**
 - Risk-Reducing Hedge Fund Portfolio
 - Diversification and low correlation to the Trust
 - Low beta to Trust, low volatility
- **Directional Growth Portfolio**
 - Return-Seeking Hedge Fund Portfolio
 - Complementary to Trust
 - Directional and tactical market beta
- **Other Hedge Funds**
 - Within other asset classes when appropriate

Hedge Fund Program Overview



Current Allocation Summary

| Absolute Return Portfolio | | | |
|---------------------------------------------------|--------------------------------------------|---------------------------|------------------------|
| Holding Name | Asset Type | Initial Allocation | Current Value |
| Hudson Bay Fund L.P. | HF - Multi-Strategy Relative Value | 10/1/2019 | \$162,159,696 |
| Laurion Capital L.P. | HF - Multi-Strategy Relative Value | 1/1/2020 | \$151,409,623 |
| (PAX) Pacific Alliance Asia Opp Fund L.P. | HF - Multi-Strategy Event Driven | 1/1/2017 | \$139,452,310 |
| Garda Fixed Income Relative Value Opportunity Fun | HF - Fixed Income Arbitrage | 11/1/2018 | \$131,181,479 |
| Apollo Credit Strategies Fund L.P. | HF - Long/Short Credit | 4/1/2020 | \$121,005,930 |
| Taiga Special Opportunities Fund | HF - Opportunistic | 7/1/2017 | \$104,249,879 |
| Polymer Asia (US) Fund LP | HF - Market Neutral | 2/1/2021 | \$102,024,697 |
| Complus Asia Macro Fund Ltd. | HF - Discretionary Global Macro Asia | 10/1/2016 | \$93,727,646 |
| Samlyn Onshore Fund LP | HF - Equity Long/Short | 8/1/2020 | \$92,387,630 |
| Graham Absolute Return Trading Ltd. | HF - Discretionary Developed Markets Macro | 2/1/2018 | \$84,561,386 |
| Iguazu Partners LP | HF - Global Macro | 12/1/2013 | \$84,509,837 |
| MW European TOPS (US) Fund | HF - Equity Long/Short | 3/1/2013 | \$84,502,220 |
| Glazer Enhanced L.P. | HF - Merger Arbitrage | 1/1/2016 | \$62,393,393 |
| Magnetar Structured Credit Fund LP | HF - Structured Credit | 1/1/2014 | \$53,955,207 |
| PAG - Project Wine - (Side Pocket) | HF - Opportunistic | 6/30/2019 | \$13,773,214 |
| Southpaw Credit Opportunity Partners L.P. | HF - Distressed / Stressed | 8/1/2012 | \$2,422,472 |
| Directional Growth Portfolio | | | |
| MW TOPS World Equities (US) Fund | HF - Equity Long/Short | 4/1/2014 | \$475,867,349 |
| PAAMCO PRISMA Launchpad | | | |
| Cinctive Global Master Fund | HF - Multi-Manager Equity Long/Short | 9/1/2019 | \$144,671,418 |
| P2 Nexxt Offshore Master Fund | HF - Equity Long/Short | 11/1/2020 | \$52,252,008 |
| Total Hedge Fund Assets | | | \$2,156,507,395 |

Absolute Return Portfolio

Anthony Curtiss, CFA, Director - Hedge Funds

Hedge Fund Program Overview



Objectives & Accomplishments

Objectives

- Outperform T-Bills + 3.50% return benchmark
- Maintain a beta to the Trust of 0.40 or lower
- Maintain a standard deviation (volatility) target of 4% to 8%
- Operate with a low correlation to the Trust

Accomplishments

- Annualized return since inception of +6.53% versus +4.64% for the benchmark
- Beta to the Trust is 0.35 (since inception)
- Current standard deviation (volatility) of 3.20%
- Correlation to the Trust is 0.73
- Historical monthly performance is positive 80% of the time

Hedge Fund Program Overview



Strategy Overview & Characteristics

- **Relative Value**
 - Capitalizes on the mispricing of an asset
 - Typically, exposure lacks market directionality (non-directional)
 - At times, a higher degree of leverage may be applied to capture small mispricings
- **Event Driven**
 - Identifies and analyzes securities associated with a corporate event
 - Examples include: mergers, divestitures, stressed/distressed, spin-offs.
 - This strategy often exhibits a longer-bias/higher net market exposure and often a higher degree of risk through potential drawdowns.

Hedge Fund Program Overview



Strategy Overview & Characteristics

- **Global Macro**

- Exposure can be either directional or relative value with significant flexibility around the use of instruments traded (i.e. derivatives, equity, fixed income, and currencies).

- **Equity Long/Short**

- The strategy focuses on buying undervalued stocks while shorting stocks that are determined overvalued
- Emphasis is placed on stock selection along with managing both net market exposure and leverage (gross exposure)

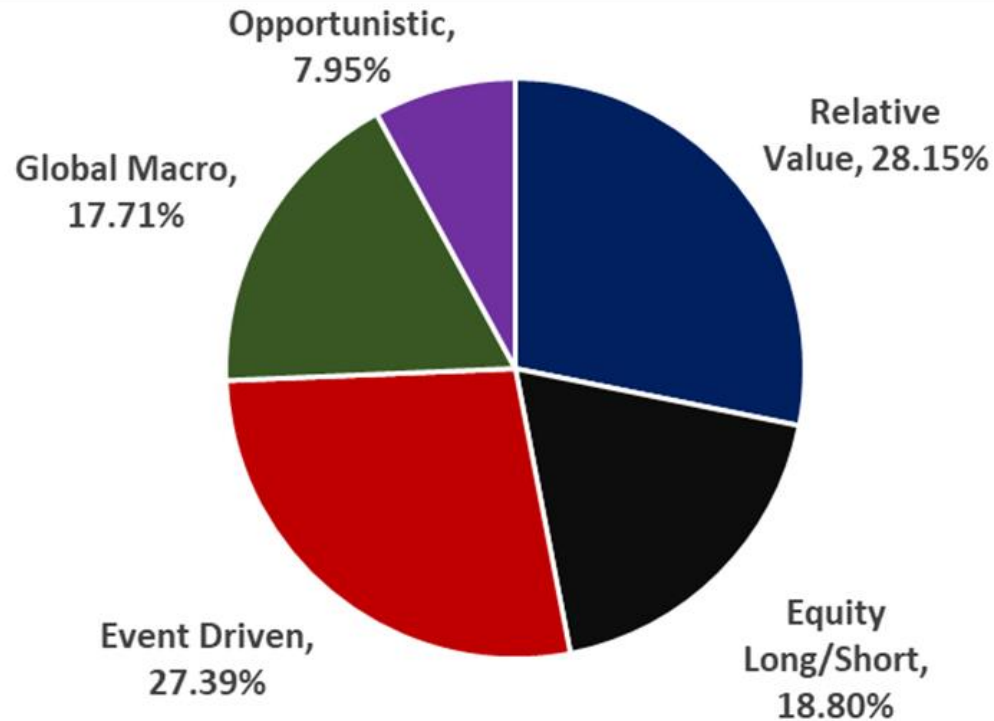
- **Opportunistic**

- Characteristics: portfolio return enhancement, long-bias exposure (in most instances), committed and drawn capital (5 years total term or less), and asymmetric return profile.

Hedge Fund Program Overview

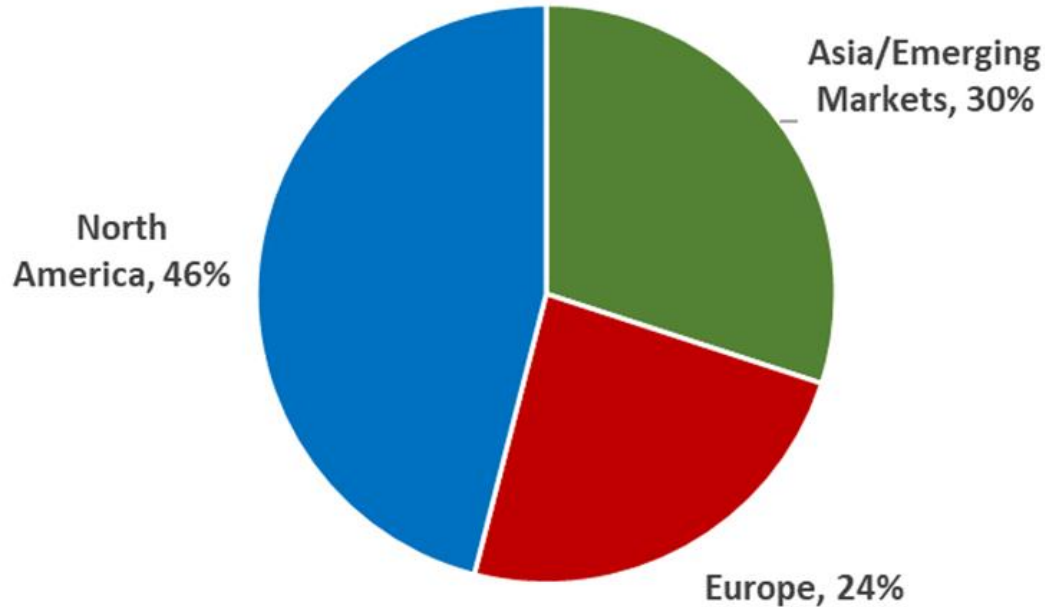


Current Portfolio – Strategy Exposures



Hedge Fund Program Overview

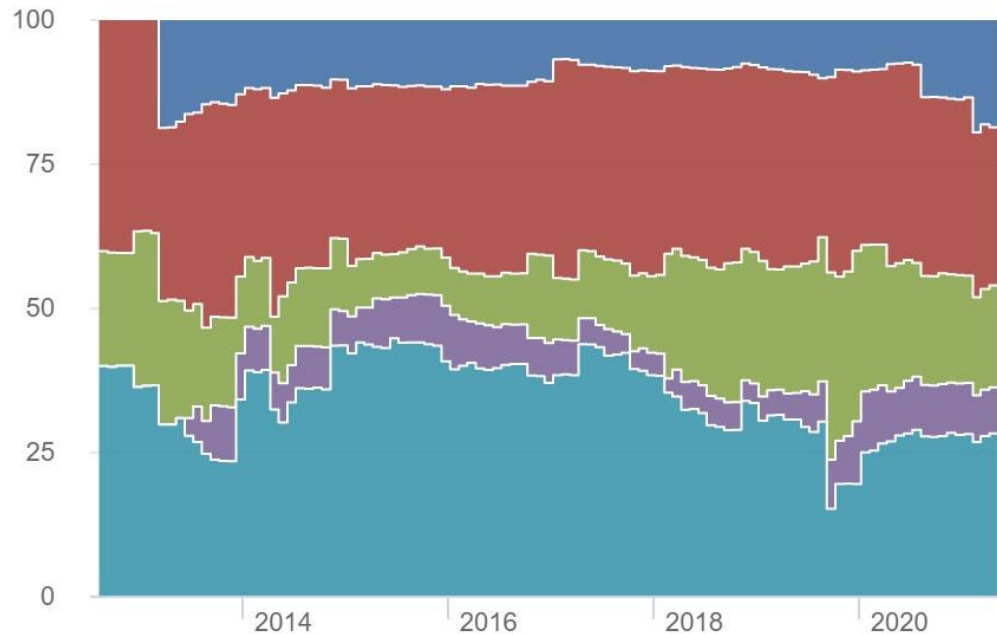
Current Portfolio – Geographic Exposures



Hedge Fund Program Overview



Current Portfolio – Historical Exposures



- Equity Long/Short
- Event Driven
- Global Macro
- Opportunistic
- Relative Value

| Strategy Class | Targeted Range | Actual |
|-------------------|----------------|--------|
| Relative Value | 20% 60% | 28% |
| Event Driven | 0% 60% | 27% |
| Equity Long/Short | 0% 30% | 19% |
| Global Macro | 10% 40% | 18% |
| Opportunistic | 0% 30% | 8% |

Hedge Fund Program Overview



Performance Metrics – Inception to April 2021

| ERS Portfolio & Benchmark | Annualized Return | Annualized Standard Deviation | Sharpe Ratio | Sortino Ratio | Largest Drawdown |
|----------------------------------|-------------------|-------------------------------|--------------|---------------|------------------|
| Absolute Return Portfolio | 6.53% | 3.20% | 1.81 | 3.46 | -4.01% |
| 90 Day T-Bills + 3.50% (blended) | 4.64% | 0.26% | 34.72 | N/A | N/A |
| HFRI FOF: Diversified Index | 4.68% | 4.69% | 0.85 | 1.27 | -8.19% |
| HFRI FOF: Conservative Index | 4.22% | 3.63% | 0.97 | 1.34 | -7.64% |
| HFRX Global Hedge Fund Index | 2.66% | 4.40% | 0.47 | 0.64 | -8.95% |

| Stated Policy Benchmark | Bloomberg Ticker |
|----------------------------------|---------------------------------|
| 90 Day T-Bills + 3.50% (blended) | G001 INDEX (floating component) |
| Industry Benchmarks | Bloomberg Ticker |
| HFRI FOF: Diversified Index | HFRIFOFD INDEX |
| HFRI FOF: Conservative Index | HFRIFOFC INDEX |
| HFRX Global Hedge Fund Index | HFRXGL INDEX |

Inception date 04/2012

Hedge Fund Program Overview



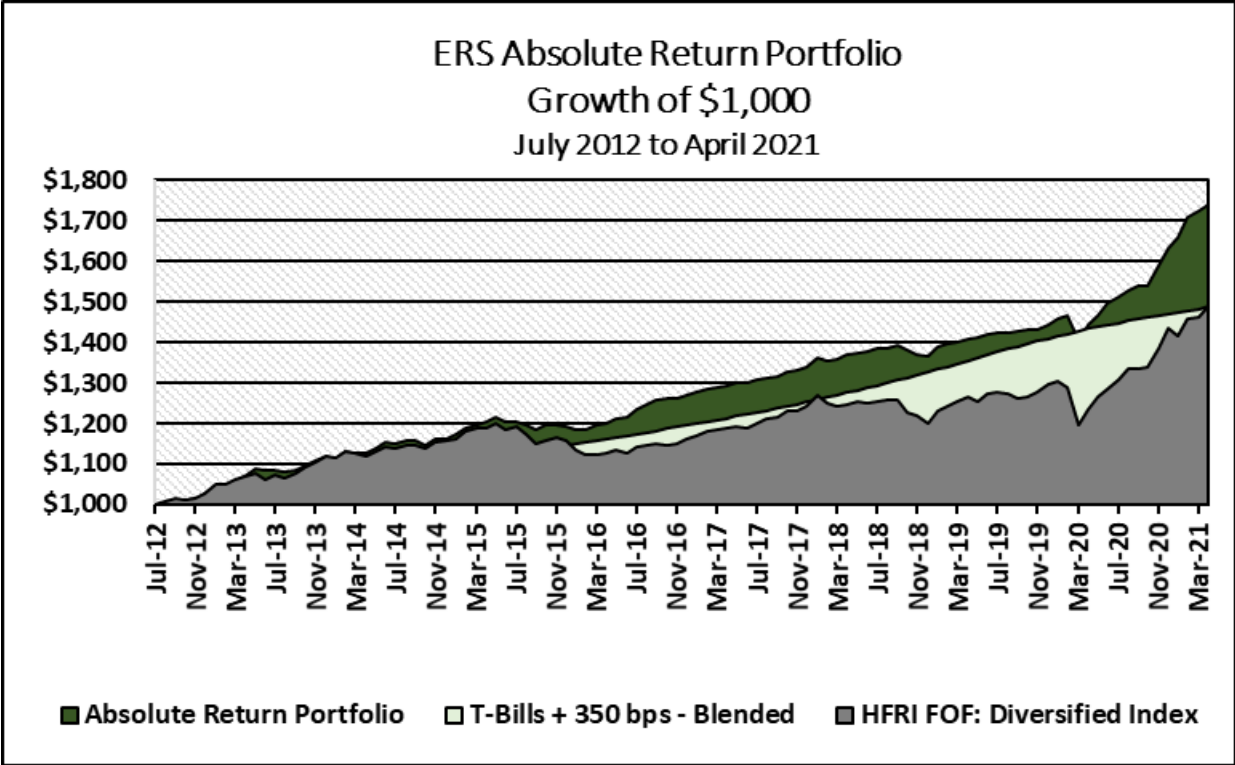
Performance Metrics – Trailing Annualized Performance

| | YTD | 1 Yr. Annualized | 3 Yr. Annualized | 5 Yr. Annualized | 7 Yr. Annualized | ITD |
|-----------------------------------------------------|--------------|------------------|------------------|------------------|------------------|--------------|
| Absolute Return Portfolio | 6.59% | 20.49% | 8.34% | 7.68% | 6.38% | 6.53% |
| Relative Outperformance / (Underperformance) | | | | | | |
| T-Bills + 3.50% (blended) | 5.40% | 16.87% | 3.07% | 2.61% | 1.60% | 1.89% |
| HFRI FOF: Diversified Index | 2.67% | -0.28% | 2.13% | 1.93% | 2.17% | 1.85% |
| HFRI FOF: Conservative Index | 1.38% | 1.85% | 3.02% | 2.72% | 2.77% | 2.31% |
| HFRX Global Hedge Fund Index | 3.65% | 5.75% | 4.35% | 3.48% | 4.30% | 3.87% |

| Stated Policy Benchmark | Bloomberg Ticker |
|----------------------------------|---------------------------------|
| 90 Day T-Bills + 3.50% (blended) | G001 INDEX (floating component) |
| Industry Benchmarks | Bloomberg Ticker |
| HFRI FOF: Diversified Index | HFRIFOFD INDEX |
| HFRI FOF: Conservative Index | HFRIFOFC INDEX |
| HFRX Global Hedge Fund Index | HFRXGL INDEX |

Hedge Fund Program Overview

Growth of \$1,000



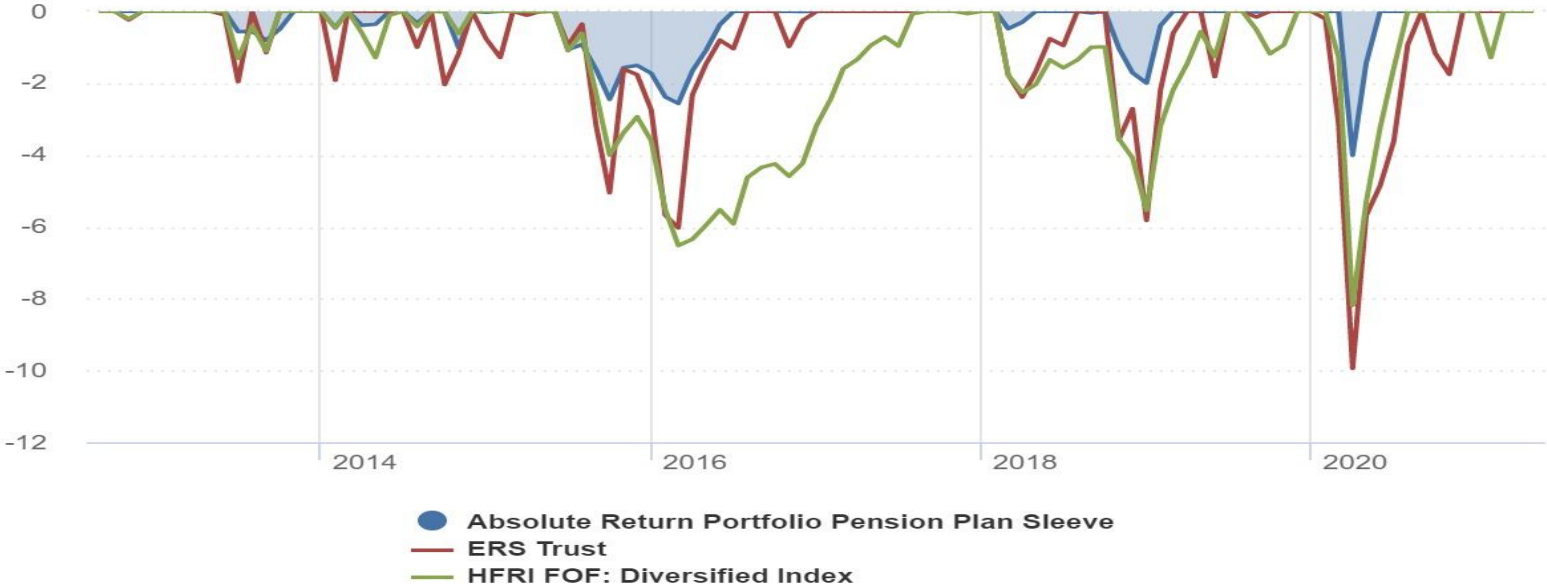
Hedge Fund Program Overview



Relative Down Period Performance

Down Period Performance

August-12 to April-21 (Monthly)



Hedge Fund Program Overview



Portfolio Construction

- The largest allocations remain focused on Relative Value and Event Driven strategies (55%)
- The portfolio remains diversified based both on geography and by strategy
 - Over 70% of the portfolio is allocated to North America and Europe
 - 15 holdings in the portfolio
 - 90% of assets considered Core relationships
- Liquidity remains a focus for all allocations
 - Approximately, 73% can be redeemed within 12 months
- New allocations will be focused on Event Driven, Relative Value, Global Macro, and Opportunistic strategies.
 - Primary focus is seeking diversifying strategies to existing holding.
 - The secondary focus is finding strategies that still provide for a degree of diversification based either on strategy or geography, but may carry a higher correlation to existing relationships.

Hedge Fund Program Overview



Performance Overview – By Strategy (annualized performance)

| Investment Strategy | Current Allocation | MTD | QTD | YTD | 3 Yr | 5 Yr | ITD |
|----------------------------------------------|--------------------|--------|--------|--------|--------|--------|-------|
| Relative Value | \$417,626,158 | 0.69% | 0.69% | 11.36% | 13.88% | 10.60% | 7.90% |
| Relative Outperformance / (Underperformance) | | 0.23% | 0.23% | 11.00% | 9.75% | 6.51% | 6.04% |
| Event Driven | \$406,353,952 | 1.01% | 1.01% | 5.56% | 8.65% | 8.08% | 6.80% |
| Relative Outperformance / (Underperformance) | | -0.55% | -0.55% | 2.26% | 4.10% | 2.65% | 3.33% |
| Equity Long/Short | \$278,914,547 | 1.54% | 1.54% | 5.18% | 7.88% | 6.68% | 7.32% |
| Relative Outperformance / (Underperformance) | | -1.45% | -1.45% | -0.55% | 4.58% | 1.99% | 4.11% |
| Global Macro | \$262,798,869 | 0.46% | 0.46% | 3.69% | 4.02% | 5.09% | 4.37% |
| Relative Outperformance / (Underperformance) | | -0.64% | -0.64% | 2.06% | 1.03% | 3.81% | 3.52% |
| Opportunistic | \$118,023,093 | 0.23% | 0.23% | 2.54% | 3.34% | 7.71% | 6.92% |

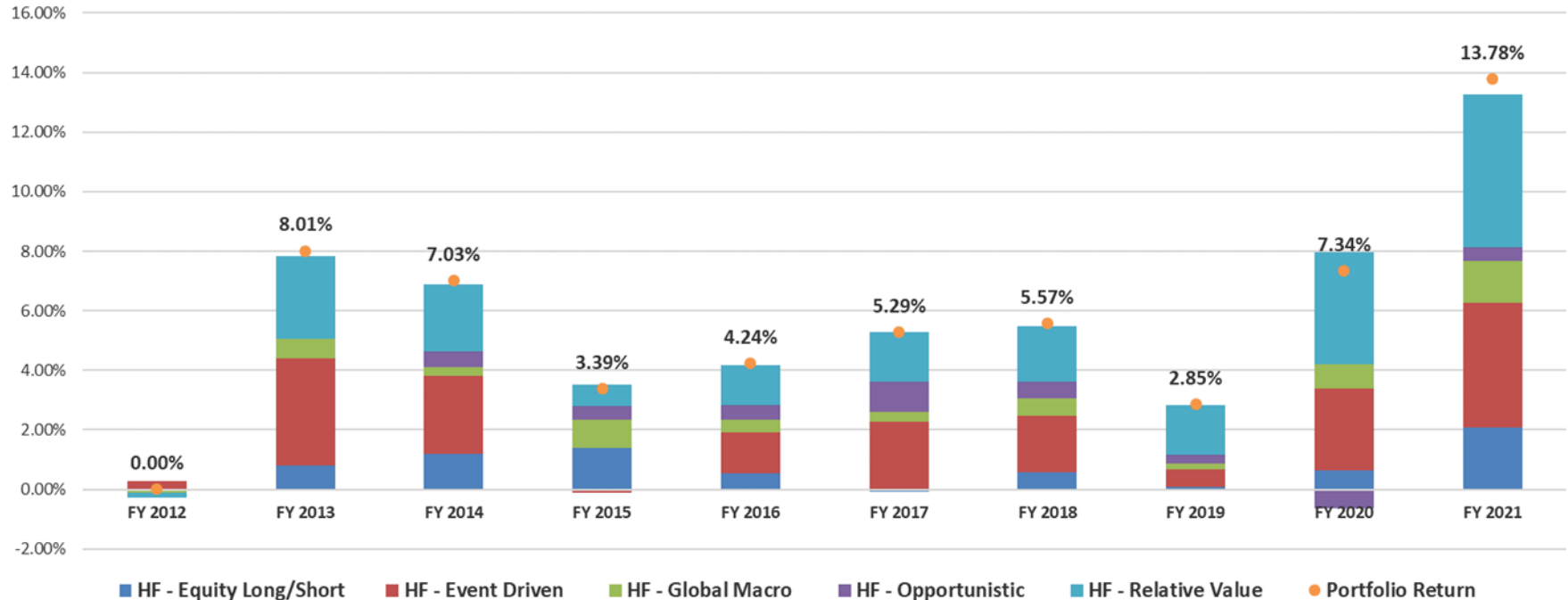
| Benchmark | Symbol |
|-------------------------------------|---------|
| HFRX Relative Value Arbitrage Index | HFRXRVA |
| HFRX Event Driven Index | HFRXED |
| HFRX Equity Hedge Index | HFRXEH |
| HFRX Macro Index | HFRXM |

Hedge Fund Program Overview

Historical Attribution – Fiscal Year



Fiscal Year Historical Strategy Attribution



Hedge Fund Program Overview

Correlations by Sub-Strategies



| Strategy Correlation | Relative Value | Event Driven | Global Macro | Equity Long/Short | Opportunistic |
|--------------------------|----------------|--------------|--------------|-------------------|---------------|
| Relative Value | | | | | |
| Event Driven | 0.62 | | | | |
| Global Macro | 0.20 | 0.41 | | | |
| Equity Long/Short | 0.41 | 0.47 | 0.41 | | |
| Opportunistic | 0.10 | 0.34 | 0.41 | 0.17 | |

Directional Growth Portfolio

Anthony Curtiss, CFA, Director - Hedge Funds

Hedge Fund Program Overview



Objectives & Accomplishments

Objectives

- Strive to outperform each underlying benchmark
- Maintain a tight beta and correlation to each respective benchmark
- Act as a complement to Trust

Accomplishments

- Relative outperformance on sole investment remains exceptionally strong and has met internal objectives
- Absolute performance has been strong while providing for attractive risk reward characteristics
- Able to continually outperform while maintaining beta and correlation guidelines

Hedge Fund Program Overview

Portfolio Allocations



| Fund | Current Allocation | Inception Date |
|---------------------------------------|--------------------|----------------|
| MW TOPS World Equities (US) Fund L.P. | \$475,867,349 | 04/01/14 |



Hedge Fund Program Overview



Performance Metrics – Inception to April 2021

| Fund Name & Benchmarks | Annualized Return | Annualized Standard Deviation | Sharpe Ratio | Sortino Ratio | Largest Drawdown |
|-----------------------------------------|-------------------|-------------------------------|--------------|---------------|------------------|
| MW TOPS World Equities (US) Fund | 15.46% | 13.56% | 1.08 | 1.70 | -20.81% |
| MSCI AC World Daily Net Local | 11.00% | 12.90% | 0.79 | 1.24 | -19.97% |
| Directional Growth Portfolio | 13.44% | 13.23% | 0.95 | 1.50 | -20.05% |

Inception date 04/2014

Hedge Fund Program Overview



Performance Metrics – Trailing Annualized Performance

| Fund Name | YTD | 1 YR | 3 YR | 5 YR | 7 YR | ITD |
|-----------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| MW TOPS World Equities (US) Fund | 12.38% | 50.76% | 16.34% | 17.54% | 15.64% | 15.46% |
| MSCI AC World Daily Net Local | 9.80% | 42.05% | 13.50% | 13.97% | 11.04% | 11.00% |

| Benchmark | Bloomberg Ticker |
|-------------------------------|------------------|
| MSCI AC World Daily Net Local | NDLEACWF INDEX |

Other Hedge Fund Allocations General Update

Anthony Curtiss, CFA, Director - Hedge Funds

Hedge Fund Program Overview

Other Hedge Fund Allocations – Update



- PAAMCO Launchpad made its second investment in November of 2020 to Phase 2 Partners.
- The ERS Board of Trustees has approved an additional \$175 million commitment in April 2021.

Albourne Annual Hedge Fund Update

Employees Retirement System of Texas

25 August 2021

Overview

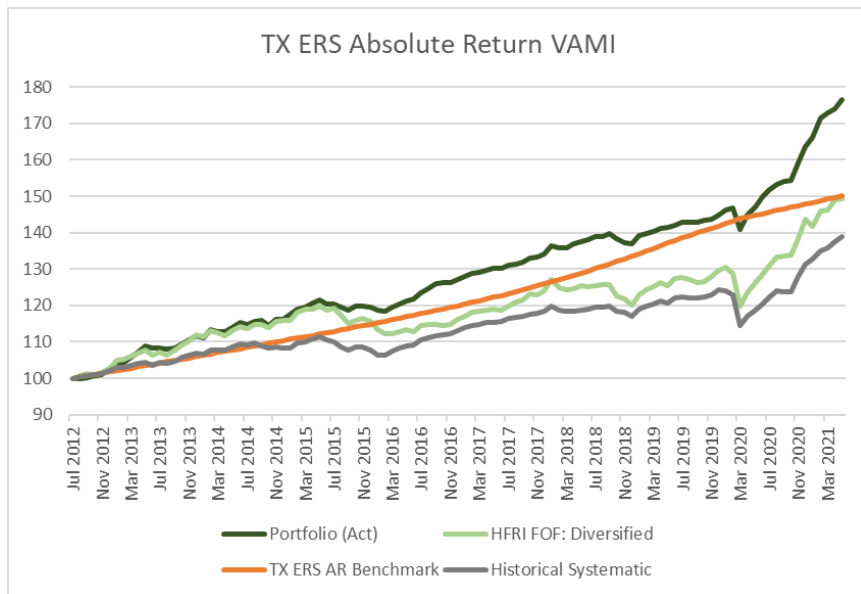
ERS Absolute Return Portfolio

- Performance
- Implementation consistent with policy
- Strategy Outlook

Market Observations

- Flows and Liquidity
- Value and Volatility
- SPACs and Crypto
- ESG and D&I

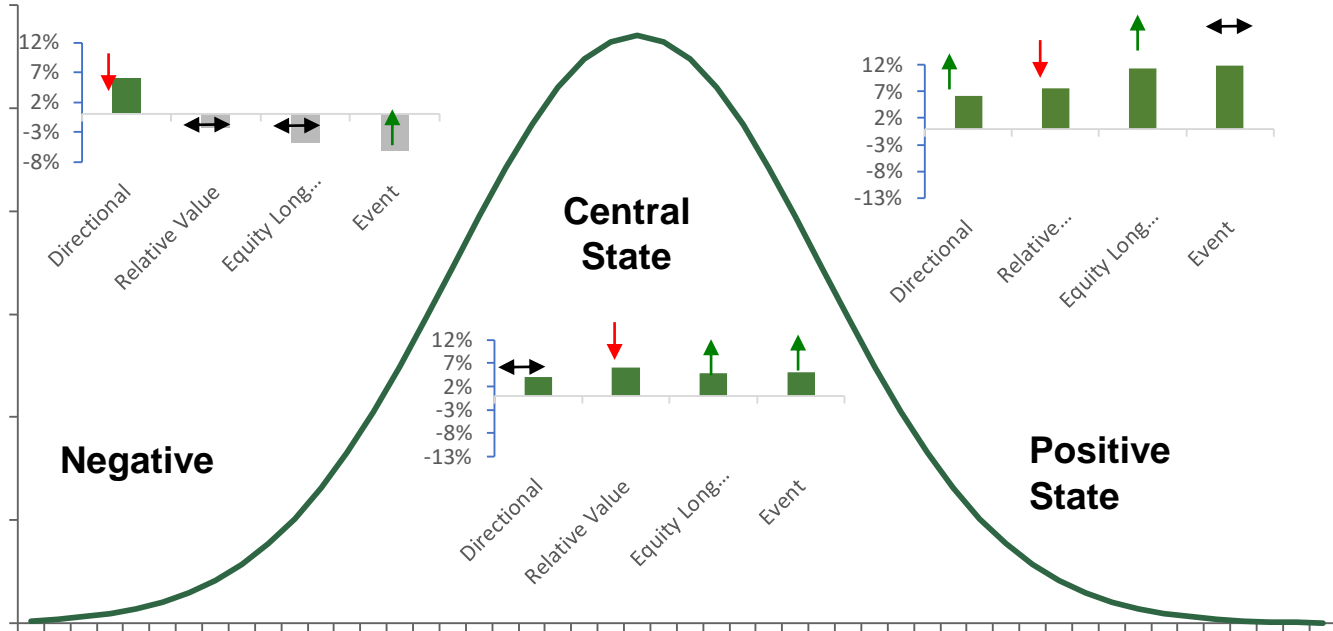
TX ERS Absolute Return Performance*



Past performance is not a reliable indicator of future results. Source: Albourne and Hedge Fund Research, Inc. (www.hedgefundresearch.com). The HFRI index above is being used under license from Hedge Fund Research, Inc., which does not approve of or endorse this presentation or its contents.

- Performance
 - Exceeds Strategic Benchmark last fiscal year, 12 months, 3 years, 5 years, and since inception.
 - Exceeds Tactical Benchmark over last fiscal year, 12 months, 3 years, 5 years, and since inception
 - With less volatility than the Tactical Benchmark since inception
- Implementation consistent with policy
 - Realized beta to TX ERS Trust <0.4
 - Super-strategy mix within stated policy guidelines

Strategy Outlook*



| Rank | Super-Strategy |
|------|-------------------|
| 1 | Directional |
| 2 | Equity Long Short |
| 3 | Event |
| 4 | Relative Value |

- ERS Allocations
 - In 2020, allocated to
 - U.S. Long/Short fund
 - Asia Pacific Long/Short Fund
 - Recently approved
 - Specialist Relative Value fund

Market Observations

- Flows and Liquidity
- Value and Volatility
- SPACs and Crypto
- ESG and D&I

Questions?

Proposed Hedge Fund Annual Tactical Plan for Fiscal Year 2022 – (Action)

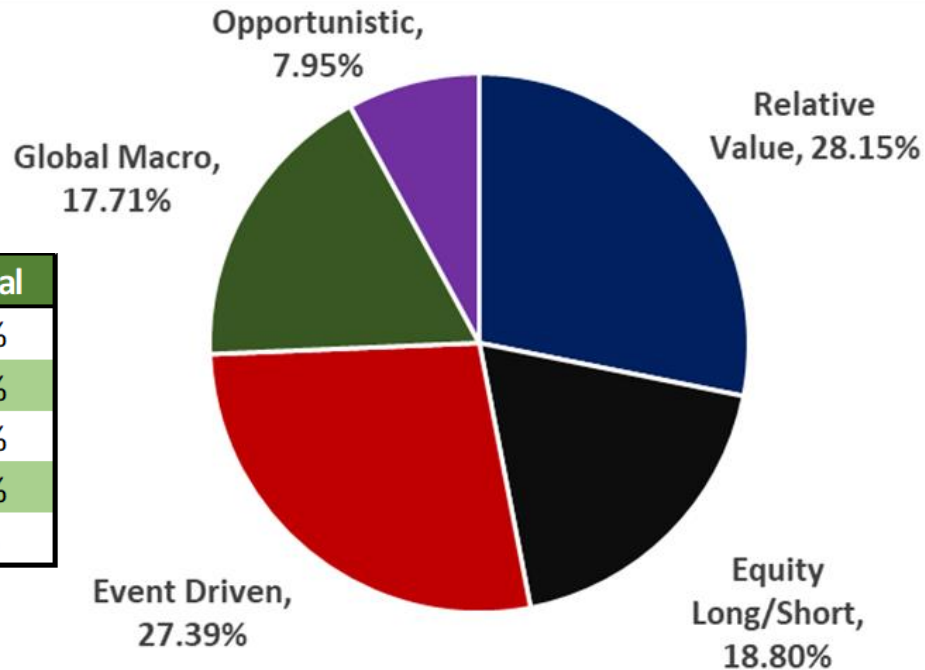
Anthony Curtiss, CFA, Director – Hedge Funds

Hedge Fund Program Overview

Tactical Plan FY22 – Exposures



| Strategy Class | Targeted Range | | Actual |
|-------------------|----------------|-----|--------|
| Relative Value | 20% | 60% | 28% |
| Event Driven | 0% | 60% | 27% |
| Equity Long/Short | 0% | 30% | 19% |
| Global Macro | 10% | 40% | 18% |
| Opportunistic | 0% | 30% | 8% |



Hedge Fund Program Overview



Tactical Plan FY22

- As of April 30, 2021, the Absolute Return Portfolio is approximately 5% of the Trust's assets
- The targeted allocation remains at 5%, but there is further flexibility given the allowable strategy bands of 0-10%
- Expectations are for up to five new investments during FY22
- New opportunities reside in Event Driven, Global Macro, Relative Value, and Opportunistic
- Emphasis will be on diversifying strategies to complement existing allocations
- Focus remains on strategies within developed markets that are either liquid or illiquid.

Questions?
Action Item

*Public Agenda Item #17

Consideration of Private Equity – (Action)

August 25, 2021

Ricky Lyra, Director – ERS Private Equity
Adriana Ballard, Portfolio Manager – ERS Private Equity
Tom Rashman, Portfolio Manager – ERS Private Equity
Thomas Martin, Partner – Aksia Torrey Cove

Private Equity Program Overview



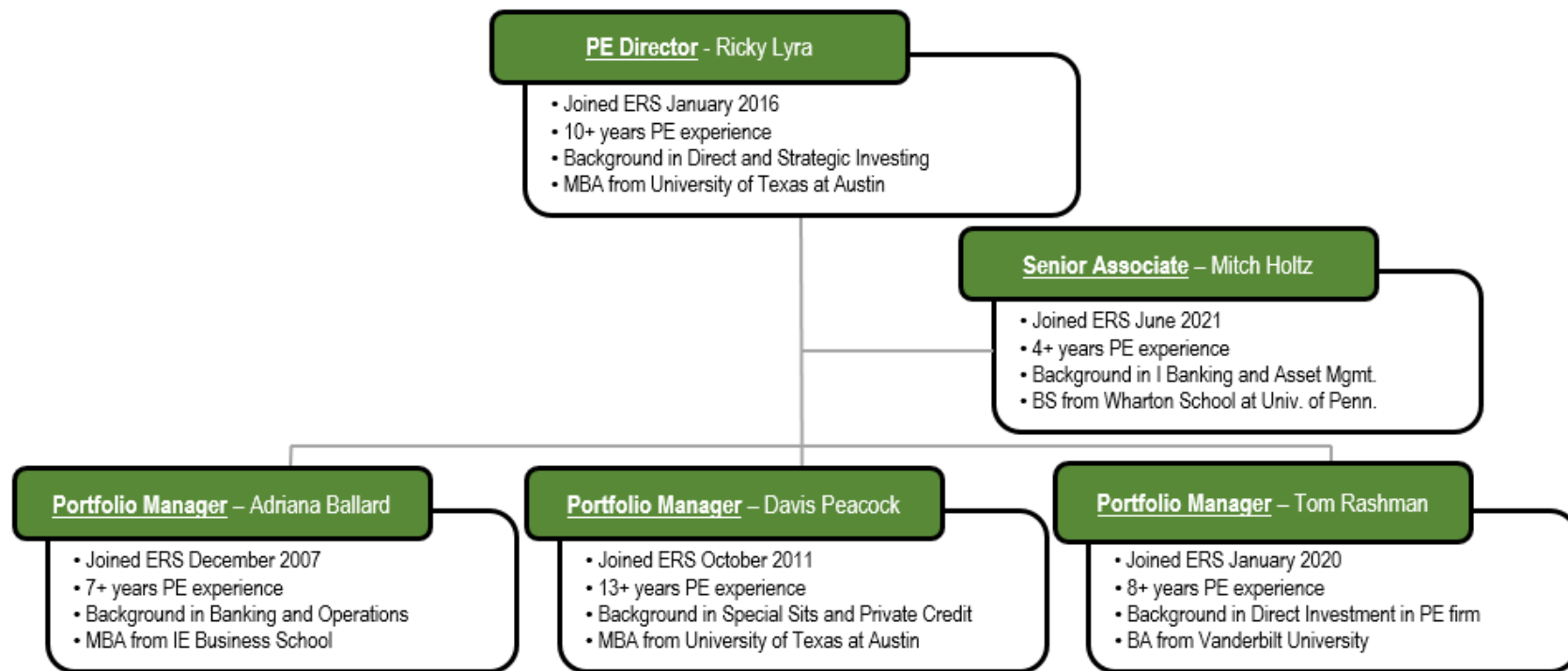
Agenda

- Team Update
- Program Summary
- PE Allocation Reconciliation & Growth vs. PFY
- PE Market
- Performance
- Program Economics
- Co-Investment Summary
- Diversification Metrics
- Goals and Objectives for Fiscal Years 2020 and 2021

Private Equity Program Overview



Team



Private Equity Program Overview

Portfolio Update (June 30, 2021)



| | Inception ¹ – FY20 | FYTD21 | Inception ¹ – FYTD21 |
|----------------------------------------------------------|-------------------------------|---------------|---------------------------------|
| Committed | \$10.2 billion | \$800 million | \$11.0 billion |
| Called | \$7.6 billion | \$1.0 billion | \$8.6 billion |
| Distributed | \$5.5 billion | \$1.2 billion | \$6.7 billion |
| Net Asset Value (NAV) | \$4.5 billion | \$1.4 billion | \$5.9 billion |
| % of Trust | 15.4% | 200 bps | 17.4% |
| Total Value to Paid in Capital (TVPI)² | 1.31x | 0.15x | 1.46x |
| Distributed to Paid in Capital (DPI)³ | 0.72x | 0.06x | 0.78x |
| Internal Rate of Return (IRR)⁴ | 10.2% | 265 bps | 12.9% |

1. **Inception** goes back to the first private equity fund commitment by ERS in December of 1998

2. **TVPI, Total Value to Paid in Capital**, is equal to (NAV + Distributions) / Paid in Capital;

3. **DPI, Distributions to Paid in Capital**, is equal to Distributions / Paid in Capital;

4. **IRR, Internal Rate of Return**, is equal to the discount rate that will bring a series of cash flows to a net present value (NPV) of zero (or to the current value of cash invested)

Private Equity Program Overview



PE as a % of ERS – Reconciliation (June 30, 2021)

- Excluding FY21 cash flows, PE growth outpaced overall ERS growth and increased its overall participation within Trust

| | | NAV \$ Millions | |
|------------------|---------------------------------|--------------------|--------------|
| | ERS Trust | 29,076 | |
| 8/31/2020 | PE Portfolio : ERS Trust | 4,483 | 15.4% |
| | Capital Calls | 1,022 | 3.5% |
| | Capital Distributions | (1,209) | -4.2% |
| | PE Value Growth | 1,606 | 5.5% |
| | Total Trust Growth | 3,408 | -2.9% |
| 6/30/2021 | PE Portfolio | 5,901 | 17.4% |
| | ERS Trust | 33,903 | |

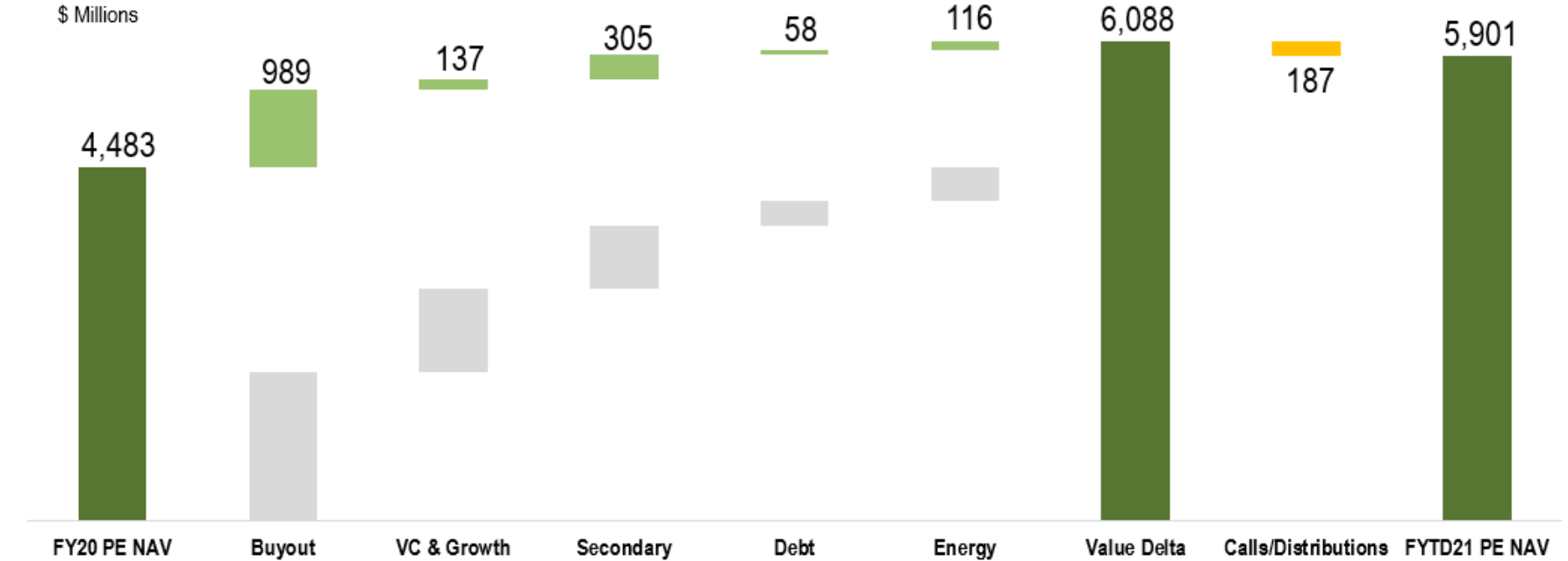
Private Equity Program Overview



FYTD21 PE Growth by Strategy (June 30, 2021)

| Strategy | Buyout | VC & Growth | Secondary | Debt | Energy | Total |
|------------------|--------|-------------|-----------|-------|--------|-------|
| % Growth Vs. PFY | 52.1% | 13.1% | 37.9% | 18.6% | 27.5% | 35.8% |

\$ Millions



Private Equity Program Overview



FYTD21 Commitments & Investments

- Taking advantage of market volatility, PE Staff identified opportunistic investments that delivered quick value growth mitigating J-Curve effect for FYTD21 commitments and investments.

| Description | Commitment | Representation | IRR |
|---------------------------|----------------|----------------|-------|
| Primaries & Fund of Funds | \$ 434 million | 54.2% | 5.2% |
| Co-Investments | \$ 181 million | 22.6% | 4.8% |
| Opportunistic Investing | \$ 185 million | 23.1% | 46.7% |
| Total For FYTD21 | \$ 800 million | 100% | 27.3% |

Private Equity Program Overview



Private Equity Market Update

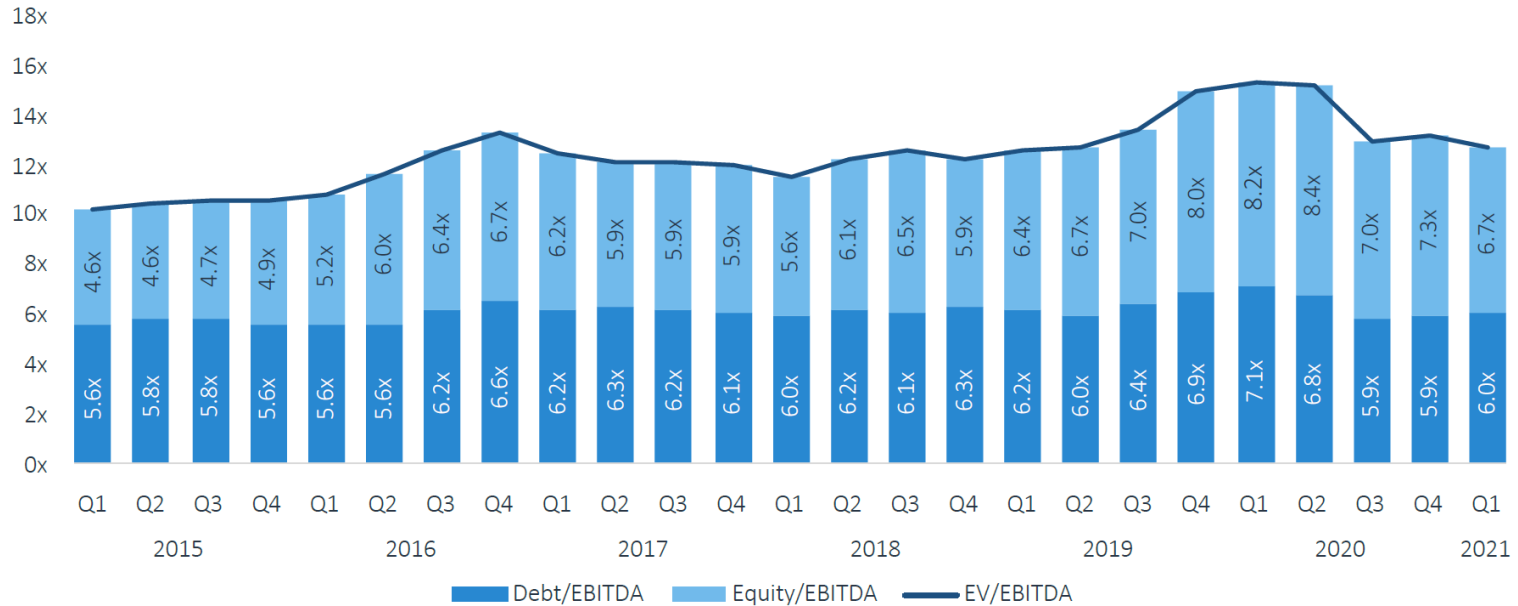
- **Elevated valuation levels have not hindered PE activity**
 - Similar to public markets, valuations have returned to or exceeded pre-COVID-19 levels
 - Accommodating monetary policies and an ample supply of debt have resulted in buyouts with high levels of leverage
 - In Q1 2021, the median PE buyout multiple was 12.7x EV / EBITDA; led by information technology with a median multiple of 20.1x EV / EBITDA
- **Fundraising has grown strongly in 2021**
 - In Q1 2021, \$188 billion was raised globally – a 16% increase from Q1 2020
 - Fund closings also increased 5% y-o-y in Q1 2021
 - Fundraising growth is being driven by PE activity outside of the U.S. – North American fundraising in Q1 2021 was valued at \$114 billion, modestly down from \$117 billion in Q1 2020
- **Increased exit options creating additional PE sales**
 - GPs exited \$162 billion in portfolio companies in Q1 2021 compared to full year \$392 billion and \$356 billion in 2020 and 2019, respectively
 - Corporate acquirors with record buying power and the rise in Special Purpose Acquisition Companies (SPACs) are driving the significant increase in GP exits

Private Equity Program Overview

Private Equity Market Update (Cont'd)



Median Private Equity Buyout Multiples by Rolling Four Quarters

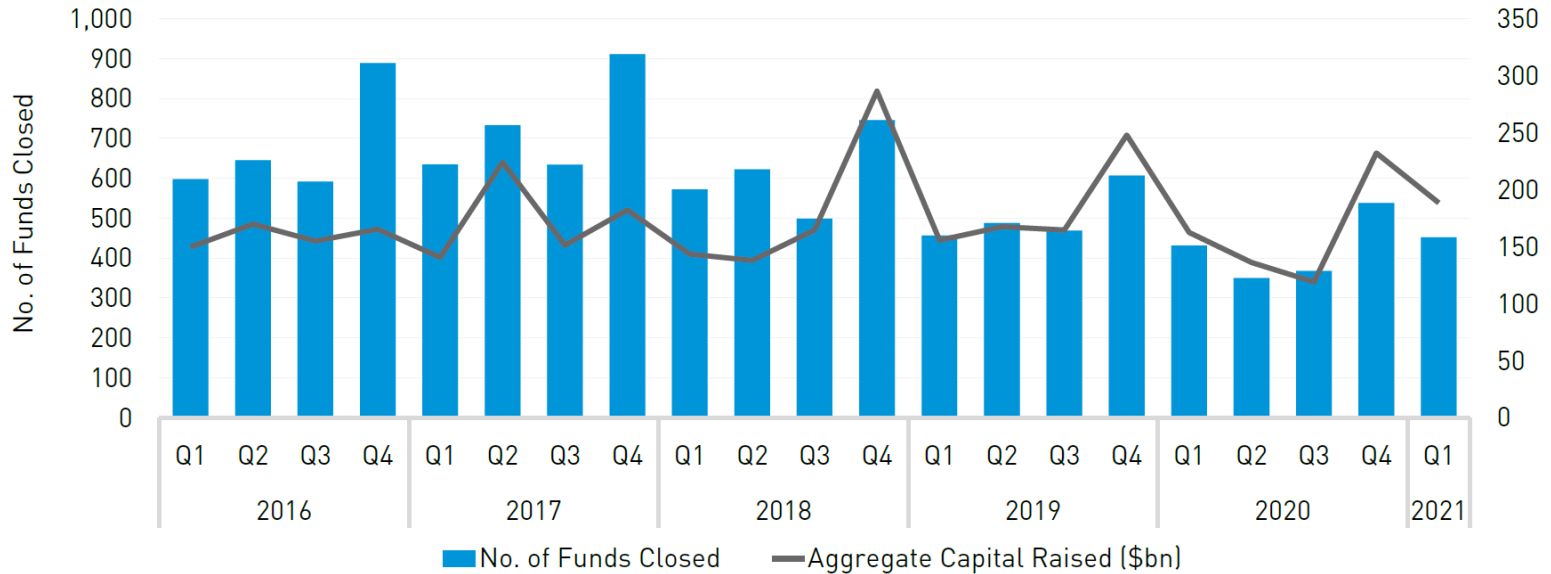


Private Equity Program Overview

Private Equity Market Update (Cont'd)



Private Equity Fundraising Activity

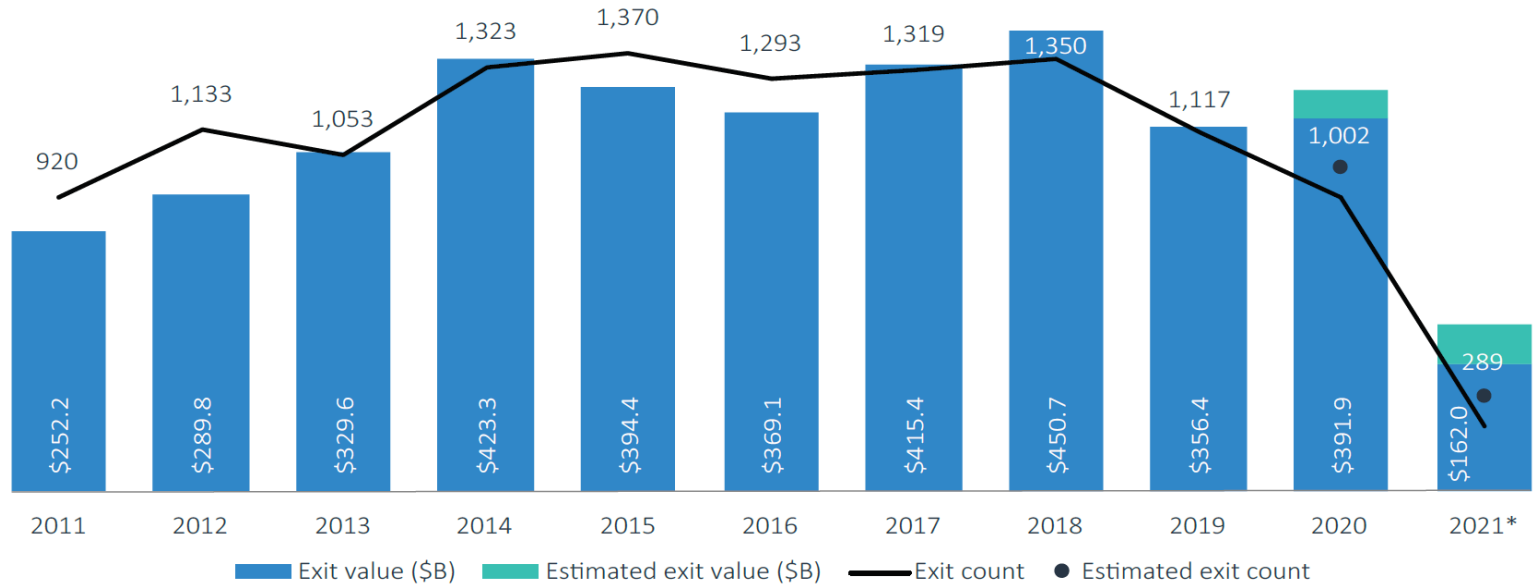


Private Equity Program Overview

Private Equity Market Update (Cont'd)



Private Equity Exit Activity



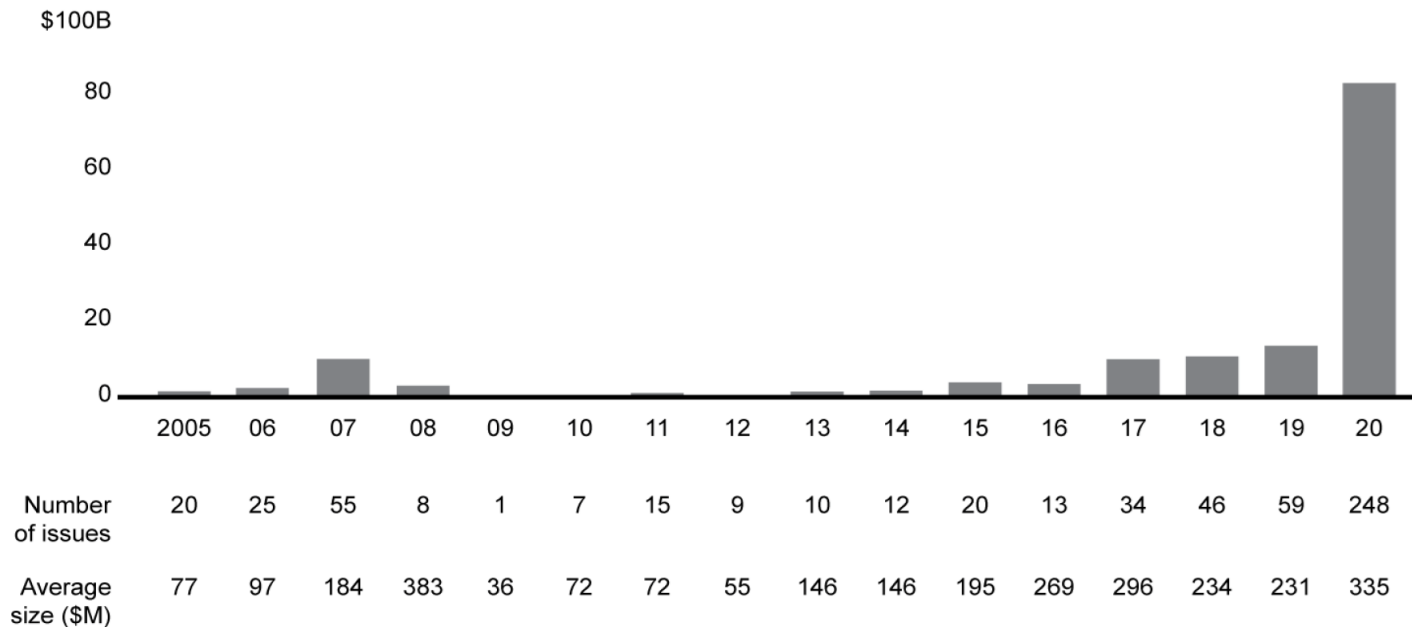
*2021 reflects Q1 2021

Private Equity Program Overview

Private Equity Market Update (Cont'd)



SPAC IPO Capital Raised

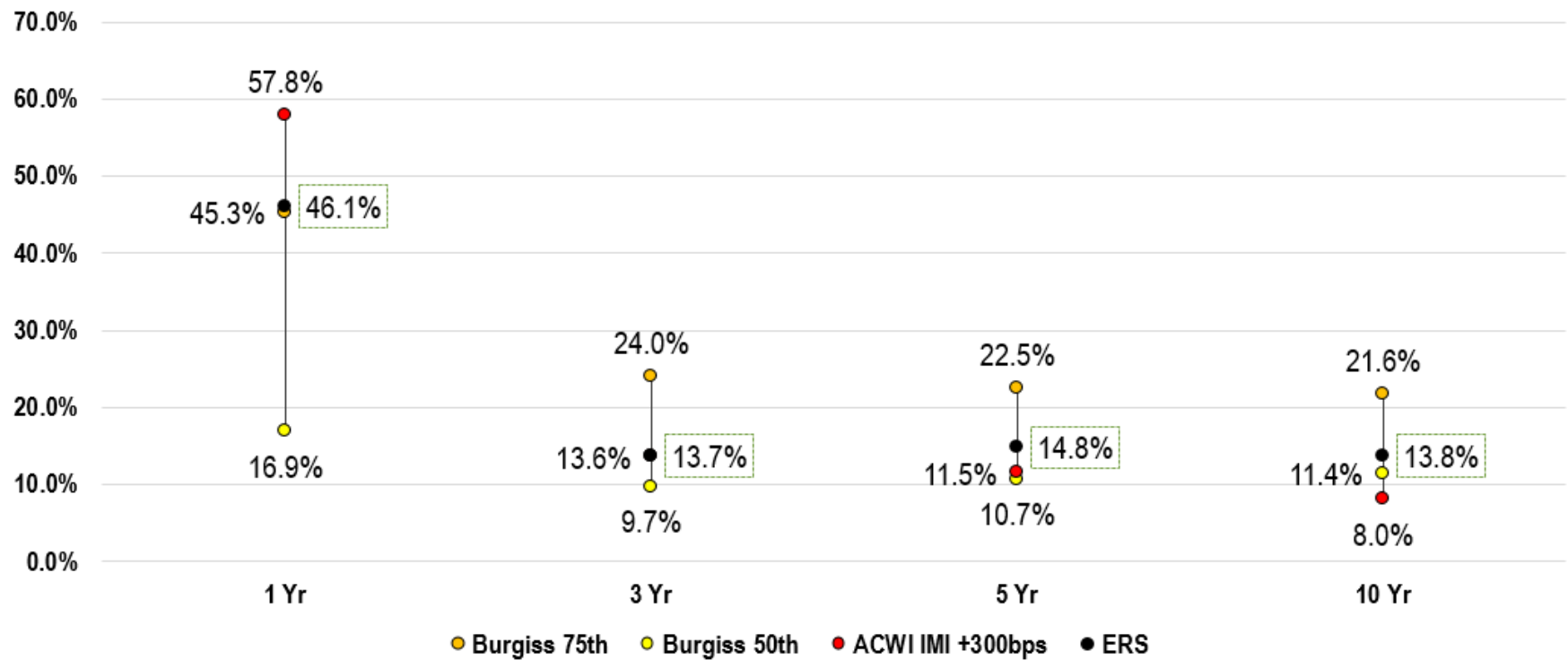


*2021 reflects Q1 2021

Private Equity Program Overview



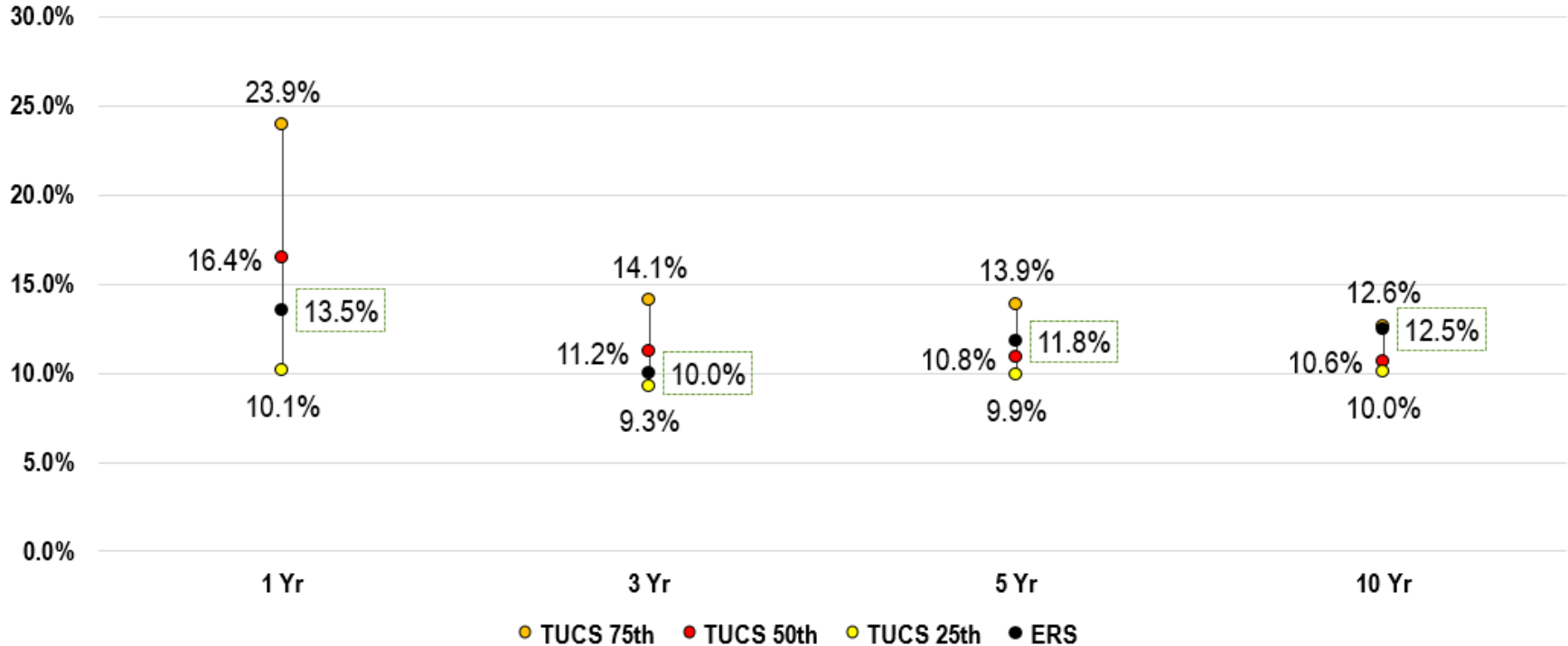
Market IRR Comparison (March 31, 2021)



Private Equity Program Overview



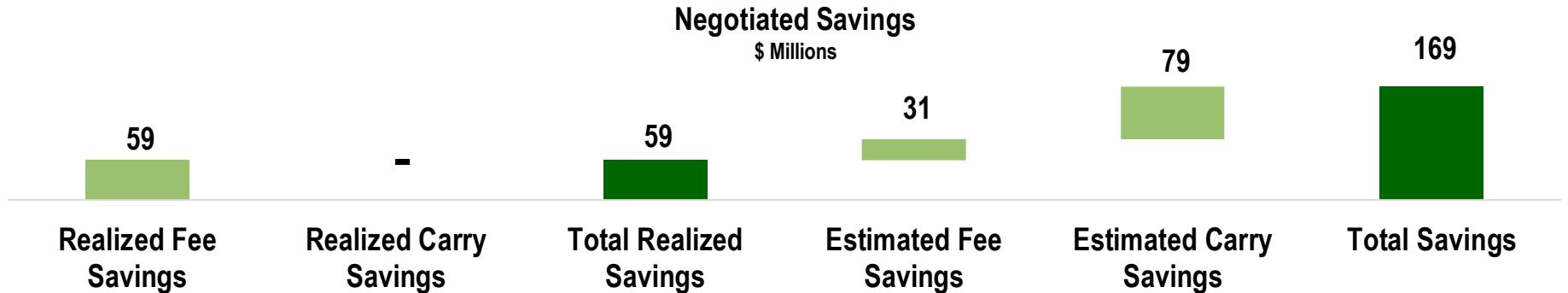
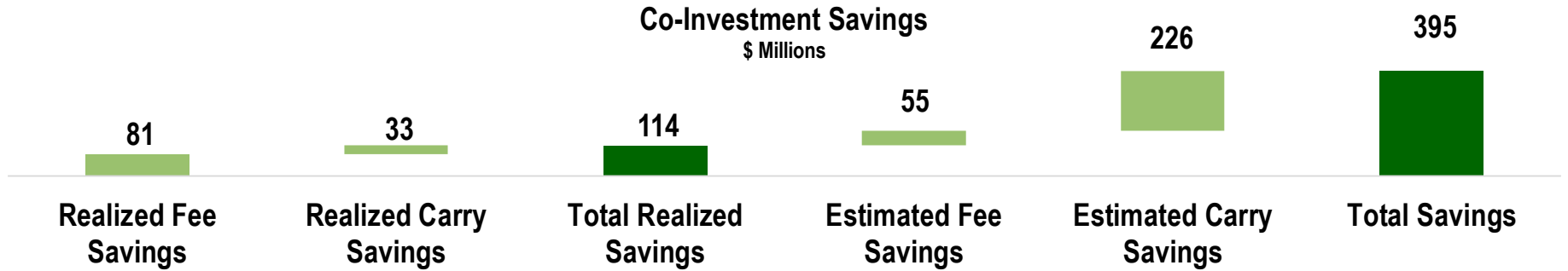
Peer (benchmark) TWR Comparison (March 31, 2021)



Private Equity Program Overview



Program Savings (June 30, 2021)

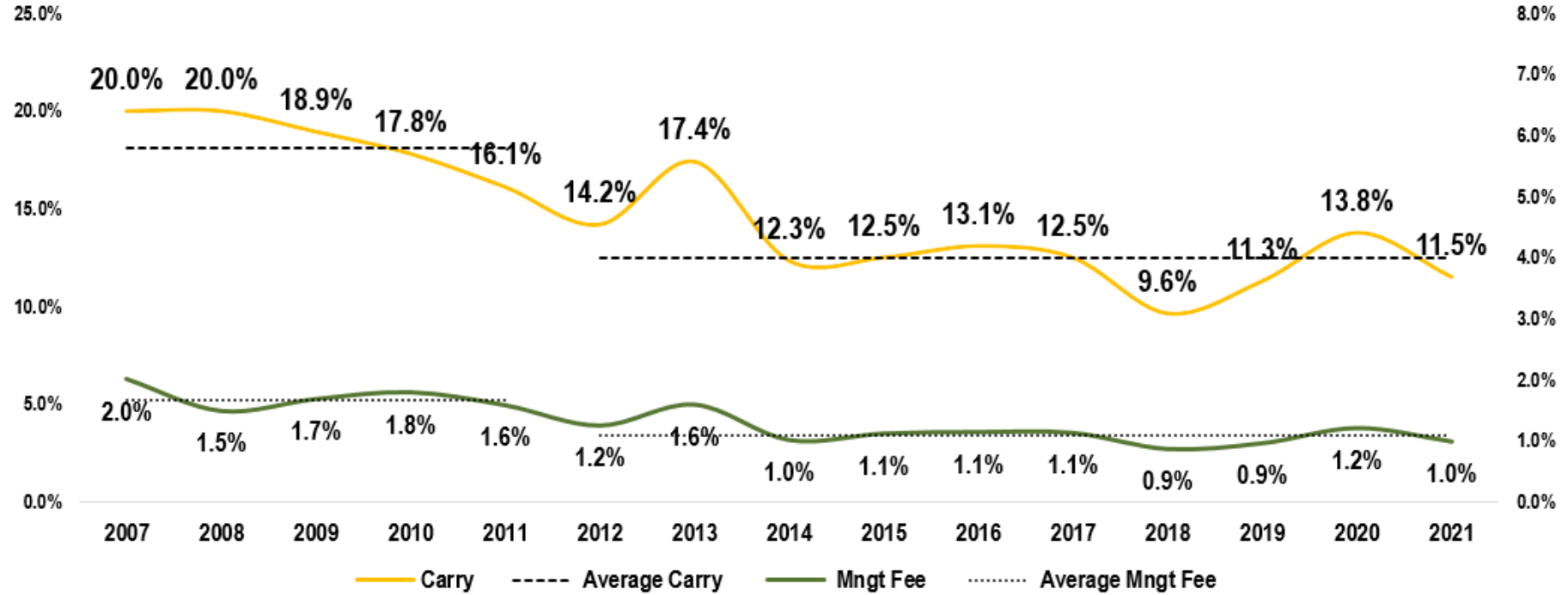


Private Equity Program Overview



Terms Evolution by Fiscal Year

Weighted Economic Terms - All PE

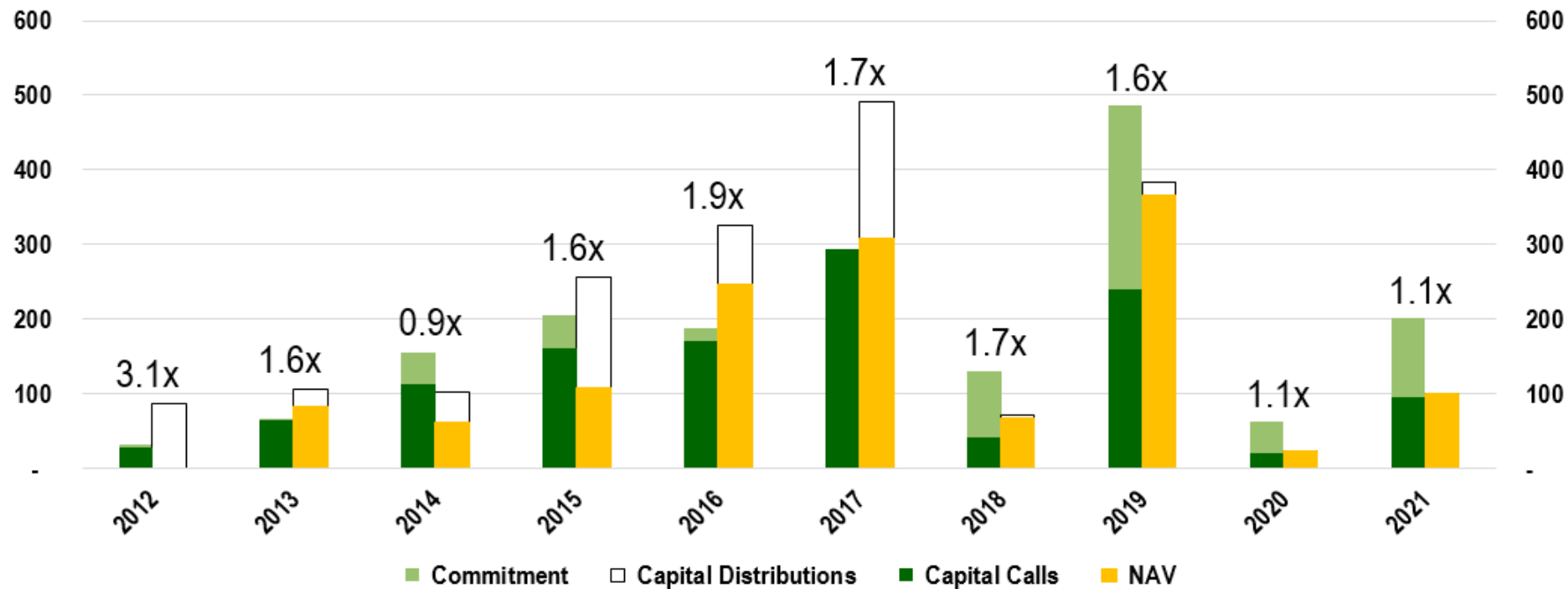


Private Equity Program Overview



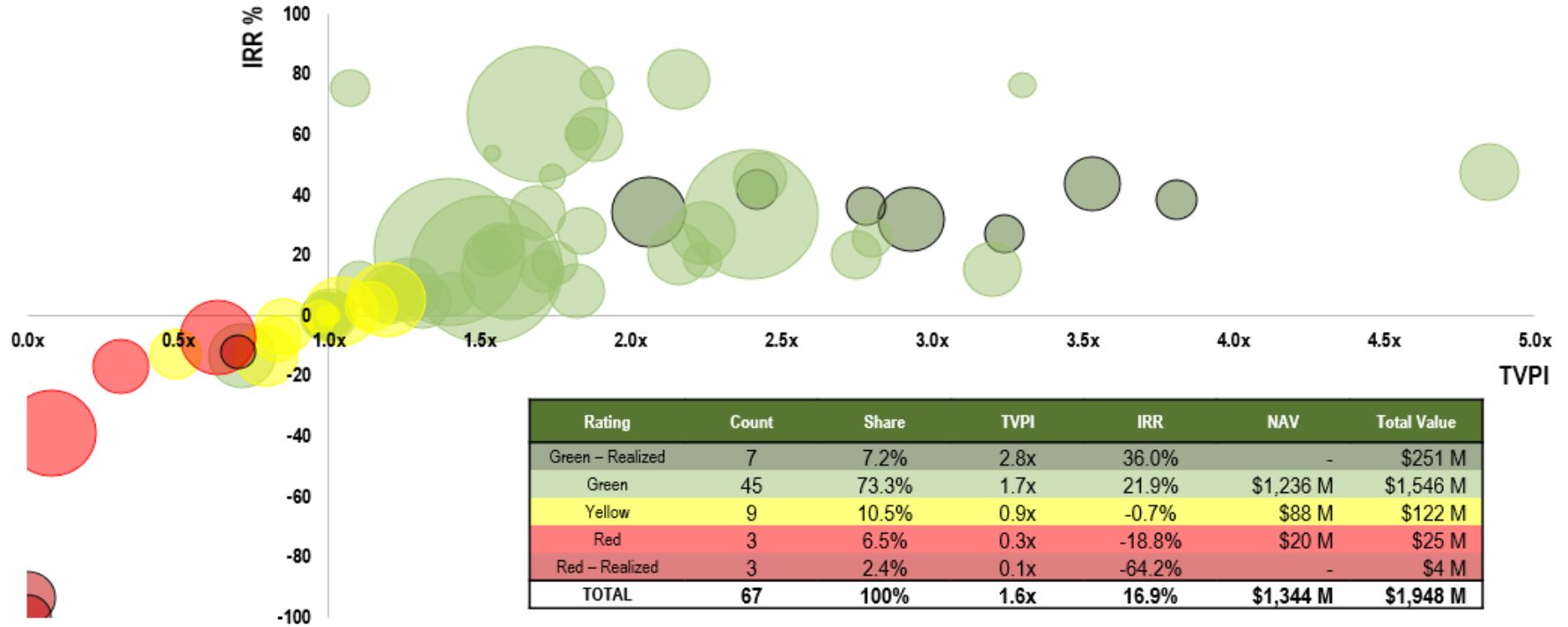
Co-Investment Program (June 30, 2021)

Co-Investment Commitments & Calls Vs. NAV and Distributions
\$ Millions



Private Equity Program Overview

Co-Investment Qualitative Ratings (March 31, 2021)



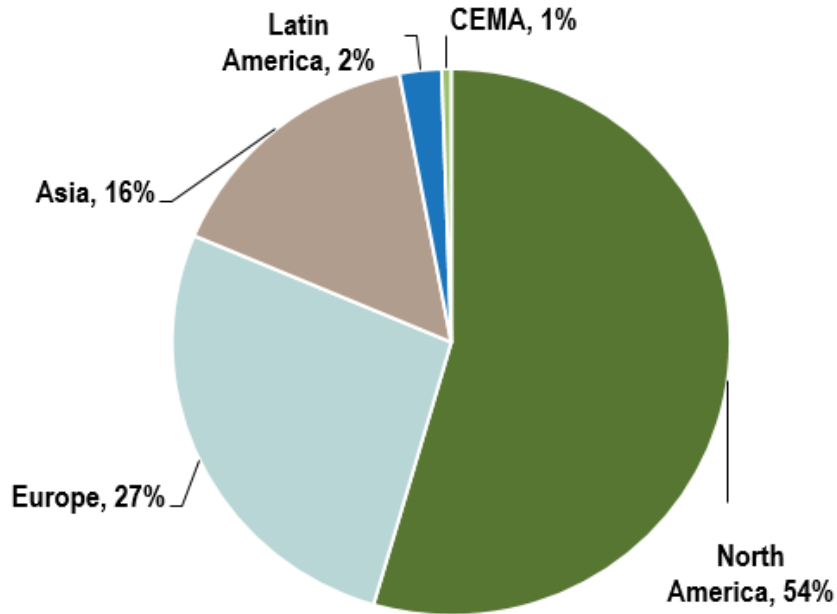
● Green - Realized ● Green ● Yellow ● Red ● Red - Realized

Private Equity Program Overview

Diversification Metrics

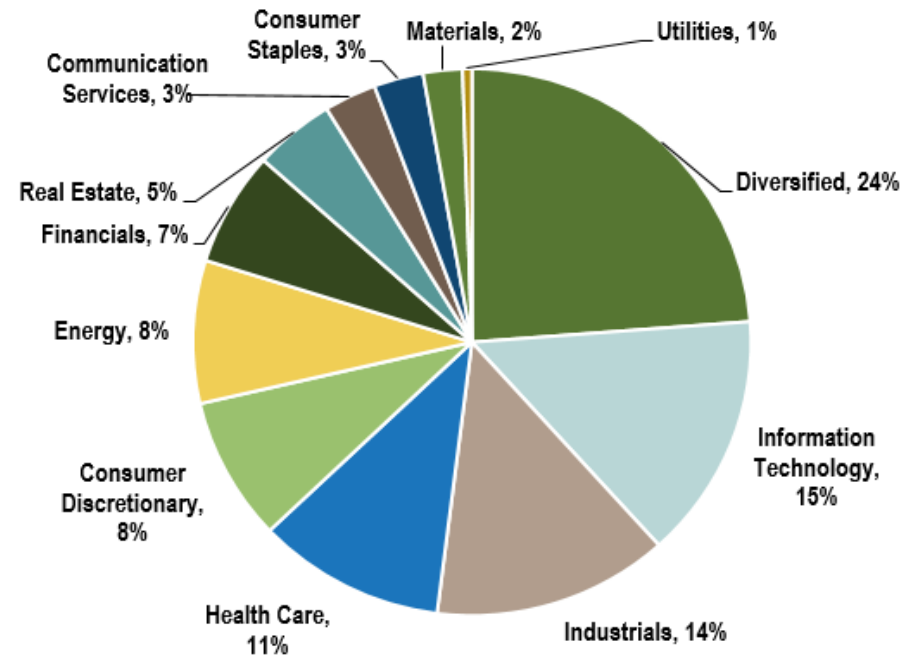
NAV by Geography

Guideline: US ≥ 50%



NAV by Sector

Guideline: < 20%



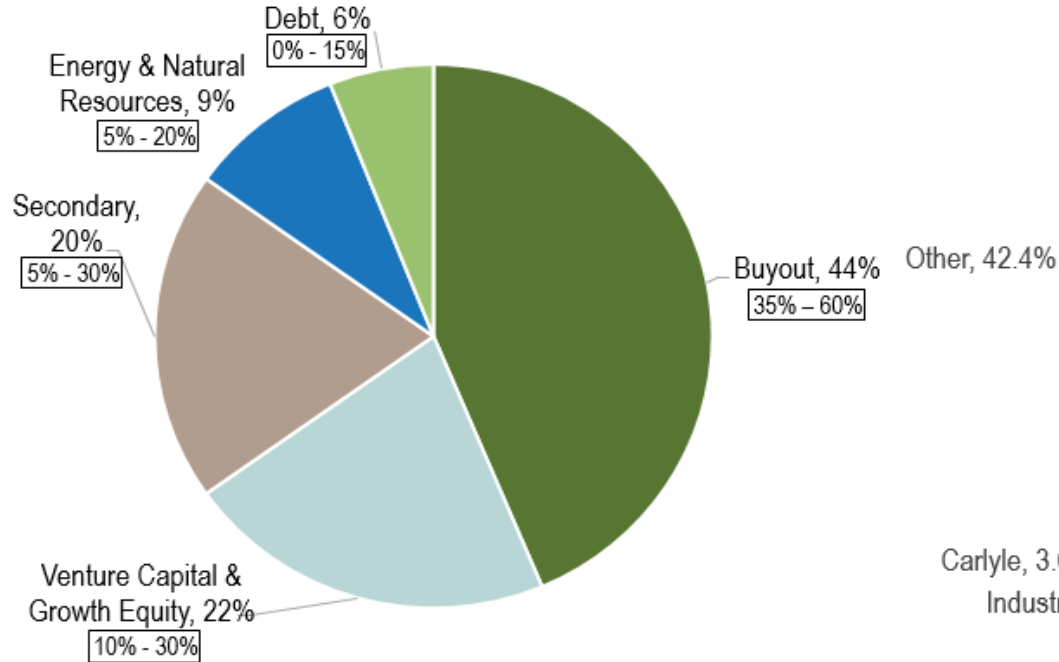
Private Equity Program Overview



Diversification Metrics

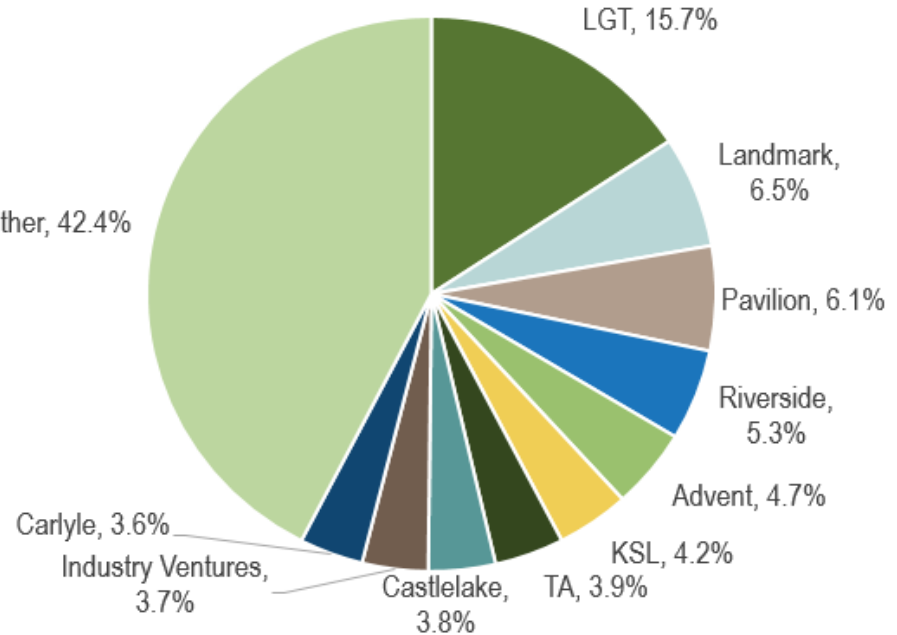
NAV by Strategy

Guideline: Ranges Defined in Boxes



Economic Exposure by Manager

Guideline: < 20%



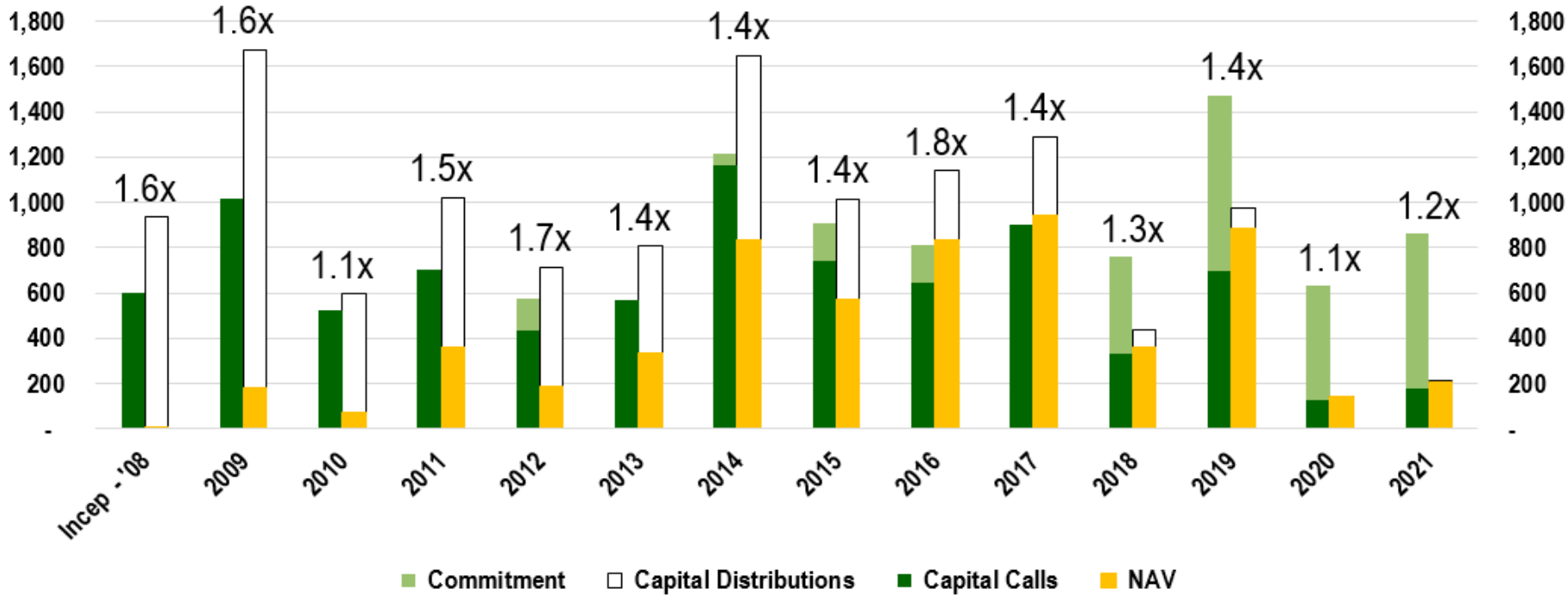
Private Equity Program Overview



Portfolio Diversification by Fiscal Year

Commitments & Calls Vs. NAV and Distributions

\$ Millions



Private Equity Program Overview

Goals and Objectives for Fiscal Years 2020 & 2021



FY21

- Execute on Tactical plan
- Process & Procedures Manual
- Hire Senior Associate Position

FY22

- Execute on Tactical plan
- Sector Focused Commitments
- European Portfolio Review

Aksia TorreyCove Partners LLC

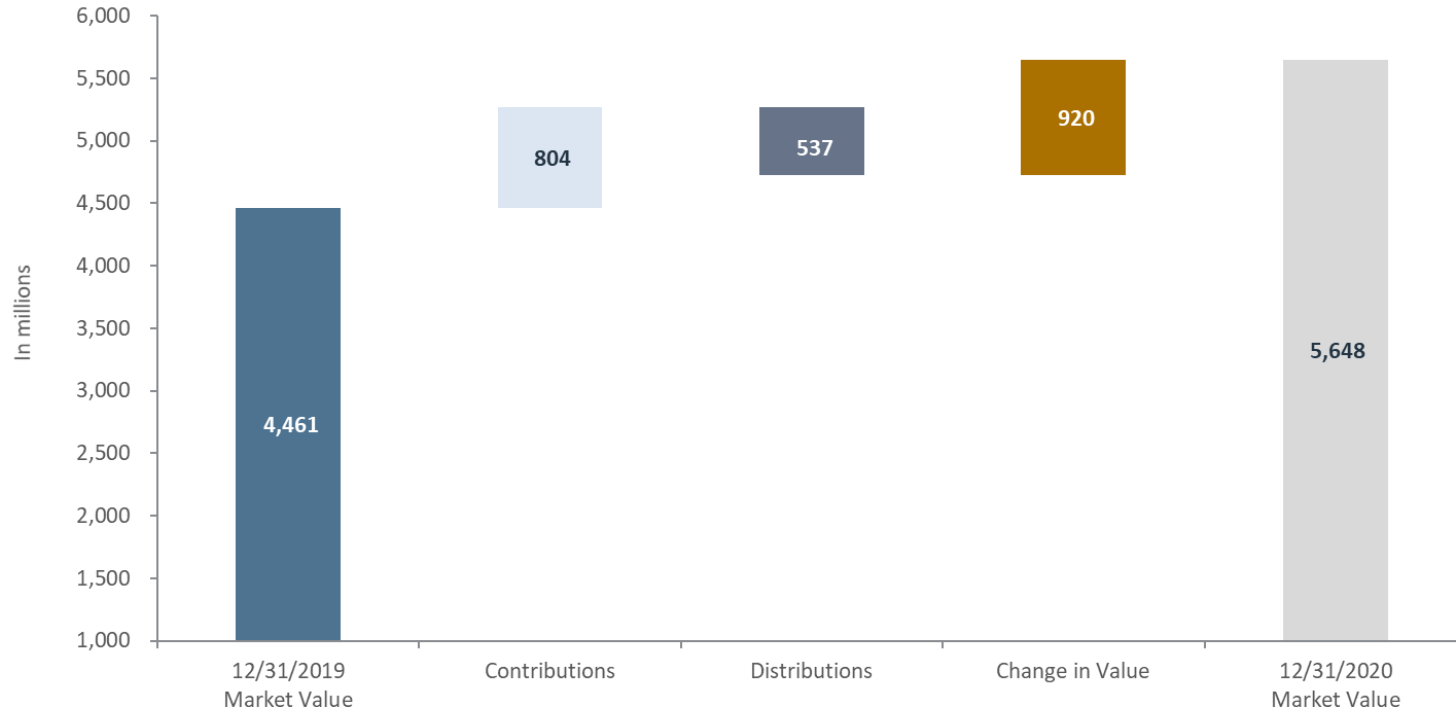
Employees Retirement System of Texas

Private Equity Program Review & Market Outlook



PERFORMANCE STATISTICS (*in millions*)

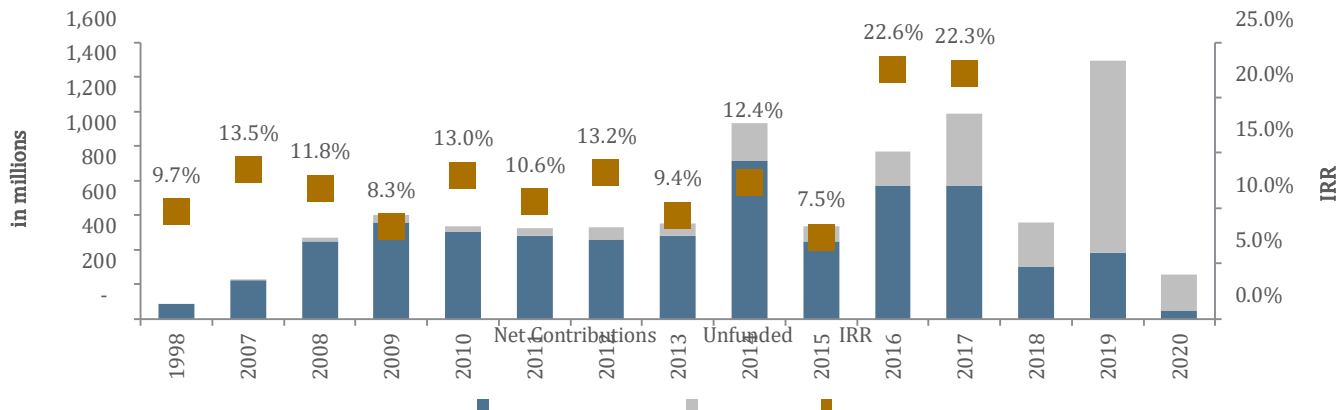
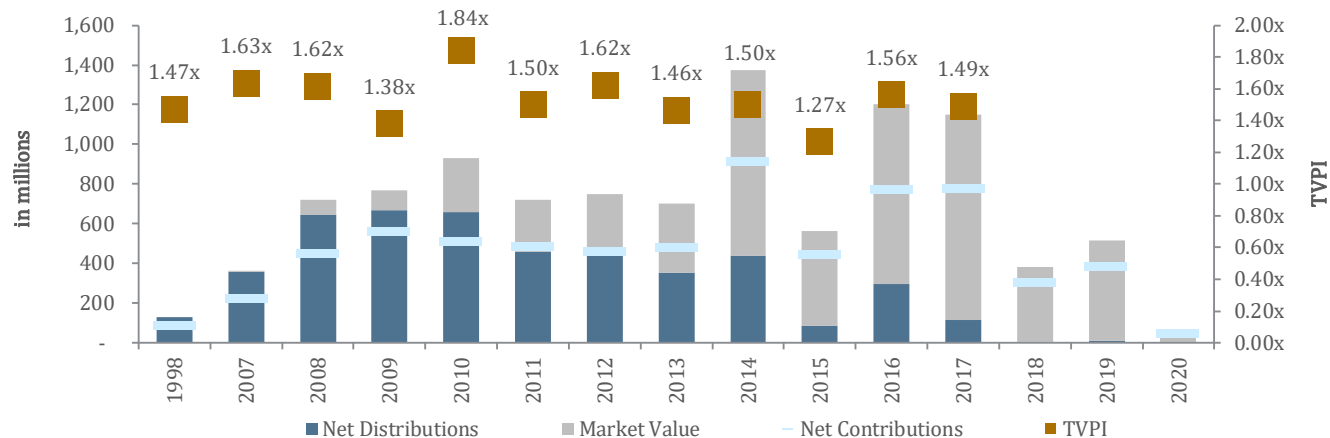
| | Dec-2019 | Mar-2020 | Jun-2020 | Sept-2019 | Dec-2020 | Change (quarter) | Change (annual) | Dec-2020 Active | Dec-2020 Liquidated |
|------------------------------------|----------|----------|----------|-----------|-----------------|------------------|-----------------|-----------------|---------------------|
| Committed Capital: | 9,131.2 | 9,469.4 | 9,588.8 | 9,689.2 | 9,979.4 | 3.0% | 9.3% | 8,909.1 | 1,070.4 |
| Unfunded Capital: | 2,981.4 | 3,147.1 | 3,138.6 | 3,069.7 | 3,087.0 | 0.6% | 3.5% | 3,087.0 | - |
| Net Contributed Capital: | 6,102.4 | 6,262.1 | 6,393.1 | 6,581.3 | 6,864.4 | 4.3% | 12.5% | 5,815.2 | 1,049.3 |
| Net Distributed Capital: | 4,185.8 | 4,300.6 | 4,346.3 | 4,477.2 | 4,680.7 | 4.5% | 11.8% | 3,210.9 | 1,469.9 |
| Recallable Capital: | 978.5 | 976.8 | 985.8 | 1,004.5 | 1,020.6 | 1.6% | 4.3% | 1,098.8 | (78.2) |
| Fair Market Value: | 4,460.9 | 4,002.6 | 4,378.0 | 4,743.5 | 5,648.5 | 19.1% | 26.6% | 5,648.5 | - |
| Net Gain / (Loss): | 2,544.3 | 2,041.0 | 2,331.2 | 2,639.3 | 3,464.8 | 31.3% | 36.2% | 3,044.2 | 420.6 |
| Total Value | 8,646.7 | 8,303.2 | 8,724.3 | 9,220.6 | 10,329.2 | 12.0% | 19.5% | 8,859.3 | 1,469.9 |
| Total Exposure | 7,442.3 | 7,149.7 | 7,516.7 | 7,813.1 | 8,735.4 | 11.8% | 17.4% | 8,735.4 | - |
| Distributed to Paid-In (DPI): | 0.69x | 0.69x | 0.68x | 0.68x | 0.68x | 0.00x | 0.00x | 0.55x | 1.40x |
| Total Value to Paid-In (TVPI): | 1.42x | 1.33x | 1.36x | 1.40x | 1.50x | 0.10x | 0.09x | 1.52x | 1.40x |
| Net Internal Rate of Return (IRR): | 11.7% | 9.7% | 10.3% | 10.9% | 12.5% | 1.7% | 0.9% | 12.8% | 11.7% |



| | 1-YEAR | 3-YEAR | 5-YEAR | 10-YEAR | INCEPTION |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| Program IRR | 20.0% | 11.3% | 13.7% | 13.2% | 12.5% |
| S&P 1500* | 16.4% | 11.8% | 12.9% | 11.7% | 11.4% |
| <i>Difference</i> | <i>3.7%</i> | <i>-0.5%</i> | <i>0.8%</i> | <i>1.5%</i> | <i>1.2%</i> |
| MSCI ACWI (+ 300 bps)* | 20.4% | 13.7% | 15.8% | 13.0% | 12.7% |
| <i>Difference</i> | <i>-0.3%</i> | <i>-2.4%</i> | <i>-2.0%</i> | <i>0.2%</i> | <i>-0.2%</i> |

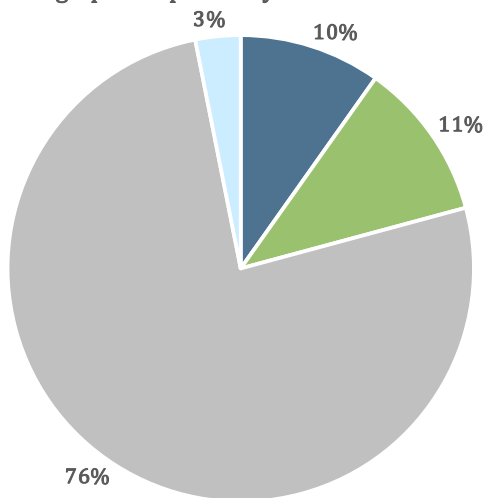
| | | TVPI | IRR | COMMITTED | FMV | EXPOSURE |
|------------------|--------------------|-------|--------|-----------|-------|----------|
| STRATEGY | Buyout | 1.49x | 12.0% | 46.5% | 44.6% | 41.3% |
| | Secondaries | 1.57x | 19.1% | 20.7% | 18.0% | 23.4% |
| | Venture / Growth | 1.70x | 14.7% | 16.1% | 20.7% | 18.1% |
| | Real Assets | 1.17x | 3.9% | 8.0% | 8.9% | 7.9% |
| | Debt | 1.44x | 8.7% | 5.9% | 6.2% | 5.8% |
| | Fund of Funds | 1.37x | NM | 2.8% | 1.6% | 3.4% |
| GEOGRAPHY | North America | 1.47x | 12.1% | 48.6% | 43.9% | 44.3% |
| | Global | 1.76x | 18.4% | 19.9% | 21.6% | 23.2% |
| | Europe | 1.49x | 12.0% | 17.4% | 14.4% | 15.8% |
| | Asia Pacific | 1.44x | 10.9% | 12.1% | 17.8% | 15.1% |
| | Latin America | 0.91x | -1.9% | 1.9% | 2.2% | 1.7% |
| STRUCTURE | Primary Fund | 1.50x | 11.8% | 63.0% | 57.8% | 57.3% |
| | Secondaries Fund | 1.61x | 19.1% | 18.1% | 16.4% | 20.3% |
| | Managed Account | 1.54x | 13.9% | 7.0% | 11.1% | 8.8% |
| | Co-Investment | 1.54x | 14.0% | 5.5% | 9.3% | 6.3% |
| | Fund of Funds | 1.24x | NM | 4.0% | 2.7% | 4.9% |
| | Co-Investment Fund | 1.12x | 3.3% | 2.1% | 2.8% | 2.4% |
| | Secondary Interest | 0.21x | -26.0% | 0.3% | 0.0% | 0.0% |

Vintage Year Performance



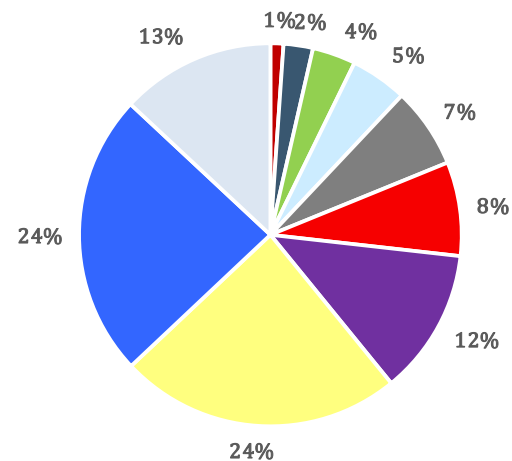
Co-Investment Portfolio Construction

Geographic Exposure by Fair Market Value



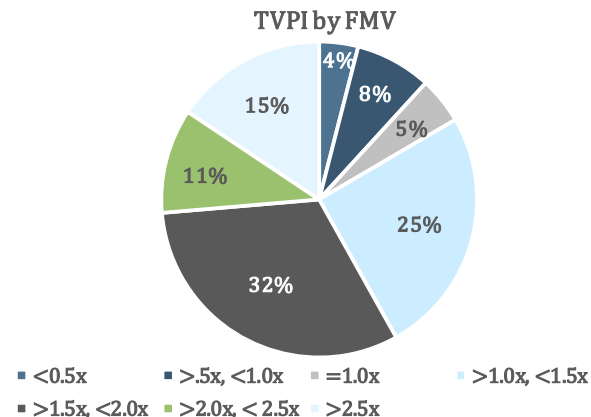
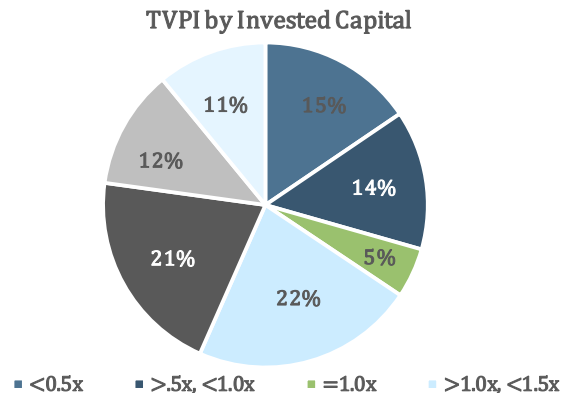
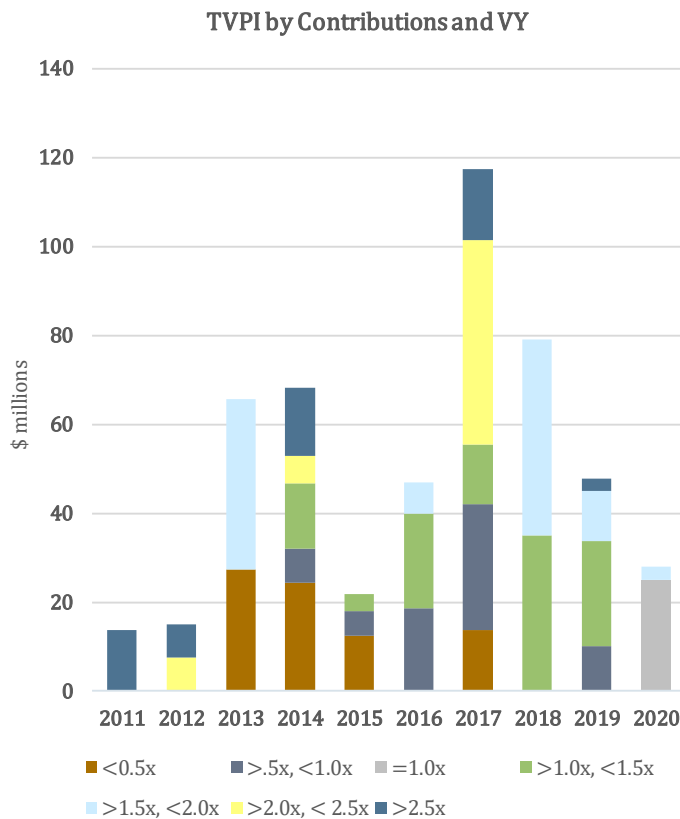
■ Asia Pacific
 ■ Europe
 ■ North America
 ■ Global

Sector Exposure by Fair Market Value



■ Consumer Staples
 ■ Real Estate
 ■ Energy
 ■ Consumer Discretionary
 ■ Materials
 ■ Industrials
 ■ Financials
 ■ Information Technology
 ■ Health Care

Co-Investment Performance



FY 21 Execution

- The FY 21 Tactical Plan was executed in line the framework presented at the beginning of the fiscal year, despite doing so from a totally virtual work environment.

Performance

- Long term performance remains attractive, and the portfolio has rebounded strongly from near term volatility driven by the global Covid pandemic.

Portfolio Construction

- The portfolio is prudently diversified with appropriate guidelines in place as a framework for future decisions.

Co-investment

- The co-investment program is an important tool to facilitate capital deployment at greater scale, allow for tactical shifts, and enhance net returns.

Market Conditions

- As mentioned last year, the global Covid pandemic is an unprecedented event in our lifetime. Accordingly, market volatility and broad economic uncertainty are likely to be pervasive for some time. As we have advocated in prior crises, patience, flexibility, commitment to the asset class, and consistent deployment will yield long term benefits.

Questions?

Proposed Private Equity Annual Tactical Plan for Fiscal Year 2022 – (Action)

Ricky Lyra, Director – ERS Private Equity

Private Equity FY22 Tactical Plan



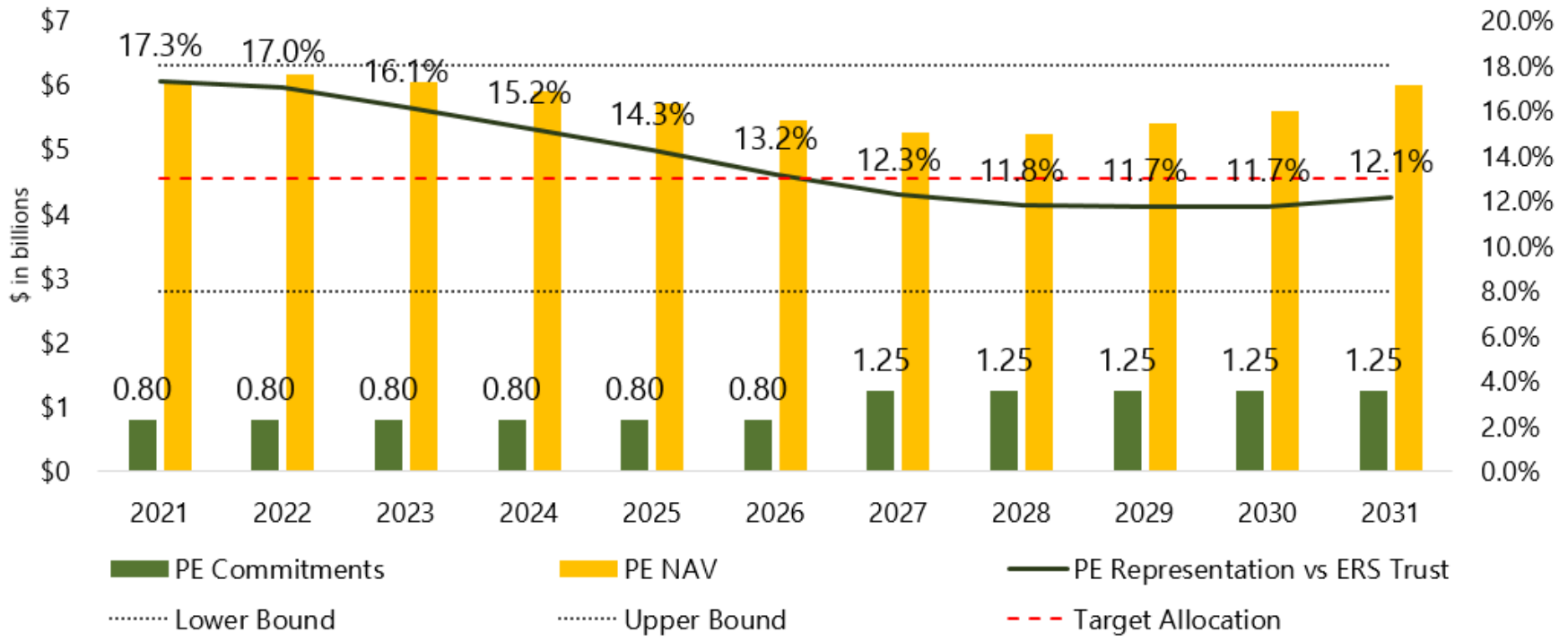
IAC and Board Approval Request

- **Review and consideration of ERS Private Equity Annual Tactical Plan for FY22:**
 - Propose to invest in 8 to 12 new fund commitments and 6 to 12 opportunistic co-investments totaling \$800.0 million
 - Commitment target range +/- 25% (\$600M – 1,000M)

Private Equity FY22 Tactical Plan



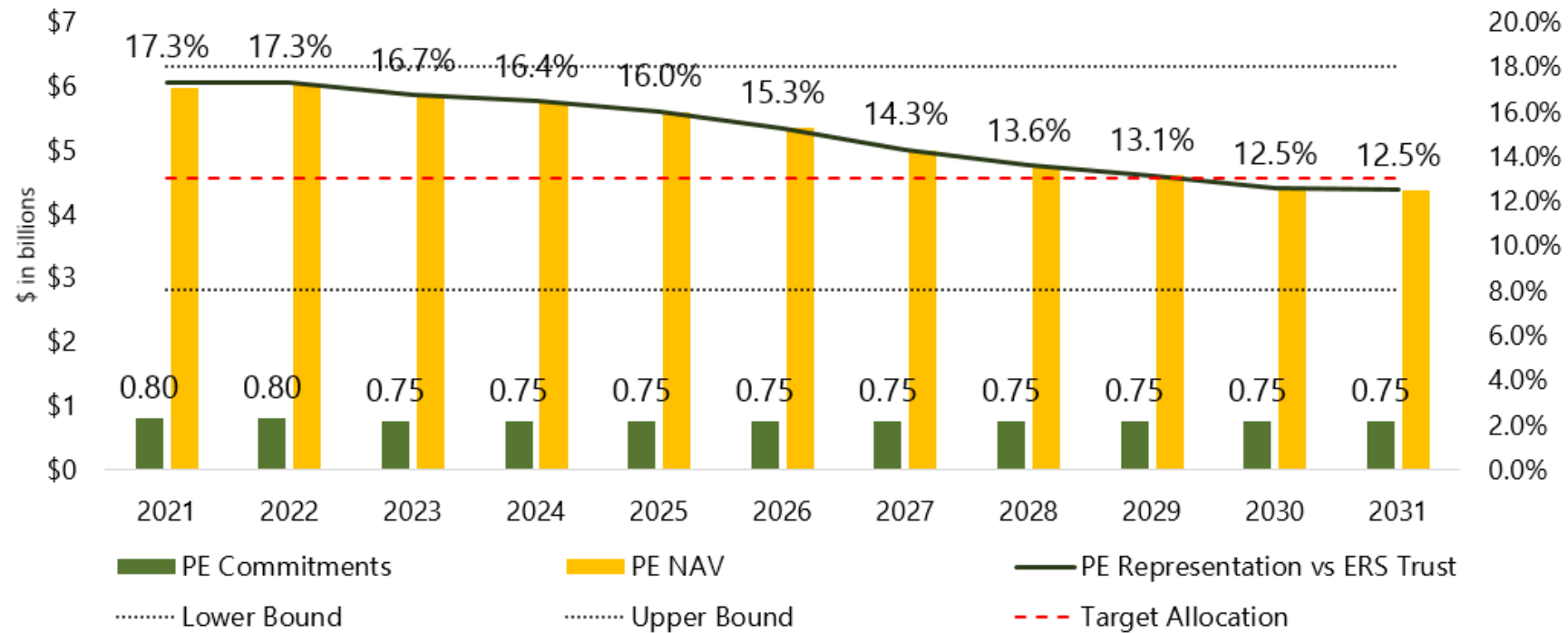
3.5% Yearly ERS Trust Growth



Private Equity FY22 Tactical Plan



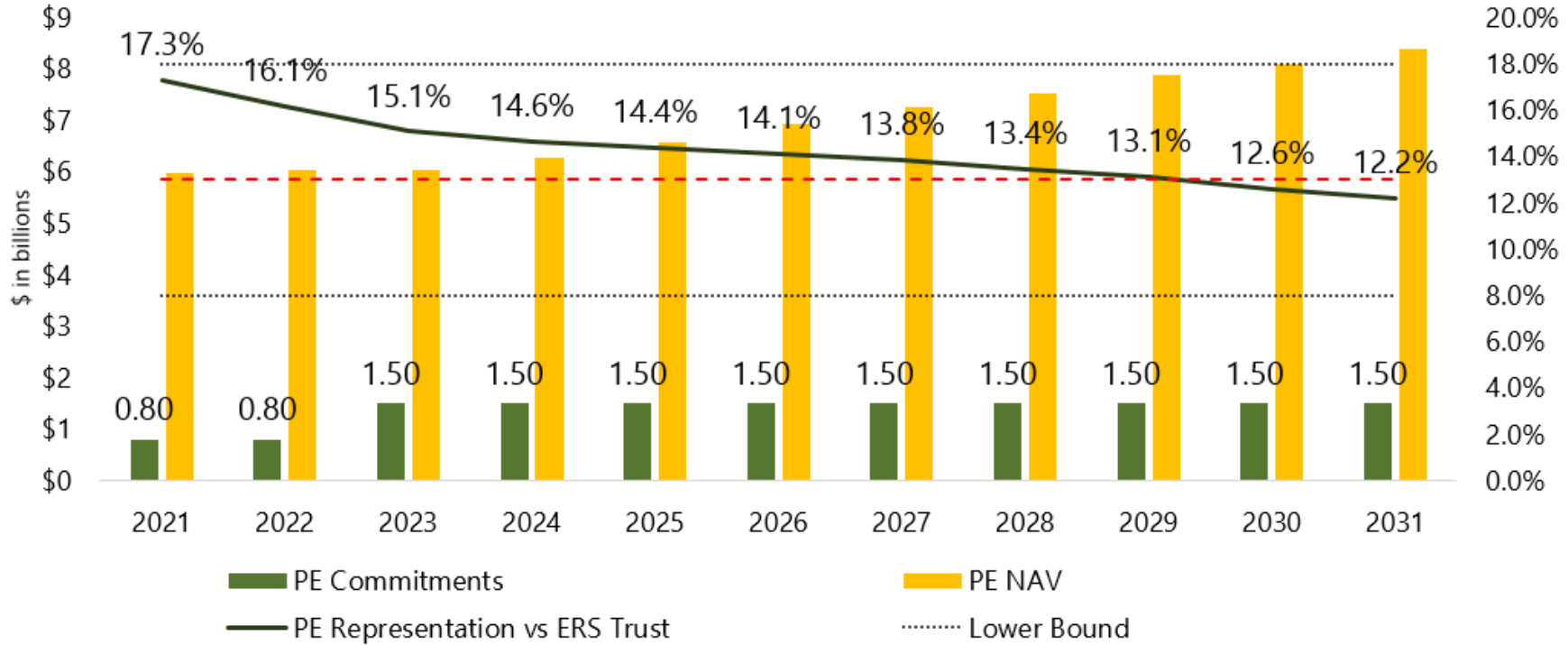
Sensitivity Analysis – 0% ERS Trust Growth



Private Equity FY22 Tactical Plan



Sensitivity Analysis – 7% ERS Trust Growth



Questions?
Action Item

Public Agenda Item #18

*Consideration of Reappointment of Investment Advisory
Committee Member – (Action – Board Only)*

August 25, 2021

Tom Tull, CFA, Chief Investment Officer

Investment Advisory Committee



Skills Assessment

| | Term Expiration | Investment Experience | Global Equity | Fixed Income | Private Equity | Real Estate | Hedge Funds | Infrastructure | Derivatives |
|------------------------------------------------------------------------------------------------------|-----------------|-----------------------|---------------|--------------|----------------|-------------|-------------|----------------|-------------|
| IAC Chair, Bob Alley, CFA Retired from AIM Advisors, Inc. as Chief Fixed Income Officer | 8/31/2021 | 44 years | X | X | X | | | | |
| IAC Vice-Chair, Gene L. Needles, Jr. Chairman and CEO Resolute Investment Management | 5/31/2023 | 26 years | X | X | X | X | X | | X |
| Caroline Cooley Managing Partner – Hedge Funds Crestline Investors, Inc. | 12/31/2022 | 35 years | | X | | | X | | X |
| Jim Hille, CFA, CAIA CIO Texas Christian University Endowment | 8/31/2023 | 28 years | X | X | X | X | X | | |
| Ken Mindell Sr. VP, Treasurer & Director of Investments Rosewood Management Corporation | 5/31/2022 | 39 years | X | X | X | X | X | | X |
| Laurie Dotter Retired from Transwestern Corporation Properties as President | 5/31/2022 | 36 years | | | | X | | X | |
| Milton Hixson, CPA, CFP CEO FMP Wealth Advisors | 3/31/2023 | 47 years | X | X | X | X | X | X | |

Questions?
Action Item (Board Only)

Public Agenda Item #19

*Election of Chair and Vice Chair of the ERS Investment Advisory Committee
for Fiscal Year 2021 – 2023 – (Action – IAC Only)*

August 25, 2021

Tom Tull, CFA, Chief Investment Officer

Questions?
Action Item (IAC Only)

Public Agenda Item #20

Chief Investment Officer Recognition

August 25, 2021

Porter Wilson, Executive Director

Chief Investment Officer Recognition



Tom Tull's many accomplishments in service to ERS include:

- 11 years on the Investment Advisory Committee
- 12 years on staff that include Director of Strategic Research 2009-2012, Interim CIO in 2012 and CIO 2013-2021
- Preservation and growth of assets in the ERS Trust Fund from \$19.8 billion in 2009 to \$34 billion in 2021
- A number of industry awards, including CIO of the Year by Institutional Investor, and the aiCIO Industry Innovation Award
- Service on a number of boards and committees, including FINRA
- Commitment to staff mentorship and support, and trustee education
- Outstanding leadership that led to greater internal management of the portfolio, generating excess returns while saving the Trust money



Questions?

Public Agenda Item #21

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

August 25, 2021

Public Agenda Item #22

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

August 25, 2021