MEKETA

INVESTMENT GROUP

State Teachers Retirement System of Ohio

June 20, 2024

Risk and Implementation Survey

- Overview of Questions –

Asset-Liability Study Timeline | May - August 2024

May 2024

Asset-liability study planning and timeline.

COMPLETED.

June 2024

Asset-liability study survey questions, introduction, and discussion.

TODAY

July 2024

Meketa available for individual discussions with trustees.

Completion of asset-liability study survey.

August 2024

Meketa presents survey results and discussion.

Potential adoption of "Reference Benchmark" for early application. This will be updated upon completion of asset-liability study.

Asset-Liability Study Timeline | September 2024 – February 2025

September 2024

Meketa initiates asset-liability study by proposing the scope of work to be completed, capital market risk and return expectations, and potential asset class considerations.

Asset class reviews.

October 2024

Asset class reviews (continued).

December 2024

Meketa presents preliminary asset-liability study results and reference portfolio.

February 2025

Meketa presents alternative asset mixes for board discussion.

Asset-Liability Study Timeline | March – June 2025

March 2025

Asset-liability study completed.

Board adopts new asset mix.

April 2025

Initial review of SIOP with asset-liability study incorporated.

Discussion of implementation approaches and benchmarks.

May 2025

Board adopts SIOP, focusing on new policy target mix.

Additional discussion of implementation approaches and benchmarks.

June 2025

AIP presented incorporating implementation of new asset-liability study.

Risk and Implementation Survey Overview

→ At the onset of the 2024/2025 Asset-Liability Study, a "Risk and Implementation Survey" will be provided to the STRS Ohio Trustees.

→ The responses to the survey help in determining STRS's tolerance for investment risk and strategic allocation structuring.

→ The survey has four sections:

- Objectives – In this section, we are trying to determine what the Trustees believe STRS's top priorities should be, among various important objectives.
- Risk Appetite – These questions explore the respondent's risk tolerance levels.
- Risk Mitigation – These questions focus on specific funding sensitivities – distinct from traditional investment metrics.
- Implementation – This section seeks the Trustees' perspectives on managing STRS's portfolio allocation over time.

→ Trustees will complete the survey in July, including one-on-one sessions with Meketa.

→ Survey results will be presented to the Board in August with a focus on areas of consensus/disagreement.

Risk and Implementation Survey Overview

→ For each question, the question will be displayed in a blue box with related guidance/clarification provided in an orange box.

→ For certain questions that are relatively self-explanatory, guidance/clarification may be limited.

Examples

Question XYZ

Guidance/Clarification

Survey Questions

Objectives Section

→ This section consists of one question that asks Trustees to rank the objectives in order of importance.

1. Please rank the following objectives in order of importance with 1 being most important and 5 being least important.
   - Achieving a final funding ratio of at least 100% by the end of the funding period (*end goal focused*)
   - Maintaining consistent progress along the current Funding Progress Path (*intermediate-term goal focused*)
   - Maximize the probability of implementing/increasing COLAs
   - Maximize the probability of reducing the full retirement age
   - Minimizing major total portfolio declines (e.g., greater than -10% in a fiscal year)

→ Different portfolio constructs (particularly level of return and volatility) will alter the funding progress and potential increases/decreases to benefit structures.

→ Depending on Trustee preferences to the above, Staff and Meketa will explain the impacts of those preferences and how the modeling process will incorporate and examine resulting tradeoffs.

Risk Appetite Section

→ This section consists of five questions that seek to ascertain where Trustees stand on their willingness to modify the portfolio's risk posture.

2. To achieve long-term goals, should STRS be taking more, less, or the same amount of investment risk (compared to current long-term policy) in the portfolio?

More Less Same

→ This question simply gauges Trustee risk tolerance levels. Risk (across multiple dimensions) will be examined relative to liability implications, peer systems, and reference portfolios (e.g., 70% equity / 30% bonds).

Risk Appetite Section

3. What is considered to be a bad but not necessarily a catastrophic investment year to the respondent?

   -8% to -12% -12% to -16% -16% to -20% Greater than -20% decline

- → While volatility is a commonly used risk metric, drawdown experiences (particularly over a horizon of one year) tend to be more reflective of an investor's risk appetite.
- → This question provides another avenue for Trustees to display their risk tolerance.

Risk Appetite Section

4. I am most concerned with which of the following macroeconomic issues (and its impact on STRS) over the next 1-5 years?

Poor economic growth | High inflation | Rising interest rates | Geopolitical conflict

→ Asset-liability studies are inherently focused on long-term horizons (e.g., 10-30 years).

→ Investors tend to focus more on near- and intermediate-term challenges.

→ Depending on Trustee responses, Staff and Meketa will discuss how the portfolio is or is not positioned for such challenges and how similar historical challenges have or have not impacted long-term results.

Risk Appetite Section

5. Which of the following outcomes is of the greatest concern over the next 10 years?

    A double-digit decline (in returns) at some point

    Trailing the performance of index/passive-oriented US equity investments (e.g., S&P 500 Index Fund)

    Not achieving the actuarial rate

    Materially underperforming peers

    Inability to obtain/increase SBP-related budget

→ A 10-year horizon begins to enter the "long-term" from the perspective of an asset-liability study.

- Moreover, this horizon is of a length where results from major decisions begin to manifest.

→ Trustee answers to this question will assist in developing the various objective functions that will be utilized in the asset-liability modeling process.

- *Objective function = a mathematical representation that the model will seek to maximize or minimize.*

Risk Appetite Section

6. Rank the following "benchmarks" in order of what you would prefer to not see STRS "underperform" over a 1-5 year horizon. (1 = the benchmark you view as most critical, 5 = the benchmark you view as least relevant)

    STRS Ohio Policy Benchmark

    S&P 500

    Potential Reference Portfolio Benchmark (e.g., 70% MSCI ACWI / 30% Bloomberg Aggregate)

    Actuarial Rate

    Peer Pension Systems

→ Across the industry, performance is examined relative to multiple points of comparison.

→ Understanding what Trustees seek to compare STRS Ohio to will guide the conversation during the asset-liability study process.

Risk Mitigation Section

→ This section consists of five questions that seek to examine specific funding sensitivities, which are distinct from traditional investment metrics.

7. "Treadwater" is an appropriate metric to examine when discussing potential asset allocation options and their corresponding metrics.

Strongly Agree   Agree   Disagree   Strongly Disagree

→ Treadwater = normal cost + interest on unfunded liability.

→ Breaching treadwater can be the result of multiple scenarios, such as low (but positive) returns for extended periods of time or material drawdowns over shorter periods of time, among others.

Risk Mitigation Section

8. During a market crisis, it is expected that the plan sponsor will increase its contribution rate to support STRS.

Strongly Agree Agree Disagree Strongly Disagree

→ The success of a defined benefit system is dependent on both investment returns and system contributions.

→ If one falters (e.g., returns below the actuarial rate for extended periods), the other lever (e.g., contributions) will be relied on to fill the gap. This may or may not be feasible.

Risk Mitigation Section

9. Based on an estimated current funded ratio of 81.3% (June 30, 2023), what is the minimum funded ratio the STRS should be willing to accept in a market crisis scenario (i.e., very rapid deterioration in economic conditions)?

   60% 65% 70% 75% 80%

→ Funded ratio threshold preferences of Trustees will guide the level of risk within the portfolio as well as the underlying construct (e.g., allocations to non-equity-like assets).

Risk Mitigation Section

10. There are asset classes other than Public Equity and Public Fixed Income that can help STRS stabilize progress along the Funding Progress Path.

Strongly Agree Agree Disagree Strongly Disagree

→ This question simply seeks to examine the Trustees' viewpoints on the value and efficacy of Real Estate, Private Equity, and Opportunistic/Diversified classes.

Risk Mitigation Section

11. The cash-flow position of STRS (e.g., net positive contributions or net negative benefit payments) is a key consideration when constructing an investment portfolio.

Strongly Agree Agree Disagree Strongly Disagree

→ A properly designed asset-liability study will seek to incorporate all elements of the inputs and outputs of the system.

→ This question focuses on a subset of the system's financial metrics and examines Trustee viewpoints on its role when constructing the portfolio.

Implementation Section

→ This section consists of 12 questions that seek the Trustees' perspectives on managing STRS's portfolio allocation over time.

12. It is straight-forward to understand what can and cannot be included in the *Alternative Investments* class.

Strongly Agree   Agree   Disagree   Strongly Disagree

→ As a critical piece of the STRS's current portfolio, obtaining a gauge of the Trustees' understanding of the *Alternative Investments* class will guide future alterations and/or enhancements.

Implementation Section

13. A globally diversified portfolio (e.g., US, non-US developed, and emerging markets) offers a better forward-looking risk-adjusted portfolio than a US-centric portfolio.

Strongly Agree　Agree　Disagree　Strongly Disagree

- → US equity markets have materially outperformed non-US equity markets since the Global Financial Crisis.
- → Depending on Trustee answers, additional education/dialogue may follow pertaining to the pros/cons of regional diversification.

Implementation Section

14. Different strategies and/or asset classes are interchangeable if they share similar risk factor exposures and portfolio functions.

    Strongly Agree Agree Disagree Strongly Disagree

- → Correlations are summary metrics that can measure the degree of commonality among asset classes.
- → Certain institutional investors either incorporate a high degree of flexibility at the implementation level or explicitly exclude certain asset classes because they do not offer a unique return driver.
- → Trustees feedback on this question will guide additional education and discussion on the topic.

Implementation Section

15. Opportunistic investments can add value.

Strongly Agree Agree Disagree Strongly Disagree

- → Whether in a dedicated "Opportunistic" class, or within existing classes, certain investors choose to implement opportunistic investments that are focused on specific market dynamics/events/dislocations/etc.
- → This question seeks to ascertain the Trustees' viewpoints on the value of such investments, which would ultimately impact the investment policy statement and governance structure.

Implementation Section

16. High fee strategies are worthwhile if they produce high net-of-fee returns (e.g., a strategy with a 1% management fee and an 8.5% expected net-of-fee return is preferred to a strategy with a 10 basis point management fee and an 8.3% expected net-of-fee return, assuming similar levels of risk)

Strongly Agree   Agree   Disagree   Strongly Disagree

- → Real Estate, Private Equity, and Opportunistic/Diversified classes exhibit materially higher fees than traditional markets.
- → Because fees are known upfront, but net-of-fee results are not, this question seeks to gauge the Trustees' willingness to increase/decrease such allocations.

Implementation Section

17. Illiquid strategies typically return more than similar-risk, liquid strategies (e.g., private equity typically returns more than public equity on a risk-adjusted basis).

Strongly Agree Agree Disagree Strongly Disagree

- → STRS maintains a meaningful allocation to private markets strategies.
- → The viewpoints of Trustees on the relative utility of private markets strategies will be useful when examining potential new long-term policy portfolios.

Implementation Section

18. Producing a return pattern that is different than peers is a risk (given a similar long-term return).

Strongly Agree   Agree   Disagree   Strongly Disagree

→ STRS has historically outperformed peers by a significant margin.

→ This question seeks to further examine the Trustees' viewpoints on this topic.

Implementation Section

19. There are segments within the global capital markets that are inefficient and offer the opportunity for added value by active management.

    Strongly Agree Agree Disagree Strongly Disagree

→ Active vs. passive investing remains a topic of discussion at STRS and across the industry.

→ This question seeks to provide a baseline on the topic.

Implementation Section

20. For Public Equity and Public Fixed Income, which implementation approach would you prefer?

100% passive | passive/active mix (passive biased) | passive/active mix (active biased) | 100% active

→ Similar to the prior question, this seeks to provide another baseline on the active vs. passive debate.

Implementation Section

21. If an asset class cannot be invested in passively, STRS Ohio should not invest in it.

Strongly Agree Agree Disagree Strongly Disagree

→ There are certain asset classes (including some within the STRS portfolio) that cannot be accessed via passive implementation.

Implementation Section

22. There are asset classes and/or strategies that STRS Ohio does not currently utilize that we would like to learn about for potential inclusion in the portfolio in the future.

Strongly Agree   Agree   Disagree   Strongly Disagree

→ Asset-liability studies offer the best opportunity to introduce potential new asset classes/strategies.

→ This question seeks to further examine the Trustees' viewpoints on this topic.

Implementation Section

23. I understand the difference between asset allocation and implementation, as well as the roles/responsibilities of the major parties (trustees, staff, consultant) on the respective topics.

Strongly Agree Agree Disagree Strongly Disagree

- → Asset-liability studies are focused on "asset allocation."
- → The active vs. passive discussion is focused on "implementation."
- → Best practices is for implementation decisions to be delegated to professional investment staff, with high-level guardrails/parameters set by the Board/IC (e.g., active risk budgets).

Conclusion and Next Steps

- → The results of the survey will serve as a foundation for the asset-liability modeling process.
- → They begin to frame the inputs (e.g., classes and constraints) and output goals (e.g., key metrics and characteristics) of the process.
- → Several questions within the survey relate to similar concepts. Any redundancy is intentional in order to obtain more stable and robust results.

- → Trustees will complete the survey in July, including one-on-one sessions with Meketa.
- → The results of the survey and corresponding takeaways will be presented in August.

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