Enterprise Risk Management (ERM)

Feb. 20, 2020
Agenda

- ERM Program Framework
- Significant Risk Topics in the Last Year
- Emerging Risk Topic
- Projected Funded Ratio
- STRS Ohio ERM Impact and Probability Analysis 2020
- Significant Negative Investment Return
- Risk Mitigation Tools
ERM Program Framework

- ERM program framework at STRS Ohio is designed to increase awareness and lead to better decision-making around the following core risk areas:
  - Investment returns
  - Actuarial results
  - Member satisfaction
  - Constituent/public relations
  - Legislative change
  - Security and technology issues
  - Business continuity and disaster preparedness
  - Regulatory/statutory compliance
ERM Program Framework

- Benefits Policy
- Investment Policy
- Pension Funding and Health Care Plan Management Policy
Significant Risk Topics in the Last Year

- The pension funding policy was updated to incorporate some changes prompted from the completion of the health care plan management policy.
- Funded ratio improves slightly to 76.1%; STRS Ohio continues to focus on the long-term sustainability of benefits.
- The probability of being less than 50% funded within 10-years is approximately 27%.
- Investment uncertainty creates more volatility; tariffs, Brexit and the impact of the coronavirus cause increased market uncertainty.
- The pension scorecard reflects a minus 5 at June 30, 2019; there are no good options to restore the fiscal integrity of the system if there is a significant negative investment return.
The future is certain to bring about change. Change can be good or bad for STRS Ohio. How does STRS Ohio position itself to maximize the opportunities and minimize the disruptions to produce the greatest sustainable benefits for our members?

• Business disruption will continue. Industries will innovate or be left behind by more resourceful players.

• Business decision-making is more transparent so mistakes/poor practices are more rapidly apparent and appropriate response times are shortened.
  - Boeing 737 MAX
  - Lax corporate behavior (#MeToo)
  - Unsafe conditions (China live markets)

• Consumers are more proactive on environmental, social and governance issues.

• STRS Ohio plan design will need to be more adaptable to changing circumstances.

STRS Ohio will begin discussing this broad risk topic during the March Investment Seminar in a session on Long-Term Planning for a Sustainable Retirement System.
### STRS Ohio ERM Impact and Probability Analysis 2020

<table>
<thead>
<tr>
<th>IMPACT</th>
<th>PROBABILITY</th>
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<tbody>
<tr>
<td>High</td>
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<tr>
<td>Medium</td>
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<tr>
<td>Low</td>
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#### High Impact
- Not earning the actuarial assumed rate of return over a 10-year period
- Long-term sovereign deficit and debt issues
- Actual experience varies from actuarial assumptions long term
- Legislative/Regulatory/Litigation action with negative impact
- Volatility of government reimbursements for health care
- Global financial stress related to low economic growth
- Actual experience varies from actuarial assumptions short term
- Sensitivity to cyber incidents/financial and confidential member data vulnerability
- Contracting membership base
- Not earning the actuarial assumed rate of return in a fiscal year

#### Medium Probability
- Managed at senior staff and department level

#### Low Impact
- Significant negative investment return in any one year
- Investment diversification ineffective
- Inadequate business continuity and disaster preparedness
- Ethics issues
- Managed at senior staff and department level
## STRS Ohio ERM Impact and Probability Analysis 2020

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### Notes:
- **Global financial stress related to low economic growth**
- **Actual experience varies from actuarial assumptions short term**
- **Sensitivity to cyber incidents/financial and confidential member data vulnerability**
- **Contracting membership base/migration to DC and ARP plan**
Significant Negative Investment Return

All projections assume the specified rate of return for fiscal year 2020, and 7.45% annually in 2021+, and that all other results exactly match the valuation assumptions.

### Projected Funded Ratio (Market Value of Assets)

<table>
<thead>
<tr>
<th>Scorecard Advisory Level</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
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<tbody>
<tr>
<td>2020 Return</td>
<td>-5.0%</td>
<td>-6.0%</td>
<td>-13.5%</td>
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<tr>
<td></td>
<td>68.2%</td>
<td>67.4%</td>
<td>61.9%</td>
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<tr>
<td></td>
<td>68.3%</td>
<td>67.5%</td>
<td>61.6%</td>
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<tr>
<td></td>
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<td>67.7%</td>
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<tr>
<td></td>
<td>68.8%</td>
<td>67.9%</td>
<td>61.2%</td>
<td>57.6%</td>
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<tr>
<td></td>
<td>69.1%</td>
<td>68.2%</td>
<td>61.0%</td>
<td>57.2%</td>
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### Projected Funding Period (Smoothed Value of Assets)

<table>
<thead>
<tr>
<th>Scorecard Advisory Level</th>
<th>2020 Return</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020 Return</td>
<td>-5.0%</td>
<td>17.1</td>
<td>18.0</td>
<td>19.3</td>
<td>20.6</td>
<td>19.9</td>
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<tr>
<td></td>
<td>-6.0%</td>
<td>18.0</td>
<td>18.8</td>
<td>20.2</td>
<td>21.6</td>
<td>20.9</td>
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<tr>
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<td>25.1</td>
<td>26.5</td>
<td>28.6</td>
<td>30.7</td>
<td>30.1</td>
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<tr>
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<td>-17.5%</td>
<td>30.0</td>
<td>31.8</td>
<td>34.6</td>
<td>37.5</td>
<td>37.0</td>
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Significant Negative Investment Return

- In four of the past 20 years, the system earned a negative return. The average return in those four years was -10.6%.

- The stress test is -10.6% in 2020 and 6.85% in all other years.

- The 85% funded ratio threshold is achieved in 2032 under the baseline scenario, but under the stress test it doesn’t happen until 2054.
Examples of ongoing policies, processes and activities that provide system monitoring tools and feedback:

1. **Board Policies** — provide operational and governance foundation/directs staff to assess risk for pension and health care; provide annual scorecard review and stochastic modeling.

2. **Annual Investment Plan** — supplies market analysis and sets return expectations.

3. **Statement of Investment Objectives and Policy** — provides operational guidelines and controls.

4. **Annual external and ongoing internal audits** — identify any discrepancies and trigger action plan to address.

5. **Annual independent actuarial studies** — offer snapshots of actuarial soundness; allow system to track funding progress over time.

6. **Asset allocation and actuarial experience studies** — give the system needed data to consider possible adjustments to asset mix, investment return expectations, economic and demographic assumptions.

7. **Financial contingency planning** — Identify opportunities for pension plan modifications.

8. **Bi-annual updates to Associate Guidelines** — help ensure that STRS Ohio is operating within established employment laws and regulations.

9. **Spheres of influence** — maintain communications with various audiences (board members, active and retired members, advocacy groups, professional organizations, associates, other retirement systems, ORSC, Ohio Legislature, U.S. Congress), and track worldwide events, policies and economics.

10. **Sensitivity analysis** — better understand risks through sensitivity analysis.

11. **Strategic Goals** — updated regularly to ensure staff is focusing on the appropriate objectives and initiatives.

12. **Enterprise Risk Management** — updated annually to provide perspective of critical risks of STRS Ohio.
Questions?