COMPTROLLER’S INVESTMENT ADVISORY BOARD

Endowment Portfolio Review

Q1 2018

MEETING DATE: AUGUST 16, 2018
Table of Contents

4................Asset Allocation Summary
5................Actual vs. Target Allocations
6................Asset Allocation Evolution
7................Contributions & Distributions
8................Portfolio Liquidity
9................Portfolio Geographic Allocation
10..............Fixed Income Summary
11..............Fixed Income Detail
12..............Equity Summary
13..............Public Equity Detail
14..............Private Equity Detail
15..............Real Assets Summary
16..............Real Estate Detail
17..............Natural Resources
18..............All Asset Strategies
19..............Value at Risk (VaR) Analysis
20..............Portfolio Risk Summary
21..............TTSTC Performance Table
### Asset Allocation Summary

**As of March 31, 2018**

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Strategy</th>
<th>Number of Funds</th>
<th>Number of Managers</th>
<th>Current Market Value</th>
<th>Weight</th>
<th>Long-Term Target</th>
<th>Policy Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global Fixed Income</td>
<td>70</td>
<td>45</td>
<td>$1,438,714,346</td>
<td>35.0%</td>
<td>35.0%</td>
<td>20-50%</td>
</tr>
<tr>
<td></td>
<td>Alternative Fixed Income</td>
<td>11</td>
<td>10</td>
<td>449,254,414</td>
<td>10.9%</td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Private Debt</td>
<td>48</td>
<td>29</td>
<td>397,421,847</td>
<td>9.7%</td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td>Equity</td>
<td></td>
<td>100</td>
<td>47</td>
<td>$1,934,285,913</td>
<td>47.0%</td>
<td>45.0%</td>
<td>30-60%</td>
</tr>
<tr>
<td></td>
<td>Global Public Equity</td>
<td>9</td>
<td>5</td>
<td>468,199,988</td>
<td>11.4%</td>
<td>15.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hedged Equity</td>
<td>16</td>
<td>14</td>
<td>1,087,475,317</td>
<td>26.4%</td>
<td>20.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Private Equity</td>
<td>75</td>
<td>30</td>
<td>378,610,608</td>
<td>9.2%</td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td>Real Assets</td>
<td></td>
<td>66</td>
<td>27</td>
<td>$705,958,472</td>
<td>17.2%</td>
<td>20.0%</td>
<td>10-50%</td>
</tr>
<tr>
<td></td>
<td>Stable Value Real Estate</td>
<td>22</td>
<td>9</td>
<td>392,085,030</td>
<td>9.5%</td>
<td>8.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enhanced Real Estate</td>
<td>42</td>
<td>18</td>
<td>167,453,421</td>
<td>4.1%</td>
<td>7.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Natural Resources</td>
<td>2</td>
<td>2</td>
<td>146,420,021</td>
<td>3.6%</td>
<td>5.0%</td>
<td></td>
</tr>
<tr>
<td>Strategic All Asset &amp; Overlays</td>
<td></td>
<td>1</td>
<td>1</td>
<td>$35,089,497</td>
<td>0.9%</td>
<td>0.0%</td>
<td>0-10%</td>
</tr>
<tr>
<td>All Asset Strategies</td>
<td></td>
<td>1</td>
<td>1</td>
<td>35,089,497</td>
<td>0.9%</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Total Portfolio</strong></td>
<td></td>
<td>237</td>
<td>108</td>
<td>$4,114,048,228</td>
<td>100.0%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

---

1. Exposures obtained through derivatives are reported on a notional basis. Cash exposure is offset by the total notional derivative exposure.
2. Does not include funds in wind down or redemption.
3. Manager count for aggregates are less than sum of components due to managers with multiple strategy allocations.
4. Includes Cash and Derivatives Offset
Actual vs. Target Allocations

As of March 31, 2018

- Global Fixed Income: -1.4%
- Alternative Fixed Income: -0.6%
- Private Debt: -0.3%
- Global Public Equity: -3.6%
- Private Equity: -0.8%
- REAL ASSETS: -2.8%
- Enhanced RE: -2.9%
- Natural Resources: -1.4%
- 0.0% FIXED INCOME [0.1% INCLUDING ALL ASSET]
- 2.3% Cash + Overlay Offset
- 2.0% EQUITY [2.7% INCLUDING ALL ASSET]
- 6.4% Hedged Equity
- 1.5% Stable Value RE
- 0.9% Strategic All Asset & Overlays

Exposures obtained through derivatives are reported on a notional basis. Cash exposure is offset by the total notional derivative exposure.

Includes Derivatives Offset.
Asset Allocation Evolution (Actual)¹

Total AUM: $4,114,048,228

10.9% Global Fixed Income²
14.4% Alternative Fixed Income
9.7% Private Debt
11.4% Global Public Equity
26.4% Hedged Equity
9.2% Private Equity
9.5% Stable Value Real Estate
4.1% Enhanced Real Estate
0.9% ILB
3.6% Natural Resources
0.9% All Asset

¹Exposures obtained through derivatives are reported on a notional basis. Cash exposure is offset by the total notional derivative exposure.
²Includes Cash and Derivatives Offset
Contributions & Distributions

As of March 31, 2018

Total AUM + Distributions
$5,939,580,854

Contributions
$3,180,903,399

Distributions
$1,825,532,627

Total AUM
$4,114,048,227

Years:
- Jun-95
- Dec-95
- Sep-96
- Mar-97
- Dec-97
- Sep-98
- Mar-99
- Dec-99
- Sep-00
- Mar-01
- Dec-01
- Sep-02
- Mar-03
- Dec-03
- Sep-04
- Mar-05
- Dec-05
- Sep-06
- Mar-07
- Dec-07
- Sep-08
- Mar-09
- Dec-09
- Sep-10
- Mar-10
- Dec-10
- Sep-11
- Mar-11
- Dec-11
- Sep-12
- Mar-12
- Dec-12
- Sep-13
- Mar-13
- Dec-13
- Sep-14
- Mar-14
- Dec-14
- Sep-15
- Mar-15
- Dec-15
- Sep-16
- Mar-16
- Dec-16
- Sep-17
- Mar-17
- Dec-17
- Mar-18

Dollars in Billions
Projected liquidity takes hard lock, notice and payout periods into consideration.

Global fixed includes cash. When reporting on liquidity, we report using total cash, which is computed as physical cash less an offset for derivative exposures elsewhere in the portfolio. This metric does not include the portion of (physical) cash that is offset by derivatives, which could be used for short-term liquidity needs.

Policy Guidelines: Minimum of 20% in 0-3 months and minimum of 60% in less than 2 years.
Portfolio Geographic Allocation

As of March 31, 2018

TOTAL PORTFOLIO

FIXED INCOME
- Global Fixed
- Alt Fixed
- Private Debt
- US Universal

EQUITY
- Global Equity
- Hedged Equity
- Private Equity
- MSCI ACWI IMI

REAL ASSETS
- Real Estate
- Natural Resources

ALL ASSET

NORTH AMERICA | EUROPE | ASIA | EMERGING MARKETS | GLOBAL/OTHER

1 Calculated using gross exposures except commodities, which are calculated using net exposures.
### Fixed Income Summary

**As of March 31, 2018**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Market Value</th>
<th>Portfolio Weight</th>
<th>Standard Deviation</th>
<th>Sharpe Ratio</th>
<th>Downside Deviation</th>
<th>Max Drawdown</th>
<th>% Positive Months</th>
<th>US Universal</th>
<th>HFRI Conservative</th>
<th>MSCI ACWI IMI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Beta</td>
<td>Correlation</td>
<td>Beta</td>
</tr>
<tr>
<td>Global Fixed Income &amp; Cash</td>
<td>$449,254,414</td>
<td>10.9%</td>
<td>1.6%</td>
<td>0.78</td>
<td>2.0%</td>
<td>-5.4%</td>
<td>72.2%</td>
<td>0.3</td>
<td>0.5</td>
<td>0.4</td>
</tr>
<tr>
<td>Global Fixed Income (ex-cash)</td>
<td>313,783,728</td>
<td>7.6%</td>
<td>2.7%</td>
<td>0.66</td>
<td>2.9%</td>
<td>-5.7%</td>
<td>66.7%</td>
<td>0.5</td>
<td>0.5</td>
<td>0.7</td>
</tr>
<tr>
<td>Cash + Overlay Offset</td>
<td>135,470,686</td>
<td>3.3%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>US Universal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative Fixed Income</td>
<td>$592,038,085</td>
<td>14.4%</td>
<td>3.5%</td>
<td>0.86</td>
<td>4.2%</td>
<td>-5.8%</td>
<td>69.4%</td>
<td>0.0</td>
<td>0.0</td>
<td>1.2</td>
</tr>
<tr>
<td>Event Driven</td>
<td>118,838,738</td>
<td>2.9%</td>
<td>5.1%</td>
<td>-0.17</td>
<td>5.5%</td>
<td>-14.8%</td>
<td>50.0%</td>
<td>-0.1</td>
<td>-0.1</td>
<td>1.8</td>
</tr>
<tr>
<td>HFRI Event Driven (Total Index)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative Value</td>
<td>291,811,922</td>
<td>7.1%</td>
<td>2.3%</td>
<td>2.42</td>
<td>3.3%</td>
<td>-2.4%</td>
<td>85.3%</td>
<td>0.2</td>
<td>0.2</td>
<td>0.7</td>
</tr>
<tr>
<td>HFRI Relative Value (Total Index)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tactical Trading</td>
<td>179,229,827</td>
<td>4.4%</td>
<td>9.4%</td>
<td>0.22</td>
<td>9.0%</td>
<td>-7.9%</td>
<td>52.8%</td>
<td>0.0</td>
<td>0.0</td>
<td>1.5</td>
</tr>
<tr>
<td>HFRI Macro (Total Index)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fund of Funds</td>
<td>2,157,598</td>
<td>0.1%</td>
<td>148.4%</td>
<td>0.37</td>
<td>2.4%</td>
<td>-3.6%</td>
<td>52.8%</td>
<td>-3.9</td>
<td>-0.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>HFRI FoF: Conservative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Private Debt</td>
<td>$397,421,847</td>
<td>9.7%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Fixed Income</td>
<td>$1,438,714,346</td>
<td>35.0%</td>
<td>2.3%</td>
<td>1.56</td>
<td>2.6%</td>
<td>-3.9%</td>
<td>72.2%</td>
<td>0.1</td>
<td>0.2</td>
<td>0.8</td>
</tr>
</tbody>
</table>

1 Trailing 36 months.
### Fixed Income Detail

**Sector Allocation**

- **Global Fixed ex-cash**
  - **Gov’t & Gov’t Rel**
    - 38% (Jun-13) to 43% (Mar-18)
  - **Credit**
    - 43% (Jun-13) to 32% (Mar-18)
  - **Securitized**
    - 19% (Jun-13) to 26% (Mar-18)

**Growth of $1,000**

- **Alternative Fixed Income**
- **HFR FoF Conservative**
- **US Universal**
- **Global Fixed Income ex-cash**

**Yield**

- **Portfolio**
  - Range: 0% to 6%
- **US Universal**
  - Range: 1% to 6%

**Duration**

- **Portfolio**
  - Range: 0 to 6 years
- **US Universal**
  - Range: 0 to 6 years

**Gross Exposure by Strategy**

**VaR of Tactical Trading Strategy**

- **Event Driven**
  - 0% to 8%
- **Relative Value**
  - 0% to 10%

---

1. *Trailing 5 year.*
2. *One month 95% confidence extrapolated ex-ante VaR provided by the managers.*
## Equity Summary

**As of March 31, 2018**

| Strategy                      | Market Value | Portfolio Weight | Standard Deviation | Sharpe Ratio | Downside Deviation | Max Drawdown | % Positive Months | MSCI ACWI IMI | HFRI Strategic |
|-------------------------------|--------------|------------------|--------------------|--------------|--------------------|--------------|------------------|--------------|----------------|----------------|
| Global Equity                 | $468,199,988 | 11.4%            | 10.2%              | 0.57         | 11.4%              | -15.9%       | 63.9%            | 0.9          | 1.0            | 1.7            | 0.9            |
| Global Equity Managers        | 372,417,198  | 9.1%             | 10.3%              | 0.57         | 11.4%              | -15.9%       | 63.9%            | 0.9          | 1.0            | 1.7            | 0.9            |
| Global Equity Derivatives     | 95,782,790   | 2.3%             | -                  | -            | -                  | -            | -                | -            | -              | -              | -              |
| **MSCI ACWI IMI**             |              |                  | 10.8%              | 0.72         | 12.6%              | -13.5%       | 69.4%            | -            | -              | 1.8            | 0.9            |
| Hedged Equity                 | $1,087,475,317 | 26.4%    | 5.6%              | 0.74         | 7.5%              | -9.4%        | 69.4%            | 0.4          | 0.8            | 1.0            | 0.9            |
| **HFRI FoF: Strategic**       |              |                  | 5.2%              | 0.38         | 7.1%              | -11.5%       | 66.7%            | 0.4          | 0.9            | -              | -              |
| Private Equity                | $378,610,608 | 9.2%             | -                  | -            | -                  | -            | -                | -            | -              | -              | -              |
| **Total Equity**              | $1,934,285,913 | 47.0%   | 5.6%              | 1.09         | 7.0%              | -8.7%        | 72.2%            | 0.5          | 0.9            | 1.0            | 0.9            |

1 Trailing 36 months.

### Sector Allocation

**Global Equity**

- **IT** 14%
- **Consumer Discretionary** 12%
- **Other** 11%
- **Healthcare** 6%
- **Financials** 24%
- **Industrials** 11%
- **Energy** 7%
- **Materials** 7%
- **Real Estate** 3%
- **Utilities** 4%
- **Consumer Staples** 5%
- **Telecommunication Services** 4%
- **Other** 1%

**Hedged Equity**

- **IT** 22%
- **Consumer Discretionary** 14%
- **Other** 7%
- **Healthcare** 10%
- **Energy** 3%
- **Financials** 10%
- **Industrials** 10%
- **Materials** 5%
- **Real Estate** 1%
- **Utilities** 1%
- **Consumer Staples** 1%
- **Telecommunication Services** 2%
- **Other** 3%

**Private Equity**

- **IT** 23%
- **Consumer Discretionary** 18%
- **Other** 11%
- **Healthcare** 10%
- **Energy** 15%
- **Financials** 10%
- **Industrials** 11%
- **Materials** 5%
- **Real Estate** 3%
- **Utilities** 3%
- **Consumer Staples** 3%
- **Telecommunication Services** 3%
- **Other** 3%

**MSCI ACWI IMI**

- **IT** 19%
- **Consumer Discretionary** 12%
- **Other** 11%
- **Healthcare** 19%
- **Energy** 6%
- **Financials** 19%
- **Industrials** 11%
- **Materials** 5%
- **Real Estate** 3%
- **Utilities** 3%
- **Consumer Staples** 8%
- **Telecommunication Services** 3%

1 Calculated using gross exposures.
Public Equity Detail

Growth of $1,000\textsuperscript{1}

- Global Equity
- MSCI ACWI IMI
- Hedged Equity
- HFRI FoF Strategic

Sector Under/Over Allocation\textsuperscript{1}

- Consumer Discretionary
- Consumer Staples
- Energy
- Financials
- Health Care
- Industrials
- Information Technology
- Materials
- Other Sectors
- Telecommunication Services
- Utilities
- Real Estate

\textsuperscript{1} Trailing 5 year.

\textsuperscript{1} Relative to MSCI ACWI IMI
Private Equity Detail

As of March 31, 2018

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Number of Current Fund Commitments</th>
<th>Portfolio Weight</th>
<th>Commitments</th>
<th>Unfunded Commitments</th>
<th>Total Contributions</th>
<th>Distributions</th>
<th>Remaining Value</th>
<th>Total Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyout</td>
<td>59</td>
<td>6.9%</td>
<td>$678,714,074</td>
<td>$205,530,710</td>
<td>$519,285,483</td>
<td>$444,402,725</td>
<td>$284,503,245</td>
<td>$728,905,970</td>
</tr>
<tr>
<td>Venture Capital</td>
<td>16</td>
<td>2.3%</td>
<td>187,050,000</td>
<td>56,937,433</td>
<td>130,642,196</td>
<td>84,349,125</td>
<td>94,107,363</td>
<td>178,456,488</td>
</tr>
<tr>
<td>Total Private Equity</td>
<td>75</td>
<td>9.2%</td>
<td>$865,764,074</td>
<td>$262,468,144</td>
<td>$649,927,679</td>
<td>$528,751,850</td>
<td>$378,610,608</td>
<td>$907,362,458</td>
</tr>
</tbody>
</table>

1 Total Contributions include fees and expenses that may not reduce or lower unfunded commitment.
2 Remaining Value is equal to the last actual reported capital account value plus subsequent capital calls less subsequent distributions through the indicated date, with no valuation changes.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Distributed/Paid In (DPI)</th>
<th>Total Value/Paid In (TVPI)</th>
<th>1 Year IRR</th>
<th>ITD IRR</th>
<th>Time Weighted Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyout</td>
<td>0.86</td>
<td>1.40</td>
<td>16.5%</td>
<td>9.1%</td>
<td>16.3% 11.3% 12.1%</td>
</tr>
<tr>
<td>Venture</td>
<td>0.65</td>
<td>1.37</td>
<td>11.3%</td>
<td>5.2%</td>
<td>11.3% 9.2% 12.5%</td>
</tr>
<tr>
<td>Total Private Equity</td>
<td>0.81</td>
<td>1.40</td>
<td>15.2%</td>
<td>7.8%</td>
<td>15.1% 10.8% 12.0%</td>
</tr>
</tbody>
</table>

Private Equity Blend

Buyout Sector Allocation

Venture Sector Allocation
# Real Assets Summary

As of March 31, 2018

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Market Value</th>
<th>Portfolio Weight</th>
<th>Target Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Real Estate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stable</td>
<td>$392,085,030</td>
<td>9.5%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Enhanced</td>
<td>$167,453,421</td>
<td>4.1%</td>
<td>7.0%</td>
</tr>
<tr>
<td><strong>Natural Resources</strong></td>
<td>$146,420,021</td>
<td>3.6%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Commodity</td>
<td>$146,420,021</td>
<td>3.6%</td>
<td>5.0%</td>
</tr>
<tr>
<td><strong>Total Real Assets</strong></td>
<td>$705,958,472</td>
<td>17.2%</td>
<td>20.0%</td>
</tr>
</tbody>
</table>
Real Estate Detail

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Number of Current Fund Commitments</th>
<th>Commitments</th>
<th>Unfunded Commitments</th>
<th>Total Contributions</th>
<th>Distributions</th>
<th>Remaining Value</th>
<th>Total Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable Value</td>
<td>22</td>
<td>$543,501,071</td>
<td>$126,800,860</td>
<td>$475,027,597</td>
<td>$224,871,824</td>
<td>$392,085,030</td>
<td>$616,956,854</td>
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<tr>
<td>Total Real Estate</td>
<td>64</td>
<td>$1,038,951,055</td>
<td>$280,314,170</td>
<td>$862,405,866</td>
<td>$563,554,222</td>
<td>$559,558,451</td>
<td>$1,123,092,673</td>
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<table>
<thead>
<tr>
<th>Strategy</th>
<th>Distributed/Paid In (DPI)</th>
<th>Total Value/Paid In (TVPI)</th>
<th>1 Year IRR</th>
<th>ITD IRR</th>
<th>Time Weighted Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable Value</td>
<td>0.47</td>
<td>1.50</td>
<td>11.6%</td>
<td>8.9%</td>
<td>11.5%  10.9%  9.8%</td>
</tr>
<tr>
<td><strong>Stable Value RE Blend</strong></td>
<td></td>
<td></td>
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<tr>
<td>Enhanced Return</td>
<td>0.87</td>
<td>1.31</td>
<td>10.5%</td>
<td>6.8%</td>
<td>10.5%  10.9% 13.4%</td>
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<tr>
<td><strong>Enhanced RE Blend</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Total Real Estate</td>
<td>0.65</td>
<td>1.30</td>
<td>11.2%</td>
<td>7.7%</td>
<td>11.2%  11.2% 12.1%</td>
</tr>
<tr>
<td><strong>Real Estate Blend</strong></td>
<td></td>
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</tbody>
</table>

Stable Value Sector Allocation

- Residential 47%
- Office 11%
- Industrial 5%
- Retail 6%
- Hospitality 1%
- Unclassified Debt 10%
- Other 11%
- Timber 5%
- Infrastructure 4%

Enhanced Sector Allocation

- Residential 30%
- Other 12%
- Hospitality 16%
- Office 23%
- Industrial 4%
- Retail 12%
- Unclassified Debt 1%
- Hospitality 16%

Texas Treasury Safekeeping Trust Company’s Presentation to the Comptroller’s Investment Advisory Board - August 16, 2018
## Natural Resources

As of March 31, 2018

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Market Value</th>
<th>Portfolio Weight</th>
<th>Standard Deviation</th>
<th>Sharpe Ratio</th>
<th>Benchmark Beta</th>
<th>Benchmark Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Resources</td>
<td>$146,420,021</td>
<td>3.6%</td>
<td>13.6%</td>
<td>-0.27</td>
<td>1.1</td>
<td>1.0</td>
</tr>
<tr>
<td>Natural Resources Blend</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commodity</td>
<td>$146,420,021</td>
<td>3.6%</td>
<td>11.7%</td>
<td>-0.22</td>
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<tr>
<td>Commodity Managers</td>
<td>32,800,868</td>
<td>0.8%</td>
<td>11.3%</td>
<td>-0.36</td>
<td>0.9</td>
<td>1.0</td>
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<tr>
<td>Commodity Derivatives</td>
<td>113,619,153</td>
<td>2.8%</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCOM</td>
<td></td>
<td></td>
<td></td>
<td>12.0%</td>
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</tbody>
</table>

*Beta & Correlation are relative to each item’s respective benchmark.*

### Net Commodity Exposure

- **Benchmark**
- **Current Portfolio**

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Current Portfolio</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nickel</td>
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<td></td>
</tr>
<tr>
<td>Gold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver</td>
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<tr>
<td>Crude Oil</td>
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<tr>
<td>Natural Gas</td>
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<td></td>
</tr>
<tr>
<td>Unleaded Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soybeans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cotton</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coffee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soybean Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soybean Meal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hogs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Industrial Metals
- Precious Metals
- Energy
- Agriculture
- Livestock
- Other
## All Asset Strategies

**As of March 31, 2018**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Market Value</th>
<th>Portfolio Weight</th>
<th>Standard Deviation</th>
<th>Sharpe Ratio</th>
<th>Downside Deviation</th>
<th>Max Drawdown</th>
<th>% Positive Months</th>
<th>Total Policy Benchmark</th>
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</thead>
<tbody>
<tr>
<td>Multi Strategy</td>
<td>$35,089,497</td>
<td>0.9%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>All Asset Total</strong></td>
<td>$35,089,497</td>
<td>0.9%</td>
<td>5.9%</td>
<td>0.50</td>
<td>8.4%</td>
<td>-14.8%</td>
<td>72.2%</td>
<td>1.2</td>
</tr>
<tr>
<td>TTSTC Blended Endowment</td>
<td></td>
<td></td>
<td>3.7%</td>
<td>1.31</td>
<td>4.0%</td>
<td>-5.4%</td>
<td>72.2%</td>
<td>-</td>
</tr>
</tbody>
</table>

*Trailing 36 months.*

### All Asset Breakdown

- **Equity**: 86%
- **Fixed Income**: 14%

---

*Texas Treasury Safekeeping Trust Company's Presentation to the Comptroller's Investment Advisory Board - August 16, 2018*
Value at Risk (VaR) Analysis

Twelve Month History

VaR as a Percent of Market Value
(One Month, 95% Confidence)

Differential from Policy VaR

VaR Contribution

Texas Treasury Safekeeping Trust Company’s Presentation to the Comptroller’s Investment Advisory Board - August 16, 2018
Portfolio Risk Summary

As of March 31, 2018

Scenario Analysis

Monthly Portfolio Tail Risk Profile

1. Normal Scenarios – 16% Probability.
2. Extreme Scenarios – 1% Probability.
## TTSTC Performance Table

As of March 31, 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>YTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>-0.8%</td>
<td>-0.1%</td>
<td>1.9%</td>
<td>-1.8%</td>
<td>-0.5%</td>
<td>-4.5%</td>
<td>-4.7%</td>
<td>0.7%</td>
<td>-6.0%</td>
<td>3.7%</td>
<td>4.0%</td>
<td>-2.8%</td>
<td>-10.9%</td>
</tr>
<tr>
<td>2003</td>
<td>-1.6%</td>
<td>-0.9%</td>
<td>0.4%</td>
<td>5.9%</td>
<td>4.8%</td>
<td>1.3%</td>
<td>1.4%</td>
<td>2.1%</td>
<td>0.3%</td>
<td>4.4%</td>
<td>1.6%</td>
<td>3.6%</td>
<td>25.8%</td>
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<tr>
<td>2004</td>
<td>2.0%</td>
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<td>0.1%</td>
<td>-2.4%</td>
<td>0.8%</td>
<td>2.1%</td>
<td>-2.8%</td>
<td>0.6%</td>
<td>2.2%</td>
<td>1.6%</td>
<td>4.1%</td>
<td>2.9%</td>
<td>13.1%</td>
</tr>
<tr>
<td>2005</td>
<td>-1.7%</td>
<td>2.0%</td>
<td>-1.6%</td>
<td>-2.1%</td>
<td>2.9%</td>
<td>1.3%</td>
<td>3.2%</td>
<td>0.2%</td>
<td>1.2%</td>
<td>-1.9%</td>
<td>2.8%</td>
<td>1.4%</td>
<td>7.8%</td>
</tr>
<tr>
<td>2006</td>
<td>3.8%</td>
<td>0.0%</td>
<td>1.8%</td>
<td>1.5%</td>
<td>-2.5%</td>
<td>-0.2%</td>
<td>0.2%</td>
<td>1.8%</td>
<td>1.2%</td>
<td>2.8%</td>
<td>2.2%</td>
<td>1.3%</td>
<td>14.7%</td>
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<td>2007</td>
<td>1.2%</td>
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<td>-1.7%</td>
<td>0.3%</td>
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<td>2.0%</td>
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<td>-0.2%</td>
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<td>-1.2%</td>
<td>-0.8%</td>
<td>-6.6%</td>
<td>-9.6%</td>
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<td>0.6%</td>
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<tr>
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<td>-3.6%</td>
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<td>0.6%</td>
<td>4.0%</td>
<td>1.3%</td>
<td>2.5%</td>
<td>0.1%</td>
<td>2.2%</td>
<td>1.1%</td>
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<td>-1.1%</td>
<td>3.4%</td>
<td>-0.7%</td>
<td>4.1%</td>
<td>2.1%</td>
<td>-0.4%</td>
<td>3.0%</td>
<td>10.3%</td>
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<td>-1.1%</td>
<td>0.1%</td>
<td>-2.2%</td>
<td>-4.4%</td>
<td>3.1%</td>
<td>-0.8%</td>
<td>-0.5%</td>
<td>-1.6%</td>
</tr>
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<td>-2.8%</td>
<td>1.1%</td>
<td>1.3%</td>
<td>1.6%</td>
<td>1.4%</td>
<td>0.1%</td>
<td>0.9%</td>
<td>0.9%</td>
<td>9.3%</td>
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<tr>
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<td>0.6%</td>
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<td>0.1%</td>
<td>-2.1%</td>
<td>-1.7%</td>
<td>1.7%</td>
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<td>-0.6%</td>
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<td>1.7%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.6%</td>
<td>0.8%</td>
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<td>7.5%</td>
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<td>-0.1%</td>
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<td></td>
<td></td>
<td>0.9%</td>
</tr>
</tbody>
</table>
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