Investment Management

Teacher Retirement System of Texas
1000 Red River Street
Austin, Texas
78701-2698
TEACHER RETIREMENT SYSTEM OF TEXAS MEETING
BOARD OF TRUSTEES
AND
INVESTMENT MANAGEMENT COMMITTEE

(Committee Chair and Members: Mr. Corpus, Chair; Mr. Hollingsworth; Mr. Moss, Ms. Sissney and Mr. Walls, Jr.)

All or part of the December 8, 2022, meeting of the TRS Investment Management Committee and Board of Trustees may be held by telephone or video conference call as authorized under Sections 551.130 and 551.127 of the Texas Government Code. The Board intends to have a quorum and the presiding officer of the meeting physically present at the following location, which will be open to the public during the open portions of the meeting: 1000 Red River, Austin, Texas 78701 in the TRS East Building, 5th Floor, Boardroom.

The open portions of the December 8, 2022, meeting are being broadcast over the Internet. Access to the Internet broadcast and agenda materials of the meeting is provided at www.trs.texas.gov. A recording of the meeting will be available at www.trs.texas.gov.

AGENDA
December 8, 2022 – 12:00 p.m.

1. Call roll of Committee members.

2. Consider the approval of the proposed minutes of the September 2022 committee meeting – Committee Chair.

3. CIO Update including Fleet Strategy; Talent Management; Accomplishments; Notices, Key Dates and Upcoming Events, and Market Update – Jase Auby.

4. Discuss the Third Quarter 2022 Performance Review – Steve Voss and Mike McCormick, AON.


NOTE: The Board of Trustees (Board) of the Teacher Retirement System of Texas will not consider or act upon any item before the Investment Management Committee (Committee) at this meeting of the Committee. This meeting is not a regular meeting of the Board. However, because the full Committee constitutes a quorum of the Board, the meeting of the Committee is also being posted as a meeting of the Board out of an abundance of caution.
Minutes of the Investment Management Committee
September 15, 2022

The Investment Management Committee of the Board of Trustees of the Teacher Retirement System of Texas met on Thursday, September 15, 2022, in the boardroom located on the Fifth Floor in the East Building of TRS’ offices located at 1000 Red River Street, Austin, Texas, 78701.

Committee members present:
Mr. David Corpus, Chair
Mr. Jarvis Hollingsworth
Mrs. Nanette Sissney
Mr. Robert H. Walls, Jr.

Other TRS Board Members present:
Mr. John Elliott
Mr. James D. Nance
Ms. Nanette Sissney

Others present:
Brian Guthrie, TRS
Andrew Roth, TRS
Heather Traeger, TRS
Jase Auby, TRS
Amanda Jenami, TRS
Don Green, TRS
Katy Hoffman, TRS
James Nield, TRS
Stephen Kim, TRS
Katherine Farrell, TRS
Suzanne Dugan, Cohen Milstein
Dr. Keith Brown, Board Advisor
Steve Vos, AON
Mike McCormick, AON.

Investment Management Committee Chair, Mr. David Corpus, called the meeting to order at 2:23 p.m.

1. Call roll of Committee members.

Ms. Farrell called the roll. A quorum was present, Mr. Moss was absent.

2. Consider the approval of the proposed minutes of the July 2022, Investment Management Committee meeting – Chair David Corpus.
On a motion by Mr. Hollingsworth, seconded by Ms. Sissney, the committee approved the proposed minutes for the July 2022 Investment Management Committee meeting as presented.

3. **CIO Update including Fleet Strategy; Talent Management; Accomplishments; Notices; Awards and Key Dates and Upcoming Events and Market Update – Jase Auby.**

Mr. Jase Auby noted the past quarter was tough for the Trust, ending June 30th with $184.4 billion. He reported that TRS received a credit rating of AAA from S&P, which helps the Fund achieve better funding levels as leverage for the Fund is implemented. He said attrition from a management perspective was the toughest challenge facing IMD, on record for a 14.9 percent attrition rate for the year. Mr. Auby reviewed the metrics noting for the first time there are positive alphas in all three of the major metrics: 66 basis points for alpha for total Trust on a rolling three-year basis, 77 basis points for private, and a positive 36 for public markets. Mr. Auby then provided the Committee an update on the market.

Mr. Auby presented his eleventh special topic to the Board regarding the concept of sentiment in TRS investment processes.

4. **Discuss the Second Quarter 2022 Performance Review – Steve Voss and Mike McCormick, Aon**

Mr. Mike McCormick began by noting it has been a difficult quarter, as well as the trailing one-year period. He noted the real return portfolio has done well, up almost 26 percent. He said with rates rising and equity markets falling creates a headwind for that part of the portfolio. He noted the real return and private asset components of the portfolio are working as a backstop to maintain the return of the portfolio at a better level considering the environment. He said over the last 12 - 18 months the return differential between private and public assets has been very meaningful. He reviewed the asset allocation of the Trust relative to the policy target. He said the portfolio is fairly in line with the policy targets, as well as the long-term target. He said the largest differential was an underweight in long Treasuries which were offset by an overweight with absolute returns. He said considering the Trust was down 2.3 percent while stocks were down 16.5 percent and US bond market down 15.3 percent really showed the benefits of diversification.

5. **Semi-annual Risk Report – James Nield and Stephen Kim.**

Mr. James Nield began by noting all eight risk metrics were in compliance. He provided additional commentary on four of these metrics: asset allocation, drawdown risk, liquidity, and counterparty risk. Mr. Stephen Kim reviewed one of the foundational tools to manage drawdown risk of the Trust is scenario analysis. He said the scenario analysis attempts to find weaknesses and strengths of the portfolio by taking current holdings through historical and hypothetical scenarios, stress tests, to ensure the Trust is prepared. He said another use of stress testing is to manage the Trust liquidity. He reported this past quarter did not end up straining the Trust liquidity, there is still 4.7 times the source of liquidity. He noted the liquidity risk was updated to use March 2020 rather than October 2008 as the worst rolling month.
Mr. Nield provided an update on the counterparties TRS interacts with on a daily basis. He reviewed the four major types of categories: the futures clearing merchants, over the counter counterparties, securities lending agent and custodian and repurchase counterparties. Mr. Nield concluded by stating there was an underweight investment exposure in the second quarter, primarily global equities which proved beneficial. He said the overweight in private equity was offset by an underweight in public equity.

There being no more business before the Investment Management Committee, the committee adjourned at 3:17 p.m.

Approved by the Investment Management Committee of the Board of Trustees of the Teacher Retirement System of Texas on December __ 2022.

______________________________    _________________
Katherine H. Farrell        Date
Secretary to the Board of Trustees
Teacher Retirement Systems of Texas
CIO Update

IMD at a Glance

Priorities

• **Performance.** As of 9/30/2022, Trust value is $173.3 billion with a one-year absolute return of -9.9% and 40 bp of excess return

• **Private Markets.** Private Markets currently are 42% of the Trust versus a neutral target of 35%

• **Alpha.** Return of active management and fundamental investing

• **Summits.** Hosted Strategic Partnership Network (SPN) Public Summit in New York City and Legal Summit in Austin

• **Annual Planning.** Engaged in annual priority-setting and capital-planning processes in preparation for 2023

<table>
<thead>
<tr>
<th>Event</th>
<th>Location</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMD Town Hall</td>
<td>Austin, TX</td>
<td>February 3, 2023</td>
</tr>
<tr>
<td>TRS Emerging Manager Conference</td>
<td>Virtual</td>
<td>February 22, 2023</td>
</tr>
<tr>
<td>Council of Institutional Investors (CII) Spring Conference</td>
<td>Washington, DC</td>
<td>March 6-8, 2023</td>
</tr>
</tbody>
</table>

Key Dates and Upcoming Events

<table>
<thead>
<tr>
<th>Snapshot as of November 2022</th>
<th>Activity</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMD FTEs 216</td>
<td>Hired</td>
<td>32</td>
<td>30</td>
<td>13</td>
</tr>
<tr>
<td>Shared-Services 21</td>
<td>Recruiting</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Contractors 15</td>
<td>Pipeline</td>
<td>0</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Secondees 5</td>
<td></td>
<td>32</td>
<td>31</td>
<td>25</td>
</tr>
</tbody>
</table>

Attrition Trend 2018 – 2022 (As of November 2022)

<table>
<thead>
<tr>
<th>Year</th>
<th>YTD Actual</th>
<th>Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>6.8%</td>
<td>1.3%</td>
</tr>
<tr>
<td>2019</td>
<td>5.3%</td>
<td>10.2%</td>
</tr>
<tr>
<td>2020</td>
<td>5.9%</td>
<td>14.5%</td>
</tr>
<tr>
<td>2021</td>
<td>11.5%</td>
<td>11.5%</td>
</tr>
<tr>
<td>2022</td>
<td>14.5%</td>
<td>10.2%</td>
</tr>
</tbody>
</table>
### CIO Update

**Metrics Reporting – As of September 30, 2022**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Objective</th>
<th>Target</th>
<th>Q4 2021</th>
<th>Q1 2022</th>
<th>Q2 2022</th>
<th>Q3 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Trust Excess Return</td>
<td>Return in excess of the benchmark return for the Total Trust (3 Year Rolling)</td>
<td>+100 bp</td>
<td>+10 bp</td>
<td>+33 bp</td>
<td>+66 bp</td>
<td>+36 bp</td>
</tr>
<tr>
<td>Private Markets Excess Return</td>
<td>Return in excess of the benchmark return for Private Markets investments (3 Year Rolling)</td>
<td>+155 bp</td>
<td>+174 bp</td>
<td>+127 bp</td>
<td>+77 bp</td>
<td>-2 bp</td>
</tr>
<tr>
<td>Active Public Markets Excess Return</td>
<td>Return in excess of the benchmark return for Active Public Markets investments (3 Year Rolling)</td>
<td>+100 bp</td>
<td>-36 bp</td>
<td>-14 bp</td>
<td>+36 bp</td>
<td>+23 bp</td>
</tr>
<tr>
<td>Principal Investments</td>
<td>Percent of portfolio capital plan in principal investments approved (cumulative year-to-date)¹</td>
<td>2021: 42% 2022: 42%</td>
<td>2021: 52%</td>
<td>YTD: 45%</td>
<td>YTD: 36%</td>
<td>YTD: 40%</td>
</tr>
<tr>
<td>Public Equity Allocation</td>
<td>Percent of internal public equity allocation</td>
<td>45%</td>
<td>51%</td>
<td>52%</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Source: State Street Bank, TRS IMD

¹ – Calculation represents approved principal investments (PI) in relation to approved portfolio (PI and Fund investments)

² – Estimated net fee savings includes management fees only and is presented net of inception to date marginal direct and overhead costs attributed to employees hired as part of the Building the Fleet initiative. CY2021 estimated net fee savings includes any cumulative prior period adjustments.
Teacher Retirement System of Texas
Performance Review: Third Quarter 2022

Investment advice and consulting services provided by Aon Investments USA Inc., an Aon Company

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• Challenges in the global investment environment have been both strong and persistent all year so far on the back of rising rates, soaring inflation and geopolitical tensions
• Global equities declined 6.6% for the quarter and 14% for the trailing year
• U.S. Treasury yields saw notable increases across the maturities which moved the yield curve upwards over the quarter. The 10-year Treasury yield was up 85bps to 3.83%, and the 30-year Treasury yield was up 65bps to 3.79% over the quarter.
• TRS returned -5.5% for the quarter which was 0.5 percentage points below its benchmark
  − Underperformance at the asset class level for Global Equity and Real Estate were the primary drivers for relative results.
• For the trailing twelve months, TRS returned -9.9% versus the benchmark return of -10.3%
  − Outperformance from the Stable Value and Risk Parity asset classes were the primary drivers of relative performance
1. Market Summary – Third Quarter 2022

<table>
<thead>
<tr>
<th></th>
<th>Third Quarter</th>
<th>YTD</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global Equity:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TF USA Benchmark</td>
<td>-4.5%</td>
<td>-24.7%</td>
<td>-17.6%</td>
<td>7.9%</td>
<td>8.8%</td>
<td>11.5%</td>
</tr>
<tr>
<td>MSCI EAFE + Canada Index</td>
<td>-0.3%</td>
<td>-26.3%</td>
<td>-24.0%</td>
<td>-1.2%</td>
<td>-0.4%</td>
<td>3.6%</td>
</tr>
<tr>
<td>MSCI Emerging Markets Index</td>
<td>-11.6%</td>
<td>-27.2%</td>
<td>-28.1%</td>
<td>-2.0%</td>
<td>-1.8%</td>
<td>1.1%</td>
</tr>
<tr>
<td>HFRI Fund of Funds Composite Index</td>
<td>-0.2%</td>
<td>-6.8%</td>
<td>-6.4%</td>
<td>4.2%</td>
<td>3.1%</td>
<td>3.5%</td>
</tr>
<tr>
<td>State Street Private Equity Index (quarter lagged)</td>
<td>4.9%</td>
<td>0.4%</td>
<td>0.2%</td>
<td>19.7%</td>
<td>16.8%</td>
<td>14.2%</td>
</tr>
<tr>
<td>Global Equity Policy Benchmark</td>
<td>-6.6%</td>
<td>-18.5%</td>
<td>-14.0%</td>
<td>7.0%</td>
<td>7.1%</td>
<td>8.5%</td>
</tr>
<tr>
<td><strong>Stable Value:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bloomberg Barclays Long Treasury Index</td>
<td>-9.6%</td>
<td>-28.8%</td>
<td>-25.6%</td>
<td>-8.5%</td>
<td>-1.8%</td>
<td>0.5%</td>
</tr>
<tr>
<td>HFRI Fund of Funds Conservative Index</td>
<td>0.3%</td>
<td>1.3%</td>
<td>0.6%</td>
<td>4.7%</td>
<td>3.8%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Absolute Return Benchmark</td>
<td>1.6%</td>
<td>3.9%</td>
<td>4.9%</td>
<td>3.4%</td>
<td>3.8%</td>
<td>3.1%</td>
</tr>
<tr>
<td>90 Day U.S. Treasury Bill</td>
<td>0.5%</td>
<td>0.6%</td>
<td>0.6%</td>
<td>0.6%</td>
<td>1.1%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Stable Value Policy Benchmark</td>
<td>-7.3%</td>
<td>-22.9%</td>
<td>-21.0%</td>
<td>-5.3%</td>
<td>-0.2%</td>
<td>1.4%</td>
</tr>
<tr>
<td><strong>Real Return:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bloomberg Barclays U.S. TIPS Index</td>
<td>-5.1%</td>
<td>-13.6%</td>
<td>-11.6%</td>
<td>0.8%</td>
<td>2.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>NAREIT ODCE (quarter lagged)</td>
<td>4.5%</td>
<td>20.6%</td>
<td>28.3%</td>
<td>11.7%</td>
<td>9.5%</td>
<td>10.2%</td>
</tr>
<tr>
<td>Energy, Natural Resources &amp; Infrastructure Benchmark</td>
<td>1.9%</td>
<td>14.3%</td>
<td>17.6%</td>
<td>8.0%</td>
<td>7.8%</td>
<td>--</td>
</tr>
<tr>
<td>Goldman Sachs Commodities Index</td>
<td>-10.3%</td>
<td>21.8%</td>
<td>23.6%</td>
<td>12.2%</td>
<td>7.8%</td>
<td>-3.9%</td>
</tr>
<tr>
<td>Real Return Policy Benchmark</td>
<td>3.8%</td>
<td>18.8%</td>
<td>25.3%</td>
<td>10.8%</td>
<td>8.7%</td>
<td>8.0%</td>
</tr>
<tr>
<td><strong>Risk Parity:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Parity Benchmark</td>
<td>-10.8%</td>
<td>-26.3%</td>
<td>-25.2%</td>
<td>-3.2%</td>
<td>0.9%</td>
<td>2.9%</td>
</tr>
<tr>
<td>TRS Policy Benchmark</td>
<td>-5.0%</td>
<td>-14.5%</td>
<td>-10.3%</td>
<td>5.2%</td>
<td>5.7%</td>
<td>6.9%</td>
</tr>
</tbody>
</table>
2. Market Value Change

![Change in Market Value Graph]

**Summary of Cash Flow**

<table>
<thead>
<tr>
<th></th>
<th>1 Quarter</th>
<th>1 Year</th>
<th>3 Years</th>
<th>5 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Market Value</td>
<td>164,398,784,440</td>
<td>196,725,663,865</td>
<td>157,632,311,142</td>
<td>146,326,336,312</td>
</tr>
<tr>
<td>+ Additions / Withdrawals</td>
<td>-1,014,975,521</td>
<td>-4,295,242,090</td>
<td>-12,250,245,170</td>
<td>-20,516,899,312</td>
</tr>
<tr>
<td>+ Investment Earnings</td>
<td>-10,106,365,423</td>
<td>-18,154,198,271</td>
<td>27,895,377,524</td>
<td>47,468,005,496</td>
</tr>
<tr>
<td>= Ending Market Value</td>
<td>173,277,443,496</td>
<td>173,277,443,496</td>
<td>173,277,443,496</td>
<td>173,277,443,496</td>
</tr>
</tbody>
</table>
## 3. Asset Allocation Detail

<table>
<thead>
<tr>
<th>Investment Exposure</th>
<th>Market Value $ in millions) as of 9/30/2022</th>
<th>Interim Policy Target</th>
<th>Relative to Interim Policy Target</th>
<th>Long Term Policy Target</th>
<th>Long Term Policy Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>($ ) ( % )</td>
<td>($ ) (%)</td>
<td>(%)</td>
<td>($ ) (%)</td>
<td>(%)</td>
</tr>
<tr>
<td><strong>Total U.S.A.</strong></td>
<td>$26,488</td>
<td>15.3%</td>
<td>16.7%</td>
<td>-1.4%</td>
<td>18.0</td>
</tr>
<tr>
<td><strong>Non-U.S. Developed</strong></td>
<td>$19,587</td>
<td>11.3%</td>
<td>12.1%</td>
<td>-0.8%</td>
<td>13.0</td>
</tr>
<tr>
<td><strong>Emerging Markets</strong></td>
<td>$13,178</td>
<td>7.6%</td>
<td>8.3%</td>
<td>-0.7%</td>
<td>9.0</td>
</tr>
<tr>
<td><strong>Private Equity</strong></td>
<td>$31,426</td>
<td>18.1%</td>
<td>18.4%</td>
<td>-0.3%</td>
<td>14.0</td>
</tr>
<tr>
<td><strong>Global Equity</strong></td>
<td>$90,680</td>
<td>52.3%</td>
<td>55.5%</td>
<td>-3.2%</td>
<td>54.0</td>
</tr>
<tr>
<td><strong>Government Bonds</strong></td>
<td>$22,512</td>
<td>13.0%</td>
<td>14.8%</td>
<td>-1.8%</td>
<td>16.0</td>
</tr>
<tr>
<td><strong>Stable Value Hedge Funds</strong></td>
<td>$9,460</td>
<td>5.5%</td>
<td>4.6%</td>
<td>+0.9%</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Absolute Return</strong></td>
<td>$5,320</td>
<td>3.1%</td>
<td>0.0%</td>
<td>-1.5%</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Stable Value</strong></td>
<td>$37,292</td>
<td>21.5%</td>
<td>19.4%</td>
<td>+2.1%</td>
<td>21.0</td>
</tr>
<tr>
<td><strong>Real Estate</strong></td>
<td>$29,961</td>
<td>17.3%</td>
<td>15.7%</td>
<td>+1.6%</td>
<td>15.0</td>
</tr>
<tr>
<td><strong>Energy, Natural Resource and Inf.</strong></td>
<td>$11,389</td>
<td>6.6%</td>
<td>6.0%</td>
<td>+0.6%</td>
<td>6.0</td>
</tr>
<tr>
<td><strong>Commodities</strong></td>
<td>$373</td>
<td>0.2%</td>
<td>0.0%</td>
<td>+0.2%</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Real Return</strong></td>
<td>$41,724</td>
<td>24.1%</td>
<td>21.7%</td>
<td>+2.4%</td>
<td>21.0</td>
</tr>
<tr>
<td><strong>Risk Parity</strong></td>
<td>$11,240</td>
<td>6.5%</td>
<td>7.4%</td>
<td>-0.9%</td>
<td>8.0</td>
</tr>
<tr>
<td><strong>Risk Parity</strong></td>
<td>$11,240</td>
<td>6.5%</td>
<td>7.4%</td>
<td>-0.9%</td>
<td>8.0</td>
</tr>
<tr>
<td><strong>Cash</strong></td>
<td>$2,477</td>
<td>1.4%</td>
<td>2.0%</td>
<td>-0.6%</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Asset Allocation Leverage</strong></td>
<td>-$10,135</td>
<td>-5.9%</td>
<td>-6.0%</td>
<td>+0.2%</td>
<td>-6.0</td>
</tr>
<tr>
<td><strong>Net Asset Allocation</strong></td>
<td>-$7,658</td>
<td>-4.4%</td>
<td>-4.0%</td>
<td>-0.4%</td>
<td>-4.0</td>
</tr>
<tr>
<td><strong>Total Fund</strong></td>
<td>$173,277</td>
<td>100.0%</td>
<td>---</td>
<td>100.0%</td>
<td>---</td>
</tr>
</tbody>
</table>

Note: Asset allocation information shown above is based upon MOPAR reporting. The excess returns shown above may not be a perfect difference between the actual and benchmark returns due entirely to rounding. *Reverts to 9-19% on 7/31/23
4. Total TRS Performance Ending 9/30/2022

![Return Summary chart]

- Total Fund
- Total Fund Benchmark

Empower Results

Proprietary & Confidential
Investment advice and consulting services provided by Aon Investments USA Inc., an Aon Company.
5. Total Fund Attribution – One Quarter Ending 9/30/2022

Total Fund Performance

- Total Value Added: 0.47%
- Total Asset Allocation: 0.20%
- Total Security Selection Value Added: 0.71%

Total Fund vs. Total Fund Benchmark

- Total Fund Benchmark: -5.05%
- Total Fund: -5.52%
- Total Fund vs. Total Fund Benchmark: -0.47%

Total Asset Allocation: 0.20%

- Asset Allocation
  - 0.03%
  - 0.00%
  - 0.03%
  - 0.12%
  - 0.17%
  - 0.13%
  - 2.86%
  - 0.57%
  - 1.66%
  - -0.69%
  - -0.28%
  - -0.21%
  - -0.87%

Total Security Selection Value Added: 0.71%

- Security Selection Value Added
  - -0.71%
  - 0.01%
  - 0.03%
  - -0.02%
  - -0.01%
  - -0.12%
  - 0.54%
  - 2.86%
  - 0.57%
  - -1.66%
  - -0.69%
  - -0.28%
  - -0.21%
  - -0.87%

- Other
  - 0.04%

- Risk Parity
  - 0.00%

- Total U.S.A
  - -0.06%

- Risk Parity
  - 0.00%

- Total U.S.A
  - 0.01%

- Total U.S.A
  - 0.03%

- Total U.S.A
  - 0.07%

- Total U.S.A
  - 0.14%

- Total U.S.A
  - 0.03%

- Total U.S.A
  - 0.01%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%

- Total U.S.A
  - 0.00%
5. Total Fund Attribution – One Year Ending 9/30/2022

**Total Fund Performance**
- Total Fund Benchmark: -10.34%
- Total Fund: -9.94%
- Total Value Added: 0.40%

**Total Value Added: 0.40%**
- Asset Allocation: 1.04%
  - Other: 0.20%
- Security Selection Value Added: -0.84%

**Total Asset Allocation: 1.04%**
- Total U.S.A: -0.93%
- Non-U.S. Developed: -0.09%
- Emerging Markets: -0.60%
- Private Equity: -0.04%
- Long Treasuries: -2.11%
- Stable Value Hedge Funds: 0.22%
- Absolute Returns: 2.75%
- Cash Equivalents: -0.66%
- Real Estate: 0.33%
- Commodities: 0.17%
- ENRI: 0.11%
- Risk Parity: -0.20%
- Asset Allocation Leverage: 1.06%

**Total Security Selection Value Added: -0.84%**
- Long Treasuries: -0.66%
- Cash Equivalents: -0.33%
- Real Estate: -0.17%
- Commodities: 0.11%
- ENRI: 0.22%
- Risk Parity: 0.00%
- Asset Allocation Leverage: -0.20%

---

Proprietary & Confidential
Investment advice and consulting services provided by Aon Investments USA Inc., an Aon Company.
6. Risk Profile: Total Fund Risk-Return vs. Peers

Note: Public Plan peer group composed of 10 public funds with total assets in excess of $10B as of 9/30/2022 respectively for the periods above. An exhibit outlining the asset allocation of the peer portfolios is provided in the appendix of this report.
6. Risk Profile: Trailing 3-Year and 5-Year Risk Metrics Peer Comparison
### 7. IPS Stated Trust Return Objectives Ending 9/30/2022

<table>
<thead>
<tr>
<th></th>
<th>Five Years</th>
<th>Seven Years</th>
<th>Ten Years</th>
<th>Twenty Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Fund</strong></td>
<td>6.0%</td>
<td>7.5%</td>
<td>7.4%</td>
<td>7.8%</td>
</tr>
<tr>
<td><strong>Total Fund Benchmark</strong></td>
<td>5.7</td>
<td>7.1</td>
<td>6.9</td>
<td>7.5</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+0.3</td>
<td>+0.4</td>
<td>+0.5</td>
<td>+0.3</td>
</tr>
<tr>
<td><strong>Total Fund</strong></td>
<td>6.0%</td>
<td>7.5%</td>
<td>7.4%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Assumed Rate of Return</td>
<td>7.4</td>
<td>7.5</td>
<td>7.7</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-1.4</td>
<td>0.0</td>
<td>-0.3</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total Fund</strong></td>
<td>6.0%</td>
<td>7.5%</td>
<td>7.4%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Inflation + 5%</td>
<td>8.8</td>
<td>8.2</td>
<td>7.5</td>
<td>7.5</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-2.8</td>
<td>-0.7</td>
<td>-0.1</td>
<td>+0.3</td>
</tr>
</tbody>
</table>

**Note:** The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
8. Global Equity: Performance Summary Ending 9/30/2022

<table>
<thead>
<tr>
<th></th>
<th>Third Quarter</th>
<th>YTD</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Global Equity</strong></td>
<td>-7.3%</td>
<td>-19.0%</td>
<td>-15.2%</td>
<td>7.1%</td>
<td>6.5%</td>
<td>8.4%</td>
</tr>
<tr>
<td>Global Equity Benchmark</td>
<td>-6.6</td>
<td>-18.5</td>
<td>-14.0</td>
<td>7.8</td>
<td>7.1</td>
<td>8.5</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-0.7</td>
<td>-0.5</td>
<td>-1.2</td>
<td>-0.7</td>
<td>-0.6</td>
<td>-0.1</td>
</tr>
<tr>
<td><strong>Total U.S. Equity</strong></td>
<td>-4.8</td>
<td>-22.5</td>
<td>-15.7</td>
<td>7.1</td>
<td>7.5</td>
<td>10.2</td>
</tr>
<tr>
<td>Total U.S. Equity Benchmark</td>
<td>-4.5</td>
<td>-24.7</td>
<td>-17.6</td>
<td>7.9</td>
<td>8.8</td>
<td>11.5</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-0.3</td>
<td>+2.2</td>
<td>+1.9</td>
<td>-0.8</td>
<td>-1.3</td>
<td>-1.3</td>
</tr>
<tr>
<td><strong>Non-U.S. Equity</strong></td>
<td>-10.0</td>
<td>-26.9</td>
<td>-25.9</td>
<td>-0.9</td>
<td>-0.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Non-U.S. Benchmark</td>
<td>-10.1</td>
<td>-26.6</td>
<td>-25.6</td>
<td>-1.4</td>
<td>-0.8</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+0.1</td>
<td>-0.3</td>
<td>-0.3</td>
<td>+0.5</td>
<td>+0.3</td>
<td>+0.6</td>
</tr>
<tr>
<td><strong>Non-U.S. Developed</strong></td>
<td>-9.2</td>
<td>-27.0</td>
<td>-25.0</td>
<td>-1.2</td>
<td>-0.5</td>
<td>4.1</td>
</tr>
<tr>
<td>MSCI EAFE + Canada</td>
<td>-9.3</td>
<td>-26.3</td>
<td>-24.0</td>
<td>-1.2</td>
<td>-0.4</td>
<td>3.6</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+0.1</td>
<td>-0.7</td>
<td>-1.0</td>
<td>0.0</td>
<td>-0.1</td>
<td>+0.5</td>
</tr>
<tr>
<td><strong>Emerging Markets</strong></td>
<td>-11.2</td>
<td>-26.8</td>
<td>-27.4</td>
<td>-0.8</td>
<td>-0.6</td>
<td>2.2</td>
</tr>
<tr>
<td>MSCI Emerging Markets</td>
<td>-11.6</td>
<td>-27.2</td>
<td>-28.1</td>
<td>-2.0</td>
<td>-1.8</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+0.4</td>
<td>+0.4</td>
<td>+0.7</td>
<td>+1.2</td>
<td>+1.2</td>
<td>+1.1</td>
</tr>
</tbody>
</table>

*Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.*
8. Global Equity: Performance Summary Ending 9/30/2022 (cont’d)

<table>
<thead>
<tr>
<th></th>
<th>Third Quarter</th>
<th>YTD</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Public Equity</strong></td>
<td>-7.8%</td>
<td>-25.0%</td>
<td>-21.5%</td>
<td>2.5%</td>
<td>2.9%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Public Equity Benchmark</td>
<td>-7.6</td>
<td>-25.7</td>
<td>-22.0</td>
<td>2.8</td>
<td>3.4</td>
<td>6.3</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-0.2</td>
<td>+0.7</td>
<td>+0.5</td>
<td>-0.3</td>
<td>-0.5</td>
<td>-0.2</td>
</tr>
<tr>
<td><strong>Total Private Equity</strong></td>
<td>-6.5</td>
<td>-5.1</td>
<td>-0.6</td>
<td>18.0</td>
<td>15.5</td>
<td>15.1</td>
</tr>
<tr>
<td>Private Equity Benchmark</td>
<td>-4.9</td>
<td>-0.4</td>
<td>6.2</td>
<td>19.7</td>
<td>16.8</td>
<td>14.2</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-1.6</td>
<td>-4.7</td>
<td>-6.8</td>
<td>-1.7</td>
<td>-1.3</td>
<td>+0.9</td>
</tr>
</tbody>
</table>

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
### 9. Stable Value: Performance Summary Ending 9/30/2022

<table>
<thead>
<tr>
<th></th>
<th>Third Quarter</th>
<th>YTD</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Stable Value</strong></td>
<td>-6.0%</td>
<td>-18.6%</td>
<td>-16.6%</td>
<td>-2.8%</td>
<td>1.3%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Total Stable Value Benchmark</td>
<td>-7.3</td>
<td>-22.9</td>
<td>-21.0</td>
<td>-5.3</td>
<td>-0.2</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+1.3</td>
<td>+4.3</td>
<td>+4.4</td>
<td>+2.5</td>
<td>+1.5</td>
<td>+1.5</td>
</tr>
<tr>
<td><strong>Total Government Bonds</strong></td>
<td>-10.1</td>
<td>-29.5</td>
<td>-27.4</td>
<td>-9.0</td>
<td>-1.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Treasury Benchmark</td>
<td>-9.6</td>
<td>-28.8</td>
<td>-26.6</td>
<td>-8.5</td>
<td>-1.6</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-0.5</td>
<td>-0.7</td>
<td>-0.8</td>
<td>-0.5</td>
<td>0.0</td>
<td>+0.2</td>
</tr>
<tr>
<td><strong>Stable Value Hedge Funds</strong></td>
<td>1.5</td>
<td>6.4</td>
<td>8.2</td>
<td>8.6</td>
<td>6.6</td>
<td>5.8</td>
</tr>
<tr>
<td>Hedge Funds Benchmark</td>
<td>0.3</td>
<td>-1.3</td>
<td>-0.6</td>
<td>4.7</td>
<td>3.8</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+1.2</td>
<td>+7.7</td>
<td>+8.8</td>
<td>+3.9</td>
<td>+2.8</td>
<td>+2.1</td>
</tr>
<tr>
<td><strong>Absolute Return</strong></td>
<td>-0.1</td>
<td>-2.7</td>
<td>-2.6</td>
<td>5.9</td>
<td>6.4</td>
<td>7.7</td>
</tr>
<tr>
<td>Absolute Return Benchmark</td>
<td>1.6</td>
<td>3.9</td>
<td>4.9</td>
<td>3.4</td>
<td>3.8</td>
<td>3.1</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-1.7</td>
<td>-6.6</td>
<td>-7.5</td>
<td>+2.5</td>
<td>+2.6</td>
<td>+4.6</td>
</tr>
</tbody>
</table>

*Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.*
## 10. Real Return: Performance Summary Ending 9/30/2022

<table>
<thead>
<tr>
<th></th>
<th>Third Quarter</th>
<th>YTD</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Real Return</strong></td>
<td>2.0%</td>
<td>15.2%</td>
<td>22.9%</td>
<td>12.3%</td>
<td>10.5%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Real Return Benchmark</td>
<td>3.8</td>
<td>18.8</td>
<td>25.3</td>
<td>10.8</td>
<td>8.7</td>
<td>8.0</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-1.8</td>
<td>-3.6</td>
<td>-2.4</td>
<td>+1.5</td>
<td>+1.8</td>
<td>+1.1</td>
</tr>
<tr>
<td><strong>Real Estate</strong></td>
<td>1.9</td>
<td>15.6</td>
<td>24.9</td>
<td>14.1</td>
<td>12.3</td>
<td>12.3</td>
</tr>
<tr>
<td>Real Estate Benchmark</td>
<td>4.5</td>
<td>20.6</td>
<td>28.3</td>
<td>11.7</td>
<td>9.6</td>
<td>10.2</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>-2.6</td>
<td>-5.0</td>
<td>-3.4</td>
<td>+2.4</td>
<td>+2.7</td>
<td>+2.1</td>
</tr>
<tr>
<td><strong>Energy, Natural Resource and Infrastructure</strong></td>
<td>2.7</td>
<td>14.6</td>
<td>18.3</td>
<td>7.8</td>
<td>7.6</td>
<td>--</td>
</tr>
<tr>
<td>Energy and Natural Res. Benchmark</td>
<td>1.9</td>
<td>14.3</td>
<td>17.6</td>
<td>8.6</td>
<td>7.6</td>
<td>--</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+0.8</td>
<td>+0.3</td>
<td>+0.7</td>
<td>-0.8</td>
<td>0.0</td>
<td>--</td>
</tr>
<tr>
<td><strong>Commodities</strong></td>
<td>-10.2</td>
<td>-2.2</td>
<td>7.9</td>
<td>13.5</td>
<td>1.6</td>
<td>-9.0</td>
</tr>
<tr>
<td>Commodities Benchmark</td>
<td>-10.3</td>
<td>21.8</td>
<td>23.6</td>
<td>12.2</td>
<td>7.8</td>
<td>-3.9</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+0.1</td>
<td>-24.0</td>
<td>-15.7</td>
<td>+1.3</td>
<td>-6.2</td>
<td>-5.1</td>
</tr>
</tbody>
</table>

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to **rounding**. These differences are generally within a few basis points and are not material.
11. Risk Parity: Performance Summary Ending 9/30/2022

<table>
<thead>
<tr>
<th></th>
<th>Third Quarter</th>
<th>YTD</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Risk Parity</strong></td>
<td>-10.9%</td>
<td>-27.0%</td>
<td>-23.6%</td>
<td>-4.4%</td>
<td>0.4%</td>
<td>2.4%</td>
</tr>
<tr>
<td><strong>Risk Parity Benchmark</strong></td>
<td>-10.9</td>
<td>-28.3</td>
<td>-26.2</td>
<td>-3.2</td>
<td>0.9</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>0.0</td>
<td>+1.3</td>
<td>+2.6</td>
<td>-1.2</td>
<td>-0.5</td>
<td>-0.5</td>
</tr>
</tbody>
</table>

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
# 12. Cash Equivalents: Performance Summary Ending 9/30/2022

<table>
<thead>
<tr>
<th></th>
<th>Third Quarter</th>
<th>YTD</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cash Equivalents</strong></td>
<td>0.8%</td>
<td>1.6%</td>
<td>1.7%</td>
<td>1.2%</td>
<td>1.5%</td>
<td>1.9%</td>
</tr>
<tr>
<td><strong>Cash Benchmark</strong></td>
<td>0.5</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>1.1</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+0.3</td>
<td>+1.0</td>
<td>+1.1</td>
<td>+0.6</td>
<td>+0.4</td>
<td>+1.2</td>
</tr>
</tbody>
</table>

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
Appendix – Supplemental Reporting
The chart below depicts the asset allocation of peer public funds with assets greater than $10 billion. The ends of each line represent the 95th and 5th percentile of exposures, the middle light blue and grey lines represent the 25th and 75th percentile of exposures, the purple square represents the median, and the green dot represents TRS exposure.

Note: The Public Plan peer universe had 13 observations for the second quarter 2022. TRS allocations may not sum to 100.0% which is entirely due to the impact of rounding.
Historical Excess Performance Ending 9/30/2022

Quarterly and Cumulative Excess Performance
Total Fund vs. Total Fund Benchmark

Quarterly Excess Performance

-1.6%  -0.8%  0.0%  0.8%  1.6%

Quarterly Out Performance

Quarterly Under Performance

Ratio of Cumulative Wealth - 10 Years

9.6  0.99  1.02  1.05  1.08

Total Fund

Benchmark

1.04
## External Manager Program:
### Public Equity Performance as of 9/30/2022

<table>
<thead>
<tr>
<th>Allocation ($ in billions)</th>
<th>Third Quarter</th>
<th>YTD</th>
<th>One Year</th>
<th>Three Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EP Total Global Equity</strong></td>
<td>$24.4</td>
<td>-6.9%</td>
<td>-23.6%</td>
<td>-20.9%</td>
</tr>
<tr>
<td>EP Global Equity Benchmark</td>
<td>--</td>
<td>-7.5</td>
<td>-25.4</td>
<td>-21.7</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+0.6</td>
<td>+1.8</td>
<td>+0.8</td>
</tr>
<tr>
<td><strong>EP U.S.A.</strong></td>
<td>$9.2</td>
<td>-4.4</td>
<td>-20.9</td>
<td>-15.1</td>
</tr>
<tr>
<td>EP U.S.A. Benchmark</td>
<td>--</td>
<td>-4.5</td>
<td>-24.7</td>
<td>-17.6</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+0.1</td>
<td>+3.8</td>
<td>+2.5</td>
</tr>
<tr>
<td><strong>EP Non-U.S. Developed</strong></td>
<td>$4.7</td>
<td>-8.4</td>
<td>-27.9</td>
<td>-28.1</td>
</tr>
<tr>
<td>MSCI EAFE + Canada Policy Index</td>
<td>--</td>
<td>-9.3</td>
<td>-26.3</td>
<td>-24.0</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+0.9</td>
<td>-1.6</td>
<td>-4.1</td>
</tr>
<tr>
<td><strong>EP Emerging Markets</strong></td>
<td>$5.1</td>
<td>-11.4</td>
<td>-25.3</td>
<td>-26.4</td>
</tr>
<tr>
<td>MSCI Emerging Markets Policy Index</td>
<td>--</td>
<td>-11.6</td>
<td>-27.2</td>
<td>-28.1</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+0.2</td>
<td>+1.9</td>
<td>+1.7</td>
</tr>
<tr>
<td><strong>EP World Equity</strong></td>
<td>$5.4</td>
<td>-5.3</td>
<td>-22.3</td>
<td>-17.2</td>
</tr>
<tr>
<td>EP World Equity Benchmark</td>
<td>--</td>
<td>-6.6</td>
<td>-25.4</td>
<td>-20.7</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>+1.3</td>
<td>+3.1</td>
<td>+3.5</td>
</tr>
</tbody>
</table>

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
### External Manager Program:
**Stable Value/Total Program Performance as of 9/30/2022**

<table>
<thead>
<tr>
<th>Allocation ($ in billions)</th>
<th>Third Quarter</th>
<th>YTD</th>
<th>One Year</th>
<th>Three Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EP Total Stable Value</strong></td>
<td>$9.5</td>
<td>1.5%</td>
<td>6.4%</td>
<td>8.2%</td>
</tr>
<tr>
<td><strong>EP Stable Value Benchmark</strong></td>
<td>--</td>
<td>0.3</td>
<td>-1.3</td>
<td>-0.6</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>--</td>
<td>+1.2</td>
<td>+7.7</td>
<td>+8.8</td>
</tr>
<tr>
<td><strong>EP Stable Value Hedge Funds</strong></td>
<td>$9.5</td>
<td>1.5%</td>
<td>6.4%</td>
<td>8.2%</td>
</tr>
<tr>
<td><strong>EP Stable Value Hedge Funds Benchmark</strong></td>
<td>--</td>
<td>0.3</td>
<td>-1.3</td>
<td>-0.6</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>--</td>
<td>+1.2</td>
<td>+7.7</td>
<td>+8.8</td>
</tr>
<tr>
<td><strong>Total External Public Program</strong></td>
<td>$40.0</td>
<td>-5.3</td>
<td>-18.2</td>
<td>-15.5</td>
</tr>
<tr>
<td><strong>EP External Public Benchmark</strong></td>
<td>--</td>
<td>-5.9</td>
<td>-20.7</td>
<td>-17.5</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>--</td>
<td>+0.6</td>
<td>+2.5</td>
<td>+2.0</td>
</tr>
</tbody>
</table>

*Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.*
The Public SPNs in aggregate outperformed the benchmark during the second quarter, as well as over the trailing one-, three-, and five-year trailing periods.

<table>
<thead>
<tr>
<th></th>
<th>Allocation ($ in billions)</th>
<th>Third Quarter</th>
<th>YTD</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Strategic Partnership</td>
<td>$6.2</td>
<td>-8.3%</td>
<td>-25.9%</td>
<td>-22.9%</td>
<td>1.1%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Public SPN Benchmark</td>
<td>--</td>
<td>-8.1%</td>
<td>-26.3%</td>
<td>-23.0%</td>
<td>-0.1%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Difference</td>
<td>--</td>
<td>-0.2</td>
<td>+0.4</td>
<td>+0.1</td>
<td>+1.2</td>
<td>+0.6</td>
</tr>
<tr>
<td>Blackrock</td>
<td>$2.1</td>
<td>-7.4%</td>
<td>-24.5%</td>
<td>-21.4%</td>
<td>1.5%</td>
<td>3.8%</td>
</tr>
<tr>
<td>J.P. Morgan</td>
<td>$2.2</td>
<td>-7.9%</td>
<td>-26.4%</td>
<td>-23.0%</td>
<td>1.8%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Morgan Stanley</td>
<td>$1.9</td>
<td>-9.8%</td>
<td>-26.9%</td>
<td>-24.6%</td>
<td>-0.4%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Note: The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
**Benchmarks**

- Total Fund Performance Benchmark – 16.7% MSCI U.S.A. IMI, 12.1% MSCI EAFE plus Canada Index, 8.3% MSCI Emerging Markets Index, 18.4% State Street Private Equity Index (1 quarter lagged), 14.8% Blmb. Barc. Long Term Treasury Index, 4.6% HFRI FoF Conservative Index, 2.0% Citigroup 3 Mo. T-Bill Index, 15.7% NCREIF ODCE Index (1 quarter lagged), 6.0% Energy and Natural Resources Benchmark, 7.4% Risk Parity Benchmark, and -6.0% Asset Allocation Leverage Benchmark.

- Global Equity Benchmark – 30.1% MSCI U.S.A. IMI, 21.8% MSCI EAFE plus Canada Index, 14.9% MSCI Emerging Markets Index, and 33.2% State Street Private Equity Index (1 quarter lagged)
  - TF U.S. Equity Benchmark - MSCI U.S.A. Investable Markets Index (IMI)
  - Emerging Markets Equity Benchmark – MSCI Emerging Markets Index
  - Non-US Developed Equity Benchmark– MSCI EAFE + Canada Index
  - Private Equity Benchmark - State Street Private Equity Index (1 quarter lagged)

Note: Returns and market values (based on account level) reported are provided by State Street. Net additions/withdrawals are reported on a gross (adjusted for expenses) total fund level as provided by State Street. All rates of return for time periods greater than one year are annualized. The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
Benchmarks (cont’d)

- Stable Value Benchmark – 76.4% Blmb. Barc. Long Term Treasury Index and 23.6% HFRI FoF Conservative Index
  - US Treasuries Benchmark – Bloomberg Barclays Long Term Treasury Index
  - Stable Value Hedge Funds – HFRI Fund of Funds (FoF) Conservative Index
  - Absolute Return Benchmark - SOFR + 4%

- Real Return Benchmark – 72.4% NCREIF ODCE Index and 27.6% Energy & Natural Resources Benchmark
  - Real Estate Benchmark – NCREIF ODCE Index (1 quarter lagged)
  - Energy and Natural Resources Benchmark – 75% Cambridge Associates Natural Resources Index (reweighted) and 25% quarterly Seasonally-Adjusted Consumer Price Index (1 quarter lagged)
  - Commodities Benchmark – Goldman Sachs Commodity Index

- Risk Parity Benchmark – 100% HFR Risk Parity Vol 12 Institutional Index

Note: Returns and market values (based on account level) reported are provided by State Street. Net additions/withdrawals are reported on a gross (adjusted for expenses) total fund level as provided by State Street. All rates of return for time periods greater than one year are annualized. The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.
Description of Performance Attribution

- A measure of the source of the deviation of a fund's performance from that of its policy benchmark. Each bar on the attribution graph represents the contribution made by the asset class to the total difference in performance. A positive value for a component indicates a positive contribution to the aggregate relative performance. A negative value indicates a detrimental impact. The magnitude of each component's contribution is a function of (1) the performance of the component relative to its benchmark, and (2) the weight (beginning of period) of the component in the aggregate.

- The individual Asset Class effect, also called Selection Effect, is calculated as:
  \[ \text{Actual Weight of Asset Class} \times (\text{Actual Asset Class Return} - \text{Asset Class Benchmark Return}) \]

- The bar labeled Allocation Effect illustrates the effect that a Total Fund's asset allocation has on its relative performance.
  \[ \text{Allocation Effect calculation} = (\text{Asset Class Benchmark Return} - \text{Total Benchmark Return}) \times (\text{Actual Weight of Asset Class} - \text{Target Policy Weight of Asset Class}) \]

- The bar labeled Other is a combination of Cash Flow Effect and Benchmark Effect:
  - Cash Flow Effect describes the impact of asset movements on the Total Fund results.
    \[ \text{Cash Flow Effect calculation} = (\text{Total Fund Actual Return} - \text{Total Fund Policy Return}) - \text{Current Selection Effect} - \text{Current Allocation Effect} \]
  - Benchmark Effect results from the weighted average return of the asset classes' benchmarks being different from the Total Funds' policy benchmark return.
    \[ \text{Benchmark Effect calculation} = \text{Total Fund Policy Return} - (\text{Asset Class Benchmark Return} \times \text{Target Policy Weight of Asset Class}) \]

- Cumulative Effect
  \[ \text{Cumulative Effect calculation} = \text{Current Effect} \times (1 + \text{Cumulative Total Fund Actual Return} \times (1 - t)) + \text{Cumulative Effect} \times (1 + \text{Total Fund Benchmark Return} \times t) \]
Disclaimers and Notes
Disclaimers and Notes

Disclaimers:

- Please review this report and notify Aon Investments USA Inc. (Aon) with any issues or questions you may have with respect to investment performance or any other matter set forth herein.

- The client portfolio data presented in this report have been obtained from the custodian. Aon has compared this information to the investment managers’ reported returns and believes the information to be accurate. Aon has not conducted additional audits and cannot warrant its accuracy or completeness. This document is not intended to provide, and shall not be relied upon for, accounting and legal or tax advice.

- Refer to Hedge Fund Research, Inc. [www.hedgefundresearch.com](http://www.hedgefundresearch.com) for more information on HFR indices

Notes:

- The rates of return contained in this report are shown on an after-fees basis unless otherwise noted. They are geometric and time weighted. Returns for periods longer than one year are annualized.

- Universe percentiles are based upon an ordering system in which 1 is the best ranking and 100 is the worst ranking.

- Due to rounding throughout the report, percentage totals displayed may not sum up to 100.0%. Additionally, individual fund totals in dollar terms may not sum up to the plan totals.
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Aon Investments USA Inc.
200 E. Randolph Street
Suite 700
Chicago, IL 60601
ATTN: Aon Investments Compliance Officer

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Annual Update to the Board:

Trading

Jaime Llano, Senior Director

December 2022
Trading Group

18
Years of average
investment
experience

3
MBAs

2
CFAs

2
CAIAs

Jaime Llano
Senior Director
Futures and Currency
MBA, Finance, St. Edwards
17 years TRS
23 years experience

Steve Peterson, CFA, CAIA
Director
US Equity
MBA, California Lutheran University
14 years TRS
27 years experience

Demetrius Pope
Director
Global Equity - Europe
BBA, Sam Houston
16 years TRS
22 years experience

Don Stanley
Investment Manager
Global Equity - Asia
BBA, UT Austin
9 years TRS
14 years experience

Andrew Moynihan
Associate
MBA, Boston College
4 years TRS
9 years experience

Brandon Bilton
Senior Trading Analyst
BBA, Prairie View A & M
5 years TRS
5 years experience

Sean Letcher, CFA FRM
CAIA CMT
Investment Manager
US Equity and Futures
BS, Business, Texas A & M
10 years TRS
15 years experience

Maribel Nesuda
Administrative Assistant
Team Support
12 years TRS
27 years experience

18
Years of average
investment
experience
Trading Mandate

**Implementation**

- **Total Trust Execution**: Global execution across multiple asset classes totaled $344.2 billion over past 12 months
- **Network**: Manage a global network of 45 brokerage firms
- **Performance**: Outperformed the median peer equity trading desk by 7.3 basis points over past 12 months, placing us in the 2nd quartile

**Index Management**

- **Index Portfolio**: Manage U.S., EAFE+Canada, and Emerging Markets Passive Equity Portfolios which totaled $8.2 billion as of 9/30/22
- **Full Replication**: Benchmark indices are fully replicated in the portfolio in real-time to achieve tight tracking error and in-line performance

**Market Intelligence**

- **Collaboration**: Collaborate across the IMD to provide implementation solutions
- **Committees**: IMD Management Committee, Diversity Council, Ambassadors

For year ended September 30, 2022
Source: TRS IMD
Whom We Serve

Cross-Divisional Collaboration

Transactions in public markets with customized implementation strategies across profit centers

- Equities
  - $77.7 billion traded

- Futures/ Derivatives
  - $216.1 billion traded

- Foreign Exchange
  - $50.4 billion traded

- Risk & Portfolio Management
  - Risk Parity
  - Low-Vol Equity

- Internal Fundamental
  - Fundamental Equity
  - Corporate Action analysis

- Multi-Asset Strategies
  - Alternative Risk Premia
  - Quantitative Equity
  - Special Opportunities

- External Public Markets
  - Transition Management

- Stock Distribution
  - Liquidation Strategies

- FX Hedging

For year ended September 30, 2022
Source: TRS IMD

Value Creation for TRS Members
## Trading Partner Network

**As of September 30, 2022**

### 4 Firms
- Deliver focused and high-capacity global relationships across all asset classes
- Highly integrated with TRS trading, risk management, administrative systems, etc.
- Leading providers of investment services – TRS is a preferred client, receiving the highest level of service available

<table>
<thead>
<tr>
<th>3 Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-10 Firms</td>
</tr>
<tr>
<td><strong>Core</strong></td>
</tr>
</tbody>
</table>

### 35 Firms
- Includes firms who have a specialty in finding liquidity for hard-to-trade names or firms who have a niche in electronic trading
- Firms who have a core competency of trading internationally in particular regions are also included

<table>
<thead>
<tr>
<th>3 Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-10 Firms</td>
</tr>
<tr>
<td><strong>Execution</strong></td>
</tr>
</tbody>
</table>

### 3 Firms
- All newly approved firms doing business with TRS

<table>
<thead>
<tr>
<th>2-10 Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pilot</strong></td>
</tr>
</tbody>
</table>

---

**TRS INVESTMENT MANAGEMENT**
Annual Trading Activity

For year ended September 30, 2022
Source: TRS IMD

**Total Notional Traded By Strategy ($, billions)**

- EPU Overlay: $25.2
- Internal Fundamental: $27.0
- Passive: $8.4
- Quant: $71.7
- Transition: $8.6
- Private Markets: $13.4
- Risk: $190.0

**Total Notional Trade by Broker ($, billions)**

- JPMorgan: $72.7
- Morgan Stanley: $41.3
- Citigroup: $41.0
- Goldman Sachs: $40.1
- UBS: $27.4
- Societe Generale: $27.5
- BNP: $2.4
- Pilot: $1.6
- Barclays: $6.6
- Credit Suisse: $9.0
- Societe Generale: $27.5

Remaining Execution (27 firms): $74.6

Risk overlay: $190.0

EPU Overlay: $25.2

Internal Fundamental: $27.0

Passive: $8.4

Quant: $71.7

Transition: $8.6

Private Markets: $13.4

Total Notional Trade by Strategy ($, billions)

Total Notional Trade by Broker ($, billions)
Equity Trading Performance

- TRS has performed in-line with the median peer desk or better for 14 straight years.
- Relative to our median peer we outperformed by $56.8 million over the last year and over the last 13 years Trading retained $583 million of TRS alpha over this time.
- TRS equity execution is measured against the Virtu peer universe of institutional investors. The median performance of our peer universe is our benchmark.

<table>
<thead>
<tr>
<th>Year Ended Sept 30th</th>
<th>TRS Trading Performance</th>
<th>Quartile Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>vs. Peer Benchmark</td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td>+ 7</td>
<td>2nd</td>
</tr>
<tr>
<td>2021</td>
<td>+ 8</td>
<td>1st</td>
</tr>
<tr>
<td>2020</td>
<td>+ 10</td>
<td>1st</td>
</tr>
<tr>
<td>2019</td>
<td>+ 6</td>
<td>1st</td>
</tr>
<tr>
<td>2018</td>
<td>+ 6</td>
<td>2nd</td>
</tr>
<tr>
<td>2017</td>
<td>+ 3</td>
<td>2nd</td>
</tr>
<tr>
<td>2016</td>
<td>+ 6</td>
<td>2nd</td>
</tr>
<tr>
<td>2015</td>
<td>+ 8</td>
<td>1st</td>
</tr>
<tr>
<td>2014</td>
<td>0</td>
<td>2nd</td>
</tr>
<tr>
<td>2013</td>
<td>+ 11</td>
<td>1st</td>
</tr>
<tr>
<td>2012</td>
<td>+ 10</td>
<td>1st</td>
</tr>
<tr>
<td>2011</td>
<td>+ 2</td>
<td>2nd</td>
</tr>
<tr>
<td>2010</td>
<td>+ 27</td>
<td>1st</td>
</tr>
<tr>
<td>2009</td>
<td>+ 15</td>
<td>1st</td>
</tr>
<tr>
<td>Target</td>
<td>+ 8 bp</td>
<td>1st</td>
</tr>
</tbody>
</table>

Source: Virtu September 20, 2022
Equity Passive Performance

- Trading manages $8.2 billion in Passive equities
- Passive Portfolios have close to zero tracking error and performance should mirror the underlying equity index
- Annual savings of passive portfolio vs holding ETFs is $23.6 million

<table>
<thead>
<tr>
<th>Style</th>
<th>AUM ($Mill.)</th>
<th>1 Yr Alpha, (bp)</th>
<th>3 Yr Alpha, (bp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive USA</td>
<td>$5,005.6</td>
<td>5</td>
<td>46</td>
</tr>
<tr>
<td>Passive EAFE+CA</td>
<td>$2,300.3</td>
<td>40</td>
<td>N/A</td>
</tr>
<tr>
<td>Passive EM</td>
<td>$633.4</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Pristine USA</td>
<td>$109.4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Pristine EAFE+CA</td>
<td>$128.8</td>
<td>49</td>
<td>43</td>
</tr>
<tr>
<td>Pristine EM</td>
<td>$47.3</td>
<td>27</td>
<td>43</td>
</tr>
</tbody>
</table>

For year ended September 30, 2022
Source: State Street
Special Topic: Foreign Exchange (FX) Markets

**Market Structure**

- Liquidity: $6 trillion average daily traded volume
  - Most liquid market in the world
- 24 Hour Trading
- OTC Market: No centralized exchange
- Market Participants
  - Central Banks, Corporates, Asset Owners and Hedge Funds.

**US Dollar Strength**

Dollar Index Spot (DXY)
1970—Present Day

- Dollar index spot chart showing significant events and trends over time.
Accomplishments and Priorities

<table>
<thead>
<tr>
<th>2022 Accomplishments</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Effectively trained and integrated our new trader and trading analyst into the Trading Group</td>
</tr>
<tr>
<td>• Reviewed and updated our current procedures for all trading processes</td>
</tr>
<tr>
<td>• Continue to outperform our peer trading benchmark</td>
</tr>
<tr>
<td>• Effectively managed transitions between external managers and internal portfolios</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2023 Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Automate our current Commission Management System and quarterly broker report card</td>
</tr>
<tr>
<td>• Optimize FX execution costs through use of liquidity pools trading with only our peers</td>
</tr>
<tr>
<td>• Improve the quality of our execution by enhancing how we review Transaction Cost Analysis (TCA)</td>
</tr>
<tr>
<td>• Improve execution quality across all asset classes by increasing algorithmic trading</td>
</tr>
</tbody>
</table>
Broker Certification Process

Phase 1 - Certification Process for New Firms

**Procedures for New Firms**
- Broker qualifications questionnaire
- Minimum standard requirements

**Evaluation Period**
- 6 to 18 month process
- Identify valued services
- Transaction cost analysis review
- Recommendations
- Category fit

**Annual Review**
- Adds/Deletions
- Promotions/Demotions
- Qualitative review
- On-Site visit

**Certification Process**
- Senior management review

*If acceptable, then ...*

Phase 2 - Broker added to Pilot Program

**Pilot Program**
- Pilot brokers evaluated quarterly using same criteria as all TRS brokers

**Quarterly Review Process**
- Trader vote
- Transaction cost analysis
- Quarterly report card to each broker

**Two Year Process**
- Pilot brokers typically have up to a 2 year evaluation process to qualify for advancement to execution category

**Completion of Pilot Program**
- Advance to execution/core category or remove from broker list
- Broker has opportunity to advance based on performance after 1 year
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Annual Update to the Board

Risk and Portfolio Management

James Nield, Chief Risk Officer
Mark Telschow, Director, RPM Portfolios

December 2022
Risk and Portfolio Management (RPM)

Enable efficient risk usage and enhance returns

RISK AND PORTFOLIO MANAGEMENT

• RISK MANAGEMENT
• RPM PORTFOLIOS
• TRUST MANAGEMENT
• TRUST STRATEGY
Coming soon…

Melissa Jerkins, PhD  
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PhD, Physics  
University of Texas  
BS, Abilene Christian University

Mike Simmons, CFA  
Director  
MPA, Accounting  
University of Texas  
BBA, Finance, Texas A&M University

Hasim Mardin, FRM  
Investment Manager  
MS, Economics  
University of Texas

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Investment Manager  
PhD, Finance  
MBA, Chicago Booth  
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Director  
BS, Civil Engineering, University of Texas

Andrew Arts  
Senior Associate  
BA, Economics, University of Wisconsin-Madison

11  
Years of average direct investment experience

16  
Advanced degrees and certifications

2  
Positions to be filled
Risk Management
Risk Management process overview

- Twenty-eight **Battle Plans** in place
- Recent plans enacted include:
  - Bubble signals
  - Allocation limits
  - Counterparty risk

**Risk Signals**
- Daily monitoring of signals to identify changes

**Risk Monthly**
- Monthly report on Trust, macro, and portfolio risks

**Battle Plans**
- Action plans outlined for risk events

**Board Report**
- Semi-annual report to the Board on key metrics

**TRS Battle Plans**
Data modernization enhancing Risk Management

- RPM Group: Key contributor to and beneficiary of IMD data modernization efforts
- Data visualization software enables “drill-through” analysis to enable more useful reporting:
  - Trust Balance Sheet exposure
  - Daily derivative Value at Risk (VaR)
  - Risk Signals
    - Daily email generated to direct reader as to which items merit attention

Sample Risk Signal daily email

<table>
<thead>
<tr>
<th>Total</th>
<th>Tier 1</th>
<th>Tier 2</th>
<th>Tier 3</th>
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</thead>
<tbody>
<tr>
<td>5</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Top 10 Risk Signals

- **Tier 1 -- Battleplan Signals**
  - AA Private Equity
  - Counterparty Rating Change

- **Tier 2 -- Asset Class Signals**
  - Bloomberg Commodities 1wk z-score

- **Tier 3 -- Single Asset Signals**
  - Natural Gas 1wk z-score
  - U.K. Bonds (10 Yr.) 1wk z-score

![Private Equity Allocation Chart](chart.png)
RPM Portfolios
Positive 1-Year alpha for RPM Portfolios

**Portfolio Returns**

<table>
<thead>
<tr>
<th></th>
<th>1-Year</th>
<th>3-Year</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Return</td>
<td>Excess</td>
</tr>
<tr>
<td><strong>Government Bonds</strong></td>
<td>-26.9%</td>
<td>-0.2%</td>
</tr>
<tr>
<td><strong>Risk Parity</strong></td>
<td>-23.6%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

**Government Bonds (16%)**

- **Government Bonds** ($21.4b): Passively managed
- **Risk Parity** ($11.2b): Balanced risk exposure implemented both internally and via external managers
- **Internal Balanced Commodities** ($0.1b): Diversified commodities exposure; launched September 2022

Source: StateStreet. Global Bond Futures portfolio was discontinued as of July 2022 due to changes in Trust needs, resource utilization, and negative performance.
Difficult market as cash has outperformed most assets

- Assets have underperformed cash over the past year with few exceptions
- ... Leading to negative return contributions from all four Risk Parity environmental boxes

1-Year Returns

Source: Bloomberg, TRS IMD
Positive Risk Parity alpha combined with low tracking error

- Manager selection led to +400 bp of outperformance for External Risk Parity
- Asset Mix led to +197 bp of alpha for Internal Risk Parity

Risk Parity Cumulative Alpha
Trailing 12 Months

Source: StateStreet, TRS IMD

Internal RP Tracking Error

- Risk Parity tracking error is actively managed to reduce the range of relative outcomes through both risk level and asset mix
Research Portfolios facilitate knowledge share and innovation

- Research portfolio process continues to serve Trust and RPM well
- Portfolios expand internal capabilities, reduce fees and provide flexibility
- RPM has launched six research initiatives since 2012
- Internal Balanced Commodities is most recent research portfolio
  - Provides balanced commodity allocation similar as approach taken in Internal Risk Parity
  - Provides Trust with additional tool to balance exposure to rising inflation

Source: StateStreet, TRS IMD; Portfolio sizes shown as peak asset sizes in $billions

RPM Portfolio Research Initiatives

- Low Volatility
  - +92 bp alpha
  - 9 years
  - Merged into MASG Multi-Factor portfolios in 2022

- Internal Risk Parity
  - +151 bp alpha
  - 9 ½ years+
  - Merged into MASG Multi-Factor portfolios in 2022

- Internal Balanced Commodities
  - Launched 2022
  - Potential size: $2B

IRP Tilts
- Closed in 2020

IRP Global Equity
- Discontinued pre-funding

Global Bond Futures
- Closed 2022

Potential sizes:
- $5.0b
- $10.7b
- $0.5b
- $0.1b
- $0.06b

$0.5b
Trust Management
Trust Management Process Overview

### Finance Liquidity
- Set liquidity targets
- Conduct repo activity
- Manage derivative trading

### Rebalance Exposure
- Analyze risks
- Minimize costs
- Direct trades within TRS

### Optimize Balance Sheet
- Manage collateral
- Lend securities
- Implement overlay programs

### Liquidity Enhancements:
1. Developed *intraday* margin call estimates
2. Created daily Value at Risk (VaR) *data visualization* tool
3. Launched internal *Treasury-Bill* account to diversify cash holdings
4. Updated requirements for sizing *Securities Lending* program
5. Received ‘AAA’ rating from S&P to facilitate financing activities
Trust Strategy
Trust Strategy Process Overview

Research Environment
- Develop capital market assumptions
- Publish Market Intelligence
- Create Peer Intelligence report

Strategize Improvements
- Coordinate Strategic Asset Allocation (SAA)
- Conduct benchmark review
- Execute hedges (currency)

Inform Decision making
- Support Asset Allocation Committee
- Provide Investment Policy updates

Market Intelligence
- Monthly pack of key slides to better understand market developments and conditions

- Energy providing recent relief against sticky shelter inflation
- S&P 500 multiples contract again as earnings level off
- Risk premia and discount rates rise again as asset prices fall
- Real Rates up, break-evens down
Trust Strategy supports ongoing Strategic Asset Allocation (SAA) work

- Current SAA now lags prior SAA after three years:
  
<table>
<thead>
<tr>
<th>Year 3</th>
<th>Cumul.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current SAA</td>
<td>-10.68%</td>
</tr>
<tr>
<td>Prior SAA</td>
<td>-9.09%</td>
</tr>
<tr>
<td>Difference</td>
<td>-1.59%</td>
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</tbody>
</table>

- Leverage has added 0.63% to returns:
  
  | SAA unlevered | -10.11% | 15.15% |
  | + 4% net leverage | -0.50% | 0.78% |
  | - financing cost | -0.07% | -0.15% |
  | SAA | -10.68% | 15.75% |

- Recent asset declines have negatively impacted SAA performance

Source: TRS IMD; SAA analysis assumes changes were made day one of new SAA taking effect and does not include security selection, preliminary benchmark estimates used. Total attribution does not sum due to mix and compounding effects.
In conclusion...

1. **Risk Management** using data modernization to enhance analysis
2. **RPM Portfolios** generated Risk Parity alpha and achieved Government Bond objectives
3. **Trust Management** expanded liquidity management tools
4. **Trust Strategy** preparing for SAA study