

**ND TFFR Board Meeting**  
**Thursday, July 20, 2023, 1:00 p.m.**  
**WSI Board Room (In Person), 1600 E Century Ave, Bismarck, ND**  
[Click here to join the meeting](#)

AGENDA

**I. CALL TO ORDER AND ACCEPTANCE OF AGENDA (*Board Action*)**

- A. Pledge of Allegiance
- B. Executive Summary
- C. Board Appointment Update – Ms. Murtha

**II. ACCEPTANCE OF MINUTES (April 27 & June 20, 2023) (*Board Action*)**

**III. GOVERNANCE (120 minutes)**

- A. Election of Officers – Dr. Lech, Ms. Murtha (*Board Action*)
- B. SIB Customer Satisfaction Survey – Ms. Seiler (*Information*)
- C. Annual TFFR Program Review – Mr. Roberts (*Board Action*)
  - 1. Code of Conduct Affirmation
- D. Annual Governance & Policy Review Committee Report – Mr. Mickelson, Mr. Roberts
  - 1. Introduction & First Reading – Multiple Policies – TFFR Governance Manual (*Board Action*)
- E. Administrative Rules – Ms. Murtha, Ms. Trotter (*Information*)
- F. Pioneer Project Update – Mr. Roberts (*Information*)

(Break)

**IV. EDUCATION (45 minutes) (*Information*)**

- A. Investment Program Overview – Mr. Anderson

**V. REPORTS (60 minutes) (*Board Action*)**

- A. Quarterly Investment Report (3/31) – Mr. Posch
- B. Quarterly Internal Audit Report (6/30) – Ms. Seiler
- C. Quarterly TFFR Ends Report (6/30) – Mr. Roberts
- D. Executive Limitations/Staff Relations – Ms. Murtha

**VI. CONSENT AGENDA – Disability retirement application<sup>1</sup> (*Board Action*)**

**VII. OTHER BUSINESS**

- A. Board Reading Materials
- B. Next Meeting:
  - 1. TFFR GPR Meeting – August 10, 2023, at 2:00 p.m.
  - 2. TFFR Board Meeting – September 21, 2023, at 1:00 p.m.

**VIII. ADJOURNMENT**

---

<sup>1</sup> Executive Session possible if Board discusses confidential member information under N.D.C.C. 15-39.1-30.

# EXECUTIVE SUMMARY

## TFFR Regular Meeting

July 20, 2023 – 1:00pm CT

---

- I. Agenda:** The July Board Meeting will be held in the Board Room at the WSI Building to accommodate in person attendance, however, a link will also be provided so that Board members and other attendees may join via video conference. The board member video link is included in the email with the Board materials.
- Attendees are invited to join the Board President in the Pledge of Allegiance.
  - Ms. Murtha will provide an update on the new TFFR Board member appointment.
- II. Minutes (Board Action):** The April 27, 2023, and June 22, 2023, Board meeting minutes are included for review and approval.
- III. A. Election of 2023-2024 Officers (Board Action):** Election of Board President and Vice President, two trustees to represent TFFR on the SIB and an SIB alternate, one Audit committee member, and three Governance & Policy Review Committee members.
- B. Annual SIB Customer Satisfaction Survey (Information Only):** Ms. Seiler will provide an overview of the survey process and Board members will be requested to provide feedback to the SIB relating to services.
- C. Annual TFFR Program Review (Board Action):** The Board will conduct its annual program review by receiving reports regarding program awards, program monitoring, customer satisfaction; conduct its annual code of conduct policy affirmations and provide guidance to staff regarding program mission, goals, and policy.
- D. Annual Governance & Policy Review Committee Report (Board Action):** The Committee Chair and Mr. Roberts will provide an overview of the work of the committee over this past year as well as the recommendations for amendments to the TFFR Board Program Manual for Introduction & First Reading.
- E. Administrative Rules (Information Only):** Ms. Murtha and Ms. Trotter will review the administrative rules promulgation process.
- F. Pioneer Project Update (Information Only):** Mr. Roberts will provide the Board with an update on the current status of the Pioneer project.
- IV. Board Education – Investment Program Overview (Information Only):** Mr. Anderson will provide the Board with an overview of the SIB’s investment strategy.
- V. Reports (Board Action):** Staff will provide reports on quarterly investment performance, audit activities, TFFR Ends and executive limitations/staff relations.

**Adjournment.**

**NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT  
MINUTES OF THE  
APRIL 27, 2023, BOARD MEETING**

**BOARD MEMBERS PRESENT:** Dr. Rob Lech, President  
Mike Burton, Vice President  
Thomas Beadle, State Treasurer  
Cody Mickelson, Trustee  
Mel Olson, Trustee  
Jordan Willgohs, Trustee

**BOARD MEMBERS ABSENT:** Kirsten Baesler, State Supt. DPI

**STAFF PRESENT:** Scott Anderson, CIO  
Derek Dukart, Investment Officer  
Jayme Heick, Retirement Programs Spec.  
Missy Kopp, Exec. Assistant  
Denise Leingang-Sargeant, Member Specialist  
Sarah Mudder, Communications/Outreach Dir.  
Jan Murtha, Exec. Director  
Matt Posch, Sr. Investment Officer  
Emmalee Riegler, Contracts/Records Coor.  
Chad Roberts, DED/CRO  
Sara Seiler, Supvr. of Internal Audit  
Ryan Skor, CFO/COO  
Rachelle Smith, Retirement Assistant  
Dottie Thorsen, Internal Auditor  
Tami Volkert, Compliance Specialist  
Denise Weeks, Retirement Program Mgr.

**OTHERS PRESENT:** Dean DePountis, Atty. General's Office  
Catharine Hamrick, Segal Benz  
Gabe Hoggarth, State Procurement  
Brad Ramirez, Segal  
Matt Strom, Segal  
Members of the Public

**CALL TO ORDER:**

Dr. Lech, President of the Teachers' Fund for Retirement (TFFR) Board of Trustees, called the meeting to order at 1:00 p.m. on Thursday, April 27, 2023. The meeting was held in the WSI Board Room, 1600 E Century Avenue, Bismarck.

**THE FOLLOWING MEMBERS WERE PRESENT REPRESENTING A QUORUM: TREASURER BEADLE, MR. BURTON, DR. LECH, MR. MICKELSON, MR. OLSON, AND MR. WILLGOHS.**

**ACCEPTANCE OF AGENDA:**

The Board considered the agenda for the April 27, 2023, meeting.

**IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. WILLGOHS AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA AS DISTRIBUTED.**

**AYES: TREASURER BEADLE, MR. BURTON, MR. MICKELSON, MR. WILLGOHS, MR. OLSON, AND DR. LECH**  
**NAYS: NONE**  
**ABSENT: SUPT. BAESLER**  
**MOTION CARRIED**

**MINUTES:**

The Board considered the minutes of the March 23, 2023, TFFR Board meeting.

**IT WAS MOVED BY MR. BURTON AND SECONDED BY MR. WILLGOHS AND CARRIED BY A VOICE VOTE TO APPROVE THE MARCH 23, 2023, MINUTES AS DISTRIBUTED.**

**AYES: MR. MICKELSON, MR. OLSON, TREASURER BEADLE, MR. BURTON, MR. WILLGOHS, AND DR. LECH**  
**NAYS: NONE**  
**ABSENT: SUPT. BAESLER**  
**MOTION CARRIED**

**ACTUARIAL SERVICES PRESENTATIONS:**

Dr. Lech reviewed the process for the actuarial services presentations. There will be three executive sessions for the presentations from the vendors, then another executive session to discuss the bids.

**IT WAS MOVED BY MR. OLSON AND SECONDED BY MR. WILLGOHS AND CARRIED BY A ROLL CALL VOTE TO ENTER INTO EXECUTIVE SESSION PURSUANT TO NDCC 44-04-19.2(6), 44-04-18.4(6), AND 55-44.4-10(2) TO SEQUESTER COMPETITORS DURING A COMPETITIVE BIDDING PROCESS AND TO RECEIVE AND DISCUSS EXEMPT PROPOSAL PROCUREMENT INFORMATION DURING A COMPETITIVE BIDDING PROCESS.**

**AYES: TREASURER BEADLE, MR. WILLGOHS, MR. OLSON, MR. BURTON, MR. MICKELSON, AND PRES. LECH**  
**NAYS: NONE**  
**ABSENT: SUPT. BAESLER**  
**MOTION CARRIED**

The executive session started at 1:05 p.m. and ended at 1:31 p.m. The executive session was attended by Board members, staff, Mr. Hoggarth, Mr. DePountis, and representatives from Cheiron.

**IT WAS MOVED BY MR. WILLGOHS AND SECONDED BY TREASURER BEADLE AND CARRIED BY A ROLL VOTE TO ENTER INTO EXECUTIVE SESSION PURSUANT TO NDCC 44-04-19.2(6), 44-04-18.4(6), AND 55-44.4-10(2) TO SEQUESTER COMPETITORS DURING A COMPETITIVE BIDDING PROCESS AND TO RECEIVE AND DISCUSS EXEMPT PROPOSAL PROCUREMENT INFORMATION DURING A COMPETITIVE BIDDING PROCESS.**

**AYES: MR. WILLGOHS, MR. BURTON, MR. MICKELSON, MR. OLSON, TREASURER BEADLE, AND DR. LECH  
NAYS: NONE  
ABSENT: SUPT. BAESLER  
MOTION CARRIED**

The executive session started at 1:36 p.m. and ended at 2:01 p.m. The executive session was attended by Board members, staff, Mr. Hoggarth, Mr. DePountis, and representatives from GRS.

**IT WAS MOVED BY MR. MICKELSON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A ROLL CALL VOTE TO ENTER INTO EXECUTIVE SESSION PURSUANT TO NDCC 44-04-19.2(6), 44-04-18.4(6), AND 55-44.4-10(2) TO SEQUESTER COMPETITORS DURING A COMPETITIVE BIDDING PROCESS AND TO RECEIVE AND DISCUSS EXEMPT PROPOSAL PROCUREMENT INFORMATION DURING A COMPETITIVE BIDDING PROCESS.**

**AYES: MR. OLSON, MR. MICKELSON, MR. WILLGOHS, TREASURER BEADLE, MR. BURTON, AND PRES. LECH  
NAYS: NONE  
ABSENT: SUPT. BAESLER  
MOTION CARRIED**

The executive session started at 2:04 p.m. and ended at 2:27 p.m. The executive session was attended by Board members, staff, Mr. Hoggarth, Mr. DePountis, and representatives from Segal.

**IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. WILLGOHS AND CARRIED BY A ROLL CALL VOTE TO ENTER INTO EXECUTIVE SESSION PURSUANT TO NDCC 44-04-19.2(6), 44-04-18.4(6), AND 55-44.4-10(2) TO SEQUESTER COMPETITORS DURING A COMPETITIVE BIDDING PROCESS AND TO RECEIVE AND DISCUSS EXEMPT PROPOSAL PROCUREMENT INFORMATION DURING A COMPETITIVE BIDDING PROCESS.**

**AYES: MR. BURTON, MR. WILLGOHS, MR. OLSON, TREASURER BEADLE, MR. MICKELSON, AND PRES. LECH  
NAYS: NONE  
ABSENT: SUPT. BAESLER  
MOTION CARRIED**

The executive session started at 2:29 p.m. and ended at 3:14 p.m. The executive session was attended by Board members, staff, Mr. Hoggarth, and Mr. DePountis.

**IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. BURTON AND CARRIED BY A ROLL CALL VOTE TO AWARD TO THE FIRM MOST SUSEPTABLE TO AWARD BASED ON THE SCORING METRIC PROVIDED.**

**AYES: MR. WILLGOHS, MR. MICKELSON, TREASURER BEADLE, MR. BURTON, MR. OLSON, AND PRES. LECH  
NAYS: NONE  
ABSENT: SUPT. BAESLER**

## **MOTION CARRIED**

The Board recessed at 3:15 p.m. and reconvened at 3:26 p.m.

## **GOVERNANCE:**

### **Plan Management Policy Score:**

Mr. Strom and Mr. Ramirez, Segal, discussed the updated plan management policy score. The score has been updated following the most recent actuarial valuation. The composite score is 6 which is down based on last year's valuation results and poor returns for fiscal year (FY) 2022. The score is in the orange range which indicates that the fund should continue to be monitored. The TFFR plan management policy score provides context for the likelihood of future positive or negative events. Notable differences from the previous score update include the market value return for the plan year ended June 30, 2022, which was -6.1% compared to the assumed rate of 7.25%. This resulted in a significantly lower July 1, 2022, funded ratio than projected the prior year. The net result is that the probabilities on which the scoring is based worsened for criteria 1, 2, and 3 compared to the prior analysis. Factors outside of TFFR that could influence the directional trend of future policy scores include projected economic conditions, typical market cycles, and the ND economy. Board discussion followed.

**IT WAS MOVED BY MR. OLSON AND SECONDED BY MR. WILLGOHS AND CARRIED BY A VOICE VOTE TO ACCEPT THE PLAN MANAGEMENT POLICY SCORE UPDATE.**

**AYES: MR. BURTON, MR. WILLGOHS, MR. OLSON, TREASURER BEADLE, MR. MICKELSON, AND PRES. LECH**

**NAYS: NONE**

**ABSENT: SUPT. BAESLER**

**MOTION CARRIED**

### **TFFR Member Communications Survey:**

Ms. Hamrick, Segal Benz, provided information about an upcoming survey of active TFFR members. Staff hope to collect feedback from members to learn what they understand about their benefits, how much they value their benefits, and their communication preferences. The survey results will be used to determine if demographic differences impact the responses. The tool that will be used is called Remesh which is an online format that allows the participants to use a computer, tablet, or mobile device. They answer questions in their own words and vote on other respondents' answers. The responses are anonymous but can be segmented. There will be a live session then the survey will be open for a week allowing additional participants to respond to each question at their own pace. Ms. Hamrick reviewed sample questions and the project timeline. Board discussion followed.

### **2023 Legislative Session Update:**

Ms. Murtha provided an update on the legislative session and reviewed RIO's strategic plan. Many of the goals in the strategic plan required legislative changes to achieve. With the session almost over, we have achieved the goals we set in our strategic plan. Ms. Murtha reviewed the bills that were passed that allowed our initiatives to be realized. Board discussion followed.

### **TFFR Benchmark Discussion:**

Mr. Posch and Mr. Anderson presented information on and recommended changes to the private market benchmark weights for the TFFR plan. The current weight method uses static weights which reflect the full weight of the asset allocation target. With this method active return performance becomes distorted and non-discretionary. Mr. Posch reviewed the proposed weight method using dynamic weights. Staff recommend changing to portfolio weight equal to benchmark weight where private equity rebalances through public equity and real asset rebalances through half fixed income and half equity. Client funds would continue to define asset target weights and rebalance corridors in policy. Staff would restate FY2022 based on this performance method and keep a performance measurement with the old system for comparison. When a benchmark consultant is hired, an appropriate benchmark for the private markets will be chosen rather than benchmarking it against its own performance. Board discussion followed.

**IT WAS MOVED BY MR. OLSON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A ROLL CALL VOTE TO CHANGE BENCHMARK TARGET WEIGHT METHODOLOGY TO ONE WHERE BENCHMARK TARGET WEIGHTS ARE ADJUSTED MONTHLY TO REFLECT THE ACTUAL EXPOSURE TO PRIVATE MARKETS WITH OFFSETTING ADJUSTMENTS MADE TO PUBLIC EQUITIES AND PUBLIC FIXED INCOME.**

**AYES: TREASURER BEADLE, MR. OLSON, MR. BURTON, MR. MICKELSON, MR. WILLGOHS, AND PRES. LECH**

**NAYS: NONE**

**ABSENT: SUPT. BAESLER**

**MOTION CARRIED**

2023-24 Board Calendar and Education Plan:

Ms. Murtha presented the proposed TFFR Board calendar and education plan for 2023-24.

**IT WAS MOVED BY MR. BURTON AND SECONDED BY MR. OLSON AND CARRIED BY A VOICE VOTE TO ACCEPT THE BOARD CALENDAR AND EDUCATION PLAN FOR 2023-24.**

**AYES: MR. BURTON, MR. MICKELSON, MR. WILLGOHS, MR. OLSON, TREASURER BEADLE, AND PRES. LECH**

**NAYS: NONE**

**ABSENT: SUPT. BAESLER**

**MOTION CARRIED**

Pioneer Project Update:

Mr. Roberts provided an update on the Pioneer Project. The project is currently on schedule. After discussions with the vendor and NDIT, it was determined that purchase of Microsoft SharePoint licenses and servers to maintain documents is not needed as the existing state license for SharePoint is sufficient. This will result in a savings of \$92,000.00 which will be allocated to the contingency/management reserve fund. This savings will fully offset the \$23,800.00 additional cost for image migration reported on at the March 2023 meeting. Board discussion followed.

Outreach Update:

Mr. Roberts provided an update on member outreach programming and customer service contacts for the quarter ending March 31, 2023. There was a surge of customer service contacts in January 2023 due mostly to a change in federal and state tax withholding forms to comply with IRS regulations. RIO will be using GovDelivery to create a streamlined and efficient system to distribute messaging, newsletter, updates, and other communication from the agency. Mr. Roberts shared completed and upcoming outreach events.

**REPORTS:**

Annual Public Pension Plan Comparison Report:

Mr. Roberts presented the annual Public Pension Plan Comparison Report comparing TFFR to the FY 2021 Public Fund Survey conducted by the National Association of State Retirement Administrators (NASRA). This survey provides information on key characteristics of most of the nation's largest public retirement systems including actuarial funding levels, membership, cash flow, contribution rates, investment returns, actuarial assumptions, and asset allocation. Board discussion followed.

Executive Limitations/Staff Relations:

The Executive Limitation/Staff Relations was provided for the Board.

**IT WAS MOVED BY MR. BURTON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A VOICE VOTE TO ACCEPT THE ANNUAL PUBLIC PENSION PLAN COMPARISON AND EXECUTIVE LIMITATIONS/STAFF RELATIONS REPORTS.**

**AYES: MR. OLSON, MR. WILLGOHS, MR. MICKELSON, TREASURER BEADLE, MR. BURTON, AND PRES. LECH**

**NAYS: NONE**

**ABSENT: SUPT. BAESLER**

**MOTION CARRIED**

**ADJOURNMENT:**

With no further business to come before the Board, Pres. Lech adjourned the meeting at 5:01 p.m.

Prepared by,

Missy Kopp, Assistant to the Board



**NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT  
MINUTES OF THE  
JUNE 22, 2023, BOARD RETREAT**

**BOARD MEMBERS PRESENT:** Dr. Rob Lech, President  
Mike Burton, Vice President  
Thomas Beadle, State Treasurer  
Cody Mickelson, Trustee  
Mel Olson, Trustee

**BOARD MEMBERS ABSENT:** Kirsten Baesler, State Supt. DPI  
Jordan Willgohs, Trustee

**STAFF PRESENT:** Missy Kopp, Exec. Assistant  
Sarah Mudder, Communications/Outreach Dir.  
Jan Murtha, Exec. Director  
Ann Nagel, Retirement Accountant  
Chad Roberts, DED/CRO  
Sara Seiler, Supvr. of Internal Audit  
Rachelle Smith, Retirement Assistant  
Stephanie Schilling, Retirement Programs Spec  
Dottie Thorsen, Internal Auditor  
Tami Volkert, Compliance Specialist  
Denise Weeks, Retirement Program Mgr.

**OTHERS PRESENT:** Dean DePountis, Atty. General's Office  
Rick Deshler, Sagitec  
Catharine Hamrick, Segal Benz  
Vasu Sridharan, Sagitec

**CALL TO ORDER:**

Dr. Lech, President of the Teachers' Fund for Retirement (TFFR) Board of Trustees, called the retreat to order at 1:06 p.m. on Thursday, June 22, 2023. The retreat was held in the WSI Board Room, 1600 E Century Avenue, Bismarck.

**THE FOLLOWING MEMBERS WERE PRESENT REPRESENTING A QUORUM:  
TREASURER BEADLE, MR. BURTON, DR. LECH, MR. MICKELSON, AND MR. OLSON.**

**ACCEPTANCE OF AGENDA:**

The Board considered the agenda for the June 22, 2023, retreat.

**IT WAS MOVED BY MR. MICKELSON AND SECONDED BY MR. BURTON AND CARRIED  
BY A VOICE VOTE TO APPROVE THE AGENDA AS DISTRIBUTED.**

**AYES: TREASURER BEADLE, MR. BURTON, MR. MICKELSON, MR. OLSON, AND DR.  
LECH**

**NAYS: NONE**

**ABSENT: SUPT. BAESLER AND MR. WILLGOHS**

**MOTION CARRIED**

## **TFFR PLAN DESIGN:**

### **Active Member Survey Results:**

Ms. Hamrick, Segal Benz, share the results and takeaways from the TFFR Active Member focus group sessions. Approximately 240 people participated in either the live or flex sessions. This response rate was low which could suggest disengagement with the topic of retirement, low name recognition of RIO and/or TFFR, or because of the length of the session. Ms. Hamrick reviewed the demographics of the participants and their responses to questions. The platform allowed us to break responses down by different demographic groups which will assist with communication strategies with TFFR Members. Ms. Hamrick shared key takeaways from survey results on plan design and communication methods. Board discussion followed.

### **Outreach & Communication Goals:**

Ms. Mudder reviewed the current TFFR communications strategy including newsletters, education, manuals, conferences, direct mail and news releases. Ms. Mudder shared communication and outreach goals for new, active, and retired members. Board discussion followed.

### **Future Board Education Topics:**

Ms. Murtha asked the Board for feedback on future educational topics including supplemental plans. Board discussion followed.

The Board recessed at 2:31 p.m. and reconvened at 2:42 p.m.

## **PIONEER PROJECT STATUS:**

### **Vendor Status Report:**

Mr. Sridharan provided an update on the Pioneer Project which is on schedule and under budget. RIO staff have been very helpful in keeping the project on track. Mr. Deshler discussed the current lawsuit against Sagitec, related to the unemployment insurance portion of the company which is separate from the pension software segment. It is still very early in the suit with the first hearing scheduled for August, so there has not been time to complete an impact study. Sagitec has been sharing information about the suit with the project team and will continue to do so as new information becomes available. Board discussion followed.

### **Staff Status Report:**

Mr. Roberts provided a staff update on the status of the Pioneer Project. The project is currently in Pilot 3 of 4 of the elaboration phase. The design and development of Pilots 1 and 2 are ongoing. The developed modules are now being tested by the vendor prior to TFFR staff testing. Through information gained from the survey of TFFR members the name of the platform was selected and will be marketed as MyTFFR. The project is under budget. Board discussion followed.

Employer Outreach Plan:

Ms. Mudder outlined the plan for communicating the pension administration system changes to employers by attending conferences and through newsletters and targeted communication. Sagitec will produce a training manual and RIO staff will be responsible for implementing the trainings.

**2023 LEGISLATIVE SESSION FOLLOW-UP:**

Administrative Rule Process Overview:

Ms. Murtha reviewed the Administrative Rule process. The memo includes the timeline for completing the process. Staff hope to have the proposed rules ready for Board review at the July 2023 meeting. If they're not ready by then, a special meeting will be necessary in August so a hearing date can be set for October and publication of the hearing notice can be completed in September. After the hearing concludes, a summary and written summary will be provided to the Attorney General's Office. The Board must grant final approval at the November 2023 Board meeting. Board discussion followed.

Internal Process Changes:

Mr. Roberts summarized the internal process changes for the TFFR program resulting from legislative changes in HB 1219 and 1150. There are changes which will be made to current processes and after the new system is implemented. Board discussion followed.

Bill Impact Review & Discussion:

Ms. Murtha provided information on the status of legislative studies impacting the TFFR plan, recent trends in legislation, and legal action recently filed by the NDPERS Board. Board discussion followed.

**RESOLUTION:**

ND Teachers' Fund for Retirement Board Resolution  
In Appreciation of Mel Olson

WHEREAS, Mel Olson has served as a member of the TFFR Board since 2013; and

WHEREAS, Mr. Olson has diligently carried out his duties and responsibilities as a member of the Board and fiduciary of the TFFR Program; and

WHEREAS, Mr. Olson has been a valued and dedicated member of the Board in helping maintain the integrity and stability of the TFFR Program.

NOW THEREFORE, BE IT RESOLVED that Mr. Olson be duly recognized by the Board for his years of unselfish dedication to the State of North Dakota through his service on the TFFR Board.

DATED this 22<sup>nd</sup> day of June 2023

**IT WAS MOVED BY MR. BURTON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A ROLL CALL VOTE TO APPROVE THE BOARD RESOLUTION.**

**AYES: MR. MICKELSON, TREASURER BEADLE, MR. BURTON AND PRES. LECH**

**NAYS: NONE**

**ABSENT: SUPT. BAESLER AND MR. WILLGOHS**

**MOTION CARRIED**

**ADJOURNMENT:**

With no further business to come before the Board, Pres. Lech adjourned the retreat at 4:02 p.m.

Prepared by,

Missy Kopp, Assistant to the Board

## MEMORANDUM

---

**TO: TFFR Board**  
**FROM: Jan Murtha, Executive Director**  
**DATE: July 14, 2023**  
**RE: Election of 2023-24 Officers, SIB members, and committee appointments**

Pursuant to Policy I. L. of the TFFR Program Manual the TFFR Board must elect officers at the first meeting of each fiscal year. Position terms are for one year. For the 2023-24 fiscal year, the Board will need to select:

- **TFFR Board President**  
(Currently Rob Lech).
- **TFFR Board Vice President**  
(Currently Mike Burton).
- **Two TFFR trustees to represent TFFR on the State Investment Board**  
(Currently Rob Lech and Cody Mickelson). \* GPR Committee Discussion item.
- **One TFFR trustee from SIB to represent TFFR on SIB Audit Committee – Subject to official appointment by SIB Chair.**  
(Currently Cody Mickelson).
- **One TFFR trustee to serve as SIB alternate/designee**  
(Currently Mike Burton)
- **Three Board members to serve on the Governance & Policy Review Committee.**  
(Currently Cody Mickelson, Rob Lech, and Mike Burton).

The State Treasurer serves as a member of the State Investment Board pursuant to state law, and therefore is not subject to assignment by the TFFR Board.

**BOARD ACTION: Nominations for positions. Motion to approve candidates.**

## MEMORANDUM

---

**To: TFFR Board**

**From: Sara Seiler, Supervisor of Internal Audit**

**Date: July 13, 2023**

**RE: Annual SIB Customer Satisfaction Survey**

The **State Investment Board** wants to hear from its customers whether the SIB, through the RIO agency, is providing quality service.

The annual SIB Customer Satisfaction Survey will be sent to the to the TFFR Board on behalf of the Board President. The survey is administered by the Supervisor of Internal Audit via SurveyMonkey. The Board President will submit the compiled the results on behalf of the Board. In recent years the Board has discussed and approved the Board President to submit the compiled results to the SIB without further review and approval by the TFFR Board to expedite the process.

Staff proposes the Board follow the same process this year and allow the results to be submitted to the SIB without further approval, with the understanding the compiled responses will then be reviewed with the TFFR Board at its September 2023 meeting.

**BOARD INFORMATION ONLY. No board action requested, unless a change in the proposed process is requested by the Board.**

## TFFR - North Dakota State Investment Board Customer Satisfaction Survey

Each year the State Investment Board (SIB) conducts a customer satisfaction survey. The purpose of this annual survey is to determine how well the SIB, through the staff of the Retirement and Investment Office (RIO), is meeting the expectations of its clients. This survey is a part of the SIB's ongoing effort to be responsive to the needs of their clients and to continually improve the services that are provided.

This survey is only about the services you receive from the State Investment Board and staff in that area as a client.

Your feedback is very important to us. Please take a few minutes to complete our very brief customer satisfaction survey. Survey responses are due by **Friday, August 25, 2023**.

If you have any questions or concerns regarding the survey or would like to receive the survey in a different format please contact Sara Seiler, Supervisor of Internal Audit at RIO, at 701.328.9896 or [sseiler@nd.gov](mailto:sseiler@nd.gov).

## TFFR - North Dakota State Investment Board Customer Satisfaction Survey

**1. Please help us measure our performance and identify areas for improvement by rating the service you received during fiscal year 2023 (July 1, 2022 - June 30, 2023). Please check the response which best reflects your experience.**

	Excellent	Above Average	Average	Poor	N/A
Availability/Responsiveness to Requests (via calls and/or emails)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clarity and Effectiveness of Communications, Reports, and Presentations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frequency of Communications/Reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledge of Investments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall value of services provided	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**2. How can the State Investment Board (SIB) and/or Retirement and Investment Office (RIO) staff better meet your expectations and improve the services currently being offered?**



## MEMORANDUM

---

**TO:** TFFR Board of Trustees  
**FROM:** Chad Roberts, DED/CRO  
**DATE:** July 14, 2023  
**RE:** Annual TFFR Program Review

The TFFR Board is responsible for administering the retirement program, and in fulfillment of its fiduciary responsibilities will conduct a periodic review of the Board's mission, goals, policies, and by-laws included in the Program Manual.

Board responsibilities include:

1. Establish and monitor policies for the administration of the TFFR program.
2. Establish and monitor investment policy, goals, objectives, and asset allocation.
3. Hire and monitor actuarial and medical consultants; establish and monitor actuarial assumptions and methods; and ensure periodic actuarial valuations, experience studies, asset liability modeling studies, and actuarial audits are conducted.
4. Pay benefits and consultant fees.
5. Submit legislation and monitor the statutory responsibilities of the TFFR program.
6. Determine appropriate levels of service to members and employers.
7. Communicate and monitor TFFR program expectations to the SIB expected to be provided through RIO.
8. Promulgate administrative rules as needed.

As part of your annual TFFR Program Review this year, the following reports are included for your review:

- TFFR Board Awards
- TFFR Program Monitoring Summary
- TFFR Customer Satisfaction Reports
- Code of Conduct Policy Affirmations

**Board members are also required to complete the TFFR Board Code of Conduct form. Please return to RIO no later than August 17, 2023.** You may print and sign the one included here and return via fax, email, or mail; a digital copy will also be emailed to you separately for your completion and convenience.

**BOARD ACTION REQUESTED: Board motion to approve the fiscal year end 2023 Annual Program Review.**

## MEMORANDUM

**TO:** TFFR Board of Trustees  
**FROM:** Sarah Mudder, Communications and Outreach Director  
**DATE:** July 20, 2023  
**RE:** Annual TFFR Customer Satisfaction Reports

To assist the Teachers' Fund for Retirement (TFFR) Board of Trustees in monitoring the performance of the pension program, the Retirement and Investment Office (RIO) collects evaluations and distribute various surveys during the year. Attached are the 2022-23 responses.

RIO's staff reviewed the evaluation responses, provided a summary of the scores below. The scores are based on a 4-point scale (Excellent 4, Above Average 3, Average 2, Poor 1). Note that the Info Mixers, i.e., business manager webinars, requested Topic Satisfaction/Dissatisfaction.

<b>MEMBERS</b>	<b>RESPONSES</b>	<b>SCORES</b>
Retirement Education Workshops		
• July 2022	28	3.75
Group Benefit Counseling		
• November 2022	15	3.80
Comment Cards		
• Staff Courtesy	106	3.95
• Promptness	95	3.86
• Understanding of Information	85	3.72
<b>EMPLOYERS</b>	<b>RESPONSES</b>	<b>SCORES</b>
New Business Manager Workshop		
• November 2022	4	3.25
• February 2023	5	3.20
Info Mixers (satisfaction with topic)		
• December 2022 – reportable salary	14	100%
• January 2023 - retirement	6	100%
• March 2023 – employer models	9	100%
• April 2023 – refunds and year end	8	100%

### **MEMBER and EMPLOYER INTEREST GROUPS**

Combined survey: results are pending. RIO will provide an update at next board meeting.

### **SUMMARY**

RIO's staff will continue to take all member and employer suggestions into consideration as we evolve the pension program and services to best meet customer needs.

**BOARD INFORMATION ONLINE. No Board action requested.**

# ANNUAL TFFR CUSTOMER SATISFACTION REPORTS



TFFR Board Meeting, July 20, 2023  
Sarah Mudder, Communications and Outreach Director

# CUSTOMER SATISFACTION REPORTS - MEMBERS

## Where were they surveyed?

- Retirement Education Workshops, face-to-face event in Bismarck
- Group Benefit Counseling, virtual event
- Comment Cards, sent via email and US mail

## What were the results?

- Education events, scored 3.75 and up
- Comment cards, scored 3.72 and up

# CUSTOMER SATISFACTION REPORTS - MEMBERS

Retirement Specialist was so knowledgeable and easy to work with whenever I called. She is a wealth of information, and I feel much more comfortable with my retirement going forward and what to expect.

I am beyond pleased as to the kindness and caring that was shown to me. This is a huge step (retirement) to wrap one's head around and I felt that I had complete and caring guidance from you to get here. Thank you!

I would definitely recommend this seminar for all teachers who are considering retirement within the next 10-5 years. It's so beneficial.

The online format worked best for me. I actually participated from home. The information was very worthwhile of course, the pace was great and very well done. I really didn't come away with any questions just lots to think and decide on. Great job!

It was great! It is so convenient to attend a webinar. Living 90 miles from Fargo (or any other city), this was the best!

# CUSTOMER SATISFACTION REPORTS - EMPLOYERS

Where were they surveyed?

- New Business Manager Workshops, virtual event
- Info Mixers, virtual events

What were the results?

- Scores, 3.20 and up
- Topics, 100% satisfaction

# CUSTOMER SATISFACTION REPORTS - EMPLOYERS

I think repeating some of the same things like what is reportable and not reportable needs to be presented every time. You could maybe expand on that list since COVID and that we are doing a lot more creative payments.

You are doing such a great job informing the business managers of what is reportable and not. And are so easy to work with when we have questions and concerns. You make our job so much easier. GREAT JOB LADIES!!!!!!!

Keep up the mixers :) As a new business manager it is nice to get reminders on what things are covered and what things aren't.

I like that it is online and having a one topic at a time helps with learning.

I like the step-by-step walkthroughs that you all do. It helps put the process of reporting and information sharing in perspective.

## Q2 Organization

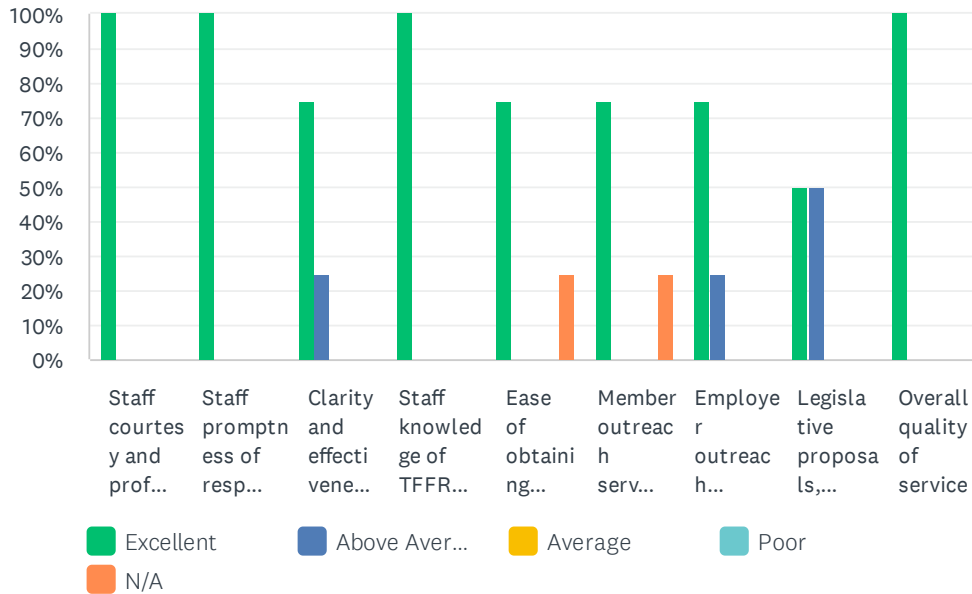
Answered: 4 Skipped: 0

#	RESPONSES	DATE
1	ND United	7/19/2023 5:14 PM
2	NDCEL	7/18/2023 1:59 PM
3	NDSBA	6/8/2023 3:22 PM
4	ND Retired Teachers Association	6/7/2023 2:10 PM



### Q3 Are you receiving quality service and information about the TFFR benefits program? Please check the response which best reflects your experience with TFFR.

Answered: 4 Skipped: 0



	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	N/A	TOTAL	WEIGHTED AVERAGE
Staff courtesy and professionalism	100.00% 4	0.00% 0	0.00% 0	0.00% 0	0.00% 0	4	4.00
Staff promptness of response	100.00% 4	0.00% 0	0.00% 0	0.00% 0	0.00% 0	4	4.00
Clarity and effectiveness of information	75.00% 3	25.00% 1	0.00% 0	0.00% 0	0.00% 0	4	3.75
Staff knowledge of TFFR program	100.00% 4	0.00% 0	0.00% 0	0.00% 0	0.00% 0	4	4.00
Ease of obtaining information or services - phone, website, newsletters, publications	75.00% 3	0.00% 0	0.00% 0	0.00% 0	25.00% 1	4	4.00
Member outreach services - presentations, conferences, benefits counseling and retirement education	75.00% 3	0.00% 0	0.00% 0	0.00% 0	25.00% 1	4	4.00
Employer outreach services - presentations, conferences, meetings	75.00% 3	25.00% 1	0.00% 0	0.00% 0	0.00% 0	4	3.75
Legislative proposals, presentations	50.00% 2	50.00% 2	0.00% 0	0.00% 0	0.00% 0	4	3.50
Overall quality of service	100.00% 4	0.00% 0	0.00% 0	0.00% 0	0.00% 0	4	4.00

## Q4 How can the TFFR Board and/or RIO staff improve their service to TFFR members and employers?

Answered: 3 Skipped: 1

#	RESPONSES	DATE
1	It would be great to do even more member outreach, perhaps by region at well promoted events. ND United will be happy to partner with TFFR on the logistics.	7/19/2023 5:14 PM
2	I'm told often my members want to see the calculator back on the website.	7/18/2023 1:59 PM
3	They are doing a great job.	6/7/2023 2:10 PM

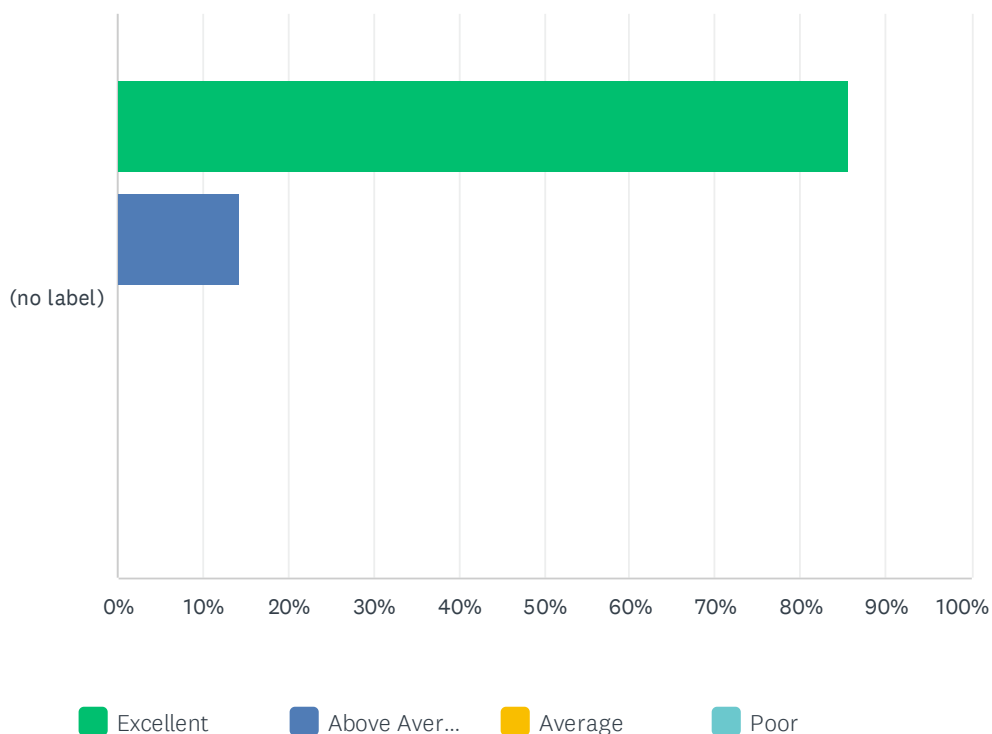
## Q5 Comments

Answered: 3 Skipped: 1

#	RESPONSES	DATE
1	Thank you to the leadership and staff at TFFR-RIO for their incredibly good work and determined focus on ensuring a reliable, well-deserved retirement for our members and other education stakeholders.	7/19/2023 5:14 PM
2	Above.	7/18/2023 1:59 PM
3	Thank you for all your hard work!	6/7/2023 2:10 PM

# Q1 TFFR Presentation

Answered: 28 Skipped: 0

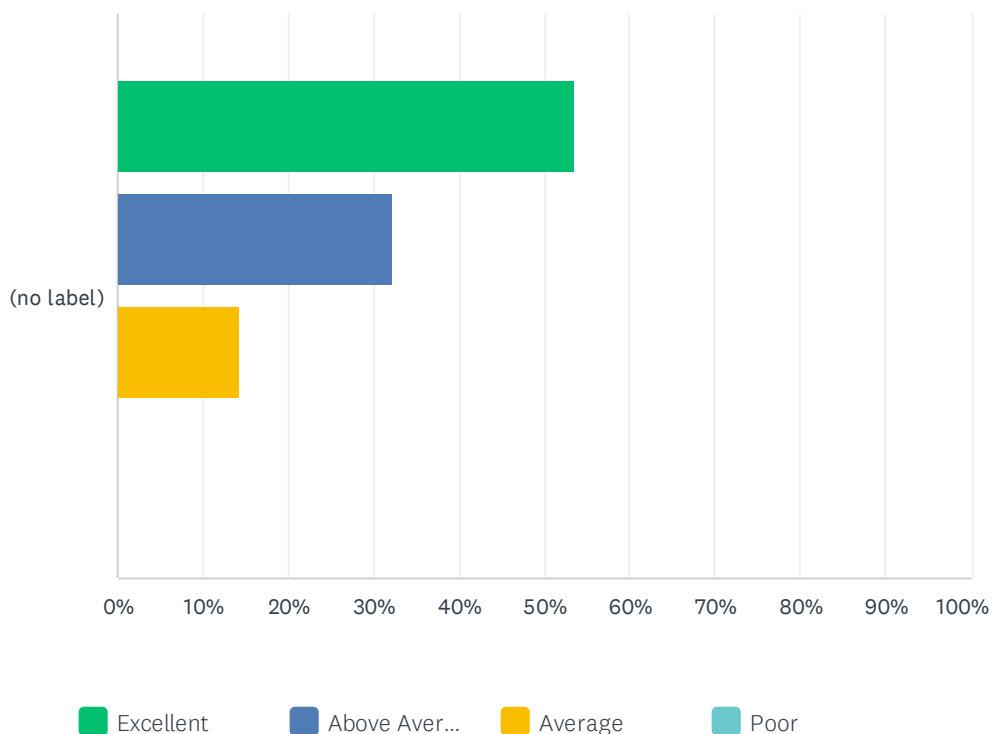


	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	85.71%	14.29%	0.00%	0.00%	28	3.86
	24	4	0	0		

#	COMMENTS	DATE
1	Knowledge speakers - I simply didn't catch all I needed to know.	7/28/2022 12:02 PM
2	I now understand what a defined benefit means! It was interesting to see what I would collect if I retired next year compared to 2029.	7/22/2022 12:00 AM
3	Great information! 😊	7/21/2022 5:26 PM
4	Information that all teachers need	7/21/2022 4:50 PM
5	Grateful for the information, personalized print out, and explanations with examples!	7/21/2022 3:47 PM
6	Thank you, very informative!	7/21/2022 2:27 PM
7	The information was so informative & will be helpful to me in planning my retirement.	7/21/2022 2:26 PM

## Q2 Estate Planning Presentation

Answered: 28 Skipped: 0

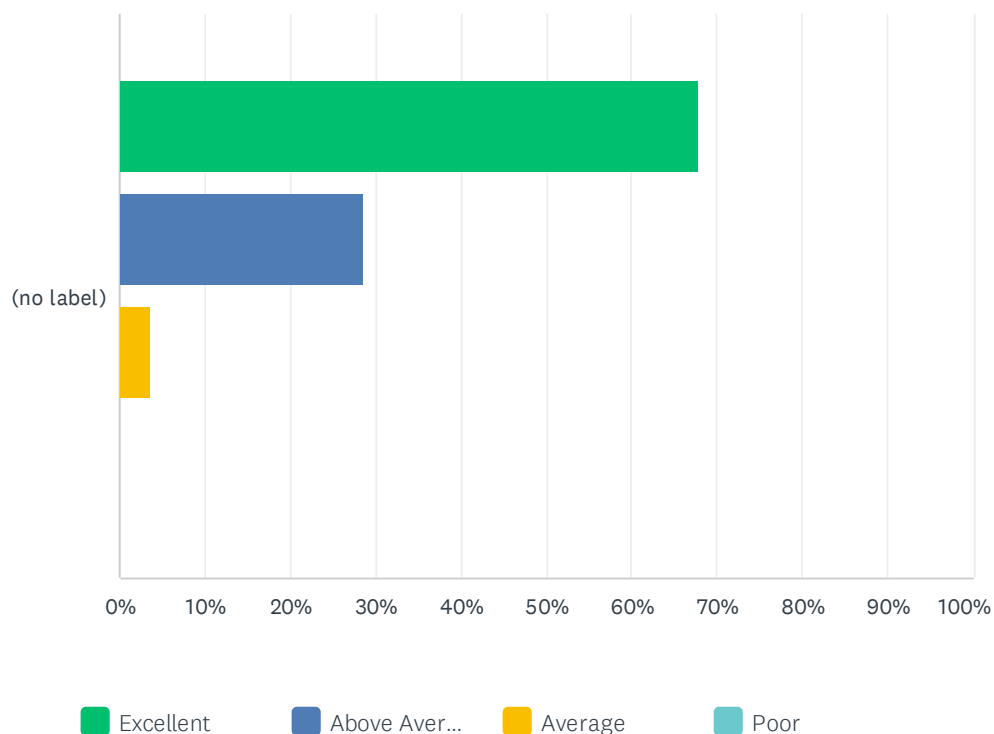


	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	53.57%	32.14%	14.29%	0.00%	28	3.39
	15	9	4	0		

#	COMMENTS	DATE
1	We are just beginning the process of making a will, assigning a power of attorney, and having a health care directive. It was informative to hear another attorney's perspective.	7/22/2022 12:00 AM
2	Great reminders of what A person needs to be thinking ahead about.	7/21/2022 5:26 PM
3	Useful information. I really appreciated hearing recommendations and the fact that online wills aren't a horrible way to go.	7/21/2022 3:47 PM
4	The Estate planning reminded me that I need to update my portfolios with current information.	7/21/2022 2:26 PM

## Q3 Social Security Administration Presentation

Answered: 28 Skipped: 0

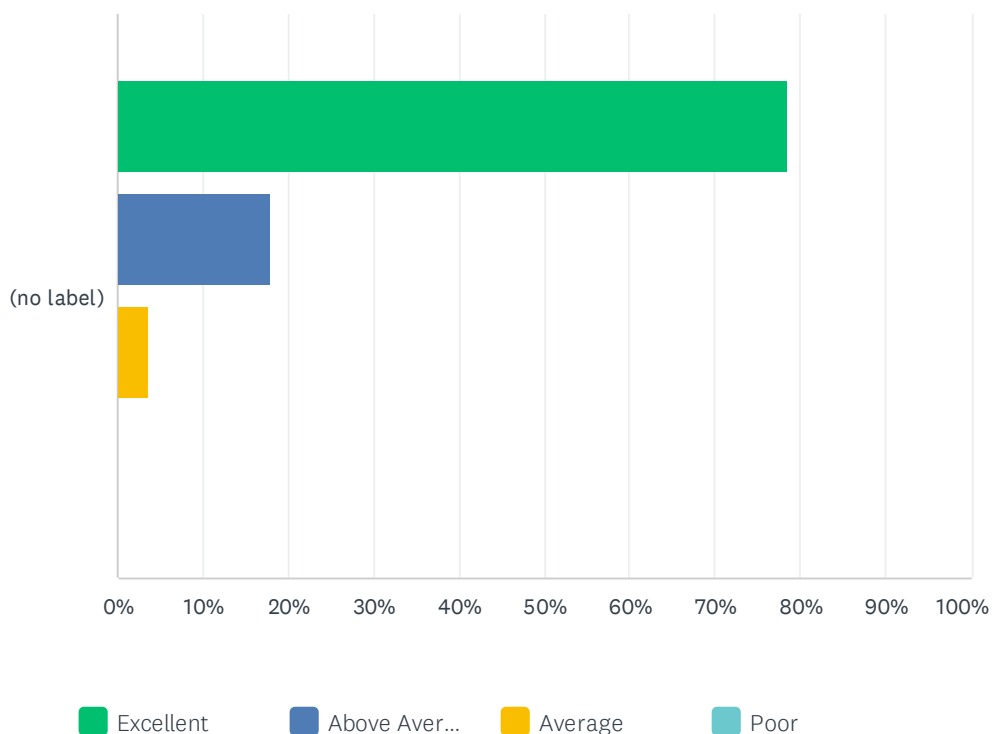


	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	67.86% 19	28.57% 8	3.57% 1	0.00% 0	28	3.64

#	COMMENTS	DATE
1	Presenter's knowledge level was high: again though I didn't catch all I needed to absorb to make decisions regarding social security and Medicare.	7/28/2022 12:02 PM
2	There are so many scenarios that I would definitely have to call for help! I started to get confused!	7/22/2022 12:00 AM
3	Nice and easy to understand.	7/21/2022 3:47 PM
4	Good information but I'll definitely need support in figuring out exactly what I need to do to get the maximum benefit for me & my husband. Also, learning how Medicare works was quite useful. There was a lot of information for us to discuss.	7/21/2022 2:26 PM

## Q4 Overall Seminar

Answered: 28 Skipped: 0

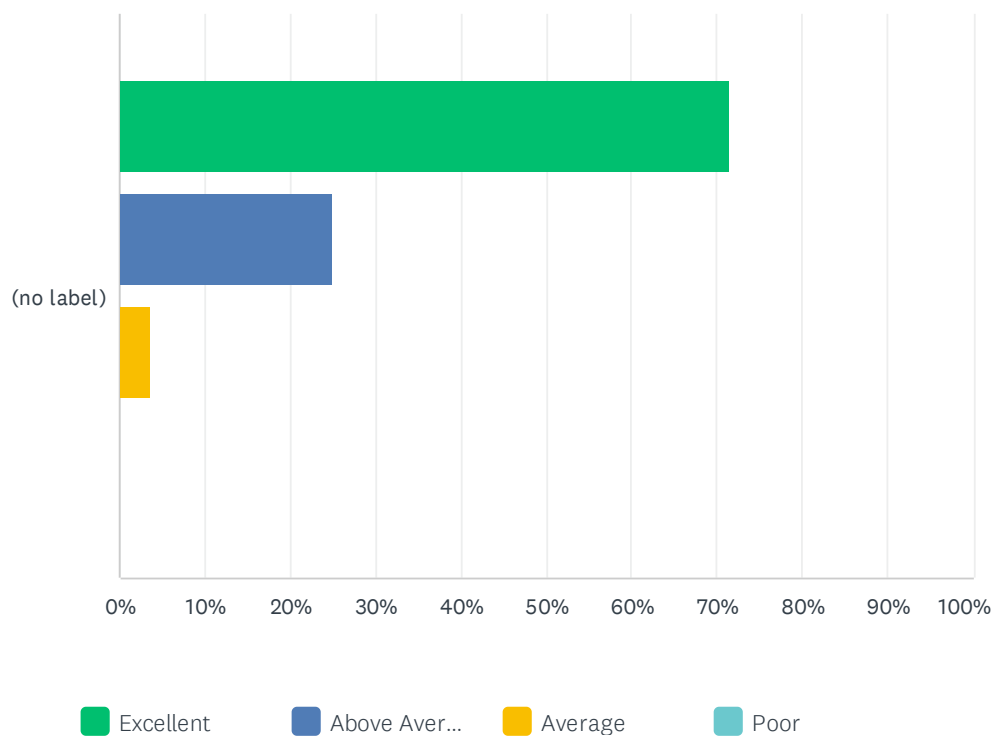


	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	78.57% 22	17.86% 5	3.57% 1	0.00% 0	28	3.75

#	COMMENTS	DATE
1	Very good!	7/28/2022 12:19 PM
2	Too much information: too little time to interact with the information- it got to the point I was over saturated with information and didn't even know what questions to ask.	7/28/2022 12:02 PM
3	Great Job!! Very informational!	7/28/2022 11:40 AM
4	Thank you for putting this on for TFFR members. My time was spend wisely learning about everything.	7/22/2022 12:00 AM
5	It was just what I needed! Thanks for the opportunity to come and go in one day. Thank you! Thanks too, to NDU for the goodies and support!!	7/21/2022 3:47 PM
6	Well worth attending!	7/21/2022 2:27 PM
7	I would definitely recommend this seminar for all teachers who are considering retirement within the next 10-5 years. It's so beneficial.	7/21/2022 2:26 PM

## Q5 Was the material relevant to your needs?

Answered: 28 Skipped: 0

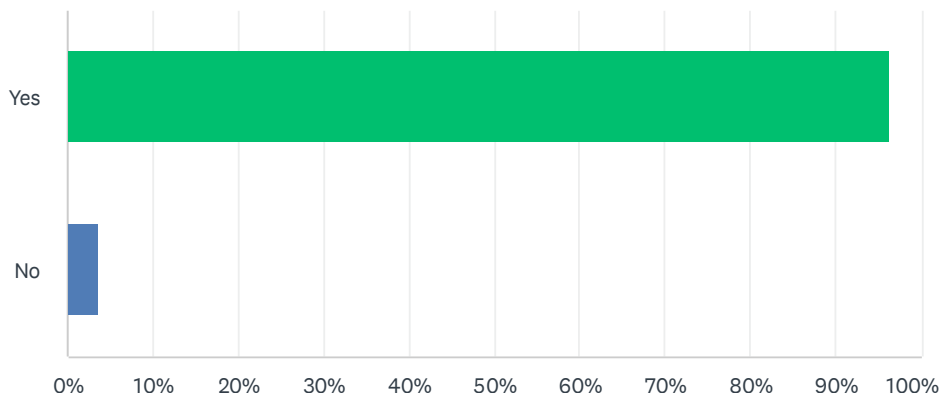


	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	71.43% 20	25.00% 7	3.57% 1	0.00% 0	28	3.68



## Q6 Will attendance at this workshop motivate you to take action relative to your retirement planning?

Answered: 28 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	96.43%	27
No	3.57%	1
<b>TOTAL</b>		<b>28</b>

#	IF YES, WHAT ACTION WILL YOU TAKE?	DATE
1	Start my planning and take action soon.	7/30/2022 9:51 PM
2	Get to work on needed documents	7/29/2022 9:56 AM
3	Retirement	7/28/2022 6:20 PM
4	Going to do it!	7/28/2022 12:19 PM
5	Legal and attending to my 403b account.	7/28/2022 12:02 PM
6	I will retire end of the school year, May 2023.	7/28/2022 11:40 AM
7	Find out more about retirement after this school year	7/27/2022 5:14 PM
8	Update will, get papers organized, plan for retirement date	7/22/2022 7:20 AM
9	I want to contact TFFR to see some more examples of if I retire sooner what payment I would receive.	7/22/2022 12:00 AM
10	Create a will and add contingent beneficiaries to my retirement plans.	7/21/2022 10:25 PM
11	Check over our will and come up with a plan as to what we want to do pre-retirement.	7/21/2022 5:26 PM
12	I will get my will updated. I'm close to retirement, so this workshop answered some of the questions I have.	7/21/2022 4:50 PM
13	Will, durable power of attorney, and medical directive AND a visit with school administration	7/21/2022 3:47 PM
14	Get things in place to retire. Also now know who and what should be contacted.	7/21/2022 2:27 PM
15	My husband & I will get our portfolios in order for all areas presented at this seminar.	7/21/2022 2:26 PM
16	figure out ss and money	7/21/2022 2:09 PM

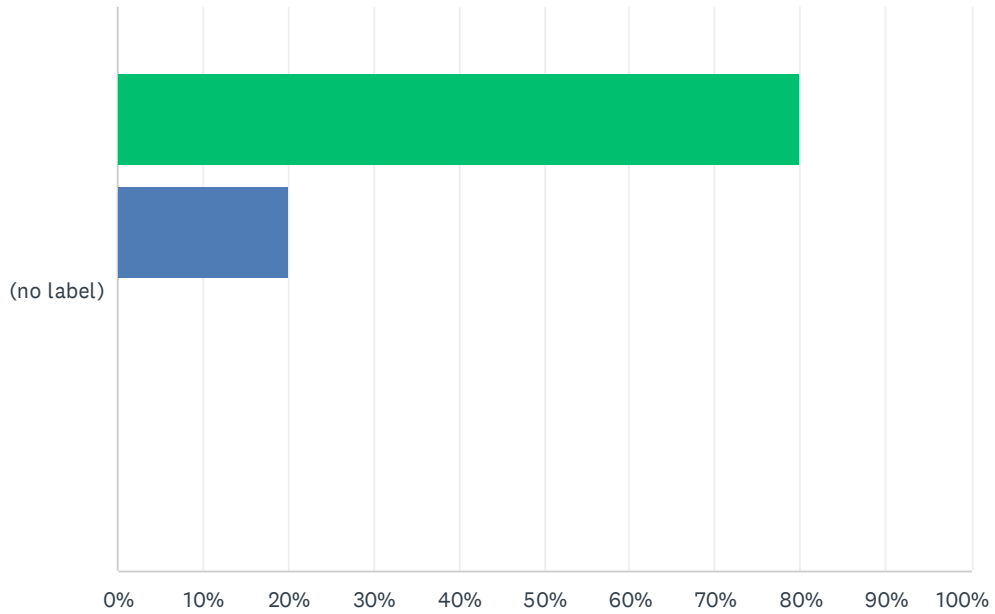
## Q7 Do you have suggestions for future programs?

Answered: 15 Skipped: 13

#	RESPONSES	DATE
1	The program was excellent. It was too bad that so few attended the program. I was thinking maybe something over the teacher convention when in Bismarck would be better attended.	7/30/2022 9:51 PM
2	No	7/28/2022 6:20 PM
3	I would have liked some individual time to talk about retirement	7/28/2022 2:04 PM
4	It would be nice to meet with someone, but I understand the time limitations.	7/28/2022 12:19 PM
5	Would appreciate smaller breakout sessions to truly grasp presented information	7/28/2022 12:02 PM
6	No	7/28/2022 11:40 AM
7	No	7/27/2022 5:14 PM
8	More time to offer questions and involve the attendants. Too many topics- maybe eliminate topic of medicare.	7/22/2022 7:20 AM
9	Nope!	7/22/2022 12:00 AM
10	No, but thank you for your time and all of the great information.	7/21/2022 5:26 PM
11	I know this might be possible, but recommendations about online will-writing tools that are consistent with ND requirements and/or ones to avoid would be useful and appreciated!	7/21/2022 3:47 PM
12	I learned so much, not sure until I start working through the process.	7/21/2022 2:27 PM
13	No suggestions. This was a wonderful seminar.	7/21/2022 2:26 PM
14	maybe little apts. set up to go over the retirement papers	7/21/2022 2:09 PM
15	None	7/21/2022 2:02 PM

## Q1 Please rate the overall program

Answered: 15 Skipped: 0

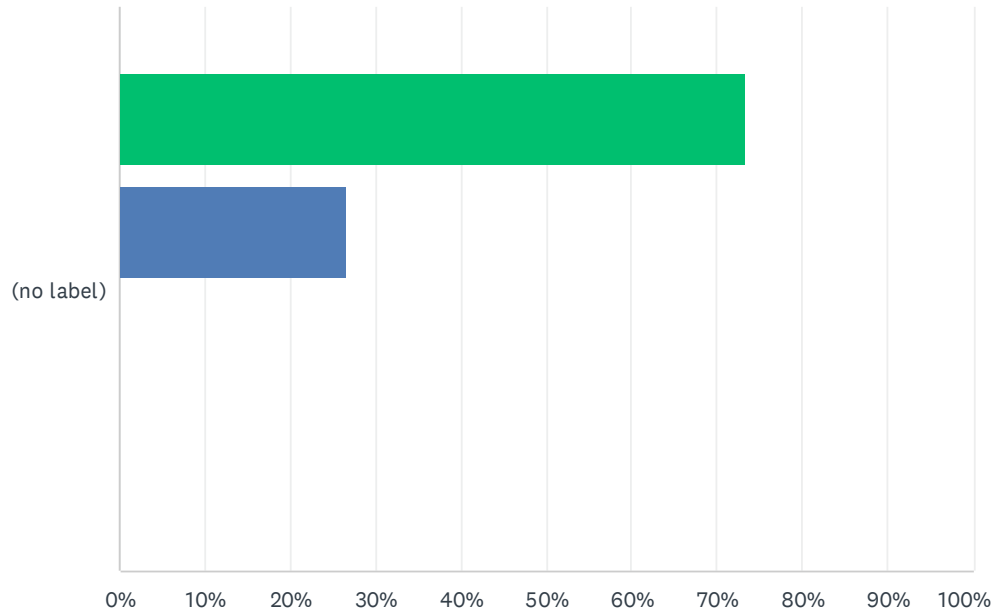


■ Excellent
 ■ Above Aver...
 ■ Average
 ■ Poor

	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	80.00% 12	20.00% 3	0.00% 0	0.00% 0	15	3.80

## Q2 Was the material relevant to your needs?

Answered: 15 Skipped: 0

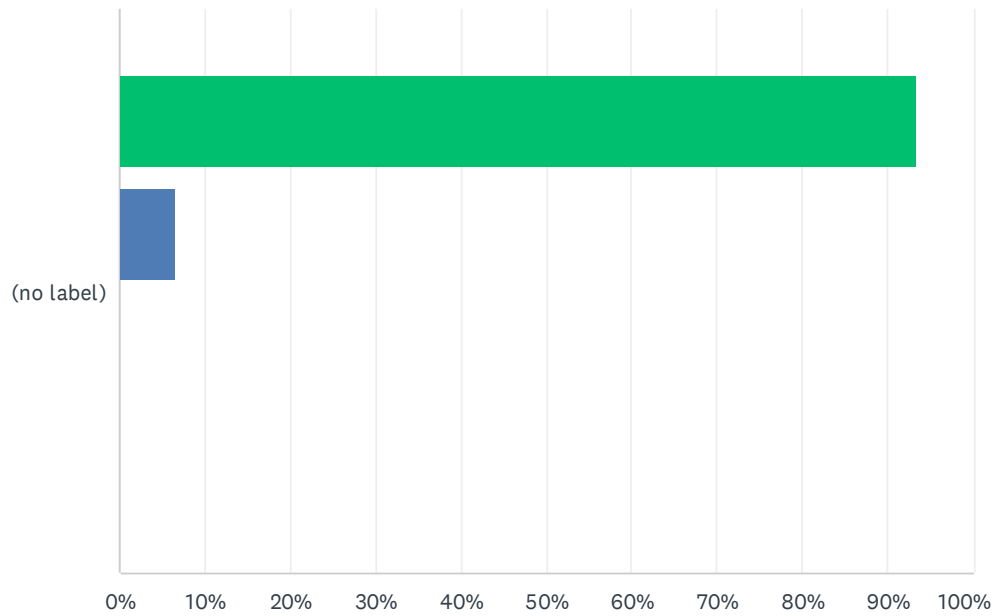


■ Excellent
 ■ Above Aver...
 ■ Average
 ■ Poor

	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	73.33% 11	26.67% 4	0.00% 0	0.00% 0	15	3.73

### Q3 How knowledgeable, organized, and effective were the speakers?

Answered: 15 Skipped: 0



■ Excellent
 ■ Above Aver...
 ■ Average
 ■ Poor

	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	93.33%	6.67%	0.00%	0.00%	15	3.93
	14	1	0	0		

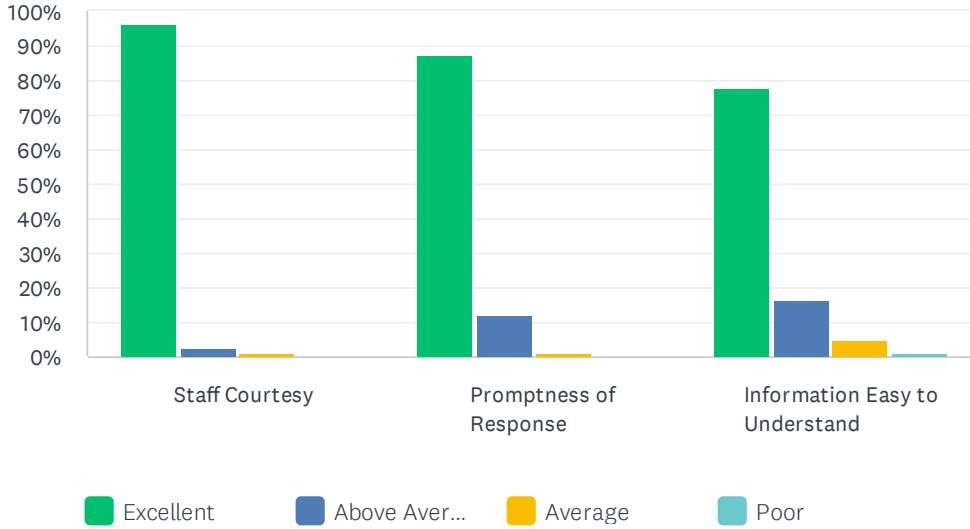
## Q4 How did the online format work for you? Do you have any suggestions for future webinars?

Answered: 15 Skipped: 0

#	RESPONSES	DATE
1	The ladies were very prepared and walked through the information very well and made me feel comfortable about what I need to do next.	11/27/2022 9:59 AM
2	It went well. It was nice not to have to attend in person.	11/23/2022 8:18 AM
3	I like the option of an online format but I was unable to attend because I had a board meeting that was scheduled for that evening so I was unable to log in.	11/22/2022 2:29 PM
4	It went well. I need more back and forth communication, when I do retire.	11/22/2022 1:59 PM
5	I think the format was a success. I liked how you could submit questions and it still didn't disrupt the flow of the meeting. Great job!	11/22/2022 7:36 AM
6	Great information and she did a great job with details.	11/21/2022 8:27 PM
7	The online format worked best for me. I actually participated from home. The information was very worthwhile of course, the pace was great and very well done. I really didn't come away with any questions just lots to think and decide on. Great job!	11/21/2022 6:24 PM
8	An outline would help that possibly notes could be written on.	11/21/2022 1:36 PM
9	This format worked well for the information and purpose.	11/21/2022 10:31 AM
10	Very informative and the online format was great.	11/21/2022 9:56 AM
11	It was very good. I need to hear this several times so I understand everything. Thank you!	11/21/2022 9:00 AM
12	My feed cut out at the 53 min. mark. Not sure if it was on my end or yours.	11/21/2022 8:30 AM
13	Worked great	11/21/2022 8:18 AM
14	It was great! It is so convenient to attend a webinar. Living 90 miles from Fargo (or any other city), this was the best!	11/21/2022 8:02 AM
15	The online format was good for me.	11/21/2022 7:47 AM

Q1 We strive to deliver quality service to our customers. Please take a minute to provide us with your feedback.

Answered: 110 Skipped: 0



	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
Staff Courtesy	96.36% 106	2.73% 3	0.91% 1	0.00% 0	110	3.95
Promptness of Response	87.16% 95	11.93% 13	0.92% 1	0.00% 0	109	3.86
Information Easy to Understand	77.98% 85	16.51% 18	4.59% 5	0.92% 1	109	3.72

## Customer Satisfaction Survey

# Q2 Comments/Suggestions

Answered: 66    Skipped: 44

#	RESPONSES	DATE
1	Thanks for all you do!	6/30/2023 10:30 AM
2	Thank you for all you do!	6/13/2023 11:57 AM
3	They are so helpful!	6/13/2023 11:57 AM
4	Thank you so much for helping me navigate through the material.	6/13/2023 11:56 AM
5	A+; thank you to Retirement Specialist for everything.	6/13/2023 11:51 AM
6	Everything was done in the time frame they gave - I never had to wait. Communication via email was clear and timely.	6/13/2023 11:51 AM
7	I felt that the forms were easy to fill out. The information was easy to understand. The retirement workshop I attended was very helpful.	6/13/2023 11:50 AM
8	Thank you!	6/13/2023 11:49 AM
9	Staff is friendly & helpful. Meetings are informative and they answer questions so process is understandable.	6/13/2023 11:49 AM
10	Retirement Specialist was wonderful to work with!	6/13/2023 11:48 AM
11	Very informative and eager to help. They should be commended, made me feel at ease with things I needed help on. Thank you!	6/13/2023 11:48 AM
12	I am beyond pleased as to the kindness and caring that was shown to me. This is a huge step (retirement) to wrap one's head around and I felt that I had complete and caring guidance from you to get here. Thank you!	6/13/2023 11:47 AM
13	What is "in-staff" substitute teaching?	6/13/2023 11:46 AM
14	Staff is super helpful! Thank you!	6/13/2023 11:46 AM
15	The Best!	6/13/2023 11:45 AM
16	Thank you for taking the time to explain everything. The counseling session was very helpful.	6/13/2023 11:45 AM
17	Very helpful - Kudos to Retirement Specialist!	6/13/2023 11:45 AM
18	Very helpful. Thx so much.	6/13/2023 11:44 AM
19	Such an easy process! Thank you!	6/13/2023 11:44 AM
20	Every question I had was answered promptly and all staff has been excellent! :)	6/13/2023 11:43 AM
21	I just want to commend you, and your staff for walking me through this process. Even though I asked a lot of questions, I was received with professionalism, and clarity for all my questions, and inquiries. Thank you!!	6/6/2023 8:03 PM
22	Every staff member that I was in contact with was knowledgeable, helpful, and friendly. The response was very quick and professional. There were two parts of the application process that could be more user friendly. The directions for completing the tax portion of the application may need the assistance of an accountant. Upon completion of all parts of the application, it was unclear how it should be submitted with two different PO addresses given on different forms. Thank you for allowing input.	5/31/2023 11:19 AM
23	Very helpful and very courteous. So nice .	5/21/2023 9:12 AM
24	Very impressed with the courtesy and professionalism from Retirement Specialist. She answered my questions and explained things thoroughly. Thank you for valuing my retirement.	5/18/2023 11:39 AM



## Customer Satisfaction Survey

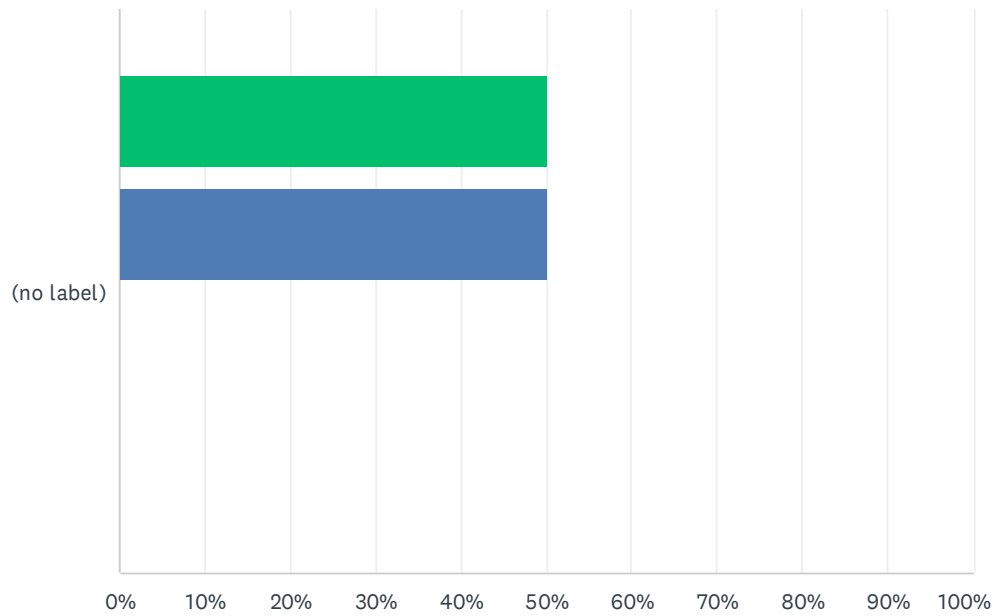
25	I am very impressed with your team! Thank you for making this process easy.	5/12/2023 2:01 PM
26	For me, the IRS form was difficult and very confusing, but the TFFR forms are well done, especially if one went to a retirement session where things were discussed.	5/9/2023 9:58 PM
27	Retirement Specialist was so knowledgeable and easy to work with whenever I called. She is a wealth of information, and I feel much more comfortable with my retirement going forward and what to expect.	5/3/2023 12:19 PM
28	Everything was handled cheerfully and promptly in my recent enrollment of services/benefits from TFFR! Thank you!	4/21/2023 4:01 PM
29	Retirement Specialist was very, very good to work with. I was impressed by her accessibility & courtesy. Thx!	4/21/2023 4:00 PM
30	Staff has been very helpful and patient with my many questions! So very thankful for the help and kindness given!	4/8/2023 9:44 AM
31	I found the process to have went smooth. Everyone was knowledgeable, and patient.	3/24/2023 10:27 AM
32	so great to work with!!!	2/14/2023 7:33 PM
33	Not to sure how to go about all the many pages that need to be done, but the staff is very friendly and helpful.	2/9/2023 4:48 PM
34	Thank u 4 continuing your "Top Notch" attention to Retirement & Disability Benefit Details	1/20/2023 1:53 PM
35	Retirement Specialist is a true asset to TFFR	1/20/2023 1:52 PM
36	Friendly & Professional	1/20/2023 1:51 PM
37	Retirement Specialist was very helpful.	1/20/2023 1:51 PM
38	Very Informative! Well organized!	1/20/2023 1:51 PM
39	Retirement Specialist did an excellent job presenting & explaining the process of retirement & the TFFR paperwork. :)	1/20/2023 1:50 PM
40	-None- very thorough!	1/20/2023 1:48 PM
41	Retirement Specialist did an outstanding job of explaining the retirement process and helping me understand the choices and how they apply to me. Many thanks!	1/20/2023 1:47 PM
42	Everyone was very helpful. Thank you	1/20/2023 1:46 PM
43	Due to my indecisiveness as to whether to retire or not, I placed myself in a challenging position with my retirement benefits. Retirement Specialist went above and beyond to assist me with this matter. She is very personable and competent in her knowledge of the ins and outs of TFFR. I cannot say enough positive comments about her assistance. The NDTFFR is very fortunate to have her on their staff.	11/21/2022 9:16 AM
44	No problems. Helped me out. Thank you.	11/17/2022 9:46 AM
45	Retirement Specialist has been wonderful to work with. She told me how to update my address and I received notification it was updated. My paperwork was delayed due to the fact it was sent to the old address. Retirement Specialist made sure it was corrected.	11/17/2022 9:45 AM
46	I have appreciated the clarity and support during this exciting but rather chaotic time.	11/17/2022 9:44 AM
47	They were very helpful and knowledgeable.	11/17/2022 9:43 AM
48	Retirement Specialist Rocks!	11/17/2022 9:43 AM
49	Thank you for all your help.	11/17/2022 9:42 AM
50	Retirement Specialist was amazing! She is quite knowledgeable and was prompt when returning calls! Thank you, Retirement Specialist! :)	11/17/2022 9:42 AM
51	Thanks for everything!	11/17/2022 9:41 AM
52	I have been very impressed w/ the assistance provided, as well as the efficiency of the process.	11/17/2022 9:41 AM

## Customer Satisfaction Survey

53	Thank you for everything - so far, so good!!	11/17/2022 9:40 AM
54	Wonderful and very simple. Thank you	11/17/2022 9:39 AM
55	Retirement Specialist is Awesome!	11/17/2022 9:39 AM
56	Retirement Specialist was very friendly and efficient. Signing up for my benefits was easy and seamless!	11/17/2022 9:14 AM
57	Thanks for helping me understand how receiving TFFR benefits works!	11/17/2022 9:08 AM
58	Retirement Specialist was very informative & great to work with!	11/17/2022 9:07 AM
59	Everyone was more than polite in answering my many questions. Mailings have been very clear and informative. Thank you!	11/17/2022 9:07 AM
60	Retirement Specialist is AMAZING to work with.	11/17/2022 9:06 AM
61	Thank you to Retirement Specialist (and any others involved)! Things went smoothly through-out the process. Two thumbs-up to the ND Retirement Dept :)	11/17/2022 9:05 AM
62	My disability came on fairly suddenly cutting my teaching career short and TFFR was a great help in getting my future aligned!	11/17/2022 9:04 AM
63	Wonderful service from Retirement Specialist! Giver her a thank you!	11/17/2022 9:03 AM
64	For the first time, Retirement Specialist completed this presentation completely online, they both did a very good job of presenting and responding to questions.	11/16/2022 11:03 AM
65	It would also have been beneficial if they could have given us information on options for health insurance or how COBRA works and if that is the only option available for us.	11/7/2022 12:37 PM
66	Every time I have reached out, I get the same great response in a prompt manner and everyone is so helpful. Thanks	9/23/2022 1:34 PM

# Q1 Was the material relevant to your needs and/or interests?

Answered: 4 Skipped: 0

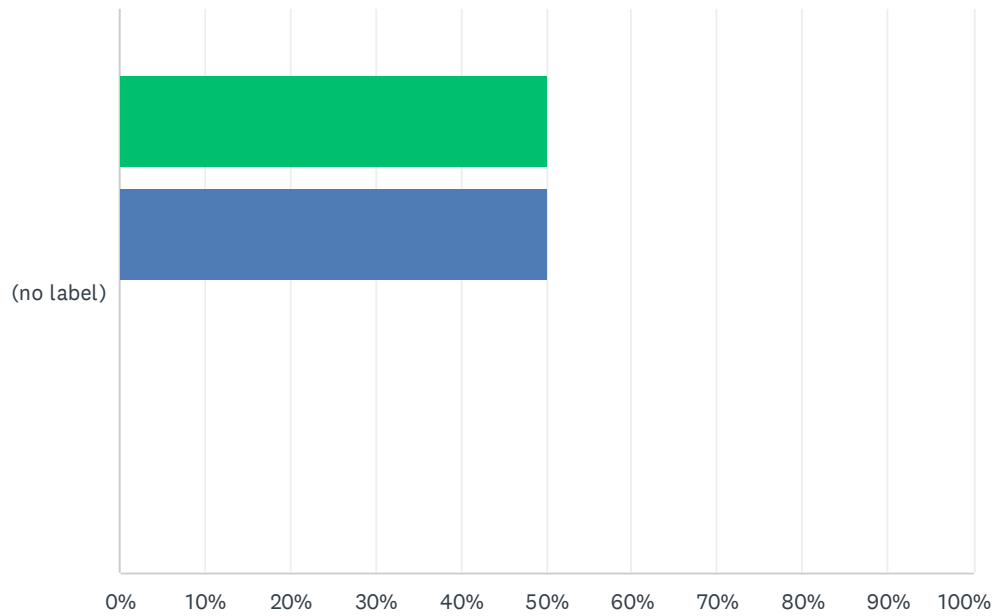


■ Excellent
 ■ Above Aver...
 ■ Average
 ■ Poor

	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	50.00% 2	50.00% 2	0.00% 0	0.00% 0	4	3.50

## Q2 How knowledgeable, organized, and effective were the speakers?

Answered: 4 Skipped: 0

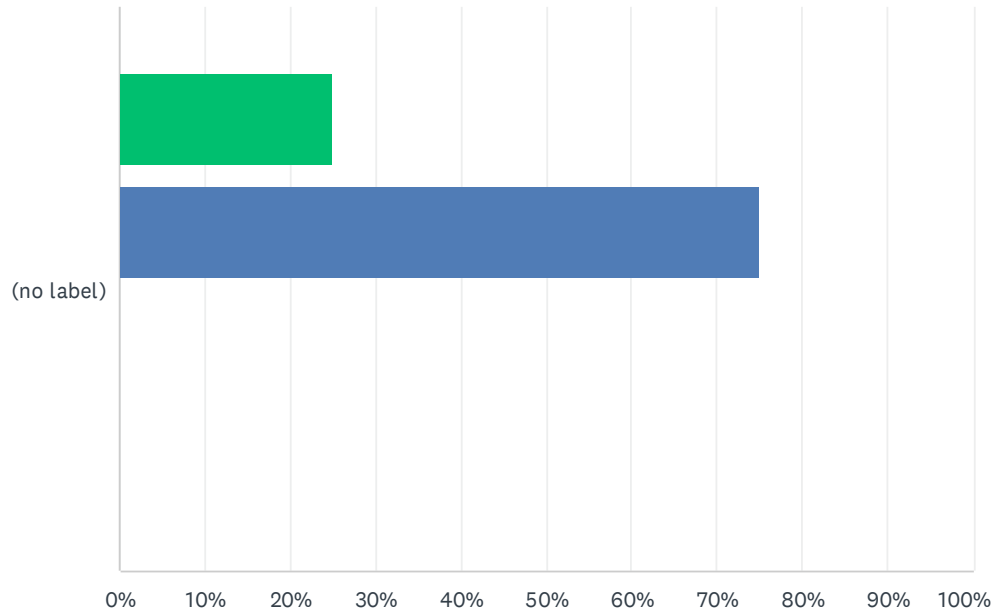


■ Excellent
 ■ Above Aver...
 ■ Average
 ■ Poor

	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	50.00% 2	50.00% 2	0.00% 0	0.00% 0	4	3.50

### Q3 How would you rate the overall workshop?

Answered: 4 Skipped: 0



■ Excellent
 ■ Above Aver...
 ■ Average
 ■ Poor

	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	25.00% 1	75.00% 3	0.00% 0	0.00% 0	4	3.25

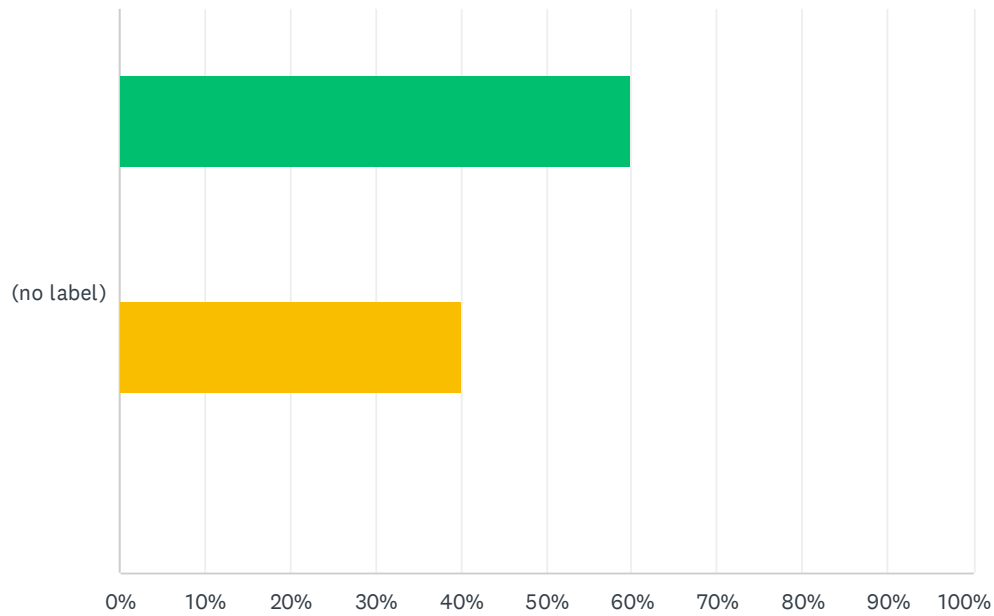
## Q4 Please share your comments about how the online format worked for you and any suggestions for future webinars.

Answered: 1 Skipped: 3

#	RESPONSES	DATE
1	I like that it is online and having a one topic at a time helps with learning.	11/22/2022 9:26 AM

# Q1 Was the material relevant to your needs and/or interests?

Answered: 5 Skipped: 0

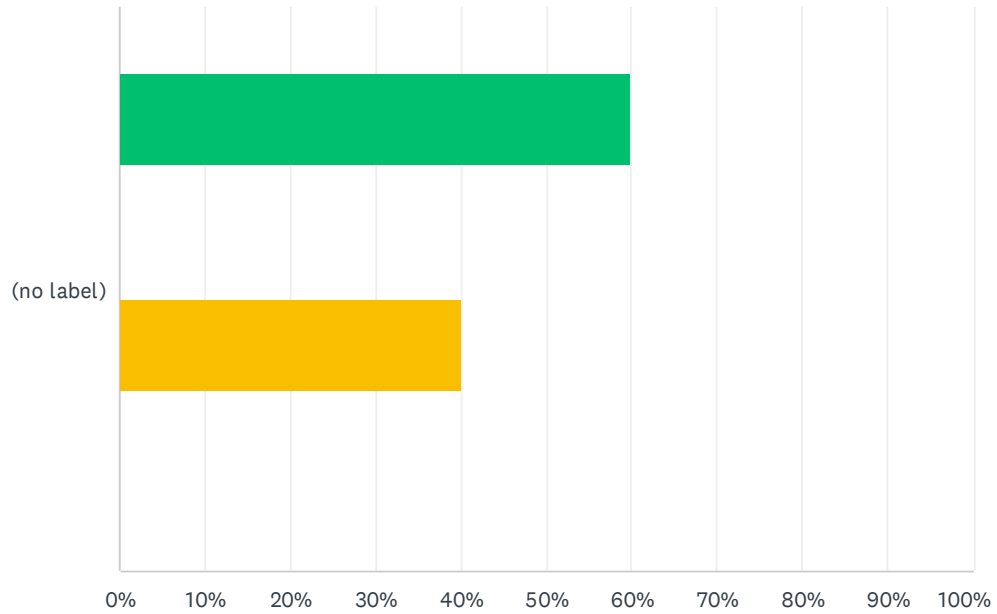


■ Excellent
 ■ Above Aver...
 ■ Average
 ■ Poor

	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	60.00% 3	0.00% 0	40.00% 2	0.00% 0	5	3.20

## Q2 How knowledgeable, organized, and effective were the speakers?

Answered: 5 Skipped: 0



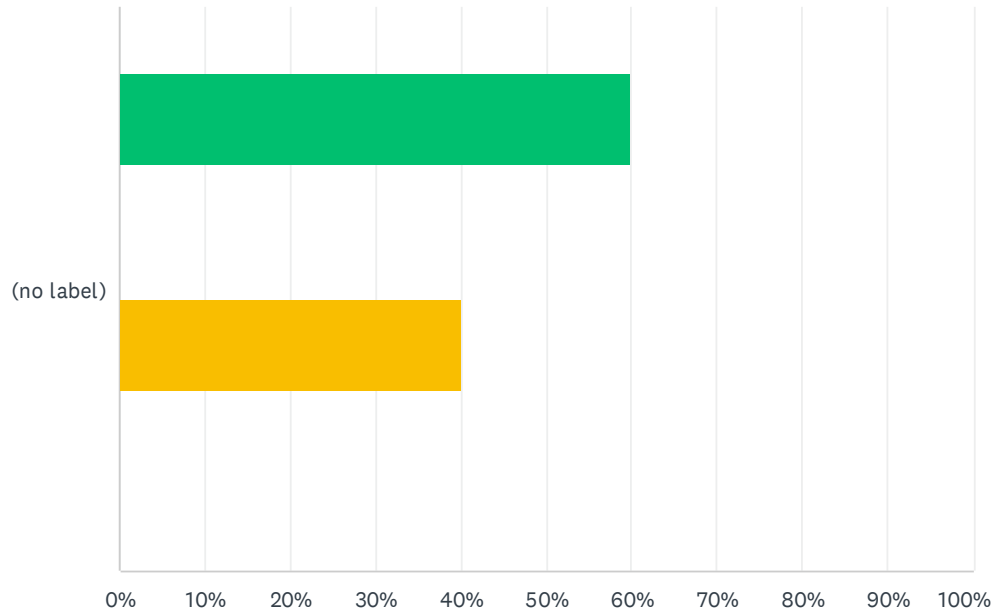
■ Excellent
 ■ Above Aver...
 ■ Average
 ■ Poor

	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	60.00% 3	0.00% 0	40.00% 2	0.00% 0	5	3.20



### Q3 How would you rate the overall workshop?

Answered: 5 Skipped: 0



■ Excellent
 ■ Above Aver...
 ■ Average
 ■ Poor

	EXCELLENT	ABOVE AVERAGE	AVERAGE	POOR	TOTAL	WEIGHTED AVERAGE
(no label)	60.00% 3	0.00% 0	40.00% 2	0.00% 0	5	3.20

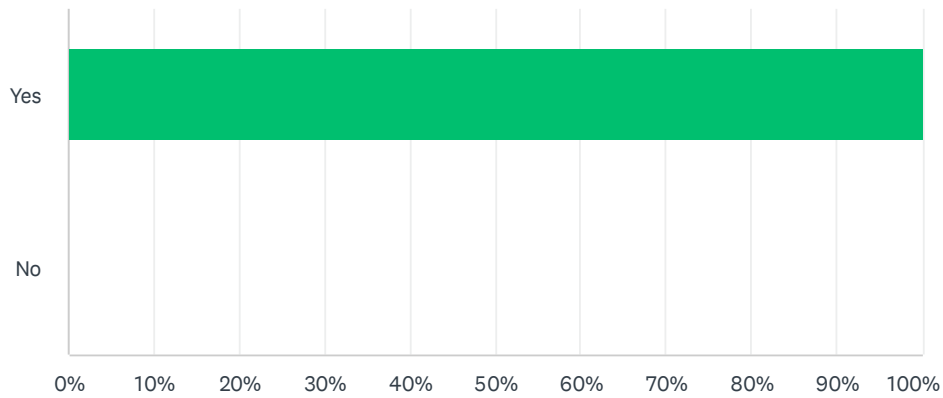
## Q4 Please share your comments about how the online format worked for you and any suggestions for future webinars.

Answered: 3 Skipped: 2

#	RESPONSES	DATE
1	Whenever I call any of you, you are so very helpful. I appreciate you all.	6/14/2023 1:33 PM
2	I was unable to attend due to software unlimited having a webinar at the same time.	2/16/2023 12:40 PM
3	This was great, always good to have a refresher.	2/8/2023 3:33 PM

# Q1 Do you prefer having two day/time choices (one a.m and one p.m.)?

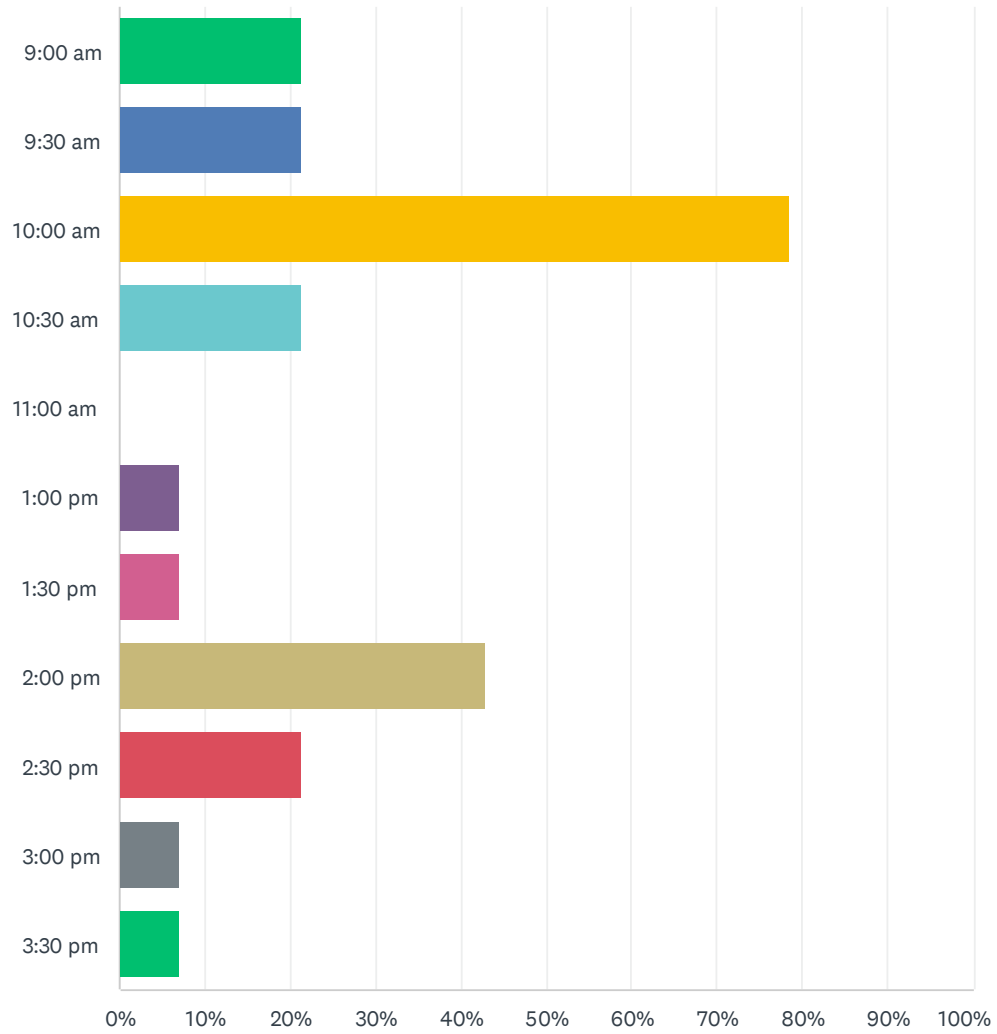
Answered: 14 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	100.00%	14
No	0.00%	0
Total Respondents: 14		

## Q2 What time(s) work best for you? (Central time)

Answered: 14 Skipped: 0

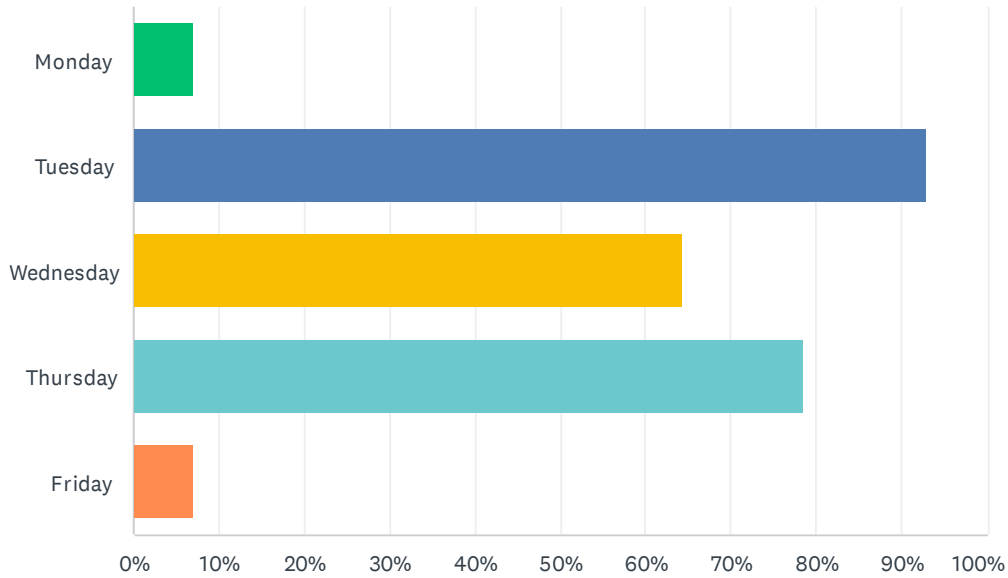


Teachers' Fund for Retirement TFFR Info Mixer Evaluation December 2022

ANSWER CHOICES	RESPONSES	
9:00 am	21.43%	3
9:30 am	21.43%	3
10:00 am	78.57%	11
10:30 am	21.43%	3
11:00 am	0.00%	0
1:00 pm	7.14%	1
1:30 pm	7.14%	1
2:00 pm	42.86%	6
2:30 pm	21.43%	3
3:00 pm	7.14%	1
3:30 pm	7.14%	1
Total Respondents: 14		

### Q3 What day(s) of the week work best for you?

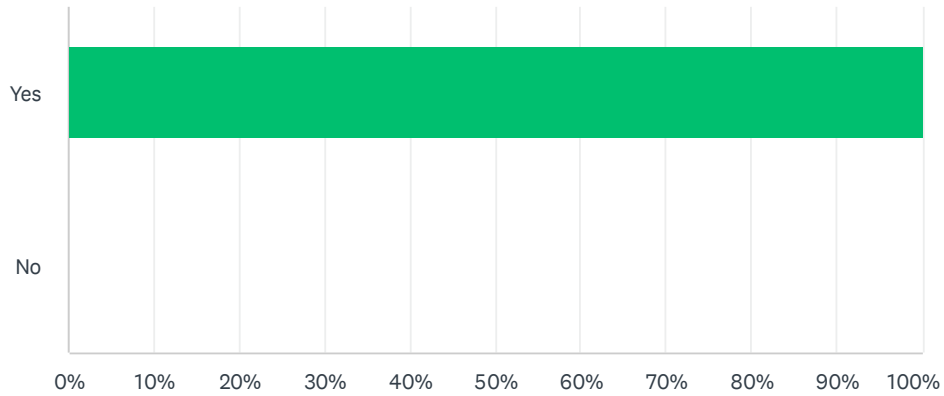
Answered: 14 Skipped: 0



ANSWER CHOICES	RESPONSES	
Monday	7.14%	1
Tuesday	92.86%	13
Wednesday	64.29%	9
Thursday	78.57%	11
Friday	7.14%	1
Total Respondents: 14		

## Q4 Does the 30-45 minute timeframe work for your schedule?

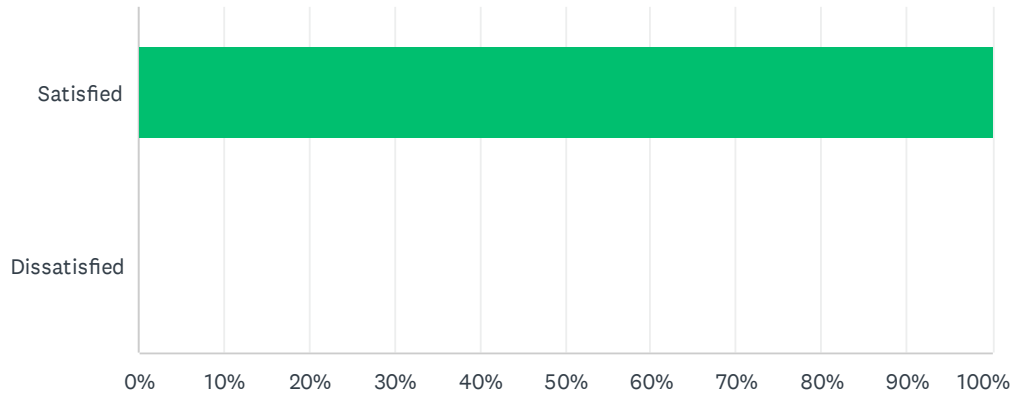
Answered: 14 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	100.00%	14
No	0.00%	0
TOTAL		14

## Q5 Are you happy with the variety of topics presented?

Answered: 14 Skipped: 0



ANSWER CHOICES	RESPONSES	
Satisfied	100.00%	14
Dissatisfied	0.00%	0
<b>TOTAL</b>		<b>14</b>



## Q6 Topic suggestions for future Info Mixers:

Answered: 1 Skipped: 13

#	RESPONSES	DATE
1	How to handle end of year salary for June and July.	12/13/2022 10:45 AM

## Q7 What parts of the Info Mixers did you like the best?

Answered: 3 Skipped: 11

#	RESPONSES	DATE
1	You are doing such a great job informing the business managers of what is reportable and not. And are so easy to work with when we have questions and concerns. You make our job so much easier. GREAT JOB LADIES!!!!!!!	12/13/2022 10:45 AM
2	Slide presentation is visual and easy to understand.	12/13/2022 10:45 AM
3	you are so helpful and open to questions--Thank you!	12/13/2022 10:42 AM

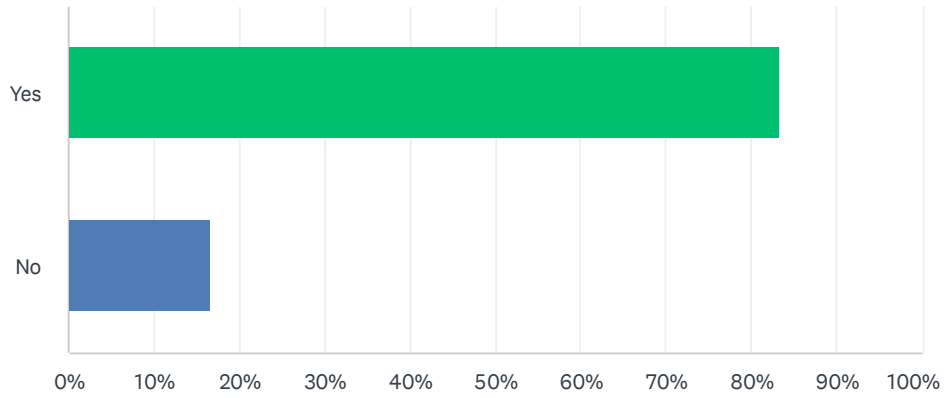
## Q8 Do you have any other comments/suggestions that would help us make future events better?

Answered: 0 Skipped: 14

#	RESPONSES	DATE
	There are no responses.	

# Q1 Do you prefer having two day/time choices (one a.m and one p.m.)?

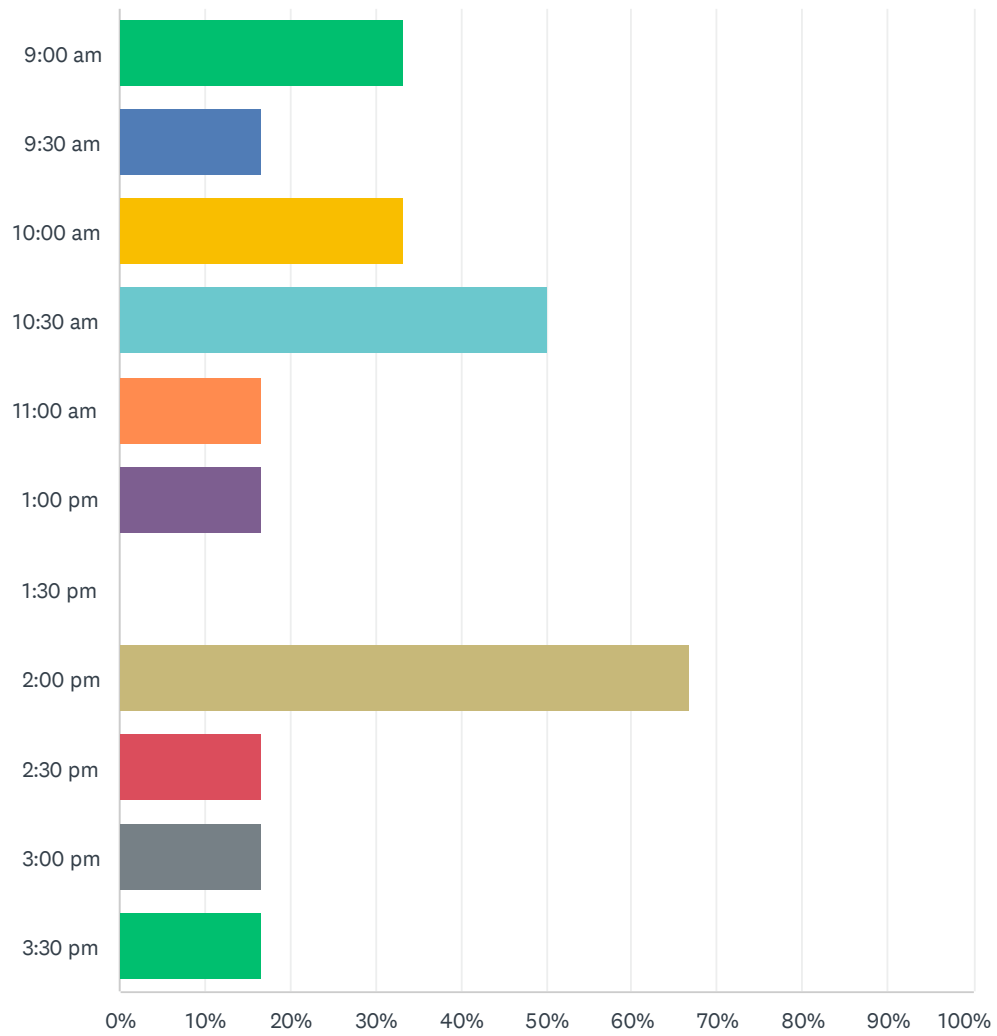
Answered: 6 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	83.33%	5
No	16.67%	1
Total Respondents: 6		

## Q2 What time(s) work best for you? (Central time)

Answered: 6 Skipped: 0

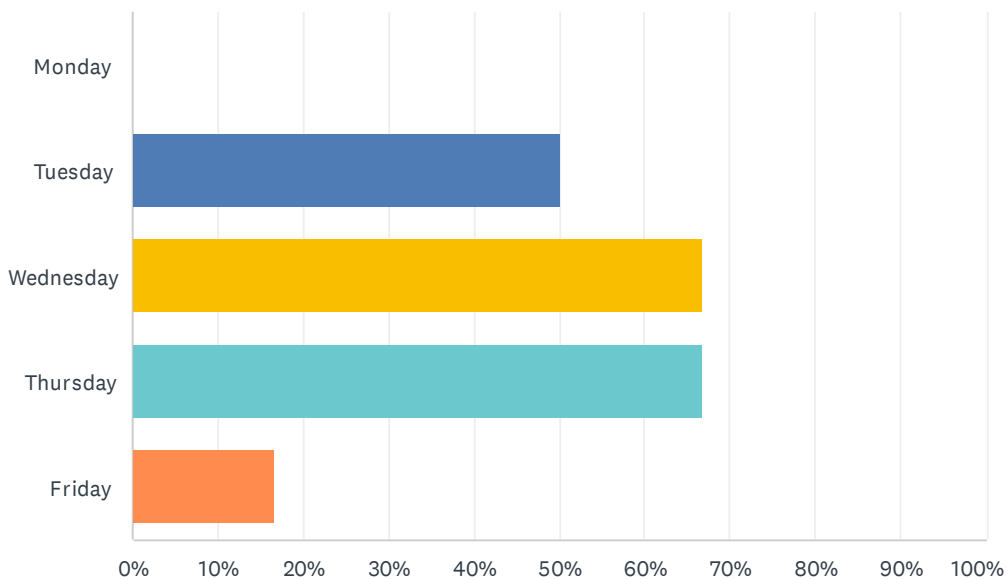


Teachers' Fund for Retirement TFFR Info Mixer Evaluation January 2023

ANSWER CHOICES	RESPONSES	
9:00 am	33.33%	2
9:30 am	16.67%	1
10:00 am	33.33%	2
10:30 am	50.00%	3
11:00 am	16.67%	1
1:00 pm	16.67%	1
1:30 pm	0.00%	0
2:00 pm	66.67%	4
2:30 pm	16.67%	1
3:00 pm	16.67%	1
3:30 pm	16.67%	1
Total Respondents: 6		

### Q3 What day(s) of the week work best for you?

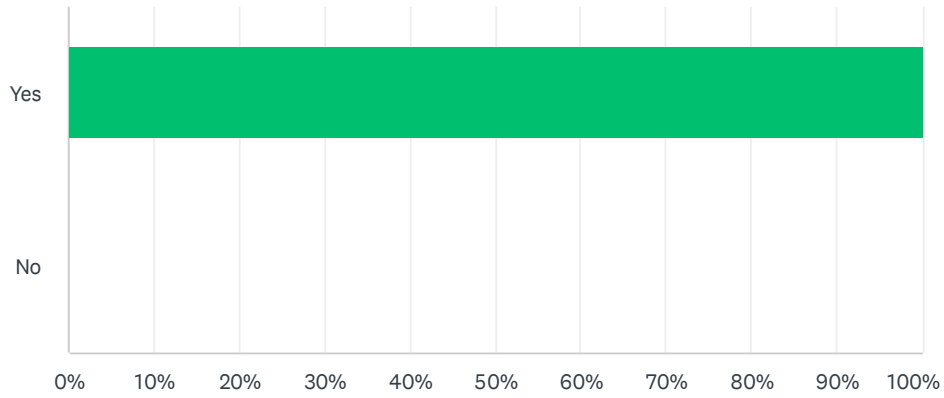
Answered: 6 Skipped: 0



ANSWER CHOICES	RESPONSES
Monday	0.00% 0
Tuesday	50.00% 3
Wednesday	66.67% 4
Thursday	66.67% 4
Friday	16.67% 1
Total Respondents: 6	

## Q4 Does the 30-45 minute timeframe work for your schedule?

Answered: 6 Skipped: 0

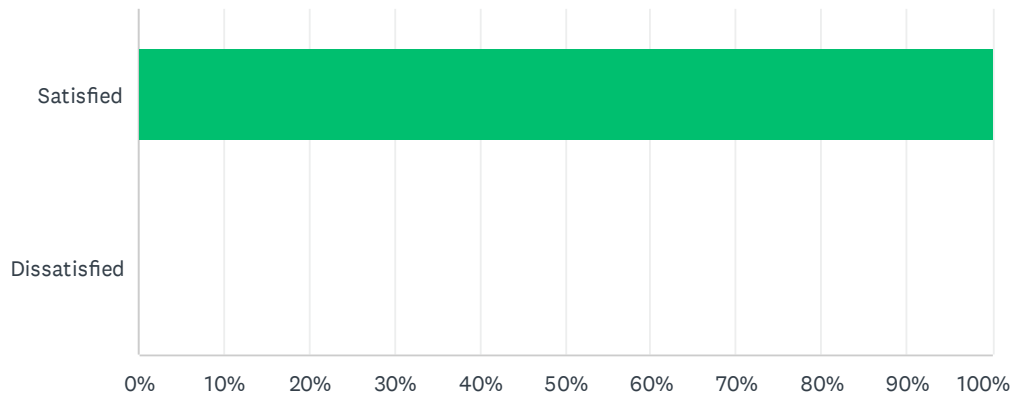


ANSWER CHOICES	RESPONSES	
Yes	100.00%	6
No	0.00%	0
<b>TOTAL</b>		<b>6</b>



## Q5 Are you happy with the variety of topics presented?

Answered: 6 Skipped: 0



ANSWER CHOICES	RESPONSES	
Satisfied	100.00%	6
Dissatisfied	0.00%	0
TOTAL		6

## Q6 Topic suggestions for future Info Mixers:

Answered: 2 Skipped: 4

#	RESPONSES	DATE
1	The different models	1/18/2023 2:50 PM
2	I'm not sure if there has been one like this already since I'm new, but is there any information on how to employ a new person who wants or had TFFR in the past? Like a new enrollment or continued, what kind of paperwork or information should we be giving the teachers.	1/18/2023 2:48 PM

## Q7 What parts of the Info Mixers did you like the best?

Answered: 2 Skipped: 4

#	RESPONSES	DATE
1	I like the step-by-step walkthroughs that you all do. It helps put the process of reporting and information sharing in perspective.	1/18/2023 2:50 PM
2	completed documents are helpful. Examples are great.	1/18/2023 2:47 PM

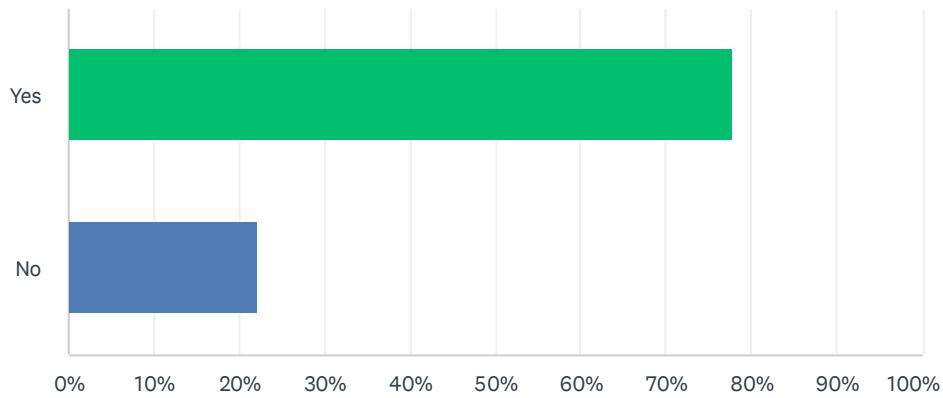
## Q8 Do you have any other comments/suggestions that would help us make future events better?

Answered: 1 Skipped: 5

#	RESPONSES	DATE
1	You all are great!!!	1/18/2023 2:50 PM

# Q1 Do you prefer having two day/time choices (one a.m and one p.m.)?

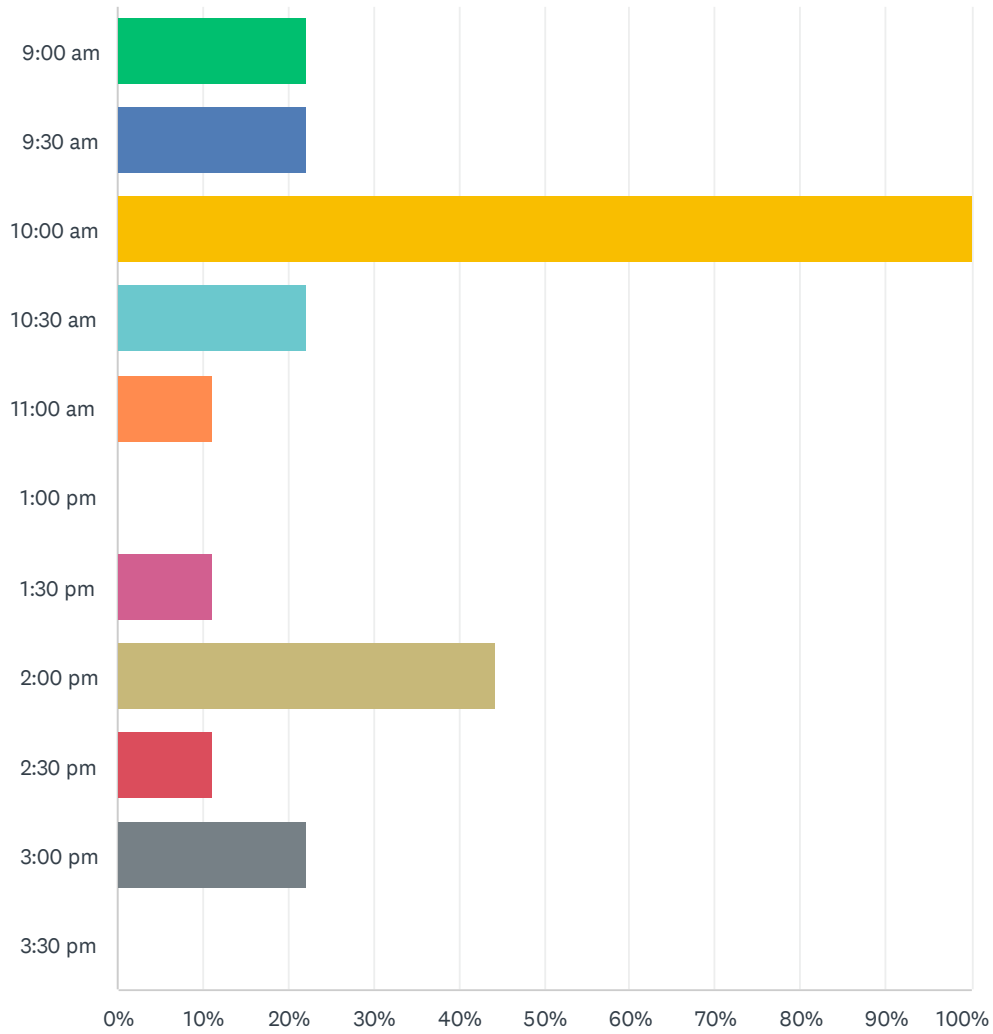
Answered: 9 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	77.78%	7
No	22.22%	2
Total Respondents: 9		

## Q2 What time(s) work best for you? (Central time)

Answered: 9 Skipped: 0

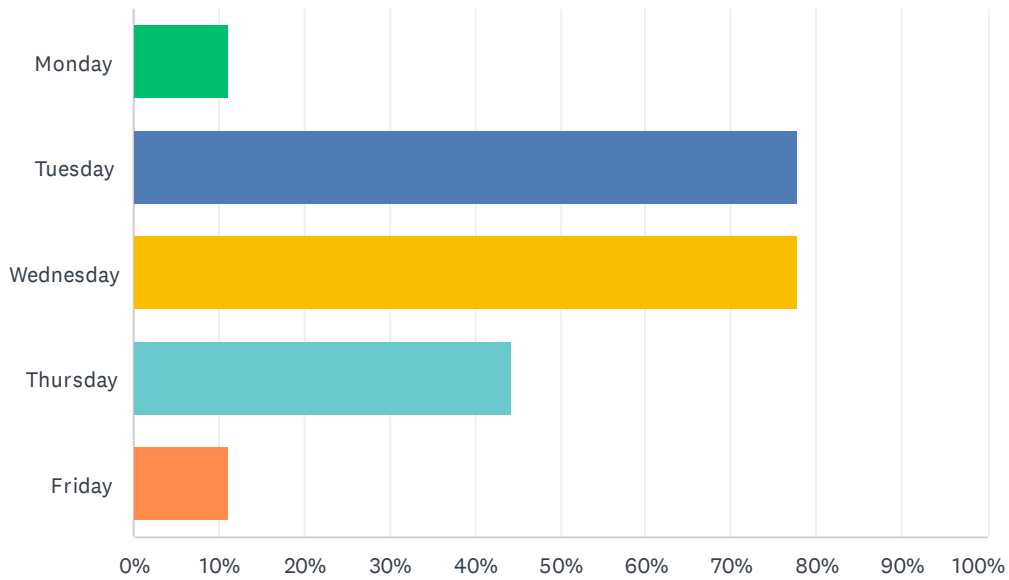


Teachers' Fund for Retirement TFFR Info Mixer Evaluation March 2023

ANSWER CHOICES	RESPONSES	
9:00 am	22.22%	2
9:30 am	22.22%	2
10:00 am	100.00%	9
10:30 am	22.22%	2
11:00 am	11.11%	1
1:00 pm	0.00%	0
1:30 pm	11.11%	1
2:00 pm	44.44%	4
2:30 pm	11.11%	1
3:00 pm	22.22%	2
3:30 pm	0.00%	0
Total Respondents: 9		

### Q3 What day(s) of the week work best for you?

Answered: 9 Skipped: 0

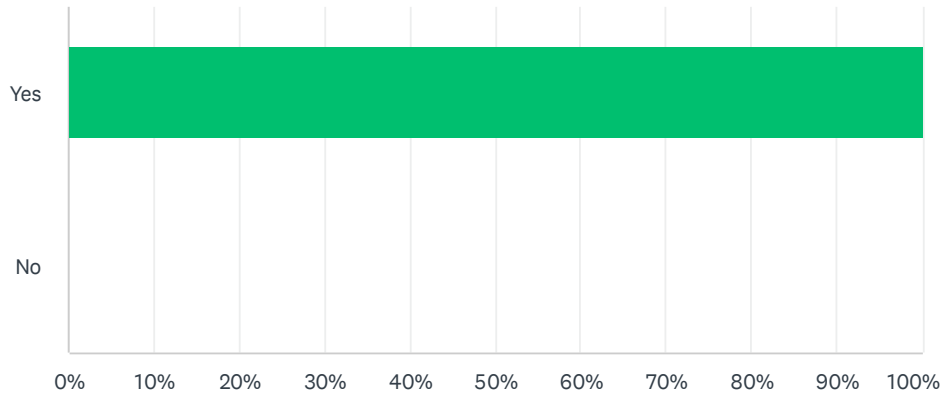


ANSWER CHOICES	RESPONSES	
Monday	11.11%	1
Tuesday	77.78%	7
Wednesday	77.78%	7
Thursday	44.44%	4
Friday	11.11%	1
Total Respondents: 9		



## Q4 Does the 30-45 minute timeframe work for your schedule?

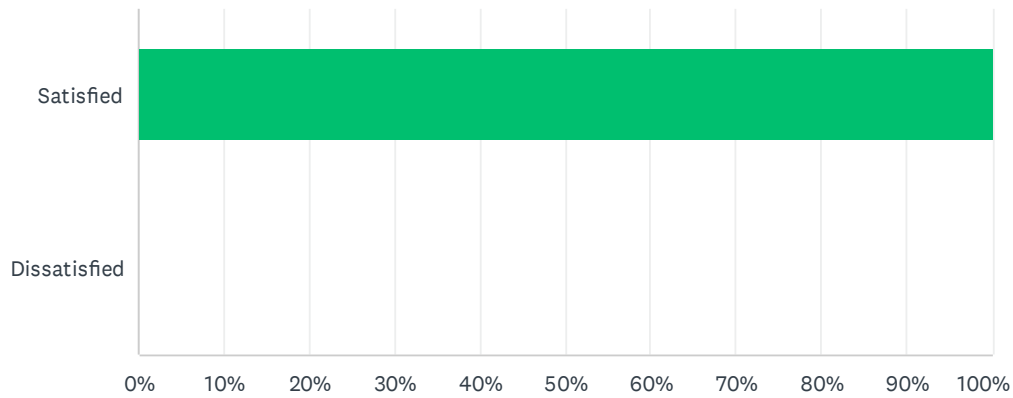
Answered: 9 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	100.00%	9
No	0.00%	0
TOTAL		9

## Q5 Are you happy with the variety of topics presented?

Answered: 9 Skipped: 0



ANSWER CHOICES	RESPONSES	
Satisfied	100.00%	9
Dissatisfied	0.00%	0
TOTAL		9

## Q6 Topic suggestions for future Info Mixers:

Answered: 1 Skipped: 8

#	RESPONSES	DATE
1	How to deal and fix errors made were made for an employees amounts.	3/14/2023 10:39 AM

## Q7 What parts of the Info Mixers did you like the best?

Answered: 1 Skipped: 8

#	RESPONSES	DATE
1	It is great to have these refreshers.	3/14/2023 10:39 AM

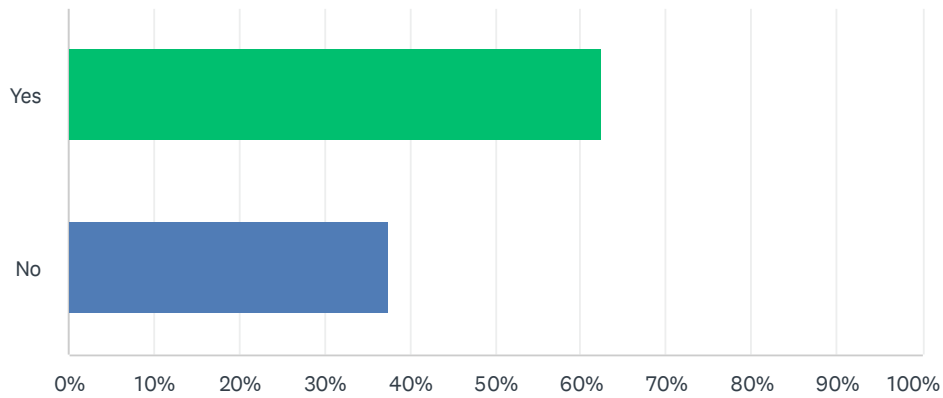
## Q8 Do you have any other comments/suggestions that would help us make future events better?

Answered: 1 Skipped: 8

#	RESPONSES	DATE
1	thank you for having these.	3/14/2023 10:41 AM

# Q1 Do you prefer having two day/time choices (one a.m and one p.m.)?

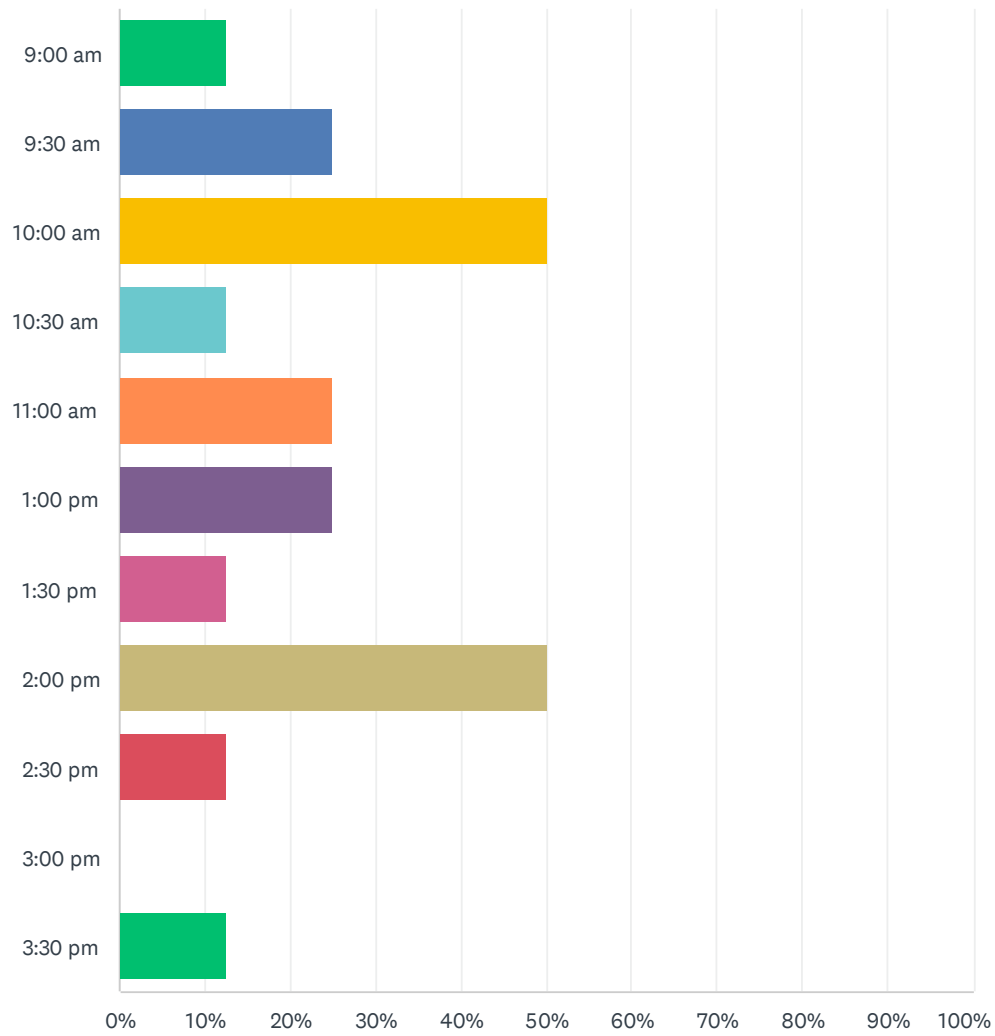
Answered: 8 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	62.50%	5
No	37.50%	3
Total Respondents: 8		

## Q2 What time(s) work best for you? (Central time)

Answered: 8 Skipped: 0



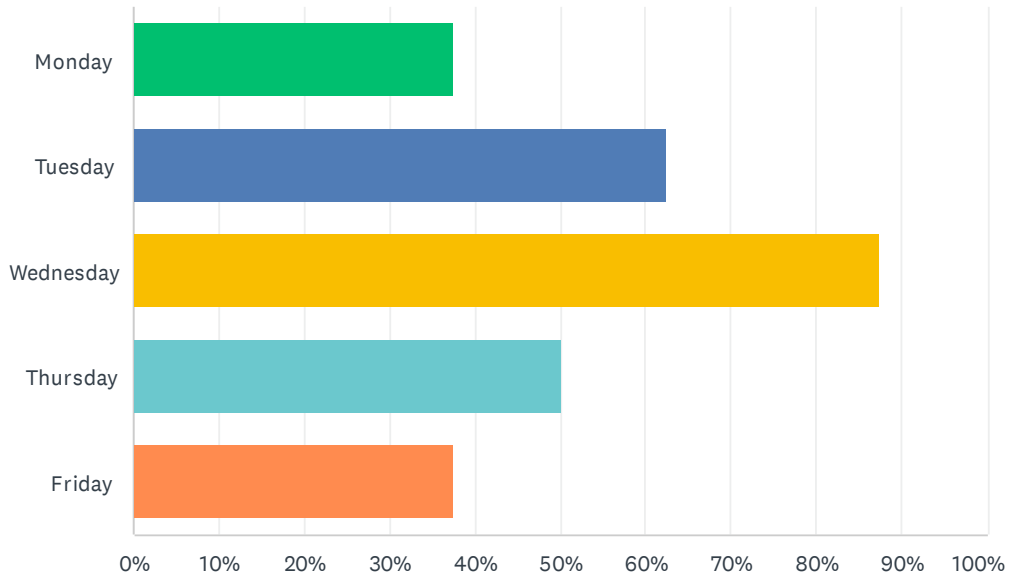
Teachers' Fund for Retirement TFFR Info Mixer Evaluation April 2023

ANSWER CHOICES	RESPONSES	
9:00 am	12.50%	1
9:30 am	25.00%	2
10:00 am	50.00%	4
10:30 am	12.50%	1
11:00 am	25.00%	2
1:00 pm	25.00%	2
1:30 pm	12.50%	1
2:00 pm	50.00%	4
2:30 pm	12.50%	1
3:00 pm	0.00%	0
3:30 pm	12.50%	1
Total Respondents: 8		



### Q3 What day(s) of the week work best for you?

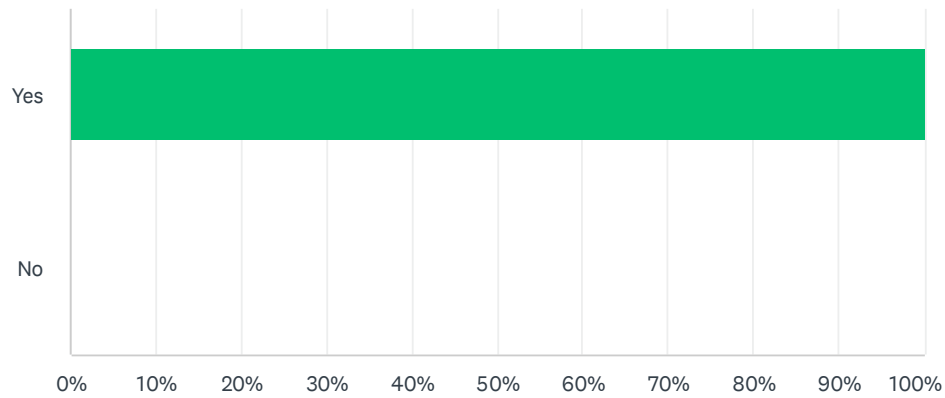
Answered: 8 Skipped: 0



ANSWER CHOICES	RESPONSES
Monday	37.50% 3
Tuesday	62.50% 5
Wednesday	87.50% 7
Thursday	50.00% 4
Friday	37.50% 3
Total Respondents: 8	

## Q4 Does the 30-45 minute timeframe work for your schedule?

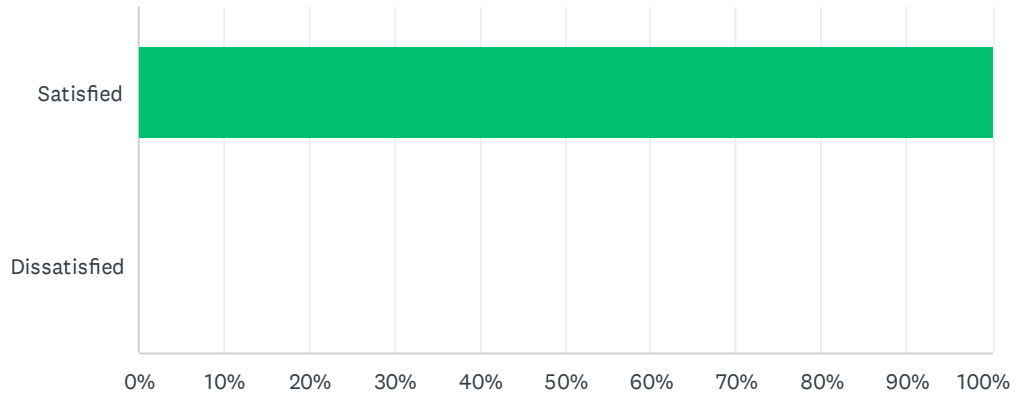
Answered: 8 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	100.00%	8
No	0.00%	0
TOTAL		8

## Q5 Are you happy with the variety of topics presented?

Answered: 8 Skipped: 0



ANSWER CHOICES	RESPONSES	
Satisfied	100.00%	8
Dissatisfied	0.00%	0
TOTAL		8

## Q6 Topic suggestions for future Info Mixers:

Answered: 2 Skipped: 6

#	RESPONSES	DATE
1	All mixers I have attended have had great information. Its nice to have a reminder of different situations.	4/20/2023 8:57 AM
2	List of staff and their job descriptions of who can help you with different areas. I just always go to Tami, but I know she isn't in charge of every department, but that is who I know.	4/19/2023 2:49 PM

## Q7 What parts of the Info Mixers did you like the best?

Answered: 3 Skipped: 5

#	RESPONSES	DATE
1	Loved all of them so far.	4/20/2023 8:57 AM
2	I think repeating some of the same things like what is reportable and not reportable needs to be presented every time. You could maybe expand on that list since COVID and that we are doing a lot more creative payments.	4/19/2023 2:49 PM
3	Reportable and non-reportable earnings	4/19/2023 2:43 PM

## Q8 Do you have any other comments/suggestions that would help us make future events better?

Answered: 3 Skipped: 5

#	RESPONSES	DATE
1	Keep up the mixers :) As a new business manager it is nice to get reminders on what things are covered and what things aren't.	4/20/2023 8:57 AM
2	Candy :)	4/19/2023 2:49 PM
3	Thank you for the slides. I printed and wrote notes to help me in the future.	4/19/2023 2:43 PM

# TFFR PROGRAM MONITORING SUMMARY

## FY2023

<i>Month</i>	<i>Ends Policy</i>	<i>Responsible Entity</i>	<i>Action Required</i>	<i>Target Date</i>	<i>Actual Date</i>
<b>July 2022</b>	Mission	TFFR Board	Annual Review	07/2022	07/21/2022
	Goals	TFFR Board	Annual Review	07/2022	07/21/2022
	Retirement Services	Interest Groups	Annual Report	07/2022	07/21/2022
	Retirement Services	TFFR Board	Annual Review	07/2022	07/21/2022
	Account Claims	TFFR Board	Annual Review	07/2022	07/21/2022
	Trust Fund Valuation	TFFR Board	Annual Review	07/2022	07/21/2022
<b>September 2022</b>	Program Policies	TFFR GPR Com.	Annual Review	Ongoing	07/07/2022
	Membership Data	Internal Audit	Annual Report	09/2022	09/22/2022
	Investments	CIO	Annual Report	09/2022	09/22/2022
	Retirement Services	Internal Audit	Annual Report	09/2022	09/22/2022
	Account Claims	Internal Audit	Annual Report	09/2022	09/22/2022
	Trust Fund Valuation	Internal Audit	Annual Report	09/2022	09/22/2022
<b>November 2022</b>	Program Policies	TFFR GPR Com.	Annual Review	Ongoing	09/07/2022
	Membership Data	External Auditor	External Auditor	11/2022	11/17/2022
	Retirement Services	External Auditor	External Auditor	11/2022	11/17/2022
	Account Claims	External Auditor	External Auditor	11/2022	11/17/2022
	Trust Fund Valuation	External Auditor	External Auditor	11/2022	11/17/2022
	Investments	TFFR Board/SIB	Asset Allocation Review	11/2022	11/17/2022
	Trust Fund Valuation	Actuary	Annual Valuation	11/2022	11/17/2022
	Program Policies	TFFR GPR Com.	Annual Review	Ongoing	11/10/2022
<b>January 2023</b>	Membership Data	TFFR Board	Annual Review	01/2023	01/26/2023
	Trust Fund Valuation	Actuary	GASB 68	01/2023	01/26/2023
<b>February 2023</b>	Program Policies	TFFR GPR Com.	Annual Review	Ongoing	02/07/2023
<b>March 2023</b>	Membership Data	TFFR Board	Annual Review	03/2023	03/23/2023
<b>May 2023</b>	Program Policies	TFFR GPR Com.	Annual Review	Ongoing	05/09/2023

\*Ongoing staff presentations addressing Membership Data, Retirement Services and Account Claims



Public Pension Coordinating Council

***Public Pension Standards Award  
For Funding and Administration  
2022***

Presented to

**North Dakota Teachers' Fund For Retirement**

In recognition of meeting professional standards for  
plan funding and administration as  
set forth in the Public Pension Standards.

*Presented by the Public Pension Coordinating Council, a confederation of*

National Association of State Retirement Administrators (NASRA)  
National Conference on Public Employee Retirement Systems (NCPERS)  
National Council on Teacher Retirement (NCTR)

A handwritten signature in black ink that reads "Alan H. Winkle". The signature is written in a cursive style with a large, stylized 'A' and 'W'.

Alan H. Winkle  
Program Administrator



## MEMORANDUM

---

**To:** TFFR Board

**From:** Nitin Vaidya

**Date:** July 14, 2023

**RE:** Annual Affirmation of Code of Conduct Policy

The *TFFR Board Members' Code of Conduct and Ethics Policy*, which is attached to this memorandum, details the Code of Ethical Responsibility for the TFFR Board. Item #11 of this policy indicates that each Board Member is required to reaffirm their understanding of this policy annually and disclose any conflicts of interest. Therefore, please read and sign the statement below to comply with this requirement.

*"I have read and understand TFFR Board Members' Code of Conduct and Ethics Policy. I have disclosed any conflicts of interest as required by this policy"*

Name (printed) \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

Detail of any conflicts of interest (if any):

## R. Code of Conduct, Ethics, and Conflicts of Interest

Following is the Code of Conduct, Ethics, and Conflicts of Interest policy for the TFFR Board of Trustees:

1. Board members owe a duty to conduct themselves so as to inspire the confidence, respect, and trust of the TFFR members and to strive to avoid not only professional impropriety, but also the appearance of impropriety.
2. Board members shall perform the duties of their offices impartially and diligently. Board members are expected to fulfill their responsibilities in accord with the intent of all applicable laws and to refrain from any form of dishonest or unethical conduct. Board members shall be unswayed by partisan interest, public sentiment, or fear of criticism.
3. Conflicts of interest and the appearance of impropriety shall be avoided by Board members. Board members shall not allow their family, social, professional, or other relationships to influence their judgment in discharging their responsibilities. Board members shall refrain from financial and business dealings that tend to reflect adversely on their impartiality or interfere with the proper performance of their duties. If a conflict of interest unavoidably arises, the Board member shall immediately disclose the conflict to the Board. The Board must vote on whether the member can vote. Conflicts of interest to be avoided include but are not limited to: receiving consideration for advice given to a person concerning any matter over which the Board member has any direct or indirect control, acting as an agent or attorney for a person in a transaction involving the Board, and participation in any transaction for which the Board member has acquired information unavailable to the general public, through participation on the Board. "Conflict of interest" means a situation in which a Board member has a direct and substantial personal or financial interest in a matter which also involves the member's fiduciary responsibility.
4. The Board shall not unnecessarily retain consultants. The hiring of consultants shall be based on merit, avoiding nepotism and preference based upon considerations other than merit that may occur for any reason, including prior working relationships. The compensation of such consultants shall not exceed the fair value of services rendered.
5. Board members shall abide by NDCC 21-10-09, which reads: "No member, officer, agent, or employee of the state investment board shall profit in any manner from transactions on behalf of the funds. Any person violating any of the provisions of this section shall be guilty of a class A misdemeanor."
6. Board members shall perform their respective duties in a manner that satisfies their fiduciary responsibilities.
7. Political contributions are regulated under NDCC 16.1-08-03 and are not restricted under this policy.
8. All activities and transactions performed on behalf of public pension funds must be for the exclusive purpose of providing benefits to plan participants and defraying reasonable expenses of administering the plan.
9. Prohibited transactions. Prohibited transactions are those involving self-dealing. Self-dealing refers to the fiduciary's use of plan assets or material, non-public information for personal gain; engaging in transactions on behalf of parties whose interests are averse to the plan; or receiving personal consideration in connection with any planned transaction.
10. Violation of these rules shall result in an official reprimand from the TFFR Board. No reprimand shall be issued until the board member has had the opportunity to be heard by the Board.
11. Board members are required to affirm their understanding of this policy annually, in writing, and must disclose any conflicts of interest that may arise. *See TFFR Code of Conduct Annual Affirmation (Exhibit 7)*
12. RIO Deputy Executive Director- Chief Retirement Officer is required to affirm his/her understanding of RIO Administrative Policy – Code of Conduct for RIO Employees – annually, in writing, and must disclose any conflicts of interest that may arise.

## MEMORANDUM

**TO:** TFFR Board of Trustees  
**FROM:** Chad R. Roberts, DED/CRO  
**DATE:** July 13, 2023  
**RE:** 1<sup>st</sup> Reading of TFFR Policy Manual revisions as recommended by GPR committee

### Summary

As part of the established work plan for the TFFR GPR Committee adopted by the committee during the September 2022 meeting, the committee undertook a full review of the TFFR Policy Manual. The committee has reviewed the 2022 manual in parts at the November 2022, February 2023, and May 2023 committee meetings.

The committee finalized its review at the May 2023 meeting and recommends the following policy manual changes to the full TFFR Board for the first reading at the July 2023 meeting.

Pursuant to policy, proposed policy amendments require two readings before the full Board to pass and amendments may be proposed at any time. The proposed amendments will be submitted for legal review prior to 2<sup>nd</sup> reading and final adoption.

### TFFR Policy Manual sections reviewed at the November 2022 committee meeting

PROGRAM MANUAL SECTION 1 SUB-SECTION I
PROGRAM MANUAL SECTION 1 SUB-SECTION J
PROGRAM MANUAL SECTION 1 SUB-SECTION K
PROGRAM MANUAL SECTION 1 SUB-SECTION O
PROGRAM MANUAL SECTION 1 SUB-SECTION P
PROGRAM MANUAL SECTION 1 SUB-SECTION S
PROGRAM MANUAL SECTION 2 SUB-SECTION A
PROGRAM MANUAL SECTION 2 SUB-SECTION B
PROGRAM MANUAL SECTION 2 SUB-SECTION C

### TFFR Policy Manual sections reviewed at the February 2023 committee meeting

PROGRAM MANUAL SECTION 1 SUB-SECTION A
PROGRAM MANUAL SECTION 1 SUB-SECTION B
PROGRAM MANUAL SECTION 1 SUB-SECTION C
PROGRAM MANUAL SECTION 1 SUB-SECTION D
PROGRAM MANUAL SECTION 1 SUB-SECTION E
PROGRAM MANUAL SECTION 1 SUB-SECTION F
PROGRAM MANUAL SECTION 1 SUB-SECTION L
PROGRAM MANUAL SECTION 1 SUB-SECTION T

PROGRAM MANUAL SECTION 1 SUB-SECTION U
PROGRAM MANUAL SECTION 2 SUB-SECTION D

**TFFR Policy Manual sections reviewed at the May 2023 committee meeting**

PROGRAM MANUAL SECTION 1 SUB-SECTION G
PROGRAM MANUAL SECTION 1 SUB-SECTION H
PROGRAM MANUAL SECTION 1 SUB-SECTION M
PROGRAM MANUAL SECTION 1 SUB-SECTION N
PROGRAM MANUAL SECTION 1 SUB-SECTION Q
PROGRAM MANUAL SECTION 1 SUB-SECTION R
PROGRAM MANUAL SECTION 2 SUB-SECTION E
PROGRAM MANUAL SECTION 2 SUB-SECTION F
PROGRAM MANUAL SECTION 2 SUB-SECTION G

**Recommended revisions to policy reviewed at the May 2023 committee meeting by section**

Section 1, subsection A adds the Executive Director to the review authorities for the annual manual review

Section 1, subsection D(4) replaces the Deputy Executive Director with the Executive Director in the board appointment process, clarifying the roles of the two positions

Section 1, subsection E(2) removes the responsibilities of evaluation and termination of the Deputy Executive Director from the Board

Section 1, subsection F(1) replaces the Deputy Executive Director with the Executive Director as a source of advice for the Board.

Section 1, subsection F(4) reflects the changes to the SIB composition as it relates to TFFR representatives as established under HB1088

Section 1, subsection G has been edited to reflect the changes in the composition of the SIB Board as delineated in HB1088

Section 1, subsection H clarifies the duties of the Executive Director and the Deputy Executive Director as it relates to the RIO agency and TFFR program

Section 1, subsection I clarifies roles between Executive Director and Deputy Executive Director.

Section 1, subsection J reflects division of ED and CIO roles. Subsections J(1)(b),(c), (d), (e), (f), (h), (i), (j), (k), (m), and (n) specifically define the roles of the two positions.

Section 1, subsection J(2)(a), (b), (c), (d), (e), (f), (g), (h), (i), and (j) further defines the responsibilities of the Executive Director and removes the role of CIO from the Executive Director position description

Section 1, subsection K(2) specifies the board may delegate the responsibility of the extension of the medical consultant contract to the Executive Director and not the Chief Retirement Officer

Section 1, subsection L(1) reflects the change in number of TFFR representatives appointed to the SIB and adds the appointment of three TFFR members to the TFFR GPR committee

Section 1, subsection L(2) adds the appointment of members to any committees to board election procedures

Section 1, subsection M(1) has been edited to reflect open meeting laws apply to business conducted on personal devices as established by the ND Attorney General

Section 1, subsection M(3) has been edited to reflect the Board may conduct retreats either on or off site

Section 1, subsection M(5) has been edited to reflect the role of the Executive Director in relation to the Board in line with previous edits to the manual clarifying that role.

Section 1, subsection M(6) has been edited to reflect the role of the Executive Director in relation to the Board in line with previous edits to the manual clarifying that role.

Section 1, subsection M(7) has been edited for grammatical clarity

Section 1, subsection M(10) has been edited to strike language delineating reasons for an executive session

Section 1, subsection N(2) has been edited to reflect the role of the Executive Director in relation to the Board in line with previous edits to the manual clarifying that role.

Section 1, subsection O has been edited to reflect the role of the Executive Director in relation to the Board in line with previous edits to the manual clarifying that role.

Section 1, subsection P has been edited to reflect the role of the Executive Director and Deputy Executive Director in relation to the Board in line with previous edits to the manual clarifying that role. This section also incorporates the role of the Communications Director for the response to specific inquiries from the public and other stakeholders

Section 1, subsection Q(2) has been edited to reflect the role of the Executive Director in relation to the Board in line with previous edits to the manual clarifying that role.

Section 1, subsection Q(3) has been edited to reflect the role of the Executive Director in relation to the Board in line with previous edits to the manual clarifying that role.

Section 1, subsection Q(5) has been edited to reflect the role of the Executive Director in relation to the Board in line with previous edits to the manual clarifying that role.

Section 1, subsection Q(6) has been edited to reflect the role of the Executive Director in relation to the Board in line with previous edits to the manual clarifying that role.

Section 1, subsection Q(10) has been edited to reflect the role of the Executive Director in relation to the Board in line with previous edits to the manual clarifying that role.

Section 1, subsection R has been edited to include the Executive Director in the conflict-of-interest affirmation

Section 1, subsection S clarifies the Executive Director will be the primary lead to work with the TFFR Board on the development of a strategic plan.

Section 1, subsection T adds the Executive Director as a source of proposed new policies or amendment and as the overseer of internal agency processes

Section 1, subsection U designates the Executive Director and not the Deputy Executive Director as a responsible party to assist the Board with the annual self-assessment.

Exhibit 2; TFFR Board Meeting Public Participation Guidelines; has been updated to clarify the Executive Director, and not the Deputy Executive Director, as the decision-making role

Section 2, subsection A signing authorities changed to reflect Executive Director and Chief Investment Officer

Section 2, subsection B deleted wording regarding how many years of amortization is remaining as of date

Section 2, Subsection D(3) clarifies language regarding the release of program information

Section 2, Subsection D(4) strikes specific language relating to account claims and inserting reference to section 2 subsection D(5). Language is also modified to allow account notices to be produced and provided by other means than only mail

Section 2, Subsection D(7) adds the Executive Director as a role that may waive the 120-day refund waiting period

Section 2, Subsection D(11) adds language excluding professional development, non-contracted subbing and extracurricular hours from reportable compensable hours

Section 2, subsection E(1)(c)(3) limits model 2 partial percentage matches to full percentage amounts

Section 2, subsection E(3) adds the role of Executive Director to the approval authorities for waiver of employer reporting penalties

Section 2, subsection F(2) changes the authority for the release of TFFR program information to interest groups to the Executive Director

Section 2, subsection G(1) has been removed to reflect the deletion of the social security income leveling option from the program with the passage of HB1219.

**ACTION REQUESTED: Motion to Approve Introduction and First Reading to the following policies: TFFR Governance Manual Section 1, subsections A, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, and Ex: 2, and Section 2, subsections A, B, D, E, F and G.**



Teachers' Fund For Retirement  
RETIREMENT & INVESTMENT

# Board Program Manual

# ND TEACHERS' FUND FOR RETIREMENT (NDTFFR) BOARD PROGRAM MANUAL

## Contents

<b>SECTION I: TFFR GOVERNANCE POLICIES .....</b>	<b>6</b>
<b>A. Introduction and Purpose .....</b>	<b>6</b>
<b>B. TFFR Program Overview .....</b>	<b>7</b>
1. History .....	7
2. Legal Framework .....	7
<b>C. TFFR Mission, Vision, and Values .....</b>	<b>7</b>
1. Our Mission .....	7
2. Our Vision.....	7
3. Our Core Values .....	7
<b>D. TFFR Board Authority, Composition, Appointment, Terms.....</b>	<b>8</b>
1. Board Authority.....	8
2. Board Composition.....	8
3. Board Trustee Desired Attributes.....	8
4. Board Appointment Process .....	9
5. Trustee Terms, Resignations and Vacancies .....	9
<b>E. TFFR Board - Duties and Responsibilities .....</b>	<b>10</b>
1. Fiduciary Duties.....	10
2. Board Responsibilities.....	11
<b>F. TFFR Board Trustees and Officers – Duties and Responsibilities .....</b>	<b>12</b>
1. TFFR Trustee.....	12
2. TFFR Board President .....	12
3. TFFR Board Vice President .....	13
4. TFFR Representatives to SIB .....	13
5. Alternate TFFR Representative to SIB .....	13
6. TFFR Representative to SIB Audit Committee .....	14
<b>G. State Investment Board .....</b>	<b>14</b>
<b>H. Retirement and Investment Office .....</b>	<b>14</b>



<b>I.</b>	<b>Delegation to Staff and Organizational Structure</b>	<b>15</b>
<b>J.</b>	<b>Staff - Duties and Responsibilities</b>	<b>15</b>
	1. Deputy Executive Director – Chief Retirement Officer	15
	2. Executive Director	17
<b>K.</b>	<b>Service Providers – Duties and Responsibilities</b>	<b>18</b>
	1. Actuary	18
	2. Medical Consultant	18
	3. Legal Counsel	18
	4. Auditor (External financial)	19
	5. Investment Consultant, Managers, and Advisors	19
<b>L.</b>	<b>Election of TFFR Board Officers and SIB trustee positions</b>	<b>20</b>
	1. Board Officers	20
	2. Election Procedure	20
	3. Term	20
	4. Vacancies	20
<b>M.</b>	<b>Board and Committee Meetings</b>	<b>21</b>
	1. Open Meetings	21
	2. Rules of Order	21
	3. Meeting Schedule	21
	4. Meeting Notice	22
	5. Meeting Agendas	22
	6. Meeting Materials	23
	7. Meeting Attendance and Quorum	23
	8. Voting	23
	9. Public Access and Comment	24
	10. Executive Sessions	24
	11. Closed Meeting Procedures	24
	12. Meeting Minutes and Records	25
	13. Meeting Payment and Travel Expense Reimbursement	25
<b>N.</b>	<b>Committees</b>	<b>26</b>
	1. Standing Committees	26
	2. Special Committees	26
	3. Audit Committee	26
<b>O.</b>	<b>Board Appeals</b>	<b>27</b>
<b>P.</b>	<b>Board Communications</b>	<b>27</b>
<b>Q.</b>	<b>Trustee Orientation and Education Program</b>	<b>27</b>

1.	Board Member Core Competencies.....	28
2.	Board Member Education .....	28
3.	New Trustee Orientation .....	28
4.	Mentoring Program .....	29
5.	Educational Conferences, Workshops, and other Training Programs.....	29
6.	In-House Education Sessions .....	30
7.	Fiduciary Education and Ethics Training.....	30
8.	Open Meetings and Open Records Training .....	30
9.	Webinars, Reports, and Studies .....	30
10.	Reimbursement of Education Expenses.....	30
<b>R.</b>	<b>Code of Conduct, Ethics, and Conflicts of Interest .....</b>	<b>31</b>
<b>S.</b>	<b>Strategic Planning .....</b>	<b>32</b>
<b>T.</b>	<b>Board Policy Approval Process.....</b>	<b>33</b>
<b>U.</b>	<b>Board Self-Assessment.....</b>	<b>33</b>
	<b>Board Governance Section Exhibits .....</b>	<b>35</b>
1.	RIO Organizational Chart.....	35
2.	TFFR Board Public Participation Guidelines.....	36
3.	RIO Board Meeting In-State Travel Expense Voucher .....	38
4.	ND Authorization for Out of State Travel .....	39
5.	ND Travel Expense Voucher.....	40
6.	TFFR Code of Conduct Annual Affirmation .....	43
	<b>SECTION II: TFFR Program Policies .....</b>	<b>44</b>
<b>A.</b>	<b>Investment Policy Statement .....</b>	<b>44</b>
<b>B.</b>	<b>Plan Management Policy Overview .....</b>	<b>50</b>
<b>C.</b>	<b>Actuarial Funding Policy Statement.....</b>	<b>54</b>
<b>D.</b>	<b>Operations.....</b>	<b>58</b>
1.	Membership Data and Contributions .....	58
2.	Member Services .....	59
3.	Disclosure of Confidential Information for Treatment, Operational, or Payment Purposes .....	60
4.	Account Claims .....	61
5.	Deductions from Annuity Checks .....	62
6.	Military Service Credit .....	62
7.	Payment of Benefits .....	62
8.	Retirement Benefit Payments .....	63
9.	Voiding Checks .....	63
10.	In-Staff Subbing Contract Period – .....	63

11. Plan Beneficiaries .....	64
12. Head Start Program Employees .....	65
13. PERS Retirement Plan Election (DPI and CTE) .....	65
<b>E. Employer Policies .....</b>	<b>66</b>
1. Employer Payment Plan Models .....	66
2. Employer Reporting Errors.....	67
3. Employer Reports.....	68
4. Ineligible TFFR Salary.....	68
<b>F. Member Communication .....</b>	<b>69</b>
1. Disclosure to Membership.....	69
2. Information Dissemination.....	69
3. Outreach Program Facilities.....	69
.....	<b>70</b>
<b>Section II Program Policies Section Exhibits.....</b>	<b>70</b>
Asset Allocation Definitions.....	70
Asset Class Definitions .....	72

# ND TEACHERS' FUND FOR RETIREMENT (NDTFFR) BOARD PROGRAM MANUAL

## SECTION I: TFFR GOVERNANCE POLICIES

### A. Introduction and Purpose

The ND Teachers' Fund for Retirement (TFFR) Board of Trustees is dedicated to ethically serving the members and stakeholders of the TFFR pension plan and ensuring that the plan is effectively managed. The Board is committed to excellence in Board governance. An effective governance structure is essential to fulfilling fiduciary duties and Board responsibilities in accordance with the highest standards of professional responsibility, accountability, and transparency.

The Board developed and adopted this TFFR Board Program Manual to establish the framework within which the Board intends to set governance and oversight policy.

The purpose of the Manual is to:

1. Provide orientation material and exhibits for new TFFR trustees and executive staff as to the roles, responsibilities, policies, procedures, and activities in the governance and oversight of the TFFR plan.
2. Serve as an ongoing reference manual for current trustees and staff.
3. Describe the roles and responsibilities of the Board of Trustees as a Board, individual Trustees, Committees, Staff, and Service Providers.
4. Describe the relationship between the TFFR Board, the State Investment Board (SIB), and the Retirement and Investment Office (RIO) as it relates to the administration of the TFFR plan.
5. Establish a Board meeting protocol that outlines the manner in which the Board will conduct itself to enable the Board to carry out its responsibilities as effectively and efficiently as possible, and in accordance with state and federal law.
6. Facilitate the organized, efficient, and cohesive functioning of the Board.
7. Facilitate effective communication among the Trustees, staff, plan members, employers, and other external parties.
8. Define responsibility and accountability for hiring and monitoring outside service providers.
9. Document the method by which the Board will conduct a Board self- assessment.

10. Document Board governance and program policies, administrative rules, and state statutes governing the plan.

The TFFR Board Program Manual is an evolving set of documents that reflect the Board's current governance practices. The Manual will be reviewed by the Board on an annual basis. Board trustees, the [Executive Director](#), Deputy Executive Director-Chief Retirement Officer, and/or legal counsel may recommend modifications for Board consideration and approval.

The contents of the TFFR Board Program Manual are intended to be consistent with state and federal laws, rules, and regulations. If there is any conflict between the provisions included in this Manual and state or federal law, the law prevails.

## B. TFFR Program Overview

### 1. History

The ND Teachers' Fund for Retirement (NDTFFR) (formerly the ND Teachers' Insurance and Retirement Fund or NDTIRF) was created by the ND Legislature in 1913. The defined benefit plan provides lifetime retirement, disability and survivor benefits for ND public school educators.

Membership participation, benefits provided, contribution requirements, and plan provisions are described in State Law and the TFFR Member Handbook.

### 2. Legal Framework

ND Century Code (NDCC) Chapter 15-39.1 contains the legal authority and statutory language governing the TFFR plan, and is supplemented by ND Administrative Code Title 82. TFFR is a qualified (tax exempt) defined benefit public pension plan covered under Section 401(a) of the Internal Revenue Code (IRC).

## C. TFFR Mission, Vision, and Values

### 1. Our Mission

To administer a comprehensive retirement program that provides North Dakota public educators with a foundation for retirement security.

### 2. Our Vision

To be a trusted leader in the administration of a financially sound retirement program for North Dakota educators by providing exceptional customer service, professional plan management, and organizational effectiveness by adhering to the principles of good governance, transparency, and accountability.

### 3. Our Core Values

- a. Customer Satisfaction and Commitment to Excellence which are demonstrated by our trustworthiness, accountability, and respectfulness.
- b. Strong Governance and Operational Effectiveness through our strategic leadership, fiduciary responsibility, ethical practices, and transparency.

## **D. TFFR Board Authority, Composition, Appointment, Terms**

### **1. Board Authority**

TFFR is governed by a 7-member TFFR Board of Trustees who are charged with oversight, policy making, and administration of the TFFR retirement program as provided under NDCC 15-39.1-05. The trustees are fiduciaries, and as such have the highest standard of law placed on them.

### **2. Board Composition**

- a. The Board is composed of seven trustees consisting of:
  - 1) Two elected state officials:
    - State Treasurer (ex officio)
    - State Superintendent of Public Instruction (ex officio)
  - 2) Five members appointed by the Governor:
    - Two board members who are actively employed as elementary or secondary teachers in full-time positions not classified as school administrators. The appointment is made from a list of three nominees submitted to the Governor by ND United (NDU).
    - One board member who is actively employed as a full-time school administrator. The appointment is made from a list of three nominees submitted to the Governor by the ND Council of Educational Leaders (NDCEL).
    - Two board members who are retired members of the Fund. The appointment is made from a list of three nominees submitted to the Governor by the ND Retired Teachers Association (NDRTA).

### **3. Board Trustee Desired Attributes**

Board trustees should possess or develop the following desired attributes in order to become an effective board trustee.

- a. Unwaveringly ethical
- b. Perpetually inquisitive

- c. Knowledgeable about the membership
- d. Ability to understand complex actuarial, financial, and investment concepts
- e. Committed to strong board governance practices
- f. Diligent and willing to spend time to learn best pension practices
- g. Professional, respectful, and courteous demeanor
- h. Proactive and responsive approach to member needs
- i. Committed and engaged
- j. Active listening and communication skills
- k. Critical thinking skills
- l. Ability to make fair and timely decisions
- m. Open and accountable to stakeholders

#### 4. Board Appointment Process

When a TFFR Board trustee term expires or vacancy occurs, the Executive Director/Chief Retirement Officer will notify the Governor's Office and the applicable stakeholder group (ND United, ND Council of Educational Leaders, or ND Retired Teachers Association) of the vacancy. Board trustee desired attributes and board responsibilities will be provided to the Governor's Office and applicable stakeholder group to assist them in making board nominee or trustee selection.

NDU, NDCEL, or NDRTA will submit a list of three Board nominees to the Governor's Office, as required by state law. Board nominees must complete the "Application for Boards and Commissions" from the Governor's Office in order to be considered for TFFR Board appointment. This application contains information about the nominee's background, education, experience, financial disclosures, and references.

After reviewing the Board nominee applications, the Governor will make the trustee appointment, and will notify the selected nominee and the Executive Director/Chief Retirement Officer. The Governor's Office will send the newly appointed trustee a Certificate of Appointment which provides formal documentation of appointment to the TFFR Board. The Governor's office will also send an Oath of Office and Statement of Intent which must be signed by the trustee and returned to the Governor's Office. These documents confirm the trustee's appointment is official. Trustees can then carry out their official duties as a Board member and can be paid for authorized expenses.

#### 5. Trustee Terms, Resignations and Vacancies

The State Treasurer is an ex-officio member of the Board, and serves on the Board throughout the term of the State Treasurer's elected position. A lawful Deputy of the State Treasurer (pursuant to NDCC 44-03-01) may act with the full authority of the State Treasurer, and may vote when serving as the State Treasurer's official designee on the Board.

The State Superintendent of Public Instruction is an ex-officio member of the Board, and serves on the Board throughout the term of the State Superintendent's elected position. The State Superintendent may designate an individual to attend and participate in Board meetings, however the designee may not vote since the designee does not have the lawful authority to vote on behalf of the State Superintendent.

Each of the five Governor-appointed trustees are appointed for a term of five years. The terms of office are staggered with the five appointed trustee positions beginning July 1 and expiring on June 30 of each successive year. There is no limit to the number of terms a trustee may serve on the Board. Trustees may remain on the Board until they are reappointed or until their successors are appointed.

Appointed active trustees who terminate employment may not continue to serve on the Board as active teacher representatives. Appointed active and retired trustees may resign from the Board by providing written notice to the Governor and the TFFR Board.

Appointed trustee position vacancies which occur before the expiration of a term will be filled by the Governor, and the new appointee will complete the term for which the original trustee was selected.

## **E. TFFR Board - Duties and Responsibilities**

### **1. Fiduciary Duties**

TFFR trustees are fiduciaries, and as such, have the highest standard of law placed upon them. Trustees are expected to discharge their duties with the utmost honesty and integrity and to act solely in the interest of the members, retirees, and beneficiaries for the exclusive purpose of providing benefits and paying reasonable expenses of administering the TFFR program.

Fiduciary duties include the following:

- a. Duty of loyalty. The obligation to act for the exclusive benefit of the plan participants and beneficiaries. Regardless of how trustees are selected, trustees must put the interests of all plan participants and beneficiaries above their own interests or those of any third parties.
- b. Duty of care. The responsibility to administer the plan efficiently and properly. The duty of care includes consideration and monitoring of the financial sustainability of funding practices and the effective administration of plan benefits in compliance with applicable laws.
- c. Duty of prudence. The obligation to act prudently in exercising power or discretion over the interests that are subject of the fiduciary relationship. A trustee should act in a manner consistent with a reasonably prudent person exercising care, skill, and caution.



## 2. Board Responsibilities

The TFFR Board of Trustees is responsible for oversight, policy making, and administration of the TFFR plan as provided under NDCC 15-39.1-05.2.

Board responsibilities include:

- a. Establish and monitor policies for the administration of the TFFR plan.
- b. Set legislative priorities and positions, submit legislative proposals, and monitor legislation affecting the plan.
- c. Develop and adopt administrative rules and board policies to administer the plan.
- d. Establish and monitor TFFR plan funding policy and progress.
- e. Establish and monitor TFFR investment policies and asset allocation under NDCC 21-10-02.1.
- f. Select and monitor the performance of consultants, advisors, and service providers for the plan.
- g. Select and monitor actuarial consultant(s) to provide actuarial and technical consulting services including: annual actuarial valuations and GASB reports, periodic actuarial experience studies, independent actuarial audits, and other special projects and studies; develop and monitor actuarial funding policy, assumptions, methods, and factors; analyze proposed legislative changes; and advise the Board on actuarial, technical, and administrative issues.
- h. Select and monitor medical consultant to conduct disability reviews.
- i. Select and monitor investment consultant to perform asset allocation and liability studies.
- j. Monitor and pay plan benefits, consulting fees, administrative and investment expenditures.
- k. Administer the plan so as to maintain the plan's qualified status under Internal Revenue Code requirements.
- l. Review and approve applications for disability retirement, Qualified Domestic Relations Orders (QDROs), and other special benefit payments.
- m. Review and decide board appeals.
- n. Determine appropriate levels of service and monitor outreach programs provided to members and employers.
- o. Monitor RIO budget, expenditures, financial reporting system, and financial audit.
- p. Monitor RIO information technology systems, projects, and security.
- q. Select TFFR representatives to serve on SIB and monitor investment program activities and fund performance.

- r. Select TFFR representative to serve on SIB Audit Committee and monitor audit program activities.
- s. Inform the State Investment Board (SIB), which is the administrative board of the Retirement and Investment Office (RIO), of the TFFR program needs, policies, and services expected to be provided through RIO.
- t. Participate with the RIO Executive Director in the hiring, ~~evaluation, and termination~~ of the TFFR Chief Retirement Officer – RIO Deputy Executive Director.

## F. TFFR Board Trustees and Officers – Duties and Responsibilities

### 1. TFFR Trustee

Trustees must be willing and able to devote the necessary time to fulfill their duties on the Board. This commitment includes the responsibility to:

- a. Act as a member of a seven-member Board of Trustees to provide leadership, oversee plan administration, and set the strategic direction for the TFFR program.
- b. Prepare for and attend Board and Committee meetings.
- c. Be an informed and active member of the Board, fully participating in the decisions and actions of the Board and its Committees by making independent assessments and reasonable judgments.
- d. Acquire and maintain the knowledge and skills necessary to perform trustee duties.
- e. Follow Board policies and procedures, applicable state and federal laws and rules.
- f. Be accurate when communicating with other trustees, members, beneficiaries, interested parties, the public, and RIO staff.
- g. Act collegially with the other trustees and staff in the conduct of TFFR business.
- h. Bring to the attention of the Board matters of concern that affect the TFFR plan.
- i. Seek the advice of the ~~Executive Director~~~~Chief Retirement Officer~~, legal advisor, and other trustees when necessary to fulfill their fiduciary duties.
- j. Comply with the Board's Code of Conduct and Ethics.
- k. Adhere to state law regarding confidentiality of member records and benefits.
- l. Adhere to state law regarding Open Meetings and Open Records.
- m. Evaluate trustee's individual performance and the Board's performance as a whole.

### 2. TFFR Board President

The Board President's principal role is to lead the Board in the conduct of Board business by managing the affairs of the Board and ensuring the integrity of the Board's process. The Board President must be willing and able to devote the time necessary to fulfill these special responsibilities. This commitment includes the responsibility to:

- a. Convene and preside over all Board meetings in a collegial, fair, and efficient manner following Board policies, procedures, and applicable state laws and rules.
- b. Review and approve the agenda for regular and special Board meetings.
- c. Ensure proper and timely flow of adequate information to the Board.
- d. Solicit input from trustees regarding matters before the Board.
- e. Ensure adequate time is provided for effective study and discussion of business.
- f. Make Committee assignments.
- g. Execute documents and other legal instruments on behalf of TFFR as required by state law, authorized by the Board, or determined in conjunction with the Chief Retirement Officer.
- h. Represent the Board to outside parties and organizations.
- i. Lead the Board's self-assessment and self-development processes.
- j. Perform all other duties identified by the Board.

### 3. TFFR Board Vice President

The Vice President will perform the duties of the President in the absence of the President.

### 4. TFFR Representatives to SIB

The TFFR Board selects ~~two~~<sup>three</sup> trustees to represent TFFR on the SIB. The TFFR Board also selects one trustee as an alternate to serve on the SIB in the absence of either designated representative. TFFR representatives to the SIB must include one active teacher, one active administrator, and one retired member. TFFR representatives to the SIB must be from the following categories: active or retired members. A third trustee from either category will be appointed to serve as the alternate to the SIB.

The TFFR representatives to the SIB have the same authority and responsibilities as do other SIB trustees as provided in NDCC 21-10 and outlined in the SIB Governance Manual.

### 5. Alternate TFFR Representative to SIB

The TFFR Board selects one alternate TFFR representative to serve on the SIB.

The Alternate TFFR representative to the SIB will perform the duties of the regular TFFR representative on the SIB in the absence of that trustee.

## 6. TFFR Representative to SIB Audit Committee

The TFFR Board selects one TFFR representative on the SIB to serve on the SIB Audit Committee, subject to official appointment by SIB Chair.

The TFFR representative on the SIB Audit Committee has the same authority and responsibilities as do other trustees on the SIB Audit Committee which are outlined in the SIB Audit Committee Charter.

## G. State Investment Board

The ND State Investment Board (SIB) is responsible for oversight, policy making, and administration of the SIB investment program as provided under NDCC 21-10. As such, TFFR assets, as well as other state pension, insurance, and other state funds, are invested by the SIB.

The SIB is composed of ~~twelve~~thirteen trustees consisting of:

- a. Lt. Governor of the State of ND
- b. State Treasurer
- c. ~~State Insurance Commissioner~~Director of Office of Management and Budget
- d. Director of Workforce Safety & Insurance
- e. Commissioner of University and School Lands
- f. ~~Three~~Two TFFR trustees
- g. ~~Three~~Two PERS trustees
- h. Two members, each of whom by experience is familiar with institutional investments, appointed by the governor. One initial appointee shall serve a term of three years, one initial appointee shall serve a term of five years, and all subsequent appointees shall serve five-year terms ~~One Legacy & Budget Stabilization Fund Advisory Board trustee (nonvoting)~~
- i. Two members, one from the senate and one from the house of representatives, or the member's designee, who serve on the legacy and budget stabilization fund advisory board, as selected by that board
- h.

Investment of TFFR assets is based on the asset allocation and investment policy statement approved by the TFFR Board and accepted by the SIB. Funds are invested following the "prudent investor rule" and must be invested exclusively for the benefit of TFFR members.

The SIB is also the governing body of the ND Retirement and Investment Office (RIO).

## H. Retirement and Investment Office

The ND Retirement and Investment Office (RIO) coordinates the activities of the TFFR retirement program and SIB investment program as provided under NDCC 54-52.5. The governing body of RIO is the SIB, although the TFFR Board and SIB each maintain their legal identities and authority under state law.

RIO is responsible for developing the agency budget, providing the staff, and allocating necessary resources to administer both the TFFR and SIB programs, subject to budget

approval by the Legislature. The TFFR Board and SIB provide input to RIO Executive Management to ensure retirement and investment program needs, policies, and services are considered.

RIO Executive Director ~~– Chief Investment Officer~~ is the administrator of RIO and is responsible for ~~the SIB investment program oversight and administration of all RIO programs and operations.~~ RIO Deputy Executive Director – Chief Retirement Officer assists in the administration of RIO and ~~is responsible for~~ the TFFR retirement program.

RIO is an administrative agency of the State of North Dakota and operates from an office located at 3442 East Century Avenue in Bismarck, North Dakota.

## I. Delegation to Staff and Organizational Structure

The TFFR Board delegates administration of the TFFR program to the RIO ~~Deputy~~ Executive Director. ~~Daily operations of the program are delegated to the RIO Deputy Executive Director --~~ TFFR Chief Retirement Officer, subject to approval by the RIO Executive Director.

The RIO Deputy Executive Director – TFFR Chief Retirement Officer reports directly to the RIO Executive Director ~~– Chief Investment Officer and functionally to the TFFR Board. See RIO Organizational Chart (Exhibit 1).~~

## J. Staff - Duties and Responsibilities

### 3. 1. Deputy Executive Director – Chief Retirement Officer ~~Update in Coordination with SIB~~

The RIO Deputy Executive Director – Chief Retirement Officer is hired by the RIO Executive Director ~~– Chief Investment Officer~~, serves in an unclassified position, and is paid such salary as the Executive Director determines. The Board delegates responsibility for administering the TFFR program to the Deputy RIO Executive Director ~~– Chief Retirement Officer, subject to approval by the Executive Directors~~ some or all of those duties may be delegated to the RIO Deputy Executive Director – Chief Retirement Officer by the RIO Executive Director. The Board will participate with the Executive Director in the hiring, ~~evaluation, and termination~~ of the Deputy Executive Director-Chief Retirement Officer.

Duties and responsibilities include:

- a. Assist the Executive Director in planning, supervising, and directing overall RIO programs in accordance with the SIB governance policies and state laws and rules, and represent the Executive Director in his/her absence.
- b. ~~Administer~~ Assist the Executive Director in administering the TFFR retirement program in accordance with governing statutes, rules, and TFFR Board policies and perform related work as assigned by the TFFR Board, including interpretation of the state and federal law which governs the retirement program.
- c. Assist the Executive Director in d Developing annual and long-range plans for the retirement program.

~~d. Interpret state and federal law which governs the retirement program.~~

~~e.d. Assist the Executive Director in the development of~~ administrative rules, policies, and procedures necessary to administer the program.

~~f.e. In the absence of or at the direction of the Executive Director, represent~~ the TFFR Board on retirement program issues.

~~g.f. Assist the Executive Director in the direction of~~ TFFR legislative agenda and process.

~~h.g. Maintain effective relationships with TFFR members, beneficiaries, employers, state officials, legislators and legislative committees, member and employer stakeholder groups, the media, and the public at large.~~

~~h. Work with actuarial consultant, medical consultant, legal counsel, auditor, investment consultant, and other service providers in administering the plan, and in coordination with the Executive Director to keep staff and Board members apprised of consultant services and recommendations.~~

~~i. Assist the Executive Director~~ in the formulation of RIO's budget, including staffing needs, program costs, operating costs, information technology requirements, and resources to assure that retirement program obligations are met.

~~k.j. Assist the Executive Director in the development and preparation of~~ Board and Committee meeting agendas and materials, ~~attend all Board and Committee meetings, responsible for preparation of~~ meeting minutes, required notices, procedures, and applicable rules and regulations of the fund, ~~and attend all Board and Committee meetings.~~

~~l. Provide the Board with relevant, appropriate, and timely information to enable it to properly carry out its oversight responsibilities.~~

~~m.k. In coordination with the Executive Director, advise~~ the Board on significant issues, problems or developments pertaining to the plan, and provide recommended courses of action as appropriate ~~regarding Board policy or action.~~

~~n.l. Maintain the data, records, and files of TFFR members, beneficiaries, and employers including membership data, salary, service, contributions, and benefit payments.~~

~~o.m. Ensure the accurate and timely collection of member and employer contributions, maintenance of member accounts, processing of account claims, and payment of pension, disability, death and refund benefits as allowed under state and federal law.~~

~~p.n. In the absence of the Deputy Executive Director~~ the Deputy Executive Director Chief Retirement Officer, ~~the Retirement Program Manager~~ will be responsible for the administration of the TFFR program. In the absence of both the Executive

Director and the Deputy Executive Director – Chief Retirement Officer, the TFFR Board may recommend to the SIB that another RIO staff member serve as Interim Deputy Executive Director- Chief Retirement Officer.

## **2. Executive Director – ~~Chief Investment Officer~~ Update in Coordination with SIB**

The Executive Director – ~~Chief Investment officer~~ (ED-~~CIO~~) is hired by the SIB, serves in an unclassified position at the SIB's pleasure, and is paid such salary as the SIB determines.

Duties and Responsibilities include:

- a. Administer the investment and retirement programs of RIO, ~~O~~oversee planning, supervising, and directing overall RIO programs in accordance with SIB and TFFR governance policies, and federal and state laws, and rules, and perform related work as assigned by the SIB and TFFR Board.
- b. Responsible for the developing the annual, biannual and strategic long range plans for RIO and both the SIB and TFFR Board.
- ~~b.~~ Administer the investment and programs of RIO and perform related work as assigned by the SIB and TFFR Board.
- c. Develop administrative rules, policies and procedures necessary to administer the retirement and investments programs and seek committee and board approval for changes when appropriate.
- ~~e.d.~~ Direct the preparation and execution of the RIO budget and legislative agenda for the agency and both the SIB and TFFR boards and evaluates and monitors financial and operational programs.
- ~~d.e.~~ Represent RIO, promote RIO programs, and has the authority and responsibility to carry out the day-to-day administrative duties for RIO including developing and approving policies relating to the effective operation of the Office.
- ~~e.f.~~ Develop and prepare or direct the preparation of agendas and materials, meeting minutes, required notices, procedures, and applicable rules and regulations for the retirement and investment programs and Attend all meetings of the SIB and TFFR Board and corresponding committees.
- ~~f.g.~~ Hire staff as necessary to carry out the responsibilities of RIO. Provides leadership, coaching and feedback to assigned staff, recommending measures to improve performance and increase efficiency.
- ~~h.~~ The TFFR Board will participate with the Executive Director in the hiring, evaluation, and termination of the Deputy Executive Director-Chief Retirement Officer, and participate in any surveys conducted by the SIB – Executive Review and Compensation Committee for executive team members.

i. Maintain effective relationships with clients, members, beneficiaries, employers, state officials, legislators and legislative committees, member and employer stakeholder groups, the media, and the public at large relevant to both the retirement and investment programs.

g.j. Advise the SIB and TFFR Board on significant issues, problems or developments pertaining to the plan, and provide recommended courses of action as appropriate regarding Board policy or action.

## K. Service Providers – Duties and Responsibilities

### 1. Actuary

The TFFR Board is responsible for selecting and monitoring the actuarial consultant for the plan.

Duties and responsibilities include:

- a. Provide actuarial and technical consulting services for the plan.
- b. Prepare annual actuarial valuation and GASB reports, periodic actuarial experience studies, and other special projects and reports.
- c. Develop and monitor actuarial funding policy, assumptions, methods, factors, etc.
- d. Analyze proposed legislative changes.
- e. Advise the Board on actuarial, technical, and administrative issues.

The Board utilizes a request for proposal (RFP) process to periodically select and approve the plan's consulting actuary. It is the Board's intent to issue RFP's every 6 to 10 years, however the timing may be adjusted at the Board's discretion.

The Board monitors actuarial costs and services and may extend the actuarial consulting service contract for 2 year terms, as approved by the TFFR Board.

The Board also hires an independent actuary to periodically perform an actuarial audit of the plan's consulting actuary. The Board utilizes an RFP process to select and approve the plan's actuarial auditor.

### 2. Medical Consultant

The TFFR Board is responsible for selecting and monitoring a medical consultant for the plan to conduct disability reviews, disability re-certifications, and perform other medical reviews as necessary.

The Board monitors medical consulting costs and services and may extend the medical consulting contract for 2-year terms, as approved by the TFFR Board. The Board may delegate this responsibility to the Executive Director~~Chief Retirement Officer~~.

### 3. Legal Counsel



The ND Attorney General's Office (AGO) provides legal services to the TFFR Board and staff. The AGO assigns an assistant attorney general to advise the Board on legal issues related to plan administration.

Duties and Responsibilities include:

- a. Represent the Board and staff in all legal matters.
- b. Draft proposed legislation, administrative rules, and other legal documents.
- c. Review and advise on retirement program issues.
- d. Research and interpret state statutes and federal regulations.
- e. Review Board policies, procedural issues, contracts, and other legal documents.
- f. Respond to legal questions from staff, members, employers, and other individuals.
- g. Advise and educate the Board and staff on legal matters that relate to the administration of the retirement system including Board appeals, fiduciary duties, ethics, open records and meetings, potential litigation, and other legal issues.
- h. Work with staff from the AGO in representing the retirement plan in administrative hearings, litigation, and other matters involving the AGO.
- i. Work with outside legal counsel on application of Internal Revenue Code technical requirements and plan qualification issues.

#### **4. Auditor (External financial)**

The ND State Auditor's Office selects the external financial auditor for RIO, with input from the SIB Audit Committee.

Duties and Responsibilities include:

- a. Perform annual audit of RIO's financial statements.
- b. Perform annual audit of TFFR's GASB 68 schedules.
- c. Provide report on internal controls and compliance.
- d. Provide required written communications.

Results of the annual financial audit are reported directly to SIB Audit Committee and communicated to the TFFR Board in conjunction with annual audit services report.

#### **5. Investment Consultant, Managers, and Advisors**

The SIB is responsible for investment of TFFR trust fund assets, and selects the investment consultant, managers, custodian, and advisors for the SIB program.

The governing body of each fund invested by the SIB is required to use RIO staff and consultants in developing asset allocation and investment policies. The TFFR Board has contracted with the SIB investment consultants to perform asset allocation and liability modeling studies in the past.

## L. Election of TFFR Board Officers and SIB trustee positions

### 1. Board Officers

The TFFR Board will elect the following Board officers each year. Any trustee may serve as a TFFR Board officer.

- Board President
- Board Vice President

The TFFR Board will select the following representatives to the SIB each year. Any trustee may serve as a TFFR representative to the SIB, except the State Treasurer is required to be an ex officio member of both the TFFR Board and SIB so may not be selected as a TFFR representative to the SIB.

- ~~Two~~ TFFR representatives to SIB ~~(representatives must include one active teacher, one active administrator, and one retired member)~~
- One TFFR alternate representative to SIB
- One TFFR representative to SIB Audit Committee (from SIB)
- Three Board members to serve on the TFFR Governance & Policy Review Committee.

### 2. Election Procedure

The TFFR Board will elect the Board officers, ~~and~~ TFFR representatives to the SIB, and members of any committees, at the first regular Board meeting immediately following July 1 of each year. There must be a quorum of four board members in attendance to elect officers.

Four affirmative votes are required to elect ~~Board officers and TFFR representatives to the SIB.~~

### 3. Term

Board officers and TFFR representatives to SIB will hold office for one year, or until their successors are elected.

There is no limit to the number of years a trustee may hold office.

### 4. Vacancies

A Board officer or TFFR representative to the SIB may resign from their position by providing written notice to the Board and Chief Retirement Officer.

Board officer or TFFR representative to the SIB vacancies that occur before the expiration of a term will be filled by the Board at the next regular meeting of the Board following the vacancy.

## M. Board and Committee Meetings

### 1. Open Meetings

All Board and Committee meetings are open to the public in accordance with ND Open Meetings laws pursuant to NDCC 44-04-17.1.

Meetings include any gathering of a quorum of the members of the Board (four members constitute a quorum for TFFR Board) regarding public business, and includes committees, subcommittees, informal gatherings or work sessions, and discussions where a quorum of members are participating by phone or any other electronic communication (either at the same time or in a series of individual contacts).

Emails or text messages between Board members regarding public business may constitute a meeting and violate open meeting laws even if done on personal devices under circumstances and within the parameters established by the ND Office of Attorney General.

Training seminars and purely social gatherings attended by a quorum of the Board or Committee are not meetings, however, as soon as the members discuss any public business, it becomes a meeting.

### 2. Rules of Order

All Board and Committee meeting will be conducted in accordance with Robert's Rules of Order Newly Revised, except as superseded by state law and Board governance policies.

### 3. Meeting Schedule

The Board will hold meetings as often as necessary for the transaction of business but will conduct a minimum of six Board meetings each year.

The Board will approve an annual Board meeting schedule identifying the time, date, and location of regular Board meetings. Board meetings will generally be scheduled for the Thursday afternoon preceding SIB meetings beginning in July of each year, unless a different day is determined. (Note: SIB meetings are generally scheduled for the 4th Friday of each month.) The Board or Board President may modify this schedule, if needed. This schedule must be filed annually with the Secretary of State's office.

The Board President, or any two members of the Board, may call for special or emergency Board meetings.

At the July Board meeting each year, the Board will elect officers, review governance and program policies, and develop the annual board agenda and education plan.

The Board may hold an annual ~~offsite~~ Board retreat, either on-site or off-site, to focus on board development, strategic planning, legislative planning, developments in public pension administration, and other topics as determined by the Board. A Board Retreat must also be noticed as a meeting of the Board.

## 4. Meeting Notice

Public notice of all Board and Committee meetings is made in accordance with state law pursuant to NDCC 44-04-20.

Meeting notices are posted on the Secretary of State website, RIO public website, RIO office, and the meeting location.

## 5. Meeting Agendas

An annual schedule of agenda topics, reports, and education items for each regular board meeting will be developed by the ~~Chief Retirement Officer~~Executive Director and approved by the Board. The annual schedule will also include review of the Board Governance Manual over several meetings.

Board meeting agendas will be prepared by the ~~Chief Retirement Officer~~Executive Director and approved by the Board President using the annual schedule as a basis for topics to be included on each regular meeting agenda. Additional topics may be added by the Executive Director, Chief Retirement Officer, Board President, and Board trustees subject to approval by the Board President.

The meeting agenda should contain enough detail so trustees, members, interested parties, and the general public can understand the nature of each agenda item.

Any individual or organization who desires to appear on the agenda of a Board or Committee meeting must notify the ~~Chief Retirement Officer~~Executive Director in writing at least ten working days prior to the meeting date. The request must include the reason or topic to be discussed with the Board. Subject to approval by the Board President, the individual will be placed on a Board meeting agenda.

Regular Board meeting agendas may be added to or altered at the time of the meeting. For special or emergency meetings, only the specific topics included in the meeting notice may be discussed.

The meeting agenda will identify if the item requires Board action, information only, consent agenda, or executive session. The agenda will also note the estimated amount of time expected for each topic.

- a. **Action** items on the agenda contain information that require Board discussion and vote (annual reports, policy changes, benefit determinations, legislative positions, etc.)
- b. **Information** only items contain information that it is important for the Board to know, but do not require Board action or a Board vote (project updates, status reports, education, etc.)
- c. **Consent agenda** items will primarily consist of approval of disability applications, QDROs, employer reviews, or other routine administrative matters that require

Board action as recommended by staff, but which typically do not require Board discussion. Trustees may request any item to be removed from the Consent agenda to allow for Board discussion and action.

- d. If an **Executive session** is required or anticipated, the Executive session must be listed as an agenda item (i.e., confidential member information, attorney consultation, etc.)

## 6. Meeting Materials

The ~~Chief Retirement Officer~~ Executive Director will coordinate the preparation of Board meeting materials and develop an Executive Summary.

Meeting materials will generally be sent to trustees 5-7 days before the meeting, unless otherwise indicated.

Materials will be posted on the public RIO website, except for Executive Session or confidential items which will be sent via secure email to the trustees only.

## 7. Meeting Attendance and Quorum

Attendance at Board meetings is an essential element of a trustee's fiduciary responsibility. Therefore, Board members are expected to attend all Board and applicable Committee meetings.

Board members may attend meetings in person, by telephone or video conference.

A quorum of four members must be present for the Board to conduct business.

Board members should come to meetings having read the materials prepared and circulated by staff and/or consultants.

Board members should be inquisitive, and should appropriately question staff, advisors, and fellow trustees as circumstances require.

Board members should conduct themselves with integrity and dignity, always maintaining the highest ethical conduct ~~maintaining the highest ethical conduct at all times~~.

Board members should make every effort to engage in collegial deliberations and to maintain an atmosphere in which trustees can speak freely and explore ideas before becoming committed to positions.

## 8. Voting

Voting on matters before the Board will be by roll call vote, except for procedural matters.

Board members have a duty to vote unless there is an applicable statute that would require or permit abstention.

Each Board member is entitled to one vote. Proxy voting is not allowed.

Four members constitutes a quorum.

Four votes are required for resolution or action by the Board.

Board minutes will show the recorded vote of each Board member.

## 9. Public Access and Comment

All Board and Committee meetings are open to the public and all persons who wish to attend may do so in accordance with ND Open Meeting laws, NDCC 44-04-17.1.

Public participation or comments during Board meetings may be allowed and limited to reasonable time limits at the discretion of the Board President as follows:

- a. By written request to appear on a Board meeting agenda.
- b. By written request to speak on a specific Board meeting agenda topic.
- c. By written request to speak on any TFFR related topic which is not on a regular Board meeting agenda.
- d. By submitting a letter or written document for distribution to the Board.

See *TFFR Board Public Participation Guidelines (Exhibit 2)*.

## 10. Executive Sessions

The Board or Committee may conduct business in Executive Session only as permitted by state law, NDCC 44-04-19.2. Executive sessions shall be presided over by the Board President or Committee Chair.

Only the portions of a public meeting that are specifically confidential or exempt from the Open Meetings law may be closed to the public and held in Executive Session. The remainder of the meeting must be open to the public.

~~Reasons a meeting may not be open to the public includes Board discussion of:~~

- ~~a. Confidential member records or information under NDCC 15-39.1-30 (examples include member benefit appeals, benefit determinations, disability applications, QDROs, etc.)~~
- ~~b. Attorney's advice regarding a "pending or reasonably predictable" lawsuit involving TFFR.~~
- ~~c. Attorney's assessment of the risks, strengths or weaknesses of an action of the TFFR Board or negotiating strategy if holding the discussion in an open meeting would have an adverse effect on the bargaining or litigating position of the Board.~~

## 11. Closed Meeting Procedures

State law specifies the following general procedure for holding an executive session.

- a. Convene meeting in an open session preceded by public notice.
- b. Announce during the open portion of the meeting the topics to be considered during the Executive Session and the legal authority for holding an Executive Session on those topics.
- c. Pass a motion to hold an Executive ~~session, unless~~ session unless motion is unnecessary because a confidential meeting is required to discuss confidential information.
- d. Record the Executive Session electronically.
- e. Limit the topics considered during the Executive Session to the announced, authorized topics.
- f. Take final action on the topics considered in the Executive Session during the open portion of a meeting.
- g. All substantive votes must be recorded by roll call.

## 12. Meeting Minutes and Records

Minutes will be taken at all Board and Committee meetings and presented for approval at the next regular meeting. The Board President or Committee Chair will sign the minutes after Board approval.

At a minimum, minutes must include:

- a. The names of the members attending the meeting.
- b. The date and time the meeting was called to order and adjourned.
- c. A list of topics discussed regarding public business.
- d. A description of each motion made at the meeting and whether the motion was seconded.
- e. The results of every vote taken at the meeting; and
- f. The vote of each member on every recorded roll call vote.

Approved meeting minutes will be made available on the RIO-TFFR website, or upon request. Meeting minutes and records of the Board and Committee activities and actions will be maintained as required by state law.

## 13. Meeting Payment and Travel Expense Reimbursement

Board members, excluding ex-officio members, will receive compensation and travel expenses for attending Board and Committee meetings as provided in state law, –NDCC 15-39.1-08.

Board members will be paid \$148 for each Board or Committee meeting attended. Board members will be paid the full amount for each meeting attended that lasts for two or more hours. Meetings lasting less than two hours will be paid at one half the amount. Mileage and travel expense reimbursement will be paid as provided in state law.

Board members may not lose regular salary, vacation pay, vacation or any personal leave, or be denied attendance by the state or political subdivision while serving on official business of TFFR.

To receive meeting payment, Board members must complete a travel expense form and submit it to RIO. See *RIO Board Meeting In-State Travel Expense Voucher (Exhibit 3)*.

## N. Committees

### 1. Standing Committees

The TFFR Board may establish permanent standing committees. The TFFR Board has created a permanent standing Governance and Policy Review Committee.

- a. POLICY OF THE TFFR BOARD – Governance & Policy Review Committee  
The Governance & Policy Review Committee is authorized to:
  - Review and recommend policies for the governance manual.
  - Ensure the governance manual reflects best practices and governance.
  - As directed by the board, review specific governance concerns, and make recommendations for improvement.
  - Request RIO staff for specific topic training or education

### 2. Special Committees

The Board may establish special ad hoc committees as needed to carry out duties specified by the Board.

The Board President will appoint the Committee Chair and Committee members for special committees.

Committee Chairs are responsible for organizing the work of the Committee. In fulfilling this function, Committee Chairs:

- a. Schedule Committee meetings as often as necessary.
- b. Consult with the ~~Chief Retirement Officer~~Executive Director or designee in setting the meeting agenda in accordance with the Committee's delegated responsibilities.
- c. Conduct Committee meetings in a collegial, fair, and efficient manner following Board policies, procedures, and applicable state law such as the open meetings law.
- d. Ensure the Committee operates to assist the Board consistent with its delegation.
- e. Provide Committee updates and reports to the Board.

When the Committee's duties are completed, the Committee automatically ceases to exist.

### 3. Audit Committee

The SIB Audit Committee also functions as the Audit Committee for the TFFR Board since the SIB is the governing body of the RIO agency and RIO administers both the TFFR retirement program and SIB investment program.

The TFFR Board selects one TFFR representative on the SIB to serve on the SIB Audit Committee, subject to official appointment by SIB Chair. This representative will act as the TFFR Board's liaison to the SIB Audit Committee.



The TFFR Board's representative on the SIB Audit Committee and/or the Audit Supervisor, will provide Audit Committee updates and monitoring reports to the Board.

## O. Board Appeals

Any member, beneficiary, employer, or affected individual may appeal a determination made by the ~~Executive Director or designee~~Chief Retirement Officer regarding TFFR eligibility, benefits, or other plan provisions with which the individual does not agree.

The affected individual must file a written request for Board review within thirty days after notice of the determination of the ~~Executive Director or designee~~Chief Retirement Officer has been mailed to the affected individual. If a request for Board review is not filed within the thirty-day period, the decision of the ~~agency~~Chief Retirement Officer is final. The request for Board review must include the decision being appealed, the reason(s) the individual believes the decision should be reversed or modified, and any relevant documentation.

To review the matter, an appeal hearing will be scheduled as part of a regularly scheduled Board meeting. A summary of the relevant facts and documentation will be presented. The affected individual and/or designee may attend and speak at the hearing. After review of the facts, documentation, and testimony, the Board will make its decision. The Board's decision will be communicated in writing to the affected individual within 30 days of the decision.

Any individual aggrieved by a decision of the Board may initiate a formal administrative action against the Board in accordance with ND Administrative Code Chapter 82-10 and ND Century Code Chap. 28-32.

## P. Board Communications

The TFFR Board President and ~~Chief Retirement Officer~~Executive Director; or Deputy Executive Director – Chief Retirement Officer in the absence of or at the direction of the Executive Director; are authorized to represent the Board on retirement program issues and in announcing Board positions and decisions, unless otherwise determined by the Board.

Board members may respond to general inquiries about the TFFR retirement program, however specific questions from members, beneficiaries, employers, and the public should be referred to the ~~Communications Director or other~~Deputy Executive Director – Chief Retirement Officer or the Retirement and Investment Office staff to provide more detailed information about the retirement program.

## Q. Trustee Orientation and Education Program

Trustees are responsible for making policy decisions affecting all major aspects of TFFR plan administration. Therefore, trustees should acquire and maintain an appropriate level of knowledge that provides and improves core competencies necessary to govern a large, complex pension fund.

## 1. Board Member Core Competencies

Board members should develop and maintain their knowledge and understanding of the issues involved in the prudent management of the retirement plan. Specific areas include:

- a. Public pension plan governance
- b. Asset allocation and investment management
- c. Actuarial principles and funding policies
- d. Financial reporting, controls, and audits
- e. Benefits administration
- f. Open meeting and open records laws
- g. Fiduciary responsibilities
- h. Ethics and conflicts of interest

## 2. Board Member Education

To permit Board members to develop core competencies, discharge their fiduciary duties, and ensure Board members have a full understanding of the issues facing the TFFR plan, the Board encourages trustee education including:

- a. New trustee orientation
- b. Mentoring program
- c. Educational conferences, workshops, and other training programs
- d. In-house education sessions
- e. Fiduciary education and ethics training
- f. Open meeting and open records training
- g. Webinars, Reports, and Studies

Board members should identify areas in which they might benefit from additional education, and work with the ~~Chief Retirement Officer~~Executive Director to find or develop educational opportunities to best address those needs.

Board members must annually report trustee education received each year. See *TFFR Board Education Report Form (Exhibit 4)*.

## 3. New Trustee Orientation

Each new Board member should attend a new trustee orientation session(s) as soon as possible after appointed to the Board or elected to office. The orientation sessions will be developed by the ~~Chief Retirement Officer~~Executive Director, and will include, at minimum, review of the following topics and materials:

- a. Introduction to RIO staff
- b. Tour of RIO office
- c. Board Governance Manual
- d. Board duties and responsibilities
- e. History and overview of the plan
- f. Overview of TFFR-SIB-RIO organizational structure
- g. Laws, rules, and board policies governing the plan

- h. Benefit structure, administration, outreach services
- i. Fiduciary responsibilities, conflict of interests, and ethics
- j. Open meetings and open records
- k. Board meeting schedule and protocol
- l. Board meeting minutes and materials
- m. Actuarial valuation report, assumptions, methods, and funding policy
- n. Actuarial experience report
- o. Actuarial audit report
- p. Annual financial report
- q. Investment program, investment policy statement, asset allocation, and performance
- r. RIO website – TFFR and SIB sections
- s. Legislative issues
- t. List of educational conferences and training sessions
- u. Other relevant information or materials deemed appropriate

#### 4. Mentoring Program

The Board President will assign each new trustee an experienced Board mentor to assist the new trustee in becoming familiar with Board responsibilities. The Board mentor should have at least two years of experience on the Board.

The Board mentor should contact the new Board member periodically outside of regularly scheduled Board meetings for consultation or discussion related to Board member duties and responsibilities. The new Board member should contact the Board mentor as often as necessary.

Appointment of a Board mentor does not constitute appointment of a cCommittee and does not implicate open meeting notice requirements.

#### 5. Educational Conferences, Workshops, and other Training Programs

The ~~Chief Retirement Officer~~Executive Director or designee will maintain a list of educational conferences, workshops, and other training programs appropriate for Board members to attend. The list will be provided at least annually to Board members. Board members may attend such conferences or others deemed to be appropriate by the Executive Director~~Chief Retirement Officer~~.

Subject to budget availability, Board members may attend at least one out of state educational conference each year. New trustees, or trustees with investment or other specialized Board responsibilities, may attend additional educational training sessions to help develop core competencies and become proficient in performing their duties.

The ~~Chief Retirement Officer~~Executive Director will review conference agendas and materials to ensure they are geared toward trustee education, and subject to budget availability, will approve Board travel requests. Board travel outside of the continental United States must be approved by the Board President and Executive Director~~Chief Retirement Officer~~.

Any Board member who attends a conference, workshop, or other training program will present an oral report to the Board.

The ~~Chief Retirement Officer~~Executive Director will inform the Board of educational conferences, workshops, or other training programs attended by trustees on an annual basis.

## 6. In-House Education Sessions

Based on the education needs identified by Board members, the ~~Chief Retirement Officer~~Executive Director will arrange for staff or outside service providers to conduct educational sessions at regularly scheduled Board meetings. Topics may include pension board governance, actuarial and funding issues, investments, retirement operations and benefits, workforce demographics and shortages, and other topics determined by the Board.

## 7. Fiduciary Education and Ethics Training

At least every two years, a fiduciary education and ethics training session will be conducted at a regularly scheduled Board meeting. The session will review and update trustees regarding fiduciary issues and ethical conduct affecting their service on the Board.

## 8. Open Meetings and Open Records Training

At least every two years, an open meetings and open records training session will be conducted at a regularly scheduled Board meeting. The session will review and update trustees regarding open meetings and open records requirements affecting their service on the Board.

## 9. Webinars, Reports, and Studies

Board members are encouraged to subscribe to mailing lists and review websites for information about public pension plan conferences, webinars, reports, and studies from pension and investment organizations. Examples include:

- a. National Council on Teacher Retirement (NCTR)
- b. National Institute on Retirement Security (NIRS)
- c. National Education Association-Retired (NEA-R)
- d. National Retired Teachers Association (NRTA-AARP)
- e. International Foundation for Employee Benefit Plans (IFEBC)
- f. Center for State and Local Government Excellence (SLGE)
- g. Center for Retirement Research at Boston College (CRR)
- h. Callan Investment Institute (Callan)
- i. Council of Institutional Investors (CII)

The Chief Retirement Officer will also provide links to recent published reports and studies with Board meeting materials.

## 10. Reimbursement of Education Expenses

Trustees must request approval for travel to educational conferences or other educational programs. Trustees should notify the Chief Retirement Officer of their interest in attending an educational conference or other program. RIO will complete the travel authorization form which

must be signed by the trustee and approved by the ~~Chief Retirement Officer~~Executive Director. See *ND Authorization for Out of State Travel (Exhibit 5)*.

RIO will make all travel arrangements and pay conference registration fees, unless otherwise agreed to by the Chief Retirement Officer and trustee.

Payment of travel-related expenses for trustee education will be in accordance with state of ND travel policies. Trustees will be reimbursed for travel related expenses including lodging, meals, transportation, etc. In order to receive reimbursement, a trustee must complete an expense form and attach receipts as required. See *RIO Conference Expense Voucher – Board Members (Exhibit 6)*.

## **R. Code of Conduct, Ethics, and Conflicts of Interest**

Following is the Code of Conduct, Ethics, and Conflicts of Interest policy for the TFFR Board of Trustees:

1. Board members owe a duty to conduct themselves so as to inspire the confidence, respect, and trust of the TFFR members and to strive to avoid not only professional impropriety, but also the appearance of impropriety.
2. Board members shall perform the duties of their offices impartially and diligently. Board members are expected to fulfill their responsibilities in accord with the intent of all applicable laws and to refrain from any form of dishonest or unethical conduct. Board members shall be unswayed by partisan interest, public sentiment, or fear of criticism.
3. Conflicts of interest and the appearance of impropriety shall be avoided by Board members. Board members shall not allow their family, social, professional, or other relationships to influence their judgment in discharging their responsibilities. Board members shall refrain from financial and business dealings that tend to reflect adversely on their impartiality or interfere with the proper performance of their duties. If a conflict of interest unavoidably arises, the Board member shall immediately disclose the conflict to the Board. The Board must vote on whether the member can vote. Conflicts of interest to be avoided include but are not limited to: receiving consideration for advice given to a person concerning any matter over which the Board member has any direct or indirect control, acting as an agent or attorney for a person in a transaction involving the Board, and participation in any transaction for which the Board member has acquired information unavailable to the general public, through participation on the Board. "Conflict of interest" means a situation in which a Board member has a direct and substantial personal or financial interest in a matter which also involves the member's fiduciary responsibility.
4. The Board shall not unnecessarily retain consultants. The hiring of consultants shall be based on merit, avoiding nepotism and preference based upon considerations other than merit that may occur for any reason, including prior working relationships. The compensation of such consultants shall not exceed the fair value of services rendered.
5. Board members shall abide by NDCC 21-10-09, which reads: "No member, officer, agent, or employee of the state investment board shall profit in any manner from

transactions on behalf of the funds. Any person violating any of the provisions of this section shall be guilty of a class A misdemeanor.”

6. Board members shall perform their respective duties in a manner that satisfies their fiduciary responsibilities.
7. Political contributions are regulated under NDCC 16.1-08-03 and are not restricted under this policy.
8. All activities and transactions performed on behalf of public pension funds must be for the exclusive purpose of providing benefits to plan participants and defraying reasonable expenses of administering the plan.
9. Prohibited transactions. Prohibited transactions are those involving self-dealing. Self-dealing refers to the fiduciary’s use of plan assets or material, non-public information for personal gain; engaging in transactions on behalf of parties whose interests are averse to the plan; or receiving personal consideration in connection with any planned transaction.
10. Violation of these rules shall result in an official reprimand from the TFFR Board. No reprimand shall be issued until the board member has had the opportunity to be heard by the Board.
11. Board members are required to affirm their understanding of this policy annually, in writing, and must disclose any conflicts of interest that may arise. *See TFFR Code of Conduct Annual Affirmation (Exhibit 7)*
12. RIO Deputy Executive Director- Chief Retirement Officer is required to affirm his/her understanding of RIO Administrative Policy – Code of Conduct for RIO Employees – annually, in writing, and must disclose any conflicts of interest that may arise.

12.13. RIO Executive Director is required to affirm his/her understanding of RIO Administrative Policy – Code of Conduct for RIO Employees – annually, in writing, and must disclose any conflicts of interest that may arise.

## S. Strategic Planning

The Board and ~~Chief Retirement Officer~~RIO Executive Director will work collaboratively to develop a long-term strategic plan which may:

1. Identify and prioritize TFFR program issues and initiatives.
2. Assess the strengths, weaknesses, opportunities, and threats for TFFR.
3. Focus resources on high value activities.
4. Develop strategies to address priorities.
5. Monitor the progress and implementation of the strategic plan.
6. Work with RIO to ensure adequate resources are in place to support the successful execution of the plan.

## T. Board Policy Approval Process

Board governance and program policies may be adopted or amended from time to time based on the following process.

New policies or policy amendments may be proposed by ~~RIO staff~~~~the Chief Retirement Officer~~ or a Board member. The Executive Director shall maintain an internal agency process for the development and presentation of staff recommendations. All new policies or amendments must be submitted to the Board's legal counsel at the Attorney General's office for review prior to Board approval.

Upon request of ~~RIO staff~~~~the Chief Retirement Officer~~ or a Board member, a new policy or amendment shall be placed on the Board's agenda for action as follows:

1. Introduction and first reading. A brief explanation or summary of the new policy or amendment shall be presented to the Board. Upon approval of introduction and first reading, the policy shall be placed on the agenda of the next scheduled meeting of the Board for second reading and adoption. When appropriate, the policy shall be distributed to interested parties.
2. Second reading and adoption. Interested parties and the public shall be allowed an opportunity to comment on the policy or amendment before final action by the Board. The policy shall take effect immediately following second reading and adoption by the Board, unless a different effective date is stated.
3. Amendments. Amendments may be proposed at any time before final adoption of the policy. Upon determination by the Board that adoption of an amendment constitutes a substantive change that significantly changes the meaning or effect of the policy, the Board shall continue consideration of second reading and adoption to the next meeting to permit further review and comment.
4. Emergency measures. Upon determination that an emergency or other circumstances calling for expeditious action exists; the Board may waive the requirement of a second reading and immediately approve the new policy or amendment following introduction and first reading.

Board policies will be reviewed at least annually, or more often as needed.

## U. Board Self-Assessment

On an annual basis, the Board will engage in a self-assessment process to evaluate the trustee's individual performance and the Board's overall performance. The Board President is responsible for overseeing implementation of this assessment, with assistance of the ~~Executive Director~~~~Chief Retirement Officer~~ and Supervisor of Audit Services.

Individual Trustee and Overall Board Assessments may contain topics including:

1. Board and staff roles
2. Board and Committee structure

3. Board meetings
4. Policy making and reviews
5. Financial management practices
6. Pension plan administration practices

*See TFFR Board Self- Assessment (Exhibit 8 Process and Survey To Be Developed).*

**Board Governance Policies Approved** \_\_\_\_\_  
**Date**





## 2. TFFR Board Public Participation Guidelines



Teachers' Fund For Retirement  
RETIREMENT & INVESTMENT

### TFFR Board Meeting

### Public Participation Guidelines

All TFFR Board and Committee meetings are open to the public and all persons who wish to attend may do so in accordance with ND Open Meetings laws, NDCC 44-04-17.1.

The Board is responsible for oversight, policy making, and administration of the TFFR plan. The Board may seek public input to assist in making decisions, but time spent answering routine questions or criticisms must not be taken from Board business. Generally, if an individual has a question or concern about the operation of the TFFR program or a specific member or employer issue, he/she is encouraged to contact the [Executive Director or Chief Retirement Officer](#) to get the needed response directly.

Although there is no legal requirement that the public be given an opportunity to speak at TFFR Board meetings, it is the Board's policy that public participation or comments during Board meetings may be allowed and limited to reasonable time limits at the discretion of the Board President. (See TFFR Board and Committee Meetings – Public Access and Comment, Policy M-9.)

**Subject to approval of the Board President, public participation or comments may be provided to the Board as follows:**

- 1) **By written request to appear on a Board meeting agenda.** The request must include the topic to be discussed and must be provided to the [Executive Director/Chief Retirement Officer](#) at least ten working days prior to the meeting date.
- 2) **By written request to speak on a specific Board meeting agenda topic at the meeting.** The request must include the topic to be discussed and must be provided to the [Executive Director/Chief Retirement Officer](#) at least two hours prior to the meeting.
- 3) **By written request to speak on any TFFR related topic which is not on a regular Board meeting agenda under "Other Business."** The request must include the topic to be discussed and must be provided to the [Executive Director/Chief Retirement Officer](#) at least two hours prior to the meeting.
- 4) **By submitting a letter or written document** to the [Executive Director/Chief Retirement Officer](#) for distribution to the Board.

#### SPEAKER INFORMATION

- Speaker should stand (if able to do so) and be recognized by the Board President.
- Speaker should state Name and Organization Representing (if applicable).
- Speaker should state agenda number and topic which the speaker will address.
- 5-minute time limit for speaker unless additional time is allowed by Board President.
- No undue interruption, disorderly conduct or remarks made out of order.
- No charges or complaints against staff will be allowed.
- Questions and comments by the Board and [Executive Director/Chief Retirement Officer](#) will be allowed.
- Board or Staff response to the Speaker's remarks will be allowed but is not required.

**TFFR BOARD**  
**PUBLIC PARTICIPATION REQUEST FORM**

Date and Time Submitted \_\_\_\_\_

Name \_\_\_\_\_

Organization Representing (if applicable) \_\_\_\_\_

Contact Information (phone number, email, or mailing address) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Topic or Agenda Item \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### 3. RIO Board Meeting In-State Travel Expense Voucher

**RETIREMENT AND INVESTMENT OFFICE**  
Board Meeting Travel Expense Voucher

Name (please print) \_\_\_\_\_

**MEETING ATTENDED:**

- TFFR  
Date \_\_\_\_\_
- SIB  
Date \_\_\_\_\_
- Audit Committee  
Date \_\_\_\_\_
- Securities Litigation Committee  
Date \_\_\_\_\_
- Executive Review Committee  
Date \_\_\_\_\_
- TFFR Governance & Policy Review Committee  
Date \_\_\_\_\_
- SIB Governance & Policy Review Committee  
Date \_\_\_\_\_

Time	Office Use

**TRAVEL EXPENSES**

**MEALS (Reimbursed at state rate effective 8/1/15):**

- Date \_\_\_\_\_  Breakfast (1st Qtr - 6am) \$7.00
- Lunch (2nd Qtr - Noon) \$10.50
- Dinner (3rd Qtr - 6pm) \$17.50
- Date \_\_\_\_\_  Breakfast (1st Qtr - 6am) \$7.00
- Lunch (2nd Qtr - Noon) \$10.50
- Dinner (3rd Qtr - 6pm) \$17.50

- Date \_\_\_\_\_  Breakfast (1st Qtr - 6am) \$7.00
- Lunch (2nd Qtr - Noon) \$10.50
- Dinner (3rd Qtr - 6pm) \$17.50
- Date \_\_\_\_\_  Breakfast (1st Qtr - 6am) \$7.00
- Lunch (2nd Qtr - Noon) \$10.50
- Dinner (3rd Qtr - 6pm) \$17.50

**MILEAGE (Round trip):**

FROM: \_\_\_\_\_

TO: \_\_\_\_\_

Total Miles: \_\_\_\_\_ @58.5¢/mile Effective 1/1/22

**LODGING (Attach Receipts - reimbursed at actual cost up to \$86.40/night + tax)**

Effective 10/1/19:

Number of Nights: \_\_\_\_\_

**MISCELLANEOUS (Attach Receipts):**

Telephone Calls \_\_\_\_\_

Taxi, car rental, etc \_\_\_\_\_

Other \_\_\_\_\_

SIGNATURE:
DATE:

Office Use
521020/521035 Total Meals \$ _____
521030 Total Mileage \$ _____
521015 Total Lodging \$ _____
Total Misc. \$ _____
<b>TOTAL TRAVEL \$ _____</b>

## 4. ND Authorization for Out of State Travel

### AUTHORIZATION FOR OUT OF STATE TRAVEL

STATE OF NORTH DAKOTA

SFN 2564 (8-96)

<b>Department or Institution</b> ND RETIREMENT AND INVESTMENT OFFICE		<b>Dept. No.</b> 190
<b>Mailing Address (If not "Inside Capitol" mail)</b> 3442 EAST CENTURY AVENUE, PO BOX 7100, BISMARCK ND 58507 7100		
<b>Person Traveling (Last Name)</b>		<b>(First Name)</b>
<b>Destination(s) (City and State)</b>		
<b>METHOD OF TRAVEL:</b>		
<input type="checkbox"/> Train (1)	<input type="checkbox"/> State Vehicle (3)	<input type="checkbox"/> Commercial Air (5)
<input type="checkbox"/> Bus (2)	<input type="checkbox"/> Personal Vehicle (4)	<input type="checkbox"/> Charter Plane (5)
<input type="checkbox"/> State Plane (6)		<input type="checkbox"/> Other (Explain)
<b>Date to depart from home</b>	<b>Date to return home</b>	<b>Does trip include vacation days?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>REASON FOR TRIP:</b>		
<input type="checkbox"/> Conference/Meeting (C)	<input type="checkbox"/> Seminar/Workshop/Training (T)	<input type="checkbox"/> Routine Work (W) <input type="checkbox"/> Other (X)
<b>NAME OF MEETING (DO NOT Abbreviate)</b>		
<b>TOTAL NUMBER OF PERSONS FROM YOUR AGENCY FOR THIS TRIP/MEETING:</b>		<b>NOTE: Submit a separate SFN 2564 for each person at the same time.</b>

ESTIMATED COST OF TRIP (To Nearest Dollar)					COSTS WILL BE PAID BY
Transportation	Meals, Lodging, Etc.	Registration	Rental Car/Taxi	TOTAL	Department
\$	\$	\$	\$	Estimated \$	<input type="checkbox"/> Other (Explain in Remarks)
<b>REMARKS</b>					

\_\_\_\_\_  
Signature of Person Traveling

\_\_\_\_\_  
Date

\_\_\_\_\_  
Supervisor Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Deputy Executive Director

\_\_\_\_\_  
Date

\_\_\_\_\_  
Executive Director

\_\_\_\_\_  
Date



## INSTRUCTIONS FOR THE TRAVEL EXPENSE VOUCHER

**Be sure to “Tab” from one field to another, rather than using the mouse.**

Month – Enter the month of travel.

Year – Enter the year of travel.

Department Name – Enter the name of your Agency.

Official Position – Enter your job title.

Employee Name – Enter your name.

Employee ID – This number is assigned by payroll.

Business Unit – Your agency’s 5-digit number.

Fiscal Month – Enter the fiscal month.

Biennium – Enter the biennium.

Day - Enter the day of the month in which the activity occurred.

Points Covered By Travel – Enter the departure/destination points.

Hour – Enter the departures and arrival time for the actual travel day (example: 7:00 am).

Vehicle Miles – Enter the number of vehicle miles traveled. If you have in state and out of state miles, separate them and list them on separate lines.

Ref – Enter an “I” for in-state travel or an “O” for out-of-state travel. **If this is not entered, the form will not calculate correctly.**

Comm'l Air Trans. – Enter the amount of commercial air transportation.

Ref – Enter an “I” for in-state travel or an “O” for out-of-state travel. **If this is not entered, the form will not calculate correctly.**

Taxi & Other Air Trans. – Enter taxi fares and any other air transportation.

Ref – Enter an “I” for in-state travel or an “O” for out-of-state travel. **If this is not entered, the form will not calculate correctly.**

Misc. Exp – Enter your other expenses that do not belong in any other column. Explain these expenses in the “Purpose of Travel and Explanation of Expenses” section.

Meals In State – Enter the dollar amount of the meals in state.

Meals Out of State – Enter the dollar amount of the meals out-of-state.

Ref – Enter a “T” if your meals are taxable. Meals are taxable if no overnight stay is involved.

Lodging in State – Enter the dollar amount of lodging in state.

Lodging Out of State – Enter the dollar amount of lodging out-of-state.

Purpose of Travel and Explanation of Expenses – Enter the reason for travel and any explanations for your miscellaneous expenses.

The amounts entered in the top section of the form will automatically be totaled and filled in the appropriate fields of the middle section, as long as the correct reference codes were entered and you used the tab key to navigate between fields. The only exceptions are the following two fields:

Vehicle Miles in State – Calculates the total vehicle miles traveled within the state. You will need to enter the current rate. The total will then automatically calculate.

Vehicle Miles out of State – Calculates the total vehicle miles out of state. You will need to enter the current rate. The total will automatically calculate.

Total Expenses – Calculates the total expenses automatically.

Ref. Doc. No. of Advance – Enter the document number if you received a travel advance and the dollar amount.

Net Expenses – Calculates the net expenses automatically.

Print two copies of the Travel Expense Voucher.

Sign one copy, attach all of your receipts, and submit it for approval. Once approved and forwarded to accounting, the bottom fields will be cost-coded and entered. Remember to keep copies of the receipts for yourself as well.



## 6. TFFR Code of Conduct Annual Affirmation



Retirement and Investment

### MEMORANDUM

---

**To:** TFFR Board

**From:**

**Date:**

**RE:** Annual Affirmation of Code of Conduct Policy

The *TFFR Board Members' Code of Conduct and Ethics Policy*, which is attached to this memorandum, details the Code of Ethical Responsibility for the TFFR Board. Item #11 of this policy indicates that each Board Member is required to reaffirm their understanding of this policy annually and disclose any conflicts of interest. Therefore, please read and sign the statement below to comply with this requirement.

*"I have read and understand TFFR Board Members' Code of Conduct and Ethics Policy. I have disclosed any conflicts of interest as required by this policy"*

Name (printed) \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

Detail of any conflicts of interest (if any):

## SECTION II: TFFR Program Policies

### A. Investment Policy Statement

#### 1. Plan Characteristics and Fund Constraints

The North Dakota Teachers' Fund for Retirement (TFFR) is a successor pension benefit plan to the Teachers' Insurance and Retirement Fund (TIRF). TIRF was established in 1913, 24 years after North Dakota became a state, to provide retirement income to all public school and certain state teachers and administrators in the state of North Dakota. TIRF became TFFR in 1971. The plan is administered by a seven-member Board of Trustees comprised of: two active teachers, two retired teachers and one school administrator appointed by the Governor of North Dakota and two elected officials - the State Treasurer and the State Superintendent of Public Instruction.

The plan is a multi-employer defined benefit public pension plan that provides retirement, disability, and death benefits in accordance with Chapter 15-39.1 of the North Dakota Century Code (NDCC). Monthly retirement benefits are based on the formula: Number of Years of service X 2.0% X Final Average Salary. Adjustments to the basic formula are made depending on the retirement option selected.

Funding is provided by monthly employee and employer contributions scheduled to increase as follows:

	7/1/11	7/1/12	7/1/14
Employee	7.75%	9.75%	11.75%
Employer	8.75%	10.75%	12.75%

Employee and employer contributions will be reduced to 7.75% each when TFFR reaches 100% funded level on an actuarial value basis.

The TFFR Board has an actuarial valuation performed annually and an Experience Study and Asset Liability Study performed every five years. The actuarial assumed rate of return on assets was reduced to 7.25% from 7.75% as of July 1, 2020. Key plan and financial statistics are recorded in the most recent valuation report on file at the North Dakota Retirement and Investment office (RIO).

#### 2. Fund Goals

The Plan benefits are financed through both statutory employer and employee contributions and the investment earnings on assets held in the Fund. The TFFR Board recognizes that a sound investment program is essential to meet the pension obligations.

As a result, the Fund goals are to:

- a. Improve the Plan's funding status to protect and sustain current and future benefits.
- b. Minimize the employee and employer contributions needed to fund the Plan over the long term.
- c. Avoid substantial volatility in required contribution rates and fluctuations in the Plan's funding status.
- d. Accumulate a funding surplus to provide increases in retiree annuity payments to

preserve the purchasing power of their retirement benefit.

The Board acknowledges the material impact that funding the pension plan has on the State/School District's financial performance. These goals affect the Fund's investment strategies and often represent conflicting goals. For example, minimizing the long-term funding costs implies a less conservative investment program, whereas dampening the volatility of contributions and avoiding large swings in the funding status implies a more conservative investment program. The Board places a greater emphasis on the strategy of improving the funding status and reducing the contributions that must be made to the Fund, as it is most consistent with the long-term goal of conserving money to apply to other important state/local projects.

### **3. Responsibilities and Discretion of the State Investment Board (SIB)**

The TFFR Board is charged by law under NDCC 21-10-02.1 with the responsibility of establishing policies on investment goals and asset allocation of the Fund. The SIB is charged with implementing these policies and investing the assets of the Fund in the manner provided in NDCC 21-10-07, the prudent investor rule. Under this rule, the fiduciaries shall exercise the judgment and care, under the circumstances then prevailing, that an institutional investor of ordinary prudence, discretion, and intelligence exercises in the management of large investments entrusted to it, not in regard to speculation but in regard to the permanent disposition of funds, considering probable safety of capital as well as probable income. The Fund must be invested exclusively for the benefit of the members and their beneficiaries in accordance with this investment policy.

Management responsibility for the investment program not assigned to the SIB in Chapter 21-10 of the North Dakota Century Code (NDCC) is hereby delegated to the SIB, who must establish written policies for the operation of the investment program, consistent with this investment policy.

The SIB may delegate investment responsibility to professional money managers. Where a money manager has been retained, the SIB's role in determining investment strategy and security selection is supervisory, not advisory.

At the discretion of the SIB, the Fund's assets may be pooled with other funds. In pooling funds, the SIB may establish whatever asset class pools it deems necessary with specific quality, diversification, restrictions, and performance objectives appropriate to the prudent investor rule and the objectives of the funds participating in the pools.

The SIB is responsible for establishing criteria, procedures, and making decisions with respect to hiring, keeping, and terminating money managers. SIB investment responsibility also includes selecting performance measurement services, consultants, report formats, and frequency of meetings with managers.

The SIB will implement changes to this policy as promptly as is prudent.

#### **4. Risk Tolerance**

The Board is unwilling to undertake investment strategies that might jeopardize the ability of the Fund to finance the pension benefits promised to plan participants.

However, funding the pension promise in an economical manner is critical to the State/School Districts ability to continue to provide pension benefits to plan participants. Thus, the Board actively seeks to lower the cost of funding the Plan's pension obligations by taking on risk for which it expects to be compensated over the long term. The Board understands that a prudent investment approach to risk taking can result in periods of under-performance for the Fund in which the funding status may decline. These periods, in turn, can lead to higher required contribution rates. Nevertheless, the Board believes that such an approach, prudently implemented, best serves the long-run interests of the State/School District and, therefore, of plan participants.

#### **5. Investment Objective**

The Board's investment objectives are expressed in terms of reward and risk expectations relative to investable, passive benchmarks. The Fund's policy benchmark is comprised of policy mix weights of appropriate asset class benchmarks as set by the SIB.

- a. The fund's rate of return, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.
- b. The fund's risk, measured by the standard deviation of net returns, should not exceed 115% of the policy benchmark over a minimum evaluation period of five years.
- c. The risk-adjusted performance of the fund, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

#### **6. Policy Asset Mix**

Benefit payments are projected to occur over a long period of time. This allows TFFR to adopt a long-term investment horizon and asset allocation policy for the management of fund assets. Asset allocation policy is critical because it defines the basic risk and return characteristics of the investment portfolio. Asset allocation targets are established using an asset-liability analysis designed to assist the Board in determining an acceptable volatility target for the fund and an optimal asset allocation policy mix. This asset-liability analysis considers both sides of the plan balance sheet, utilizing both quantitative and qualitative inputs, in order to estimate the potential impact of various asset class mixes on key measures of total plan risk, including the resulting estimated impact of funded status and contribution rates. After consideration of all the inputs and a discussion of its own collective risk tolerance, the Board approves the appropriate policy asset mix for the Fund.

Asset Class	Policy Target (%)
Public Equity	45%
- Broad U.S. Equity	27%
- Global ex-U.S. Equity	18%
Fixed Income	27%
- Core Fixed Income	18%
- High Yield	8%
- Cash Equivalents	1%
Alternatives	28%
- Real Estate	9%
- Private Infrastructure	9%
- Timber	0%
- Private Equity	10%
Total	100%

An allocation to Global Alternatives of up to 10% is authorized but shall not increase the expected volatility of the portfolio as measured in Section 5; and if utilized, all other targets will be adjusted pro-rata. The Board does not endorse tactical asset allocation, therefore, it is anticipated the portfolio be managed as close to the policy target as is prudent and practicable while minimizing rebalancing costs. Rebalancing of the Fund to this target will be done in accordance with the SIB's rebalancing policy.

## 7. Restrictions

- a. While the SIB is responsible for establishing specific quality, diversification, restrictions, and performance objectives for the investment vehicles in which the Fund's assets will be invested, it is understood that:
  - 1) Futures and options may be used to hedge or replicate underlying index exposure, but not for speculation.
  - 2) Derivatives use will be monitored to ensure that undue risks are not taken by the money managers
  - 3) No transaction shall be made which threatens the tax-exempt status of the Fund.
  - 4) All assets will be held in custody by the SIB's master custodian, or such other custodians as are acceptable to the SIB.
  - 5) No unhedged short sales or speculative margin purchases shall be made.
  - 6) Social investing is prohibited unless it meets the Exclusive Benefit Rule, and it can be substantiated that the investment must provide an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.
- b. For the purpose of this document, Social Investing is defined as "The investment or commitment of public pension fund money for the purpose of obtaining an effect other than a maximized return to the intended beneficiaries."

- 1) Economically targeted investing is prohibited unless the investment meets the Exclusive Benefit Rule.
- c. For the purpose of this document economically targeted investment is defined as an investment designed to produce a competitive rate of return commensurate with risk involved, as well as to create collateral economic benefits for a targeted geographic area, group of people, or sector of the economy.

Also, for the purpose of this document, the Exclusive Benefit Rule is met if the following four conditions are satisfied:

- 1) The cost does not exceed the fair market value at the time of investment.
- 2) The investment provides the Fund with an equivalent or superior rate of return for a similar investment with a similar time horizon and similar task.
- 3) Sufficient liquidity is maintained in the Fund to permit distributions in accordance with the terms of the plan.
- 4) The safeguards and diversity that a prudent investor would adhere to are present.

Where investment characteristics, including yield, risk, and liquidity are equivalent, the Board's policy favors investments which will have a positive impact on the economy of North Dakota.

## **8. Internal Controls**

A system of internal controls must be in place by the SIB to prevent losses of public funds arising from fraud or employee error. Such controls deemed most important are the separation of responsibilities for investment purchases from the recording of investment activity, custodial safekeeping, written confirmation of investment transactions, and established criteria for broker relationships. The annual financial audit must include a comprehensive review of the portfolio, accounting procedures for security transactions and compliance with the investment policy.

## **9. Evaluation and Review**

Investment management of the Fund will be evaluated against the Fund's investment objectives. Emphasis will be placed on five-year results. Evaluation should include an assessment of the continued feasibility of achieving the investment objectives and the appropriateness of the Investment Policy Statement for achieving those objectives.

Performance reports will be provided to the TFFR Board periodically, but not less than annually. Such reports will include asset returns and allocation data as well as information regarding all significant and/or material matters and changes pertaining to the investment of the Fund, including but not limited to:

A list of the advisory services managing investments for the board.

A list of investments at market value, compared to previous reporting period, of each fund managed by each advisory service.

Earnings, percentage earned, and change in market value of each fund's investments.

Comparison of the performance of each fund managed by each advisory service to other funds under the board's control and to generally accepted market indicators.

All material legal or legislative proceedings affecting the SIB.

Compliance with this investment policy statement.

TFFR Board Adopted: May 25, 1995.

Amended: November 30, 1995; August 21, 1997; July 15, 1999; July 27, 2000; September 18, 2003; July 14, 2005; September 21, 2006; September 20, 2007; October 27, 2011; September 26, 2013; January 21, 2016; September 21, 2017; January 25, 2018; November 19, 2020, April 22, 2021.

Approved by SIB: November 18, 2011, February 26, 2016, September 22, 2017, February 23, 2018, November 20, 2020, May 21, 2021.

~~Change Signatures to be updated: ED & CIO or ED CRO or just ED signature with Board approval dates?~~

ND Teachers' Fund for Retirement

ND State Investment Board

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

\_\_\_\_\_  
~~Janilyn Murtha  
Executive Director  
Deputy Executive Director/  
Chief Retirement Officer~~

\_\_\_\_\_  
~~Scott Anderson  
Chief Investment Officer~~ Janilyn Murtha  
Executive Director

## B. Plan Management Policy Overview

The North Dakota Teachers' Fund for Retirement (TFFR) Plan Management Policy is a risk assessment and management tool that monitors the ongoing health of TFFR using the most recent actuarial valuation results and stochastic projections. The objective of the Plan Management Policy is to provide a basis for balancing the Fund's obligations with current assets and expected future contributions in order to maintain its long-term health and viability. The Policy also provides a framework that the Board can follow in establishing metrics for future funding and benefit changes. The Plan Management Policy is based upon metrics and a scoring system that were established at the July 24, 2019, Board meeting. The Plan Management Policy Score will be updated subsequent to each annual actuarial valuation.

### 1. Background

The Plan Management Policy is different from the Funding Policy. The Funding Policy sets parameters for the determination of the actuarially determined contribution (ADC) as of each actuarial valuation date. The Plan Management Policy establishes the parameters for a forward-looking assessment of TFFR.

An ADC is used as a benchmark to compare to the statutory contribution rate. An ADC reflects an asset valuation method (i.e., smoothing method), actuarial cost method (e.g., entry age normal), and amortization method for paying down unfunded liabilities or recognizing surplus assets. A description of the ADC is contained in a separate document ("Actuarial Funding Policy Statement"). In summary, the current TFFR funding policy relies on an ADC that is equal to the sum of (a) the employer normal cost rate and (b) the level percentage of pay required to amortize the unfunded actuarial accrued liability over the 30-year closed period that began July 1, 2013 ~~(24 years remaining as of July 1, 2019)~~.

### 2. Risk Assessment and Management

The Plan Management Policy is a risk assessment tool. The risks facing TFFR can be broadly classified into three categories: risks related to economic variables, risks related to demographic events, and risks related to external forces. An overview of the primary risks facing TFFR stakeholders follows.

a. Risks related to economic variables:

Investment return – the risk that actual returns will be different than expected and more volatile than desired.

Inflation (price inflation, wage inflation) – the risk that measures of inflation will be inconsistent with other economic measures.

b. Risks related to demographic events:

- 1) Mortality/longevity – the risk that participants will live longer than expected
- 2) Payroll and/or population growth – the risk that aggregate payroll will increase at a rate less than expected. This is relevant since contributions to TFFR are collected as a percentage of member payroll.
- 3) Retirement/disability/termination experience – the risk that members leave active service in a manner that generates actuarial gains or losses relative to the assumptions.



There are even risks related to external forces (e.g., governance risk, regulatory risk, litigation risk, political risk), but these risks are difficult – or impossible – to manage.

The Plan Management Policy is a tool that measures investment return risk since investment return risk has the most significant impact on TFFR’s long term financial health.

### 3. Scoring System Metrics

The scoring system metrics that will be monitored on a periodic basis are:

- a. **The current funded ratio:** This is equal to the ratio of the market value of assets to the actuarial accrued liability as of the latest actuarial valuation date. The purpose of this metric is to assess the current funded status of TFFR.
- b. **The downside funded ratio as of July 1, 2030:** Based on stochastic projections, determine the probability that the funded ratio will be less than 65%. The purpose of this metric is to assess the likelihood of the funded ratio not improving over the short term. The lower the likelihood that the funded ratio will not increase, the higher the score.
- c. **The target funded ratio as of July 1, 2040:** Based on stochastic projections, determine whether the funded ratio is projected to increase above certain thresholds over a longer time horizon with 51% or more probability.
- d. **Improvement in the funded ratio over a 10-year period:** Based on stochastic projections, determine the probability that the funded ratio will improve by 5% over the following 10 years.
- e. **Ability to recover/withstand from a market downturn:** Based on stochastic projections, determine the probability that the funded ratio improves by 5% over 10 years following a market downturn. A market downturn is defined as a two-year period with a compound average return of -10% or worse.

### 4. Policy Score

The Policy Score is the sum of the points that have been assigned to each metric and can range from 0 to 14 and correspond to a color ranging from red to green. A higher score indicates better overall health of TFFR. The Policy Score is grouped into the following categories:

Color	Policy Score	Indication
Green	11 to 14	TFFR objectives are being met or likely to be met
Yellow	7 to 10	TFFR objectives may be met over a longer period
Orange	4 to 6	Continue to monitor TFFR
Red	0 to 3	Changes to TFFR should be considered



## 5. Policy Scoring System

Each metric is assigned a score based upon the results of the annual actuarial valuation and resulting analysis as follows:

<b>Metric</b>	<b>Criteria</b>	<b>Score</b>
The current funded ratio	<ul style="list-style-type: none"> <li>Funded ratio of 90% or higher</li> <li>Funded ratio between 80% and 90%</li> <li>Funded ratio between 70% and 80%</li> <li>Funded ratio less than 70%</li> </ul>	<ul style="list-style-type: none"> <li>+3</li> <li>+2</li> <li>+1</li> <li>+0</li> </ul>
The downside funded ratio as of July 1, 2030	<ul style="list-style-type: none"> <li>Under 65% funded ratio with less than 20% probability</li> <li>Under 65% funded ratio with less than 30% probability</li> <li>Under 65% funded ratio with less than 40% probability</li> <li>Under 65% funded ratio with more than 40% probability</li> </ul>	<ul style="list-style-type: none"> <li>+3</li> <li>+2</li> <li>+1</li> <li>+0</li> </ul>
The target funded ratio as of July 1, 2040	<ul style="list-style-type: none"> <li>85% or higher with 51% or more probability</li> <li>Between 80% and 85% with 51% or more probability</li> <li>Between 75% and 80% with 51% or more probability</li> <li>Between 70% and 75% with 51% or more probability</li> <li>Not more than 70% with 51% or more probability</li> </ul>	<ul style="list-style-type: none"> <li>+4</li> <li>+3</li> <li>+2</li> <li>+1</li> <li>+0</li> </ul>
Improvement in the funded ratio over a 10-year period	<ul style="list-style-type: none"> <li>Funded ratio improves by +5% over 10 years with 66% probability</li> <li>Funded ratio improves by +5% over 10 years with 50% probability</li> <li>Funded ratio does not improve by +5% over 10 years with 50% probability</li> </ul>	<ul style="list-style-type: none"> <li>+2</li> <li>+1</li> <li>+0</li> </ul>
Ability to recover from or withstand a market downturn	<ul style="list-style-type: none"> <li>Funded ratio after downturn improves by +5% over 10 years with 50% probability</li> <li>Funded ratio after downturn improves by +5% over 10 years with 33% probability</li> <li>Funded ratio after downturn does not improve by +5% over 10 years with 33% probability</li> </ul>	<ul style="list-style-type: none"> <li>+2</li> <li>+1</li> <li>+0</li> </ul>

For purposes of scoring, probabilities and funded ratios will be rounded to the nearest whole percentage. For example, a probability of 49.6% would be rounded up to 50%.

## 6. Outside Factors

Other factors outside of TFFR could have an effect on the directional trend of future Policy Scores. These factors include, but are not limited to:

- a. Projected economic conditions
- b. Market cycles
- c. North Dakota economy

TFFR Staff and the actuary will discuss the appropriate outside factors and determine whether these factors are expected to potentially improve or worsen the Policy Score.

## 7. Actuarial Assumptions

The actuarial assumptions used will be the same as those used for the annual actuarial valuation. The actuarial assumptions are described in detail in the actuarial valuation report. The funded ratio used in the plan management policy is based upon the market value of assets.

In order to stochastically model investment returns, Capital Market Assumptions are used. Capital Market Assumptions are developed by investment firms and represent expectations for future risk and returns for different asset classes. The Capital Market Assumptions used for the analysis are those published in the most recently available Horizon's Annual Survey of Capital Market Assumptions. If Horizon discontinues the publication of this survey, a suitable replacement or alternative will be used.

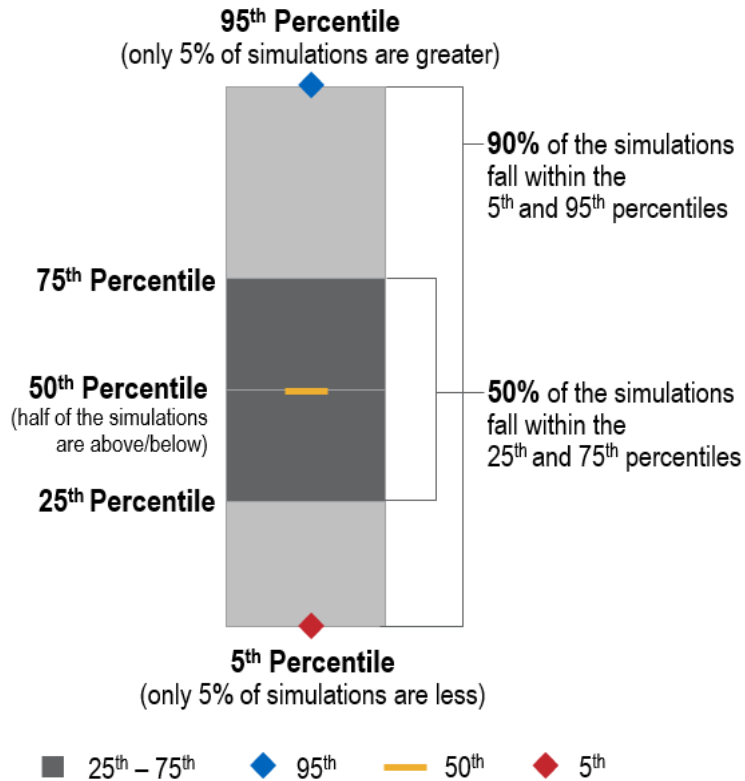
Projected liabilities are based upon an "open group" liability forecast. An open group projection generates projected populations for each future valuation date based on assumptions related to retirement, termination, salary increases, mortality, etc. New entrant records are generated to replace active members that decrement in the model in order to maintain a level active membership in the future. The profile of new entrants is based on recent demographics of new hires, subject to input from TFFR staff and Board.

## 8. Stochastic Modeling

The Capital Market Assumptions are used with TFFR's target asset allocation in order to simulate 5,000 investment portfolio return scenarios, each simulation representing a 20-year period. The simulated investment returns, along with open group liability forecasts, are used to model the projected funded ratio. The results are grouped into percentiles and summarized as a range:

- a. **Best Case:** Better cases would occur only 5% of the time (above the 95<sup>th</sup> percentile in the example below)
- b. **Most Likely:** Better or worse cases (50<sup>th</sup> percentile) are equally likely
- c. **Worst Case:** Worse cases would occur only 5% of the time (below the 5<sup>th</sup> percentile in the example below)

## Sample Funded Ratio



**TFFR Board Adopted:** October 24, 2019

**Amended:** January 23, 2020

## C. Actuarial Funding Policy Statement

### 1. Introduction

The purpose of this Actuarial Funding Policy is to record the funding objectives and policy set by the Board of Trustees (Board) for the North Dakota Teachers' Fund for Retirement (TFFR). Effective with the July 1, 2013, actuarial valuation, the Board establishes this Actuarial Funding Policy to help ensure the systematic funding of future benefit payments for members of TFFR. The contributions made to TFFR are set by statute. These statutory contributions will be compared to the contributions determined under the funding policy in order to assess the appropriateness of the statutory contributions. Based upon this comparison, the Board will decide what action to take, if any. The employer contribution determined under the funding policy is called the actuarially determined employer contribution (ADEC). In addition, this document records certain guidelines established by the Board to assist in administering TFFR in a consistent and efficient manner.

This Actuarial Funding Policy supersedes any previous Actuarial Funding Policies and may be modified as the Board deems necessary.

## **2. Goals of Actuarial Funding Policy**

- a. To achieve long-term full funding of the cost of benefits provided by TFFR;
- b. To seek reasonable and equitable allocation of the cost of benefits over time;
- c. To maintain a policy that is both transparent and accountable to the stakeholders of TFFR, including plan participants, employers, and residents of the State of North Dakota.

## **3. Actuarially Determined Employer Contribution and Funding Policy Components**

TFFR's actuarially determined employer contribution is comprised of the Normal Cost and an amortization of the Unfunded Actuarial Accrued Liability (UAAL). The Normal Cost and the amortization of the UAAL are determined by the following three components of this funding policy:

- a. Actuarial Cost Method: the techniques to allocate the cost/liability of retirement benefits to a given period;
- b. Asset Smoothing Method: the techniques that spread the recognition of investment gains or losses over a period of time for the purposes of determining the Actuarial Value of Assets used in the actuarial valuation process; and
- c. Amortization Policy: the decisions on how, in terms of duration and pattern, to reduce the difference between the Actuarial Accrued Liability and the Actuarial Value of Assets in a systematic manner.

### **4. Actuarial Cost Method:**

The Entry Age Normal method shall be applied to the projected benefits in determining the Normal Cost and the Actuarial Accrued Liability. The Normal Cost shall be determined as a level percentage of pay on an individual basis for each active member.

### **5. Asset Smoothing Method:**

The investment gains or losses of each valuation period, as a result of comparing the actual market return to the expected market return, shall be recognized in level amounts over 5 years in calculating the Actuarial Value of Assets. Deferred investment gains or losses cannot exceed 20% of the Market Value of Assets (i.e., the Actuarial Value of Assets cannot be more than 120%, nor less than 80%, of the Market Value of Assets as of any valuation date).

### **6. Amortization Policy:**

- a. The UAAL, (i.e., the difference between the Actuarial Accrued Liability and the Actuarial Value of Assets), as of July 1, 2013, shall be amortized over a "closed" 30-year period. In other words, the UAAL as of July 1, 2014 shall be amortized

over 29 years, the UAAL as of July 1, 2015 shall be amortized over 28 years, etc.

- b. Beginning with the July 1, 2024, valuation, the Board shall have the discretion to continue the “closed” amortization period, or instead to amortize the UAAL over another period, not to exceed 20 years.
- c. Any new UAAL as a result of change in actuarial assumptions or methods will be amortized over a period equal to the amortization period of the UAAL. The Board shall have the discretion to amortize the new UAAL as a result of change in actuarial assumptions or methods over a period of 20 years.
- d. Unless an alternative amortization period is recommended by the Actuary and accepted by the Board based on the results of an actuarial analysis, the increase in UAAL as a result of any plan amendments will be amortized over a period not to exceed 20 years.
- e. In a situation where the amortization of the UAAL has more than one component, a single equivalent amortization period will be determined by the Actuary.
- ~~e.~~
- f. UAAL shall be amortized as a level percentage of payroll so that the amortization amount in each year during the amortization period shall be expected to be a level percentage of covered payroll, taking into consideration the current assumption for general payroll increase.
- g. If an overfunding exists (i.e., the UAAL becomes negative so that there is a surplus), such surplus and any subsequent surpluses will be amortized over an “open” amortization period of 30 years. Any subsequent UAAL will be amortized over 20 years as the first of a new series of closed period UAAL amortization.

~~g.~~

## 7. Actuarial Assumptions Guidelines

The actuarial assumptions directly affect only the timing of contributions; the ultimate contribution level is determined by the benefits and the expenses actually paid offset by actual investment returns. To the extent that actual experience deviates from the assumptions, experience gains and losses will occur. These gains (or losses) then serve to reduce (or increase) the future contribution requirements.

Actuarial assumptions are generally grouped into two major categories:

- a. Demographic assumptions – including rates of termination, retirement, disability, mortality, etc.
- b. Economic assumptions – including investment return, salary increase, payroll growth, inflation, etc.

The actuarial assumptions are described in detail in the actuarial valuation report. They represent the Board’s best estimate of anticipated experience under TFFR and are intended to be long term in nature. Therefore, in developing the actuarial assumptions, the Board considers not only past experience but also trends, external forces and future expectations.

Actuarial experience studies are completed every five years or at the Board’s direction.

## 8. Glossary of Funding Policy Terms

- a. **Present Value of Benefits (PVB) or total cost:** the “value” at a particular point in time of all projected future benefit payments for current plan members. The “future benefit payments” and the “value” of those payments are determined using actuarial assumptions as to future events. Examples of these assumptions are estimates of retirement patterns, salary increases, investment returns, etc. Another way to think of the PVB is that if the plan has assets equal to the PVB and all actuarial assumptions are met, then no future contributions would be needed to provide all future service benefits for all current members, including future service and salary increases for current active members.
- b. **Actuarial Cost Method:** allocates a portion of the total cost (PVB) to each year of service, both past service and future service.
- c. **Normal Cost:** the cost allocated under the Actuarial Cost Method to each year of active member service.
- d. **Entry Age Normal Actuarial Cost Method:** A funding method that calculates the Normal Cost as a level percentage of pay or level dollar amount over the working lifetime of the plan’s members.
- e. **Actuarial Accrued Liability (AAL):** the value at a particular point in time of all past Normal Costs. This is the amount of assets the plan would have today if the current plan provisions, actuarial assumptions and participant data had always been in effect, contributions equal to the Normal Cost had been made and all actuarial assumptions came true.
- f. **Market Value of Assets (MVA):** the fair value of assets of the plan as reported in the plan’s audited financial statements.
- g. **Actuarial Value of Assets (AVA):** the market value of assets less the deferred investment gains or losses not yet recognized by the asset smoothing method.
- h. **Unfunded Actuarial Accrued Liability (UAAL):** the portion of the AAL that is not currently covered by the AVA. It is the positive difference between the AAL and the AVA.
- i. **Surplus:** the positive difference, if any, between the AVA and the AAL.
- j. **Actuarial Value Funded Ratio:** the ratio of the AVA to the AAL.
- k. **Market Value Funded Ratio:** the ratio of the MVA to the AAL.
- l. **Actuarial Gains and Losses:** changes in UAAL or surplus due to actual experience different from what is assumed in the actuarial valuation. For example, if during a given year the assets earn more than the investment return

assumption, the amount of earnings above the assumption will cause an unexpected reduction in UAAL, or “actuarial gain” as of the next valuation. These include contribution gains and losses that result from actual contributions made being greater or less than the level determined under the policy.

m. **Valuation Date:** July 1 of every year.

## **D. Operations**

### **1. Membership Data and Contributions**

A. Ensure the security and accuracy of the members’ permanent records and the collection of member and employer contributions from every governmental body employing a TFFR member.

B. Accordingly, the administrative means will be to:

1. Retain member and employer documents applicable to the retirement program.
2. Safeguard TFFR database files.
3. Protect the confidential information contained in member and employer files.
4. Collect the member and employer contributions from the employers based on retirement salary earned by the member.
5. Monitor the employer reporting process including the timely filing of information, consistency of month-to-month data, and changes in the employer payment plan models.
6. Review the individual member data, salary, and service credit for accuracy.
7. Post and validate the data received from the employer to the individual member accounts.
8. Provide annual statements to every member.
9. Summarize the member data reported and notify the employers annually of the prior fiscal year information.



10. Perform reviews to monitor whether individuals employed as “teachers” in North Dakota school districts, political subdivisions, and state institutions are reported to TFFR in compliance with the North Dakota Century Code (NDCC).
11. Provide publications and reporting instructions to employers on TFFR.
- ~~12.~~ Transfer member and employer contributions to the investment program in a timely manner.

A. **Monitoring** (Method, Responsibility, Frequency)

1. Internal Report
  - a. Disclosure of compliance to the board from RIO’s internal auditors.
  - b. Compliance for individual accounts is monitored through internal audits of staff compliance with state laws, rules, board policy, and procedures.
2. External Report
  - a. Disclosure of compliance to the board by RIO’s external auditors as a part of the annual audit.
  - b. Disclosure of compliance to members through annual statements.

## 2. Member Services

Provide direct services and public information to members of TFFR.

A. Accordingly, the administrative means will be to:

1. Enroll, update, maintain, and certify all member accounts.
2. Respond to member inquiries on the retirement program.
3. Provide statewide benefits counseling services to members.
4. Make group presentations and distribute information at conferences and conventions throughout the state.
5. Coordinate and conduct retirement education programs for members on a statewide basis.
6. Certify eligibility for TFFR benefits and purchase of service credit.

7. Calculate and process claims for refund, retirement, disability, survivor, and Qualified Domestic Relations Order (QDRO) benefits, as well as claims for purchasing credit.
8. Permit members to change designated beneficiaries in the event of life occurrences identified in the administrative rules.
9. Close retirement accounts of deceased teachers.
10. Develop and distribute information to the members on the retirement program and related topics through newsletters, annual reports, member handbooks, brochures, and retirement planning materials.
11. Maintain a website and provide online services to provide members with a variety of access methods for TFFR information.

B. Monitoring (Method, Responsibility, Frequency)

1. Internal Report
  - a. Disclosure of compliance to the board through internal audits on compliance with laws, rules, and policies.
  - b. Periodic presentations by staff at board meetings.
2. External Report
  - a. Receive annual reports from leadership of groups representing the plan's beneficiaries.
  - b. RIO's annual audit by independent auditor.
  - c. Written and oral communication with board members from teachers regarding payment and processing of benefit claims.

### 3. Disclosure of Confidential Information for Treatment, Operational, or Payment Purposes

The TFFR Board of Trustees has determined that confidential information for treatment, operational, or payment purposes under NDCC 15-39.1-30(12) includes:

A. Information related to enrollment, participation, benefits, ~~or~~ contributions, and otherwise necessary for the administration and operation of the program may be shared with participating employers or TFFR contractors, attorneys, and consultants, for purposes of maintaining a member's participation and benefits in the TFFR program. ~~Such sharing of information is limited to that information which is necessary to assure that a member's participation and benefits are properly handled. All such information remains confidential whether in the possession of TFFR, its participating employers, or its contractors.~~

~~1. Information necessary for the administration and operation of the program may be~~

~~shared with TFFR attorneys and consultants. To the extent such information is shared, it remains confidential.~~

~~2 Information relating to the death benefits and beneficiary designations of a deceased member or beneficiary may be shared with an ex-spouse if listed as a beneficiary on a designation of beneficiary form, subsequent to the death of the applicable member or beneficiary, but in advance of a final determination regarding the applicable beneficiary, only to the extent necessary to accurately identify the appropriate beneficiary.~~

B. Information relating to the death benefits and beneficiary designations of a member or beneficiary may be shared with any other person if the beneficiary is unknown or unable to be located, only to the extent necessary to accurately identify the appropriate beneficiary or to close an account subsequent to the death of a member or beneficiary.

~~All other requests for confidential information under this policy must first be submitted to the Deputy Executive Director/Chief Retirement Officer and then reviewed by the TFFR Board of Trustees.~~

**TFFR Board adopted:** September 25, 2014

#### 4. Account Claims

A. Ensure the payment of benefit claims to members of TFFR.

Accordingly, the administrative means will be to:

- 1) Pay retirement benefits based on an estimated final salary for members retiring upon completion of their teaching contract and whose final salary has not been reported to TFFR.
- 2) Allow retired members receiving an annuity from TFFR to have payroll deductions subtracted from their monthly benefit, ~~pursuant to section II.D.5. including: , but not limited to: health, life, and other insurance premiums payable to NDPERS, North Dakota Retired Teachers Association (NDRTA) dues, North Dakota United (ND United) Retired dues, and federal and North Dakota income tax withholdings.~~
- 3) Distribute payments for benefit claims (annuities, PLSOs, refunds, and rollovers) once per month. ~~Benefit payments made by Electronic Funds Transfer (EFT) will be deposited and payable on the first working day of each month. Benefit payments made by check will be mailed on the last working day of the previous month payable on the first working day of each month.~~
- 4) Distribute special payments for benefit claims in the event of unforeseen circumstances (i.e., death, disability, Court Order, staff processing delay, etc.) if approved by the Deputy Executive Director-Chief Retirement Officer.
- 5) Mail Produce and make available new account notices and account change notices to retired members and beneficiaries receiving benefits.

B. Monitoring (Method, Responsibility, Frequency)

- 1) Internal Report
  - i. Disclosure of compliance to the board through internal audits on compliance with laws, rules, and policies.
- 2) External Report
  - ii. Disclosure of compliance to the board through annual audit by RIO

external auditors.

## 5. Deductions from Annuity Checks

- A. It shall be the policy of the TFFR Board of Trustees to allow retirees and beneficiaries receiving annuity payments to have payroll deductions subtracted from their monthly payments.
- B. To initiate, change, or stop a deduction, the retiree must notify the administrative office in writing at least ten working days prior to the date the monthly benefit is issued. All deductions withheld will be forwarded to the appropriate entity within three working days after the first of the month or as required by federal/North Dakota state law. Authorization forms are to be kept on file at the administrative office.

The following deductions are available to retirees and beneficiaries receiving monthly annuity benefits:

- 1) Health, life, and other insurance premiums payable to the NDPERS.
- 2) Annual dues payable to the NDRTA and the ND United Retired organization.
- 3) Federal and North Dakota income tax withholdings.
- 4) Court ordered payments including child support orders, Qualified Domestic Relations Orders (QDRO), IRS tax levies, federal garnishments, and other court ordered payments, subject to approval by the Attorney General's office.
- 5) Additional deductions may be added upon approval by the board.

## 6. Military Service Credit

It shall be the policy of the TFFR Board of Trustees that a teacher purchasing military service be credited with a full year of credit if the service was rendered for at least 175 school days or a period of nine months within any fiscal year.

## 7. Payment of Benefits

It shall be the policy of the TFFR Board of Trustees to distribute payments for benefit claims (annuities, refunds/rollovers) once per month. Distributions will be mailed on the last working day of the previous month payable on the first working day of each month.

In order for a teacher to assure receipt of a benefit payment on the first working day of the month, the required information and forms must be filed with the administrative office at least ten working days prior to the distribution date.

The Deputy Executive Director/Chief Retirement Officer may authorize special payments to pay benefit claims due to unforeseen circumstances that delay the processing of the claim.

Payments to a teacher approved for a refund/rollover will include all contributions and interest paid by a teacher for the purchase and repurchase of service credit. This is in addition to the entitled refund of member contributions plus interest. The Executive Director or Deputy Executive Director/Chief Retirement Officer may waive the 120-day waiting period for refunds/rollovers based on necessary documentation.

## 8. Retirement Benefit Payments

A. It is the policy of the TFFR Board of Trustees that new retirees will have their initial retirement benefit payment calculated using either estimated or final salary and service credit information:

1) Estimated salary and service credit information

The member's initial retirement benefit is calculated using 90% of the estimated current year salary for final average salary calculation purposes. If the final information reported by the employer is different than the estimated information, the member's monthly retirement benefit will be adjusted retroactive to the member's retirement date. Using estimated information allows a member to begin receiving retirement benefits sooner but results in correction of benefits at a later date retroactive to the member's retirement date.

2) Finalized salary and service credit information

The member's retirement benefit is calculated using finalized current year salary and service credit information. After salary, service credit, and last date of employment are reported by the employer and verified by TFFR, the member's retirement benefit is calculated, and claim is processed. Using finalized information delays a member's first retirement benefit payment, but when payment is made, it is retroactive to the member's retirement date.

B. Under all circumstances, if any change or error in the records of TFFR or a participating employer or if any calculation results in a member receiving more or less in benefits than the member is entitled to receive, TFFR will correct the error and adjust the benefit (NDCC 15-39.1-31 and 32).

## 9. Voiding Checks

It shall be the policy of the TFFR Board of Trustees to void any uncashed benefit checks for the payment of retirement, disability, survivor, and refund benefits after six months. Should the payee request payment after six months, the RIO will reissue a check, but without additional interest.

**10. In-Staff Subbing Contract Period ~~\_ Per Board action on 7-22-21 the policy is suspended as it applies to rehired retirees until further Board action. Needs to be updated to reflect changes made in H.B. 1219 (2023~~<sup>[MJ1]</sup>**

It is the policy of the TFFR Board of Trustees that the following guidelines apply for the purpose of determining the contract period for in-staff subbing for active members and re-employed retirees as provided for in NDCC 15-39.1-04 (4) and (12), 15-39.1-19.1, 15-39.1-19.2, and NDAC 82-05-06-01.

A. In-staff subbing is defined as substitute teaching duties performed by a contracted teacher for the contracting TFFR participating employer.

B. If the active member or re-employed retiree has a contract or written agreement with the participating employer for full or part time work, TFFR will view the beginning and ending calendar dates indicated on the contract as the contract term to determine the contract period, unless the contract period is otherwise specifically detailed in the active member or re-employed retiree's contract.

1) If substitute teaching duties are performed during the contract term, those duties are considered in-staff subbing, and retirement contributions are required to be paid on the substitute teaching pay. The in-staff subbing hours are reported as compensated hours for active members and are counted toward the annual hour limit for re-employed retirees (700 – 1000 hours depending upon length of contract).

2) If substitute teaching duties are performed before the beginning calendar date or after the ending calendar date of the contract term, those duties are not considered in-staff subbing, and no retirement contributions are required to be paid on the substitute teaching pay. The subbing hours are not reported as compensated hours for active members and are not counted toward the annual hour limit for re-employed retirees.

C. If the active member ~~or re-employed retiree~~ does not have a contract or written agreement with the participating employer, then no retirement contributions are required to be paid on the substitute teaching pay. The subbing hours are not reported as compensated hours for active members. If a re-employed retiree does not have a contract or written agreement with the participating employer then professional development, extracurricular duties and non-contracted substitute teaching duties and are not counted toward the annual hour limit for re-employed retirees and no contributions may be collected for these activities-

D. This policy does not prohibit the Board from making an eligible salary determination for an individual member pursuant to N.D.A.C. 82-04-02-01.

## 11. Plan Beneficiaries

TFFR beneficiaries are:

### A. Plan Members:

1) Active – all persons who are licensed to teach in North Dakota and who are contractually employed in teaching, supervisory, administrative, or extracurricular services:

- i. Classroom teachers
- ii. Superintendents, assistant superintendents, county superintendents
- iii. Business managers
- iv. Principals and assistant principals

- v. Special teachers
- vi. Superintendent of Public Instruction, professional employees of Dept. of Public Instruction and Dept. of Career and Technical Education, unless transferred to North Dakota Public Employees Retirement System (NDPERS)
- vii. Professional or teaching staff of Center for Distance Education, Youth Correctional Center, School for the Blind and School for the Deaf.
- viii. Other persons or positions authorized in state statutes
- 2) Annuitants – All persons who are collecting a monthly benefit:
  - i. Retirees
  - ii. Disabilitants
  - iii. Survivors/Beneficiaries
- 3) Inactive members:
  - i. Vested
  - ii. Nonvested

**B. Employers:**

- 1) School districts, special education units, vocational centers, County superintendents, Regional Education Associations (REA)
- 2) State institutions and agencies defined in state statutes
- 3) Other TFFR participating employers

**12. Head Start Program Employees**

It shall be the policy of the TFFR Board of Trustees that employees of a Head Start Program who are certified to teach and contracted with a school district or other participating employer, are members of TFFR if the following conditions are met:

- A. Grantee agency for the Head Start Program is the school district which is governed by the local school board.
- B. Head Start Program employees are on the school district teaching or administrative faculty in positions such as coordinator, director, teacher, or home visitor.
- C. Head Start Program employees are on the school district salary schedule and negotiate for salary and benefits like other school district teaching faculty.

**13. PERS Retirement Plan Election (DPI and CTE)**

- A. NDCC 15-39.1-09(3) allows new employees of the Department of Public Instruction (DPI), who are eligible for TFFR coverage and hired after January 6, 2001, excluding the State Superintendent of Public Instruction, to elect to become participating members of ND Public Employees Retirement System (PERS).
- B. NDCC 15-39.1-09(4) allows new employees of the Department of Career and Technical Education (CTE) who are eligible for TFFR coverage and hired after July 1, 2007, to elect to become participating members of PERS.

C. It is the policy of the TFFR Board of Trustees to allow the PERS retirement plan election by eligible new DPI and CTE employees under the following guidelines:

- 1) Any new employee who is required to participate in TFFR under NDCC 15-39.1-04(11)(b) and who is entered onto the payroll of DPI after January 6, 2001 (except the Superintendent of Public Instruction), or CTE after July 1, 2007, is eligible to make the election to become a participating member of NDPERS.
- 2) If eligible, the new employee must complete the “NDPERS/TFFR Membership Election” form within ninety days of hire. Until this election is made, the employee will be enrolled in the NDPERS retirement plan. If no election is made, the employee will be transferred to TFFR.
- 3) If the new employee is a former DPI employee or is retired from DPI and receiving TFFR benefits, the employee must have a one-year break in service to be eligible to elect participation in PERS. If the new employee is a former CTE employee or is retired from CTE and receiving TFFR benefits, the employee must have a one-year break in service to elect participation in PERS.
- 4) If the new employee is a TFFR retiree (but not a former DPI or CTE employee), the retiree may elect participation in PERS upon date of hire. The retiree is not subject to the one-year waiting period and is not subject to the TFFR retiree annual hours limit.

## E. Employer Policies

### 1. Employer Payment Plan Models

- A. The TFFR Board has developed models relating to employer payment of member contributions as provided for in NDCC 15-39.1-09 and NDAC 82-04-01. The models are outlined in employer instructions prepared by the fund. Special provisions apply to state agencies and institutions, and employers that have not adopted a model.
- B. Employers must select the employer payment plan model under which they will pay member contributions on a form provided by the administrative office. The model selected by the employer can only be changed once each year at the beginning of the fiscal year.
- C. The following employer payment plan models are available to participating employers:
  - 1) Model 1: Member contributions are paid by the member through a salary reduction and remitted to TFFR by the employer as tax deferred contributions.



- 2) Model 2 All: Member contributions are paid by the employer as a salary supplement and remitted to TFFR as tax deferred contributions.
  - 3) Model 2 Partial (%): A fixed percentage (1% minimum and increasing increments of full percentages only) of the member contributions are paid by the employer as a salary supplement and remitted to TFFR as tax deferred contributions. The remaining member contributions are paid by the member and remitted by the employer as tax deferred contributions.
  - 4) Model 3 Partial (\$): A fixed dollar amount of the member contributions are paid by the employer as a salary supplement and remitted to TFFR as tax deferred contributions. The remaining member contributions are paid by the member and remitted by the employer as tax deferred contributions. Effective July 1, 2003, employers may no longer select Model 3. Any employers currently paying member contributions under this model may continue as a closed group, but Model 3 will no longer be available to other employers. Effective July 1, 2019, Model 3 will be eliminated, and no employers will be allowed to utilize this model.
  - 5) Model 4 State Agencies: Four Percent (4%) of the member contributions (or the % of member contributions the State agrees to pay) are paid by the State as a salary supplement and remitted to TFFR as tax deferred contributions. The remaining member contributions are paid by the member and remitted by the employer as tax deferred contributions.
- D. Employers who do not select one of the above models must report member contributions paid by the member and remitted by the employer as taxed contributions. Payment of member contributions cannot be made on a tax deferred basis unless one of the above approved models is selected in writing.

## 2. Employer Reporting Errors

It is the policy of the TFFR Board of Trustees that when an unintentional error in the reporting of retirement contributions by a TFFR participating employer is discovered during an employer audit, the following guidelines will apply:

- a. The employer will be billed for all material shortages due plus interest or refunded for all material overpayments.
- b. Materiality limit to be used in determining if a member's account will be corrected is an aggregate total of \$500 in a fiscal year per individual member per year, unless otherwise approved by the Deputy Executive Director-Chief Retirement Officer.
- c. The interest charged to the employer will be the actuarial investment return assumption.
- d. Failure of the employer to pay the required shortages or provide required information will constitute "failure to make required reports and payments"

- and require application of section 15-39.1-23, NDCC.
- e. The TFFR board reserves the right to negotiate with an employer.
  - f. The employer must respond in writing to the finding(s) and/or recommendation(s) within 30 days of being notified.

### 3. Employer Reports

- A. It shall be the policy of the TFFR Board of Trustees to require all participating employers to file reports and make payment of member and employer contributions on a monthly basis to the RIO. Both payment and report are due by the 15th day of the month following the end of the reporting period.
- B. The administrative office will monitor late TFFR employer reports and payments and establish procedures for minor processing delays. Except for unintentional reporting errors, employers that do not meet the established deadlines for filing required reports shall be assessed a civil penalty as required in NDCC 15-39.1-23 unless the Executive Director or Deputy Executive Director/Chief Retirement Officer approves a request for a waiver of the penalty under special circumstances such as:
  - 1) Death, surgery, or illness of the individual responsible for TFFR reports or their family.
  - 2) "Acts of God" that require an employer to close school such as blizzards, storms, or floods.
  - 3) Unforeseen events such as resignation of the individual responsible for TFFR reports, computer malfunction, etc.
- C. The request for a waiver must be in writing and signed by the administrator.

### 4. Ineligible TFFR Salary

The TFFR Board desires to provide guidance to TFFR employers regarding how eligible salary shall be determined for payments made to licensed teachers for performing certain duties.

NDCC 15-39.1-04(10)(h) provides that eligible salary does not include "*other benefits or payments not defined in this section which the board determines to be ineligible teachers' fund for retirement salary.*"

It is the policy of the TFFR Board of Trustees that effective July 1, 2016, additional payments made by a TFFR participating employer to a licensed TFFR member for equipment maintenance and repair, jobsite prep and finish work, and similar types of nonteaching duties are not eligible salary for TFFR purposes if the duties are not included on the member's regular teaching contract(s).

This policy does not prohibit the Board from making an eligible salary determination for an individual member pursuant to N.D.A.C. § 82-04-02-01.

## F. Member Communication

### 1. Disclosure to Membership

It shall be the policy of the TFFR Board of Trustees that member handbooks, member statements, member newsletters, and financial reports be prepared and made available for TFFR members. RIO staff will prepare, and the TFFR Board of Trustees will review for approval at least once a biennium a communications plan that summarizes the content and method for providing member and employer education and publications.

### 2. Information Dissemination

It is the policy of the TFFR Board of Trustees to allow member and employer interest groups and other approved third parties to send specific information to the TFFR membership using a “blind mailing” method. The information to be mailed and ~~third party~~~~third-party~~ organization must be approved by the ~~Executive Director RIO Deputy Executive Director/Chief Retirement Officer~~ in advance. Member and employer interest groups include, but are not limited to, North Dakota Council of Educational Leaders (NDCEL), ND United, NDRTA, and North Dakota School Boards Association (NDSBA).

Under the “blind mailing” method, the third party must submit information or materials they wish to send to TFFR members. The third party must sign an agreement that they will not use the mailing to engage in partisan political activities.

If approved, the third party will forward the materials to an independent mailing company approved by TFFR. The mailing company must sign a “no disclosure” agreement with TFFR.

TFFR will then supply membership mailing information to the mailing company. The mailing company will combine the material from the third party with the mailing list and send to TFFR members. The cost of the mailing will be paid by the third party.

**TFFR Board Adopted:** July 15, 1999.

**Amended:** November 15, 2001.

### 3. Outreach Program Facilities

It shall be the policy of the TFFR Board of Trustees that school district facilities used for TFFR outreach programs must meet ADA requirements. In addition, authorized school district employees must be present to direct guests to the proper meeting room and lock the building at the close of the program. RIO employees who are conducting outreach programs for TFFR

members are not allowed to be in school district buildings without the presence of an administrator, teacher, or other authorized school district employee.

RIO staff will not be able to conduct outreach programs at that site if the above conditions are not met.

## ~~G. Other Policies — Recommended for Removal~~

### ~~1. Level Income Option~~

#### ~~(May be Removed Pending Legislation)~~

~~It shall be the policy of the TFFR Board of Trustees to allow members who select the level income retirement option:~~

- ~~1. To level to age 62 or normal retirement age (including any fractional age from age 65 to 67).~~
- ~~2. To combine the level income option with the service retirement options offered (single life annuity, 100% and 50% joint and survivor, 10 and 20 year term certain and life annuity).~~
- ~~3. To reduce a member's retirement benefit the second month following the month the member reaches age 62 or normal retirement age.~~
- ~~4. To apply postretirement legislative benefit increases to the teacher's non-level income monthly retirement benefit.~~

## Section II Program Policies Section Exhibits

### Asset Allocation Definitions

#### Overview of Asset Class Definitions

**There are three major asset classes:**

- 1. Equity**
- 2. Debt**
- 3. Real Assets (or Other)**

*Alternative Investments* are often cited as the fourth major asset class, but can frequently be re-classified into one of the other three categories with some exceptions (i.e. total return strategies using debt and equity).

**Equity investments represent an ownership claim on the residual assets of a company after paying off debt.**

Equities should be segregated into two major sectors, Public and Private, given major differences in liquidity:

1. Public equities are generally highly liquid and *valued on a daily basis* in the financial markets. Examples include common stock (Apple, Coca-Cola or McDonalds), options and futures.
2. Private equities are generally less liquid and often *valued on a less frequent basis* (quarterly).

Public equity markets are often sub-classified by geographic region (U.S., International or Global), market capitalization (Large, Medium or Small), investment style (core, growth or value) and level of economic development (developed or emerging markets). The top U.S. and global equity benchmarks are discussed below.

**Five major U.S. equity benchmarks** include the **S&P 500, Russell 1000, 2000 and 3000**, and **Dow Jones Industrial Average (“Dow”)**. The **S&P 500** is based on the market capitalizations of 500 large companies having common stock listed on the NYSE or NASDAQ. The **Russell 1000** represents the highest-ranking 1,000 stocks in the Russell 3000 Index, and represents about 90% of the total market capitalization of that index. The Russell 1000 has a weighted average market capitalization of over \$100 billion with a median of approximately \$8 billion. The **Russell 2000 Index** is a small-cap index and represents the bottom 2,000 stocks in the Russell 3000 Index. The Russell 2000 has a weighted average market capitalization of less than \$2 billion with a median of less than \$1 billion. The Russell 2000 is the most common benchmark for funds that identify themselves as "small-cap", while the **S&P 500** index is used primarily for large capitalization stocks. The **Dow** is a price-weighted measure of 30 U.S. blue-chip companies. **The Dow** covers all industries with the exception of transportation and utilities, which are covered by the Dow Jones Transportation Average and Dow Jones Utility Average. While stock selection is not governed by quantitative rules, a stock typically is added to The Dow only if the company has an excellent reputation, demonstrates sustained growth and is of interest to a large number of investors. Maintaining adequate sector representation within the indices is also a consideration in the selection process.

The MSCI All Country World Index (or “ACWI”) measures the equity market performance of developed and emerging markets and consists of 47 country indexes comprising 23 developed and 24 emerging market country indexes. The ACWI includes approximately 2,500 large and mid-cap equity securities and covers 85% of the global investable market. The **MSCI ACWI Investible Market Index** (or “ACWI IMI”) captures large, mid and small cap securities across 23 developed and 24 emerging market countries with over 8,700 constituents and covering approximately 99% of the global investment opportunity set. The **MSCI EAFE Index (Europe, Australasia, Far East)** measures the equity market performance of the developed market countries, excluding the US & Canada. The **MSCI Emerging Markets Index** measures equity market performance of emerging markets and consists of 24 countries.

Public equity has historically provided **high investment returns with high volatility and high liquidity when compared to Bonds or Real Assets**. Most investment consultants believe that Private Equity can provide an even higher investment return than Public Equity, albeit with significant less liquidity and potentially higher volatility.

**Debt** represents a legal obligation between a borrower and a lender for a stated period of time and rate.

Debt or “Bonds” are classified as fixed or floating depending upon whether the interest rate is derived using a fixed rate (i.e. 5%) or a floating rate (i.e. Prime + 1.00%). Duration risk within fixed income is a major driver of investment risk and return particularly for longer term securities, including U.S. Treasury bonds.

Debt is often sub-classified into investment grade (rated BBB- or better) or non-investment grade (rated less than BBB- or non-rated) or by geographic region (U.S., International, Developed Markets or Emerging Markets). Debt can be issued by governments, agencies or companies and represent general obligations of the issuer or be backed by a specified pool of assets (i.e. mortgage backed securities). Bonds serve to diversify a portfolio by offering **lower volatility** than equities along with a **lower expected return and generally high liquidity**. **Real Assets represent an ownership interest in physical assets** such as real estate, infrastructure (airports, electrical grids, energy pipelines, information technology data centers and systems, shipping ports, toll roads, and water supply and treatment facilities), timberland and certain commodities (gold, oil, wheat). Real assets are expected to provide inflation hedging characteristics in periods of unanticipated inflation and diversify a portfolio consisting of debt and equity.

**Alternative Investments** can include precious metals, art, antiques, and financial assets such as derivatives, commodities, private equity, distressed debt and hedge funds. Real estate, infrastructure and forestry/timber are also often termed alternative. Alternatives are sometimes used as a tool to reduce overall investment risk through diversification and may offer lower correlation with traditional financial investments such as stocks and bonds, although it may be difficult to determine the current market value of the asset, may be illiquid, purchase and sales costs may be high, and there may be limited historical risk and return data, all of which makes analysis complex.

## Asset Class Definitions

### Global Equity

#### Definition

Investment represents an ownership claim on the residual assets of a company after the discharge of all senior claims such as secured and unsecured debt.

### Public Equity

Public equity is traded on a national exchange. Includes common stock, preferred stock, convertible to stock, options, warrants, futures and other derivatives on equities or composites of equities, exchange-traded funds and equity-linked notes, units and partnership shares representing ownership interests in an underlying equity investment.

### Private Equity

Private equity represents equity or equity linked securities in operating companies that are not publicly traded on a stock exchange.

#### Types of investment strategies

- *Leveraged buyout (LBO)* – Acquisition of a company with the use of financial leverage
- *Growth capital* – Investment in mature companies looking for capital to expand, restructure, enter new markets

- *Venture capital* – Investment in typically less mature companies, for launch, early development, or expansion
- *Mezzanine* – Subordinated debt/preferred equity used to reduce amount of equity capital required to finance LBOs
- *Distressed* – Equity securities of financially stressed companies
- *Secondary* – Investment in existing private equity assets

#### Types of structures

- *Direct investment* – Direct purchase of equity securities of a private company
- *Co-investments* – Investments in equity securities of a private company alongside the manager of a direct fund
- *Direct fund* – Pool of capital formed to make direct investments
- *Fund-of-funds* – Pool of capital formed to make investments in direct funds

#### Strategic Role

- High long-term real returns
- Hedge against active (pre-retirement) liabilities
- Private equity enhances total portfolio return as a tradeoff for illiquidity

#### Characteristics

##### Public Developed Markets

- Relatively high returns (long-term) as compared to fixed income and real assets
- Relatively high volatility (standard deviation of returns) as compared to fixed income and real assets
- Relatively high liquidity
- Diversification
- Historically, public developed equities exhibit high correlation with private equity and high yield bonds, moderate correlation with investment grade corporate bonds and real assets, and negative correlation with sovereign debt.
- Currency adds to volatility but can be hedged, which mutes the diversification benefits

##### Public Emerging Markets

- Higher expected returns due to economic growth potential
- Liquidity risk is significant, particularly in frontier markets
- High volatility, particularly in frontier markets
- Historically, public emerging equities exhibit high correlation with high yield bonds, moderate correlation with investment grade corporate bonds and real assets, and negative correlation with sovereign debt.
- FX markets not sufficiently developed to hedge currency risk
- Limited access to markets
- Market information less abundant than for developed markets
- Counterparty risk and settlement delays pronounced in frontier markets

##### Private Equity

- Illiquid, long-term time horizon (7-12 year closed-end partnerships)
- Quality of the managers selected is the key determinant of success
- High volatility of returns compensated by higher expected returns
- Historically, public emerging equities exhibit high correlation with high yield bonds,

moderate correlation with investment grade corporate bonds and real assets, and negative correlation with sovereign debt.

- Encompasses three stages: fundraising, portfolio construction and investment, exit and return realization

## Risks

### Public Equity

- *Absolute risk* – Possible magnitude of price decline
- *Liability hedging risk* – Risk that assets will not increase when liabilities increase
- *Regulatory risk* – Changes may adversely affect markets
- *Tax risk* – Changes may adversely affect markets
- *Liquidity risk* – Difficulty trading securities under adverse market conditions
- *Firm specific risk* – Unique risks associated with a specific firm
- *Tracking risk* – Magnitude of performance deterioration from a benchmark
- *Time horizon* – Horizon too short to weather cycles
- *Benchmark risk* – Benchmark not appropriate proxy
- *Market risks* – Price decline
- *Currency risk* – Unanticipated changes in exchange rate between two currencies
- *Counterparty risk* – Counterparty does not live up to its contractual obligations

### Private Equity

- *Liquidity risk* – Absence of liquidity and appropriate exits could significantly increase time horizon
- *Firm specific risk* – Unique risks associated with a specific firm
- *Leverage risk* – Historical excess use of leverage and current inability to secure financing may adversely affect LBOs
- *Manager selection risk* – Selecting managers that fail to deliver top performance results
- *Diversification risk* – Inability to properly diversify the portfolio by vintage year, industry groups, geography
- *Tax risk* – Changes may adversely affect markets
- *Regulatory risk* – Changes may adversely affect markets
- *Strategy risk* – Continuing applicability of investment strategy in context of capital flows
- *Market risks* – Price decline

### Global Fixed Income

#### Definition

Investment represents a legal obligation between a borrower and the lender with a maturity in excess of one year. Evidence of indebtedness and securities that evidence an ownership interest in debt obligations that are issued, insured, guaranteed by, or based on the credit of the following: companies, governmental entities or agencies, banks and insurance companies. Includes agency and non-agency mortgage-backed securities, collateralized mortgage obligations, commercial mortgage-backed securities, asset-backed securities, private placements, and options, futures or other derivatives on fixed income securities or components of fixed income.

#### Strategic Role

- Diversification within a multi-asset class, total return portfolio
- Hedge against a long duration accrued liability



- Current income
- Non-U.S. provides hedge against unanticipated domestic inflation and diversification to U.S. assets

#### Characteristics

- Medium volatility asset class
- Relatively high liquidity
- Broadly diversified by market sector, quality, and maturity
- Historically, developed sovereign debt exhibits low to negative correlation with real assets and negative correlation with equities; investment grade corporate bonds exhibit moderate correlation with equities and low correlation with real assets; high yield exhibits high correlation with equities and moderate correlation with real assets.
- A large currency component exists within international fixed income returns
- Developed markets are extremely liquid. Many issues of less developed markets are also relatively liquid.

#### Risks

- *Duration risk* – Price volatility from a change in overall interest rates
- *Convexity risk* – Negative convexity is the risk of price declines being greater than the price increase due to interest rates moving equally up versus down
- *Default or credit risk* – The uncertainty surrounding the borrower's ability to repay its obligations
- *Structure risk* – Risk that arises from the options implicit in bonds (like call ability and sinking funds) or the rules that govern cash flow differ from expectations
- *Sector risk* – Risk of holding sectors that are in different proportions than the benchmark
- *Liquidity risk* – Cost of trading in a security which is reflected in the bid-ask spread or the cost of selling due to cash flow needs
- *Reinvestment risk* – The uncertainty surrounding future yield opportunities to invest funds which come available due to call, maturities, or coupon payments
- *Benchmark risk* – Risk of the benchmark being inappropriate
- *Yield curve risk* – Price changes induced by changes in the slope of the yield curve
- *Currency risk* – The risk of currency movements vs. the dollar for each market. Currency may contribute greatly to return and lower correlation.

## Global Real Assets

#### Definition

Investment represents an ownership interest in real return assets that provide inflation hedging characteristics in periods of unanticipated inflation. Includes inflation-linked securities, private or public real estate equity or equity-linked investments, private or public real estate debt, infrastructure, timber, real asset mezzanine debt or equity, non-fixed assets and other opportunistic investments in real assets.

#### Strategic Role

- Reduces risk of composite multi-asset portfolios through diversification
- Relatively low correlations to traditional asset classes
- Can serve as a possible inflation hedge during periods of high inflation
- Provides an attractive return relative to fixed income asset class in periods of low to moderate inflation

- Infrastructure provides inflation protection as the revenues of the underlying assets are typically linked to CPI
- Potential for high returns in niche opportunities

## **Characteristics**

### **Real Estate**

- *Risk* – Volatility of private real estate falls between publicly-traded debt and publicly-traded equities
- *Returns* – Nominal returns are expected to fall between equities and fixed income
- *Correlation* – Expected to exhibit low to no correlation with government and investment grade corporate bonds, and moderate correlation with high yield and equities.
- *Illiquidity* – Transactions require a significantly longer period to execute than other asset classes
- *Inefficient Market* – Information affecting real estate asset valuation and market trading is not rapidly, accurately, or efficiently reflected or interpreted in its pricing

### **Infrastructure**

- *Long life assets* – Capital intensive assets with 25 to 99 year concessions, match for liability duration
- *Inflation protection* – Revenues typically linked to CPI
- *Monopoly or quasi monopoly* – High barriers to entry due to scale and capital cost
- *Steady and predictable cash flow* – Produce strong and predictable yields
- *Low correlation* – Provides portfolio diversification, low beta; expected to exhibit low to no correlation with fixed income and equities
- *Inelastic demand* – Predictable demand with little volatility, less susceptibility to economic downturns
- *Limited commodity risk* – Not subject to commodity pricing
- *Insensitive to changes in technology* – Low risk of redundancy or technology obsolescence
- Investments are usually illiquid and involve a long (10 to 20 year) holding period

### **Timberland**

- *Return* – Low correlation with other asset classes, returns stem from four distinct sources: biological growth, timber prices, land values and management strategy
- *Income* – Driven almost entirely by the sale of harvested mature trees
- *Correlation* – Expected to exhibit low to no correlation with government and investment grade corporate bonds, and moderate correlation with high yield and equities.
- *Appreciation* – Driven by increased volume and value on timber and appreciation of underlying land
- Categorized by type of land (e.g. plantation, natural forest), type of tree (e.g., hardwood, softwood), country and region

### **Commodities**

- *Real assets* – Raw materials that are the physical inputs of production, relatively homogenous in nature, lending itself to be traded via contracts with standardized terms
- *Inflation protection* – Storable commodities (such as energy) directly related to the intensity of economic activity exhibit positive correlation with unexpected inflation
- *Insurance risk premium* – Commodity futures prices tend to be priced at a discount to

spot prices in order to induce speculators to bear volatile commodity price risk that inventory holders and producers wish to lay off

- *Positive event risk* – Surprises that occur in the commodities markets tend to be those that unexpectedly reduce the supply of the commodity to the market, resulting in price spikes
- *Negatively correlated with financial assets* – Unlike stocks and bonds, commodities are not as directly impacted by changes in discount rates as they are by the current supply and demand of the underlying commodity, thus they should be expected to have little or even negative correlation with capital assets.

## **Risks**

### **Real Estate**

- *Property type risks* – Negative changes in demand/supply conditions by property type (e.g., office, industrial, retail, lodging, mixed-use, multi-family)
- *Location risks* – Local market condition relative to the adverse changes surrounding a property, or in discovery of hazardous underlying conditions, such as toxic waste
- *Tenant credit risks* – Failure by a tenant to pay what is contractually owed
- *Physical/functional obsolescence* – Negative influences on buildings due to technological changes, outdated layout and design features, and physical depreciation
- *Interest rate risk* – Higher rates can negatively impact both sales strategies and leveraged properties at refinancing
- *Reinvestment risk* – In a declining rental rate market, cash flow received may not be reinvested at the same level
- *Business cycle risk* – As economies slow down, there may be less demand for space
- *Inflationary risk* – Rent levels may not always keep up with rising operating expense levels
- *Illiquidity* – Inability to effectively liquidate a property into cash
- *Natural disaster risk* – Weather, floods, earthquake
- Regulatory concerns are critical, especially in emerging markets
- Capital and managerial intensive

### **Infrastructure**

- *Leverage* – Deals with leverage between 40% and 80% can transform low risk assets into risky investments. Changes in the credit environment alter refinancing risk.
- *Market inefficiencies* – Competitive auctions lead to overpaying. There is a limited history and track record in the U.S. infrastructure space.
- *Political and headline risk* – Public acceptance and understanding of infrastructure needs to expand. In addition, the political landscape in every state and municipality differs.
- *Regulatory risk* – Regulated assets are subject to government changes
- *Construction and development* – Project overruns and delays should be shared with construction partners. Volume/demand risk for new developments can vary.
- *Labor issues* – Greenfield projects could generate new jobs while the privatization of brownfield assets could eliminate skilled labor members
- *Asset control* – Stipulations via concession agreements limit some management control (pricing, growth, decision approvals, etc.). Asset control needs to be appropriately priced.
- *Firm specific risk* – Unique risks are associated with specific firm

## Timberland

- *Liquidity risk* – Liquidity is thin, marketplace characterized by few buyers and sellers, transactions are complicated and can take many months to execute
- *Valuation risk* – Annual appraisal process can lead to disparities between carrying value and realized sales prices during downturns
- *Physical risk* – Subject to losses from natural and human-caused events such as fire, insect and vermin infestations, disease, inclement weather, and theft
- *Political and regulatory risk* – Environmental regulations can restrain or prohibit timberland management activities
- *Leverage* – Can amplify volatility and potentially lead to an inability to refinance properties or lead to a distressed sale, requires a minimum level of generated income
- *Location risks* – Real estate dispositions may also be impacted by weakness in local residential real estate markets

## Commodities

- *Price risk* – Commodities with difficult or non-existent storage situations (heating oil, live cattle, live hogs, copper) coupled with a long-lead time between the production decision and the actual production of the commodity can lead to very volatile spot prices
- *Negative futures roll* – When the future contract's price is at a premium to the spot price, the cost to roll contracts forward is negative: an investor continuously locks in losses from the futures contracts converging to a lower spot price
- *Regulatory risk* – Concerns about the role played by investors in commodity markets could lead to new regulations impacting available investment opportunities, ultimately affecting investors' "license to invest".
- *Leverage* – A commodity futures program that is not fully collateralized (for every desired \$1 in commodity futures exposure, an investor sets aside \$1 in cash) can amplify volatility and potentially lead to greater losses
- *Implementation* – Because futures contracts are levered, cash management for the collateral is an important consideration due to the value

## Global Alternatives

### Definition

Investment has a distinct return/risk factor profile as compared to other specified broad asset class groupings. Examples: Low market exposure/absolute return strategies such as market neutral, and other niche strategies with low asset class beta such as insurance-linked investments, volatility, intellectual property, healthcare royalty, shipping, litigation finance and fine art.

### Strategic Role

- More robust diversification achieved through the introduction of non-traditional return driver/risk factors
- Low or negative correlations to other asset classes
- Return profile less dependent on economic growth and interest rates
- Potential for attractive risk-adjusted returns

### Characteristics

- *Returns* – Exhibits lower correlations to broader equity and credit markets in periods of

market distress

- *Illiquidity* – Transactions may require a longer period to execute than other asset classes
- *Inefficient Market* – Information affecting asset valuation and market trading may not be accurately or efficiently reflected or interpreted in its pricing

Risks

- *Market risk* – Cost of carry on being long volatility
- *Natural disaster risk* – Weather, floods, earthquake affect natural catastrophe-based insurance-linked products
- *Due diligence* – Complicated to evaluate and monitor
- *Illiquidity* – Transactions may require a longer period to execute than other asset classes
- *Implementation* – Complexity of implementation may be an impediment

DRAFT

## MEMORANDUM

---

**TO:** TFFR Board  
**FROM:** Jan Murtha, Executive Director  
**DATE:** July 19, 2023  
**RE:** Administrative Rules

At the June TFFR Board Retreat, the Board was provided with an overview of the administrative rules process. It was discussed that in order to meet the deadline to amend those administrative code sections impacted by recent legislation the Board should meet the April 1, 2024, deadline for rule promulgation. It was discussed that a special TFFR Board meeting in late August or early September may be needed to successfully review and process proposed changes. In further consultation with the TFFR Board President, a Special TFFR Board meeting will be held within that time frame on a date to be determined. It is anticipated that the special meeting shall be virtual only and limited to approximately one hour.

Ms. Trotter, RIO legal intern will provide the Board with a proposed time frame for the steps required by rule promulgation at the July 2023 meeting.

**BOARD ACTION: Informational.**

# Administrative Rules Timeline – Overview

LINDSEY TROTTER – LEGAL INTERN

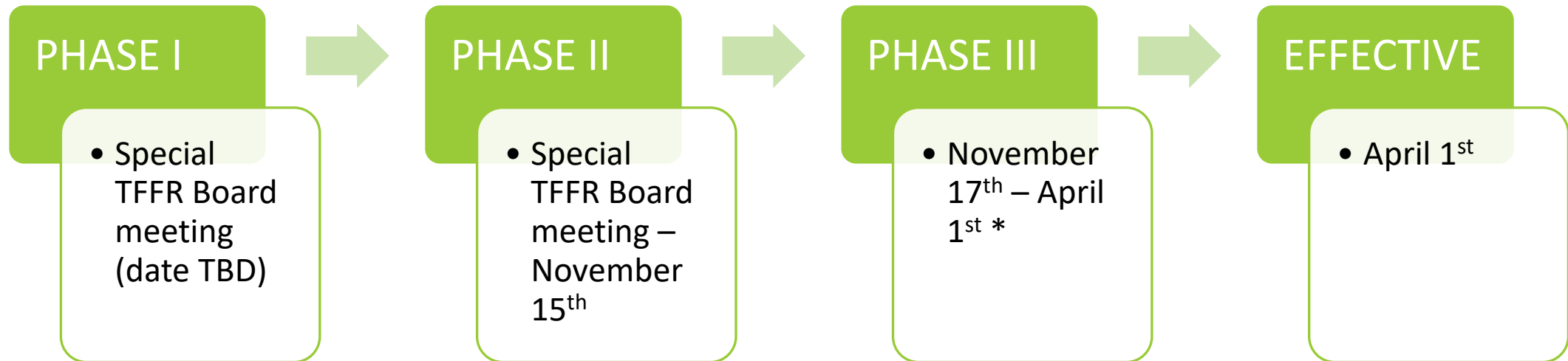


NORTH  
**Dakota** | Retirement & Investment  
Be Legendary.

July 20<sup>th</sup>, 2023

# Timeline

---



\*Note TFFR Board meeting on November 16<sup>th</sup>



# PHASE I

---

---

Up until Special TFFR Board Meeting (date TBD): Draft amended rules for Board review and approval

---

Special TFFR Board Meeting: Presenting rules to the board for approval and first reading, receive feedback for small edits

September 18<sup>th</sup>

- Submit materials to NDNA



September 25<sup>th</sup>:

- This latest publishing date allows for the 20-day minimum between last notice's publishing date + extra publishing time



October 23<sup>rd</sup>

- Hearing date



November 3<sup>rd</sup>

- Allow for more than a 10-day period to collect comments before presenting to the Board. Comment period closes on this date.



November 16<sup>th</sup>

- Present to Board for second reading and approval

## PHASE II

- TBD Date of Special Board Meeting to November 15<sup>th</sup>
- Submit Abbreviated Notice to NDNA at least 1 week before publication and prepare other mandatory documents (notices, statements, assessments, letters, and analyses)
- Submit full notice, rules, cover letter to Legislative Council
- Hold the hearing (see example hearing timeline on left); prepare summary of comments after mandatory 10-day comment period
- Present materials to AGO

# PHASE III

---

---

November 17<sup>th</sup> to April 1<sup>st</sup>

Receive Rules Opinion from AGO (late November/early December)

---

File final documents with the Legislative Council and schedule Legislative Rules Committee meeting prior to February 1<sup>st</sup> for an effective date of April 1<sup>st</sup>

## MEMORANDUM

---

**TO:** TFFR Board of Trustees  
**FROM:** Chad R. Roberts, DED/CRO  
**DATE:** July 12, 2023  
**RE:** July 2023 Pioneer Project Update

### **Project Status**

The development sessions for Pilot 3 are concluding the week of July 17<sup>th</sup>. The fourth of final pilot, Pilot 4, will begin around August 1, 2023. This final pilot focuses on the design and appearance and usability of both the employer portal and the member facing portal. These are the portals the actual users will use to access the system. This pilot is expected to last through October of 2023.

The file scanning and integration sessions focusing on the transfer of indexing of all historical records and documents in the State FileNet system are continuing. This project will be sporadic through the next 12 months as time allows. The completion of this piece of the overall project does not need to be complete until we “go live”, so it is being worked on as vendor and TFFR staff time allows. There is heavy NDIT involvement in this function as well.

An ongoing part of the project which will continue until the “go live” is the data mapping. This is converting the data from the format the legacy system we presently have uses to the format the new system needs the data to be in to process it. This is a large undertaking also requiring significant assistance from NDIT.

An interface has been developed to communicate with the Department of Public Instruction to automatically validate all teaching licenses of active TFFR participants. This is presently a manual process that TFFR staff perform manually on an annual basis. Once the new system is active, this validation will occur automatically monthly. Underway is the development of an interface with NDPERS to track dual members as well as health, vision, and dental insurance deductions. Presently the tracking of dual membership, calculation of benefits for dual members, and the withholding of insurance deductible payments is a very manual process taking significant TFFR staff time. This interface will allow the new system to automatically calculate and process these items and drastically reduce any staff time involved in these processes.

### **Budget Status**

The project remains slightly under budget by approximately \$60,000 due to the savings found through the elimination of the SharePoint licensing listed in the contract by using the existing State SharePoint licensing.

### **Unanticipated Issues**

No unanticipated issues have arisen since the last update given at the June 2023 Board Retreat.

**BOARD ACTION REQUESTED: Information only**



# INVESTMENT STRATEGY

INVESTMENT STAFF  
JULY 20, 2023

NORTH  
**Dakota**  
Be Legendary.

Retirement & Investment

# OVERVIEW

## RIO AT A GLANCE

As of December 31, 2022

**\$19.2 Billion**

AUM across all Client Funds

**28 Client Funds**

Sovereign wealth, pension  
and insurance

**43 Managers**

Equity, Fixed Income, Private  
Equity, and Real Asset

## INVESTMENT FOCUS

Global multi-asset public and  
private market fund of funds  
organization

## OBJECTIVE

To maximize after cost return  
for risk at a prudent level of  
risk for the funds in our care

Global, Multi-asset



Advanced Funds  
Management

## OUR COMMITMENT

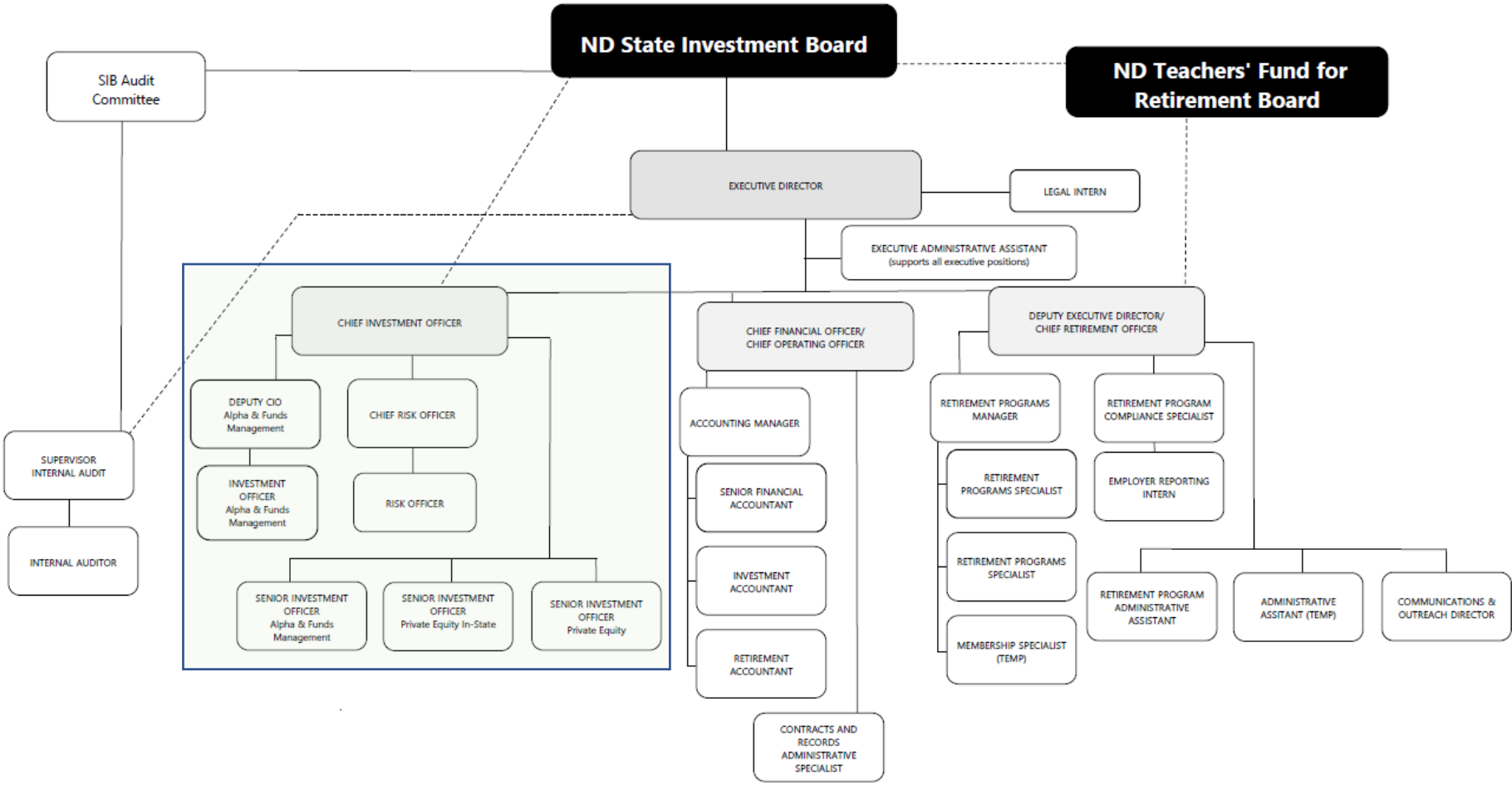
Client Focused

Value Added Results

Efficient Delivery

# RETIREMENT AND INVESTMENT OFFICE

## RETIREMENT AND INVESTMENT OFFICE



# INVESTMENT TEAM OVERVIEW

**Scott M Anderson**  
Chief Investment Officer (CIO)



**Eric Chin**  
Deputy CIO/Public Funds Mgt



**Matt Posch**  
Senior IO/Public Funds Mgt



**Derek Dukart**  
IO/Public Funds Mgt



**George Moss**  
Senior IO/Private Funds Mgt



**Lance Zietlow**  
Senior IO/Private Funds Mgt



**Nitin Vaidya**  
Chief Risk Officer



**Jason Yu**  
Risk Officer



PUBLIC MARKETS  
FUNDS MANAGEMENT

PRIVATE MARKETS  
FUNDS MANAGEMENT

RISK ALLOCATION  
AND MANAGEMENT

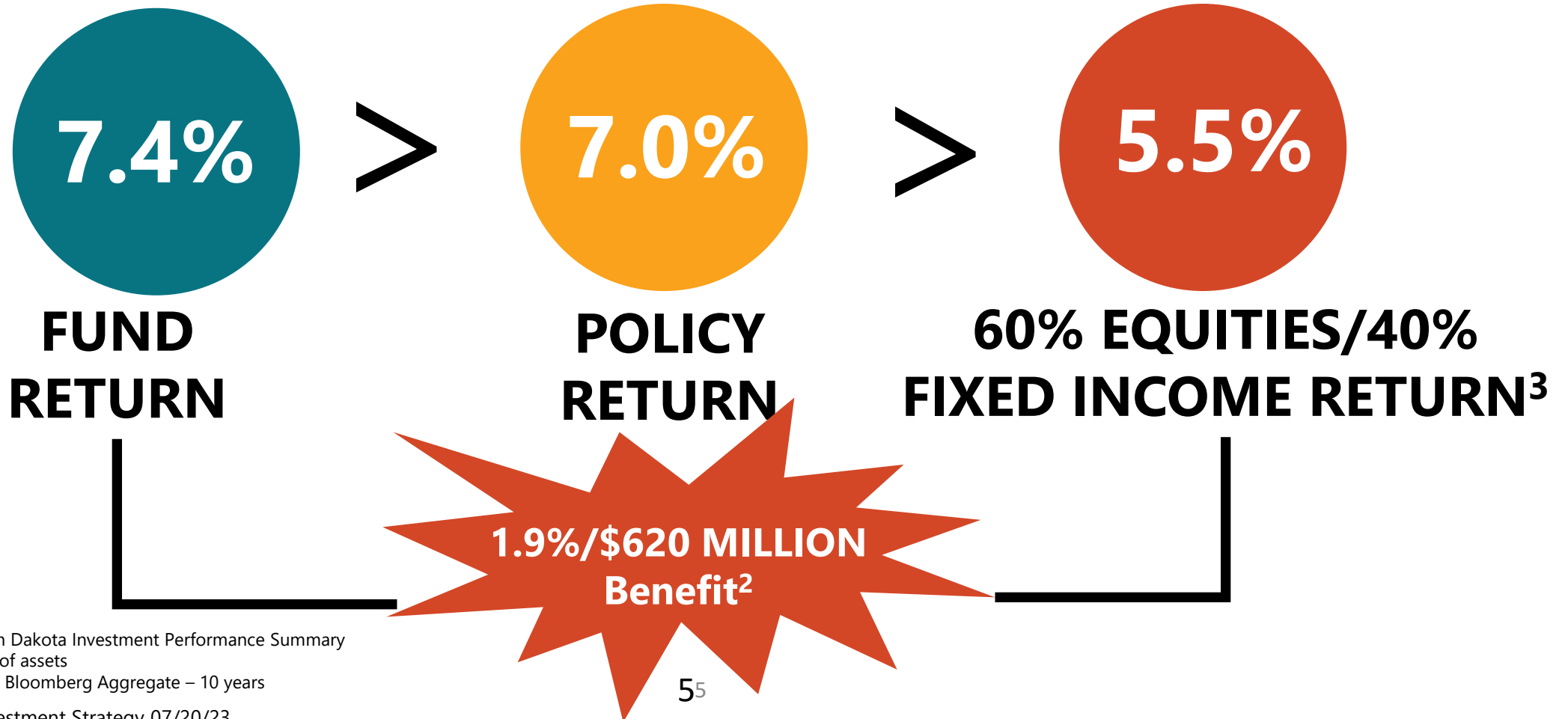
## EXPERIENCE: > 18 YEARS AVERAGE INVESTMENT EXPERIENCE

- ASSET AND RISK ALLOCATION
- DIRECT PUBLIC AND PRIVATE INVESTMENT
- FUND AND PORTFOLIO MANAGEMENT
- MANAGER SELECTION
- FUND OF FUNDS MANAGEMENT
- QUANTITATIVE ANALYSIS
- RISK MANAGEMENT
- LIQUIDITY MANAGEMENT
- PENSION, ENDOWMENT AND INSURANCE
- PERFORMANCE MANAGEMENT
- OVERLAYS AND EXPOSURE MANAGEMENT
- MULTI-ASSET PORTFOLIO MANAGEMENT



# VALUE PROPOSITION

## TFFR TEN YEAR AVERAGE RETURN<sup>1</sup>



1. Thru MARCH 2023; North Dakota Investment Performance Summary  
2. Starting with \$3.0 Billion of assets  
3. 60% MSCI ACW IMI/40% Bloomberg Aggregate – 10 years

# WE BELIEVE

- Our mission is to deliver a high return per unit of risk; at a prudent level of risk for our client fund mandates; at an efficient cost
- Asset allocation is our chief source of efficient return (return/risk)
- Long term markets are efficient but there are short term inefficiencies that create opportunity for active return
- Active management improves return efficiency but active return is rare so is allocated in appropriate proportions of risk
- Effective implementation is an important driver of lower cost, and lower risk; therefore an important contributor to return efficiency
- Good investment decisions require fact based, reasoned judgements of experienced investment professionals regarding knowledge of compensated risks, investment process and return expectations in an analyst driven culture

# OBJECTIVE AND STRATEGY

## OBJECTIVE:

- To maximize after cost return for risk at a prudent level of risk for the funds in our care

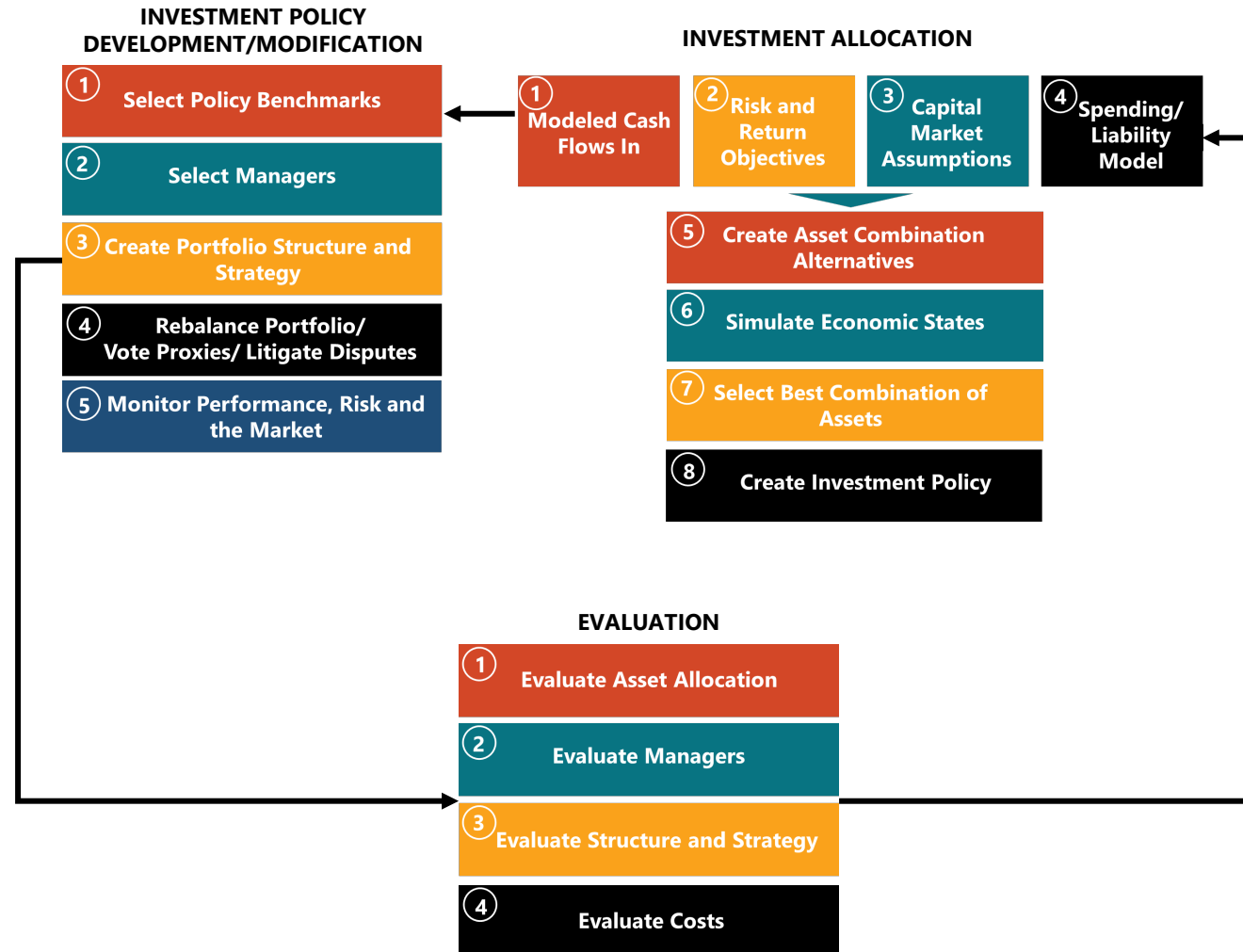
## STRATEGY:

- Develop valuable investment trade-offs of return, risk and cost with time horizon, scale, complexity, and make versus buy decisions as drivers
- Implement trade-offs as state-based investment decisions enabled by technology and integrated across investment teams that leverage direct versus external, and customized versus commodity decisions
- Evolve strategies to be backward compatible

## WHY?

- We will have an advantage from diverse sources of market and business case information from our custom data as well as internal and external manager strategies. RIO will be differentiated with integrated optimization of state-based knowledge management decisions and implementation

# INVESTMENT PROCESS



# VALUE CREATION LEVERS (NEED TO SELL TO BUY)

## INVESTMENT DECISION APPROACH

- HIGH FREQUENCY
- MIS-PRICING
- ANALYSIS
- RULES BASED ACTIVE
- BUY AND HOLD ACTIVE
- STATE BASED BETA
- BUY AND HOLD BETA



## PRICE VERSUS VALUE

BUY +

- RETURN
- RISK
- TIME HORIZON
- COMPLEXITY
- IMPACT TO OPERATIONS

PRICE  
≠  
VALUE

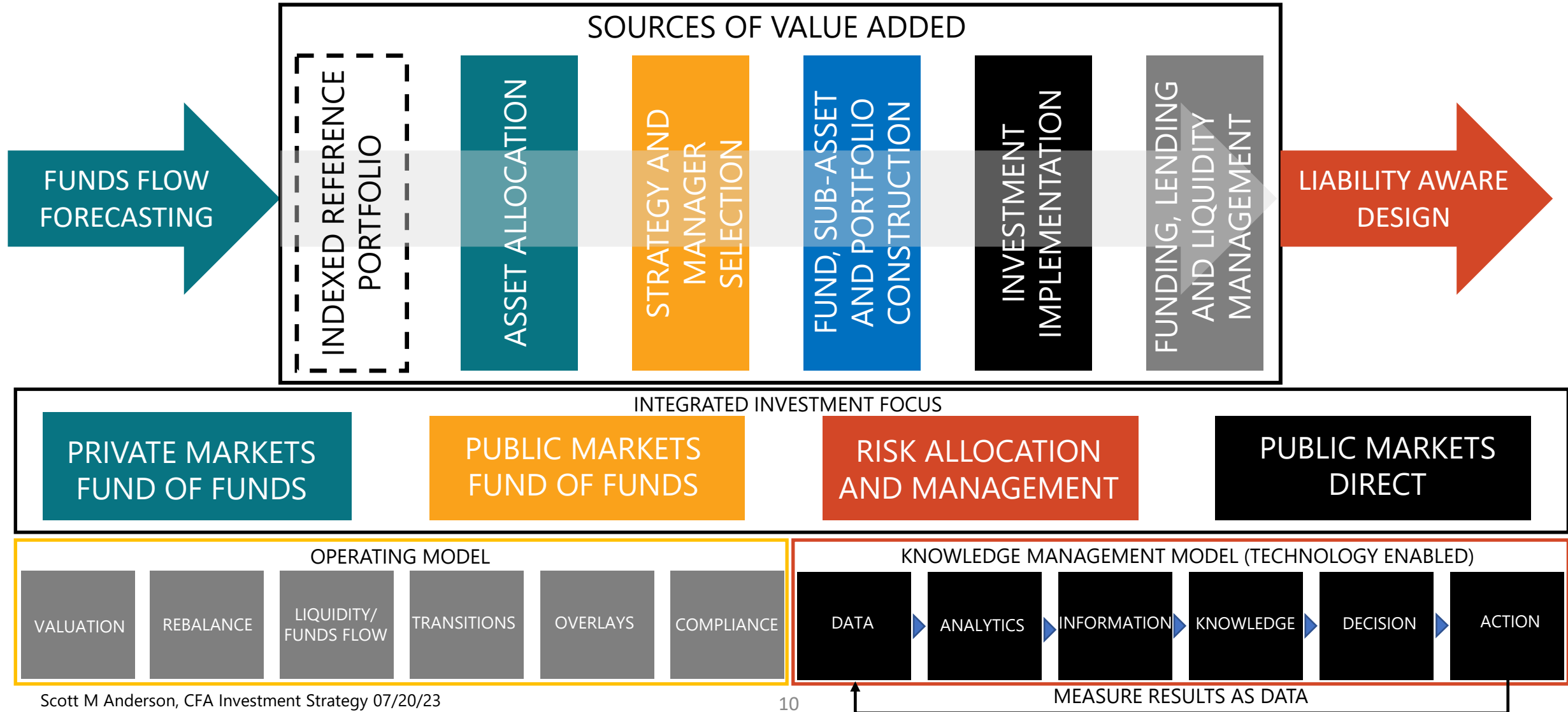
- CURRENCY
- CORRELATION
- STATE
- LIQUIDITY
- GROWTH
- CREDIT SPREAD
- TERM
- CASH
- TRANSACTION COST

SELL -

- RETURN
- RISK
- TIME HORIZON
- COMPLEXITY
- IMPACT TO OPERATIONS

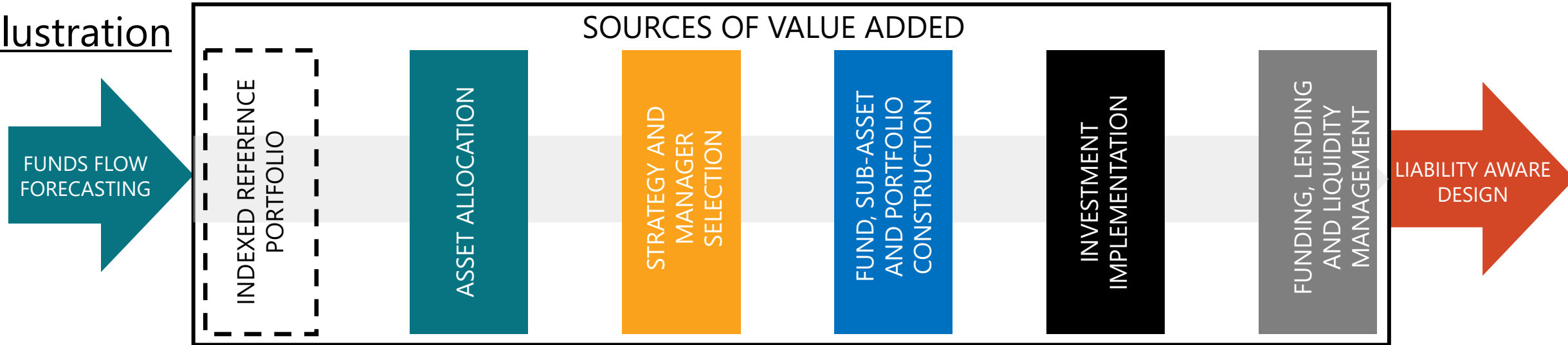
PRICE  
≠  
VALUE

# INVESTMENT TARGET MODEL- ADVANCED FUND OF FUNDS MODEL



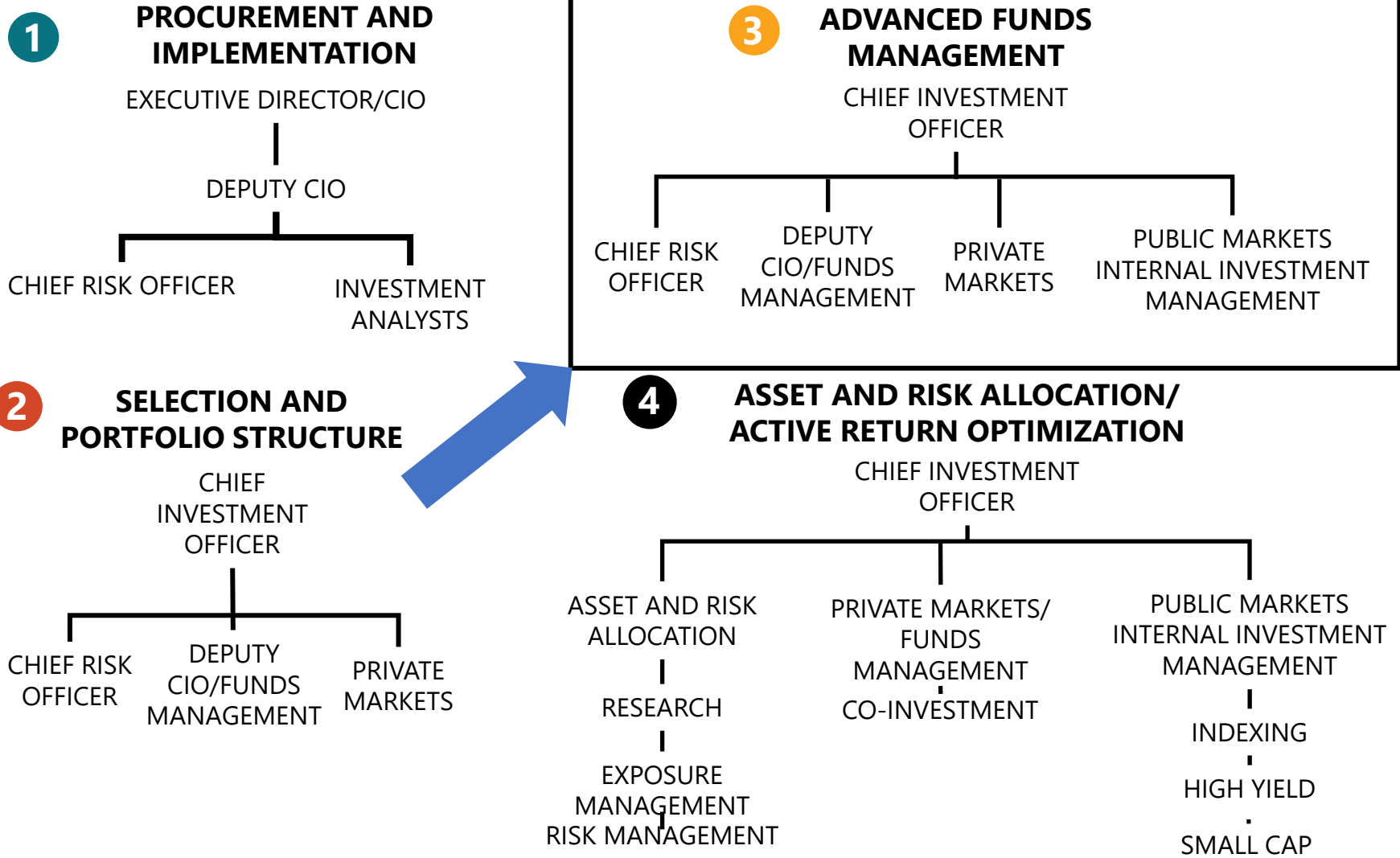
# SOURCES OF VALUE ADDED

## Illustration



Forecast funds flows for liquidity risk, cash, rebalancing and liquidity management	A minimum efficient allocation of 60% World Index and 40% Domestic Fixed Income	An enhanced allocation with private markets, leverage, a more refined sub-asset allocation and dynamic as options	Selection of a diversified set of the best strategies and managers that implement the asset allocation	Optimal systematic and idiosyncratic return per risk at an appropriate risk, manage dynamically as an option	Choose make versus buy and optimize cost of management, fees, incentives, implementation, operations and exposures	Find best return and costs for security lending, cash management, transaction finance and liquidity risk management	Reduce liability defeasance risk by understanding features of the liability and economic scenarios (local and global)
	VALUE ADDED:	> 100 BP	> 40 BP	> 10 BP	> 10 BP	> 5 BP	
} INTERACTING DECISIONS							

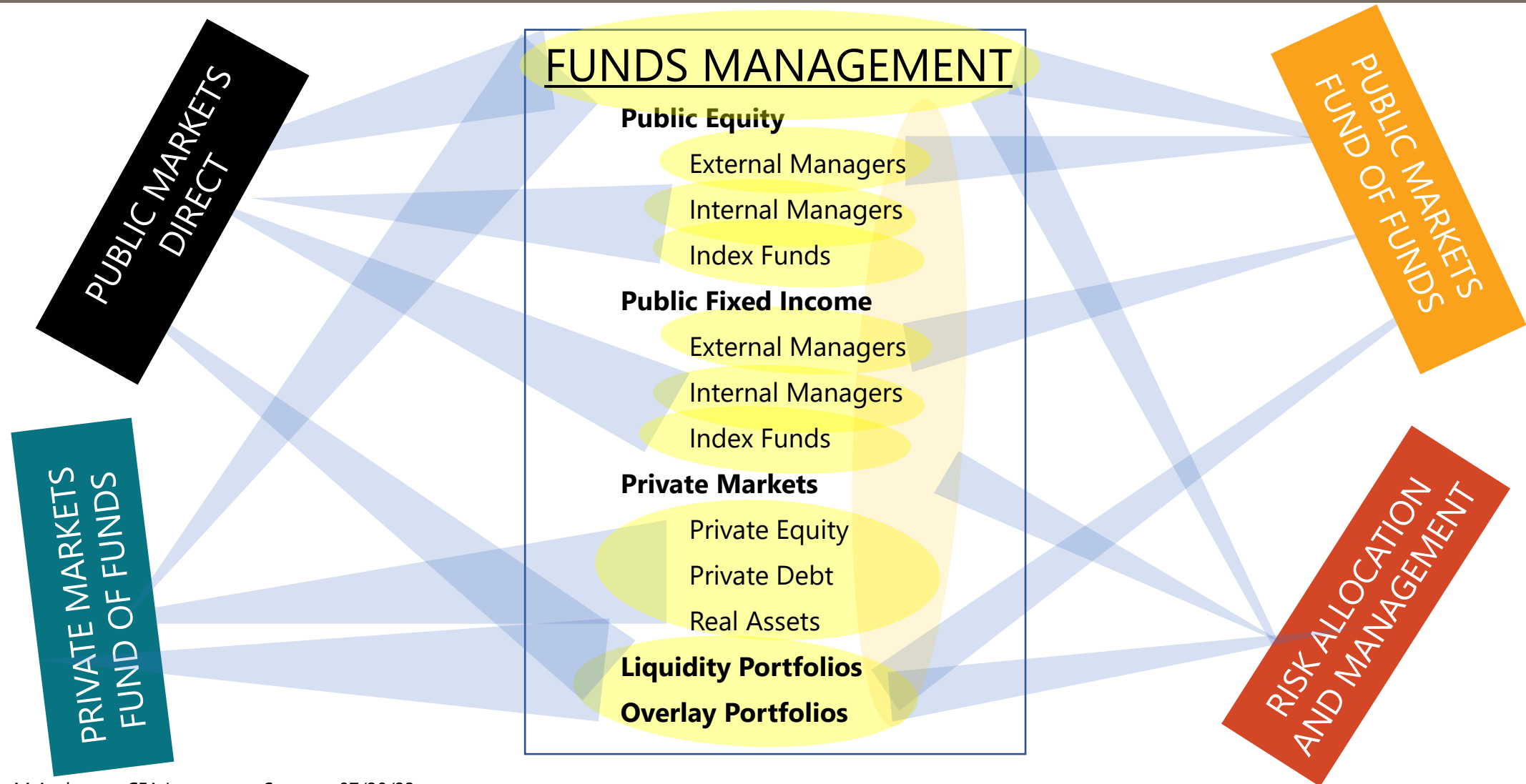
# EVOLVING INVESTMENT STRUCTURE



- Increasing investment focus
- Increasing analyst driven culture
- Increasing knowledge/collaboration
- Increasing specialization
- Increasing sophistication
- Increasing fund level/portfolio level harmonization
- Increasing risk management orientation
- Increased return/risk
- **Backward compatible**



# INTEGRATED INVESTMENT FOCUS



# NEW CAPABILITY - PUBLIC MARKETS DIRECT

## OPPORTUNITY

### ENHANCED INDEXING AND PUBLIC MARKETS STRATEGIES

- Enhanced indexing; multi-asset capability; leverages expertise with index information; same active return for a lower active risk and cost than external managers for simple mandates

### ENHANCED LIQUIDITY MANAGEMENT

- Overlay of cash generates additional return and enables more available cash
- Buying and selling of liquidity

### ENHANCED REBALANCING

- Rebalancing of exposures in shorter time frames
- Rebalancing thru internal portfolios rather than managers – reducing transaction costs


### EXPOSURE MANAGEMENT

- Separate manager active return from manager policy return to optimize cost and active return
- Manage exposures to manage risks and generate returns

### OPTIMAL IMPLEMENTATION

- Choose optimal instrument to implement policy exposures reduces cost, increases revenues, manages risk

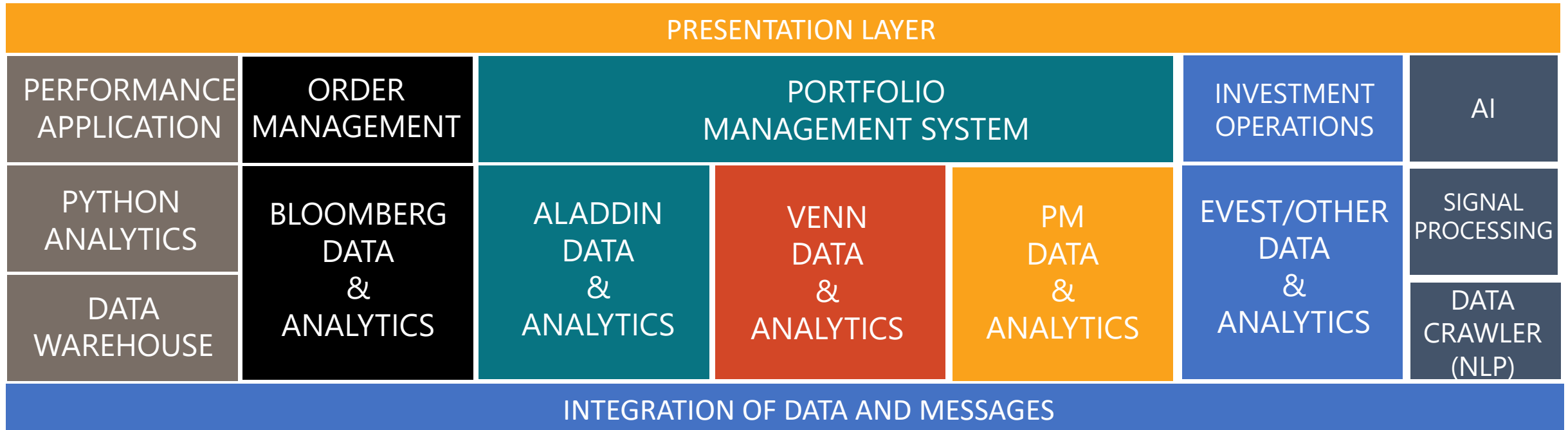
# NECESSARY CAPABILITIES FOR SUCCESS

GOVERNANCE 	A governance hierarchy including a staff run investment committee with some delegation as well as board level investment expertise
<b>TALENT MANAGEMENT</b>	<b>Specific investment role recognition as well as a total rewards package that is competitive with similar investment organizations</b>
OPERATIONS (EARLIER PAGE)	Appropriate staffing and skills or outsourcing of critical investment accounting, transaction processing, and enterprise risk capabilities
<b>DATA AND TECHNOLOGY INFRASTRUCTURE</b>	<b>High frequency and high-quality data as well as infrastructure to support data throughput and processing speeds</b>
RESEARCH AND KNOWLEDGE MANAGEMENT (EARLIER PAGE)	A culture of research, learning, creativity and knowledge management supported by expectations, resources, and recognition

# TECHNOLOGY ENABLEMENT

## ILLUSTRATION

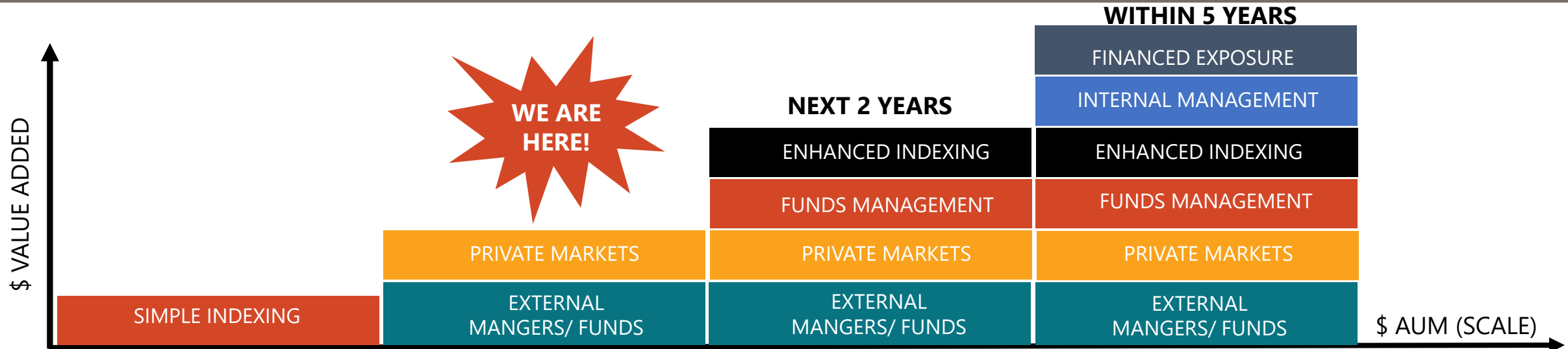
INTEGRATED DATA AND MESSAGES, SOFTWARE AS A SERVICE, AI/MACHINE LEARNING, ADVANCED ANALYTICS



# TALENT MANAGEMENT IS AN IMPORTANT CAPABILITY FOR UNLOCKING INVESTMENT RESULTS

- STRUCTURE THE ORGANIZATION FOR COLLABORATION AND KNOWLEDGE DEVELOPMENT
- ATTRACT GREAT TALENT
- DEVELOP STAFF TO GROW AND EXCEL
- MOTIVATE STAFF TO PERFORM WELL

# ROADMAP FOR SUCCESS



## CAPABILITIES FOR SUCCESS

- DELEGATED AUTHORITY
- INCENTIVE COMP SYSTEM
- DIRECT INVESTMENT TEAM
- INDEPENDENT BENCHMARK CONSULTANT
- PRIVATE MARKETS BENCHMARK CORRIDOR
- FUND POOLING
- DAILY FUND VALUES AND RETURNS
- ADVANCED OPERATIONS
- AUDIT PROCESSES AND COMPLIANCE
- NEW INVESTMENT PROCESSES
- FUND AND LIQUIDITY MANAGEMENT
- DERIVATIVES OVERLAYS
- VALUATION AND EXPOSURE MANAGEMENT
- INVESTMENT DATA WAREHOUSE
- ORDER MANAGEMENT SYSTEM
- PORTFOLIO MANAGEMENT ANALYTICS
- INTEGRATED DATA AND MESSAGES
- KNOWLEDGE MANAGEMENT SYSTEM



# PERFORMANCE REVIEW

INVESTMENT STAFF  
JULY 20, 2023

NORTH  
**Dakota**  
Be Legendary.

Retirement & Investment

# PERFORMANCE – BENCHMARK INDICES

<b>Summary of Returns</b>					
<b>May 31, 2023</b>					
<b>Benchmark Indices</b>					
<b>(% change, annualized)</b>	<b>YTD</b>	<b>1 Yr</b>	<b>5 Yr</b>	<b>10 Yr</b>	<b>10 Yr Volatility</b>
Russell 1000	9.8%	2.4%	10.6%	11.7%	17.9%
Russell 2000	0.6%	-4.7%	2.7%	7.4%	22.3%
S&P 500	10.1%	2.9%	11.0%	12.0%	17.7%
MSCI ACWI IMI Net	6.8%	0.3%	6.3%	7.7%	14.2%
MSCI World ex US	5.7%	1.5%	3.4%	4.5%	14.3%
MSCI Emerging Markets	1.1%	-8.5%	-0.7%	1.9%	15.8%
Bloomberg Aggregate	2.1%	-2.1%	0.8%	1.4%	4.3%
Bloomberg Gov/Credit	2.2%	-2.0%	1.1%	1.5%	4.7%
Bloomberg US High Yield	3.1%	0.0%	3.1%	4.0%	5.2%
NCREIF Property Index (03/31/2023)	-1.8%	-1.6%	6.7%	8.34%	3.4%

Source: Bloomberg



# PERFORMANCE – TFFR<sup>1</sup>

**AS OF May 31, 2023**

<b>TFFR (\$3.0 BILLION)</b>	<b>YEAR TO DATE</b>	<b>1 YEAR</b>	<b>3 YEAR</b>	<b>5 YEAR</b>	<b>RISK (5 YEAR)</b>
<b>TOTAL FUND RETURN</b>	<b>3.3%</b>	<b>-0.5%</b>	<b>7.9%</b>	<b>6.1%</b>	<b>9.9%</b>
<b>POLICY BENCHMARK</b>	<b>3.5%</b>	<b>-0.4%</b>	<b>8.1%</b>	<b>6.4%</b>	<b>10.1%</b>
<b>TOTAL RELATIVE RETURN</b>	<b>-0.2%</b>	<b>-0.1%</b>	<b>-0.2%</b>	<b>-0.3%</b>	

1. After fees performance

# PERFORMANCE – TFFR<sup>1</sup>

## One Year Relative Attribution Effects

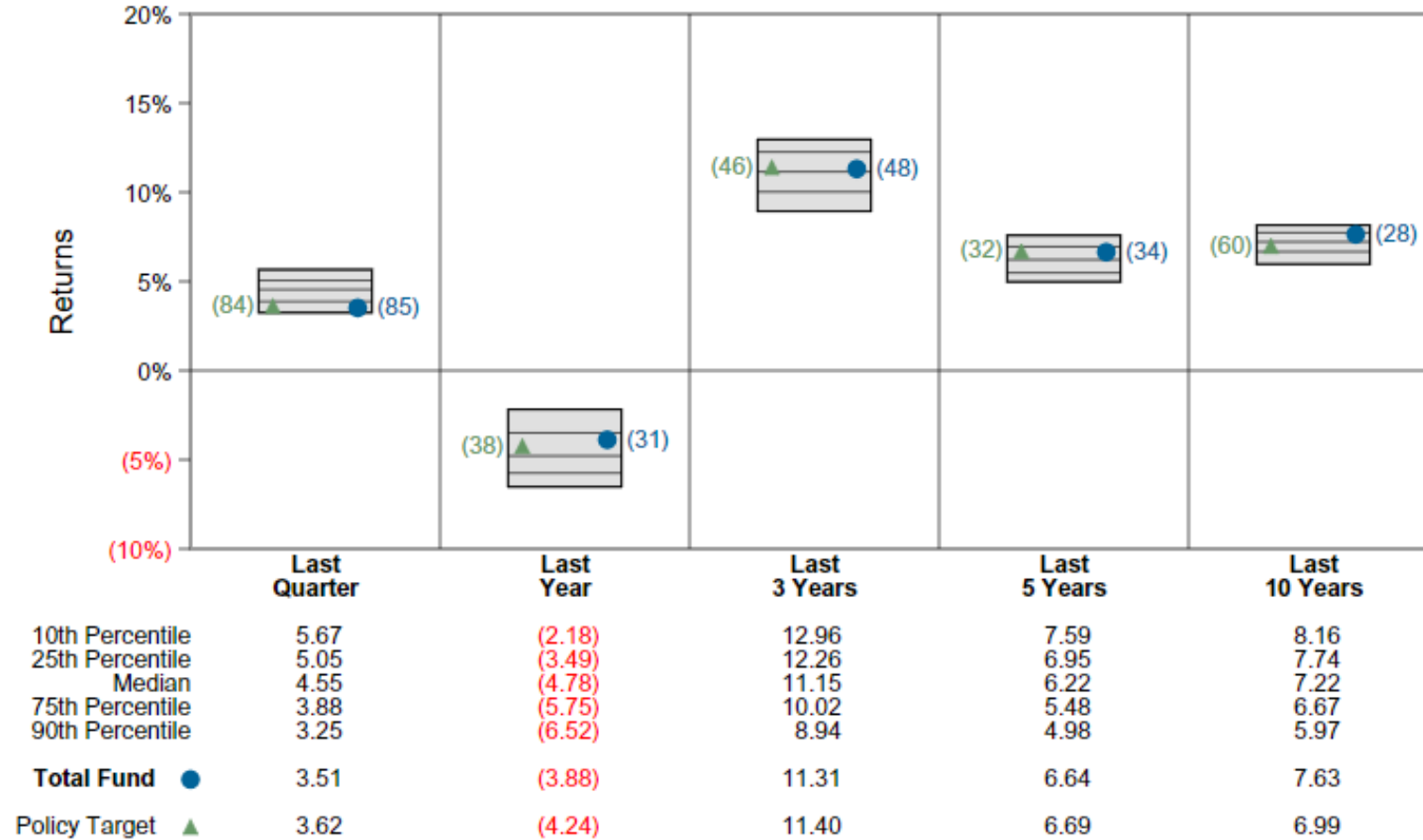
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	24%	(7.27%)	(8.74%)	0.35%	(0.43%)	(0.08%)
World Equities	5%	5%	(19.86%)	(21.99%)	0.25%	0.11%	0.36%
International Equities	14%	16%	(5.73%)	(5.43%)	(0.05%)	0.00%	(0.05%)
Private Equities	12%	10%	(3.38%)	(3.38%)	0.00%	(0.09%)	(0.09%)
Domestic Fixed Income	26%	26%	(3.75%)	(4.28%)	0.16%	(0.00%)	0.16%
Real Estate	11%	9%	0.46%	(1.63%)	0.22%	(0.14%)	0.08%
Timber	1%	1%	(3.60%)	11.31%	(0.19%)	(0.02%)	(0.21%)
Infrastructure	6%	8%	10.18%	1.28%	0.45%	(0.21%)	0.25%
Cash & Equivalents	1%	1%	2.82%	2.50%	0.00%	(0.05%)	(0.05%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>(3.88%)</b>	<b>(4.24%)</b>	<b>+ 1.20%</b>	<b>+ (0.84%)</b>	<b>0.36%</b>

## Five Year Annualized Relative Attribution Effects

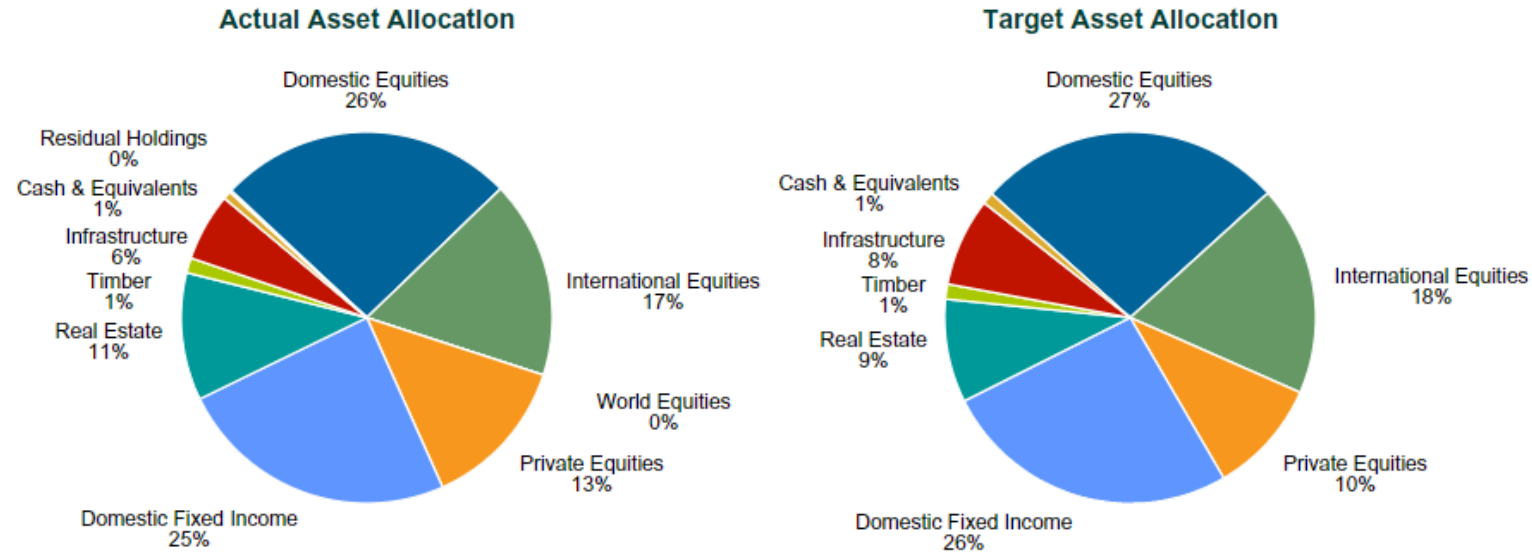
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	22%	11.21%	9.67%	0.33%	(0.08%)	0.25%
World Equities	13%	12%	2.18%	4.28%	(0.35%)	0.00%	(0.35%)
International Equities	15%	15%	3.28%	2.54%	0.12%	(0.02%)	0.11%
Private Equities	7%	8%	13.88%	13.88%	0.00%	(0.32%)	(0.32%)
Domestic Fixed Income	25%	24%	2.49%	1.68%	0.23%	(0.04%)	0.19%
International Fixed Inc.	0%	0%	-	-	0.00%	-	0.00%
Real Estate	10%	10%	7.68%	6.71%	0.10%	(0.07%)	0.03%
Timber	2%	2%	3.25%	5.54%	(0.02%)	(0.02%)	(0.04%)
Infrastructure	5%	7%	7.97%	5.36%	0.15%	(0.06%)	0.09%
Cash & Equivalents	1%	1%	1.45%	1.41%	0.00%	(0.01%)	(0.01%)
Residual Holdings	0%	0%	-	-	0.00%	(0.00%)	(0.00%)
<b>Total</b>			<b>6.64%</b>	<b>6.69%</b>	<b>+ 0.56%</b>	<b>+ (0.61%)</b>	<b>(0.05%)</b>

# PERFORMANCE – TFFR<sup>1</sup>

## Callan Public Fund Sponsor Database



# TFFR ASSET ALLOCATION



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	784,501	25.8%	26.7%	(0.9%)	(28,464)
International Equities	521,562	17.2%	18.3%	(1.1%)	(33,513)
World Equities	284	0.0%	0.0%	0.0%	284
Private Equities	404,682	13.3%	10.0%	3.3%	100,673
Domestic Fixed Income	745,303	24.5%	26.0%	(1.5%)	(45,120)
Real Estate	338,963	11.1%	9.0%	2.1%	65,355
Timber	38,873	1.3%	1.3%	0.0%	0
Infrastructure	180,717	5.9%	7.7%	(1.8%)	(54,018)
Cash & Equivalents	21,858	0.7%	1.0%	(0.3%)	(8,542)
Residual Holdings	3,346	0.1%	0.0%	0.1%	3,346
<b>Total</b>	<b>3,040,089</b>	<b>100.0%</b>	<b>100.0%</b>		

## MEMORANDUM

---

**To: TFFR Board**

**From: Sara Seiler, Supervisor of Internal Audit**

**Date: July 10, 2023**

**RE: Audit Activities Quarterly Update**

The SIB Audit Committee met on May 11, 2023. The SIB Audit Committee reviewed and approved the third quarter audit activities and an update on current audit activities.

The following were presented and approved:

1. June 30, 2023 Fiscal Year Financial Statement Audit Kickoff
  - a. Engagement Scope
    - RIO's Financial Statements as of June 30, 2023
    - TFFR's GASB 68 Schedules as of June 30, 2023
  - b. Workplan
    - Risked-Based Approach
    - Investments, Contributions, Benefit Payments, Actuarial Data
  - c. Timeline
    - Planning & Testing: May – September 2023
    - Final Audit Reports: October – November 2023
2. 2023-2024 Internal Audit Workplan
  - a. Allocate time to audits, consulting, and quality assurance
  - b. Fluid Workplan
    - Will be updated as needed
3. Internal Audit Business Process Review
  - a. Weaver & Tidwell, LLP presented final report:
    - Evaluated the maturity of the Internal Audit function
      1. Evaluated against the Institute of Internal Auditors Standards and International Professional Practices Framework
    - Developed future state roadmap
    - Discussed staffing and resource needs to increase Internal Audits maturity

The following link has the committee materials that were presented for your reference:

<https://www.rio.nd.gov/sites/www/files/documents/PDFs/SIB%20Audit/Board/Materials/sibauditmat20230511.pdf>

## MEMORANDUM

---

**TO:** TFFR Board of Trustees  
**FROM:** Chad R. Roberts, DED/CRO  
**DATE:** July 12, 2023  
**RE:** TFFR Ends Report 3rd QTR 2023 ending March 31, 2023

This report highlights exceptions to the normal operating conditions of the TFFR program for the period spanning January 1, 2023, through March 31, 2023.

- The TFFR system worked with the legacy PAS vendor to design and implement changes to the federal income tax collection guidelines with the introduction of Form W-4P from the IRS. In addition to system changes, educational outreach communication was developed for persons receiving benefits to help with the transition. TFFR staff fielded a surge of calls and walk-in appointments related to the IRS changes and the new form.
- Testimony was prepared and presented during the 2023 legislative session on numerous bills affecting TFFR programming by RIO staff. Those bills included:
  - HB1219 relating to TFFR programming changes sponsored by the Board
  - HB1150 relating to a military retiree exemption from TFFR participation
  - HB1039 relating to the closure of the PERS defined benefit plan
  - HB1040 relating to the PERS defined benefit plan
  - SB2022 relating to the RIO agency budget bill
  - SB2258 relating to expanding the scope of critical shortage areas in teaching
- The Board received the actuarial audit report from GRS. The audit revealed no significant findings.
- An RFP for actuarial services was reviewed, approved, and issued.
- Sarah Mudder was hired as the Communications and Outreach Director for the RIO agency.

**BOARD ACTION REQUESTED: Board Acceptance.**

## MEMORANDUM

**TO:** SIB  
**FROM:** Jan Murtha, Executive Director  
**DATE:** July 14, 2023  
**RE:** Executive Limitations/Staff Relations

Ms. Murtha will provide a verbal update at the meeting on staff relations and strategic planning. Including updates on the following topics:

**I. Retirements/Resignations/FTE's/Temporary Assistance:**

Position Title*	Status
Sr. Investment Accountant	Posted internally 7/7/23, closed 7/12/23.
Fiscal/Investment Administrative Assistant	Posted 6/28/23, closes 7/17/23.

\*New FTEs granted by the 2023 Legislative Assembly. Remaining new FTEs related to the Internal Investment program are expected to be posted by March, 2024.

**II. Current Project Activities/Initiatives:**

- **TFFR Pioneer Project** – The TFFR Pioneer Project continues with implementation consistent with the project plan. Currently the project is in an elaboration phase involving review of system components. The amount of time spent on the project by various staff members continues to vary from 5 to 25 hours or more per week.
- **TFFR Actuary** – The TFFR Board selected a new actuary for the upcoming biennium. Staff has been working to coordinate transitioning actuary activities from Segal to GRS.
- **TFFR Medical Consultant** – The TFFR Medical Consultant contract has been renewed with Sanford Health.
- **Northern Trust Initiative** – In an effort to enhance the infrastructure for the investment program the Investment and Fiscal teams continues to coordinate with Northern Trust for additional functionality/capabilities.
- **Annual Audit Activities** – Staff has been coordinating activities with CLA to complete external audit activities for this past fiscal year.
- **Audit Consultant Report** - Staff is working on a project plan to present to the Audit committee in August to implement recommendations from Weaver Consulting. This plan includes internal activities as well as a future RFP for co-sourcing activities.
- **Compensation Study RFP** - An RFP for a Compensation Study was issued for consultant services necessary to prepare and present an incentive compensation plan for approval to the Board and develop compensation goals for agency positions. The ERCC will meet in August to interview and select the consultant.
- **Benchmark Consultant RFP** - An RFP was issued for an independent third-party consultant to provide benchmarking services. These services are necessary for the creation of an internal investment program. No responses were received by the initial or extended RFP deadline.

Staff is proceeding under an agency procurement exception allowed in century code to reach out to potential vendors to procure these services. The Investment Committee is scheduled to interview potential vendors in August.

### **III. Board & Committee Presentations May 19, 2023, through July 21, 2023**

Staff provided or is scheduled to provide the following presentations to Boards and Committees during the above referenced time period:

- **NDPERS Investment Subcommittee – 5/30/23**
- **BoardSmart ESG Panel – 6/1/23**
- **NCTR Director’s meeting – 6/7/23 – 6/9/23**
- **SIB Securities Litigation Committee - 6/14/23, 7/6/23, 7/7/23**
- **SIB Investment Committee – 6/16/23, 7/14/23**
- **SIB GPR Committee – 6/20/23, 7/17/23**
- **Legacy & Budget Stabilization Fund Advisory Board - 6/21/23**
- **TFFR Board Retreat – 6/22/23**
- **Legislature - Budget Section – 6/29/23**
- **City of Bismarck (Pension) – 7/12/23**
- **Retirement Education Workshop – 7/19/23**
- **TFFR meeting – 7/20/23**
- **SIB meeting – 7/21/23**

### **IV. New Board Members and Board Member Onboarding**

As a result of H.B. 1088 and an amendment to the S.B. 2015 (OMB Budget bill) relating to the PERS Board during the legislative session the composition of the State Investment Board membership has significantly changed. As individuals that will be serving on the SIB are identified RIO staff will reach out to begin the onboarding process. The SIB GPR committee has worked with staff to update and enhance the new board member onboarding process and curriculum. We have tentatively scheduled a group new board member onboarding education session on Wednesday, August 2, 2023, in the Governor’s Conference room. All current board and committee members are also invited to attend. An agenda for the remaining curriculum will be distributed at that time.

### **V. Executive Director Education/Travel Activities**

During June 2023, I attended two conferences:

- National Council on Teacher Retirement (NCTR) Director’s Meeting in Madison, WI (6/7/23 – 6/9/23); and
- National Association of Public Pension Attorney’s (NAPPA) legal education conference in San Antonio, TX (6/27/23 – 6/30/23).

Both conferences provide an opportunity to receive education on public pension plan administration and public sector institutional investor topics and learn from other states.

**BOARD ACTION REQUESTED: Board Acceptance.**



Confidential information will be sent directly to Board members via a secure link.

## MEMORANDUM

---

**TO: TFFR Board of Trustees**  
**FROM: Chad R. Roberts, DED/CRO**  
**DATE: July 12, 2023**  
**RE: July 2023 TFFR Board Reading Materials**

### Summary

Enclosed are four journal articles related to factors and influences involved in the decision-making process and approaches of pension trustees as it relates to investment decisions.

### Journals

#### **Bibliography**

- Brooks, J. (2019). Board on the job: public-pension governance in the United States. *Journal of Public Policy*, 1-34.
- Hoepner, A., & Schopohl, L. (2020). State Pension Funds and Corporate Social Responsibility: Do Beneficiaries' Political Views Influence Funds' Investment Decisions? *Journal of Business Ethics*, 489-516.
- Jiang, Z., Peng, C., & Yan, H. (2023). Personality Differences and Investment Decision-making. *NBER Working Paper Series*.
- Weiss-Cohen, L., & Ayton, P. (2019). Behavioral biases in pension fund trustees' decision making. *Review of Behavioral Finance*, 128-143.

**BOARD ACTION REQUESTED: None**

# Board on the job: public-pension governance in the United States (US) states

JOHN BROOKS

*Department of Political Science and Public Administration, Auburn University at Montgomery, USA*  
E-mail: jbrook30@aum.edu

**Abstract:** Although elected officials have the final say over pensions, boards of trustees also influence plan governance. Not a great deal is known about boards or how they shape policies. Boards are composed of politically and nonpolitically appointed members, as well as active and retired employees. Plan active-employee size turns out to be the best predictor of membership, suggesting that employee voice expands as plans cover more workers. Using both fixed effects and instrumental variables approaches, I show how boards shape plans' policies and funded levels. Active and retired members shape discount rates, whereas active membership is positively associated with funded ratios. Interestingly, gridlock is also associated with higher discount rates. However, I find that plans' actual investment returns are poor predictors of expected returns, irrespective of board composition. Although boards offer a venue through which states can manage funds, they are not suited to solving pensions' governance challenges alone.

**Key words:** bureaucracy, federalism, pension, public finance, state government

Defined-benefit (DB) pensions are central components of public-employees' compensation packages. Public plans expanded as governments needed to solve a personnel problem following the establishment of Civil Service protections: employees remained in their jobs too long, often working until death. Pensions encouraged employees to exit their jobs by paying them to not work, provided they achieved certain levels of tenure.<sup>1</sup> In turn, pensions also helped incentivise new employees to enter public service, especially as more positions opened up. In so doing, pensions helped build the

<sup>1</sup> In defined-contribution (DC) plans, payments are not fixed, but instead based on investment returns. I focus solely on DB plans, which cover the vast majority of public employees: just three states have DC systems, and only a handful use hybrid approaches. Even in these, many employees are grandfathered in under DB plans. Employees also only opt to use supplementary DC plans at modest rates (US Government Accountability Office 2008).

professionalised civil service across state governments that exists today (Lazear 1979; Ippolito 1987; Clark et al. 2003).

Over time, though, these funds have grown incredibly large. Most plans now have riskless liabilities that are 100–500% as large as their states' general revenues. Pensions also have grown in cost, and states increasingly fail to make their required employer contributions. Unfortunately, pensions present governments with a time-inconsistency problem: they pass a portion of costs into the future by design. Although governments need to pay these costs eventually, complicated actuarial rules keep visibility low and insulate politicians from blame (Moe 1990; Arnold 1992; Anzia and Moe 2017). In comparison with expanding pension benefits, politicians must set aside the full cost of salary increases in the current fiscal period (Bartel and Lewin 1981; Hunter and Rankin 1988). Thus, pensions offer a partial resolution to constituents' inconsistent demands for public goods and low taxes (Converse 1964). Additionally, elected officials often favour spending on other more popular programmes (Johnson 1997; Wagner 2001; Hess and Squire 2010).

Costly pensions have important consequences. Most directly, funds may run out of money to meet their promises to employees. For example, Prichard, Alabama's DB plan was so impoverished in 2009 that the government stopped sending checks to its 150 retired workers, in defiance of state law, and in spite of the fact that these employees had contributed into their funds throughout their entire careers. Two years later, the employees still had not been paid, and 18 had passed away (Cooper and Walsh 2011). Although this has not yet happened at the state level, there is no guarantee states will avoid this problem in the future.

More broadly, troubled funds add to states' general budget deficits and damage credit ratings, making it harder for governments to borrow money or plan their budgets. Growing pension costs might crowd out spending on other public goods and services demanded by taxpayers. Moreover, shakier pensions might undermine workers' trust in their employers (see Hall and Soskice 2001), eroding plans' intended recruitment and retention incentives and constraining the production of public goods and services (see Ippolito 1997; Lee and Whitford 2008). Although I focus on state-employee plans in the United States (US) similar concerns regarding sustainability, employees' welfare and the efficient provision of public goods certainly exist for government-employee pensions in other nations, as well.

The US national government has shown little willingness to help assuage state plans' problems, instead opting for a federalist approach of nonregulation. In comparison, the national government regulates and insures private DB pensions under the 1974 Employee Retirement Income Security Act through the Pension Benefit Guarantee Corporation. Although the

Government Accounting and Standard Board provides some guidelines that many plans follow, it ultimately is a nonprofit organisation lacking in enforcement power.<sup>2</sup> Thus, the national government allows state and local governments to design and manage plans as they see fit. This has facilitated extensive variation in management and plan outcomes.

Sustainable pension stewardship requires making tough decisions such as contributing enough money into funds, finding dependable investments and making policy changes in response to dynamic economic and personnel conditions. However, politicians tend to prefer avoiding blame for enacting new policies that could appear to reduce or retrench pension generosity (Weaver 1986; Pierson 1996). Hess and Squire (2010), for example, argue that teacher pensions facilitate the delivery of short-term payouts to employees at the expense of long-term fiscal management. Although elections could motivate politicians to deal with pensions, it is not theoretically obvious how they would matter. Wagner (2001) argues that state legislators practice fiscal responsibility when their prospects for future control remain intact. In comparison, Immergut and Abou-Chadi (2014) find that politicians in pluralist nations with weak unions only pass reforms when they face competitive elections. Elections aside, governments also may just not care that much about pension health, and use unrealistic assumptions and underfund plans (Inman 1981; Johnson 1997).

That said, elected officials are not the only actors who influence pensions. They delegate a fair amount of decision-making authority to boards of trustees. Boards oversee investment decisions, set discount rates and required employer contribution rates, produce plan reports and handle day-to-day management tasks. For example, CalPERS board's tasks "include setting employer contribution rates, determining asset allocations, providing actuarial valuations, and more. The board DOES NOT have the ability to add, change, or delete benefits without concurrence from the state legislature" (2015). Thus, although boards do not unilaterally determine benefit levels, they have the potential to play important roles in shaping and implementing policies.

Not a great deal is known about boards. It is an open question how and to what extent they actually matter. Potentially, boards represent opportunities to develop competent and sustainable pension management. Their trustees may wield a great deal of autonomy in managing pensions, especially as they cultivate expertise and connections with various stakeholders (see Carpenter 2001). If so, efforts to rectify pensions' problems should be focused primarily on boards.

<sup>2</sup> Two of their key recommendations are that plans produce Comprehensive Annual Financial Reports (CAFRs) and be able to finance their current obligations (Government Accounting Standards Board 2006).

Alternatively, boards may have very limited direct influence over pensions. Although politicians cede power when they grant authority to boards, they still enjoy the traditional advantages of delegation. That is, they may appear to make credible commitments to pensions and employees, while also diffusing blame for any problems (see Weaver 1986). Politicians can always reign in boards when they feel the need to do so, after all (McCubbins and Schwartz 1984; Epstein and O'Halloran 1999). Any serious fixes to pensions, in this case, will have to come directly from elected officials.

Finally, boards may be effective at influencing some aspects of pension policy, but not others. After all, they are quasi-autonomous institutions that work in tandem with elected officials. They also face political, policy and economic constraints. For example, elected officials may be uninterested in raising taxes to cover pensions' costs. Prior policies that tend to remain in place over time also may limit boards' options, as could piling pension costs. Finally, economic conditions should constrain boards, especially given plans' reliance on investments. Although these forces may limit boards, they also limit politicians' powers. If so, pension reform may require a more holistic approach, involving both elected officials, boards and plan members themselves.

To better assess these possibilities, I focus on three types of board members. The first is the level of politicisation among trustees. Such members are politicians, their appointees or ex-officio state representatives. For example, then-Governor Mitt Romney sat on the Massachusetts Retirement Commission Board in 2005. Second, I examine the proportion of active employees on boards. These are plan members who have not yet begun collecting benefits. Third, I consider the fraction of retired employees who currently collect benefits on boards.<sup>3</sup>

I collected information on board composition from over 1,000 state-plan CAFRs between 2001 and 2011. The data span 103 total plans in all 50 states. I control for political, plan-policy and economic characteristics, and consider several models including fixed effects to account for unobserved geographic and temporal variation that could influence the outcome variables. I also complement this with an instrumental variables (IV) approach, leveraging the fact that plan active membership significantly affects board composition, while not appearing to directly influence plan policies or funded ratios. In addition, I report models without and with the plan controls, in case boards and political actors select particular plan policies that remain in place over long periods of time, making them inherently endogenous.

<sup>3</sup> Active and retired board employees are political appointees in some plans, and nonpolitical employee representatives in others. The active and retired variables ignore the mechanism by which the member entered service on the board.

First, I analyse how various political and policy forces drive variation in boards. Although boards do not change markedly year-to-year, they do nevertheless experience some variation.<sup>4</sup> A key result is that plan active-employee size significantly influences board membership. In the IV approach, these regressions form the first stage. Then, I examine how board membership influences several pension outcomes. These are the second-stage equations in the IV approach. I first focus on discount rates, which are a specific plan policy that boards influence. After that, I examine three broader and related outcomes: the funded ratio, assets and liabilities.<sup>5</sup>

The results show that although political, policy and economic forces do shape trustee composition, boards also exert their own influence. Perhaps surprisingly, there is not a great amount of evidence that the politicisation variable predicts pension outcomes. However, active board members influence the selection of lower discount rates, and are associated with better funded ratios, as well as greater assets and fewer liabilities. Retired trustees, in comparison, are associated with higher discount rates. None of the board variables, though, seem to make discount rates reflect actual investment returns.<sup>6</sup> Thus, although boards do matter for pension policy, they also face significant constraints, and are not capable of fixing plans' problems on their own.

### **Pensions and the role of boards of trustees**

Although there is not a great deal of literature on the factors influencing pension board composition, there is a substantial amount of research on staffing choices in bureaucratic agencies, as well as the consequences of those decisions. Surely, boards may be subject to political pressures, even if the exact forces or their consequences may not be obvious. Polarisation, for example, might be associated with greater politicisation, reflecting a sort of spoils politics (see Moe 1989; Devins and Lewis 2008; Anzia and Moe 2017). Political gridlock also might harm the ability of elected officials to staff boards. Other factors also could matter, such as unionisation, plan occupation-type and legislative professionalism. I cover these in greater detail in the following section.

<sup>4</sup> In the Appendix, I present two additional models examining variation in boards.

<sup>5</sup> The unit of analysis is plan-year. In the Online Appendix, I also consider boards' relationships with other plan policies and outcomes, including required and actual employer contribution, employee contributions, investment returns, the gap between investment returns and the discount rate and the allocation of investment strategies.

<sup>6</sup> I also show in the Appendix that while boards seem to impact investment allocation, they have no impact on investment returns.

Politicisation also is a useful starting point for thinking about boards' impact on governance outcomes (see Snyder and Weingast 2000). Political appointees tend to retain allegiances to the institutions that place them in their jobs (Moe 1982; Wilson 1989). In turn, they may feel more pressure to keep taxes low and underfund pensions (Johnson 1997). In addition, political employees turn over more frequently, which can harm institutional knowledge (see Hecló 1977; Ban and Ingraham 1990). In comparison, longer-term employees can develop strong relationships with stakeholders (Hecló 1975). At the national level, Lewis (2007) and Gilmour and Lewis (2006) show declines in governance outcomes associated with increased managerial politicisation.

In prior research on pensions, Cayer (1998) notes that insulating boards from political control can help prevent raids on funds. Hess (2005) argues that nonpolitically appointed board members are more accountable to plans' beneficiaries and operate outside of political influence. Their presence prevents legislators from using funds as "safety valves" to pay for other programmes. Further, political board members often have other job duties that occupy their time. In Maryland, employee-elected members attended 90–100% of all meetings. In comparison, ex-officio members attended about 60% of the time.

Board type may also influence investment decisionmaking. For example, Hess (2005) discusses how a general-employee fund in Maryland invested in a management company with strong ties to the governor, even though the firm continually under-performed. Alabama's CAFR goes so far as to explicitly state that the plan does well when the state's economy performs well, presumably thanks to localised investments. Relatedly, funds can target investments to influence corporate behaviour, which happened when CalPERS divested from tobacco, as shown by Barber (2009).<sup>7</sup>

Alternatively, politicisation may not matter that much, or even improve governance. Moe (1985) argues that political appointees can make bureaucratic organisations more responsive, encourage the flow of ideas and keep government in touch with interest groups and voters. Nonpolitical board appointees also might ask for more generous pensions, or prefer the use of actuarial methods that disguise costs.

That said, it may be the case that the specific appointment mechanism is less critical than the trustee's plan-member status. For example, the Montana Public Employee Retirement Association's website states that the governor appoints all members of the "independent" board, which is staffed entirely with plan members. Once on the board, those trustees may behave quite

<sup>7</sup> A concern is that such "socially active investing" might undermine the goal of maximising returns (Romano 1993; Wahal 1996). However, activism might not be a major problem if it only happens on the fringe, especially as a consequence of attentive management (Hess 2005).



similarly to their nonpolitically appointed counterparts in other states. In prior research, Schneider and Damanpour (2002) and Hsin and Mitchell (1997) find that employee trustees are associated with lower funded levels, whereas Munnell et al. (2008) find that they have no significant overall effect.

I build on this work by examining the fraction of active and retired members on boards each year. One possibility is that both of these types of members pursue similar strategies, which are at odds with those of politically appointed officials. Alternatively, it may be the case that active and retired trustees have distinct incentives that may or may not align with those of politicised trustees.

Active employees may desire more generous pensions, assuming they wish to maximise their own personal wealth. However, as is the case with CalPERS, boards generally lack the power to influence generosity without consent from state legislatures. Further, active trustees have a stake in plans' long-term fiscal health, so that they will be able to actually receive their promised benefits in the future. Pension income also tends to grow as employees remain in their jobs, bolstering active trustees' long-term incentives. In addition, active trustees might make "better" board members for many of the same reasons why politicised employees could make worse ones. Active trustees have more years of work ahead of them, on average, and are therefore less likely to turn over. As such, they may well be associated with lower discount rates and better funded ratios.

In comparison, retired trustees do not face quite the same long-term incentives. They are most directly concerned with receiving their promised pension payments in the current period. Although they wish to avoid a situation like the one in Prichard, they could be more willing to accept unrealistic actuarial assumptions or underfunding, so long as they receive their benefits and feel reasonably confident that their plans are not going to tank anytime soon. These employees also are more likely to turn over than their active-employee counterparts, as they are older. Further, there are simply fewer retired than active employees on most boards: active employees compose 43.7% of membership, on average, whereas retired employees make up just 13.5%. Assuming that boards use majority-voting rules retired trustees may have less influence.

### **Pension governance variables**

To better understand how boards matter for governance, I first regress the membership variables on an array of political, economic and actuarial factors. I utilise panel data from 103 DB plans between 2001 and 2011.<sup>8</sup>

<sup>8</sup> Much of the actuarial data come from Boston College's Public Plans Database. I exclude local plans, though, in order to make claims solely about state-level pensions.

Following that, I examine plan discount rates, funded ratios, assets and liabilities as dependent variables.

### Board variables

The data on boards come from pensions' annual reports, which capture differences between plans and states, as well as changes that occur over time.<sup>9</sup> I have board data for all plan-year observations. In constructing the politicisation variable, I include elected officials, representatives appointed by elected officials and ex-officio members. I make a simplifying assumption by combining these, as most ex-officio employees are politicians. Roughly 62.7% of trustees are politicised.<sup>10</sup> The active and retired variables are collected in a similar manner.<sup>11</sup>

Often, studies of agencies or boards are limited to cross-sectional variation. Although many plans maintain consistent boards over time, substantial variation does exist. In all, 34 states in my data have more than one plan. Among those, 21 (61.8%) have differences in the politicisation variable, and 25 (73.5%) vary in both the active and retired variables. Additionally, substantial minorities of the plans vary in board membership at one or more points between 2001 and 2011. There are 39 (37.9%) plans that experience change in the political variable over time, and 47 (45.6%) that vary in the active and retired variables. Greater variation among the retired and active variables could indicate that state actors have more leeway in placing active and retired employees on boards, as well as the fact that active members sometimes retire, but remain on boards.

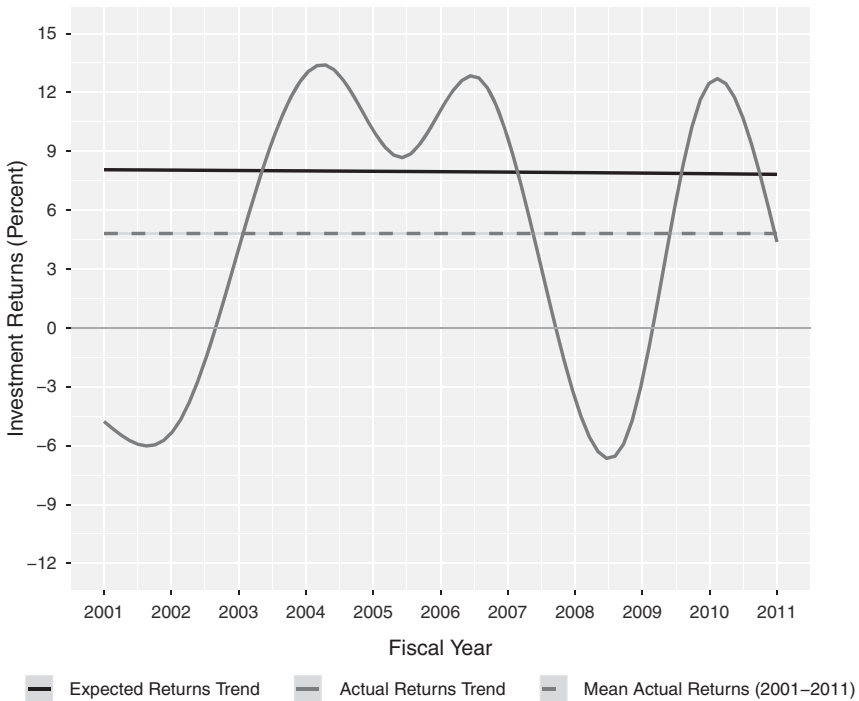
I also use these as independent variables to examine pension governance outcomes. In doing so, I consider two separate models. The first includes all three board variables, whereas the second only includes the active and retired measures. This is because many plans politically appoint active and retired members, implying that the sum of the three variables may be greater than one. Although it is useful to consider all the variables jointly, there is also value in examining a model that avoids double-counting members.<sup>12</sup>

<sup>9</sup> That is, occasionally new legislation will alter boards. Vacancies also occasionally occur on boards, which sometimes last for several years.

<sup>10</sup> This is congruous with Hsin and Mitchell (1997), who point out appointed and ex-officio members make up about 60–70% of boards.

<sup>11</sup> Active and retired employee ratios will always sum to a maximum of one in a plan. The sum of all three variables, though, can be greater than one, as many boards have politically appointed active and retired employees.

<sup>12</sup> The omitted category in the second model is appointees who are not enrolled in plans.



**Figure 1** Average expected versus actual investment returns over time.

*Note:* This graph plots smoothed annual trends in expected and actual investment returns for all plans. As can be seen, even though the actual returns fluctuate a great deal, the average expected return (or discount rate) remains quite flat over time. Moreover, the actual one-year investment returns have a geometric mean of about 4.8% between 2001 and 2011, even as plans assume that it will be just below 8% (based on data from Public Plans Database).

## The discount rate

Second, I examine boards' relationships with plan discount rates or expected investment returns. As pensions' costs have risen, they have grown increasingly reliant on investments.<sup>13</sup> As seen in Figure 1, those returns

<sup>13</sup> This opens plans up to other sorts of moral hazard problems. Many plans also responded to political pressure to invest in local and state businesses, leading to losses in multiple systems (Mactas 1992). Further, plans occasionally invest or divest in companies for social or political reasons, in order to exercise influence over corporate practices (Barber 2009). One well-known example occurred in 2000 when California's fund, CalPERS, divested from tobacco companies, at an estimated cost of \$1 billion in missed profits.

fluctuate a great deal. Moreover, discount rates are consistently higher than actual returns, on average.

The discount rate is based on how assets are expected to perform in the future, and is used to calculate plan liabilities. Many economists argue that this is not sensible, given the fundamentally distinct nature of liabilities and assets. Higher discount rates tend to understate liabilities (Novy-Marx and Rauh 2009, 2011).<sup>14</sup> Peng (2004) also warns that plans underestimate risk and over-burden future tax payers. Potentially, boards could play a role in selecting more or less realistic discount rates.

### The funded ratio, assets and liabilities

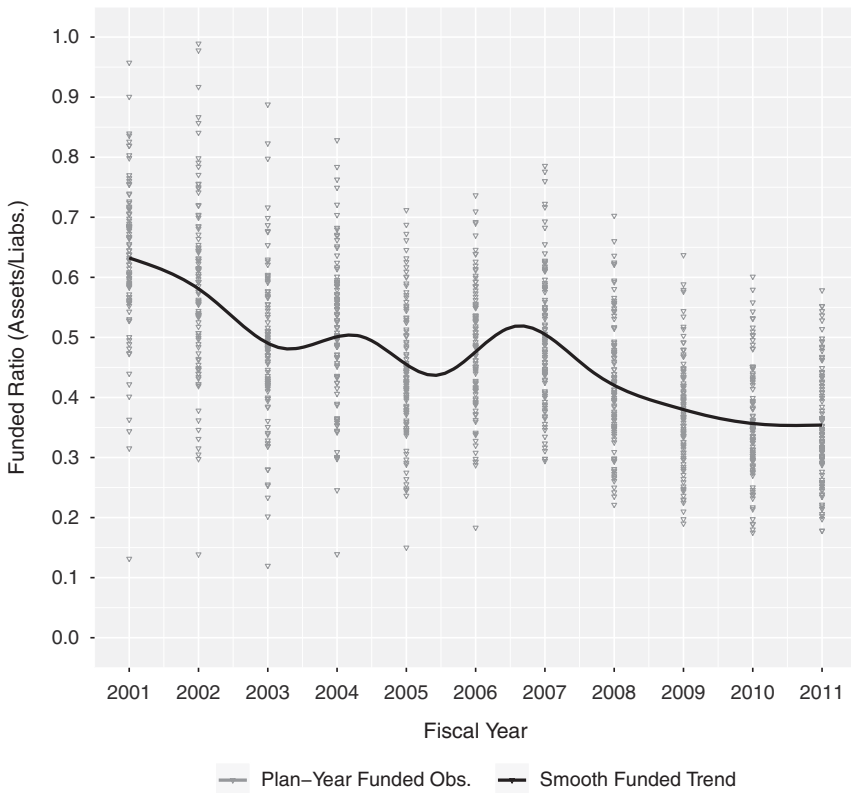
Third, I estimate the relationship between boards and the funded ratio and logged versions of its two components: liabilities and assets. Funds that have more assets relative to their liabilities essentially have enough money on hand to pay employees and meet old debts on schedule. As seen in Figure 2, average funded ratios have declined over time. A fair amount of extant research has examined plans' funded ratios (see Schneider and Damanpour 2002; Eaton and Nofsinger 2004; Munnell et al. 2011; Butt 2012).

Assets come from combinations of employee and employer contributions, as well as investment returns. Liabilities combine payments owed to current retirees, debts and interest. Plans estimate both components at the same time, though, and likely bias liabilities downwards to improve funded status (see Novy-Marx and Rauh 2009, 2011). To assess this, I use riskless liabilities and funded levels, which I calculated using a lower standardised discount rate for each fiscal year.<sup>15</sup>

Notably, liabilities and assets are distinct from each other. Potentially, some of the independent variables might exercise influence primarily through one of the components. Similarly, some variables may not influence the funded ratio, but push both components in the same direction. At the same time, assets and liabilities are unlikely to be independent of each other, given the funded ratio's salience, and the fact that the same individuals estimate both. This motivates the decision to control for lagged versions of both in the log assets and liabilities models.

<sup>14</sup> Riskless liabilities use a lower discount rate to correct for this, and reflect the fact that pension benefits are guaranteed. Governments must cover these costs at some point.

<sup>15</sup> See the Appendix for a longer discussion of how I calculated this variable. The riskless transformation shrinks the mean and reduces the variance somewhat, but otherwise does little to change distribution's shape. I do not report them here, but replicating this portion of the analysis with self-reported funded levels leads to similar results.



**Figure 2** Plan riskless funded ratios over time.

*Note:* This graph plots plans' annual funded ratios for each year in the data, as well as a smoothed Loess curve to demonstrate how average plan funded ratios have changed over time. The graph indicates that on average, plans' mean funded ratios have decreased from just under 0.65 in 2001 to about 0.35 in 2011 (based on data from Public Plans Database).

### Political and economic variables

I now turn toward political factors that could influence funds. With the possible exception of unionisation, none of these affect private pensions.<sup>16</sup> First, legislative conditions might affect pensions. Four useful variables are: divided government, polarisation, legislative partisanship and legislative professionalism. For my purposes, I take these as exogenous, and do not attempt to do justice to their varying causes. Information on divided

<sup>16</sup> Low labour participation in the private sector renders this point moot, anyway.

government and legislative partisanship comes from the National Conference of State Legislatures. Divided legislatures might be less able to pass reforms (see Mayhew 1991; Fiorina 1992; Sundquist 1992). Polarisation, or the degree to which the parties can agree on policy, also might shape states' fiscal situations (Shor and McCarty 2011).<sup>17</sup>

Gridlock from the combination of the two also might influence plan governance (Jones 2001; Binder 2003). Separately, party elites could pursue different strategies with regard to pensions. I include a variable for the percentage of the lower chamber held by Republicans.<sup>18</sup> I also control for the professionalism of the state legislature (see Carey et al. 2000), which considers whether serving as a state legislator is a full-time job, and also comes with a staff and support.<sup>19</sup>

Unions present a separate potential source of influence. Potentially, they may seek to shape board composition. Further, they might increase liabilities by demanding more benefits and pushing for less realistic actuarial assumptions. That said, they also could push for policies generating greater assets, such as sound investment strategies or higher taxes.<sup>20</sup> I control for the percent of state employees covered by unions.<sup>21</sup> Additionally, I include dummy controls for plans that cover public-safety and teacher employees, which might differ owing to factors such as union strength, personnel needs or partisan preferences.

I also examine whether state plans are complemented with Social security (SS).<sup>22</sup> Although court decisions and congressional reforms have extended coverage over time, about 6.4 million state employees still were not eligible to receive SS in 2011 (Clark et al. 2009). Separately, I account for states' economic characteristics by controlling for the ratio of debt to gross state product and per capita income.<sup>23</sup>

<sup>17</sup> I use data from Shor and McCarty (2011), measured in terms of ideological distance between the median Republican and Democrat in the lower legislative chamber. Estimating the models instead using upper-chamber polarisation does not change the results.

<sup>18</sup> The data do not include Nebraska, which has a unicameral legislature. This specification also reduces the multicollinearity of including both divided government and united Republican control in a model. Including variables for upper chamber or governor partisanship would create a similar problem.

<sup>19</sup> The variable used here is a unidimensional measure that combines these factors.

<sup>20</sup> See the Online Appendix a brief review of the literature on unionisation and how it might apply to pensions.

<sup>21</sup> The data come from the Union Membership and Coverage Database (Hirsch and Macpherson 2003). Unfortunately, this includes all state employees, and does not segment by occupation. I cannot isolate the effects of different types of union organisations. For example, in Wisconsin, police and fire pensions are more secure than other funds, likely owing to the differences in union strength (Cooper and Walsh 2011).

<sup>22</sup> This information comes from the Public Plans Database.

<sup>23</sup> These variables are constructed from Census data. They also are lagged by a year to avoid posttreatment concerns.

## Pension plan variables

Aside from politics and economics, plan policies might affect future governance. Here, I control for several key assumptions, including the discount rate, whether the plan uses market valuation and more. These variables all come from the Public Plans Database. However, I also estimate models excluding these variables, given the possibility that governments choose assumptions to exaggerate plan health and delay costs. In the models that do include these, I lag them by a year to mitigate potential posttreatment concerns. This dual approach helps account for the complicated and potentially endogenous relationship between boards and plan governance.

I include the discount rate as an independent variable in these models. Additionally, I also include a dummy variable that takes a value of 1 when a plan uses market valuation of liabilities (MVL), and 0 when it uses actuarial accrued liability (AAL) in calculating expected returns. MVL equates the discount rate with the current market rate of a group of high-quality fixed income investments, making it more responsive to economic fluctuations.<sup>24</sup> In comparison, AAL's longer smoothing periods spread costs into the future.<sup>25</sup> Most public plans use AAL, and would experience declines in their funded ratios if they switched (Gold and Latter 2009; Novy-Marx and Rauh 2009).<sup>26</sup>

In addition, I include investment returns and allocation variables. Specifically, I control for the level of investment in equities, real estate, alternatives and bonds.<sup>27</sup> Equities refer to shares of stock, which are one of the most common pension investments. Real-estate investments include traditional properties, and even items such as golf courses in some cases. Alternatives refer to investments that are not in stocks, bonds or real estate. They include hedge funds, venture capital and carbon credits. They also may involve purchasing goods that are expected to increase in value over time, such as metals, alcohol, coins, antiques and so on. Alternatives often come with higher side fees than investments in equities or real estate, and also less liquidity. Finally, plans can purchase bonds, which provide them with interest in return for lending money to governments or businesses.

<sup>24</sup> See Section "Additional Background on Pension Actuarial Techniques" in the Online Appendix for a more thorough discussion.

<sup>25</sup> The Financial Accounting Standards Board requires MVL in the private sector.

<sup>26</sup> Gold and Latter (2009) report funded levels for four public plans using both AAL and MVL. Under MVL, plans were between 50 and 80% funded, whereas with AAL funded ratios ranged from 66 to 106%.

<sup>27</sup> These variables are percents. A plan, for example, might place 50% of its investments in equities, 15% in real estate and 7% in alternatives in a given year.

So far, no study has clearly shown that any of these different investments are more or less likely to pay off.<sup>28</sup>

Actuarial plan type is an additional control, and refers to the method by which plans estimate their liabilities. Although my data contain four of the six possible methods, I just include dummy variables for entry age normal (EAN) or projected unit credit (PUC) plans, as most plans use those. EAN plans allocate the present value of lifetime retirement benefits equally each year employees work, adding to liabilities as employees remain in their jobs. In comparison, PUC estimates benefits as a function of the present value of additional lifetime benefits employees expect by retirement.<sup>29</sup>

Next, employer contributions provide a broad measure of generosity. Employees also contribute to funds, which they see as deductions from their pay. I examine both as percentages of real payroll. The proportion of assets generated by contributions is actually quite small. Employer contributions are 2.5% of the total plan assets in my data, whereas employee contributions are just 1.5%. Plans requiring larger contributions might be more generous or attempting to make up for lower funded ratios in prior years. Additional variables include the age of the plan and the plan's logged number of active employees.

## Empirical analysis

Much of the extant work on pensions relies on case studies or regressions with a few simple models. However, case studies are limited in their ability to generalise or understand the broad characteristics that affect governance. Although the latter class of research can do better in this regard, much of it is plagued by omitted variables bias, controlling for posttreatment variables, reverse causation and endogeneity between politics and plan policies. Of course, there is unfortunately no ability to randomise plans to cleanly estimate treatment effects under ideal conditions. Pensions present researchers with a number of thorny empirical challenges.

Here, I take several approaches to seriously grapple with these issues while gaining additional insight into the drivers and consequences of board composition and governance. Although each of these approaches has upsides and downsides, using them in concert helps provide a broader sense of factors influencing pension policy, and improves on prior work that either claims or strongly implies causality (see Schneider and Damanpour 2002; Clark et al. 2003; Hess 2005; Munnell et al. 2008).

<sup>28</sup> In the Online Appendix, I briefly explore trends in these investments over time, as well factors associated with investments in each of these.

<sup>29</sup> See “Additional Background on Pension Actuarial Techniques” in the Online Appendix for a more thorough explanation.



I begin by examining the factors that influence pension boards. I do this while controlling for lagged versions of the variables discussed above, while also including year and plan fixed effects. The use of lagged variables accounts allows me to examine whether and how boards change in the following year in response to political or policy forces. Further, year fixed effects help control for the fact that broad forces in the economy or politics might influence numerous plans at once. Finally, using plan fixed effects focusses solely on variation within boards over time.<sup>30</sup> Fixed effects accounts for the correlation between the unobserved characteristics that could influence the dependent variables and the observed covariates.<sup>31</sup> Further, I include lagged versions of the board variables to focus on the factors contributing to change in boards since the prior year.<sup>32</sup>

I present alternate models that exclude and include the pension controls, as it is possible that the political variables influence the selection of the actuarial techniques, making the latter endogenous or posttreatment (Matkin et al. 2016). For example, Hsin and Mitchell (1997) point out that poorly funded plans often choose actuarial assumptions that justify small contributions. Nevertheless, it is still useful to understand these relationships, so as to gain insight into how assumptions shape plans. In the model that includes the plan variables, they are all lagged by a year to mitigate potential posttreatment concerns. In assessing the pension governance or policy outcomes, I similarly include lagged versions of the outcome variables, as well as models including and excluding the plan variables. Further, I include year and state fixed effects.<sup>33</sup> States tend to differ from each other in important and unobserved

<sup>30</sup> In the Online Appendix, I consider two alternate specifications. The first includes the lagged funded ratio as an additional control, which allows me to test whether board composition changes in response to the funded status. I do not find any evidence that this is the case. In the second, I stratify my data to only include boards that change at least once over time, and rerun the analysis. This provides an alternate view into the factors that are associated with variation in boards, conditional on the fact that they do actually vary.

<sup>31</sup> In comparison, a random effects model, or generalised least squares, assumes that these are independent. I do not have reason to believe this is the case, given the number of possible governmental features associated with more robust pensions.

<sup>32</sup> One concern is that including both lagged versions of the dependent variables and fixed effects in the same model potentially can lead to inconsistent estimates, known as Nickell (1981) bias. In the Appendix, I present alternate versions of the results that respectively leave out the lagged dependent variable, and then the fixed effects. Excluding the lags does little to change the main results. In comparison, leaving out the fixed effects results in null effects for nearly all of the board variables across the models. However, I have strong reasons for including fixed effects, as discussed above. In line with the findings presented in Keele and Kelly (2005), it is still most appropriate to include both when there is likely to be dependency across time within the data and need to control for unobserved variation across geographies and time.

<sup>33</sup> This should not be confused with controlling for state-year fixed effects, which would only examine variation within a particular state in a given year.

ways. For example, it would be impossible to control for all the ways in which California's pensions are different from Rhode Island's pensions. State fixed effects focus solely on variation within states and over time.

Aside from that, it is important to acknowledge that many of the independent and dependent variables are correlated across time. In all models, I also adjust for some of the potential endogeneity by using Eicker-Huber-White "robust" standard errors. I use two-way clustering of standard errors at the state and plan levels. Clustering at the state level helps account for the fact that plans are not independent of each other within states. The same individuals simultaneously determine pension policies for several plans within most states, making it essential to cluster at that level. Clustering at the plan level, in comparison, helps account for the fact that many plan policies do not change a great deal over time. Failing to adjust for this autocorrelation could result in underestimating the size of the standard errors (Wooldridge 2010; Cameron and Miller 2015).

In the following board regression model,  $i$  is the given plan,  $t$  is the year,  $\beta_1$ – $\beta_5$  are vectors of the point estimates and  $\epsilon_{it}$  is the random error. The models include year and plan fixed effects, which are dummy variables for each year and plan in the data. Note that in one specification of the model, I exclude the pension variables. In the IV approach, this is first-stage regression.

$$\text{Board}_{it} = \beta_0 + \beta_1 \text{LogActives}_{i(t-1)} + \beta_2 \text{Politics}_{i(t-1)} + \beta_3 \text{Econ}_{i(t-1)} + \beta_4 \text{Pension}_{i(t-1)} + \beta_5 \text{Board}_{i(t-1)} + \text{YearFE} + \text{PlanFE} + \epsilon_{it} \quad (1)$$

I then turn to estimating discount rates, funded ratios, log assets and liabilities. I do this first by taking a similar approach as above, again including lagged versions of the dependent variables as a control to focus on analysing the change from the prior year, and using state and year fixed effects. As above, I consider models that both include and leave out the pension characteristics.

$$Y_{it} = \theta_0 + \theta_1 \text{Board}_{it} + \theta_2 \text{Politics}_{it} + \theta_3 \text{Econ}_{i(t-1)} + \theta_4 \text{Pension}_{i(t-1)} + Y_{i(t-1)} + \theta_5 \text{LogActives}_{i(t-1)} + \text{YearFE} + \text{StateFE} + \zeta_{it} \quad (2)$$

In addition, I report results from a complementary IV approach, which uses the predicted values from the first-stage models that exclude the actuarial controls.<sup>34</sup> This approach exploits the fact that the fraction of active employees has little direct significant impact on pension policies (shown in the results in Tables 2–5 here, as well as in the results in the Online Appendix), but does influence board composition. I use that influence in a multi-stage process to examine whether active employee size can

<sup>34</sup> Including too many dependent variables in the first stage tends to weaken the instrument, which could bias estimates upwards in the second stage.

influence plan governance *through* their influence on boards. One clear advantage to this approach is that it more clearly establishes the direction of the relationship between boards and governance. In addition, the predicted values from the first stage have greater variance than the board variables, somewhat mitigating autocorrelation.

Equation 3 is very similar to 2, except I now exclude the log active membership variable and use the predicted board variables from the first stage.

$$Y_{it} = \gamma_0 + \gamma_1 \text{Boârd}_{it} + \gamma_2 \text{Politics}_{it} + \gamma_3 \text{Econ}_{i(t-1)} + \gamma_4 \text{Pension}_{i(t-1)} + Y_{i(t-1)} + \text{YearFE} + \text{StateFE} + \xi_{it} \quad (3)$$

I first examine discount rates to focus on a plan policy over which boards have direct influence.<sup>35</sup> I then turn to funded ratios, assets and liabilities, which are more general governance outcomes. I use logged measures of assets and liabilities to downweight outliers and impose normal distributions, better comporting with the assumptions of regression.<sup>36</sup> Additionally, I control for lagged assets and liabilities in both models, given the reality that plans report both at the same time, and likely have overall funded levels in mind when they do so. Taken together, these findings provide insight into how boards and the other variables influence variation in state-employee pensions.

## Results and discussion

The results provide evidence that board membership shapes pension governance in numerous ways. At the same time, though, boards also are influenced by politics, and not situated to overcome pensions' most challenging problems by themselves.

### The factors associated with variation in board membership

Little is known about state pension boards. In order to assess this, I examine changes within plans, which are due to variation over time. Table 1 presents the results of regressing the board variables on all of the independent variables, as well as one-year lagged versions of the board variables.<sup>37</sup> The results show that the number of active plan-employees influences board

<sup>35</sup> In the Appendix, I also examine boards' relationship with numerous other pension policies.

<sup>36</sup> Note that in using logged values the results may differ slightly from the funded ratio models, which do not use logged measures.

<sup>37</sup> In the Appendix, I present an alternate model stratifying solely on boards that experience change at some point between 2001 and 2011, in order to provide a more focused sense of what board change looks like when it happens.

composition. This suggests that employee voice or representation on boards increases with growth in active membership. In comparison, politicians exercise greater control as membership shrinks.

In one of the specifications, the politicisation variable also increases in response to greater legislative polarisation.<sup>38</sup> As the parties grow further apart from each other, there may be more attempts to place sympathetic staff on pension boards. Otherwise, boards do not seem especially responsive to political forces.

These results also provide some sense of the degree to which board composition responds to prior-year policies. Discount rates do not influence any of the board variables. Board membership also does not appear to react to investment returns, which suggests that little reining in occurs along this dimension. In the Appendix, I also show that lagged funded ratios do not feed back into board membership. Active and retired membership are especially robust to prior policies. In comparison, politicisation increases in plans that are less invested in real estate and also use AAL over market valuation. Active and retired membership do seem sensitive to economic conditions, though.

These regressions form the first stage in the IV approach, which exploits the fact that the active employee variable has little direct impact on pension policies and funded ratios. The variable does have influence, however, when using it as a first-stage predictor, suggesting that the number of employees shapes plans governance *through* boards of trustees. This approach also has the benefit of somewhat mitigating autocorrelation.<sup>39</sup>

The IV estimator is a ratio of log-lagged active employees's effect on the second-stage outcome variables as a proportion of log-lagged active employees's effect on board composition. If the latter relationship is small, then the instrument is weak, meaning that there is little exogenous variation. Weak instruments result in second-stage estimates that are too large and incorporate too little uncertainty. Stock and Yogo (2005) present a standard test for weak instruments, which focusses on the upper bound of tolerable bias. They identify critical values for *F*-statistics at which the false positive rate is less than 10% when a significance level of  $\alpha = 0.05$  is used to interpret coefficients under the null hypothesis of no effect. The critical value for this test is 16.38 with one instrument and one endogenous

<sup>38</sup> The stratified results in the Appendix suggest an even greater role for polarisation in politicising boards.

<sup>39</sup> Using the test of autocorrelation discussed in Wooldridge (2010), the *F*-statistic decreases from 102.6 to 47.58 in the politicisation model, 176.94 to 97.25 in the active board model and 21.05 to 18.67 in the retired model. This test does not take into account the cluster-robust standard errors, though.

Table 1. Board membership regressions

	(1)	(2)	(3)	(4)	(5)	(6)
	% Politicisation	% Politicisation	% Active	% Active	% Retired	% Retired
L. log actives	-0.076 (0.020)***	-0.076 (0.020)***	0.037 (0.018)*	0.043 (0.017)*	0.024 (0.009)**	0.026 (0.011)*
Divided government	-0.006 (0.018)	-0.008 (0.017)	-0.006 (0.009)	-0.010 (0.009)	0.002 (0.007)	0.008 (0.008)
Legislative Polarisation	0.029 (0.020)	0.036 (0.016)*	-0.073 (0.046)	-0.063 (0.039)	0.054 (0.031)+	0.044 (0.031)
Polarisation × divided government	0.002 (0.010)	0.003 (0.009)	0.006 (0.005)	0.008 (0.005)	-0.000 (0.004)	-0.004 (0.006)
% Republic legislative	-0.034 (0.053)	-0.029 (0.045)	0.040 (0.045)	0.067 (0.044)	-0.017 (0.030)	-0.061 (0.032)+
Professionalism	-0.001 (0.006)	0.001 (0.006)	0.002 (0.005)	0.001 (0.005)	-0.009 (0.011)	-0.010 (0.011)
Union	-0.033 (0.039)	0.020 (0.037)	-0.022 (0.057)	-0.043 (0.048)	0.008 (0.038)	-0.010 (0.039)
L. income per capita	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
L. state debt/GSP	-0.110 (0.252)	-0.016 (0.209)	-0.569 (0.293)+	-0.769 (0.325)*	0.257 (0.202)	0.354 (0.189)+
L. discount rate		0.004 (0.005)		0.003 (0.009)		0.008 (0.010)
L. market valuation		-0.024 (0.011)*		0.019 (0.014)		0.050 (0.024)*
L. investment Return		-0.017 (0.012)		-0.034 (0.028)		-0.018 (0.024)
L. % equities		-0.008 (0.031)		-0.042 (0.033)		0.064 (0.037)+
L. % real estate		-0.219 (0.109)*		0.006 (0.130)		0.385 (0.195)+
L. % alternatives		-0.056 (0.051)		0.021 (0.050)		-0.102 (0.111)
L. % bonds		0.017 (0.020)		0.002 (0.021)		-0.003 (0.016)
L. log system age		-0.002 (0.006)		0.011 (0.015)		-0.001 (0.014)
L. EAN		-0.011 (0.010)		0.030 (0.019)		-0.004 (0.012)
L. PUC		-0.013 (0.016)		-0.038 (0.038)		0.017 (0.036)
L. employer contributions		0.006 (0.024)		-0.013 (0.016)		0.005 (0.017)
L. employee contributions		-0.730 (0.477)		0.123 (0.236)		0.311 (0.233)
L. board politicisation	0.410 (0.087)***	0.435 (0.066)***				
L. board % active			0.571 (0.103)***	0.512 (0.122)**		
L. board % retired					0.639 (0.063)***	0.590 (0.085)***
Observations	705	689	705	689	705	689
Adjusted R <sup>2</sup>	0.991	0.992	0.981	0.981	0.893	0.896
F	35.250	21.173	17.309	14.888	61.276	138.464

Note: The above presents the results of regressing the board variables on the independent variables. Two-way robust-cluster standard errors in parentheses. Models include plan and year fixed effects. GSP = gross state product; EAN = entry age normal; PUC = projected unit credit.  
 +p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001.

regressor. Thus, first-stage models with  $F > 16.38$  are sufficiently strong instruments for IV analysis. As seen in Table 1, the  $F$ -statistic surpasses this threshold in all but model (4). For the sake of consistency, I solely interpret the results from the predicted values from models (1), (3) and (5) in the second stage.

### Discount rates and board membership

I next turn to analysing pension governance outcomes using both fixed effects and IV approaches. Pension boards and their policies are likely to have many direct and indirect effects. See the Appendix for additional analyses of how boards shape other policies, such as investment allocation and employer contributions.<sup>40</sup> However, it is useful to first focus on one of the most direct and salient policies that boards influence: the discount rate.<sup>41</sup> The results in Table 2 across both the ordinary least squares (OLS) and instrumented models show that active trustees are associated with lower discount rates, whereas retired trustees are associated with higher ones.<sup>42</sup> In comparison, although politicisation is associated with higher discount rates, it is not statistically significant. This suggests that boards with greater fractions of active employees could choose smaller discount rates, whereas boards with more retired employees may select larger ones.<sup>43</sup>

Among the other political variables, gridlock is associated with higher discount rates. It may well be the case that when gridlock occurs states have a harder time monitoring pensions. Boards in such states might then lean more heavily on investment returns in the following year.<sup>44</sup> Discount rates also seem to rise as union coverage grows within states. Thus, both legislative gridlock and unions may well play a role in pushing policies in unrealistic directions to cover pensions' costs.

In terms of the plan variables, investment strategy choices seem to influence the selection of the discount rate in the following year, which is not surprising. Alternative investments are significantly associated with higher

<sup>40</sup> See the Appendix for additional analyses of how boards shape other policies, such as investment allocation and employer contributions.

<sup>41</sup> There is a great deal of autocorrelation when examining discount rates, as they only range between 6.6 and 9%. The instrumented models cut down some on autocorrelation, marginally reducing the  $F$ -statistic in the full models from 821.5 to 809.03. This highlights the importance of clustering the standard errors within states and plans.

<sup>42</sup> The active instrument is not significant in the two fuller specifications, though.

<sup>43</sup> In the Appendix, there is evidence that the gap between actual returns and the discount is significantly larger as retired employee representation increases on boards, as well.

<sup>44</sup> In the Appendix, I also show that this variable is associated with less realistic discount rates, relative to actual returns.

Table 2. Board membership and plan discount rates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Board politicisation	0.019 (0.024)	0.020 (0.031)						
Board % active	-0.105 (0.037)**	-0.074 (0.038)*	-0.112 (0.038)**	-0.081 (0.043)*				
Board % retired	0.167 (0.079)*	0.177 (0.072)*	0.157 (0.073)*	0.166 (0.068)*				
Politicisation					0.042 (0.054)	0.054 (0.069)		
Institutions								
Active institutions					-0.142 (0.065)*	-0.089 (0.068)	-0.160 (0.065)*	-0.113 (0.075)
Retired institutions					0.280 (0.132)*	0.287 (0.125)*	0.259 (0.121)*	0.254 (0.112)*
Divided government	-0.061 (0.034)*	-0.063 (0.033)*	-0.061 (0.033)*	-0.063 (0.032)*	-0.060 (0.040)	-0.063 (0.041)	-0.059 (0.039)	-0.062 (0.040)
Polarisation	0.028 (0.089)	0.050 (0.088)	0.030 (0.088)	0.052 (0.088)	0.045 (0.092)	0.093 (0.094)	0.047 (0.091)	0.095 (0.094)
Divided government × polarisation	0.043 (0.019)*	0.045 (0.018)*	0.043 (0.018)*	0.045 (0.018)*	0.043 (0.021)*	0.046 (0.022)*	0.043 (0.021)*	0.046 (0.021)*
% Republic legislative	0.333 (0.292)	0.341 (0.310)	0.330 (0.289)	0.337 (0.307)	0.299 (0.302)	0.296 (0.314)	0.298 (0.301)	0.292 (0.312)
Legislative	0.016 (0.024)	0.008 (0.024)	0.015 (0.024)	0.007 (0.024)	0.025 (0.030)	0.014 (0.030)	0.024 (0.030)	0.013 (0.030)
professionalism								
Union coverage	0.622 (0.246)*	0.553 (0.234)*	0.618 (0.245)*	0.544 (0.231)*	0.609 (0.226)**	0.510 (0.212)*	0.606 (0.224)**	0.502 (0.210)*
Social security	-0.037 (0.021)*	-0.056 (0.026)*	-0.039 (0.021)*	-0.056 (0.026)*	-0.052 (0.023)*	-0.063 (0.029)*	-0.053 (0.023)*	-0.059 (0.029)*
Teacher	-0.019 (0.017)	-0.027 (0.021)	-0.018 (0.016)	-0.027 (0.021)	-0.032 (0.020)	-0.041 (0.024)*	-0.032 (0.020)	-0.042 (0.024)*
Public safety	-0.022 (0.016)	-0.030 (0.021)	-0.021 (0.015)	-0.029 (0.019)	-0.032 (0.019)*	-0.038 (0.024)	-0.030 (0.018)*	-0.036 (0.022)
L. income per capita	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
L. state debt/GSP	-1.689 (1.374)	-1.808 (1.383)	-1.685 (1.375)	-1.803 (1.385)	-1.960 (1.457)	-2.023 (1.452)	-1.952 (1.461)	-2.012 (1.458)
L. discount rate	0.807 (0.036)**	0.764 (0.045)**	0.809 (0.035)**	0.766 (0.044)**	0.809 (0.037)**	0.767 (0.050)**	0.811 (0.037)**	0.769 (0.049)**
L. market valuation		0.032 (0.057)		0.036 (0.057)		0.041 (0.064)		0.044 (0.064)
L. investment returns		-0.010 (0.163)		-0.010 (0.163)		0.056 (0.159)		0.058 (0.159)
L. % equities		0.013 (0.120)		0.016 (0.120)		0.018 (0.126)		0.025 (0.124)
L. % real estate		-0.113 (0.261)		-0.095 (0.269)		-0.072 (0.259)		-0.048 (0.267)
L. % alternatives		0.280 (0.133)*		0.287 (0.136)*		0.250 (0.146)*		0.252 (0.147)*
L. % bonds		-0.210 (0.090)*		-0.218 (0.093)*		-0.239 (0.105)*		-0.247 (0.108)*
L. log system age		-0.014 (0.018)		-0.011 (0.016)		-0.019 (0.017)		-0.018 (0.017)
L. EAN		0.076 (0.051)		0.077 (0.051)		0.074 (0.047)		0.074 (0.047)
L. PUC		0.044 (0.050)		0.048 (0.051)		0.039 (0.048)		0.045 (0.048)
L. employee contributions		-0.014 (0.183)		0.014 (0.182)		0.050 (0.167)		0.097 (0.159)
L. employer contributions		0.085 (0.034)*		0.087 (0.034)*		0.082 (0.034)*		0.087 (0.034)*
L. log actives		-0.004 (0.004)		-0.004 (0.004)				
Observations	713	702	713	702	661	654	661	654
Adjusted R <sup>2</sup>	0.870	0.869	0.870	0.870	0.866	0.867	0.866	0.867

Note: The above is the result of regressing discount rates (expected investment returns) on the independent variables.

Two-way robust-cluster standard errors in parentheses. Models include state and year fixed effects.

GSP = gross state product; EAN = entry age normal; PUC = projected unit credit.

\*p < 0.10, \*\*p < 0.05, \*\*\*p < 0.01, \*\*\*\*p < 0.001.

discount rates, whereas bonds are associated with smaller discount rates. Thus, it would appear that states expect these alternative investments to pay off. In addition, discount rates are positively associated with employer contributions, suggesting that governments that contribute more into pensions also expect greater, although unfortunately unrealistic, yields from their investments.

Perhaps most surprisingly, prior investment returns do not seem to affect the selection of the discount rate. Ostensibly, prior returns should influence the discount rate, by definition. The null relationship here suggests that discount rates have much more to do with plans' current needs, rather than the realities of the market.

### The funded ratio and its components

I then move onto a broader metric of pension governance: the funded ratio and its components. It is possible that boards will have a constrained impact on these variables, given various external political and economic forces. Nonetheless, boards may still play an important role in shaping these variables. As before, I examine these both with OLS regressions and the instrumented board variables, and report the results in Tables 3–5.<sup>45</sup>

Although politicised boards are associated with lower funded ratios, the coefficients are not significant in any of the models. The only exception is that instrumented politicisation has a negative relationship with log assets.<sup>46</sup> In comparison, active trustees on boards are associated with larger funded levels, suggesting that greater employee voice could play an important role in pension management. Active members on boards are associated with a 0.027–0.07 increase in funded ratio, depending on the model. This means that if a board of ten people replaces a nonactive member with an active one, there will be between a 0.3 and 0.7% increase in the plan's funded ratio. Given that the average funded ratio in the data is 47%, this is relatively consequential. In examining assets, active members are associated with fewer liabilities in the noninstrumented specifications, and more assets in the instrumented models. Retired trustees, though, do not shape funded ratios or liabilities. However, they are associated with

<sup>45</sup> Once again, there is considerable autocorrelation. The *F*-statistic reduces from 139 to 131.83 with the instrumented approach in the full models. It is critical to cluster the standard errors at the state and plan levels to account for this.

<sup>46</sup> In the Appendix, I focus on comparing a subset of plans that have experienced marked changes in board composition. These results point to a greater potential role for politicisation, and also show that significant changes to active membership in either direction can negatively affect funded ratios. Smaller changes to active board membership are more common and therefore likely to be positively associated with funded ratios.



Table 3. Board membership and plan funded ratios

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Board politicisation	-0.019 (0.016)	-0.008 (0.014)						
Board % active	0.034 (0.017) <sup>+</sup>	0.027 (0.015) <sup>+</sup>	0.040 (0.020) <sup>*</sup>	0.030 (0.015) <sup>+</sup>				
Board % retired	-0.031 (0.020)	-0.008 (0.032)	-0.021 (0.023)	-0.003 (0.032)				
Politicisation institutions					-0.044 (0.032)	-0.023 (0.030)		
Active institutions					0.052 (0.030) <sup>+</sup>	0.046 (0.026) <sup>+</sup>	0.070 (0.033) <sup>*</sup>	0.056 (0.024) <sup>*</sup>
Retired institutions					-0.067 (0.044)	-0.041 (0.050)	-0.046 (0.040)	-0.027 (0.044)
L. funded ratio	0.632 (0.058) <sup>***</sup>	0.567 (0.070) <sup>***</sup>	0.644 (0.054) <sup>***</sup>	0.569 (0.070) <sup>***</sup>	0.626 (0.056) <sup>***</sup>	0.574 (0.070) <sup>***</sup>	0.639 (0.053) <sup>***</sup>	0.577 (0.070) <sup>***</sup>
Divided government	-0.007 (0.016)	-0.007 (0.017)	-0.008 (0.016)	-0.008 (0.017)	-0.026 (0.016)	-0.031 (0.017) <sup>+</sup>	-0.027 (0.016) <sup>+</sup>	-0.031 (0.017) <sup>+</sup>
Polarisation	0.027 (0.038)	0.022 (0.034)	0.026 (0.037)	0.021 (0.034)	0.053 (0.046)	0.047 (0.041)	0.051 (0.045)	0.046 (0.040)
Divided government × polarisation	0.004 (0.011)	0.004 (0.011)	0.004 (0.011)	0.004 (0.011)	0.013 (0.010)	0.016 (0.011)	0.014 (0.010)	0.016 (0.011)
% Republic legislative	-0.032 (0.034)	0.024 (0.042)	-0.031 (0.034)	0.026 (0.042)	-0.042 (0.045)	0.006 (0.053)	-0.043 (0.045)	0.007 (0.052)
Legislative professionalism	0.009 (0.012)	0.008 (0.013)	0.009 (0.012)	0.008 (0.013)	0.008 (0.015)	0.007 (0.017)	0.009 (0.015)	0.007 (0.017)
Union coverage	0.084 (0.074)	0.094 (0.074)	0.090 (0.075)	0.098 (0.075)	0.089 (0.080)	0.103 (0.078)	0.095 (0.081)	0.107 (0.079)
Social security	-0.009 (0.009)	-0.015 (0.012)	-0.007 (0.009)	-0.015 (0.012)	-0.004 (0.009)	-0.010 (0.012)	-0.003 (0.009)	-0.011 (0.011)
Teacher	-0.020 (0.009) <sup>*</sup>	-0.024 (0.010) <sup>*</sup>	-0.019 (0.009) <sup>*</sup>	-0.023 (0.010) <sup>*</sup>	-0.016 (0.009) <sup>+</sup>	-0.017 (0.009) <sup>+</sup>	-0.015 (0.008) <sup>+</sup>	-0.017 (0.009) <sup>+</sup>
Public safety	-0.006 (0.009)	-0.007 (0.011)	-0.007 (0.009)	-0.007 (0.010)	-0.002 (0.009)	-0.003 (0.010)	-0.004 (0.008)	-0.004 (0.009)
L. income per capita	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
L. state debt/GSP	0.525 (0.292) <sup>+</sup>	0.481 (0.336)	0.518 (0.291) <sup>+</sup>	0.479 (0.336)	0.536 (0.312) <sup>+</sup>	0.508 (0.370)	0.525 (0.311) <sup>+</sup>	0.502 (0.370)
L. discount rate		-0.039 (0.015) <sup>*</sup>		-0.039 (0.015) <sup>*</sup>		-0.037 (0.015) <sup>*</sup>		-0.037 (0.015) <sup>*</sup>
L. market valuation		-0.029 (0.012) <sup>*</sup>		-0.030 (0.012) <sup>*</sup>		-0.022 (0.014)		-0.023 (0.014) <sup>+</sup>
L. investment returns		-0.138 (0.061) <sup>*</sup>		-0.138 (0.060) <sup>*</sup>		-0.156 (0.063) <sup>*</sup>		-0.157 (0.063) <sup>*</sup>
L. % equities		0.021 (0.044)		0.020 (0.044)		0.038 (0.045)		0.035 (0.045)
L. % real estate		0.012 (0.079)		0.005 (0.084)		0.023 (0.078)		0.013 (0.084)
L. % alternatives		0.105 (0.059) <sup>+</sup>		0.102 (0.058) <sup>+</sup>		0.128 (0.061) <sup>*</sup>		0.126 (0.061) <sup>*</sup>
L. % bonds		0.050 (0.033)		0.053 (0.034)		0.047 (0.033)		0.051 (0.033)
L. log system age		-0.011 (0.012)		-0.012 (0.011)		-0.008 (0.009)		-0.009 (0.009)
L. EAN		0.007 (0.019)		0.007 (0.019)		0.009 (0.018)		0.009 (0.018)
L. PUC		0.007 (0.019)		0.005 (0.018)		0.010 (0.019)		0.008 (0.018)
L. employee contributions		-0.007 (0.115)		-0.017 (0.122)		-0.027 (0.106)		-0.045 (0.107)
L. employer contributions		-0.069 (0.041) <sup>+</sup>		-0.070 (0.040) <sup>+</sup>		-0.065 (0.039)		-0.066 (0.039) <sup>+</sup>
L. log actives		0.003 (0.005)		0.003 (0.004)				
Observations	711	702	711	702	660	654	660	654
Adjusted R <sup>2</sup>	0.847	0.853	0.847	0.853	0.843	0.851	0.842	0.851

Note: The above is the result of regressing riskless funded ratios on the independent variables. Two-way robust-cluster standard errors in parentheses. Models include state and year fixed effects. GSP = gross state product; EAN = entry age normal; PUC = projected unit credit. <sup>+</sup>p < 0.10, <sup>\*</sup>p < 0.05, <sup>\*\*</sup>p < 0.01, <sup>\*\*\*</sup>p < 0.001.

Table 4. Board membership and log riskless liabilities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Board politicisation	0.025 (0.033)	-0.011 (0.024)						
Board % active	-0.059 (0.038)	-0.062 (0.031) <sup>+</sup>	-0.068 (0.042)	-0.058 (0.031) <sup>+</sup>				
Board % retired	-0.007 (0.047)	-0.080 (0.070)	-0.018 (0.050)	-0.074 (0.066)				
Politicisation institutions					0.079 (0.090)	-0.026 (0.065)		
Active institutions					-0.064 (0.060)	-0.077 (0.046)	-0.092 (0.068)	-0.068 (0.049)
Retired institutions					0.095 (0.071)	-0.009 (0.084)	0.058 (0.070)	0.005 (0.078)
L. log liabilities	0.751 (0.062) <sup>***</sup>	0.688 (0.079) <sup>***</sup>	0.758 (0.058) <sup>***</sup>	0.688 (0.079) <sup>***</sup>	0.740 (0.064) <sup>***</sup>	0.689 (0.075) <sup>***</sup>	0.750 (0.058) <sup>***</sup>	0.688 (0.075) <sup>***</sup>
L. log assets	0.234 (0.061) <sup>***</sup>	0.286 (0.083) <sup>**</sup>	0.229 (0.058) <sup>***</sup>	0.287 (0.083) <sup>**</sup>	0.250 (0.068) <sup>***</sup>	0.290 (0.079) <sup>***</sup>	0.238 (0.059) <sup>***</sup>	0.292 (0.077) <sup>***</sup>
Divided government	0.008 (0.033)	0.009 (0.034)	0.008 (0.033)	0.009 (0.034)	0.034 (0.030)	0.043 (0.030)	0.036 (0.029)	0.042 (0.030)
Polarisation	-0.133 (0.079) <sup>+</sup>	-0.129 (0.069) <sup>+</sup>	-0.132 (0.077) <sup>+</sup>	-0.130 (0.070) <sup>+</sup>	-0.171 (0.092) <sup>+</sup>	-0.158 (0.079) <sup>+</sup>	-0.167 (0.090) <sup>+</sup>	-0.160 (0.081) <sup>+</sup>
Divided government × polarisation	0.001 (0.025)	-0.000 (0.024)	0.001 (0.025)	-0.000 (0.025)	-0.012 (0.021)	-0.018 (0.021)	-0.013 (0.020)	-0.017 (0.021)
% Republic legislative	0.056 (0.118)	-0.033 (0.133)	0.056 (0.118)	-0.031 (0.133)	0.057 (0.134)	-0.025 (0.148)	0.058 (0.133)	-0.024 (0.149)
Legislative professionalism	-0.008 (0.020)	-0.009 (0.023)	-0.008 (0.020)	-0.009 (0.023)	-0.003 (0.022)	-0.005 (0.026)	-0.003 (0.023)	-0.004 (0.026)
Union coverage	-0.207 (0.120) <sup>+</sup>	-0.260 (0.136) <sup>+</sup>	-0.212 (0.120) <sup>+</sup>	-0.255 (0.134) <sup>+</sup>	-0.254 (0.133) <sup>+</sup>	-0.313 (0.140) <sup>*</sup>	-0.260 (0.133) <sup>+</sup>	-0.308 (0.141) <sup>*</sup>
Social security	0.007 (0.019)	0.039 (0.026)	0.004 (0.017)	0.038 (0.027)	-0.004 (0.022)	0.024 (0.026)	-0.008 (0.019)	0.023 (0.026)
Teacher	0.044 (0.018) <sup>*</sup>	0.044 (0.017) <sup>*</sup>	0.043 (0.018) <sup>*</sup>	0.044 (0.018) <sup>*</sup>	0.035 (0.017) <sup>*</sup>	0.035 (0.013) <sup>*</sup>	0.034 (0.016) <sup>*</sup>	0.036 (0.014) <sup>*</sup>
Public safety	0.017 (0.020)	0.015 (0.020)	0.019 (0.018)	0.014 (0.019)	0.014 (0.020)	0.010 (0.019)	0.016 (0.018)	0.010 (0.019)
L. income per capita	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
L. state debt/GSP	-0.328 (0.611)	-0.259 (0.664)	-0.325 (0.610)	-0.262 (0.662)	-0.226 (0.682)	-0.193 (0.748)	-0.215 (0.680)	-0.194 (0.745)
L. discount rate		0.068 (0.036) <sup>+</sup>		0.067 (0.036) <sup>+</sup>		0.068 (0.032) <sup>*</sup>		0.068 (0.032) <sup>*</sup>
L. market valuation		0.044 (0.025) <sup>+</sup>		0.042 (0.025)		0.029 (0.029)		0.027 (0.030)
L. investment returns		0.351 (0.132) <sup>*</sup>		0.350 (0.132) <sup>*</sup>		0.387 (0.144) <sup>*</sup>		0.385 (0.143) <sup>*</sup>
L. % equities		0.012 (0.082)		0.010 (0.081)		-0.035 (0.079)		-0.037 (0.078)
L. % real estate		-0.024 (0.171)		-0.034 (0.172)		-0.063 (0.170)		-0.074 (0.174)
L. % alternatives		-0.206 (0.111) <sup>+</sup>		-0.210 (0.111) <sup>+</sup>		-0.237 (0.120) <sup>+</sup>		-0.242 (0.118) <sup>*</sup>
L. % bonds		-0.104 (0.063)		-0.099 (0.065)		-0.112 (0.056) <sup>+</sup>		-0.107 (0.060) <sup>+</sup>
L. log system age		0.038 (0.023)		0.036 (0.021) <sup>+</sup>		0.037 (0.024)		0.035 (0.022)
L. EAN		0.003 (0.034)		0.002 (0.034)		-0.003 (0.031)		-0.005 (0.031)
L. PUC		0.029 (0.040)		0.027 (0.040)		0.022 (0.034)		0.018 (0.033)
L. employee contributions		0.407 (0.259)		0.392 (0.258)		0.416 (0.223) <sup>+</sup>		0.387 (0.221) <sup>+</sup>
L. employer contributions		0.220 (0.090) <sup>*</sup>		0.219 (0.090) <sup>*</sup>		0.197 (0.086) <sup>*</sup>		0.195 (0.086) <sup>*</sup>
L. log actives		0.004 (0.014)		0.004 (0.013)				
Observations	711	702	711	702	660	654	660	654
Adjusted R <sup>2</sup>	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992

Note: The above is the result of regressing riskless log riskless liabilities on the independent variables.

Two-way robust-cluster standard errors in parentheses. Models include state and year fixed effects.

GSP = gross state product; EAN = entry age normal; PUC = projected unit credit.

<sup>+</sup>p < 0.10, <sup>\*</sup>p < 0.05, <sup>\*\*</sup>p < 0.01, <sup>\*\*\*</sup>p < 0.001.

Table 5. Board membership and log assets

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Board politicisation	-0.009 (0.013)	-0.016 (0.011)						
Board % active	0.017 (0.019)	0.002 (0.022)	0.020 (0.021)	0.007 (0.022)				
Board % retired	-0.082 (0.033)*	-0.114 (0.052)*	-0.078 (0.036)*	-0.105 (0.052)*				
Politicisation institutions					-0.023 (0.035)	-0.060 (0.030)*		
Active institutions					0.058 (0.030) <sup>+</sup>	0.030 (0.037)	0.066 (0.032)*	0.049 (0.034)
Retired institutions					-0.061 (0.051)	-0.097 (0.066)	-0.051 (0.050)	-0.065 (0.061)
L. log liabilities	0.068 (0.022)**	0.064 (0.029)*	0.065 (0.021)**	0.063 (0.030)*	0.072 (0.025)**	0.072 (0.031)*	0.070 (0.022)**	0.070 (0.031)*
L. log assets	0.920 (0.019)***	0.903 (0.025)***	0.922 (0.017)***	0.904 (0.025)***	0.914 (0.022)***	0.908 (0.027)***	0.918 (0.019)***	0.914 (0.026)***
Divided government	-0.020 (0.016)	-0.021 (0.015)	-0.020 (0.016)	-0.021 (0.015)	-0.024 (0.017)	-0.027 (0.016) <sup>+</sup>	-0.024 (0.017)	-0.029 (0.016) <sup>+</sup>
Polarisation	-0.071 (0.036) <sup>+</sup>	-0.083 (0.037)*	-0.072 (0.036) <sup>+</sup>	-0.084 (0.037)*	-0.057 (0.043)	-0.064 (0.045)	-0.058 (0.043)	-0.069 (0.045)
Divided government x polarisation	0.013 (0.011)	0.013 (0.010)	0.013 (0.011)	0.013 (0.010)	0.014 (0.012)	0.016 (0.010)	0.014 (0.012)	0.017 (0.010)
% republic legislative	-0.006 (0.073)	0.013 (0.079)	-0.006 (0.074)	0.016 (0.080)	-0.029 (0.077)	-0.007 (0.081)	-0.030 (0.078)	-0.005 (0.083)
Legislative professionalism	-0.005 (0.008)	-0.010 (0.009)	-0.005 (0.008)	-0.010 (0.010)	-0.001 (0.013)	-0.007 (0.015)	-0.001 (0.013)	-0.006 (0.015)
Union coverage	-0.028 (0.088)	-0.042 (0.094)	-0.026 (0.088)	-0.035 (0.094)	-0.058 (0.098)	-0.067 (0.104)	-0.056 (0.098)	-0.056 (0.104)
Social security	-0.019 (0.008)*	0.002 (0.014)	-0.018 (0.008)*	0.001 (0.013)	-0.026 (0.009)**	-0.004 (0.013)	-0.025 (0.009)*	-0.006 (0.012)
Teacher	0.002 (0.008)	-0.009 (0.010)	0.002 (0.008)	-0.009 (0.010)	-0.000 (0.007)	-0.006 (0.008)	0.000 (0.007)	-0.005 (0.008)
Public safety	0.006 (0.009)	-0.002 (0.008)	0.005 (0.009)	-0.003 (0.008)	0.006 (0.010)	0.002 (0.009)	0.006 (0.010)	0.001 (0.010)
L. income per capita	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000) <sup>+</sup>	0.000 (0.000)	0.000 (0.000) <sup>+</sup>	0.000 (0.000)
L. state debt/GSP	0.910 (0.414)*	0.801 (0.427) <sup>+</sup>	0.909 (0.414)*	0.797 (0.426) <sup>+</sup>	1.074 (0.424)*	0.943 (0.449)*	1.071 (0.425)*	0.940 (0.455)*
L. discount rate		-0.020 (0.013)		-0.021 (0.014)		-0.020 (0.012)		-0.020 (0.012)
L. market valuation		-0.022 (0.015)		-0.025 (0.016)		-0.030 (0.015) <sup>+</sup>		-0.034 (0.015)*
L. investment returns		-0.013 (0.032)		-0.014 (0.032)		-0.003 (0.034)		-0.007 (0.033)
L. % equities		0.025 (0.038)		0.024 (0.038)		0.007 (0.040)		0.002 (0.040)
L. % real estate		0.080 (0.095)		0.066 (0.094)		0.035 (0.088)		0.011 (0.089)
L. % alternatives		0.020 (0.061)		0.014 (0.061)		0.041 (0.064)		0.030 (0.063)
L. % bonds		-0.028 (0.029)		-0.022 (0.028)		-0.038 (0.029)		-0.026 (0.024)
L. log system age		0.009 (0.012)		0.007 (0.012)		0.010 (0.012)		0.006 (0.012)
L. EAN		0.003 (0.017)		0.002 (0.017)		-0.001 (0.015)		-0.004 (0.015)
L. PUC		0.023 (0.026)		0.020 (0.026)		0.021 (0.023)		0.013 (0.021)
L. employee contributions		0.570 (0.172)**		0.549 (0.169)**		0.492 (0.167)**		0.427 (0.170)*
L. employer contributions		0.068 (0.014)***		0.068 (0.015)***		0.038 (0.015)*		0.034 (0.017) <sup>+</sup>
L. log actives		0.018 (0.006)**		0.018 (0.006)**				
Observations	716	702	716	702	665	654	665	654
Adjusted R <sup>2</sup>	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997

Note: The above is the result of regressing log assets on the independent variables. Two-way robust-cluster standard errors in parentheses. Models include state and year fixed effects. GSP = gross state product; EAN = entry age normal; PUC = projected unit credit. \*p < 0.10, \*\*p < 0.05, \*\*\*p < 0.001.

significantly fewer assets in the noninstrumented models. This could mean that they affect some plan characteristics, even if they do not affect the overall funded status.

The other political variables do not appear to play major roles. Polarisation is associated with fewer assets and liabilities, although only at the 10% level in most models. This could be owing to the more direct influence of boards, as well as the fact that pensions have historically been popular with both parties (Anzia and Moe 2017). Unionisation also is not significantly related to funded status, but is associated with fewer liabilities. This seems to counter the expectation that increased union coverage drives up liabilities across plans within states, at least.

In terms of occupations, plans covering teachers tend to have worse funded ratios within states. Specifically, they are associated with significantly more liabilities, but not more assets. In comparison, public safety plans' effects are insignificant. It may well be the case that teachers' unions have been more successful securing larger benefits for employees, leading to greater liabilities.

Many of the plan policies also appear to influence these variables. The lagged discount rate has a negative and significant relationship with funded ratios. This reflects the fact that higher discount rates are further removed from the riskless rates, meaning that plans arguably tend to understate liabilities. Thus, higher prior-year discount will be positively associated with riskless liabilities and, in turn, reduced funded ratios. More unnerving, though, is that higher discount rates are not associated with larger assets in the following year. This relationship exists irrespective of the board variable included in each model.

Market valuation is associated with lower funded levels, as well as with somewhat greater log assets and smaller log liabilities. Investment returns are associated with worse funded levels and greater liabilities. Funded ratios also improve with additional investments in alternatives, whereas liabilities shrink (at the 10% level). However, they compose a very small portion of plans' overall investing, so it is difficult to state with certainty whether plans should engage in more of this behaviour.

Employer contributions are associated with significantly larger liabilities and assets, although more of the former than the latter, negatively contributing to funded ratios. Employee contributions, in comparison, are associated with more of both assets and liabilities, contributing to an overall null effect on the funded ratio. Although this may seem surprising, higher employer contributions usually reflect attempts to make up for historically lower funded ratios. Thus, it is clear that although boards influence some of these variables, numerous other policy, political and economic factors also exercise influence, constraining boards' powers.

## Discussion

Historically, elected officials have used pensions as tools to reward employees while keeping visibility and taxes low. However, doing so involves pushing costs into the future, creating a fiscal management problem that will have to be dealt with at some point. The descriptive statistics and regression results highlight several fundamental challenges faced by pensions. Funded levels have decreased with time, and not just in response to the 2008 economic downturn. States frequently fail to make their full contributions into funds, whereas employee contributions rarely budge. Public discount rates also are systematically higher than plans' actual returns. When controlling for other factors, investment returns have a null relationship with discount rates. Discount rates similarly have an insignificant relationship with assets, highlighting a disconnect between plans' assumptions and the amount of money they have on hand.

Market valuation tends to reduce funded ratios, and as a consequence very few plans opt to use it. Although there may be good reasons to stick with the self-reported ratios currently popular with plans, the concerns raised by Novy-Marx and Rauh (2009) and others make it more likely that plans would provide more thorough pictures by reporting riskless measures, as well. Currently, though, plans do not seem in any rush to do so. Finally, as plans turn to investments to cover costs, there is little evidence that any sort of strategy will pay off with certainty, which is simply a reality of the market.

These facts highlight just some of pensions' challenges. Given this, I wonder how board governance both responds and contributes to this situation. Not a great deal of work has pointed to variation in management boards. Although boards do not experience drastic changes over time, they do occasionally shift in ways that reflect features of plans, politics and their local economies. I find that all three board variables change in response to the number of active employees covered by plans. Although there is no evidence that legislative gridlock affects board membership ratios, there is some evidence that polarisation is associated with greater political control. As polarisation grows in various state legislatures, it will be useful to examine its continued effects on boards and plan governance. Although it is tempting to blame fiscal problems on polarisation, polarised but united governments might potentially be in the best positions to muster the political will to tackle pensions' longer-term costs.

I also show that boards shape discount rates and funded levels. I do so both with a more straightforward OLS approach and using lagged log board composition as an IV for board composition. Both sets of results show that boards with greater portions of active employees contribute to

lower discount rates, whereas more retired trustees contribute to higher ones. The Appendix also shows additional ways in which boards influence pension policy. Active board members also have a significant relationship with board funded levels and their components, whereas retired boards have fewer assets.<sup>47</sup>

The results show that although boards matter, they also do not act in a vacuum. The same forces that shape pension policies sometimes also shape boards. Institutional stickiness also tends to keep plan features consistent over time, which can serve as a source of autonomy, but also limit boards' abilities to make more changes to remedy the problems listed above. While my inferences rely on observational data, and are unlikely to be as good as those made under random assignment, my approach expands on earlier literature in important ways, and provides new insight into pension governance.

## Conclusion

As pensions' costs grow over the next several decades, governments will need to figure out ways to manage funds in a more sustainable manner, while using more realistic actuarial assumptions and contributing greater money into plans. As it stands, growing costs add to states' general deficits, harm credit ratings, constrain the ability to borrow money or fund other programmes and potentially discourage employee recruitment and retention. Thus, there is a key tension between fiscal sustainability and pensions' personnel purposes. Even as I focus on the US, these tensions exist in public-sector pensions internationally, as well. While the national government could step in to regulate state-plan policy, it has not chosen to do so. Plans vary extensively across and within states, as well as over time.

Using original data collected from most major state pension plans from 2001 to 2011, I ask what factors drive variation in pension management boards and governance outcomes. My approach pays close attention to key features of plans' political and institutional landscapes. Much of the existing literature on pensions focuses on actuarial characteristics or labour market incentives, but pays little attention to the politics (Lazear 1979; Ippolito 1987; Hsin and Mitchell 1997; Munnell and Sunden 2001; Novy-Marx and Rauh 2009). At the same time, political science tends to focus more broadly on the politicisation of bureaucratic employees (Hecl 1975; Gilmour and Lewis 2006; Lewis 2007), but ignore pensions as critical administrative and policy tools within state and local governments.

<sup>47</sup> Retired board members are also associated with smaller next-year funded ratios in some of the models in the Appendix.

I consider board membership with three constructs: the percent of the board that is politicised, and the active and retired status of board members. Interestingly, the size of active employee membership within plans significantly predicts all three variables, suggesting that employees exercise more influence over policy as their numbers grow. Additionally, there is some evidence that polarisation contributes to greater politicisation of pension boards, which could reflect parties' attempts to gain more control over the levers of government. State economies also seem to impact board composition. Otherwise, boards seem mostly insulated from political forces. Although politicians do control board composition, there is little evidence that they "reign in" membership in response to specific plan outcomes, such as low funded ratios or poor investment returns.

Following that, I show that boards matter for pension governance, although in specific ways. Boards with more active employees utilise smaller discount rates, whereas those with more retired employees use larger ones. Funded ratios also improve, on average, as boards have more active employees. There is some evidence that such boards are associated with greater assets and fewer liabilities, as well. Retirees on boards also contribute to reduced assets.<sup>48</sup> Thus, boards do offer states an opportunity to shape pension governance.

At the same time, though, boards also *fail* to matter in numerous ways. Politicisation seems to have little impact on discount rates or funded ratios. No type of board does better at improving the matching between investment returns and discount rates, either. Both in the US and abroad, it is unlikely that bureaucratic decisionmaking absent significant political reform will be sufficient to keep pensions running smoothly. Governments should see boards for what they are: quasi-autonomous management institutions that implement some legislative policies, and set others. They are constrained by many forces, and not likely to rock the boat.

Anzia and Moe (2017) present a useful complement to my research, focussing on how partisan politics have led to variation in pension legislation. They find no major partisan differences before the 2008 economic crisis. I also find no partisan effect on funded ratios. However, they maintain that the 2008 crisis helped politicise the issue, leading to some sorting in which Republicans made more cuts than Democrats. In comparison, analysts at Morningstar and Moody's recently have argued that there is no clear red-blue pattern addressing pensions' problems (Balz 2013). The issue is far from settled, but it certainly seems possible that parties could polarise over pensions in future years.<sup>49</sup>

<sup>48</sup> In the Appendix, I show that boards affect additional governance outcomes.

<sup>49</sup> As stated earlier, I show additional support for the role of polarisation on politicisation in the Appendix. This may well suggest that polarisation will lead to more marked changes in pensions over time.

Future work should pay greater attention to boards' roles in the pension policy process. Scholars should more closely look at how boards make their decisions, affect policies and navigate their particular political environments. It also would be useful to measure board tenure and turnover, so as to analyse their effects on pension governance. Aside from that, we could better understand the connections between board composition and state-government personnel: are workers more likely to remain in their jobs when there are more active employees on pension boards? Such work also could analyse pensions through surveys of current and potential bureaucrats. Last, it would be useful to better understand how these forces play out in public-sector pensions in other countries, which would offer additional sources of institutional variation. As time passes, we will gain a better understanding into the nonstatic nature and consequences of pension governance.

As governments consider reforming pensions, they should think carefully about management boards, which play key roles in shaping plan policy. Many of these actors remain on boards for years, and make decisions that are somewhat behind the scenes. Given the size of pensions' liabilities and assets, and the degree to which pensions rely on investments, these board members exert real influence. At the same time, boards are constrained by political, policy and economic factors. They are not up to the task of fixing pensions' policy problems alone. Dealing with pensions' most fundamental challenges will require broader political will that goes beyond the scope of boards' powers.

### Acknowledgements

The author thanks Sean Gailmard, Sarah Anzia, Paul Pierson, Margaret Weir, Anthony Bertelli, John Henderson, Robert Van Houweling, Phillip Rocco, Christopher Goodman, Doug Ahler, Jason Anastasopoulos and Stephen Goggin for comments and advice on this article. Additionally, the author thanks the Center for Retirement Research at Boston College for providing data on states' plans and actuarial information. All errors are my own.

### Supplementary material

To view supplementary material for this article, please visit <https://doi.org/10.1017/S0143814X17000241>

### References

- Anzia S. F. and Moe T. M. (2017) Polarization and Policy: The Politics of Public-Sector Pensions. *Legislative Studies Quarterly* 42(1): 33–62.



- Arnold R. D. (1992) *The Logic of Congressional Action*. New Haven, CT: Yale University Press.
- Balz D. (2013) Red, Blue States Move in Opposite Directions in a New Era of Single-Party Control. *Washington Post*, Washington, DC, December 28, 2013.
- Ban C. and Ingraham P. W. (1990) Short-Timers: Political Appointee Mobility and its Impact on Political-Career Relations in the Reagan Administration. *Administration & Society* 22(1): 106–124.
- Barber B. M. (2009) Pension Fund Activism: The Double-Edged Sword. In Mitchell O. S. and Anderson G. (eds), *The Future of Public Employee Retirement Systems*. New York, NY: Oxford University Press, 271–293.
- Bartel A. and Lewin D. (1981) Wages and Unionism in the Public Sector: The Case of Police. *The Review of Economics and Statistics* 63(1): 53–59.
- Binder S. A. (2003) *Stalemate: Causes and Consequences of Legislative Gridlock*. Washington, DC: Brookings Institution Press.
- Butt A. (2012) Causes of Defined Benefit Pension Scheme Funding Ratio Volatility and Average Contribution Rates. *Annals of Actuarial Science* 6(1): 76–102.
- CalPERS (2015) CalPERS Board Members, <https://www.calpers.ca.gov/page/about/board/board-members> (accessed 18 November 2015).
- Cameron A. C. and Miller D. L. (2015) A Practitioner’s Guide to Cluster-Robust Inference. *Journal of Human Resources* 50(2): 317–372.
- Carey J. M., Niemi R. G. and Powell L. W. (2000) Incumbency and the Probability of Reelection in State Legislative Elections. *Journal of Politics* 62(3): 671–700.
- Carpenter D. P. (2001) *The Forging of Bureaucratic Autonomy: Reputations, Networks, and Policy Innovation in Executive Agencies, 1862–1928*. Princeton, NJ: Princeton University Press.
- Cayer J. N. (1998) Employee Benefits: From Health Care to Pensions. In Condrey S. E. (ed.), *Handbook of Human Resource Management in Government*. San Francisco, CA: Josey-Bass Inc. Publishers, 658–675.
- Clark R. L., Craig L. A. and Ahmed N. (2009) The Evolution of Public Sector Pension Plans in the United States. In Mitchell O. S. and Anderson G. (eds.), *The Future of Public Employee Retirement Systems*. New York, NY: Oxford University Press, 239–270.
- Clark R. L., Craig L. A. and Wilson J. W. (2003) *A History of Public Sector Pensions in the United States*. Philadelphia, PA: University of Pennsylvania Press.
- Converse P. E. (1964) The Nature of Belief Systems in Mass Publics. *Critical Review* 18(1–3): 1–74.
- Cooper M. and Walsh M. W. (2011) Public Pensions, Once Of Limits, Face Budget Cuts. *New York Times*, New York, NY, August, <http://www.nytimes.com/2011/04/26/us/26pensions.html?r=0> (accessed 14 January 2013).
- Devins N. and Lewis D. E. (2008) Not-So Independent Agencies: Party Polarization and the Limits of Institutional Design. *Boston University Law Review* 88(2): 459–498.
- Eaton T. V. and Nofsinger J. R. (2004) The Effect of Financial Constraints and Political Pressure on the Management of Public Pension Plans. *Journal of Accounting and Public Policy* 23(3): 161–189.
- Epstein D. and O’Halloran S. (1999) Asymmetric Information, Delegation, and the Structure of Policy-Making. *Journal of Theoretical Politics* 11(1): 37–56.
- Fiorina M. P. (1992) An Era of Divided Government. *Political Science Quarterly* 107(3): 387–410.
- Gilmour J. B. and Lewis D. E. (2006) Does Performance Budgeting Work? An Examination of the Office of Management and Budget’s PART Scores. *Public Administration Review* 66(5): 742–752.

- Gold J. and Latter G. (2009) The Case for Marking Public Plan Liabilities to Market. In Mitchell O. S. and Anderson G. (eds.), *The Future of Public Employee Retirement Systems*. New York, NY: Oxford University Press, 29–57.
- Government Accounting Standards Board (2006) Why Government Accounting and Financial Reporting Is-And Should be-Dierent. White Paper, <http://www.gasb.org/cs/ContentServer?c=DocumentC&pagename=GASB/%2FDocumentC/%2FGASBDocumentPage&cid=1176162354189> (accessed 15 February 2013).
- Hall P. A. and Soskice D. W. (2001) An Introduction to Varieties of Capitalism. In Hall P.A. and Soskice D. W. (eds.), *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. New York, NY: Oxford University Press, 1–68.
- Heclo H. (1975) OMB and the Presidency – The Problem of Neutral Competence. *Public Interest* 38: 80–98.
- Heclo H. (1977) *A Government of Strangers: Executive Politics in Washington*. Washington, DC: Brookings Institution Press.
- Hess D. (2005) Protecting and Politicizing Public Pension Fund Assets: Empirical Evidence on the Effects of Governance Structures and Practices. *UC Davis Law Review* 39: 187–227.
- Hess F. M. and Squire J. P. (2010) “But the Pension Fund Was Just SITTING There...?: The Politics of Teacher Retirement Plans. *Education* 5(4): 587–616.
- Hirsch B. T. and Macpherson D. A. (2003) Union Membership and Coverage Database from the Current Population Survey: Note. *Industrial and Labor Relations Review* 56(2): 349–354.
- Hsin P. L. and Mitchell O. S. (1997) Managing Public-Sector Pensions. *Public Policy Toward Pensions* 36(8): 247.
- Hunter W. J. and Rankin C. H. (1988) The Composition of Public Sector Compensation: The Effects of Unionization and Bureaucratic Size. *Journal of Labor Research* 9(1): 29–42.
- Immergut E. M. and Abou-Chadi T. (2014) How Electoral Vulnerability Affects Pension Politics: Introducing a Concept, Measure and Empirical Application. *European Journal of Political Research* 53(2): 269–287.
- Inman R. P. (1981) “Municipal Pension Funding: A Theory and Some Evidence” by Dennis Epple and Katherine Schipper. *Public Choice* 37(1): 179–187.
- Ippolito R. A. (1987) Why Federal Workers Don’t Quit. *The Journal of Human Resources* 22(2): 281–299.
- Ippolito R. A. (1997) *Pension Plans and Employee Performance*. Chicago, IL: University of Chicago Press.
- Johnson R. W. (1997) Pension Underfunding and Liberal Retirement Benefits Among State and Local Government Workers. *National Tax Journal* 50(1): 113–142.
- Jones D. R. (2001) Party Polarization and Legislative Gridlock. *Political Research Quarterly* 54(1): 125–141.
- Keele L. and Kelly N. J. (2005) Dynamic Models for Dynamic Theories: The Ins and Outs of Lagged Dependent Variables. *Political Analysis* 14(2): 186–205.
- Lazear E. P. (1979) Why is There Mandatory Retirement? *Journal of Political Economy* 87(6): 1261–1284.
- Lee S.-Y. and Whitford A. B. (2008) Exit, Voice, Loyalty, and Pay: Evidence from the Public Workforce. *Journal of Public Administration Research and Theory* 18(4): 647–671.
- Lewis D. E. (2007) Testing Pendleton’s Premise: Do Political Appointees Make Worse Bureaucrats? *Journal of Politics* 69(4): 1073–1088.
- Mactas M. V. (1992) Is Your State Underfunding Your Pension Plan?. In Brzezinski M. J. (ed.), *Public Employee Benefit Plans*. Brookfield, WI: International Federation of Employee Benefit Plans.

- Matkin D. S. T., Chen G. and Khalid H. (2016) The Governance of Public Pensions. *Administration & Society* 1–29.
- Mayhew D. R. (1991) *Divided We Govern*. New Haven, CT: Yale University Press.
- McCubbins M. D. and Schwartz T. (1984) Congressional Oversight Overlooked: Police Patrols Versus Fire Alarms. *American Journal of Political Science* 28(1): 165–179.
- Moe T. M. (1982) Regulatory Performance and Presidential Administration. *American Journal of Political Science* 26(2): 197–224.
- Moe T. M. (1985) Control and Feedback in Economic Regulation: The Case of the NLRB. *American Political Science Review* 79(4): 1094–1116.
- Moe T. M. (1989) The Politics of Bureaucratic Structure. In Chubb J. E. and Peterson P. E. (eds.), *Can the Government Govern?*. Washington, DC: The Brookings Institution, 267–329.
- Moe T. M. (1990) Political Institutions: The Neglected Side of the Story. *Journal of Law, Economics & Organization* 6: 215–253.
- Munnell A. H., Aubry J.-P. and Quinby L. (2011) Public Pension Funding in Practice. *Journal of Pension Economics and Finance* 10(2): 247–268.
- Munnell A. H., Haverstick K. and Aubry J.-P. (2008) Why Does Funding Status Vary Among State and Local Plans?. Center for Retirement Research at Boston College, [http://crr.bc.edu/wp-content/uploads/2008/05/slp\\_6-508.pdf](http://crr.bc.edu/wp-content/uploads/2008/05/slp_6-508.pdf) (accessed 3 April 2011).
- Munnell A. H. and Sunden A. E. (2001) Investment Practices of State and Local Pension Funds: Implications for Social Security Reform. In Mitchell O. S. and Hustead E. C. (eds.), *Pensions in the Public Sector*. Philadelphia, PA: Pension Research Council & University of Pennsylvania Press, 153–194.
- Nickell S. (1981) Biases in Dynamic Models With Fixed Effects. *Econometrica* 49(6): 1417–1426.
- Novy-Marx R. and Rauh J. D. (2009) The Liabilities and Risks of State-Sponsored Pension Plans. *The Journal of Economic Perspectives* 23(4): 191–210.
- Novy-Marx R. and Rauh J. D. (2011) Public Pension Promises: How Big Are They and What Are They Worth? *The Journal of Finance* 66(4): 1211–1249.
- Peng J. (2004) Public Pension Funds and Operating Budgets: A Tale of Three States. *Public Budgeting and Finance* 24(2): 59–73.
- Pierson P. (1996) The New Politics of the Welfare State. *World Politics* 48(2): 143–179.
- Romano R. (1993) Public Pension Fund Activism in Corporate Governance Reconsidered. *Columbia Law Review* 93(4): 795–853.
- Schneider M. and Damanpour F. (2002) Public Choice Economics and Public Pension Plan Funding: An Empirical Test. *Administration & Society* 34(1): 57–86.
- Shor B. and McCarty N. (2011) The Ideological Mapping of American Legislatures. *American Political Science Review* 105(3): 530–551.
- Snyder S. K. and Weingast B. R. (2000) The American System of Shared Powers: The President, Congress, and the NLRB. *Journal of Law, Economics, and Organization* 16(2): 269–305.
- Stock J. H. and Yogo M. (2005) Testing for Weak Instruments in Linear IV Regression. In Stock J. H. and Andrews D. W. K. (eds.), *Identification and Inference for Econometric Models*. Cambridge, UK: Cambridge University Press, 80–108.
- Sundquist J. L. (1992) *Constitutional Reform and Effective Government*. Washington, DC: Brookings Institution Press.
- US Government Accountability Office (2008) State and Local Government Retiree Benefits: Current Funded Status of Pension and Benefit Plans. Technical Report, Washington, DC, <http://www.gao.gov/new.items/d08223.pdf> (accessed 20 December 2010).
- Wagner G. A. (2001) Political Control and Public Sector Savings: Evidence from the States. *Public Choice* 109(1): 149–173.

- Wahal S. (1996) Pension Fund Activism and Firm Performance. *Journal of Financial and Quantitative Analysis* 31(1): 1–23.
- Weaver R. K. (1986) The Politics of Blame Avoidance. *Journal of Public Policy* 6(4): 371–398.
- Wilson J. Q. (1989) *Bureaucracy: What Governments Do and Why They Do It*. New York, NY: Basic Books.
- Wooldridge J. M. (2010) *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.



# State Pension Funds and Corporate Social Responsibility: Do Beneficiaries' Political Values Influence Funds' Investment Decisions?

Andreas G. F. Hoepner<sup>1,2</sup> · Lisa Schopohl<sup>3</sup>

Received: 11 September 2017 / Accepted: 12 December 2018 / Published online: 12 January 2019  
© The Author(s) 2019

## Abstract

This study explores the underlying drivers of US public pension funds' tendency to tilt their portfolios towards companies with stronger corporate social responsibility (CSR). Studying the equity holdings of large, internally managed US state pension funds, we find evidence that the political leaning of their beneficiaries and political pressures by state politicians affect funds' investment decisions. State pension funds from states with Democratic-leaning beneficiaries tilt their portfolios more strongly towards companies that perform well on CSR issues, and this tendency is intensified when the state government is dominated by Democratic state politicians. Moreover, we find that funds which tilt their portfolios towards companies with superior CSR scores generate a slightly higher return compared with their counterparts. Overall, our findings indicate that funds align their investment choices with the financial and non-financial interests of their beneficiaries when deciding whether to incorporate CSR into their equity allocations.

**Keywords** Corporate social responsibility · CSR · Fiduciary duty · Political values · Portfolio decisions · State pension funds · Socially responsible investing

**JEL Classification** G11 · H55 · H75 · M14

## Introduction

With holdings of USD 1.1 trillion in corporate stocks and an average ownership share of 7–8% of the total US equity market over the last decades,<sup>1</sup> US state pension funds are a major market force in the US and global financial markets (Tonello and Rabimov 2010). Their market power is highly concentrated in the largest state pension plans, providing these funds with enormous influence through their holdings of equity positions in large publicly traded companies.<sup>2</sup>

And these funds increasingly use their power to promote positive change in the corporate governance and corporate social responsibility (CSR) performance of their holding companies, including the encouragement of desirable corporate behaviour such as environmental protection and better employment practices, as well as the avoidance of corporate behaviour which their beneficiaries may consider unethical.<sup>3</sup> In particular, several studies document a positive link between the ownership share of US state pension funds and the CSR performance of their portfolio companies (Johnson and Greening 1999; Neubaum and Zahra 2006; Di Giuli and Kostovetsky 2014). Furthermore, by 2013 nine state

✉ Lisa Schopohl  
l.schopohl@icmacentre.ac.uk

Andreas G. F. Hoepner  
andreas.hoepner@ucd.ie

<sup>1</sup> Michael Smurfit Graduate Business School & UCD  
Lochlan Quinn School of Business, University College  
Dublin, Carysfort Avenue, Blackrock, Co. Dublin, Ireland

<sup>2</sup> Mistra Financial Systems, Stockholm School of Economics,  
Box 6501, 113 83 Stockholm, Sweden

<sup>3</sup> ICMA Centre, Henley Business School, University  
of Reading, Reading RG6 6BA, UK

<sup>1</sup> Based on figures from the 2017 Annual Survey of Public Pension Funds, see: <https://www.census.gov/data/tables/2017/econ/aspp/aspp-historical-tables.html>.

<sup>2</sup> According to the 2017 Public Fund Survey, assets worth of around USD 3.68 trillion are centred in the 180 largest funds, comprising 95% of the entire US state and local retirement system. See <http://www.publicfundsurvey.org/>.

<sup>3</sup> We follow Barnea & Rubin (2010) and McWilliams & Siegel (2001) and define CSR as firms' policies and actions with respect to employees, communities and the environment which exceed legal requirements.

and local government pension plans had signed the United Nations-supported Principles for Responsible Investment (PRI) and thereby committed to incorporate aspects of CSR into investment practices, while since 2014 six additional state and local plans joined the PRI.<sup>4</sup>

Relatively little is known about the determinants of state pension funds' preferences for companies with stronger CSR performance, and the research that exists mainly regards public pension funds as one homogeneous investor class with respect to their motivation and propensity for incorporating CSR factors into their investment decisions.<sup>5</sup> However, only few public pension funds have developed an interest in CSR and have taken up leadership roles in promoting responsible investment practices. Hence, the question arises what motivates some US public pension funds to consider their investment targets' CSR when making investment decisions. Following Aguilera et al.'s (2007) conceptual framework, institutional investors may consider CSR due to instrumental reasons, such as improving the financial performance of their portfolios, due to relational reasons based on claims by their stakeholders to account for CSR factors, or due to moral motives as they are guided by their own—or their beneficiaries'—norms and values. While much of the existing CSR literature is concerned with analysing the financial impact of CSR, both on the corporate level as well as for responsible investment strategies,<sup>6</sup> and hence focuses on instrumental motives, surprisingly little is known about the relational and moral drivers of institutional investors' CSR preferences and the question whose morals should be

guiding institutional investors' investment processes. Our study aims to fill this gap by analysing whether US public pension funds' propensity for incorporating CSR into their investment decisions is driven by instrumental, relational or moral motives. To do so, we focus on a sub-group of these funds that due to their strong beneficiary focus and relative independence in decision-making should be most prone and able to incorporate ethics in general and CSR in particular into investment processes (Ryan and Schneider 2002; Cox and Wicks 2011): large, internally managed public pension funds.<sup>7</sup>

From the perspective of business ethics, these so far unexplored relational and moral drivers of public pension funds' investment decisions are particularly relevant when analysing the role of morals in financial markets and the extent to which the incorporation of CSR into investment practices can foster the ethicalisation of investment processes, as argued in Cox and Wicks (2011), and may help to align funds' investment practices with the interests and norms of their beneficiaries. In other words, if not even US public pension funds had a propensity to incorporate ethical considerations into their investment decision-making, then shareholder ethics, at least with regard to large institutional investors, may be considered a contradiction. If US public pension funds, however, are considering ethical aspects in their investment decision-making, then they may be a part or even an engine of the conceptual business revolution “to a more responsible capitalism” observed by Freeman (2017, p. 462) since the 2008 global financial crisis.

Based on Aguilera et al.'s (2007) conceptual framework and a review of the existing literature, we develop three channels that could explain the differences in public pension funds' investment choices. First, drawing on the literature on the impact of political values (Hong and Kostovetsky 2012; Di Giuli and Kostovetsky 2014) and social norms (Cahan et al. 2017) on investment decision-making, public pension funds may be guided by their beneficiaries' attitudes towards CSR, in line with Aguilera et al.'s relational and moral motives for CSR preferences. Hence, they may incorporate CSR criteria into their investment decisions if these are aligned with their beneficiaries' attitudes towards CSR, as measured by beneficiaries' political leaning. We call this the “beneficiaries' interests” channel. Alternatively, state politicians may use the funds' investments as an extended political campaigning tool or policy apparatus to extract personal benefits, as suggested by the literature on political connections and pressures in public pension funds (Romano 1993, 1995; Wang and Mao 2015; Bradley et al. 2016; Andonov

<sup>4</sup> The pension funds that signed the PRI prior to 2013 comprise CalPERS, CalSTRS, Connecticut Retirement Plans and Trust Funds, Illinois State Board of Investments, Los Angeles County Employees Retirement Association, Maryland State Retirement and Pension System, New York City Employees' Retirement System, New York State Common Retirement System, State Universities' Retirement System of Illinois. Several of these funds are also founding and drafting members of the PRI and thus are at the forefront of the responsible investment movement. All of these pension funds are located in states that are predominantly Democratic leaning, as classified by their overall votes in the presidential election from 1996 to 2012 which covers the relevant period of our sample. In addition, since 2014 the Teachers' Retirement System of the City of New York, San Francisco Employees Retirement System, Seattle City Employees' Retirement System, the Employees' Retirement System of the State of Hawaii, the Office of the Illinois State Treasurer, and the City of Chicago (City Treasurer's Office) have become signatories to the PRI. See: <https://www.unpri.org/signatories>.

<sup>5</sup> A notable exception is the study by Wang and Mao (2015) but their findings on public pension funds' environmental and social shareholder activism suggests very different drivers compared to our findings.

<sup>6</sup> For instance, Friede et al. (2015) in their meta-analysis document more than 2000 empirical studies on the financial performance of CSR and responsible investment. See also the critique of Capelle-Blancard, & Monjon (2012) on the current state of the responsible investment literature.

<sup>7</sup> We expand on this point in Section “Investment Processes in US Public Pension Funds” and “Public Pension Funds' Equity Investments and their Preferences for CSR”.

et al. 2018). In this regard, public pension funds may be pressured by state politicians to promote CSR, irrespective of whether its social and environmental objectives align with their beneficiaries' interests. In this case, public pension funds are driven by relational motives, but instead of prioritising beneficiaries' interests, they cater to another of their stakeholders, state politicians. We term this the "political pressures" channel. Finally, public pension funds' propensity to tilt their portfolios towards CSR might be unrelated to any relational or moral factors. Instead, the funds might consider the incorporation of CSR factors as a pure investment strategy to improve funds' portfolio performance in line with findings in the literature that institutional investors and pension funds in particular predominantly focus on the financial impact and the 'business case' of responsible investment (e.g., Petersen and Vredenburg 2009; Himick and Audoussert-Coulier 2016). This channel is based on instrumental motives and is termed the "pure financial motives" channel. In other words, we ask: Are state pension funds reflecting social movements in terms of shifting norms and values among their beneficiaries (Arjaliès 2010; Peattie and Samuels 2018)? Or are they merely playing politics (Wang and Mao 2015; Bradley et al. 2016; Andonov et al. 2018) or optimising financial returns without much ethical reflection?

These three channels have different implications for the drivers of the relation between funds' portfolio allocation decisions and firms' CSR scores, and for the link between funds' portfolio performance and the aggregate CSR score of their portfolio. These different implications allow us to empirically test which of these channels drives funds' incorporation of CSR into investment decisions. Looking at the public equity holdings of 31 large, internally managed US state pension funds, we find that funds with Democratic-leaning beneficiaries tilt their portfolios more strongly towards companies with high CSR scores than their counterparts with predominantly Republican-leaning beneficiaries. Additionally, we show that funds with a Democratic-leaning beneficiary base show a stronger CSR preference if the state government is predominantly affiliated with the Democratic Party. Finally, we document a weakly positive association between the funds' portfolio performance and the portfolio's CSR score. This finding suggests that public pension funds' CSR preferences do not harm fund performance and thus are not detrimental to beneficiaries' financial interests. We interpret these results as indicative that state pension funds incorporate their beneficiaries' political values and attitudes towards CSR into investment choices, consistent with the "beneficiaries' interests" channel.

Our study makes three distinct contributions to the CSR and responsible investment literature. First, while several previous studies have shown a positive link between public pension funds' ownership share and the CSR performance of their investment targets (e.g., Johnson and Greening 1999;

Neubaum and Zahra 2006; Di Giuli and Kostovetsky 2014) and attributed this link to social norms and values that these funds are subjected to (Cox and Wicks 2011; Cahan et al. 2017), these studies do not further investigate how such norms and values might govern pension funds' investment decisions and whose norms and values are considered. We extend this literature by showing that it is funds' beneficiaries' values which determine their responsible investment practices and we provide a channel through which beneficiaries' values and norms can transfer from individuals to the governing body and portfolio management of pension funds, namely via funds' positive screening towards CSR. While the importance of political values in investment decisions has previously been documented for individual mutual fund and hedge fund managers (Hong and Kostovetsky 2012) and in corporate finance for CEOs, and founders and directors (Di Giuli and Kostovetsky 2014), we are the first to analyse how political values and norms play a role in US public pension funds whose institutional characteristics differ considerably from the previously investigated actors. As such our study contributes to a growing body of research in business ethics on the role of morals in markets and the foundations of the ethicalisation of investment practices through responsible investment strategies (see Cox and Wicks 2011; Hoepner and Schopohl 2018) by analysing one channel through which beneficiaries' moral values can affect public pension funds' investment decisions.

Second, we extend the literature on the drivers of state pension funds' investment preferences towards CSR. To the best of our knowledge, only one other study by Wang and Mao (2015) tries to explain the dynamic changes of US public pension funds' investment behaviour in relation to CSR. The authors link public pension funds' probability to submit CSR-related shareholder proposals to the degree of political self-dealing by state politicians on funds' board of trustees, and find that funds act against their beneficiaries' interests. Our study provides a counter point to Wang and Mao (2015). We show that public pension funds' tendency to positively screen for investment targets with stronger CSR is based on moral considerations, reflects their beneficiaries' values and norms, and therefore is aligned with their beneficiaries' interests.

Finally, our study contributes to the debate on the alignment of responsible investment with the fiduciary duties of institutional investors (e.g., Rounds 2005; Freshfields Bruckhaus Deringer 2005; Sethi 2005; Richardson 2007, 2011; Sandberg 2011; Hawley et al. 2014), by providing empirical evidence that US public pension funds can incorporate their beneficiaries' moral and political values into their responsible investment practice without jeopardising beneficiaries' financial interests. Hence, our findings support arguments by Sethi (2005) that public pension funds' responsible investment practices are aligned with their

fiduciary duty, while they do not back concerns expressed by opponents of responsible investment that “social investing subverts a fiduciary’s common-law duty of undivided loyalty” and serves as a “vehicle for political mischief at the expense of the interests of taxpayers” (Rounds 2005, p. 76). As such, we contribute to a discussion in the business ethics literature that argues for a broadening of the interpretation of fiduciary duties and an expansion of the understanding of beneficiaries’ interests beyond purely financial ones to entail beneficiaries’ values and norms (see Richardson 2007, 2009, 2011; Jansson et al. 2014; Hoepner and Schopohl 2018).

The rest of the paper is organised as follows. Section “Literature Review and Hypotheses Development” provides an overview of the existing literature and derives testable hypotheses. Section “Methods” describes the methodological design of our study and the data. In Section “Findings and Discussion of Results”, we present the results of our empirical analyses. We test the robustness of our findings in Section “Robustness Tests”. In Section “Conclusions”, we draw conclusions and discuss the implications of our findings for fiduciary asset management.

## Literature Review and Hypotheses Development

To motivate our empirical analyses, we first review the investment processes in US public pension funds and argue that several institutional features of these funds make them particularly prone to consider CSR in their portfolio allocation, before we discuss the existing empirical evidence on the link between public pension fund equity ownership and firms’ CSR performance. We then derive testable hypotheses regarding the drivers of public pension funds’ preferences for firms with stronger CSR performance, inspired by the conceptual framework of the drivers of CSR preferences developed in Aguilera et al. (2007).

### Investment Processes in US Public Pension Funds

Public pension funds differ significantly from other institutional investors regarding their investment processes and objectives. First, public pension funds are particularly well placed to consider the CSR performance of their portfolio companies due to their long-term investment horizon and their holdings of a significant share in the entire equity market (Ryan and Schneider 2002; Cox and Wicks 2011). The interplay of these two factors makes them especially susceptible to risks that materialise in the long term and that are the result of externalities affecting the whole market. Since CSR factors represent good indicators of such long-term externalities, public pension funds may consider the CSR

performance of their portfolio companies as a way to manage their exposure to these long-term externalities.<sup>8</sup>

Second, public pension funds are governed by a board of trustees which sets funds’ investment policies and is responsible for the appointment of investment managers (Andonov et al. 2018). Through these channels, the board can directly influence the degree to which the fund incorporates responsible investment practices into its investment process (Wang and Mao 2015). Due to the representation of state officials and politicians on public pension funds’ boards, funds’ investment policies may be subject to political influences, more so than corporate pension funds’ policies (Romano 1993; Andonov et al. 2018).

Third, while several of the smaller public pension funds appoint external investment managers for the day-to-day management of their funds, the largest US public pension funds tend to conduct a considerable share of their investment management internally via their own in-house asset managers (Ryan and Schneider 2002; Cox and Wicks 2011). In-house management fundamentally differs from contracted-out, external management. In-house fund managers are salaried employees, their remuneration is usually not closely tied to short-term performance targets, and their sole responsibility and duties lie with their employer. These factors make in-house managers more likely to adopt longer-term and more stable investment approaches such as those associated with CSR (Neubaum and Zahra 2006; Cox et al. 2008) and can ensure that their investment philosophy is aligned with the long-term culture and values of the pension plan and its members (Cox and Wicks 2011).

Finally, US public pension funds are not subject to the same strict fiduciary standards of ERISA as private US pension funds, which—according to the traditional interpretation of ERISA—require funds to purely focus on financial factors and disregard social and environmental concerns from their investment choices (Lydenberg 2007). In comparison, fiduciary standards for US public pension funds are typically based on state regulation and less strictly interpreted (Wang and Mao 2015), potentially offering them greater discretion towards responsible investment.

While these factors suggest that US public pension funds should have greater leeway and be more prone to consider the CSR performance of firms in their investment decisions, the issue whether they indeed tilt their portfolios towards companies with stronger CSR performance remains an empirical question.

<sup>8</sup> Pension funds are considered ‘universal owners’ due to their large size and considerable investment exposure to essentially the entire investment market (Hawley and Williams 2000; Jensen 2002). For universal owners, externalities of some of their portfolio companies are not ‘true’ externalities due to the negative effects on other holding companies.



## Public Pension Funds' Equity Investments and Their Preferences for CSR

The first study documenting differences among institutional investor classes in their preferences for firms' CSR performance is by Johnson and Greening (1999). Analysing the link between the equity ownership of different investors and the investment target's CSR performance as measured by KLD (now MSCI ESG) ratings, the authors find a positive relation between the percentage of a firm's equity owned by US public pension funds and the firm's CSR performance, while the ownership share by mutual funds and investment banks shows no significant link to firms' CSR factors. Since then, findings presented in Neubaum and Zahra (2006) and Di Giuli and Kostovetsky (2014) have confirmed the positive link suggesting that firms that do well on CSR dimensions are significantly more likely to be owned by public pension funds.

However, several studies cast doubt on the unequivocal preference of US public pension funds for firms with good CSR performance. For instance, Barnea and Rubin (2010), using the same data sources as Johnson and Greening (1999), document a negative relation between public pension fund ownership and a firm's CSR performance as measured by a firm's net CSR score, i.e., its CSR strengths over its CSR weaknesses. In addition, Cox and Schneider (2010) analyse the equity holdings of US state pension funds in UK public companies and find no significant relationship between the ownership by US state pension funds and a firm's CSR performance. The authors, therefore, conclude that the overseas investments of US state pension funds are predominantly driven by financial considerations and less by firms' CSR credentials. Finally, results presented in Cox and Wicks (2011) point towards the importance of internal versus external investment management in affecting funds' propensity towards CSR factors. The authors find that CSR plays a primary role in the share selection decisions for internally managed public pension funds, while for externally managed funds CSR considerations carry less weight.

Overall, the review of the literature provides mixed results regarding the link between public pension funds' equity holdings and firms' CSR performance and raises the question whether US public pension funds might differ in the extent to which they incorporate CSR factors into investment decisions. In the next section, we suggest three alternative explanations why some pension funds might show a propensity for CSR factors, and we derive hypotheses to empirically test which of these channels may explain CSR-related equity allocations of a sample of large, internally managed US state pension funds.

## Hypotheses Development

### Beneficiaries' Interests Channel

Aguilera et al. (2007) suggest that CSR interests at the institutional level can be driven by relational and moral motives as institutional actors aim to act according to their stewardship duties and aim to reflect the higher-order values and norms of their stakeholders and society. In terms of institutional investors, Cahan et al. (2017) argue that such moral drivers are behind the positive CSR screening practices of certain norm-constrained investors, such as public pension funds. However, the authors do not empirically analyse how such norms affect investors' portfolio allocations and whose norms are considered by these institutions.

For the case of public pension funds, their fiduciary duty defines whose interests should be given priority to as it obliges these funds to make investment decisions in the best interests of their beneficiaries. Hence, Barber (2007) argues that if public pension funds are to incorporate companies' CSR performance into their investment choices, they should align their investment allocations with the moral norms and political values of their beneficiaries, but should not forgo beneficiaries' financial objectives.<sup>9</sup> In other words, if public pension funds were to oblige by their beneficiaries' interests and values, they should only incorporate CSR considerations into their portfolio allocations if they are in the interests of their beneficiaries, i.e., in line with beneficiaries' norms and values and not detrimental to funds' portfolio performance. We call this the "beneficiaries' interests" channel.

Attempting to measure attitudes towards CSR, several studies have shown that the political leaning of individuals is significantly linked to their propensity for incorporating environmental and social factors into investment decisions. For instance, Di Giuli and Kostovetsky (2014) show that firms with Democratic-leaning CEOs, founders and directors spend more on CSR activities and have a higher CSR rating than companies with no affiliations to the Democratic Party. In addition, Hong and Kostovetsky (2012) analyse the portfolio holdings of Democratic-leaning mutual fund and hedge fund managers and show that Democratic-leaning fund managers invest less in industries that are not in line with the Democratic political agenda such as tobacco, natural resources, and guns and defence, whereas they tilt

<sup>9</sup> For instance, Thomas DiNapoli, trustee of the New York State Common Retirement Fund, stated that "it has been our experience that integrating relevant environmental, social and governance considerations into the investment decision-making process enhances our ability to achieve our objectives [to meet the obligations of our pension fund for current and future members, retirees and beneficiaries]". See <https://www.ceres.org/resources/reports/21st-century-investor-ceres-blueprint-sustainable-investing#>.

towards environmentally friendly firms and firms that score well on matters of diversity, community and employee relations.<sup>10</sup> Taken together, the results of these two studies suggest that people's political leaning is closely linked to their attitudes towards CSR. Applying these insights to the case of public pension funds, we argue that beneficiaries' norms and values towards CSR can be approximated by their political leaning, which results in the following two hypotheses for funds' portfolio allocation and portfolio performance for the "beneficiaries' interests" channel:

**H1a** A pension fund holds a larger share of its portfolio in companies with strong CSR performance if its beneficiaries have a preference for CSR as captured by their political leaning.

**H1b** A pension fund's portfolio-weighted CSR score is not negatively related to the fund's portfolio performance.

### Political Pressures Channel

An alternative mechanism that may explain the propensity of some public pension funds to incorporate CSR considerations into investment decisions is through political pressures exerted on the funds by state politicians. This argument is based on the existing literature on political self-dealing in public pension funds (Romano 1993, 1995; Wang and Mao 2015; Bradley et al. 2016; Andonov et al. 2018). This body of work suggests that state politicians may influence funds' investment decisions either directly through their representation on the board of trustees, or indirectly through their representative power in the state government and by occupying political offices with considerable influence over state pension funds. For instance, Wang and Mao (2015), studying the shareholder proposals submitted by US public pension funds, show that the number of proposals on environmental and social issues increases significantly as more politically affiliated trustees run for office and conclude that "public pension fund board members employ shareholder proposals to enhance their political capital".<sup>11</sup> In addition, they find that the market reacts more negatively to proposals submitted while trustees run for office which suggests that these proposals do not serve beneficiaries' financial interests. These findings are in line with the wider literature which documents a negative link between the strength of

the political influence over public pension funds and funds' financial performance (e.g., Romano 1993, 1995; Bradley et al. 2016; Andonov et al. 2018).

Hence, a second channel to explain why some funds tilt their portfolios towards firms with superior CSR is through their relational ties to another of their main stakeholders—state politicians—who exert pressures on public pension funds to adopt responsible investment policies. In particular, state politicians affiliated with the Democratic party may pressure funds to implement a CSR-focused investment policy aligned with the Democratic agenda to use the investments of public pension funds as an extended campaigning tool at the potential detriment of beneficiaries' interests (Wang and Mao 2015). We call this the "political pressures" channel and based on Aguilera et al.'s (2007) framework, it reflects relational motives for CSR through public pension funds' link to state politicians. The "political pressures" channel comprises the following two predictions:

**H2a** A pension fund holds a larger share of its portfolio in companies with strong CSR performance if it is subject to stronger political pressures by Democratic state politicians.

**H2b** A pension fund's portfolio-weighted CSR score is negatively related to the fund's portfolio performance.

### Pure Financial Motives Channel

Finally, the link between funds' propensity to invest in companies with stronger CSR performance could be unrelated to any political pressures or moral considerations. Instead, pension funds might take CSR factors into account as they believe that incorporating a firm's environmental and social performance into investment decisions can improve their funds' portfolio performance.<sup>12</sup> As such, public pension funds' responsible investment practices would be purely instrumentally driven as funds considered positive CSR screens as a means to realise superior investment outcomes (Aguilera et al. 2007). For instance, Himick and Audoussert-Coulrier (2016) analysed the statements of investment policies of 60 Canadian public pension funds and show that the financial frame of responsible investment dominates the social frame in funds' investment policies as funds' primary

<sup>10</sup> In both studies, the political leaning of the individuals is approximated by contributions to presidential candidate election campaigns.

<sup>11</sup> Wang and Mao (2015) do not differentiate by party affiliation of the state politicians but we argue in our study that only the Democratic political agenda aligns with promoting CSR core issues and hence only Democrats benefit from being associated to state pension funds incorporating CSR factors into their investment decisions.

<sup>12</sup> Survey evidence suggests that the two top motivations of institutional investors for considering CSR factors are improving returns and managing risk. Furthermore, Anne Simpson, Senior Portfolio Manager and Director of Global Governance of CalPERS justifies CalPERS's responsible investment strategies by citing the fund's investment belief that "environmental, social and governance factors can affect the risk and return performance of investment portfolios to varying degrees across companies, sectors, regions and asset classes". See <https://www.ceres.org/resources/reports/21st-century-investor-ceres-blueprint-sustainable-investing#>.

motive for engaging in responsible investment seems to relate to financial considerations, such as improving returns or managing risks. Petersen and Vredenburg (2009) obtain similar results based on a survey of Canadian institutional investors in oil and gas companies which state financial objectives and their belief in a positive link between CSR and corporate financial performance as a motivating force to invest in companies with higher environmental and social performance.

A vast body of research has attempted to empirically test the link between CSR performance and financial performance, both by evaluating the performance of responsible investment portfolios, including SRI mutual funds, and by assessing the link between measures of firms' CSR performance and corporate financial performance. However, the findings in the literature remain ambiguous, with some studies suggesting a positive link (e.g., Derwall et al. 2005; Kempf and Osthoff 2007; Statman and Glushkov 2009; Edmans 2011),<sup>13</sup> some documenting a negative link (e.g., Geczy et al. 2005; Adler and Kritzman 2008; De Haan et al. 2012),<sup>14</sup> and others finding no (consistent) significant relation between CSR and financial performance (e.g., Bauer et al. 2005; Bello 2005; Galema et al. 2008; Renneboog et al. 2008, 2011; Gil-Bazo et al. 2010)<sup>15</sup>. Due to the size of this literature which covers more than 2200 individual studies (Friede et al. 2015), a comprehensive review goes beyond the scope of our study. However, we can turn to the findings of several meta-analyses which aim to determine the dominant relation between CSR and financial performance across this vast body of literature, (e.g., Orlitzky et al. 2003; Margolis et al. 2009; Rathner 2013; Friede et al. 2015). Covering around 2200 individual studies, Friede et al. (2015) conclude that around 90% of studies provide empirical evidence for a non-negative link between CSR and financial performance, while the majority of studies suggest a positive relation

between both constructs. For studies on the investment performance of responsible portfolios, including mutual funds, the majority of evidence hints at a neutral, non-negative relation between CSR and investment performance, implying that responsible investors are at least not financially hurt by adopting a responsible investment approach. Similar results are obtained by Margolis et al. (2009) and Orlitzky et al. (2003) who find, on balance, only a small but positive link between CSR and financial performance and stress that this finding depends on several moderating factors including studies' methodological approach, the sample choice and the choice of the measures for CSR and financial performance (see also Rathner 2013, for a more formal analysis of the impact of primary study characteristics on the likelihood of finding a performance differential between responsible investment portfolios and conventional portfolios).

Hence, the existing literature provides some support that public pension funds may turn to environmental and social factors purely as a way of generating improved portfolio returns, irrespective of any wider ethical considerations and political pressures. We call this the "pure financial motives" channel and it comprises the following two predictions.

**H3a** A pension fund's propensity for incorporating CSR factors into their share selection is not related to any political or social factors of the fund or the state.

**H3b** A pension fund's portfolio-weighted CSR score is positively related to the fund's portfolio performance.

## Methods

Next, we outline the methodological design of our analyses to test these sets of hypotheses.

## Sample

Based on the above discussion of the literature, our sample of public pension funds comprises large, internally managed US state pension plans as this sub-group is well suited to incorporate CSR considerations into their investment decisions. Focusing our analysis on internally managed holdings also enables us to rule out that our results are affected by investment processes and incentive effects of the external management company that are unrelated to state plan-specific investment incentives.

We obtain data on the public equity holdings of these large internally managed US state pension funds from the Thomson Ownership Holdings Database. This database mainly relies on the holdings reported to the Security Exchange Commission (SEC) but further supplements this information with holdings data gathered from international

<sup>13</sup> For instance, Edmans (2011) shows that portfolios comprising firms with high employee satisfaction outperform those with a lower level of employee satisfaction on a risk-adjusted basis. Derwall et al. (2005) document that portfolios of companies with strong environmental credentials generate significant risk-adjusted excess returns. Statman & Glushkov (2009) and Kempf & Osthoff (2007) provide evidence that portfolios comprising firms with strong CSR policies outperform portfolios consisting of weak CSR companies.

<sup>14</sup> For instance, De Haan et al (2012) find a negative link between corporate environmental performance and corporate stock returns. In addition, several studies argue that there are significant costs involved with imposing responsible investment screens on portfolios (e.g. Geczy et al. 2005; Adler and Kritzman 2008).

<sup>15</sup> For instance, Bauer et al. (2005), Bello (2005), Galema et al. (2008), Gil-Bazo et al. (2010) and Renneboog et al. (2008, 2011) analyse the investment performance of mutual funds which integrate CSR factors into their portfolio allocation decisions relative to their conventional peers and predominantly find a non-significant performance differential between these two groups.

filings and shareholder reports. The externally managed holdings of public pension funds are filed under the name of the external management company, so they are automatically screened out from the stated holdings in the Thomson Ownership database.

We manually searched the database and identified 31 state pension funds located in 23 different states. Compared to previous studies that rely on US state pension funds' equity holdings, our sample is comparable in size and even larger than the sample usually employed in the literature (e.g., Woitke 2002; Cremers and Nair 2005; Dittmar and Mahrt-Smith 2007; Barnea and Rubin 2010; Brown et al. 2015; Bradley et al. 2016).<sup>16</sup> Table 1 lists the 31 pension funds and their state, together with additional summary statistics at the pension-fund level. Our sample period runs from 1997Q1 to 2013Q4. In the majority of our analyses, we restrict our sample to funds' holdings in S&P500 companies as our CSR measure is only available for S&P500 companies during our entire sample period and we want to avoid any time bias in our results (see Hong and Kostovetsky 2012). However, in Section "Robustness Tests", we test the robustness of our results to including companies for which CSR scores are not consistently available over the entire sample period. We do not have holdings data for all 31 funds over the entire sample period as some funds only report their holdings for sub-periods of the sample. The average (median) number of quarters per fund is 43 (55). For 14 of the 31 funds, we are able to obtain holdings data over the entire sample period.<sup>17</sup> The average number of funds per quarter is 19, with a minimum of 15 pension funds per quarter for 1997Q1 and a maximum of 26 pension funds per quarter for 2013Q4. Finally, most funds are invested in the vast majority of companies that are part of the S&P500 index, with the average sample fund holding 392 out of 500 companies in every quarter of the sample. However, several funds do only invest in a small sub-set of the S&P500 with one fund only holding eleven S&P500 companies.<sup>18</sup>

<sup>16</sup> There are two reasons why only few plans are featured in the database relative to the total number of state pension plans. First, some public plans are exempt from disclosing their holdings, e.g. because their assets under investment discretion are less than USD 100 million, their holdings are below 10,000 stocks and less than USD 200,000; or the SEC grants a confidentiality waiver. Second, several funds outsource their portfolio management to external managers (Del Guercio and Tkac 2002; Lakonishok et al. 1992).

<sup>17</sup> In unreported results, we perform a sub-sample analysis using only these 14 funds to ensure that our results are not affected by the increase in the number of funds over time. The results are qualitatively unchanged.

<sup>18</sup> In unreported results, we perform a sub-sample analysis using only funds that hold less than 90% of the companies in the S&P500 restricting our sample to 12 funds. The results are qualitatively unchanged.

## Dependent Variables

To test our first set of predictions regarding the determinants of funds' portfolio allocations, our main dependent variable is a company's weight in the fund's portfolio. We call this variable portfolio weight ( $w_{ijt}$ ). While some earlier studies have documented a link between the CSR performance of firms and their ownership share by state pension funds (e.g., Johnson and Greening 1999; Di Giuli and Kostovetsky 2014), we focus on the fund portfolio level by directly employing funds' portfolio weights as our dependent variable. The reason for our choice of dependent variable is that holdings, and hence portfolio weights, are more indicative of funds' investment preferences (Fich et al. 2015), because they directly reflect funds' portfolio allocation decisions. In contrast, the percentage of shares held by a fund compared to the firm's total number of shares outstanding is not necessarily reflective of the relative importance of a particular firm in the fund's portfolio as it is highly dependent on the fund's total assets under management.

Following Grinblatt et al. (1995), we calculate portfolio weights ( $w_{ijt}$ ) in the following way:

$$w_{ijt} = \frac{\text{val}_{ijt}}{\sum_i \text{val}_{ijt}} \quad (1)$$

where  $\text{val}_{ijt}$  is the value of the holding in company  $i$  held by pension fund  $j$  at the end of quarter  $t$  and  $\sum_i \text{val}_{ijt}$  is the total portfolio value held by pension fund  $j$  at the end of quarter  $t$  in all S&P500 companies.

To test our second set of predictions, we calculate the quarterly portfolio returns on a fund's S&P500 holdings ( $(r_{jt})$ ) by weighting the return of each holding  $i$  ( $r_{it}$ ) by its weight in fund  $j$ 's portfolio at the end of the previous quarter ( $w_{ijt-1}$ )

$$r_{jt} = \sum_i r_{it} * w_{ijt-1} \quad (2)$$

where  $(r_{jt})$  is the quarterly portfolio-weighted return of fund  $j$  over quarter  $t$ .

We re-balance the portfolio every quarter based on the new portfolio weights.

## Main Independent Variables

### CSR Scores

The company-specific CSR scores are obtained from Kinder, Lydenberg, Domini and Co. which has been acquired by Riskmetrics and is now owned by MSCI (MSCI ESG). MSCI ESG ratings are a commonly used measure of a company's CSR performance in the literature and have been employed in prior studies of the link between public pension

**Table 1** Overview sample funds

	Name of the pension fund	Abbreviation	State	Q	Shares
1	Alaska Retirement Management Board	AlaskaRMB	AK	31	25
2	Arizona Safety Personnel Retirement System	ArizonaSafePERS	AZ	24	75
3	Arizona State Retirement System	ArizonaStateRS	AZ	11	499
4	California Public Employees' Retirement System	CalPERS	CA	68	492
5	California State Teachers' Retirement System	CalSTRS	CA	68	486
6	Colorado Public Employees' Retirement Association	ColoradoPERA	CO	68	493
7	Florida State Board of Administration	FloridaSBA	FL	68	489
8	Illinois Municipal Retirement System	IllinoisMunRS	IL	8	488
9	Kentucky Retirement Systems	KentuckyRetS	KY	38	428
10	Kentucky Teachers' Retirement System	KentuckyTRS	KY	68	495
11	Louisiana State Employees' Retirement System	LouisianaSERS	LA	1	498
12	Michigan Municipal Employees' Retirement System	MichiganMunERS	MI	2	498
13	Michigan Treasury	MichiganTreas	MI	68	496
14	Montana Board of Investments	MontanaInvB	MT	24	73
15	New York City Employee Retirement System	NYCityERS	NY	8	36
16	New Jersey Board of Investments	NJInvB	NJ	68	377
17	New York State Common Retirement System	NYStateComRS	NY	68	498
18	New York State Teachers' Retirement System	NYStateTRS	NY	68	490
19	New Mexico Educational Retirement Board	NewMexicoERB	NM	68	446
20	Ohio Public Employees Retirement System	OhioPERS	OH	68	494
21	Ohio State Teachers' Retirement System	OhioTRS	OH	68	461
22	Oregon Public Employees' Retirement System	OregonPERS	OR	17	499
23	Pennsylvania Public School Employees' Retirement System	PennsylvaniaPSERS	PA	55	498
24	South Dakota Board of Investments	SouthDakotaInvB	SD	24	253
25	Tennessee Consolidated Retirement System	TennesseeConsRS	TN	24	376
26	Texas Employees' Retirement System	TexasERS	TX	62	487
27	Texas Teachers' Retirement System	TexasTRS	TX	27	461
28	Utah Retirement Systems	UtahRS	UT	6	414
29	Virginia Retirement System	VirginiaRS	VA	68	443
30	Washington State Investment Board	WashingtonStateIB	WA	11	11
31	Wisconsin Investment Board	WisconsinIB	WI	68	386
	Total			43	392

This table reports the names of the 31 US state pension plans in our sample, together with summary statistics at the pension-fund level

*Abbreviation* represents the abbreviated name of the pension plan used in this study

*State* is the US state that the pension plan is located in

*Q* is the number of quarters for which we have available holdings data

*Shares* represents the time-series average of the number of S&P500 companies held by the pension plan.

funds' equity ownership and firms' CSR performance in the US market (Johnson and Greening 1999; Neubaum and Zahra 2006; Barnea and Rubin 2010; see also Hong and Kostovetsky 2012; Di Giuli and Kostovetsky 2014, for examples from the political values literature). Despite being widely used, MSCI ESG ratings are not without critics.<sup>19</sup>

<sup>19</sup> A detailed discussion on the advantages and disadvantages of using the MSCI ESG rating as a measure for CSR can be found in Chatterji et al. (2009) and Cheng et al. (2013).

As an alternative, recent studies such as Ferrell et al. (2016) use MSCI's latest CSR measure, Intangible Value Assessment (IVA). The reason why we rely on the standard MSCI ESG scores in our main analysis is because of its longer history of available ratings for a considerable share of the US equity market which ensures maximum coverage of our sample period. Alternative CSR measures tend to have a significantly more limited data availability. However, in Section "Alternative CSR Measure", we replace the MSCI ESG scores with the more recent IVA/EcoValue21 rating

to ensure that our results are not an artefact of using MSCI ESG scores.

MSCI ESG assesses companies on seven CSR-specific categories on a point-by-point basis and awards each company a separate score of strengths and concerns for each sub-category. These categories comprise: community activities, diversity, employees' relations, environmental record, product quality, human rights, and corporate governance. For our analysis, we calculate a single CSR score ( $CSR_a$ ) that best captures the overall CSR performance of a company. The main argument behind this approach is that public pension funds look at the entirety of a firm's CSR profile when deciding whether, and how much, they want to invest in a particular company. In other words, public pension funds cannot invest in a sub-set of a firm's CSR performance (e.g., only the strength or concern components), which is why we focus on overall CSR scores. In addition, netting the strength and concern scores is a common approach in empirical finance studies and has been extensively used in related work (Barnea and Rubin 2010; Hong and Kostovetsky 2012; Di Giuli and Kostovetsky 2014).

To construct our CSR scores ( $csr_{it}$ ), we first deduct the number of strengths from the number of concerns for each of the seven MSCI ESG sub-categories. Kotchen and Moon (2012) point out that some of the assessed items in the sub-categories have been added or removed over the years. Thus, the aggregate scores might lack comparability over time. We follow Kotchen and Moon (2012) and Hong and Liskovich (2015) and standardise net sub-category scores per year, so that each year the net sub-category score is scaled to a mean of zero and a standard deviation of one. The standardisation by year ensures that our results are not affected by increases in the number of assessed items over the sample period.<sup>20</sup> We aggregate the standardised sub-category scores to create an overall CSR score, ensuring that each sub-category is given equal weight in the overall score. Finally, we scale the CSR score to have an overall minimum of zero and a maximum of one to facilitate the interpretation of the coefficient estimates.

To test our second set of predictions regarding the portfolio performance of funds, we calculate the quarterly portfolio-weighted CSR score of each fund ( $CSR_{jt}^{pfw}$ ). We take the previously calculated CSR score of each firm ( $CSR_{it}$ ) and weigh it by its weight in fund  $j$ 's portfolio at the end of the previous quarter ( $w_{ijt-1}$ ). We then aggregate the weighted CSR scores for each fund to arrive at our measure of the overall portfolio-weighted CSR score per fund ( $CSR_{jt}^{pfw}$ ).

<sup>20</sup> MSCI ESG changed its methodology in 2009 which led to an inflationary increase in net CSR scores. In unreported results, we restrict the sample to before 2009 and find that our results are qualitatively unchanged.

## Proxies for Political Leaning and Political Pressures

Next, we turn to the proxies for the political leaning of the funds' beneficiaries. As state pension funds do not have detailed information on the political affiliations of their members, the closest proxy for their beneficiaries' political leaning is the political leaning of the state they are located in. We judge this as a viable proxy for the beneficiaries' political values as members of state pension funds represent a considerable share of the state's population and state pension funds indirectly account responsible to all taxpayers of a state. As the responsibility for funding the defined benefit funds of state pension plans ultimately lies with the sponsoring government, even taxpayers that are not employed in the public sector have a stake in how these pension funds are managed (Coronado et al. 2003; Brown et al. 2015). Note that we do not require that all members of funds located in states concentrated by Democrats (Republicans) be Democrat (Republican). Rather, we only assume that individuals in states concentrated by Democrats (Republicans) are more likely to subscribe to the Democratic (Republican) political ideologies, so that the political leaning of the state serves as an indicator for public pension funds regarding the predominant political tendencies of their beneficiaries' base.<sup>21</sup> To capture whether a state's population is Democratic-leaning, we rely on the percentage of a state's votes received by the Democratic Party in the latest presidential elections, which we obtain from Dave Leip's Atlas of US Presidential Elections.<sup>22</sup> This source is widely used in empirical studies in finance to proxy for the political environment of a state (e.g., Pe'er and Gottschalg 2011; Di Giuli and Kostovetsky 2014). We construct two proxies for beneficiaries' political leaning: (a) the percentage of a state's votes received by the Democratic Party in the latest presidential elections (% of Votes for Democratic Party), and (b) a dummy variable that takes the value of one if the percentage of a state's votes received by the Democratic Party is larger than the percentage of the state's votes received by the Republican Party, and zero otherwise (Democrat-Dummy).

Our proxy for political pressures by state politicians is based on the composition of the state government. We follow Di Giuli and Kostovetsky (2014) and define the proportion of a state's government that is affiliated with the Democratic Party (% of Dem. State Gov.) as:

$$\begin{aligned} \% \text{ of Dem. State Gov.} &= 0.5 * \text{Dem. Governor} \\ &+ 0.25 * \text{Dem. Upper Chamber} \\ &+ 0.25 * \text{Dem. Lower Chamber} \end{aligned} \quad (3)$$

<sup>21</sup> Recent studies use a similar location-based identification strategy for individual investors to infer their political leaning (Bonaparte et al. 2017).

<sup>22</sup> See <http://www.uselectionatlas.org>.

where Dem. Governor is a dummy variable equal to one if the state governor is a Democrat, and zero otherwise, and Dem. Lower Chamber and Dem. Upper Chamber are the proportions of the Lower and Upper Chamber of the state government, respectively, that are affiliated with the Democratic Party. We also construct a dummy variable (Dem. State Gov.-Dummy) that captures whether the majority of the state government are Democrats. In particular, Dem. State Gov.-Dummy equals one if % of Dem. State Gov. > 50%, and zero otherwise. The data on the composition of the Lower and Upper Chamber are taken from the US Census Bureau's National Data Book. Information on State Governors is obtained from the National Governors' Association.<sup>23</sup>

To test the conditional effects of beneficiaries' political leaning and political pressures, we construct four additional proxies: (a) Dem. Leaning and Dem. State Gov. – Dummy equals one if the funds' beneficiaries are Democratic-leaning and the majority of the state government are Democrats (i.e., Democrat-Dummy = 1 and Dem. State Gov.-Dummy = 1), and zero otherwise; (b) Dem. Leaning and Rep. State Gov.-Dummy takes the value of one if the funds' beneficiaries are Democratic-leaning and the majority of the state government is not affiliated with the Democratic Party (i.e., Democrat-Dummy = 1 and Dem. State Gov.-Dummy = 0), and zero otherwise; (c) Rep. Leaning and Dem. State Gov.-Dummy equals one if the funds' beneficiaries are Republican-leaning and the majority of the state government are Democrats (i.e., Democrat-Dummy = 0 and Dem. State Gov.-Dummy = 1), and zero otherwise; and (d) Rep. Leaning and Rep. State Gov.-Dummy takes the value of one if the funds' beneficiaries are Republican and the majority of the state government is not affiliated with the Democratic Party (i.e., Democrat-Dummy = 0 and Dem. State Gov.-Dummy = 0), and zero otherwise.

## Control Variables

Since portfolio allocation decisions and portfolio performance depend on a variety of company, fund and state-specific factors, we employ several controls that are linked to fund's investment decisions at the portfolio company level, pension fund level and state level. We rely on the CRSP database for stock price data and the Compustat database for financial accounting data to control for company-specific characteristics of the portfolio companies. We obtain data on state pension fund characteristics from the Public Plans Database provided by the Centre for Retirement Research at Boston College which we supplement with manually collected data from state pension funds' Comprehensive Annual Financial Reports. Our state level data is obtained from a variety of publicly available sources.

## Firm-Level Controls

The characteristics of the portfolio companies, i.e., the investment targets, may influence the public pension funds' decision with respect to the proportion of their portfolio that they want to invest in the stocks of that company. For instance, many public pension funds benchmark their equity performance against a market-weighted equity index and hence, are likely to invest a larger share of their assets in firms of larger size as measured by firms' stock market capitalisation (Del Guercio and Tkac 2002). To control for this positive relation between funds' portfolio weights and the portfolio firms' size, we include the log-transformed market capitalisation of the portfolio company, calculated as the product of the price per share and the number of shares outstanding, as a control variable. In addition, public pension funds may have preferences for value or growth stocks and tilt their portfolio towards companies with high book-to-market ratio and/or away from firms with low book-to-market ratio. Thus, we include as a control variable the natural logarithm of the portfolio firm's book value of the equity over the market value of equity, measured at the end of the previous quarter. We are agnostic about the sign of the relationship between funds' portfolio weights and a portfolio firm's book-to-market ratio. Moreover, some funds might have policies in place that restrict them from investing in non-dividend paying firms or firms with large dividend cuts, as argued in Parrino et al. (2003). Consequently, their portfolio allocation decisions might be sensitive to a firm's dividend pay-out policy. We account for this feature by including the firms' dividend yield, i.e., the ratio of dividends per share over the price per share, measured at the end of the previous quarter, as an additional portfolio firm control.

The degree of a company's debt ratio computed as the portfolio firm's total debt over total assets serves as a measure of firm distress and indebtedness which might also affect funds' portfolio allocations as portfolio firms with higher leverage are considered to be riskier investments (Cox et al. 2008; Di Giuli and Kostovetsky 2014). As a measure of a portfolio firm's exposure to systematic market risk, we further include its stock market beta. A higher beta implies a greater exposure to systematic risk factors and hence a riskier investment (Cox et al. 2008). We construct beta coefficients based on rolling regressions of a stock's monthly excess return on the market risk premium (i.e., the S&P500 return in excess of the risk-free rate) and an intercept, over a 36-month window.

Finally, funds' portfolio allocation choices may be subject to the prior financial performance of that holding company. Hence, we control for a portfolio firm's return on assets as an accounting-based performance measure and a company's quarterly stock return to measure market-based performance. Return on assets is defined as the income before

<sup>23</sup> See <http://www.nga.org/cms/home.html>.

extraordinary items divided by a firm's total assets (Cox et al. 2008; Di Giuli and Kostovetsky 2014) and a firm's quarterly stock return is calculated as the stock's continuously compounded previous-quarter return. The latter measure also accounts for potential momentum trading by funds which involves the conditioning of portfolio allocations on a stock's past performance.

### Fund-Level Controls

Several characteristics at the level of the public pension fund are argued to affect both the fund's portfolio allocation choices and its portfolio performance. First, we include the natural logarithm of public pension funds' actuarial assets under GASB standards to control for fund size. Fund size can influence portfolio allocation decisions and performance through various channels. First, it can be assumed that the larger the pension fund, the more professional its asset management and the more resources are allocated to investment research, including more investment staff and wider access to CSR information. Second, as larger funds are more likely to hold a larger ownership stake in a company they are considered more influential and may get access to superior information. Third, Coronado et al. (2003) provide evidence of a positive relation between fund size and the incentive for political intervention as politicians seek to maximise their relatively short-term political interests. Finally, Sievaenen et al. (2013) show that larger funds are more likely to engage in responsible investing.

Furthermore, pension fund's security selection decisions might differ depending on the proportion of their assets invested in equities. For example, Coronado et al. (2003) show that the fraction of the portfolio invested in equities affects state pension funds' total rate of return. Thus, we expect that funds, which show a higher allocation to equity and whose overall performance depends more strongly on the performance of their equity holdings, dedicate more resources to analysing and managing these holdings. The percentage of a pension fund's assets invested in public equities is supposed to control for these effects. Moreover, we employ the proportion of shares outstanding held by a pension fund in a particular company. It is defined as the ratio of the number of shares held by the pension fund over a company's total number of shares outstanding. As pointed out in Parrino et al. (2003) and Fich et al. (2015), the larger the ownership share of a fund in a company the more likely this fund is to have access to board members, senior managers, suppliers and customers of the company and thus to gain superior information. Moreover, the larger the fund's ownership, the more attention and resources is the fund expected to allocate to that particular company.

Additionally, several studies show that the funding situation of a pension fund significantly affects its portfolio allocation and risk-taking behaviour as well as the degree of political pressures on the fund (Novy-Marx and Rauh 2011; Andonov et al. 2017; Mohan and Zhang 2014). We control for these effects using pension funds' funded ratio under the GASB standards, defined as the ratio of actuarial assets over actuarial liabilities, updated at the end of the year (Hochberg and Rauh 2013). We also add the inflation assumption that the fund uses for its actuarial valuations to our set of pension fund controls. This variable accounts for the fund's expectation of future price developments and inflationary tendencies which can affect its allocation towards equities.

We include the fund's age, measured as the natural logarithm of the difference between the current year and the fund's year of inception, since an older fund may have more investment experience and a different membership structure. To further address differences in the membership structure of funds, we include the fund's ratio of active members to beneficiaries. Regarding a fund's portfolio allocation decisions, the membership structure can affect a fund's liquidity preferences, and its objective to generate high returns to ensure satisfying all future benefit payments. Finally, we account for the pension fund's overall performance by including the total fund return as reported in the fund's annual report to our set of fund controls.

### State-Level Controls

The portfolio allocation choices of a fund and the degree of outside pressures it experiences may depend on the economic and social characteristics of its state. To account for these state-specific effects, we include several controls. First, we include the state's real gross domestic product (GDP) per capita and the state's corporate net income taxes over total tax revenues as proxies for local economic growth (Bradley et al. 2016). These measures are retrieved from the Bureau of Economic Analysis and the US Census, respectively. We also control for a state's level of political corruption which is defined as the number of federal, state and local public officials convicted of a corruption-related crime, divided by the state's population. Several previous studies have established that this measure is related to US state pension funds' investment and funding decisions (Hochberg and Rauh 2013; Bradley et al. 2016). The data on political corruption convictions is retrieved from the US Department of Justice's Report to Congress on the Activities and Operations of the Public Integrity Section. Finally, we employ the proportion of government employees who are union members to capture the influence of unions in public pension fund decision-making and investment processes. We retrieve the data from Barry Hirsch's Union Membership and Coverage Database which is described



in Hirsch and Macpherson (2003). It can be argued that unions' objectives and agendas more closely align with the Democratic political beliefs and hence a stronger influence of unions in certain states can affect the state pension funds' preferences for certain CSR policies, such as employee-friendly practices and policies.

## Estimation Techniques

### Portfolio Allocation Model

To test our first set of predictions relating to public pension funds' portfolio allocation decisions, we estimate a series of fixed effect panel regressions with the portfolio weight ( $w_{ijt}$ ) as the dependent variable.<sup>24</sup> The main independent variables are the company's lagged CSR score ( $CSR_{it-1}$ ) and the lagged CSR score interacted with one of the political proxies ( $CSR_{it-1} \times \text{politicalproxy}_{jt}$ ). As MSCI ESG updates its ratings at the end of each year and publishes the ratings in January, we use lagged CSR scores to avoid any look-ahead bias. We also include the set of control variables described in the previous section. Employing fixed effects at the fund-security level, the regression model can be expressed as follows:

$$w_{ijt} = \beta_0 + \beta_1 CSR_{it-1} + \beta_2 CSR_{it-1} \times \text{Political proxy}_{jt} + \beta_3' \text{Firm controls}_{it-1} + \beta_4' \text{Fund controls}_{jt} + \beta_5' \text{State controls}_{jt} + v_{ij} + u_{ijt} \quad (4)$$

where  $\text{politicalproxy}_{jt}$  is one of the political proxies described in Section "Main Independent Variables";  $\text{firm controls}_{it-1}$ ,  $\text{fund controls}_{jt}$  and  $\text{state controls}_{jt}$  are column vectors of the seven company-specific, eight fund-specific and four state-specific controls;  $v_{ij}$  are *fund-security* fixed effects and  $u_{ijt}$  is an idiosyncratic disturbance term.

The unit of measurement is the fund-security-quarter level. As we employ a fixed effects panel model we only focus on the within-variation. That means we study the variation in portfolio weights per fund-security combination over time but not across funds and securities. Effects that are particular to the *fund-security* combination are captured in the fixed effects ( $v_{ij}$ ). Since funds are expected to hold similar portfolio weights in a particular S&P500 company over consecutive quarters, we correct standard errors by clustering at the *fund-security* level to reflect this clustered sampling. Our benchmark portfolio allocation model comprises around 530,000 observations and more than 20,000 *fund-security* fixed effects.

<sup>24</sup> To select between the fixed effects and random effects estimator, we conduct a Hausman (1978) test.

### Financial Performance Model

To test our second set of predictions regarding funds' portfolio performance, we follow Bradley et al. (2016) and estimate a portfolio performance model at the fund level in a multivariate panel setting. The model can be expressed as follows:

$$r_{jt} = \beta_0 + \beta_1 CSR_{jt-1}^{pfw} + \beta_2 CSR_{jt-1}^{pfw} \times \text{Political Proxy}_{jt} + \beta_3' \text{Fund Controls}_{jt} + \beta_4' \text{State Controls}_{jt} + v_j + \epsilon_{jt} \quad (5)$$

where  $r_{jt}$  is the quarterly portfolio-weighted return of fund  $j$  over quarter  $t$ ,  $CSR_{jt-1}^{pfw}$  is the portfolio-weighted CSR score of fund  $j$  at quarter  $t-1$ ,  $\text{political proxy}_{jt}$  is one of the political proxies described in Section "Main Independent Variables",  $\text{fund controls}_{jt}$  and  $\text{state controls}_{jt}$  are column vectors including seven fund-specific and four state-specific effects. We include pension fund fixed effects ( $v_j$ ) to absorb time invariant characteristics within a fund. For all model specifications, standard errors are clustered at the fund-level to correct for serial correlation in residuals. As we only have a very limited number of quarterly holdings for some of the funds, we restrict the sample for this empirical analysis to those funds with at least 25 quarters of holdings data which reduces our sample to 18 funds.<sup>25</sup> The fund performance model includes 1080 observations.

## Findings and Discussion of Results

### Summary Statistics

The discussion of results begins by presenting descriptive statistics for the sample data. Table 2 provides summary statistics (Panel A) and a correlation matrix (Panel B) for the main variables employed in the empirical analyses. The mean (median) portfolio weight held by a pension fund in one of the S&P500 companies is 0.23% (0.09%). These values correspond closely to the respective values for the weight of the companies in the S&P500 index—the mean (median) weight of a firm in the S&P500 index during our sample period is 0.20% (0.09%)—indicating that our funds tend to follow the S&P500 closely. The difference between the mean portfolio weight of our sample funds and the mean weight of a company in the S&P500 relates to few pension funds holding only a small subset of S&P500 firms and/

<sup>25</sup> These funds include: CalPERS, CalSTRS, ColoradoPERA, FloridaSBA, KentuckyRetS, KentuckyTRS, MichiganTreas, NJInvB, NYStateComRS, NYStateTRS, NewMexicoERB, OhioPERS, OhioTRS, PennPSERS, TexasERS, TexasTRS, VirginiaRS, WisconsinIB.

Table 2 Summary statistics and correlation matrix

	Mean	SD	Median	Min.	Max.	5th Perc.	95th Perc.	N
Panel A: Summary Statistics								
Portfolio Weight	0.23	0.48	0.09	0.00	18.75	0.01	0.94	574,151
Fund Portfolio Return	0.007	0.092	0.022	-0.321	0.166	-0.170	0.131	1112
CSR Score	0.49	0.11	0.49	0.00	1.00	0.31	0.67	574,151
Portfolio-weighted CSR Score	0.49	0.012	0.49	0.46	0.53	0.47	0.51	1112
% of Votes for Democratic Party	0.50	0.07	0.51	0.25	0.63	0.39	0.61	574,151
Democrat-Dummy	0.64	0.48	1.00	0.00	1.00	0.00	1.00	574,151
% of Dem. State Gov.	0.42	0.36	0.50	0.00	1.00	0.00	1.00	574,151
Dem. State Gov.-Dummy	0.32	0.47	0.00	0.00	1.00	0.00	1.00	574,151
Dem. Leaning and Dem. State Gov. Dummy	0.25	0.43	0.00	0.00	1.00	0.00	1.00	574,151
Dem. Leaning and Rep. State Gov. Dummy	0.39	0.49	0.00	0.00	1.00	0.00	1.00	574,151
Rep. Leaning and Dem. State Gov. Dummy	0.06	0.24	0.00	0.00	1.00	0.00	1.00	574,151
Rep. Leaning and Rep. State Gov. Dummy	0.30	0.46	0.00	0.00	1.00	0.00	1.00	574,151
Lagged Log Market Capitalisation	16.17	1.16	16.09	11.47	20.26	14.37	18.28	574,136
Lagged Log Book-to-Market Value	-0.97	0.80	-0.91	-6.80	2.93	-2.31	0.18	565,422
Lagged Dividend Yield	0.02	0.04	0.01	0.00	1.95	0.00	0.06	574,151
Lagged Debt Ratio	0.25	0.17	0.24	0.00	1.56	0.00	0.56	574,151
Lagged Return on Assets	0.05	0.10	0.05	-4.58	0.57	-0.03	0.16	574,151
Lagged Beta Coefficient	1.09	0.72	0.99	-2.52	5.76	0.15	2.41	561,160
Lagged Log Security Return	0.01	0.19	0.03	-2.07	1.31	-0.32	0.28	573,825
Log Fund Assets	17.67	0.91	17.81	14.85	19.46	15.97	18.86	574,151
% invested in Equities	0.57	0.09	0.58	0.21	0.78	0.39	0.70	574,151
Funded Ratio	0.89	0.16	0.88	0.43	1.45	0.63	1.15	574,151
% of Share Outstanding Held	0.18	0.39	0.11	0.00	42.36	0.01	0.50	574,151
Log Fund Age	4.12	0.35	4.19	2.71	4.61	3.33	4.52	574,151
Active Members to Beneficiaries	2.08	0.54	2.01	0.66	6.88	1.34	3.06	574,151
Inflation Assumption	0.03	0.01	0.04	0.00	0.06	0.03	0.05	574,151
Total Fund Return	0.08	0.12	0.12	-0.27	0.30	-0.14	0.22	574,151
% Union Members	40.00	19.58	46.00	8.40	72.40	14.10	70.20	574,151
Political Corruption Convictions	0.35	0.19	0.32	0.00	2.20	0.11	0.72	574,151
Log Real GDP per Capita	10.73	0.15	10.71	10.31	11.21	10.51	10.98	574,151
Net Corp. Income Taxes to Total Taxes	5.42	2.62	5.32	0.00	33.07	0.00	9.55	574,151

Table 2 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
Panel B: Correlation Matrix																						
(1) CSR Score	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(2) % of Votes for Democratic Party	0.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(3) % of Dem. State Gov.	0.00	0.36	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(4) Lagged Log Market Capitalisation	0.05	0.00	0.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(5) Lagged Log Book-to-Market Value	-0.13	0.04	0.02	-0.23	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(6) Lagged Dividend Yield	-0.02	0.01	0.01	-0.02	0.16	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(7) Lagged Debt Ratio	-0.10	-0.01	-0.01	-0.07	0.02	0.16	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(8) Lagged Return on Assets	0.06	0.00	0.00	0.17	-0.31	-0.03	-0.15	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(9) Lagged Beta Coefficient	0.00	0.03	0.03	-0.12	0.07	-0.15	-0.13	-0.20	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-
(10) Lagged Log Security Return	0.00	-0.01	-0.01	0.12	0.06	0.02	-0.01	0.03	-0.07	1.00	-	-	-	-	-	-	-	-	-	-	-	-
(11) Log Fund Assets	0.00	0.62	0.01	0.00	0.03	0.00	-0.01	0.01	0.02	-0.01	1.00	-	-	-	-	-	-	-	-	-	-	-
(12) % invested in Equities	0.00	-0.16	-0.07	-0.06	-0.07	-0.02	0.01	-0.01	-0.04	0.00	-0.01	1.00	-	-	-	-	-	-	-	-	-	-
(13) Funded Ratio	0.00	0.08	-0.18	-0.12	-0.09	-0.01	0.04	-0.02	-0.08	-0.04	0.20	0.37	1.00	-	-	-	-	-	-	-	-	-
(14) % of Share Outstanding Held	0.00	0.21	0.01	-0.09	0.06	0.00	0.01	-0.01	-0.02	0.00	0.25	0.13	0.18	1.00	-	-	-	-	-	-	-	-
(15) Log Fund Age	0.00	0.26	0.19	0.00	0.04	0.00	-0.02	0.01	0.03	0.00	0.16	-0.09	-0.37	0.05	1.00	-	-	-	-	-	-	-
(16) Active Members to Beneficiaries	0.00	-0.35	-0.11	-0.11	-0.07	-0.01	0.03	-0.03	-0.07	-0.03	-0.24	0.40	0.38	-0.02	-0.25	1.00	-	-	-	-	-	-

Table 2 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(17) Inflation Assumption	0.00	-0.35	-0.16	-0.10	-0.05	0.00	0.02	-0.01	-0.05	-0.01	-0.31	0.22	0.23	-0.03	-0.19	0.31	1.00	-	-	-	-	-
(18) Total Fund Return	0.00	-0.06	-0.04	0.05	0.05	-0.01	-0.03	0.04	-0.01	0.12	-0.05	0.16	-0.01	0.02	-0.04	-0.01	0.08	1.00	-	-	-	-
(19) % Union Members	0.00	0.77	0.15	-0.02	0.01	0.00	0.00	-0.01	0.00	0.00	0.64	0.23	0.25	0.21	-0.37	-0.18	0.01	1.00	0.23	-	-	-
(20) Political Corruption Convictions	0.00	-0.30	-0.12	0.00	-0.02	0.00	0.01	-0.01	-0.01	-0.01	-0.22	0.13	-0.03	-0.03	-0.05	0.05	0.01	-0.01	-0.20	1.00	-	-
(21) Log Real GDP per Capita	0.00	0.59	0.16	0.04	0.03	0.00	-0.01	0.01	0.04	0.00	0.60	0.03	0.06	0.17	0.37	-0.10	-0.43	-0.02	0.53	-0.25	1.00	-
(22) Net Corp. Inc. Taxes to Tot. Taxes	0.00	0.45	0.32	-0.01	-0.03	0.00	0.00	0.01	-0.01	0.00	0.30	0.04	0.12	0.16	-0.01	-0.15	-0.15	0.07	0.49	-0.05	0.18	1.00

Panel A reports summary statistics and Panel B shows a correlation matrix for the main variables described in "Methods" section. The unit of observation is the *fund-security-quarter* level, except for the *Fund Portfolio Return* and the *Portfolio-weighted CSR Score* for which the unit of observation is the *fund-quarter* level

or allocating a large proportion of their portfolio to single companies.<sup>26</sup>

Looking at the dependent variable of the financial performance model, the fund portfolio return, we find a considerable degree of variation regarding funds' quarterly performance on their S&P500 holdings.<sup>27</sup> The average (median) quarterly return on funds' portfolio is 0.7% (2.2%) which suggests that funds only marginally generate a positive quarterly return on their S&P500 holdings; but the standard deviation of 9.2% as well as the minimum of -32.1% and the maximum of 16.6% show that these averages mask the level of variability in fund performance across the sample. Turning to the CSR performance measures, the CSR score at the fund-security level and the portfolio-weighted CSR score at the fund level have comparable mean and median values of 0.49 with a standard deviation of 0.11 and 0.012, respectively. While it has been noted in the previous literature that CSR measures can be relatively stable over time, we still find a reasonable level of variability in our sample. Regarding the political leaning of the funds' members, the state population of the sample funds votes, on average, 50% for the Democratic Party, though the range of values from 25 to 63% indicates some strongly Democratic-leaning and strongly Republican-leaning states in our sample. The mean value of 0.64 for the *Democrat-Dummy* implies that the members of the average pension fund are likely to be predominantly Democratic-leaning. Additionally, we find that the pension funds in our sample tend to be located in states with a non-Democratic state government, as indicated by the mean values of the variables *% of Dem. State Gov.* (0.42) and *Dem. State Gov.-Dummy* (0.32) which clearly lie below 50%. This provides first evidence that the political leaning of the state population and the dominant party in the state government are not necessarily in line, and that our political proxies pick up different effects.<sup>28</sup>

Turning to the correlations between our control variables (Panel B, Table 2), the highest (absolute) correlations are

<sup>26</sup> In unreported tests, we restrict our sample to funds that hold less than 90% of S&P500 companies and find that our results are qualitatively unchanged.

<sup>27</sup> The total number of observations for *Fund Portfolio Returns* and *Portfolio-weighted CSR Score* are lower than for the other variables as these variables are employed in the financial performance model whose unit of measurement is the pension fund-level, while the other variables are reported at the fund-security level.

<sup>28</sup> Furthermore, in states with a Democratic-leaning population the union coverage among public employees is sizably higher than in those with a Republican population. This divide is less pronounced for funds from states with Democratic and Non-Democratic state governments. This lends support that our proxy for members' political leaning captures the attitudes of the population, whereas the composition of the state government captures the characteristics of the political system.

between our measure of a state's political leaning (*% of Votes for Democratic Party*) and the size of the fund as well as the state's degree of union membership by public employees and real GDP, which reinforces the importance to control for the demographic and economic characteristics of the state. As *% of Votes for Democratic Party* is included as an interaction term with the CSR score, we conclude that concerns of multicollinearity are not an issue in our data.

### Portfolio Allocation Model

Table 3 reports results from our portfolio allocation model, expressed in Eq. (4), which allows us to test the first set of hypotheses relating to the drivers of funds' portfolio allocation decisions towards firms' CSR score. In each specification, we interact the CSR score with a different political proxy.

Turning to the results of the model, for all five model specifications, we obtain negative and statistically significant regression coefficients on the CSR score indicating that the higher the company's CSR score the less weight does this company generally constitute in a fund's portfolio. These results are in line with Barnea and Rubin's (2010) finding of a negative relation between a firm's CSR performance and its equity ownership by US public pension funds, although, unlike Barnea and Rubin (2010), our model explains funds' portfolio weights and not the percentage of ownership in a firm. One possible explanation for the negative relation between portfolio weights and CSR scores may relate to funds' tendency to follow index weights (Parrino et al. 2003). In unreported results, we find a negative association between a firm's weight in the S&P500 index and its CSR score, so if state pension funds followed S&P500 index weights, we expect to find a negative coefficient on the standalone CSR score. However, in this case the identified negative relation does not reflect funds' preferences toward CSR but rather their tendency to follow the S&P500 index. To ensure that our results are not purely driven by funds' tendency to follow the index, we substitute the portfolio weights with deviations from S&P500 weights in Section "Deviations from Benchmark Weights", and find that the negative coefficient on the CSR standalone score loses its statistical significance.

To assess whether the direction of the relation changes based on the different political drivers, we need to look at the values of the interaction term of the CSR score with the political proxies. Specifications (1) and (2) test the implications of the "beneficiaries' interests" channel expressed in hypothesis *H1a* by interacting the CSR score with *% of Votes for Democratic Party* and the *Democrat-Dummy*, respectively. Both variables serve as indicators whether the members of the pension fund are predominantly Democratic-leaning. We find a positive and highly significant regression

coefficient on both interaction terms, suggesting that funds with predominantly Democratic-leaning beneficiaries hold a higher portfolio weight in companies that perform well on CSR, compared to funds with predominantly Republican-leaning members. This finding provides first evidence consistent with the portfolio allocation implications of the "beneficiaries' interests" channel.

In specifications (3) and (4), we test whether conditioning on political pressures by state politicians affects funds' propensity to tilt their portfolio towards firms with better CSR performance. We interact the CSR score with *% of Dem. State Gov.* and the *Dem. State Gov.-Dummy*, respectively. We find a positive relation between the portfolio weight and the company's CSR score for funds from states where the majority of the state government is affiliated with the Democratic Party as indicated by the positive and significant coefficient estimates on both interaction terms. Thus, public pension funds tilt their portfolios more strongly towards companies with higher CSR scores if they face greater pressures by state politicians, consistent with the prediction of hypothesis *H2a* of the "political pressures" channel. However, when comparing the magnitude of the coefficients on the interaction terms of specifications (1) and (2) with those of specifications (3) and (4), respectively, the effect of political pressures by Democratic state politicians seems to be considerably lower in economic magnitude than the effect arising from the political leaning of funds' beneficiaries.

To evaluate the relative importance of the "beneficiaries' interests" channel and the "political pressures" channel, we interact the CSR score with the proxies that condition on both political dimensions. The omitted group are funds with Democratic-leaning members and a predominantly Republican state government (*Dem. Leaning & Rep. State Gov.-Dummy*). Thus, the coefficients on the interaction terms have to be interpreted as deviations from this category. Turning to the results presented in specification (5), the coefficient on the interaction term for the *Dem. Leaning & Dem. State Gov.-Dummy* is significantly positive, implying that public pension funds with Democratic-leaning members show an even stronger CSR preference if the state government is dominated by the Democratic Party, which suggests that state politicians might exercise a reinforcing effect on funds' portfolio allocations. In comparison, we find a negative coefficient on the interaction terms for the *Rep. Leaning & Dem. State Gov.-Dummy* and the *Rep. Leaning & Rep. State Gov.-Dummy*. These findings indicate that funds with Republican members tilt away from companies with strong CSR performance, irrespective of whether these funds might be subject to higher pressures by Democratic state politicians. One way of interpreting these findings is that the political leaning of funds' members is the dominant force behind funds' preferences for CSR, in line with hypothesis *H1a* of the "beneficiaries' interests" channel. In comparison,

**Table 3** Portfolio allocation model

	(1)	(2)	(3)	(4)	(5)
	Portf. Weight	Portf. Weight	Portf. Weight	Portf. Weight	Portf. Weight
CSR Score	-0.390*** (0.0520)	-0.149*** (0.0198)	-0.144*** (0.0193)	-0.136*** (0.0191)	-0.130*** (0.0192)
CSR Score × % of Votes for Democratic Party	0.507*** (0.0927)				
CSR Score × Democrat-Dummy		0.0278*** (0.00665)			
CSR Score × % of Dem. State Gov.			0.0355*** (0.00615)		
CSR Score × Dem. State Gov.-Dummy				0.0185*** (0.00378)	
CSR Score × Rep. Leaning & Rep. State Gov. Dummy					-0.0184** (0.00779)
CSR Score × Rep. Leaning & Dem. State Gov. Dummy					-0.0188** (0.00743)
CSR Score × Dem. Leaning & Dem. State Gov. Dummy					0.0192*** (0.00414)
Lagged Log Market Capitalisation	0.170*** (0.00536)	0.170*** (0.00536)	0.170*** (0.00536)	0.170*** (0.00535)	0.170*** (0.00536)
Lagged Log Book-to-Market Value	-0.00723*** (0.00232)	-0.00693*** (0.00232)	-0.00711*** (0.00232)	-0.00705*** (0.00232)	-0.00701*** (0.00232)
Lagged Dividend Yield	0.0777*** (0.0166)	0.0802*** (0.0167)	0.0789*** (0.0166)	0.0799*** (0.0167)	0.0788*** (0.0167)
Lagged Debt Ratio	-0.0718*** (0.0115)	-0.0717*** (0.0115)	-0.0710*** (0.0116)	-0.0723*** (0.0115)	-0.0720*** (0.0115)
Lagged Return on Assets	0.00283 (0.00682)	0.00359 (0.00681)	0.00382 (0.00678)	0.00395 (0.00679)	0.00353 (0.00680)
Lagged Beta Coefficient	-0.00525*** (0.00200)	-0.00505** (0.00200)	-0.00510** (0.00200)	-0.00495** (0.00200)	-0.00515** (0.00200)
Lagged Log Security Return	-0.0299*** (0.00261)	-0.0303*** (0.00261)	-0.0304*** (0.00261)	-0.0303*** (0.00261)	-0.0303*** (0.00261)
Log Fund Assets	0.0151 (0.0131)	0.0307** (0.0127)	0.0220* (0.0129)	0.0269** (0.0128)	0.0267** (0.0128)
% invested in Equities	-0.0758*** (0.0192)	-0.0896*** (0.0191)	-0.117*** (0.0190)	-0.113*** (0.0190)	-0.0956*** (0.0193)
Funded Ratio	0.000765 (0.0138)	-0.00361 (0.0137)	0.00305 (0.0138)	-0.00364 (0.0137)	-0.00447 (0.0136)
% of of Share Outstanding Held	0.0971*** (0.0321)	0.0969*** (0.0320)	0.0970*** (0.0319)	0.0969*** (0.0319)	0.0969*** (0.0320)
Log Fund Age	-0.114*** (0.0383)	-0.107*** (0.0384)	-0.122*** (0.0384)	-0.127*** (0.0386)	-0.122*** (0.0386)
Active Members to Beneficiaries	0.0515*** (0.00718)	0.0533*** (0.00718)	0.0483*** (0.00718)	0.0508*** (0.00717)	0.0515*** (0.00721)
Inflation Assumption	-0.528 (0.364)	-0.586 (0.363)	-0.773** (0.366)	-0.768** (0.365)	-0.741** (0.369)
Total Fund Return	-0.0783*** (0.00480)	-0.0799*** (0.00478)	-0.0782*** (0.00479)	-0.0774*** (0.00479)	-0.0786*** (0.00478)
% Union Members	-0.000199 (0.000359)	0.000134 (0.000356)	-0.000112 (0.000360)	-0.000161 (0.000367)	-0.00008 (0.000368)

**Table 3** (continued)

	(1)	(2)	(3)	(4)	(5)
	Portf. Weight	Portf. Weight	Portf. Weight	Portf. Weight	Portf. Weight
Political Corruption Convictions	0.00320 (0.00786)	0.000771 (0.00792)	0.00158 (0.00790)	-0.000412 (0.00793)	0.000685 (0.00807)
Log Real GDP per Capita	-0.293*** (0.0359)	-0.300*** (0.0359)	-0.313*** (0.0355)	-0.319*** (0.0355)	-0.307*** (0.0362)
Net Corp. Income Taxes to Total Taxes	-0.00243** (0.00119)	-0.00250** (0.00119)	-0.00232* (0.00120)	-0.00230* (0.00121)	-0.00211* (0.00121)
Constant	0.868** (0.355)	0.643* (0.367)	1.029*** (0.357)	1.026*** (0.358)	0.861** (0.379)
Fund-Security FE	Yes	Yes	Yes	Yes	Yes
Observations	552,929	552,929	552,929	552,929	552,929
Number of FE	20,258	20,258	20,258	20,258	20,258
Adj. R-squared	0.137	0.136	0.136	0.136	0.137

This table reports estimated coefficients from fixed effect panel regressions expressed in Eq. (4)

The sample runs from 1997Q1 to 2013Q4

Standard errors are clustered at the *fund-security* level and are shown in brackets

\*, \*\*, \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively

political pressures from Democratic state politicians seem to merely have a moderating effect on funds' CSR tilts, providing only limited support for the implications of the "political pressures" channel expressed in *H2a*. The significant coefficients on the interaction terms of the CSR score with the different political proxies are not consistent with *H3a* of the "pure financial motives" channel, which predicts an insignificant effect of such proxies on the portfolio allocation of public pension funds.

Turning to the estimated coefficients on the control variables, we find that public pension funds tend to invest more in larger companies, in line with a tendency of funds to follow the market weights (Del Guercio and Tkac 2002). Portfolio weights are also higher for companies with lower book-to-market ratios, lower debt ratios and lower market risk exposure. In line with Parrino et al.'s (2003) argument that funds' portfolio allocations are sensitive to firm's dividend policies, we find that funds allocate a higher portfolio weight to companies paying higher dividends. A potential explanation for this effect relates to the liquidity implications of dividend payments in relation to funds' obligations of benefit payments. Surprisingly, our sample funds also seem to increase their allocation to companies that had a lower return in the previous quarter, suggesting that funds follow a contrarian investment strategy. Additionally, controlling for fund and state characteristics seems to be important as indicated by the statistically significant coefficients on all fund and state controls. While the results on most of these variables are difficult to interpret in this regression setting, the positive coefficient on the percentage of shares outstanding suggests that pension funds tilt their portfolio towards

companies over which they can exercise greater control. This finding is in line with the reasoning in Fich et al. (2015).

### Portfolio Performance Model

Next, we turn to the results of the portfolio performance model expressed in Eq. (5) and presented in Table 4. Specifications (1)–(2) show results for all funds, while specifications (3)–(6) and specifications (7)–(10) condition on the fund beneficiaries' political leaning and the political pressures by state politicians, respectively. We run each specification with fund fixed effects and test the robustness of our findings to controlling for time-specific performance trends by including quarter fixed effects in specifications (2), (4), (6), (8), and (10).

As can be seen in Table 4, eight out of ten specifications suggest a positive and significant relation between funds' portfolio-weighted CSR score and their quarterly portfolio return, implying that funds with a stronger CSR performance of their holdings generate higher returns. However, this association weakens in statistical significance once we control for quarter fixed effects and becomes statistically insignificant in specifications (6) and (8).

Dividing the funds in sub-samples based on our political proxies allows us to test whether the CSR-performance link is restricted to specific subsets of sample funds or applies to all funds irrespective of the leaning of their beneficiaries (specifications (3)–(6)) and political pressures by state politicians (specifications (7)–(10)). Interestingly, we find that the strongest statistical effect of the funds' portfolio-weighted CSR score on fund returns is observed for funds

Table 4 Portfolio performance model

	Democrat-dummy = 1			Democrat-dummy = 0			Dem. state gov.-dummy = 1			Dem. state gov.-dummy = 0		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
Portfolio-weighted CSR Score	1.672*** (0.221)	0.267* (0.130)	1.688*** (0.273)	0.375** (0.166)	2.198*** (0.440)	0.129 (0.143)	2.322*** (0.607)	0.450 (0.284)	1.712*** (0.256)	0.307* (0.149)		
Log Fund Assets	-0.0692** (0.0321)	0.000653 (0.00349)	-0.0434 (0.0538)	-0.00166 (0.00241)	-0.0670* (0.0364)	-0.0345* (0.0185)	-0.0235 (0.0793)	0.00703 (0.00854)	-0.0890** (0.0387)	-0.00850 (0.00577)		
% invested in Equities	-0.0540* (0.0273)	-0.00119 (0.00493)	-0.0419 (0.0374)	-0.000497 (0.00721)	-0.115 (0.0958)	0.00555 (0.00963)	-0.192** (0.0845)	0.0197 (0.0181)	-0.0404 (0.0350)	-0.00629 (0.00592)		
Funded Ratio	-0.0489** (0.0181)	0.00599 (0.00811)	-0.101** (0.0345)	-0.00923 (0.00860)	0.0321 (0.0524)	0.0516*** (0.0120)	-0.116 (0.105)	0.0222 (0.0146)	-0.0303 (0.0333)	0.00705 (0.0112)		
Log Fund Age	0.0451 (0.0346)	0.0178** (0.00824)	0.114** (0.0493)	0.0340*** (0.00799)	0.388** (0.125)	0.0251 (0.0279)	-0.123 (0.290)	0.0793* (0.0410)	0.0163 (0.0448)	0.0117 (0.0128)		
Active Members to Beneficiaries	2.80e-05 (0.0114)	0.000348 (0.00152)	0.0290 (0.0206)	0.000503 (0.00250)	-0.00161 (0.00750)	0.000605 (0.00118)	0.0502 (0.0299)	-0.00155 (0.00358)	-0.0140 (0.00901)	-0.00256 (0.00199)		
Inflation Assumption	0.146 (0.655)	-0.00651 (0.0645)	0.168 (0.995)	0.0535 (0.0699)	-0.888 (0.905)	-0.436*** (0.0724)	-0.454 (1.947)	0.254 (0.227)	-0.210 (0.657)	0.0400 (0.0899)		
Total Fund Return	0.114** (0.0414)	-0.00224 (0.00435)	0.109** (0.0485)	-0.00155 (0.00473)	0.0990* (0.0464)	0.00697 (0.00938)	0.148** (0.0525)	-0.0121 (0.00833)	0.104** (0.0435)	0.00666 (0.00431)		
% Union Members	0.000629 (0.000837)	0.000164* (9.12e-05)	0.00100 (0.00133)	0.000200 (0.00147)	-0.00101 (0.00128)	-0.000177 (0.000377)	0.000621 (0.00230)	0.000602* (0.000299)	0.000427 (0.00128)	3.60e-06 (9.58e-05)		
Political Corruption Convictions	0.00210 (0.0126)	0.00339 (0.00352)	0.0192 (0.0241)	-0.000260 (0.00314)	-0.0493 (0.0270)	-0.00812 (0.00552)	0.0305 (0.0790)	0.00370 (0.0101)	-0.000804 (0.0136)	0.00505 (0.00424)		
Log Real GDP per Capita	-0.0916 (0.0663)	-0.00782 (0.0109)	-0.245** (0.108)	-0.00132 (0.0154)	-0.372*** (0.0834)	-0.0243 (0.0222)	-0.364 (2.54)	-0.0144 (0.0274)	-0.0652 (0.0839)	0.00692 (0.00962)		
Net Corp. Income Taxes to Total Taxes	-0.00123 (0.00173)	-0.00072*** (0.000245)	-0.000721 (0.00299)	-0.00085*** (0.000250)	0.000527 (0.00230)	-0.00005 (0.000473)	-0.00580 (0.00408)	-0.00138** (0.000470)	0.00212 (0.00202)	-0.000335 (0.000388)		
Constant	1.248*** (0.387)	0.00505 (0.157)	2.117*** (0.705)	-0.130 (0.221)	2.571*** (0.665)	0.781*** (0.224)	3.813 (2.556)	-0.422 (0.406)	1.433*** (0.423)	0.0211 (0.208)		
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Quarter FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes		
Number Pension Funds	18	18	16	16	10	10	15	15	18	18		
Observations	1080	1080	718	718	362	362	350	350	730	730		
Adj. R-squared	0.109	0.992	0.105	0.992	0.100	0.991	0.0815	0.991	0.122	0.992		

This table reports estimated coefficients from the panel regressions, expressed in Eq. (5)

The sample runs from 1997Q1 to 2013Q4

Standard errors are clustered at the *fund* level and are shown in brackets

\*, \*\*, \*\*\* indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively



with predominantly Democratic-leaning members (specifications (3)-(4)) and, to a lesser extent, for funds in states where the state government is not dominated by the Democratic Party (specifications (9)-(10)). In both sub-samples, the positive effect prevails even after controlling for time effects though its statistical significance weakens, while in the other two sub-samples the statistical significance of the coefficient estimates vanishes once adding quarter fixed effects.

To conclude, our findings are broadly in line with the empirical literature on the link between CSR and financial performance as the majority of these studies finds a non-negative, neutral link between portfolios' CSR and financial performance, while some studies document a weakly positive relation. However, while much of the literature on which these findings are derived focuses on portfolios of SRI mutual funds, to the best of our knowledge, our study is the first to show weakly positive performance effects of CSR tilts for US state pension funds. In the light of the implications of these findings for fiduciary asset management, it is particularly noteworthy that funds with predominantly Democratic-leaning members show the most consistent positive performance effect of tilting their portfolios towards companies with better CSR scores, suggesting that the CSR tilts we documented in the previous section are not to the financial disadvantage of fund beneficiaries. As such and in contrast to Wang and Mao's (2015) findings, we provide empirical evidence that US public pension funds' responsible investment approach can be beneficial to their beneficiaries' interests and is not unidirectionally linked to self-serving motives of state politicians. Overall, our results are consistent with the predictions of *H1b* and *H3b* but inconsistent with those of *H2b*.

Turning to the coefficient estimates on the control variables, we do not find many consistent associations between portfolio performance on the one hand and fund-specific and state-specific characteristics on the other hand, which are robust to the inclusion of time fixed effects. Hence, we are cautious when drawing conclusions from these results. We find some evidence in line with Bauer et al. (2010) suggesting that larger funds tend to generate lower returns than their smaller counterparts. Attempting to explain this negative association between fund size and portfolio performance, Bauer et al. (2010) name liquidity limitations associated with larger fund size which can restrict public pension funds' portfolio allocation choices and lower their performance. This argument is in line with the negative coefficient estimate we find on the proportion of a fund's portfolio invested in equities, as funds which have a higher share of their portfolio invested in equities might have more limited investment options and are more restricted when aiming to adjust their portfolio holdings. However, this effect is statistically weak. Additionally, our results provide limited support that some older funds and funds with stronger total

returns tend to generate higher returns on their equity portfolio. But again, these effects are subject to the choice of sub-sample and sensitive to controlling for time-specific effects. Overall, our results lead us to conclude that the majority of fund-specific and state-specific factors do not have a systematic and consistent impact on the performance of funds' equity portfolio throughout our sample period.

## Robustness Tests

In this section, we test the robustness of our results to three alternative specifications.

### Alternative CSR Measure

First, we test that our results are not an artefact of the specific CSR measure we use by replacing the CSR score of MSCI ESG with an alternative CSR rating, the IVA/Eco-Value21 rating used in Ferrell et al. (2016).<sup>29</sup> The IVA/Eco-Value21 rating is provided by MSCI and it rates companies on their environmental risk and opportunities assigning a rating of AAA to CCC for each company. We follow Ferrell et al. (2016) and transform the letter-based rating into a numerical score that ranges from 0 (for CCC, the lowest rating category) to 6 (for AAA, the highest category). Hence, a higher score is associated with a better CSR performance. We substitute the lagged CSR score with the firm's Eco-Value21 rating at the end of the previous quarter. IVA/Eco-Value21 ratings are only consistently available for a smaller subset of US companies and for a considerably shorter time period, which reduces the number of observations to around 192,000.<sup>30</sup> The results are presented in Table 5. Overall, we find statistically positive coefficients on the interaction terms with our proxies for beneficiaries' political leaning and, slightly weaker, positive coefficients on the proxies for political pressures. However, the coefficient estimate on the standalone CSR score is now mostly positive and statistically significant, providing additional support for our conjecture that the negative coefficient on the MSCI ESG-based CSR score may be linked to effects unrelated to funds' investment preferences, such as their tendency to follow index weights. We control for this more explicitly in Section "[Deviations from Benchmark Weights](#)".

<sup>29</sup> We use the EcoValue21 score as combined IVA ratings are only available for a considerably smaller sub-set and time period and hence significantly restrict our company coverage. However, the two ratings are methodologically very comparable. For a detailed description of the IVA/EcoValue21 ratings refer to Ferrell et al. (2016).

<sup>30</sup> Due to the significant loss in firm observations and the typically low variability of CSR scores over time, we include fund fixed effects in this analysis to allow more variation in our dataset.

**Table 5** Alternative CSR measure

	(1)	(2)	(3)	(4)	(5)
	Portf. Weight	Portf. Weight	Portf. Weight	Portf. Weight	Portf. Weight
EcoValue21 Rating	-0.000253 (0.00354)	0.00387*** (0.000601)	0.00524*** (0.000590)	0.00648*** (0.000466)	0.00905*** (0.000637)
EcoValue21 Rating × % of Votes for Democratic Party	0.0143** (0.00694)				
EcoValue21 Rating × Democrat-Dummy		0.00565*** (0.000786)			
EcoValue21 Rating × % of Dem. State Gov.			0.00392*** (0.000983)		
EcoValue21 Rating × Dem. State Gov.-Dummy				0.00124* (0.000682)	
EcoValue21 Rating × Rep. Leaning & Rep. State Gov. Dummy					-0.00512*** (0.000905)
EcoValue21 Rating × Rep. Leaning & Dem. State Gov. Dummy					-0.00543*** (0.00119)
EcoValue21 Rating × Dem. Leaning & Dem. State Gov. Dummy					0.00128 (0.000850)
Lagged Log Market Capitalisation	0.283*** (0.00151)	0.283*** (0.00151)	0.283*** (0.00151)	0.283*** (0.00151)	0.283*** (0.00151)
Lagged Log Book-to-Market Value	0.0197*** (0.000973)	0.0197*** (0.000972)	0.0198*** (0.000972)	0.0198*** (0.000972)	0.0197*** (0.000972)
Lagged Dividend Yield	0.468*** (0.0403)	0.467*** (0.0403)	0.468*** (0.0403)	0.468*** (0.0403)	0.467*** (0.0403)
Lagged Debt Ratio	-0.0252*** (0.00572)	-0.0254*** (0.00572)	-0.0250*** (0.00572)	-0.0251*** (0.00572)	-0.0254*** (0.00572)
Lagged Return on Assets	0.00249 (0.00312)	0.00243 (0.00312)	0.00258 (0.00312)	0.00251 (0.00312)	0.00243 (0.00312)
Lagged Beta Coefficient	0.0259*** (0.000890)	0.0259*** (0.000890)	0.0259*** (0.000890)	0.0259*** (0.000890)	0.0259*** (0.000890)
Lagged Log Security Return	-0.0964*** (0.00386)	-0.0962*** (0.00386)	-0.0965*** (0.00386)	-0.0965*** (0.00386)	-0.0962*** (0.00386)
Log Fund Assets	-0.0625*** (0.0155)	-0.0702*** (0.0154)	-0.0682*** (0.0156)	-0.0604*** (0.0154)	-0.0706*** (0.0154)
% invested in Equities	-0.307*** (0.0169)	-0.305*** (0.0168)	-0.316*** (0.0168)	-0.311*** (0.0168)	-0.305*** (0.0168)
Funded Ratio	0.105*** (0.0141)	0.111*** (0.0141)	0.108*** (0.0141)	0.104*** (0.0141)	0.111*** (0.0141)
% of Share Outstanding Held	0.442*** (0.00827)	0.441*** (0.00825)	0.442*** (0.00826)	0.442*** (0.00827)	0.441*** (0.00825)
Log Fund Age	-0.329*** (0.0392)	-0.326*** (0.0392)	-0.341*** (0.0390)	-0.338*** (0.0394)	-0.338*** (0.0396)
Active Members to Beneficiaries	0.0580*** (0.00605)	0.0580*** (0.00603)	0.0563*** (0.00603)	0.0573*** (0.00604)	0.0569*** (0.00613)
Inflation Assumption	-0.158 (0.415)	-0.182 (0.415)	-0.300 (0.418)	-0.242 (0.419)	-0.271 (0.421)
Total Fund Return	-0.116*** (0.00972)	-0.114*** (0.00974)	-0.118*** (0.00972)	-0.117*** (0.00973)	-0.115*** (0.00974)
% Union Members	0.00185*** (0.000379)	0.00212*** (0.000382)	0.00187*** (0.000380)	0.00180*** (0.000381)	0.00211*** (0.000385)

**Table 5** (continued)

	(1)	(2)	(3)	(4)	(5)
	Portf. Weight	Portf. Weight	Portf. Weight	Portf. Weight	Portf. Weight
Political Corruption Convictions	0.0121 (0.0143)	0.0124 (0.0143)	0.0114 (0.0143)	0.0115 (0.0143)	0.0129 (0.0145)
Log Real GDP per Capita	-0.511*** (0.0495)	-0.477*** (0.0497)	-0.502*** (0.0495)	-0.512*** (0.0493)	-0.475*** (0.0497)
Net Corp. Income Taxes to Total Taxes	-0.00179 (0.00148)	-0.00161 (0.00148)	-0.00175 (0.00148)	-0.00178 (0.00148)	-0.00158 (0.00148)
Constant	11.47*** (0.568)	11.20*** (0.570)	11.52*** (0.567)	11.50*** (0.567)	11.23*** (0.571)
Fund FE	Yes	Yes	Yes	Yes	Yes
Observations	191,995	191,995	191,995	191,995	191,995
Adj. R-squared	0.609	0.609	0.609	0.609	0.609

This table reports estimated coefficients from the portfolio allocation model where the MSCI ESG-based *CSR score* is replaced by the *IVA/Eco-Value21 rating* as described in Section "Alternative CSR Measure"

Standard errors are clustered at the *fund* level and are shown in brackets

\*, \*\*, \*\*\* indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively

## Extended Company Coverage

In our main analysis, we restrict the company coverage to S&P500 companies to avoid a time bias caused by the significant increase in companies covered by the MSCI ESG in the early 2000s. To test that our results are not limited to S&P500 companies, we include all companies to our sample once an MSCI ESG rating is available. We re-calculate portfolio weights to account for this extended company coverage by dividing a fund's portfolio holding in a company by the total value of its holdings in all companies with available MSCI ESG scores. The results of this analysis are presented in Table 6. While the number of observations increases significantly to more than 1,200,000, the coefficient estimates on our main variables of interest remain qualitatively unchanged. In particular, the coefficient estimate on the standalone CSR score is negative and statistically significant and the interaction terms of the CSR scores with the political proxies remain statistically significant and positive for specifications (1) to (4) and show the same signs and statistical significance for specification (5), in line with our baseline results presented in Table 3.

## Deviations from Benchmark Weights

A substantial proportion of state pension funds' portfolios is indexed (Parrino et al. 2003), and fund managers' investment performance is typically evaluated against a benchmark, incentivising managers not to deviate too strongly from benchmark weights (Del Guercio and Tkac 2002). Recent research suggests that deviations from benchmarks and norms are especially informative with respect to superior

information and investor preferences (e.g., Kumar and Page 2014), and thus, might be more indicative of funds' investment preferences than simple portfolio weights. To account for this effect, we calculate the absolute deviation of a fund's portfolio weight from the S&P500 by deducting a company's weight in the S&P500 index from its portfolio weight in the fund's portfolio ( $w_{ijt}$ ) and use this as the dependent variable instead of the simple portfolio weights. Table 7 shows the results of these tests. In line with our previous results, we find a positive relation between the political leaning of funds' members and their portfolio weights in companies with higher CSR scores, as indicated by the positive and statistically significant coefficient estimates on the interaction terms in specifications (1) to (4). In line with the findings of the baseline model presented in Table 3, the coefficients on the interaction terms in specification (5) show the expected sign and thus provide additional support that the dominant effect stems from beneficiaries' political values instead of pressures by state politicians. Interestingly, the coefficient estimates on the standalone CSR scores almost entirely lose their statistical significance—except for that in specification (5) which remains weakly statistically significant, suggesting that the average fund's deviation from S&P500 benchmark weights are not statistically related to the portfolio firm's CSR performance. Only after considering the conditioning political dimensions do the preferences towards CSR of different funds' in the sample become apparent. This result provides additional support that the negative and significant coefficient estimate on the standalone CSR score documented in our benchmark regression, is rather linked to funds' tendency to follow S&P500 index weights, instead of speaking to funds' preferences for CSR.

**Table 6** Robustness test: extended company coverage

	(1)	(2)	(3)	(4)	(5)
	Portf. weight	Portf. weight	Portf. weight	Portf. weight	Portf. weight
CSR Score	-0.313*** (0.0330)	-0.115*** (0.0133)	-0.105*** (0.0131)	-0.105*** (0.0130)	-0.0993*** (0.0131)
CSR Score × % of Votes for Democratic Party	0.407*** (0.0568)				
CSR Score × Democrat-Dummy		0.0194*** (0.00382)			
CSR Score × % of Dem. State Gov.			0.00947** (0.00374)		
CSR Score × Dem. State Gov.-Dummy				0.0112*** (0.00215)	
CSR Score × Rep. Leaning & Rep. State Gov. Dummy					-0.0154*** (0.00412)
CSR Score × Rep. Leaning & Dem. State Gov. Dummy					-0.0140*** (0.00505)
CSR Score × Dem. Leaning & Dem. State Gov. Dummy					0.0103*** (0.00217)
Controls	Yes	Yes	Yes	Yes	Yes
Funds—Security FE	Yes	Yes	Yes	Yes	Yes
Observations	1,213,798	1,213,798	1,213,798	1,213,798	1,213,798
Number of FE	64,897	64,897	64,897	64,897	64,897
Adj. R-squared	0.0966	0.0962	0.0959	0.0960	0.0963

This table reports results of the robustness test described in Section [Extended Company Coverage](#), where the sample is extended beyond firms included in the S&P500 and comprises funds' holdings in all companies with an MSCI ESG rating in quarter  $t$

Standard errors are clustered at the *fund-security* level and are shown in brackets

\*, \*\*, \*\*\* indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively

## Conclusions

This study explores the underlying drivers of US public pension funds' tendency to tilt their portfolios towards companies with superior CSR performance. We argue that large, internally managed US state pension plans are ideally placed to incorporate CSR considerations into their investment decisions. However, only some of these funds adopt responsible investment practices, while others do not show an interest in the environmental and social performance of their portfolio companies. We explore three channels that may explain the heterogeneity in the relation between funds' portfolio holdings and the CSR performance of their investment targets:

(1) The “beneficiaries' interests” channel which suggests that state pension funds tilt their portfolios more strongly towards companies with superior CSR performance if such environmental and social considerations are in line with the interests of their beneficiaries;

- (2) The “political pressures” channel according to which state politicians exert pressures on state pension funds to tilt their portfolios towards companies that show superior CSR performance in order to serve their own political agenda; and
- (3) The “pure financial motives” channel which implies that funds tilt their portfolios towards CSR companies to boost their financial performance, irrespective of beneficiaries' non-financial interests or political pressures.

Looking at the public equity holdings of 31 US state pension plans over the period 1997 to 2013, our empirical findings are most consistent with the “beneficiaries' interests” channel. First, our analysis of funds' portfolio weights suggests that funds whose beneficiaries show stronger concerns for firms' CSR performance as measured by state's political leaning hold larger portfolio weights in companies with higher CSR scores, compared to funds whose state's political leaning does not indicate

**Table 7** Robustness test: deviation from S&P500 weight

	(1)	(2)	(3)	(4)	(5)
	S&P500 Devia- tions	S&P500 Devia- tions	S&P500 Devia- tions	S&P500 Devia- tions	S&P500 Devia- tions
CSR Score	-0.0559 (0.0375)	0.00207 (0.0124)	0.0101 (0.0123)	0.0160 (0.0122)	0.0241* (0.0125)
CSR Score × % of Votes for Dem. Party	0.149** (0.0664)				
CSR Score × Democrat-Dummy		0.0255*** (0.00451)			
CSR Score × % of Dem. State Gov.			0.0240*** (0.00432)		
CSR Score × Dem. State Gov.- Dummy				0.0122*** (0.00257)	
CSR Score × Rep. Leaning & Rep. State Gov. Dummy					-0.0256*** (0.00535)
CSR Score × Rep. Leaning & Dem. State Gov. Dummy					-0.00969* (0.00573)
CSR score × Dem. Leaning & Dem. State Gov. Dummy					0.00805*** (0.00295)
Control Variables	Yes	Yes	Yes	Yes	Yes
Fund—Security FE	Yes	Yes	Yes	Yes	Yes
Observations	552,929	552,929	552,929	552,929	552,929
Number of FE	20,258	20,258	20,258	20,258	20,258
Adj. R-squared	0.0249	0.0252	0.0252	0.0250	0.0254

This table reports results of the robustness test described in Section "[Deviations from Benchmark Weights](#)", where the dependent variable is the absolute deviation of the funds' portfolio weights from the S&P500 index weights

Standard errors are clustered at the *fund-security* level and are shown in brackets

\*, \*\*, \*\*\* indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively

a strong interest in environmental and social concerns. We further document that the effect of the political values of funds' beneficiaries on their tendency to overweight companies with good CSR credentials dominates the effect of potential political pressures by state politicians. Finally, we provide evidence that funds which tilt their portfolios towards companies with stronger CSR generate a higher return than their counterparts, though the statistical significance of this performance effect is weak, suggesting that it is not the main driver of funds' investment choices.

Overall, our findings indicate that US public pension funds consider financial objectives and moral values of their beneficiaries when deciding whether to incorporate CSR into their investment choices. In this way, our results are in line with previous research by Hong and Kostovetsky (2012), Di Giuli and Kostovetsky (2014) and Riedl and Smeets (2017) which suggests an attitude-driven rather than a purely financially motivated preference for CSR by investors. However, in contrast to these authors, we find that US state pension funds account for beneficiaries' environmental and social concerns without sacrificing financial return. As such our findings correspond

to survey-based evidence presented in Sievaenen et al. (2017, p. 912) who report that European pension funds with responsible investment strategies pay attention to both the CSR focus and the financial focus of their investments and in this way "can bring balance between finance and responsibility". Our conclusions are also consistent with Cox and Wicks' (Cox and Wicks 2011, p. 160) positive interpretation of the adoption of responsible investment strategies by institutional investors as "representative of a shift in collective conceptualisations of the role, place, and nature of morality in the market."

In addition, our study provides an antidote to a recent study which concluded that public pension funds engage in investment activities that serve the political agendas of state politicians but are detrimental to beneficiaries' interests and neglect their fiduciary duty (Wang and Mao 2015). In contrast, we show that fiduciary duty concerns are the main driver of funds' investment choices regarding CSR and that public pension funds have adopted a more holistic consideration of beneficiaries' interests that spans beyond pure financial objectives and extends to the impact of investments on the physical and social environment.

As such, our findings have important implications for the debate on the compatibility of CSR considerations with investors' fiduciary duty (e.g. Rounds 2005; Freshfields Bruckhaus Deringer 2005; Sethi 2005; Richardson 2007, 2011; Sandberg 2011; Hawley et al. 2014). Our study lends support to claims that a pure financial interpretation of funds' fiduciary duty might run the risk of discounting the wider interests of funds' beneficiaries (e.g. Richardson 2011; Lydenberg 2012), and that a more holistic interpretation of fiduciary duty is called for, enabling funds to incorporate their beneficiaries' non-financial interests as long as these are not detrimental to fund performance. For instance, Jansson et al. (2014) surveyed more than 1000 future beneficiaries of the Swedish pension system and found that they prefer an extended interpretation of fiduciary duty that incorporates social, ethical and environmental concerns in investments over a traditional, pure financial focus. Our study provides empirical evidence of one channel, namely via positive CSR screening, how such social, ethical and environmental concerns of beneficiaries are incorporated by US public pension funds.

While such a broadened understanding of fiduciary duty may allow funds to serve their beneficiaries' interests more holistically, it also poses new challenges. For instance, how should funds define the "best interests" of beneficiaries and whose interests should dominate in case that beneficiaries differ in their attitudes toward environmental and social issues. These questions suggest interesting avenues for future research in the area of business ethics and are particularly important for public pension funds administered as defined benefit plans since plan participants do not have an option to exit the fund in case that they are dissatisfied with the funds' investment approach (Clark 2004; Sandberg et al. 2014; Hoepner and Schopohl 2018). Thus, we hope that our study will contribute to the ongoing public debate about a re-interpretation of fiduciary duty in light of growing environmental and social concerns, by shedding light on the moral dimension of beneficiaries' interests.<sup>31</sup>

Our study has certain limitations. First, our empirical analysis is restricted to large, internally managed US state pension funds and specifically focuses on their portfolio allocations in public equities. Arguably, these funds are best placed to incorporate firms' CSR performance into their investment choices. In contrast, smaller funds with no internal management might be more limited to adopt such strategies. Hence, it would be interesting to explore to what extent beneficiaries' interests drive the award of external mandates, are present in other asset classes (e.g., fixed income), can

be extended to other markets and countries, and are observable for different responsible investment strategies (e.g., negative screening, shareholder engagement). Additionally, the empirical design of our study does not allow to identify whether public pension funds consciously adjust their portfolio allocations based on beneficiaries' political leaning or whether these adjustments occur indirectly through a subtle change in political climate. Qualitative studies that explore the direct investment processes and analyse how public pension funds incorporate their beneficiaries' interests would supplement our empirical findings and allow a more comprehensive understanding of the underlying channels through which funds' serve their beneficiaries.

**Acknowledgements** We would like to thank Chris Brooks, Michael Clements, Dan diBartolomeo, Sabine Doebeli, Qian Li, Marcus Nilsson, Ian Tonks, Simone Varotto, Yeqin Zeng, Chendi Zhang, Xiaoyan Zhou and participants at the 2015 PRI Academic Workshop, the 2015 European Responsible Investment and Institutions Conference (ERIIIC), the 2015 Sussex Young Finance Scholars' Conference, the 2015 Henley Doctoral Researcher Conference, the 2016 BAFA conference in Bath, the 2016 Geneva Summit on Sustainable Investment and the 8th INQUIRE UK Business School Seminar for helpful comments. We are responsible for all remaining errors and omissions. Authors are listed in alphabetical order. The work on this project began when Dr. Hoepner was a Lecturer in Finance at the School of Management at the University of St. Andrews. The paper was previously circulated under the title "Red versus Blue: Do Political Dimensions Influence the Investment Preferences of State Pension Funds?".

**Funding** This study was not funded by a specific research Grant.

## Compliance with Ethical Standards

**Conflict of interest** All Authors declared that they have no conflict of interest.

**Ethical Approval** This article does not contain any studies with human participants or animals performed by any of the authors.

**Open Access** This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

## References

- Adler, T., & Kritzman, M. (2008). The cost of socially responsible investing. *Journal of Portfolio Management*, 35(1), 52–56.
- Aguilera, R. V., Rupp, D. E., Williams, C. A., & Ganapathi, J. (2007). Putting the S back in corporate social responsibility: A multilevel theory of social change in organizations. *Academy of Management Review*, 32, 836–863.
- Andonov, A., Bauer, R., & Cremers, M. (2017). Pension Fund asset allocation and liability discount rates. *Review of Financial Studies*, 30(8), 2555–2295.

<sup>31</sup> See, the efforts of the PRI on (re-)defining fiduciary duty in relation to responsible investment practices in various markets: <https://www.unpri.org/sustainable-markets/sustainable-financial-system/fiduciary-duty>.

- Andonov, A., Hochberg, Y. V., & Rauh, J. D. (2018). Political representation and governance: Evidence from the investment decisions of public pension funds. *Journal of Finance*, *73*(5), 2041–2086.
- Arjaliès, D. L. (2010). A social movement perspective on finance: How socially responsible investment mattered. *Journal of Business Ethics*, *92*(1), 57–78.
- Barber, B. M. (2007). Monitoring the monitor: Evaluation CalPERS activism. *Journal of Investing*, *16*(4), 66–80.
- Barnea, A., & Rubin, A. (2010). Corporate social responsibility as a conflict between shareholders. *Journal of Business Ethics*, *97*, 71–86.
- Bauer, R., Koedijk, K., & Otten, R. (2005). International evidence on ethical mutual fund performance and investment style. *Journal of Banking & Finance*, *29*, 1751–1767.
- Bauer, R. M. M. J., Cremers, K. J. M., & Frehen, R. G. P. (2010). Pension fund performance and costs: Small is beautiful. *Working Paper*.
- Bello, Z. Y. (2005). Socially responsible investing and portfolio diversification. *Journal of Financial Research*, *28*(1), 41–57.
- Bonaparte, Y., Kumar, A., & Page, J. K. (2017). Political Climate, optimism, and investment decisions. *Journal of Financial Markets*, *34*, 69–94.
- Bradley, D. J., Pantzalis, C., & Yuan, X. (2016). The influence of political bias in state pension funds. *Journal of Financial Economics*, *119*(1), 69–91.
- Brown, J. R., Pollet, J., & Weisbenner, S. J. (2015). The in-state equity bias of state pension plans. *NBER Working Paper*.
- Cahan, S. F., Chen, C., & Chen, L. (2017). Social norms and CSR performance. *Journal of Business Ethics*, *145*(3), 493–508.
- Capelle-Blancard, G., & Monjon, S. (2012). Trends in the literature on socially responsible investment: Looking for the keys under the lamppost. *Business Ethics: A European Review*, *21*(3), 239–250.
- Chatterji, A. K., Levine, D. I., & Toffel, M. W. (2009). How Well do social ratings actually measure corporate social responsibility? *Journal of Economics & Management Strategy*, *18*(1), 125–169.
- Cheng, I. H., Hong, H., & Shue, K. (2013). Do Managers do good with other people's money?. *NBER Working Paper, No. 19432*.
- Clark, G. L. (2004). Pension fund governance: Expertise and organizational form. *Journal of Pension Economics and Finance*, *3*(2), 233–253.
- Coronado, J. L., Engen, E. M., & Knight, B. (2003). Public Funds and private capital markets: The Investment practices and performance of state and local pension funds. *National Tax Journal*, *56*(3), 579–594.
- Cox, P., Brammer, S., & Millington, A. (2008). Pension funds and corporate social performance an empirical analysis. *Business & Society*, *47*(2), 213–241.
- Cox, P., & Schneider, M. (2010). Is corporate social performance a criterion in the overseas investment strategy of U.S. pension plans? An empirical examination. *Business & Society*, *49*(2), 252–289.
- Cox, P., & Wicks, P. G. (2011). Institutional interest in corporate responsibility: Portfolio evidence and ethical explanation. *Journal of Business Ethics*, *103*, 143–165.
- Cremers, K. J. M., & Nair, V. B. (2005). Governance Mechanisms and equity prices. *Journal of Finance*, *60*(6), 2859–2894.
- De Haan, M., Dam, L., & Scholtens, B. (2012). The drivers of the relationship between corporate environmental performance and stock market returns. *Journal of Sustainable Finance & Investment*, *2*(3–4), 338–375.
- Del Guercio, D., & Tkac, P. A. (2002). The determinants of the flow of funds of managed portfolios: Mutual funds vs. pension funds. *Journal of Financial and Quantitative Analysis*, *37*(4), 523–557.
- Derwall, J., Guenster, N., Bauer, R., & Koedijk, K. (2005). The eco-efficiency premium. *Financial Analyst Journal*, *61*(2), 51–63.
- Di Giuli, A., & Kostovetsky, L. (2014). Are Red or blue companies more likely to go green? Politics and corporate social responsibility. *Journal of Financial Economics*, *111*(1), 158–180.
- Dittmar, A., & Mahrt-Smith, J. (2007). Corporate Governance and the Value of Cash Holdings. *Journal of Financial Economics*, *83*(3), 599–634.
- Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics*, *101*(3), 621–640.
- Ferrell, A., Liang, H., & Renneboog, L. (2016). Socially responsible firms. *Journal of Financial Economics*, *122*(3), 585–606.
- Fich, E. M., Harford, J., & Tran, A. L. (2015). Motivated Monitors: The Importance of Institutional Investors Portfolio Weights. *Journal of Financial Economics*, *118*(1), 21–48.
- Freeman, R. E. (2017). The New Story of Business: Towards a More Responsible Capitalism. *Business and Society Review*, *122*(3), 449–465.
- Freshfields Bruckhaus Deringer (2005). A legal framework for the integration of environmental, social and governance issues into institutional investment. United Nations Environmental Programme Finance Initiative. Available: [http://www.unepfi.org/fileadmin/documents/freshfields\\_legal\\_resp\\_20051123.pdf](http://www.unepfi.org/fileadmin/documents/freshfields_legal_resp_20051123.pdf).
- Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, *5*(4), 210–233.
- Galema, R., Plantinga, A., & Scholtens, B. (2008). The stocks at stake: Return and risk in socially responsible investment. *Journal of Banking & Finance*, *32*, 2646–2654.
- Geczy, C. C., Stambaugh, R. F., & Levin, D. (2005). Investing in Socially Responsible Mutual Funds. *Working paper*.
- Gil-Bazo, J., Ruiz-Verdú, P., & Santos, A. A. P. (2010). The Performance of Socially Responsible Mutual Funds: The Role of Fees and Management Companies. *Journal of Business Ethics*, *94*, 243–263.
- Grinblatt, M., Titman, S., & Wermers, R. (1995). Momentum Investment Strategies, Portfolio Performance, and Herding: A Study of Mutual Fund Behavior. *American Economic Review*, *85*(5), 1088–1105.
- Hausman, J. A. (1978). Specification Tests in Econometrics. *Econometrica*, *46*(6), 1251–1271.
- Hawley, J., Hoepner, A. G., Johnson, K., Sandberg, J., & Waitzer, E. (Eds.). (2014). *Cambridge Handbook of Institutional Investment and Fiduciary Duty*. New York: Cambridge University Press.
- Hawley, J., & Williams, A. (2000). *The Rise of Fiduciary Capitalism: How Institutional Investors Can Make Corporate America More Democratic*. Philadelphia: University of Pennsylvania Press.
- Himick, D., & Audoussert-Coulier, S. (2016). Responsible Investing of Pension Assets: Links between Framing and Practices for Evaluation. *Journal of Business Ethics*, *136*, 539–556.
- Hirsch, B. T., & MacPherson, D. A. (2003). Union membership and coverage database from the current population survey: Note. *Industrial & Labor Relations Review*, *56*(2), 349–354.
- Hochberg, Y. V., & Rauh, J. D. (2013). Local overweighting and underperformance: Evidence from limited partner private equity investments. *Review of Financial Studies*, *26*(2), 403–451.
- Hoepner, A. G. F., & Schopohl, L. (2018). On the price of morals in markets: An empirical study of the Swedish AP-funds and the Norwegian Government pension fund. *Journal of Business Ethics*, *151*, 665–692.
- Hong, H., & Kostovetsky, L. (2012). Red and blue investing: values and finance. *Journal of Financial Economics*, *103*(1), 1–19.
- Hong, H., & Liskovich, I. (2015). Crime, Punishment and the Halo Effect of Corporate Social Responsibility. *NBER Working Paper, No. 21215*.
- Jansson, M., Sandberg, J., Biel, A., & Gärling, T. (2014). Should pension funds fiduciary duty be extended to include social, ethical

- and environmental concerns? A study of beneficiaries preferences. *Journal of Sustainable Finance & Investment*, 4(3), 213–229.
- Jensen, M. (2002). Value maximization, stakeholder theory, and the corporate objective function. *Business Ethics Quarterly*, 12, 235–256.
- Johnson, R. A., & Greening, D. W. (1999). The effects of corporate governance and institutional ownership types on corporate social performance. *Academy of Management Journal*, 42(5), 564–576.
- Kempf, A., & Osthoff, P. (2007). The effect of socially responsible investing on portfolio performance. *European Financial Management*, 13(5):908–922.
- Kotchen, M., & Moon, J. J. (2012). Corporate social responsibility for irresponsibility. *B.E. Journal of Economic Analysis and Policy*, 12(1), 1935–1682.
- Kumar, A., & Page, J. K. (2014). Deviations from norms and informed trading. *Journal of Financial and Quantitative Analysis*, 49(4), 1005–1037.
- Lakonishok, J., Shleifer, A., & Vishny, R. W. (1992). The Structure and Performance of the Money Management Industry. *Brookings Papers on Economic Activity. Microeconomics*, 1992, 339–391.
- Lydenberg, S. (2007). Universal Investors and Socially Responsible Investors: a tale of emerging affinities. *Corporate Governance: An International Review*, 15(3), 467–477.
- Lydenberg, S. (2012). Reason, Rationality and Fiduciary Duty. *Pensions & Investments*, February 21.
- Margolis, J. D., Elfenbein, H. A., & Walsh, J. P. (2009). Does it Pay to Be Good... And Does it Matter? A Meta-Analysis of the Relationship between Corporate Social and Financial Performance. *Working Paper*.
- McWilliams, A., & Siegel, D. S. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review*, 26(1), 117–127.
- Mohan, N., & Zhang, T. (2014). An analysis of risk-taking behaviour for public defined benefit pension pans. *Journal of Banking & Finance*, 40, 403–419.
- Neubaum, D. O., & Zahra, S. A. (2006). Institutional ownership and corporate social performance: The moderating effects of investment horizon, activism, and coordination. *Journal of Management*, 32(1), 108–131.
- Novy-Marx, R., & Rauh, J. (2011). Public pension promises: How big are they and what are they worth? *Journal of Finance*, 66(4), 1211–1249.
- Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, 24(3), 403–441.
- Parrino, R., Sias, R. W., & Starks, L. T. (2003). Voting with their Feet: Institutional Ownership Changes around Forced CEO Turnover. *Journal of Financial Economics*, 68(1), 3–46.
- Peattie, K., & Samuel, A. (2018). Fairtrade Towns as Unconventional Networks of Ethical Activism. *Journal of Business Ethics*, 153(1), 265–282.
- Pe'er, A., & Gottschalg, O. (2011). Red and Blue: the relationship between the institutional context and the performance of leveraged buyout investments. *Strategic Management Journal*, 32(12), 1356–1367.
- Petersen, H. L., & Vredenburg, H. (2009). Morals or Economics? Institutional Investor Preferences for Corporate Social Responsibility. *Journal of Business Ethics*, 90, 1–14.
- Rathner, S. (2013). The Influence of Primary Study Characteristics on the Performance Differential Between Socially Responsible and Conventional Investment Funds: A Meta-Analysis. *Journal of Business Ethics*, 118(2), 349–363.
- Renneboog, L., Ter Horst, J., & Zhang, C. (2008). The price of ethics and stakeholder governance: The performance of socially responsible mutual funds. *Journal of Corporate Finance*, 14, 302–322.
- Renneboog, L., Ter Horst, J., & Zhang, C. (2011). Is ethical money financially smart? Nonfinancial attributes and money flows of socially responsible investment funds. *Journal of Financial Intermediation*, 20(4), 562–588.
- Richardson, B. J. (2007). Do the Fiduciary Duties of Pension Funds Hinder Socially Responsible Investment? *Banking and Finance Law Review*, 22(2), 145–201.
- Richardson, B. J. (2009). Keeping Ethical Investment Ethical: Regulatory Issues for Investing for Sustainability. *Journal of Business Ethics*, 87, 555–572.
- Richardson, B. J. (2011). From Fiduciary Duties to Fiduciary Relationships for Socially Responsible Investment. *Journal of Sustainable Finance & Investment*, 1(1), 5–19.
- Riedl, A., & Smeets, P. (2017). Why do investors hold socially responsible mutual funds? *Journal of Finance*, 72(6), 2505–2550.
- Romano, R. (1993). State pension fund Activism in Corporate Governance Reconsidered. *Columbia Law Review*, 93(4), 795–853.
- Romano, R. (1995). The Politics of State pension funds. *Public Interest*, 119, 42–53.
- Rounds, C. E. Jr. (2005). Why Social Investing Threatens Public Pension Funds, Charitable Trusts, and the Social Security Trust Fund. In J. Entine (ed.), *Pension Fund Politics. The Dangers of Socially Responsible Investing* (pp. 56–80), Washington, D. C.: The AEI Press.
- Ryan, L. V., & Schneider, M. (2002). Antecedents of Institutional Investor Activism. *Academy of Management Review*, 27(4), 554–573.
- Sandberg, J. (2011). Socially Responsible Investment and Fiduciary Duty: Putting the Freshfields Report into Perspective. *Journal of Business Ethics*, 101, 143–162.
- Sandberg, J., Siegl, S., & Hamilton, I. (2014). The Regulation of institutional investment in Sweden: A Role model for the promotion of responsible investment? In J. P. Hawley et al. (Eds.), *Cambridge Handbook of Institutional Investment and Fiduciary Duty* (1st edn., pp. 59–71). Cambridge: Cambridge University Press.
- Sethi, S. P. (2005). Investing in Socially Responsible Companies is a Must for Public Pension Funds—Because There is no Better Alternative. *Journal of Business Ethics*, 56, 99–12.
- Sievaenen, R., Rita, H., & Scholtens, B. (2013). The Drivers of Responsible Investment: The Case of European Pension Funds. *Journal of Business Ethics*, 117(1), 137–151.
- Sievaenen, R., Rita, H., & Scholtens, B. (2017). European Pension Funds and Sustainable Development: Trade-Offs between Finance and Responsibility. *Business Strategy and the Environment*, 26, 912–926.
- Statman, M., & Glushkov, D. (2009). The Wages of Social Responsibility. *Financial Analyst Journal*, 65(4), 33–46.
- Tonello, M., & Rabimov, S. R. (2010). The 2010 Institutional Investment Report: Trends in Asset Allocation and Portfolio Composition. *Research Report*, The Conference Board.
- Wang, Y., & Mao, C. X. (2015). Shareholder activism of public pension funds: The political facet”. *Journal of Banking and Finance*, 60, 138–152.
- Woidtke, T. (2002). Agents watching agents? Evidence from pension fund ownership and firm value. *Journal of Financial Economics*, 63(1), 99–131.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.



NBER WORKING PAPER SERIES

PERSONALITY DIFFERENCES AND INVESTMENT DECISION-MAKING

Zhengyang Jiang  
Cameron Peng  
Hongjun Yan

Working Paper 31041  
<http://www.nber.org/papers/w31041>

NATIONAL BUREAU OF ECONOMIC RESEARCH  
1050 Massachusetts Avenue  
Cambridge, MA 02138  
March 2023

I have nothing to disclose. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

NBER working papers are circulated for discussion and comment purposes. They have not been peer-reviewed or been subject to the review by the NBER Board of Directors that accompanies official NBER publications.

© 2023 by Zhengyang Jiang, Cameron Peng, and Hongjun Yan. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Personality Differences and Investment Decision-Making  
Zhengyang Jiang, Cameron Peng, and Hongjun Yan  
NBER Working Paper No. 31041  
March 2023  
JEL No. D91,G11,G41

**ABSTRACT**

We survey thousands of affluent American investors to examine the relationship between personalities and investment decisions. The Big Five personality traits correlate with investors' beliefs about the stock market and economy, risk preferences, and social interaction tendencies. Two personality traits, Neuroticism and Openness, stand out in their explanatory power for equity investments. Investors with high Neuroticism and those with low Openness tend to allocate less investment to equities. We examine the underlying mechanisms and find evidence for both standard channels of preferences and beliefs and other nonstandard channels. We show consistent out-of-sample evidence in representative panels of Australian and German households.

Zhengyang Jiang  
Kellogg School of Management  
Northwestern University  
2211 Campus Drive  
Evanston, IL 60208  
and NBER  
zhengyang.jiang@kellogg.northwestern.edu

Hongjun Yan  
DePaul University  
Department of Finance  
1 E. Jackson Blvd., Suite 5500  
Chicago, IL 60604  
hongjun.yan.2011@gmail.com

Cameron Peng  
London School of Economics  
Houghton Street  
London  
WC2A 2AE  
UK  
c.peng9@lse.ac.uk

# 1. Introduction

The recent household finance literature shows large and persistent heterogeneity in people’s portfolio composition and returns (e.g., [Fagereng, Guiso, Malacrino, and Pistaferri, 2020](#)). While investment differences have been related to individual characteristics such as age, wealth, intelligence and financial literacy, these individual characteristics do not fully account for the observed heterogeneity (e.g., [Gomes, Haliassos, and Ramadorai, 2021](#)). A similar challenge arises when using demographic variables to explain investor beliefs—a key ingredient of portfolio decisions. For example, [Giglio, Maggiori, Stroebel, and Utkus \(2021\)](#) show that there is persistent heterogeneity in investor expectations and an exhaustive list of demographic variables can only explain a small fraction of this variation. Overall, the empirical evidence suggests a need to expand the set of characteristics to explain the process through which people make investment decisions.

In this paper, we bring in a new set of individual attributes to shed light on the process of financial decision-making. Our overarching hypothesis is that persistent differences in personality traits are related to persistent differences in both beliefs and investment decisions. This, we argue, is plausible ex-ante for two reasons. First, extensive research has shown that personality traits matter for a variety of life outcomes, including health and aging, marital and career success, and economic decisions such as spending behaviors ([Becker, Deckers, Dohmen, Falk, and Kosse, 2012](#)). As investment decisions just represent another form of life decisions, it is reasonable to expect personality traits to also play a role. Second, many concepts coined by personality psychologists, such as Neuroticism and Conscientiousness, are related and potentially complementary to concepts developed by economists, such as risk aversion and time preference. These psychology-based concepts can potentially provide new ways to measure and demonstrate the forces behind investment decisions above and beyond the traditional measures in economics.

To organize our empirical analysis, we first present a stylized portfolio-choice model to illustrate the potential connections between personality traits and portfolio decisions. In

this model, an investor weighs between optimizing a standard mean-variance utility and maintaining a “target portfolio.” The former captures the pecuniary effects of standard mean variance preferences while the latter, in a reduced form, reflects non-pecuniary effects. For example, some individuals may enjoy investing in the stock market as a social activity and therefore derive utility from a source independent of investment returns. Such a tendency, in our model, would be reflected by a target portfolio with a high equity share. Hence, portfolio choice is determined through two channels: the standard mean-variance optimization and the target portfolio.

We hypothesize that personality traits are related to portfolios through both channels. Motivated by the growing literature that uses surveys to study people’s investment decision process (Choi and Robertson, 2020; Giglio et al., 2021; Chinco, Hartzmark, and Sussman, 2022; Liu, Peng, Xiong, and Xiong, 2022), we design and administer a nationwide survey to collect information on personality traits and investment decisions. This approach is particularly well-suited for the study of personality traits, because psychologists have spent decades refining the measurement of personality traits and have come up with well-established questionnaires ready for use. Our survey uses a 20-item questionnaire to elicit each respondent’s personality traits in the Big Five dimensions, including Extraversion, Agreeableness, Openness, Conscientiousness, and Neuroticism (Condon and Revelle, 2015). In addition to having a module on personality traits, the survey also asks about expectations of key economic indicators, risk preferences, social interaction tendencies, and asset allocation decisions. The American Association of Individual Investors (AAII) distributes our survey to its members. The survey yields 3,325 completed voluntary responses, with median reported wealth of 3.5 million U.S. dollars.

We document four main findings about the relationship between personality traits and investment decisions. First, the Big Five personality traits have significant power for explaining belief heterogeneity. Neuroticism stands out: investors high in Neuroticism are more pessimistic about average future stock returns and assign a greater probability to a

crash. They are also more pessimistic about future economic growth and expect higher inflation. When explaining expectations about stock market returns, the explanatory power of the five personality traits, measured by the adjusted R-squared, is comparable to that of all demographic variables combined.

Second, personality traits are also related to risk preferences. In particular, investors high in Openness are more willing to take risks. Moreover, an investor's elicited expected stock return and risk aversion are uncorrelated, suggesting that these two measures reflect different aspects of individual characteristics.

Third, we connect personality traits to portfolio holdings and examine the underlying mechanisms. Investors who score high on Neuroticism or low on Openness tend to invest less in equities. However, these two traits appear to affect investment decision-making through different channels: high Neuroticism is associated with pessimistic beliefs about future stock returns and tail risks, whereas low Openness is associated with high risk aversion. Moreover, the two traits remain significant in explaining asset allocations even after controlling for risk aversion and return expectations. This suggests that personality traits carry additional explanatory power for investment decisions beyond the traditional measures of beliefs and preferences.

Fourth, we find that personality traits also affect other aspects of belief formation and portfolio decisions. For example, investors react differently to the behavior of the people in their social circles: those who score high on Neuroticism and Extraversion are more likely to adopt a certain investment when it becomes popular among people around them. We also find that personality traits are correlated with how people form conditional expectations on stock returns. Once again, Neuroticism and Openness stand out: higher Neuroticism is associated with stronger beliefs in mean-reversion, while higher Openness is associated with more extrapolative beliefs.

The above results are based on correlations between personality traits and asset allocations. A natural concern is omitted variables, the variation of which affects both personalities

and investment decisions. We address this concern in two ways. First, in investor-level regressions, we include a large set of demographic variables, such as income and wealth, as well as preference and belief characteristics as controls. The explanatory power of personality traits is robust to the inclusion of these controls. Second, we note that personality traits display remarkable stability within individuals over time (Cobb-Clark and Schurer, 2012; Flinn, Todd, and Zhang, 2018; Parise and Peijnenburg, 2019).<sup>1</sup> The high persistence in personality traits mitigates the concern that the documented correlation between personality traits and equity allocations is due to concurrent omitted variables, since personality traits have been mostly determined before the realizations of concurrent variables. Instead, personality traits capture persistent differences across individuals that also manifest themselves in financial decisions.

We also note that, interestingly, personality traits important for financial decisions are different from those that covary with other economic outcomes. For example, the labor economics literature finds Agreeableness to be a key personality trait that drives economic outcomes in the labor market.<sup>2</sup> However, we find no evidence that Agreeableness plays a direct role in financial decisions.<sup>3</sup> Therefore, the importance of each personality trait may vary from one economic domain to another, and our exercise shows that Neuroticism and Openness are the most relevant traits in the domain of financial decisions. Moreover, this domain specificity imposes additional limitations on the scope of alternative explanations. If, for example, the explanatory power of personality traits is driven by some fixed unobserved characteristics, these characteristics need to be more relevant in this financial setting but

---

<sup>1</sup>For example, Costa and McCrae (1994) and Roberts and DelVecchio (2000) find that personality traits measured 6 to 30 years later display correlations between 60% and 80% with the original measures. More recently, Parise and Peijnenburg (2019) confirm, using a representative sample of households in the Netherlands, that personality traits are highly persistent over time, with a correlation coefficient of 0.66 to 0.88 across waves.

<sup>2</sup>An important factor in negotiation, Agreeableness has shown to be a valid predictor for wages in workplace (Heineck, 2011; Nyhus and Pons, 2005), bargaining power in real estate markets (Goldsmith-Pinkham and Shue, 2021) and in intra-household decisions (Flinn et al., 2018; Flinn, Todd, and Zhang, 2021; Gu, Peng, and Zhang, 2021).

<sup>3</sup>We speculate that the relevance of Agreeableness hinges on direct human interactions, which are absent in many settings of financial decision-making.

not so much other economic settings that have been examined.

Our analysis has important implications for how economists could bring personality traits into a financial-decision framework. First, personality traits are not equally important, and their relative importance may be domain-specific. Second, personality traits may operate through different channels. Therefore, even though multiple traits may affect asset allocation simultaneously, the underlying mechanisms could be completely different, as in the case of Neuroticism and Openness in our analysis. Third, to fully connect personality traits to investment decisions, we may need to go beyond the traditional framework by considering the social aspect of investment decision-making, a topic that has recently received growing attention (Han, Hirshleifer, and Walden, 2018; Hirshleifer, 2020). Finally, the measurement system of personality traits and that of preferences (e.g., risk, time, and social) complement each other in explaining individuals' economic behavior (Becker et al., 2012). In light of this complementarity, personality traits can provide a useful set of noncognitive attributes. Indeed, many household panels begin to include a module of personality traits, and it would be useful for researchers to begin including these additional variables either as explanatory variables or as controls in household-level analysis.<sup>4</sup>

To examine the robustness of our results, we conduct similar analysis using two additional datasets: the “Household, Income and Labour Dynamics in Australia” (HILDA) Survey and the “German Socio-Economic Panel (GSOEP)” Survey. The two datasets cover representative panels of the Australian and German population, respectively. Again, traits Neuroticism and Openness stand out and their associations with investors' equity shares are qualitatively the same as those in our U.S. survey. These results not only offer an important out-of-sample test, but also demonstrate the robustness of our findings in different populations across business cycles.

A vast literature documents persistent heterogeneity in investment decision-making and

---

<sup>4</sup>The following household panels include, or have included before, a personality module: the Household, Income and Labour Dynamics in Australia (HILDA) Survey, the German Socio-Economic Panel (SOEP) Survey, the British Household Panel Survey (BHPS), the Health and Retirement Study (HRS), and the Wisconsin Longitudinal Study (WLS).

outcomes across households (Benhabib and Bisin, 2018; Bach, Calvet, and Sodini, 2018; Campbell, Ramadorai, and Ranish, 2019; An, Bian, Lou, and Shi, 2021; Fagereng et al., 2020). The heterogeneity in portfolio decisions can be attributed to demographic variables, such as age, gender, wealth, IQ, and geographic location (Barber and Odean, 2001; D’Acunto, Hoang, Paloviita, and Weber, 2019a,b), and to other characteristics, such as own or friends’ past experience and political orientation (Malmendier and Nagel, 2011, 2016; Bailey, Cao, Kuchler, and Stroebel, 2018; Meeuwis, Parker, Schoar, and Simester, 2018; Nagel and Xu, 2022). Giglio et al. (2021) recently show that beliefs are mostly characterized by large and persistent individual differences unexplained by demographic variables. Our paper contributes to this literature by showing that personality traits are related to the cross-sectional difference in beliefs after controlling for demographic variables. This result puts forward personality traits as promising variables for understanding why some people are persistently optimistic while others are persistently pessimistic. In a similar spirit, we also show that personality traits are correlated with cross-sectional differences in risk aversion and social interaction. The latter result adds to the recent literature on the social aspects of investment decisions (Hirshleifer, 2020).

Our paper is also related to the growing literature on the implications of personality for economic outcomes, including income, wealth, educational attainment and achievement (Almlund, Duckworth, Heckman, and Kautz, 2011). In the domain of financial decisions, Grinblatt and Keloharju (2009) studies how sensation seeking—one particular personality trait—affects excessive trading, Conlin, Kyröläinen, Kaakinen, Järvelin, Perttunen, and Svento (2015) examine the correlation between an alternative set of personality traits and stock market participation, and Parise and Peijnenburg (2019) show that low noncognitive abilities contribute to a greater probability of financial distress. Our paper adds to this nascent literature along two dimensions. First, our survey covers the respondents’ personality traits and financial investments, as well as beliefs, risk preferences, and social interaction. In doing so, we are able to examine the channels through which personality traits affect



investment decisions. Second, by surveying thousands of Americans who have invested substantial amounts in financial markets, we focus on a more sophisticated spectrum of market participants and show personality traits matter among these people.

Our paper complements the literature that attempts to link financial decision-making to genetics. For example, [Kuhnen, Samanez-Larkin, and Knutson \(2013\)](#) study how a particular genetic variation explains financial decisions through its effects on Neuroticism. There is further evidence that both financial decisions and personality traits are persistent and appear correlated with genetics.<sup>5</sup> In a recent study, [Sias, Starks, and Turtle \(2020\)](#) study how genetic traits predict an individual’s Neuroticism and therefore equity market participation. It has been shown that personality traits are shaped by both genetics and environment ([Bouchard et al., 1994](#)). Hence, genetics provide an a priori source of variation with clean measurement. In comparison, while survey-based measurements of personality traits may be more noisy, they summarize information from both genes and experiences.

Finally, our paper contributes to a growing literature that uses a survey-based approach to study how people make financial decisions. Previous literature has shown how survey expectations explain equity holdings ([Giglio et al., 2021](#)), how surveys can differentiate various finance theories ([Choi and Robertson, 2020](#); [Liu et al., 2022](#)), and how surveys can shed light on the subjective perception of risks ([Chinco et al., 2022](#)). We highlight the value of survey-based personality traits by demonstrating how they enrich our understanding of investment decisions.

---

<sup>5</sup>For instance, [Lesch, Bengel, Heils, Sabol, Greenberg, Petri, Benjamin, Müller, Hamer, and Murphy \(1996\)](#), [Sen, Burmeister, and Ghosh \(2004\)](#), and [Kuhnen and Chiao \(2009\)](#) find an association between a serotonin transporter promoter polymorphism, anxiety-related personality traits (such as Neuroticism), and financial risk-taking in experimental setups, and [Cesarini, Dawes, Johannesson, Lichtenstein, and Wallace \(2009\)](#) and [Barnea, Cronqvist, and Siegel \(2010\)](#) suggest that genetic factors likely account for a significant portion of variation in real-life portfolio allocations across individuals.

## 2. Big Five Personality Traits and Investment Decisions

### 2.1. Definitions and Measurements

The Big Five model of personality traits arises from the factor analysis of statements people use to describe themselves.<sup>6</sup> Across numerous studies that vary in survey questions, languages, and cultures, a stable structure of five traits emerges as a parsimonious way to organize individual differences that can be articulated in natural languages. This finding is surprising, since the theories of personality have been remarkably diverse and the questionnaires designed to operationalize them show little resemblance to each other (McCrae and John, 1992). Below, we explain these five traits and the standard measurement methodology adopted in this paper.

**Openness.** Openness (to experience) refers to the tendency to be open to new aesthetic, cultural, or intellectual experiences. People who are open to experience are intellectually curious, open to emotion, sensitive to beauty, and willing to try new things. They tend to be more creative and more aware of their feelings. They are also more likely to entertain unconventional ideas.<sup>7</sup>

We use the 20-item form from the SAPA Personality Inventory (Condon and Revelle, 2015), which measures each personality trait by four questions. To measure Openness, we ask respondents self-evaluate, on a scale of 1 to 6, whether they are “full of ideas,” are “able to come up with new and different ideas,” are “original thinkers,” and “love to think up new ways of doing things.”

---

<sup>6</sup>Parallel to this survey-based approach, lexical analysis of the trait terms in natural languages has also identified five similar dimensions (e.g., Goldberg, 1981; John, Angleitner, and Ostendorf, 1988).

<sup>7</sup>The definitions of personality traits are taken from the *American Psychological Association Dictionary* (2007).

**Conscientiousness.** Conscientiousness refers to the tendency to be organized, responsible, and hardworking. Conscientious people display self-discipline, have a strong sense of duty and responsibility, and strive for achievement against outside expectations. Accordingly, the psychology literature has found that Conscientiousness is a strong predictor for job performance and is half as important as IQ (Almlund et al., 2011). To measure Conscientiousness, our survey asks the respondents to self-evaluate whether they “like order,” “start tasks right away,” “work hard,” and “neglect duties.”

**Extraversion.** Extraversion refers to an orientation of one’s interests and energies toward the outer world of people and things rather than the inner world of subjective experiences; it is often characterized by positive affect and sociability. Extraverts are enthusiastic, action-oriented people who enjoy interacting with people, possess high group visibility, and tend to assert themselves. To measure Extraversion, our survey asks whether the respondents “usually like to spend free time with people,” “like going out a lot,” “avoid company,” and “dislike being the center of attention.”

**Agreeableness.** Agreeableness refers to the tendency to act in a cooperative unselfish manner. Agreeable individuals are more considerate, kind, generous, helpful, trustworthy, and altruistic. For Agreeableness, we ask respondents to self-evaluate whether they are “concerned about others,” “sympathize with others’ feelings,” are “sensitive to the needs of others,” and “use others for own ends.”

**Neuroticism.** Neuroticism refers to a chronic level of emotional instability and proneness to psychological distress. More neurotic people are less predictable and less consistent in their emotional reactions. They tend to be flippant in the way they express emotion and are more likely to interpret ordinary situations as threatening and minor frustrations as difficult. To measure Neuroticism, our survey asks respondents to self-evaluate whether they “get overwhelmed by emotions,” are “worriers,” “worry about things,” and “panic easily.”

Research in neuroscience shows that personality traits have a biological basis (McAdams, 2015). In particular, they are related to different brain systems, which are brain areas and neural circuitries that generate given behavioral functions. For example, Extraversion is related to brain systems governing *positive emotionality*, while Neuroticism is related to brain systems governing *negative emotionality*. Conscientiousness and Agreeableness are related to neurocognitive systems governing *effort control*. These brain systems co-evolve with personality dispositions from early stages of development.

While the Big Five model has become an important tool for understanding personalities, several limitations should be noted. First, while the Big Five model represents the highest hierarchical level of dispositional traits, it omits more granular variations across individuals.<sup>8</sup> Second, personality surveys ask respondents to rate themselves on a 5- or 6-point continuum with respect to certain statements, such as “I am a cheerful optimist.” Responses are meaningful only if people mean the same thing when they refer to a cheerful optimist. Third, measures of personality traits are context-free, which should be interpreted as “psychology of the stranger” that provides information about persons that one would need to know when one knows nothing else about them (McAdams, 1992). Despite these limitations, the Big Five model provides an efficient and high-level summary of individual differences from a psychological perspective, and can potentially shed new light on investors’ heterogeneity.

## 2.2. *Conceptual Framework*

The Big Five model has strong predictive power for life outcomes, including divergent thinking abilities (McCrae, 1987), marital adjustment and divorce (Kelly and Conley, 1987), health outcomes such as coronary disease (Dembroski, MacDougall, Costa Jr, and Grandits, 1989), spending behavior (Weston, Gladstone, Graham, Mroczek, and Condon, 2019), job performance (Barrick and Mount, 1991), and corporate decisions (Gow, Kaplan, Larcker, and

---

<sup>8</sup>For example, personality traits can be further broken down to 10 or 27 dimensions (Ashton, Lee, Goldberg, and de Vries, 2009; Condon, 2018; Revelle, Dworak, and Condon, 2021).

Zakolyukina, 2019). Given that many of these life outcomes concern economic decisions, it is natural to expect personality traits to also affect financial decisions. However, the exact nature of these effects is unclear as the literature offers limited guidance. In this section, we use a simple framework of investment decisions to provide some guidance on our subsequent analysis.

In a standard framework, financial decisions are determined by an investor's preferences and beliefs over asset returns. Many existing studies, however, show that financial decisions are also driven by other, non-pecuniary factors. For example, Hong, Kubik, and Stein (2004) shows that households invest in the stock market, not just because they derive utility from asset returns, but also because they enjoy the social aspect of discussing stocks with their friends. Gao and Lin (2015) provides evidence that retail investors appear to treat trading stocks as a fun and exciting gambling activity. More recently, the rise of ESG investment suggests that people invest in ESG-related stocks not just because they believe these stocks will outperform, but also because of ethical and environmental concerns (Pástor, Stambaugh, and Taylor, 2021). Therefore, in order to fully understand the implications of personality traits for investment decisions, we need to also consider non-pecuniary factors. For instance, Extraverts may enjoy the interactions with people more and have a stronger tendency to follow their friends.

To incorporate both pecuniary and non-pecuniary factors, we consider the following simple framework. The market has two assets: a risk-free asset with an interest rate of zero and a stock with a stochastic return  $r$ .  $w_i$  denotes the portfolio share allocated to the stock by investor  $i$ , who makes her decision based on two considerations. The first is the standard mean-variance utility maximization. Under this consideration, personality traits are related to investment decisions through standard channels of beliefs and risk preferences. The second consideration is meant to capture the non-pecuniary factors, such as the above-mentioned social and ethical concerns. To this end, we use  $w_i^*$  to denote investor  $i$ 's allocation to the stock if her decision is entirely determined by the second consideration. We refer to this port-

folio as the “target portfolio.” For instance,  $w_i^*$  is higher for investors who derive more utility from the social aspect of stock trading. Under this second consideration, personality traits are related to portfolio choice through the target portfolio. We choose to leave the target portfolio unspecified. Given the exploratory nature of our study, the goal of this framework is to organize our empirical analysis with an agnostic prior with minimal restrictions to give our data an opportunity to “speak out.”

Investor  $i$ 's decision is determined by the following objective function

$$\max_{w_i} (1 - \alpha) \left( w_i E_i[r] - \frac{1}{2} \gamma_i w_i^2 \text{Var}_i[r] \right) - \alpha \frac{1}{2} (w_i - w_i^*)^2, \quad (1)$$

where the first term captures standard mean-variance maximization:  $\gamma_i$  is the coefficient of risk aversion, and  $E_i[r]$  and  $\text{Var}_i[r]$  are the subjective mean and variance of stock returns. The second term, with a quadratic formulation, is a simple parameterization that penalizes deviation from the target portfolio. Finally, parameter  $\alpha$ , with  $\alpha \in [0, 1]$ , represents the weight that the investor allocate to the non-pecuniary factors.

Objective function (1) implies that the optimal portfolio is given by:

$$w_i = \frac{(1 - \alpha) E_i[r] + \alpha w_i^*}{(1 - \alpha) \gamma_i \text{Var}_i(r) + \alpha}. \quad (2)$$

The above equation illustrates that an investor's decision is determined by not only her belief (i.e.,  $E_i[r]$  and  $\text{Var}_i(r)$ ) and preference (i.e.,  $\gamma_i$ ) but also other factors that are summarized by  $w_i^*$ . In one extreme case of  $\alpha = 0$ , the decision is determined by the traditional mean variance optimization  $w_i = \frac{E_i[r]}{\gamma_i \text{Var}_i(r)}$ . In the other extreme case of  $\alpha = 1$ , the investor's decision is  $w_i^*$  and hence is completely guided by factors other than the traditional utility maximization.

According to this simple framework, personality traits are related to investment decisions through two separate channels. First, they are related to asset allocations through their effects on the expected return  $E_i[r]$ , the perceived risk  $\text{Var}_i(r)$ , or the risk aversion  $\gamma_i$ .

For instance, if investors high in Neuroticism are likely to be pessimistic (i.e., have lower expected return  $E_i[r]$ ), they would hold less risky assets. Second, personality traits may carry additional explanatory power for investment decisions beyond their correlation with beliefs and preferences, through their effects on the target portfolio share  $w_i^*$ . In the example above, traders who are more social will have higher target shares  $w_i^*$  and hence higher allocations to the risky asset. Our goal is to examine empirically the relevance of both channels that link investors’ personality traits to their financial decisions.

It is worth noting that the framework also offers a natural explanation of the “low sensitivity” phenomenon documented in [Giglio et al. \(2021\)](#) and [Liu et al. \(2022\)](#). These studies find that although investors’ portfolios respond to their reported expectation of future returns, the sensitivity appears to be excessively low relative to the implication from a standard utility maximization framework. While this phenomenon can be driven by transaction costs or investor inertia, our framework offers an additional simple interpretation. An investor’s financial decisions are partly driven non-utility maximization factors, as summarized by the target portfolio share  $w_i^*$ . In fact, the sensitivity of the stock allocation to the expected stock return decreases in  $\alpha$  and approaches zero when  $\alpha$  approaches one.

### 3. Survey Description

We design and administer a nationwide survey through the American Association of Individual Investors (AAII), a nonprofit organization of about 150,000 members. The main purpose of AAI is to assist “individuals in becoming effective managers of their own assets through programs of education, information and research.” Previously, survey expectations from AAI members have been used to study the formation of investor expectations over time. For example, [Greenwood and Shleifer \(2014\)](#) show that the expectations based on the AAI surveys are highly correlated with those based on other surveys such as the Gallup investor survey and Graham-Harvey CFO survey.

AAII distributed the survey on our behalf via an email to its members on November 22, 2019. Members were given two weeks to complete the survey, and a reminder was sent out on November 29. We obtain 3,325 valid responses after filtering, yielding a 2% response rate out of roughly 150,000 AAI members.<sup>9</sup>

### 3.1. *Survey Design*

The survey, attached in the Appendix, has four sections. When administering the survey, we randomize the order of the first three sections, which represent the core of the survey and aim to collect three distinct sets of information.

**Personality.** The first section draws upon the well-established questionnaire approach to measure the Big Five personality traits. In particular, we use the 20-item form from the SAPA Personality Inventory (Condon and Revelle, 2015) and randomize the order of these items.<sup>10</sup> Each item is a brief and concise description of a person, such as “I usually like to spend my free time with people.” The respondent is asked to evaluate if the item is an accurate description of himself or herself by choosing a score from 1 to 6, where 1 represents “Very Inaccurate” and 6 represents “Very Accurate.” Each big-five personality trait is then derived from the equal-weighted average of the respondents’ scores for the four questions corresponding to this trait. For example, “I usually like to spend my free time with people” is one of the four questions corresponding to Extraversion. A respondent’s score for this trait will be the average of his or her responses (1 to 6) for this question and three other questions.

**Belief and preference parameters.** The second section elicits a set of parameters that are central ingredients in standard models of portfolio decision-making. First, we ask respon-

---

<sup>9</sup>We exclude 4 respondents who took over 10,000 seconds to complete the survey and 56 respondents whose answers to risk aversion questions are not self-consistent (more details in Section 4.2). The small number of inconsistent responses also demonstrates the high quality of our survey respondents.

<sup>10</sup>Condon and Revelle (2015) show that the personality scales derived from these 20 items correlate well with the IPIP Big-Five Factor Markers, a mainstream personality questionnaire that uses 50 or 100 items.



dents to report their expectations about the stock market return, GDP growth, and inflation rate in the following year. To capture beliefs about tail events, we ask them to assign probabilities to the tail events that the stock return will be above 20% or below  $-20\%$  in the following year. To capture extrapolative and contrarian beliefs, we ask them if they believe stock price trends will continue or reverse in the future, conditional on a past gain or loss. Second, we follow [Van Rooij, Lusardi, and Alessie \(2011\)](#) and elicit investors' risk attitude by asking them to choose between a job with a stable income and a job with a risky but higher expected income. Third, to capture the "social interaction" dimension of investment decisions, we ask how the respondents typically react when a new financial product becomes popular among people around them.

**Equity allocation.** The third section asks about the allocation of financial assets, our key outcome variables of portfolio choice. Specifically, we ask the correspondents to evaluate, in their retirement and non-retirement accounts, how much money they have invested and what fraction of the investment is in equities. Combining these questions gives the fraction of investment in risky shares.

**Demographics.** The last section includes standard questions on demographics, including age, gender, race, income, wealth, location, education.

### *3.2. Summary Statistics of Personality Traits and Demographics*

Table 1(a) reports summary statistics. Our respondents are predominantly white males older than 60 and around 80% fall into this category. Relative to the general population, they are more educated and wealthier: 90% of them have a college degree, more than 80% have wealth over 1 million dollars, and about one third of them have an annual income greater than \$200,000. Figure 1 reports the histograms of selected demographic variables and confirms these patterns. Although the AAI sample is skewed in demographics by over-representing

white males older in age, these individuals are also the ones more actively invested in the stock market, making it rather relevant for the study of retail behavior.

The five personality traits have different means but similar standard deviations, suggesting that variations in their magnitudes are comparable. While Openness and Extraversion exhibit little skewness, the other three have skewed distributions: Agreeableness and Conscientiousness are negatively skewed, whereas Neuroticism is positively skewed. These distributions are visualized in Figure 2, which reports the histograms of personality traits.

Table 1(b) reports the pairwise correlation between personality traits. While the Big-Five traits are designed to capture different sources of variation across people, their empirical measures appear to be mildly correlated. For example, people who are more agreeable tend to be more open and conscientious, whereas people who are more neurotic tend to be less conscientious. We therefore, in the following analysis, include all five personality traits as regressors to examine the effect of independent variation in a given trait. As a cross-validation check, our correlation coefficients in Table 1(b) are similar to those reported in [Almlund et al. \(2011\)](#).

Personality traits are also correlated with some demographic characteristics. In early and middle adulthood, it is well documented that as people get older, they tend to become agreeable and conscientious (e.g., [Srivastava, John, Gosling, and Potter, 2003](#)). In comparison, people in our sample are significantly older. Table 2 reports the results when we regress personality traits on demographic variables. We find that female respondents tend to have higher Agreeableness and higher Neuroticism, while older respondents tend to have higher Agreeableness, lower Conscientiousness, lower Neuroticism, higher Extraversion and lower Openness. Overall, the explanatory power of the demographic variables is small: the R-squared is 3% to 5%. We include these demographic variables as controls in subsequent regressions.

### 3.3. *Summary Statistics of Beliefs and Preferences*

Table 1(c) reports the summary statistics of beliefs and preferences. The average expected one-year stock market return is 5.57%. There is substantial heterogeneity across respondents in the expected return. Respondents at the 10th percentile of the distribution report a one-year expected stock return of  $-10\%$ , while respondents at the 90th percentile expect a one-year return of  $14\%$ . The cross-respondents standard deviation of the one-year expected return is 9.51%. Similarly, the average probabilities of the extreme events that the stock market rises or falls by more than  $20\%$  are  $18.49\%$  and  $25.09\%$ , respectively, with large heterogeneity across respondents. The average expected one-year GDP growth and the average expected inflation rate are both about  $2\%$ , with the 10th-90th percentile bounds around  $1\%$  to  $3\%$ .

Following [Van Rooij et al. \(2011\)](#), we ask respondents three questions to elicit their risk aversion. Each question asks the respondents to decide between a safe job and a risky job. In the first question, the risky job has a  $50\%$  chance to double the income and a  $50\%$  chance to cut the income by  $20\%$ . In the second question, the risky job has a  $50\%$  chance to double the income and a  $50\%$  chance to cut the income by  $33\%$ . In the third question, the risky job has a  $50\%$  chance to double the income and a  $50\%$  chance to cut the income by  $50\%$ .

The risky jobs in these three questions are increasingly riskier and require higher levels of risk appetite. Consistent with this property, we find that  $60\%$  of the respondents pick the risky job in the first question,  $27\%$  pick the risky job in the second question, and  $6\%$  pick it in the third question. If the respondent prefers more to less and answers these questions in a self-consistent way, picking the risky job in the second question should imply picking the risky job in the first question, and picking the risky job in the third question should imply picking the risky job in the second question. Out of the 3,385 respondents who completed the survey, only 56 are not self-consistent and are excluded from subsequent analysis.

We conclude this section by discussing two more appeals of our AAI survey. First, our survey was distributed by AAI to its members, many of whom had been AAI members for

years and had a strong sense of affiliation. Indeed, AAI provides a variety of services to its members, including sending out regular newsletters and organizing annual conferences on investing. Therefore, compared to respondents from other survey platforms such as MTurk or Prolific, our respondents were able to complete the survey with more patience and care, ensuring the high data quality in our survey. Second, we are interested in not only examining the link between personality traits and investment choices, but also shedding light on the underlying mechanism. Compared to other surveys with a personality module, our AAI survey is designed to collect responses on beliefs, risk preference, and social interactions, making it possible to examine the underlying mechanism more directly.

## 4. Linking Personality Traits with Beliefs, Preferences, and Social Tendencies

### 4.1. *Expectation*

In this section, we link personality traits with investor beliefs and preferences. We start with the questions about return expectations. Although our survey only captures one cross-section of return expectations, previous research has documented that belief variation is mostly summarized by individual fixed effects (Giglio et al., 2021). In other words, investors tend to have very large and persistent differences in their views. Therefore, this first exercise aims to attribute investor-level expectations about future stock market performance and economic outcomes to personality traits.

In Table 3, Column (1) reports the results of regressing expected market returns on the five personality traits while controlling for demographic variables. Investors with high Neuroticism are more pessimistic in their expectations: a one-point increase in Neuroticism is associated with a 79-basis-point drop in the forecast of future one-year market return. In contrast, investors high in Conscientiousness and Extraversion are more optimistic in

their forecasts: a one-point increase in Conscientiousness (Extraversion) is associated with a 66-basis-point (82-basis-point) increase in the forecast of future one-year market return.

Columns (2) and (3) are concerned with the tails in the distribution of beliefs about stock market returns. While investors high in Neuroticism do not exhibit any difference in their assessed probability of an extreme upside, they are much more concerned with the downside risk: a one-point increase in Neuroticism is associated with a 102-basis-point increase in the predicted probability of a 20% market crash within the next year. In comparison, investors with high Extraversion and Conscientiousness expect a lower probability of a market crash.

A distinct pattern for Openness is worth noting. While Openness is uncorrelated with average beliefs, higher Openness leads to a higher estimated probability for both the upside and the downside. Intuitively, people with higher Openness are more willing to entertain the possibility of extreme events, which may explain why they assign greater probabilities to both tails at the same time.

How much explanatory power do personality traits have? Table 3(b) runs the regression separately using personality traits and other demographic variables. The five personality traits turn out to have explanatory power similar to that of all the demographic fixed effects combined, including gender, age, income, wealth, education and location. The adjusted R-squared is comparable across the two specifications, which suggests that personality traits may help explain why some people are persistently optimistic while others are persistently pessimistic. This result is especially interesting, given that the persistent heterogeneity in investor belief has been shown to be difficult to explain (Giglio et al., 2021).

We also find that personality traits shape how investors forecast other macroeconomic variables. Columns (4) and (5) report regression results using expected GDP growth and expected inflation as dependent variables. Higher Neuroticism is associated with a more pessimistic forecast while higher Extraversion with a more optimistic forecast. Moreover, higher Neuroticism is associated with a *higher* inflation forecast. Panel (b) shows that the explanatory power of personality traits for GDP growth and inflation expectations is also

similar to that of all demographic variables combined.

Overall, the results so far consistently highlight Neuroticism as a key determinant in cross-sectional variation in beliefs: neurotic investors are more pessimistic about market returns and economic growth, assign a greater probability to a market crash, and expect future inflation to be higher. While Conscientiousness and Extraversion are also correlated with investors' beliefs, Neuroticism is the only trait that is correlated with beliefs about stock returns, GDP growth, and inflation.

One concern about these results is that an investor's expected stock return and her personality traits are both affected by her recent experiences. We believe this is unlikely to fully explain our results because the five personality traits are context-free constructs. In fact, the psychology literature notes that the Big Five model is designed to capture unconditional differences in personality traits, which abstract away from the contextual and conditional nature of human experiences (McAdams, 1992). Moreover, the five personality traits are stable for an individual, and intra-individual changes are found to be generally unrelated to adverse life events (Cobb-Clark and Schurer, 2012; Anusic and Schimmack, 2016).

To demonstrate the robustness of personality traits' explanatory power, we run a separate survey among a representative sample of Chinese retail investors and find similar results: specifically, the explanatory power of personality traits and of Neuroticism and Openness in particular for the variations in investor belief is similar to that of a large set of demographic fixed effects. We describe our method and results in Appendix B.

We also probe how personality traits affect an investor's belief-formation process. Two of the simplest, most explored belief-formation processes in the literature are extrapolative beliefs and mean-reverting beliefs. In the survey, we ask respondents if they believe a stock will rise, fall, remain the same over the next year if it has risen or fallen a lot over the last year. Based on their answers, we assign each respondent an extrapolation score ranging from  $-100$  to  $100$ , where a higher score indicates more extrapolative and less mean-reverting beliefs. Table 4 reports the results when regressing the extrapolation score on personality

traits. Neuroticism and Openness again stand out: higher Neuroticism is associated with less extrapolative and more mean-reverting beliefs while higher Openness is associated with more extrapolative and less mean-reverting beliefs. Therefore, personality traits not only affect the level of beliefs, but also the perception of trends and streaks. In general, the belief in mean-reversion or continuation in stock returns is not necessarily irrational. However, our evidence shows that the tendency of the belief in mean-reversion or continuation depends on personality traits, highlighting their important role in belief formation.

#### 4.2. *Risk Aversion*

Similarly, we regress our measures of risk aversion on personality traits and demographic controls. In Table 5, Columns (1) to (3), the dependent variables are the dummy variables indicating whether the respondent is willing to take a particular bet. In Column (4), the dependent variable is the implied risk aversion parameter.<sup>11</sup> This risk aversion parameter is uncorrelated with the respondent's expected stock return, which suggests that it captures a different aspect of the investment decision-making process.

These regression results suggest that Openness, Agreeableness, and Extraversion are strongly correlated with risk aversion. An investor is more risk-averse if she is low in Openness, high in Agreeableness, or low in Extraversion. The connection between Openness and risk aversion is quite intuitive: an investor with higher Openness tends to be more open to taking risks, whereas an investor with lower Openness tends to be more conservative. Similarly, an investor with higher Extraversion enjoys social interaction and tends to be more excitement-seeking (McCrae and Costa Jr, 1997). However, the association between Agreeableness and risk aversion seems less obvious.

Conceptually, the results in Sections 4.1 and 4.2 suggest that personality traits can pro-

---

<sup>11</sup>The implied risk aversion parameter equals 1 if the respondent picks the risky job in all three questions, 2 if the respondent picks the risky job in the first two questions and rejects it in the third question, 3 if the respondent picks the risky job in the first question and rejects it in the second and third questions, and 4 if the respondent rejects the risky job in all three questions. Therefore, a higher parameter value implies a higher risk aversion.

vide deeper psychological foundations for the origins of individual differences in beliefs and preferences (see [McAdams, 2015](#), for a review). A related literature specifically examines how a particular genetic variation explains financial decisions through its effects on Neuroticism ([Kuhnen et al., 2013](#), among others). Therefore, this could open up a new line of research that relates the origins of heterogeneous risk preference to personality traits, the biological and experiential foundations of which have been studied extensively in psychology and behavioral sciences.

### *4.3. Social Interaction Tendencies*

A recent literature begins to investigate how social interactions contribute to financial decision-making (e.g., [Bailey et al., 2018](#); [Han et al., 2018](#); [Hirshleifer, 2020](#)). To capture this social aspect, we include the following question: “Upon seeing a new type of investment becoming popular among people around you, would you consider investing in it as well?” This captures a scenario that many investors face regularly—e.g., how to respond when Bitcoin became a popular investment amongst the general public—and the resulting measure can be interpreted as a measure of social “herding.” The options range from “Definitely No” to “Definitely Yes,” coded as scores from 1 to 5.

Table 6 reports results when regressing measures of social interactions on personality traits. The dependent variable in Column (1) is the score from 1 to 5 and, in Column (2), is a dummy variable that equals one for “Yes” or “Definitely Yes.” In both specifications, Neuroticism and Extraversion are associated with a higher degree of social “herding.” It is intuitive why Extraversion matters here: an extravert derives utility (and pleasure) from interacting with others and tends to copy their investment decisions after such social interactions. The positive coefficient on Neuroticism is also worth noting. One possible explanation is that more neurotic investors have more fear of missing out (FOMO), and therefore tend to follow the crowd.

The results above suggest that, to fully incorporate personality traits into a financial-



decision framework, we need to go beyond the standard framework of beliefs and preferences by accommodating social interaction tendencies. In particular, personality traits may affect how investment strategies (Han et al., 2018; Hirshleifer, 2020) and expectations (Bailey et al., 2018) transmit in the population, an aspect that has been often ignored in traditional finance models but has recently received growing attention.

## 5. Personality Traits and Asset Allocation

In this section, we examine the relationship between personality traits and asset allocation decisions. We start with our main data set, the AAI survey, which covers a cross-section of American investors. To further establish robustness in panel data and in an international setting, we conduct similar analysis using two household panels for the Australian and German populations.

### 5.1. AAI Survey

We obtain in our AAI survey each respondent’s overall equity share as a fraction of financial wealth, and regress it on the five personality traits, controlling for gender, age, state, and education fixed effects. Table 7 reports the results. As shown in Column (1), both high Neuroticism and low Openness are associated with low equity shares. However, these two effects appear to operate through difference channels. Specifically, as shown in Tables 3 and 5, high Neuroticism is associated with low expected returns and high crash risks, but has no meaningful correlation with risk aversion. Hence, the effect of Neuroticism on equity allocation is likely through the belief channel. In contrast, high Openness is associated with low risk aversion, and high perceived risks, but has no significant correlation with expected returns. That is, this effect is dominated by the preference channel: investors with high Openness have low risk aversion and hence high equity allocation, despite their high perceived risks.

We then separately analyze the equity shares in retirement and non-retirement savings. In our sample, retirement savings and non-retirement savings are of similar magnitude. In Column (2) of Table 7, we repeat the regression but use the equity share of the retirement saving as the dependent variable. Results are consistent with the evidence in Column (1): high Openness and low Neuroticism are associated with higher equity shares.

In Column (3), we repeat the regression but use the equity share of the assets outside of retirement saving as the dependent variable. The coefficient associated with Openness is consistent with that in Columns (1) and (2), but the coefficient associated with Neuroticism is no longer significant. We suspect that the data in non-retirement savings are more noisy, because they may include alternative investments such as private equity and hedge funds that are risky but not counted in the equity share.<sup>12</sup>

In Columns (4) to (6), we additionally control for the respondents' belief and risk preferences from the survey. While the respondents' expected equity return, belief about tail risks in the stock market, and risk aversion can explain their equity shares, the explanatory power of Openness and Neuroticism remains robust. This suggests that personality traits carry additional explanatory power for investment decisions beyond the traditional framework of beliefs and preferences. There are at least two interpretations for this result. First, under the traditional mean-variance framework in which portfolio choice is pinned down completely by risk preference and expectations, our result suggests that personality traits provide measures of risk preferences and expectations that are complementary to measures commonly used in surveys. Second, if we are willing to deviate from the traditional framework, the above results suggest that personality traits are related to nonstandard preferences, nonstandard beliefs, or other frictions, captured by the "target portfolio." Therefore, there is a need to extend standard models of portfolio choice by considering alternative forces, such as social interactions and non-pecuniary preferences.

---

<sup>12</sup>We inform the respondents that equities include not only individual stocks, but also mutual funds and exchange-traded funds (ETFs) that mainly hold equities. Equities do not include ordinary bonds, preferred stocks, convertible bonds, and various money market funds.

One concern about the above specification is omitted variables affecting both sides of the equation. This concern, however, is largely mitigated by the fact that measures of personality traits are highly persistent in time-series (Costa and McCrae, 1994; Parise and Peijnenburg, 2019). It is also important to note that personality traits are increasingly stable with age (Roberts and DelVecchio, 2000). This feature, combined with the AAI sample’s overrepresentation of older individuals, suggests that the measured personality traits in our sample are likely to represent persistent—not transitory—individual characteristics.<sup>13</sup> Therefore, it is unlikely that the correlation between personality traits and equity allocations is due to *concurrent* omitted variables, since personality traits have been mostly determined before the realizations of concurrent variables.

## 5.2. *The HILDA Survey*

One concern, inherent in our cross-sectional setting, is that the effects of personality traits on investment decisions are time-varying and our results only capture one snapshot at a time. For instance, perhaps Neuroticism leads to more pessimistic investment only after a long bull market, if Neurotic investors worry more about a reversion after a long boom. Since the AAI survey data do not allow us to directly address this issue, we resort to a different dataset to examine the robustness of our results in a panel setting.

We bring additional data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Survey is a household-based panel study that collects information about economic and personal well-being, labour market dynamics, and family life. It covers the period from 2001 to 2017. The personality data were collected in 2005, 2009, 2013, and 2017. The investment data were collected in 2002, 2006, 2010, and 2014. We merged these data in adjacent years (for example, the 2005 personality data are merged with the 2006 investment data), obtaining three measurements (2005–2006, 2009–2010, and

---

<sup>13</sup>The persistence in personality traits holds true also in the HILDA survey that we used: Cobb-Clark and Schurer (2012) and Flinn et al. (2018) show that all big-five personality traits are stable over time and across age cohorts. This claim is also consistent with the evidence that personality traits have genetic and biological roots (Kuhnen et al., 2013; McAdams, 2015; Sias et al., 2020).

2013–2014).<sup>14</sup>

We choose this dataset for complementary analysis for the following reasons. First, with a panel structure, the HILDA Survey allows us to track a given household’s portfolio decisions and personality traits over time. Second, the HILDA sample has much more balanced demographics. For example, the numbers of female and male respondents are close and the distribution across age brackets is smooth. Third, the HILDA Survey concerns a sample from the population of a different country, Australia, with comparable institutional features. Therefore, it provides an “out-of-sample” test of the results of the AAI survey.

We perform similar analysis using the data from the HILDA Survey. Specifically, we regress the equity share as a fraction of the financial assets on the five personality traits, controlling for the demographic variables including gender, age, income, wealth, and income. To avoid potential data errors, we drop observations where the equity wealth is above financial wealth. Since this data cover multiple years, we also control for year fixed effects.

Because the HILDA data contain household investments and individual personality traits, we consider two specifications. In Column (1) of Table 8, we restrict the HILDA data to the subsample of one-person households, allowing us to perfectly match a person’s personality traits with her portfolio holdings. In Column (2), we use the subsample of respondents who claim to be “always” or “usually” the one who makes the households’ savings, investment, and borrowing decisions. It is reassuring that these results further validate our previous analysis: both Neuroticism and Openness are significantly correlated with the equity shares in household portfolios.

### 5.3. *The GSOEP Survey*

We further test our main result using the German Socio-Economic Panel (GSOEP) Survey. This survey is also a household-based panel study. The personality and investment data were collected in 2005, 2009, 2012, 2013, and 2017. This survey allows us to test our

---

<sup>14</sup>For details, see <https://melbourneinstitute.unimelb.edu.au/hilda>.

main result in a different language and cultural setting. However, the survey only provides a dummy variable for stock market participation. Hence, the analysis is restricted to the extensive margin. With this limitation in mind, we run the regression in Table 8, using this dummy variable (multiplied by 100) as the dependent variable.

Table 9 reports the results. In order to relate the person-level personality data to the household-level financial data, we restrict the data to the subsample of one-person households, or the subsample of respondents who claim to be the “head” of the household. Similar to the results on the intensive margin in the U.S. and Australian samples, the coefficient associated with Neuroticism is significantly negative and the coefficient associated with Openness is significantly positive, whereas Agreeableness is insignificant on the extensive margin in this German sample. Moreover, Conscientiousness and Extraversion are correlated with stock market participation in this German data.

## 6. Discussion

### 6.1. *Result Synthesis*

Our results show that the two personality traits—Neuroticism and Openness—can explain cross-investor variations in belief, risk aversion, tendencies of social interaction, and portfolio allocation. Hence, the two personality traits can potentially provide a unified account for different aspects of investor behaviors. That is, some of the common component of investor heterogeneity in beliefs, preferences, social interaction tendencies, and investment decisions can be traced to these two traits.

To explore this idea, we first sort our survey respondents into 10 groups based on either their Neuroticism or Openness scores. Within each group, we compute the mean of each of the seven characteristic that we examined earlier: expected stock return, risk aversion score, perceived (left and right) tail risks in the stock market, extrapolation score, tendency for social interaction, and equity allocation. We plot these mean characteristics against the

mean Neuroticism or Openness scores across the 10 groups in Panels (a)–(g) of [Figure 3](#). These figures recast our earlier results: investors sorted by either Neuroticism or Openness exhibit clear differences in these characteristics.

We then rescale each of the seven characteristics to unit variance and conduct a principal component analysis (PCA). The first and second principle components (PC1 and PC2) explain 22% and 18% of the total variance, respectively. For comparison, if those characteristics share no common variations, each principal component should explain  $14\% (= 100\%/7)$  of the variance. In other words, there is a modest amount of commonality across those seven characteristics.

The loadings of these two principal components on those key characteristics are quite intuitive. For example, a higher PC1 is associated with a higher expected return, a higher probability of an up tail event in the stock market, and a lower probability of a down tail event in the stock market. These characteristics are consistent with those of a more optimistic investor. A higher PC2 is associated with higher probabilities of both up and down tail events, a lower risk aversion, and a higher tendency of social interaction. These characteristics are consistent with those of an investor who expects more extreme events. Hence, at the intuitive level, PC1 and PC2 reflect the two personality traits, Neuroticism and Openness. To see that, we plot the average PC1 or PC2 score against the average Neuroticism or Openness score for each group sorted by either Neuroticism or Openness scores in the last two panels of [Figure 3](#). We find that a higher PC1 is related to a lower Neuroticism and a higher Openness, while a higher PC2 is related to a higher Neuroticism and a higher Openness. These results suggest that the investor heterogeneity in those seven key characteristics have a common component that can be traced to the heterogeneity in investors' Neuroticism and Openness. Therefore, the two personality traits Neuroticism and Openness provide a useful tool for dimension reduction in the context of investor behaviors—in the sense that they provide useful information for organizing a wide range of investor characteristics.

## 6.2. *Implications for Future Research*

In the context of our conceptual framework in Section 2.2, the Big Five personality traits can explain investor behavior through two distinct channels. First, they covary with investors' beliefs and preferences, which affect investment decisions through the traditional risk-return trade off. Therefore, this could open up a new line of research that relates the origins of heterogeneous risk preferences and beliefs to personality traits, the biological and experiential foundations of which have been studied extensively in psychology and behavioral sciences. Second, they may operate through non-standard channels, such as social interactions, as illustrated by the target portfolio in a reduced form. This suggests a need to extend standard models of portfolio choice by considering alternative forces, such as social interactions and non-pecuniary preferences.

On the empirical side, future research can develop in several important directions. First, while we have presented suggestive evidence on the underlying mechanisms for the roles of personality traits in financial decision-making, the specific channels remain inconclusive. Our evidence suggests that the mechanism can go beyond traditional channels of beliefs and preferences. Further exploration would be fruitful. Second, if one takes the interpretation that personality traits are proxies for fixed characteristics, our evidence suggests that those characteristics need to be domain-specific. For instance, the characteristics proxied by Neuroticism and Openness should be relevant for our financial setting but not in the same manner in other economic settings (e.g., wage bargaining) in the prior literature. Finally, given that personality traits can be determined by both nature and nurture, it is also interesting to compare these two components on their explanatory power for investment decisions. One ongoing data effort that makes this differentiation possible is the increasing amount of data collected on genetic information. For example, the National Longitudinal Study of Adolescent to Adult Health (“Add Health”) contains genetic markers that can be potentially related to the genetic component of personality traits.

## 7. Conclusion

We conduct a nationwide survey among affluent American individual investors to study the implications of personality traits for investment decisions. Our evidence suggests that personality traits may affect investment decisions via three distinct channels: beliefs, preferences, and social interaction tendencies. Two traits, Neuroticism and Openness, are particularly important for explaining equity investment, through two different channels: Neuroticism through beliefs while Openness through preferences. We discuss how to incorporate personality traits into future frameworks of financial decision-making and advocate the need to consider social interactions in such frameworks.



## References

- Almlund, M., Duckworth, A. L., Heckman, J., Kautz, T., 2011. Personality psychology and economics. In: *Handbook of the Economics of Education*, vol. 4, pp. 1–181.
- An, L., Bian, J., Lou, D., Shi, D., 2021. Wealth redistribution in bubbles and crashes.
- Anusic, I., Schimmack, U., 2016. Stability and change of personality traits, self-esteem, and well-being: Introducing the meta-analytic stability and change model of retest correlations. *Journal of Personality and Social Psychology* 110, 766.
- Ashton, M. C., Lee, K., Goldberg, L. R., de Vries, R. E., 2009. Higher order factors of personality: Do they exist? *Personality and Social Psychology Review* 13, 79–91.
- Bach, L., Calvet, L. E., Sodini, P., 2018. Rich pickings? risk, return, and skill in household wealth.
- Bailey, M., Cao, R., Kuchler, T., Stroebel, J., 2018. The economic effects of social networks: Evidence from the housing market. *Journal of Political Economy* 126, 2224–2276.
- Barber, B. M., Odean, T., 2001. Boys will be boys: Gender, overconfidence, and common stock investment. *Quarterly Journal of Economics* 116, 261–292.
- Barnea, A., Cronqvist, H., Siegel, S., 2010. Nature or nurture: What determines investor behavior? *Journal of Financial Economics* 98, 583–604.
- Barrick, M. R., Mount, M. K., 1991. The big five personality dimensions and job performance: a meta-analysis. *Personnel Psychology* 44, 1–26.
- Becker, A., Deckers, T., Dohmen, T., Falk, A., Kosse, F., 2012. The relationship between economic preferences and psychological personality measures. *Annu. Rev. Econ.* 4, 453–478.

- Benhabib, J., Bisin, A., 2018. Skewed wealth distributions: Theory and empirics. *Journal of Economic Literature* 56, 1261–91.
- Bouchard, T. J., et al., 1994. Genes, environment, and personality. *Science-AAAS-Weekly Paper Edition* 264, 1700–1701.
- Campbell, J. Y., Ramadorai, T., Ranish, B., 2019. Do the rich get richer in the stock market? evidence from india. *American Economic Review: Insights* 1, 225–40.
- Cesarini, D., Dawes, C. T., Johannesson, M., Lichtenstein, P., Wallace, B., 2009. Genetic variation in preferences for giving and risk taking. *Quarterly Journal of Economics* 124, 809–842.
- Chinco, A., Hartzmark, S. M., Sussman, A. B., 2022. A new test of risk factor relevance. *The Journal of Finance* 77, 2183–2238.
- Choi, J. J., Robertson, A. Z., 2020. What matters to individual investors? evidence from the horse’s mouth. *Journal of Finance* 75, 1775–2321.
- Cobb-Clark, D. A., Schurer, S., 2012. The stability of big-five personality traits. *Economics Letters* 115, 11–15.
- Condon, D., Revelle, W., 2015. Selected personality data from the sapa-project: On the structure of phrased self-report items. *Journal of Open Psychology Data* .
- Condon, D. M., 2018. The sapa personality inventory: An empirically-derived, hierarchically-organized self-report personality assessment model.
- Conlin, A., Kyröläinen, P., Kaakinen, M., Järvelin, M.-R., Perttunen, J., Svento, R., 2015. Personality traits and stock market participation. *Journal of Empirical Finance* 33, 34–50.
- Costa, P. T., McCrae, R. R., 1994. Set like plaster? evidence for the stability of adult personality.

- D'Acunto, F., Hoang, D., Paloviita, M., Weber, M., 2019a. Human frictions in the transmission of economic policy.
- D'Acunto, F., Hoang, D., Paloviita, M., Weber, M., 2019b. Iq, expectations, and choice.
- Dembroski, T. M., MacDougall, J. M., Costa Jr, P. T., Grandits, G. A., 1989. Components of hostility as predictors of sudden death and myocardial infarction in the multiple risk factor intervention trial. *Psychosomatic Medicine* 51, 514–522.
- Fagereng, A., Guiso, L., Malacrino, D., Pistaferri, L., 2020. Heterogeneity and persistence in returns to wealth. *Econometrica* 88, 115–170.
- Flinn, C., Todd, P., Zhang, W., 2021. Labor market returns to personality: A job search approach to understanding gender gaps.
- Flinn, C. J., Todd, P. E., Zhang, W., 2018. Personality traits, intra-household allocation and the gender wage gap. *European Economic Review* 109, 191–220.
- Gao, X., Lin, T.-C., 2015. Do individual investors treat trading as a fun and exciting gambling activity? evidence from repeated natural experiments. *The Review of Financial Studies* 28, 2128–2166.
- Giglio, S., Maggiori, M., Stroebel, J., Utkus, S., 2021. Five facts about beliefs and portfolios. *American Economic Review* 111, 1481–1522.
- Goldberg, L. R., 1981. Language and individual differences: The search for universals in personality lexicons. *Review of Personality and Social Psychology* 2, 141–165.
- Goldsmith-Pinkham, P., Shue, K., 2021. The gender gap in housing returns.
- Gomes, F., Haliassos, M., Ramadorai, T., 2021. Household finance. *Journal of Economic Literature* 59, 919–1000.

- Gow, I. D., Kaplan, S. N., Larcker, D. F., Zakolyukina, A. A., 2019. Ceo personality and firm policies.
- Greenwood, R., Shleifer, A., 2014. Expectations of returns and expected returns. *Review of Financial Studies* 27, 714–746.
- Grinblatt, M., Keloharju, M., 2009. Sensation seeking, overconfidence, and trading activity. *The Journal of Finance* 64, 549–578.
- Gu, R., Peng, C., Zhang, W., 2021. The gender gap in household bargaining power: A portfolio-choice approach.
- Han, B., Hirshleifer, D., Walden, J., 2018. Social transmission bias and investor behavior.
- Heineck, G., 2011. Does it pay to be nice? personality and earnings in the united kingdom. *ILR Review* 64, 1020–1038.
- Hirshleifer, D., 2020. Presidential address: Social transmission bias in economics and finance. *The Journal of Finance* 75, 1779–1831.
- Hong, H., Kubik, J. D., Stein, J. C., 2004. Social interaction and stock-market participation. *The journal of finance* 59, 137–163.
- Jiang, Z., Liu, H., Peng, C., Yan, H., 2022. Investor memory and biased beliefs: Evidence from the field.
- John, O. P., Angleitner, A., Ostendorf, F., 1988. The lexical approach to personality: A historical review of trait taxonomic research. *European journal of Personality* 2, 171–203.
- Kelly, E. L., Conley, J. J., 1987. Personality and compatibility: A prospective analysis of marital stability and marital satisfaction. *Journal of Personality and Social Psychology* 52, 27.

- Kuhnen, C. M., Chiao, J. Y., 2009. Genetic determinants of financial risk taking. *PloS one* 4.
- Kuhnen, C. M., Samanez-Larkin, G. R., Knutson, B., 2013. Serotonergic genotypes, neuroticism, and financial choices. *PloS one* 8, e54632.
- Lesch, K.-P., Bengel, D., Heils, A., Sabol, S. Z., Greenberg, B. D., Petri, S., Benjamin, J., Müller, C. R., Hamer, D. H., Murphy, D. L., 1996. Association of anxiety-related traits with a polymorphism in the serotonin transporter gene regulatory region. *Science* 274, 1527–1531.
- Liu, H., Peng, C., Xiong, W. A., Xiong, W., 2022. Taming the bias zoo. *Journal of Financial Economics* 143, 716–741.
- Malmendier, U., Nagel, S., 2011. Depression babies: do macroeconomic experiences affect risk taking? *Quarterly Journal of Economics* 126, 373–416.
- Malmendier, U., Nagel, S., 2016. Learning from inflation experiences. *Quarterly Journal of Economics* 131, 53–87.
- McAdams, D. P., 1992. The five-factor model in personality: A critical appraisal. *Journal of Personality* 60, 329–361.
- McAdams, D. P., 2015. *The art and science of personality development*. Guilford Publications.
- McCrae, R. R., 1987. Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology* 52, 1258.
- McCrae, R. R., Costa Jr, P. T., 1997. Personality trait structure as a human universal. *American Psychologist* 52, 509.
- McCrae, R. R., John, O. P., 1992. An introduction to the five-factor model and its applications. *Journal of Personality* 60, 175–215.

- Meeuwis, M., Parker, J. A., Schoar, A., Simester, D. I., 2018. Belief disagreement and portfolio choice.
- Nagel, S., Xu, Z., 2022. Asset pricing with fading memory. *The Review of Financial Studies* 35, 2190–2245.
- Nyhus, E. K., Pons, E., 2005. The effects of personality on earnings. *Journal of economic psychology* 26, 363–384.
- Parise, G., Peijnenburg, K., 2019. Noncognitive abilities and financial distress: evidence from a representative household panel. *The Review of Financial Studies* 32, 3884–3919.
- Pástor, L., Stambaugh, R. F., Taylor, L. A., 2021. Sustainable investing in equilibrium. *Journal of Financial Economics* 142, 550–571.
- Revelle, W., Dworak, E. M., Condon, D. M., 2021. Exploring the persome: The power of the item in understanding personality structure. *Personality and Individual Differences* 169, 109905.
- Roberts, B. W., DelVecchio, W. F., 2000. The rank-order consistency of personality traits from childhood to old age: a quantitative review of longitudinal studies. *Psychological bulletin* 126, 3.
- Sen, S., Burmeister, M., Ghosh, D., 2004. Meta-analysis of the association between a serotonin transporter promoter polymorphism (5-httlpr) and anxiety-related personality traits. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics* 127, 85–89.
- Sias, R. W., Starks, L. T., Turtle, H. J., 2020. Molecular genetics, risk aversion, return perceptions, and stock market participation.
- Srivastava, S., John, O. P., Gosling, S. D., Potter, J., 2003. Development of personality in early and middle adulthood: Set like plaster or persistent change? *Journal of Personality and Social Psychology* 84, 1041.

Van Rooij, M., Lusardi, A., Alessie, R., 2011. Financial literacy and stock market participation. *Journal of Financial Economics* 101, 449–472.

Weston, S. J., Gladstone, J. J., Graham, E. K., Mroczek, D. K., Condon, D. M., 2019. Who are the scrooges? personality predictors of holiday spending. *Social Psychological and Personality Science* 10, 775–782.

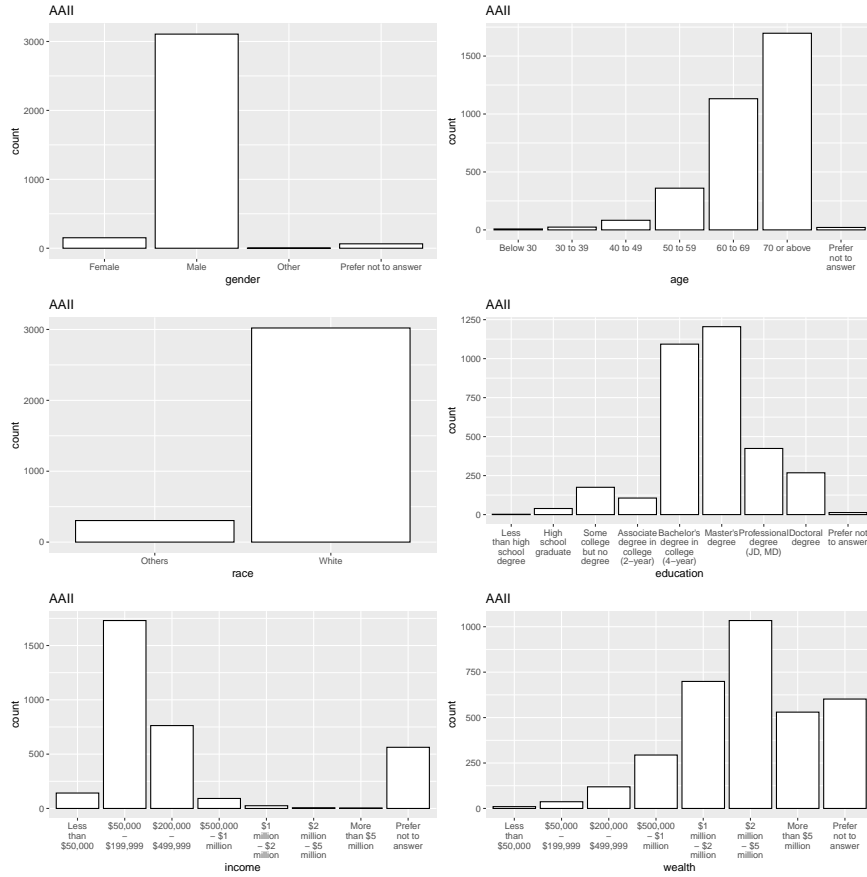


Fig. 1. Distribution of Demographic Variables in the AAI survey

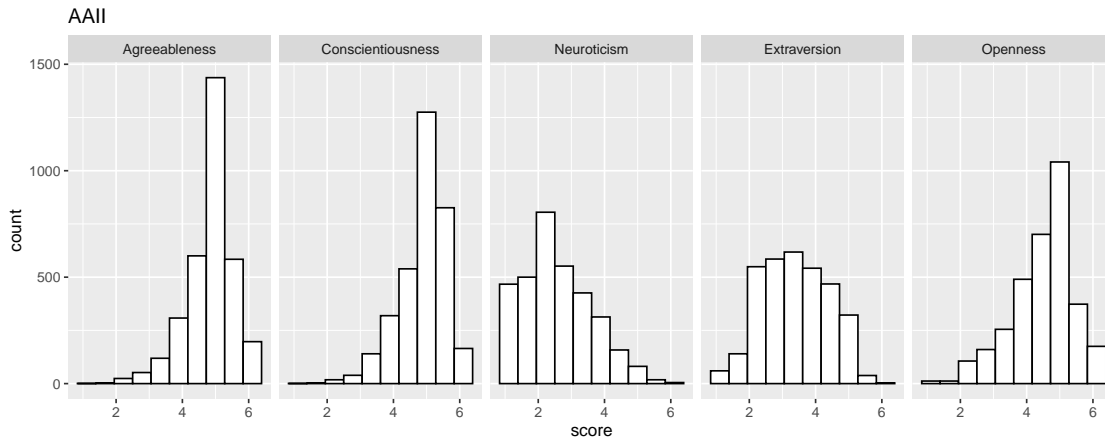
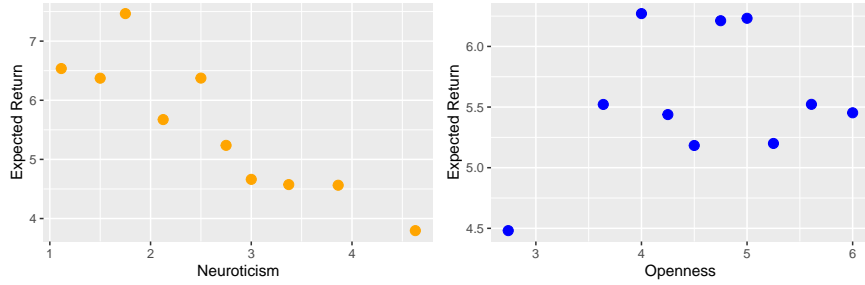
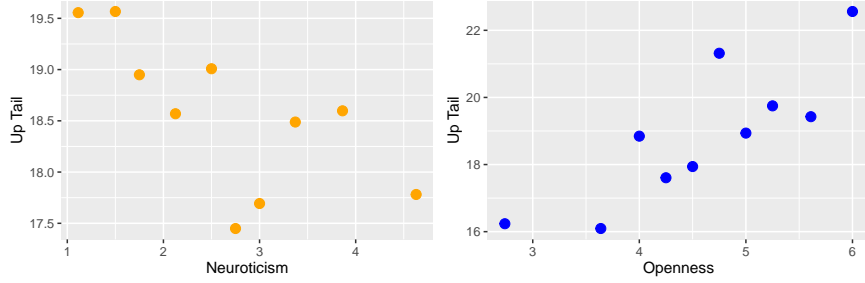


Fig. 2. Distribution of Personality Traits in the AAI Survey

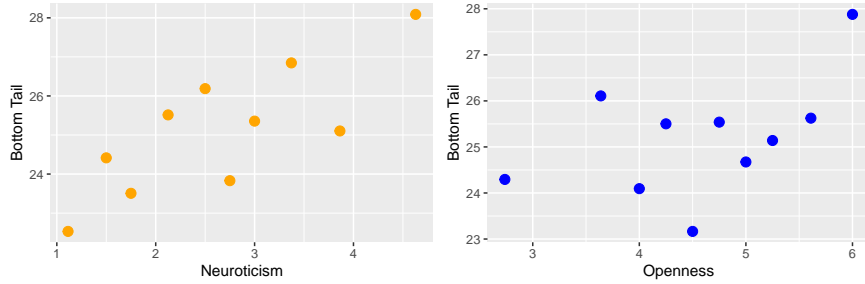




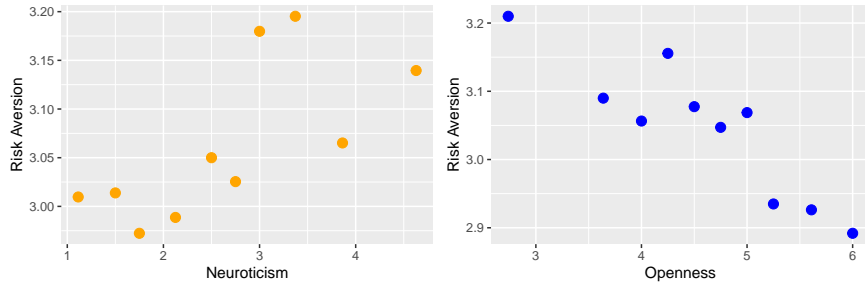
(a) Expected Return



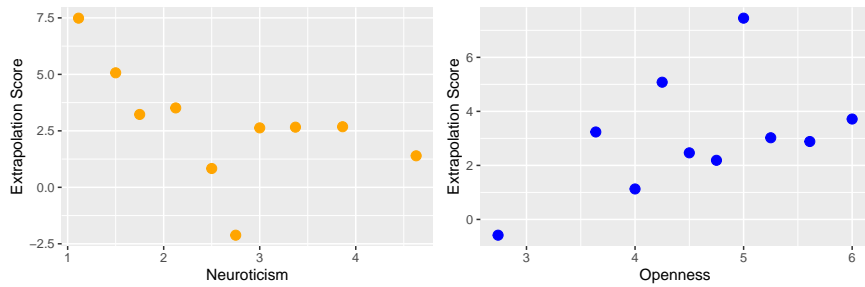
(b) Up Tail



(c) Bottom Tail

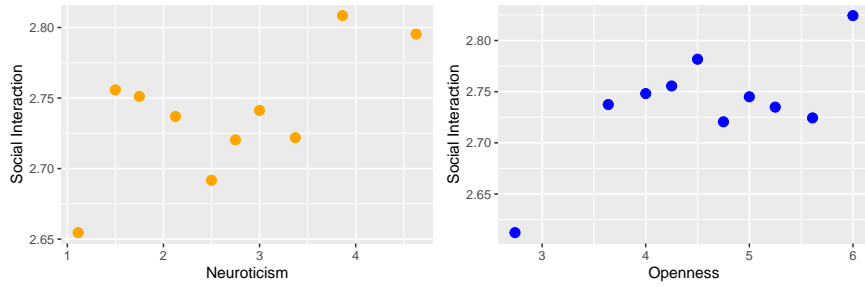


(d) Risk Aversion

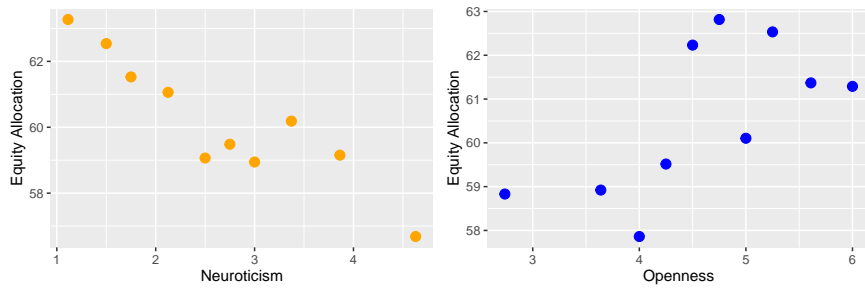


(e) Extrapolation Score

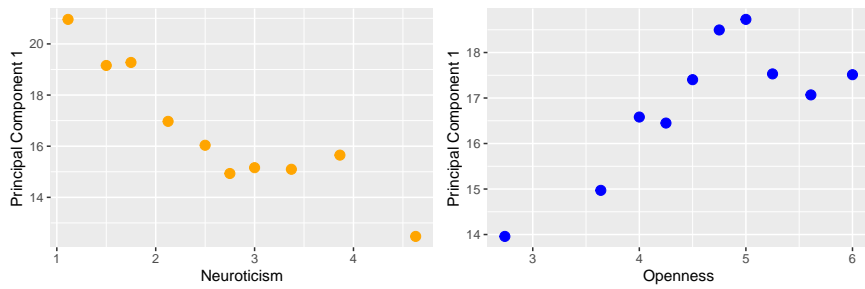
Fig. 3. Investor Characteristics vs. Neuroticism and Openness



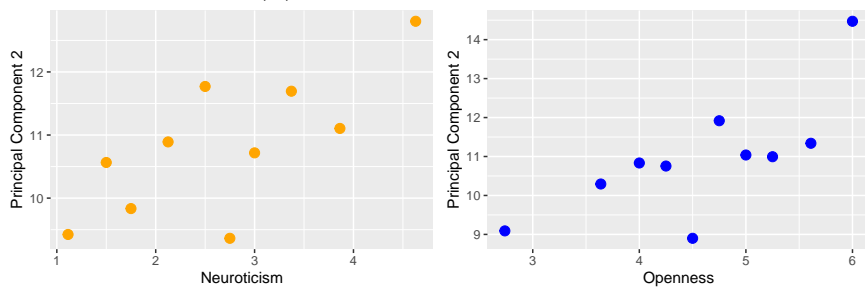
(f) Social Interaction



(g) Equity Allocation



(h) Principal Component 1



(i) Principal Component 2

Fig. 3 (Continued) Investor Characteristics vs. Neuroticism and Openness

Table 1: Summary Statistics

Panel (a) reports the summary statistics of personality traits and demographic variables. “Male” is the dummy variable which is 1 if the respondent is a male. “White” is the dummy variable which is 1 if the respondent’s self-identified race is white. “College” is the dummy variable which is 1 if the respondent has a bachelor’s degree or above. There are 3,325 respondents in total.

<i>Panel (a) Demographics and Personality Traits</i>						
	Mean	Std Dev	10 Pct	50 Pct	90 Pct	Skewness
Male	0.93	0.25	1.00	1.00	1.00	-3.51
White	0.91	0.29	1.00	1.00	1.00	-2.83
Age	68.23	8.50	55.00	75.00	75.00	-1.43
Income (in \$1000)	233.29	369.41	125.00	125.00	350.00	12.97
Wealth (in \$1000)	3271.95	2353.79	750.00	3500.00	7500.00	0.76
College	0.90	0.30	0.00	1.00	1.00	-2.65
Agreeableness	4.86	0.73	3.75	5.00	5.75	-0.84
Conscientiousness	4.89	0.74	3.75	5.00	5.75	-0.80
Neuroticism	3.39	0.97	2.00	3.50	4.75	-0.06
Extraversion	2.59	1.04	1.25	2.50	4.00	0.39
Openness	4.48	0.92	3.25	4.50	5.65	-0.63

<i>Panel (b) Correlation Matrix</i>					
	Agreeableness	Conscientiousness	Neuroticism	Extraversion	Openness
Agreeableness	1.00	0.21	0.01	0.14	0.18
Conscientiousness	0.21	1.00	-0.07	0.12	0.24
Neuroticism	0.01	-0.07	1.00	-0.14	-0.11
Extraversion	0.14	0.12	-0.14	1.00	0.16
Openness	0.18	0.24	-0.11	0.16	1.00

<i>Panel (c) Belief and Preferences</i>						
	Mean	Std Dev	10 Pct	50 Pct	90 Pct	Skewness
Expected Stock Return	5.57	9.51	-10.00	7.00	14.00	-1.23
Stock Rise by >20%	18.49	16.25	1.00	15.00	40.00	1.54
Stock Fall by >20%	25.09	18.41	5.00	24.00	50.00	1.02
GDP Growth	1.97	1.31	1.00	2.00	3.00	-0.88
Inflation	2.05	1.03	1.00	2.00	3.00	0.30
Pick Risky Job 1	0.60	0.49	0.00	1.00	1.00	-0.42
Pick Risky Job 2	0.27	0.44	0.00	0.00	1.00	1.03
Pick Risky Job 3	0.06	0.23	0.00	0.00	0.00	3.77

Table 2: Personality Traits and Investor Characteristics

We regress each personality trait on demographic variables. In these regressions, we use the subsample of the AAI respondents who indicate they are either male or female, and provide their income and wealth information. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
	Agreeableness	Conscientiousness	Neuroticism	Extraversion	Openness
Female	0.29*** (0.07)	-0.02 (0.07)	0.25** (0.11)	0.06 (0.10)	-0.04 (0.09)
Age	0.01*** (0.002)	-0.01*** (0.002)	-0.01** (0.002)	0.01*** (0.002)	-0.01** (0.002)
Log Income	0.03 (0.02)	0.09*** (0.02)	-0.08** (0.03)	0.09*** (0.03)	0.05 (0.03)
Log Wealth	-0.04* (0.02)	0.04** (0.02)	-0.03 (0.03)	0.02 (0.03)	0.01 (0.02)
College	0.05 (0.05)	-0.03 (0.05)	0.03 (0.07)	-0.08 (0.07)	0.07 (0.06)
Race F.E.	Y	Y	Y	Y	Y
State F.E.	Y	Y	Y	Y	Y
Observations	2,607	2,607	2,607	2,607	2,607
R <sup>2</sup>	0.04	0.05	0.04	0.05	0.03
Adjusted R <sup>2</sup>	0.01	0.02	0.01	0.02	0.002

Table 3: Personality Traits and Investor Belief

Panel (a) reports the regressions of investor beliefs on personality traits. Each cell in Panel (b) reports the adjusted R-squared of a regression, with personality traits only or with demographics fixed effects only. Dependent variables are (1) the expected stock return, (2) the probability that the stock market rises by more than 20%, (3) the probability that the stock market falls by more than 20%, (4) the expected GDP growth rate, and (5) the expected inflation. Demographics fixed effects include gender, age, income, wealth, education and location. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

<i>Panel (a) Benchmark Results</i>					
	(1)	(2)	(3)	(4)	(5)
	Stock Return			GDP Growth	Inflation
	Mean	Prob(>20%)	Prob(< -20%)	Mean	Mean
Agreeableness	-0.10 (0.24)	-0.34 (0.40)	-0.09 (0.46)	-0.01 (0.03)	0.002 (0.03)
Conscientiousness	0.66*** (0.24)	-0.07 (0.40)	-0.99** (0.46)	0.04 (0.03)	-0.07*** (0.03)
Neuroticism	-0.79*** (0.16)	-0.21 (0.28)	1.02*** (0.32)	-0.07*** (0.02)	0.05*** (0.02)
Extraversion	0.82*** (0.18)	1.27*** (0.30)	-1.07*** (0.34)	0.09*** (0.02)	-0.02 (0.02)
Openness	0.04 (0.19)	1.49*** (0.32)	0.92** (0.37)	-0.003 (0.03)	0.01 (0.02)
Demographics F.E.	Y	Y	Y	Y	Y
Observations	3,325	3,325	3,325	3,325	3,325
R <sup>2</sup>	0.06	0.06	0.04	0.04	0.04
Adjusted R <sup>2</sup>	0.03	0.04	0.01	0.02	0.01
<i>Panel (b) Adjusted R<sup>2</sup> under Alternative Specifications of Explanatory Variables</i>					
Personality Traits Only	0.02	0.01	0.01	0.01	0.005
Demographics F.E. Only	0.01	0.02	0.01	0.01	0.01

Table 4: Personality Traits and Belief Formation

This table reports results from an OLS regression, in which the dependent variable is a respondent’s “extrapolation score” that is constructed based on her responses to the following two questions. 1) “If a stock’s price has risen a lot over the last year, its price over the next year will...” 2) “If a stock’s price has fallen a lot over the last year, its price over the next year will...” For the first question, a respondent receives a score of 100 if her answer is “Continue to rise;” a score of  $-100$  if her answer is “Start to fall;” or a score of 0 if her answer is “Remain the same” or “Cannot say.” Similarly, for the second question, a respondent receives a score of 100 if her answer is “Continue to fall;” a score of  $-100$  if her answer is “Start to rise;” or a score of 0 if her answer is “Remain the same” or “Cannot say.” A respondent’s extrapolation score is the average of her scores for these two questions. Demographics fixed effects include gender, age, income, wealth, education and location. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	(1) Extrapolation Score
Agreeableness	0.89 (0.86)
Conscientiousness	-0.38 (0.87)
Neuroticism	-1.30** (0.59)
Extraversion	-0.10 (0.64)
Openness	1.55** (0.69)
Demographics F.E.	Y
Observations	3,325
R <sup>2</sup>	0.03
Adjusted R <sup>2</sup>	0.01

Table 5: Personality Traits and Risk Aversion

In Columns (1)–(3), we regress the dummy variables indicating whether the respondent is willing to take each bet on personality traits and controls. In Column (4), the dependent variable is the implied risk aversion parameter from the survey responses. Demographics fixed effects include gender, age, income, wealth, education, and location. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	Bet 1	Bet 2	Bet 3	Risk Aversion
Agreeableness	−0.03*** (0.01)	−0.04*** (0.01)	−0.01** (0.01)	0.09*** (0.02)
Conscientiousness	−0.01 (0.01)	−0.01 (0.01)	0.002 (0.01)	0.02 (0.02)
Neuroticism	−0.01 (0.01)	−0.02** (0.01)	−0.002 (0.004)	0.03* (0.02)
Extraversion	0.03*** (0.01)	0.03*** (0.01)	0.01 (0.004)	−0.06*** (0.02)
Openness	0.03*** (0.01)	0.03*** (0.01)	0.02*** (0.005)	−0.08*** (0.02)
Demographics F.E.	Y	Y	Y	Y
Observations	3,325	3,325	3,325	3,325
R <sup>2</sup>	0.06	0.05	0.03	0.06
Adjusted R <sup>2</sup>	0.04	0.02	0.003	0.04

Table 6: Personality Traits and Social Influence

Column (1) reports the result from an OLS regression, in which the dependent variable is the score from 1 (Definitely No) to 5 (Definitely Yes) assigned by respondents to the question, “upon seeing a new type of investment becoming popular among people around you, would you consider investing in it as well?” In Column (2), we replace the dependent variable by the dummy variable indicating if the score is 4 (Yes) or 5 (Definitely Yes). Demographics fixed effects include gender, age, income, wealth, education and location. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)
	Score	Yes or Definitely Yes
Agreeableness	0.01 (0.02)	0.001 (0.01)
Conscientiousness	0.01 (0.02)	-0.003 (0.01)
Neuroticism	0.04*** (0.01)	0.01** (0.004)
Extraversion	0.04*** (0.01)	0.01*** (0.004)
Openness	0.02* (0.01)	-0.002 (0.004)
Demographics F.E.	Y	Y
Observations	3,325	3,325
R <sup>2</sup>	0.03	0.04
Adjusted R <sup>2</sup>	0.005	0.01



Table 7: Personality Traits and Equity Allocation: AAI Data

Regression results based on our AAI survey. We regress each investor's equity-to-wealth ratio on personality traits and controls. Demographics fixed effects include gender, age, income, wealth, education, and location. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Total	Retirement	Non-Retirement	Total	Retirement	Non-Retirement
Agreeableness	-0.46 (0.57)	-0.02 (0.57)	-0.70 (0.72)	-0.39 (0.56)	0.12 (0.56)	-0.61 (0.72)
Conscientiousness	-1.32** (0.58)	-0.66 (0.58)	-1.00 (0.72)	-1.51*** (0.58)	-0.84 (0.57)	-1.17 (0.72)
Neuroticism	-1.74*** (0.40)	-2.55*** (0.39)	-0.80 (0.49)	-1.44*** (0.39)	-2.23*** (0.39)	-0.55 (0.49)
Extraversion	-0.33 (0.43)	0.14 (0.43)	-0.05 (0.53)	-0.65 (0.43)	-0.30 (0.42)	-0.31 (0.54)
Openness	0.94** (0.46)	1.50*** (0.46)	1.15** (0.57)	0.95** (0.46)	1.40*** (0.45)	1.14** (0.58)
Expected Return				0.23*** (0.05)	0.24*** (0.05)	0.22*** (0.06)
Up Tail				-0.01 (0.03)	0.04 (0.03)	-0.02 (0.04)
Down Tail				-0.08*** (0.02)	-0.09*** (0.02)	-0.05 (0.03)
Risk Aversion				-1.17*** (0.44)	-1.44*** (0.44)	-0.90 (0.56)
Demographic F.E.	Y	Y	Y	Y	Y	Y
Observations	2,807	3,285	3,281	2,807	3,285	3,281
R <sup>2</sup>	0.08	0.07	0.09	0.10	0.10	0.10
Adjusted R <sup>2</sup>	0.05	0.05	0.07	0.07	0.07	0.08

Table 8: Personality Traits and Equity Allocation: Australian HILDA Data

Regression results based on the HILDA survey, which has a panel structure. The dependent variable is the share of stock assets in households' total financial wealth, which is between 0 and 100. In Column (1), we use the subsample of one-person households. In Column (2), we use the subsample of respondents who claim to "always" or "usually" be the one who makes the household's savings, investment and borrowing decisions. Demographics fixed effects include gender, age, income, wealth, and location. We also control for year fixed effects. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	One-Person Household	Decision Maker in the Household
	(1)	(2)
Agreeableness	0.04 (0.30)	-0.17 (0.23)
Conscientiousness	-0.39 (0.27)	-0.35* (0.20)
Neuroticism	-0.56** (0.27)	-0.46** (0.20)
Extraversion	0.13 (0.24)	-0.26 (0.18)
Openness	0.81*** (0.25)	0.63*** (0.20)
Demographic F.E.	Y	Y
Year F.E.	Y	Y
Observations	5,542	8,924
R <sup>2</sup>	0.17	0.16
Adjusted R <sup>2</sup>	0.17	0.16

Table 9: Personality Traits and Equity Allocation: German GSOEP Data

Regression results based on the GSOEP survey, which has a panel structure. The dependent variable is stock market participation, which is 0 if the person holds no stock assets and 100 if the person holds any stock assets. In Column (1), we use the subsample of one-person households. In Column (2), we use the subsample of respondents who claim to be the head of household. Demographics fixed effects include gender, age, income, wealth, and location. We also control for year fixed effects. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	One-Person Household	Decision Maker in the Household
	(1)	(2)
Agreeableness	0.30 (0.40)	-0.73 (0.45)
Conscientiousness	-2.06*** (0.61)	-1.97*** (0.56)
Neuroticism	-1.07** (0.38)	-0.94*** (0.28)
Extraversion	-1.16** (0.41)	-1.11* (0.54)
Openness	1.11*** (0.25)	1.27*** (0.35)
Demographic F.E.	Y	Y
Year F.E.	Y	Y
Observations	10,250	10,781
R <sup>2</sup>	0.15	0.16
Adjusted R <sup>2</sup>	0.15	0.15

## Appendix A. Appendix A: Survey Questions

Our survey has 4 sections.

### *A.1. Section I*

In this section, you will see a number of different phrases and sentences. Please use the response options to indicate how accurately each phrase or sentence describes you.

1. Usually like to spend my free time with people.
2. Get overwhelmed by emotions.
3. Like order.
4. Am concerned about others.
5. Am full of ideas.
6. Like going out a lot.
7. Am a worrier.
8. Start tasks right away.
9. Sympathize with others' feelings.
10. Am able to come up with new and different ideas.
11. Avoid company.
12. Worry about things.
13. Work hard.
14. Am sensitive to the needs of others.
15. Am an original thinker.
16. Dislike being the center of attention.
17. Panic easily.
18. Neglect my duties.
19. Use others for my own ends.
20. Love to think up new ways of doing things.

Answer options for each question above are the same:

- Very Inaccurate
- Moderately Inaccurate
- Slightly Inaccurate
- Slightly Accurate
- Moderately Accurate
- Very Accurate

## *A.2. Section II*

This section asks your opinion about financial markets and the economy in general.

We start with three questions that ask how you make financial decisions under various hypothetical financial situations.

1. First, in your opinion, if a stock's price has risen a lot over the last year, its price over the next year will
  - Continue to rise
  - Start to fall
  - Remain the same
  - Cannot say
2. Second, in your opinion, if a stock's price has fallen a lot over the last year, its price over the next year will
  - Continue to fall
  - Start to rise
  - Remain the same
  - Cannot say
3. Third, upon seeing a new type of investment becoming popular among people around you, would you consider investing in it as well?

- Definitely yes
- Yes
- Maybe
- No
- Definitely no

4. We next ask you to make various predictions about the U.S. economy in 2020. First, what do you think the return would be for the S&P 500 Index in 2020? (Note: the S&P 500 Index is one of the best representations of the U.S. stock market.)

- A slide bar between  $-50$  and  $50$  for S&P 500 Index Return (%).

5. Second, in your opinion, what is the probability that the S&P 500 Index will rise by more than 20% in 2020? (An answer of 0% means that it cannot happen, an answer of 100% means it is sure to happen.)

- A slide bar between 0 and 100 for Probability (%).

6. Third, in your opinion, what is the probability that the S&P 500 Index will fall by more than 20% in 2020? (An answer of 0% means that it cannot happen, an answer of 100% means it is sure to happen.)

- A slide bar between 0 and 100 for Probability (%).

7. We move on to other economic indicators. What do you think the GDP growth rate would be for the U.S. in 2020?

- A slide bar between  $-10$  and  $10$  for US GDP Growth (%).

8. How much inflation do you expect for the U.S. in 2020? (Note: inflation rate is the rate at which prices for goods and services increase.)

- A slide bar between  $-10$  and  $10$  for Inflation Rate (%).

9. Finally, we ask about how you perceive risks. Suppose you are the only income earner in the family, and you already have a good job guaranteed to give you your current

income every year for life. You are given the opportunity to take a new, equally good job. With a 50% chance it will double your income, and with a 50% chance, it will cut your income by 20%. Would you take the new job?

- Yes.
- No.

10. Suppose the chances were 50% that it would double your income and 50% that it would cut your income by 33%. Would you take the new job?

- Yes.
- No.

11. Suppose the chances were 50% that it would double your income and 50% that it would cut your income by 50%. Would you take the new job?

- Yes.
- No.

### *A.3. Section III*

This section asks about your financial decisions.

1. How many years have you been investing in the stock market (including stocks, mutual funds, ETF, etc.)?

- Less than 5 years
- 5 to 10 years
- 11 to 20 years
- 21 to 30 years
- More than 30 years

In the next four questions, we will ask about your asset allocation within and outside of your retirement plan.

2. First, how much money have you saved in your retirement accounts (such as 401(K)s, IRAs, and Keogh accounts)?

- Less than \$50,000
- \$50,000 - \$199,999
- \$200,000 - \$499,999
- \$500,000 - \$1 million
- \$1 million - \$2 million
- \$2 million - \$5 million
- More than \$5 million
- Prefer not to answer

3. Second, within your retirement accounts, what percentage is currently invested in equities? Equities include not only individual stocks, but also mutual funds and exchange-traded funds (ETFs) that mainly hold equities. Equities do not include ordinary bonds, preferred stocks, convertible bonds, and various money market funds.

- Less than 10%
- 10% - 20%
- 20% - 30%
- 30% - 40%
- 40% - 50%
- 50% - 60%
- 60% - 70%
- 70% - 80%
- 80% - 90%
- More than 90%
- Prefer not to answer

4. Third, outside of your retirement accounts, what is your total financial wealth? Your



financial wealth typically includes: cash, stocks, mutual funds, ETFs, bank deposits, etc.

- Less than \$50,000
- \$50,000 - \$199,999
- \$200,000 - \$499,999
- \$500,000 - \$1 million
- \$1 million - \$2 million
- \$2 million - \$5 million
- More than \$5 million
- Prefer not to answer

5. Finally, outside of your retirement accounts, what percentage of your financial wealth is invested in equities? Equities include not only individual stocks, but also mutual funds and exchange-traded funds (ETFs) that mainly hold equities. Equities do not include ordinary bonds, preferred stocks, convertible bonds, and various money market funds.

- Less than 10%
- 10% - 20%
- 20% - 30%
- 30% - 40%
- 40% - 50%
- 50% - 60%
- 60% - 70%
- 70% - 80%
- 80% - 90%
- More than 90%
- Prefer not to answer

#### *A.4. Section IV*

Lastly, we have some questions about your demographic information. (Answer options omitted.)

1. What is your gender?
2. What is your age?
3. In which state do you currently reside?
4. What is the highest level of school you have completed or the highest degree you have received?
5. Choose one or more races that you consider yourself to be.
6. What was your total household income before taxes during the past 12 months?
7. What is your total household wealth (including real estate, financial assets, pension plans, etc.)?

## Appendix B. Additional Empirical Results on Investor Belief

In this appendix, we describe the additional survey we ran among Chinese retail investors. We administered the survey through the Investor Education Center of the Shenzhen Stock Exchange (SZSE). The same setting has been used in [Jiang, Liu, Peng, and Yan \(2022\)](#), which includes more institutional details. In a nutshell, we randomized across branch offices of China’s 60 largest brokers. Specifically, we selected 2,993 branch offices across 30 provinces (and regions) and required each branch office to collect at least 10 valid responses.

The survey took place between November 29, 2021, and January 6, 2022, and respondents were given two weeks. A valid response had to be completed within 30 minutes. Respondents could open the survey using their personal computers or on their smartphones; the vast majority completed on their phones. After applying basic filters, we collected an initial sample of around 17,324 respondents. By design, respondents are evenly distributed across the 60 brokers, with only slight variation. In terms of geographic variation, areas that are more financially developed (e.g., Guangdong, Zhejiang, Jiangsu, and Shanghai) are more represented. Overall, the sample is young, well-educated, and affluent: the median age is around 35, the majority have a bachelor degree, and a substantial fraction have a wealth above 1 million RMB.

In the survey, we implemented the same 20-item personality questionnaire that we translated into Chinese. We also asked the respondents about their expectations of the stock market’s performance in the next 30 days and in the next year, as well as their expectations of their own stock portfolio’s performance in the next 30 days and in the next year. We also collected additional variables, including age, gender, level of education, total wealth, and total income, which we refer to below as the demographic variables.

We regress investor beliefs of future performance on either demographic variables or personality traits, as in [Table 3](#). We report the adjusted R-squared in [Table A1](#). In the

first row, we use the demographic variables as the explanatory variables. Specifically, we use 89 age dummies, 8 education dummies, 9 wealth dummies and 10 income dummies. In the second row, we use the five personality traits. In the third row, we specifically use the two personality traits that stand out in the main text: Neuroticism and Openness. We note that, the explanatory power of the personality traits is comparable to that of the demographic dummies, which is consistent with our finding in the main text. Also, while the adjusted R-squared is relatively low across specifications, Neuroticism and Openness remain significant predictors of the respondents' expectations.

Table A1: Explanatory Power of Different Variables for Investor Belief

We regress investor beliefs on either demographic variables or personality traits. Each cell reports the adjusted R-squared of a regression. The dependent variable is the expected market return in the next 30 days or the next year, or the expected return of the investor's own portfolio in the next 30 days or the next year, in columns (1) through (4), respectively. The independent variables are demographics fixed effects (including gender, age, income, wealth, and education) in the first row, the Big Five personality traits in the second row, and traits Neuroticism and Openness in the third row.

	(1)	(2)	(3)	(4)
	Market 30 Day	Market 1 Year	Self 30 Day	Self 1 Year
Demographics F.E. Only	0.008	0.027	0.029	0.042
Personality Traits Only	0.015	0.027	0.020	0.022
Neuroticism and Openness Only	0.012	0.019	0.020	0.019

# Behavioral biases in pension fund trustees' decision making

Leonardo Weiss-Cohen and Peter Ayton

*Department of Psychology, City, University of London, London, UK*

Iain Clacher

*Division of Accounting and Finance, Business School,  
Leeds University, Leeds, UK, and*

Volker Thoma

*School of Psychology, University of East London, London, UK*

## Abstract

**Purpose** – Behavioral finance research has almost exclusively investigated the decision making of lay individuals, mostly ignoring more sophisticated institutional investors. The purpose of this paper is to better understand the relatively unexplored field of investment decisions made by pension fund trustees, an important subset of institutional investors, and identify future avenues of further exploration.

**Design/methodology/approach** – This paper starts by setting out the landscape in which pension fund trustees operate and make their decisions, followed by a literature review of the extant behavioral finance research applicable to similar situations.

**Findings** – Despite receiving training and accumulating experience in financial markets, these are limited and sparse; therefore, pension fund trustees are unlikely to be immune from behavioral biases. Trustees make decisions in groups, are heavily reliant on advice and make decisions on behalf of others. Research in those areas has uncovered many inefficiencies. It is still unknown how this specific context can affect the psychological effects on their decisions.

**Research limitations/implications** – Given how much influence trustees' decisions have on asset allocation and by extension in financial markets, this is a surprising state of affairs. Research in behavioral finance has had a marked influence on policy in the past and so we anticipate that exploring the decisions made within pension funds may have wide ramifications for the industry.

**Originality/value** – As far as the authors are aware, no behavioral research has empirically tested pension fund trustees' decisions to investigate how the combination of group decisions, advice and surrogacy influence their decisions and, ultimately, the sustainability of our pensions.

**Keywords** Decision making, Pensions, Biases, Trustees

**Paper type** Literature review

Most of the published research in behavioral finance has investigated systematic biases in investment decisions made by individuals (for comprehensive reviews, see Barberis and Thaler, 2003; Shefrin, 2009). This biased behavior can be described as anomalous departures from normative decisions as predicted by economic and financial theory. For example, Benartzi and Thaler (2001) have shown how individuals display naive diversification when deciding how to invest their own savings plans: they allocate a uniform distribution of their assets across the options available. Individuals' choices are determined by the number of options available, regardless of the nature of the options. Hence, their choices reflect the options offered, e.g. the proportion invested in stocks depends strongly on the proportion of stock funds offered, while normative financial theory claims they should be informed by the risk-return characteristics of each option. While some individuals decide their retirement asset allocation directly, as researched by Benartzi and Thaler, most people rely on institutions, such as their pension funds, to invest the assets on their behalf. In this situation, the investment decision is not made at an individual level, but at an institutional level.

Financial investors can be traditionally split into two main categories: individual investors and institutional investors, with the latter covering pension funds, insurers,



mutual funds, hedge funds, corporations and the public sector. Despite the overwhelming interest of behavioral finance research in individual investors and their decisions, they are not the most important influencers in the financial markets. In the UK, according to the Investment Association[1], a trading body representing UK investment managers, only 19 percent of the assets under management in the UK were held on behalf of retail clients, with an overwhelming 79 percent being held for institutional clients (The Investment Association, 2017). More than half of the institutional investors assets belong to pension funds. In Europe, according to the European Fund and Asset Management Association[2], the proportions in 2015 were 27 percent in retail and 73 percent in institutional hands, with pension funds representing around one-third of the latter figure (European Fund and Asset Management Association, 2017). The proportional representation of pension funds assets has also grown in the last 10 years and is expected to continue growing, with government pushing individuals to enroll more aggressively into pension funds, for example by using automatic enrollment.

While institutional investors, and pension funds in particular, are large significant players in financial markets, very little academic attention has been given to researching the behavioral aspects of their financial decisions. Given the issues facing pension funds worldwide, their importance to global financial markets and the lack of attention their decision making has received in research, further exploration of their decision making is crucial. In order to ensure the retirement income of future pensioners, it is essential that investment decisions of pension funds are made wisely. Before defining the potential areas where cognitive biases can surface in pension fund trustees' decisions, we first need to establish the landscape in which they operate.

The assets of occupational pension funds are typically organized as trust entities and managed by a board of trustees (Bunt *et al.*, 1998). According to a survey in Clacher *et al.* (2017b), the majority of trustee boards have between five and seven members. Larger funds with larger sizes of trustee boards will tend to create specialized sub-committees, thus reducing the size of the group ultimately making certain decisions, such as investment decisions (Myners, 2001). The trustee board has a fiduciary duty to act in the best interests of the underlying members of the fund, who are its ultimate beneficiaries. It is possible that these fiduciary pressures, and the threat of legal action if they are breached, might influence the decision making of trustees, for example, by increasing behavioral inertia (Myners, 2001), by increasing the reliance on external advisers (Pratten and Satchell, 1998) or by relying on non-financial criteria for investment decisions (Del Guercio and Tkac, 2002).

Crucially, they decide on how and where to invest the assets of the pension fund, in order to ensure that members will receive a satisfactory income upon retiring (Pratten and Satchell, 1998). The boards tend to meet quarterly or half-yearly, which means that the decisions they make are not frequent, and the feedback they receive on their decisions may take years to emerge (Clacher *et al.*, 2017b). Contrast this against more dynamic market decisions made by traders and brokers, which typically involves immediate feedback. Delayed feedback can disconnect the causal link between action and outcome, and impair learning, leading to poorer decisions in the future (Sutton and Barto, 1990).

Pensions regulations in the UK state that at least one-third of trustees have to be nominated by the members of the pension fund (typically the employees of the company associated with that fund), with the remainder being assigned by the employer (Myners, 2001). Some of the trustees are professional trustees, and the remainder of the trustees tend to be employees of the company itself. The former group has considerably more experience, are better trained and are more sophisticated than the latter (Myners, 2001). While pension funds are legally required to provide training, the training provided tends to be very limited and likely falls short of creating truly sophisticated financial agents, with trustees lacking

---

sufficient financial and investment knowledge and skills. Some trustees interviewed by Myners (2001) have claimed that they did not have a good understanding of the financial markets. By contrast, in the survey by Clacher *et al.* (2017b), 69 percent of trustees reported above average financial literacy, although this was self-reported, and could have resulted from hubris or the illusory superiority resulting from the better-than-average fallacy (Alicke, 1985). Subsequent investigation by Clacher *et al.* (2017a) concluded that trustees were familiar with the most basic investment management concepts, but struggled with more specialist areas, while overall trustees of larger schemes fared better than those of smaller schemes.

Because of the lack of crucial knowledge to perform their duties, and the weight of their fiduciary responsibilities, trustees rely heavily on external advice, in the form of consultants and advisers (Myners, 2001; Pratten and Satchell, 1998). These advisers bring with them knowledge in diverse fields, such as legal, financial, accountancy and actuarial. They are likely to have a disproportional weight on the final decisions made by pension funds. Pension advisers are also called upon for handling the daily administrative duties of pension funds, and thus, might also have a large influence in the running of pension funds, for example, by influencing the way that questions and issues are framed and presented for trustees when decisions are required, which can make a major difference to the choices made (e.g. Tversky and Kahneman, 1981). According to the Myners report: “trustees tend to feel that they lack the expertise to do so, and advisers that they lack the power to make decisions” (p. 6). Although it is impossible to deny that investment consultants have great influence on the decision making of trustees (Myners, 2001), the majority of trustees claim to challenge and question their advice, by considering alternatives, instead of taking it for granted (Clacher *et al.*, 2017a). Despite this, trustees admit that they rarely reject the consultant’s recommendations in the end, and that they are very reliant on their advice (Clacher *et al.*, 2017a). While the advice provided by consultants is likely to be helpful to trustees, and good advice generally can help improve decision quality (Bonaccio and Dalal, 2006; Harvey and Fischer, 1997), excessive reliance on advice can open avenues for malicious manipulation, such as an increased influence of poor or misleading advice (Gino *et al.*, 2012; Soll and Larrick, 2009).

One of the most influential type of consultants is the investment consultant, who advises the trustees on where to invest the assets of the pension. While the decision on where to invest ultimately lies within the trustees’ control, it is clear that the investment consultants exert great influence in this decision (Myners, 2001; Pratten and Satchell, 1998). For example, they provide recommendations of approved funds for the trustees, and while the trustees could in theory select funds from outside the recommended list, they are unlikely to do so (Clacher *et al.*, 2017c) and might not even be aware of other options available to them. The process of selecting funds typically involves looking at a series of performance metrics, provided by the investment funds consultant, as well as prospective managers being directly interviewed by the trustees (Clacher *et al.*, 2017c). Del Guercio and Tkac (2002) looked at how pension funds select where to invest their assets. They claim that because of the fiduciary duties of pension fund trustees and their responsibility toward pension scheme members, the financial decisions that are made are those that can be defended *ex post* and where blame can be transferred to others. This agency issue leads to pension trustees basing their investment decisions on non-financial and non-performance characteristics of asset managers, such as their personality, credibility, reputation and attentiveness. It also increases their reliance on external advice.

Based on the UK government reports on institutional investors (Bunt *et al.*, 1998; Myners, 2001; Pratten and Satchell, 1998), the surveys on trustees summarized above (Clacher *et al.*, 2017a, b, c) and our understanding of the pension funds and their decisions, we identify three characteristics of institutional investor decision making as topics for

---

further research: trustees often make decisions in groups; they often rely on external advisers to inform their decisions; and they make surrogate decisions on behalf of others. We review the research on each of these topics in the following three sections.

### 1. Group decision making

The decisions of pension funds are made by the board of trustees, which is a mixed group of individuals selected by the employer and employees (Clacher *et al.*, 2017b; Myners, 2001). Despite common beliefs, and a corporate appetite for brainstorming (Thamia and Woods, 1984), groups usually do not make decisions efficiently, with lower productivity per person than separate individuals (Baron and Kerr, 2003; Fifić and Gigerenzer, 2014; Paulus *et al.*, 1993)[3]. This lack of group efficiency is due to process losses associated with group decision making and their interaction: groups are not as efficient as the sum of their parts, with actual performance considerably below the potential of their pooled resources (Stroebe and Diehl, 1994). An exceptional individual alone will often perform better than a group including that individual, which shows how process losses can deteriorate individual performance (Hill, 1982). The issue remains, though, of identifying who was the exceptional individual in the group, and thus, combining individuals might still be better than relying on one randomly selected individual. These process losses act by reducing motivation and coordination, as a result of several social behavioral issues, such as social loafing and free-riding, self-censorship and inhibition and members blocking the productivity of each other (Diehl and Stroebe, 1987). Despite these process losses, there is a perceived illusion of effectiveness within group members: Individuals tend to believe that working in a group enhances performance. This illusion arises because individuals might claim others' ideas as their own, believe to be individually more productive in a group and overestimate the number of ideas that occurred to them during group discussions (Stroebe *et al.*, 1992).

This illusion of effectiveness of group decisions may also be responsible for overconfidence in group decisions. Overconfidence is an issue often encountered in individual decision making, when an individual believes that their own responses are more accurate than they really are (Ayton and McClelland, 1997; Harvey, 1997). Empirical research has shown that groups are even more confident than individuals in their decisions, in particular in judgmental tasks (Heath and Gonzalez, 1995; Sniezek and Henry, 1989; Zarnoth and Sniezek, 1997). Overconfidence can be detrimental to decision making: in financial decisions, for example, it can lead to poor financial performance and unnecessary losses via excessive trading (Barber and Odean, 2000), excessive market volatility (Daniel *et al.*, 1998) and excessive risk taking (Camerer and Lovo, 1999; Nosić and Weber, 2010). Confidence in a decision can even be more influential for behavior than accuracy, as confidence mediates actions and might induce poorly chosen behaviors based on wrong, but confident, beliefs and judgments (Sniezek, 1992). However, expertise can influence confidence, with higher expertise leading to higher confidence in one's decisions (Trafimow and Sniezek, 1994). Most trustees are not experts in the decisions they make, which could lower their confidence and reduce actionable behavior, leading to behavioral inertia, an issue highlighted in Myners (2001).

Group process losses can also impact effectiveness by reducing the amount of information shared during group discussions. By bringing together individuals who can share information, groups should improve the informational set used for decisions and make better decisions. While the majority of pension fund trustees might not possess specific knowledge required to make the decisions needed for their pension scheme, such as a high level of financial or legal expertise, it was found that many boards had at least one individual who was better informed in each necessary area (Myners, 2001). However, research has shown that group members do not pool their informational resources: groups tend to make decisions using only information which was already previously



---

shared between all the members of the group, while unshared information available to single individuals are rarely introduced into the decision-making discussion (Stasser and Titus, 1985).

Groups therefore tend to gravitate toward a common knowledge solution, even when there is private information available within the group to lead to better decisions (Lu *et al.*, 2012; Stasser and Titus, 2003). One interpretation is that group members positively evaluate one another when mentioning shared information (Wittenbaum *et al.*, 1999) and do not share unique information, which cannot be validated by other, for fear it will prevent consensus. As a result, commonly available information is substantially more discussed. High information load makes the bias even stronger, with an increased focus on shared information and lower tendency to exchange unique information when there is more information overall (Stasser and Titus, 1987). This is applicable to pension fund decisions where the trustees may well be overloaded with reports and information: reducing the amount of information could lead to more sharing and better decisions. This bias also appears to become worse with larger group sizes: smaller groups discuss unshared information more (Cruz *et al.*, 1997; Stasser *et al.*, 1989). Their finding supports the approach of larger trustee boards to rely on smaller sub-committees for certain decisions. Consistent with this notion, Postmes *et al.* (2001) found that inducing a group norm for critical thought improved attention to unique information and the quality of decisions.

Despite this apparent lack of sharing of new information, the debates and discussions occurring during group decision making often lead to individuals revising their judgments and decisions, which has been associated with group polarization and choice shifts (Isenberg, 1986). Group polarization occurs when individuals' views become more extreme after discussion than they were prior to the interaction (Moscovici and Zavalloni, 1969; Myers and Lamm, 1976). These discussions can enhance the initially dominant point of view, reinforcing it and making it more salient. Any previously shared information gets excessively more attention and disproportionately more discussion time. Confirmation bias also plays a role by helping individuals to more easily ignore and discard conflicting information (Klayman and Ha, 1987). As a result, a choice-shift can occur: the group's pooled consensus answer tends to be more extreme than the average of the individuals' (Hinsz and Davis, 1984; Schroeder, 1973). Hence, groups tend to shift and amplify their choices in the direction which most of the group members were already preferring. Facing a situation in which individuals would initially have a natural tendency to be risk takers, for example, in the domain of losses (Kahneman and Tversky, 1979), group discussions would lead to a "risky shift," with even greater risk taking; while in the gains domains, if individuals are more naturally risk averse, then a "cautious shift" would be observed following group discussions, with lower risk taking (Stoner, 1968). One of the reasons why groups can take more extreme positions than their individual members is because responsibility is diffused and blame can no longer be directly attributed to any particular member directly (Pruitt, 1971). The group shift can sometimes be so extreme that final decisions can even fall outside the range of original independent decisions (Sniezek and Henry, 1989).

## 2. Judge adviser systems

The UK government's reports on institutional investors concluded that "investment consultants are highly influential in [the] investment decision-making" of pension fund trustees (Myners, 2001, p. 7). One relevant area of psychology research that has extensively investigated a similar type of relationship looks at judge adviser systems (JAS). In JAS research, a judge makes the final decision, receiving advice provided by one or many advisers, usually in the form of a recommendation (for a review, see Bonaccio and Dalal, 2006). There are many reasons why judges seek advice. They might want to improve the quality of their decisions, minimize decision-making effort, reduce uncertainty, share

responsibility for their actions and also to make it easier to justify their decisions *ex post* (Harvey and Fischer, 1997; Schrah *et al.*, 2006). They also take advice provided now, in order not to offend the adviser, maintaining a good on-going relationship and not to preclude any future provision of additional advice (Gurmankin *et al.*, 2002; Sniezek and Buckley, 1995). Receiving and integrating advice also seems to increase the confidence levels of judges, making it easier to make decisions and act upon them (Savadori *et al.*, 2001).

Despite being open to receiving advice, the research shows that judges typically do not fully integrate the advice into their own decision, but tend to discount most advisory information received, consistently putting more weight on their own ideas and opinions and underweighting advice (Harvey and Fischer, 1997; Mannes, 2009; Yaniv and Kleinberger, 2000). The works by Soll and Larrick (2009) and Soll and Mannes (2011) go even further, showing that advice is often completely ignored. In contrast, expert medical advice can have a very strong influence on patients' decisions, with some patients fully accepting a treatment proposed by a doctor, even when it goes against the patients' preferences (Gurmankin *et al.*, 2002; Siminoff and Fetting, 1991). It appears that weight given to advice can vary widely, but the judge's own personal views are rarely completely ignored, and remains egocentrically influential even when they know little about the question at hand and the advice provided comes from an expert in the field (Sniezek *et al.*, 2004; Soll and Mannes, 2011; Yaniv and Kleinberger, 2000). Lim and O'Connor (1995) have shown how individuals find it considerably difficult to allocate lower weights on their own judgments even when presented with reliable advice.

According to Yaniv and Kleinberger (2000), this egocentric discounting of advice occurs because individuals have access to their own reasoning supporting their own judgments, but not to the reasoning supporting the judgments of others. People tend to weight opinions in relation to the strength of the supporting evidence (Soll and Mannes, 2011), which could lead to advice with a stronger evidence base being allocated higher weights. Advisers who can demonstrate expertise, knowledge and experience of the topic also tend to receive higher weights (Goldsmith and Fitch, 1997; Gurmankin *et al.*, 2002). Individuals might also prefer their own opinions as a way of preserving self-esteem, because accepting advice might result in an undesirable devaluation of one's opinion: after individuals initially reject advice in their own area of expertise, thereby confirming their own self-value, they are more susceptible to accepting advice in other areas of expertise (Soll and Larrick, 2009).

Other factors influence the weight given to advice, such as the distance between the advice and the judge's own prior opinion: the larger the distance, the lower the weight given to the advice (Yaniv, 2004b). Therefore, advice that is closer to the judge's initial views receives more weight. Consequently, advisers who know a judge well can undertake a process of nudging them along in small steps, by providing a series of incremental advices over time. Counter-intuitively, conflicting advice can be quite influential as well, by confusing judges and lowering their confidence (Sniezek and Buckley, 1995). Sniezek and Buckley believe that conflicting advice might make the judge believe that the task is more difficult than it really is, and induce the judge to take a simpler decision heuristic involving luck rather than skill. Task difficulty and task complexity on their own also directly influences advice usage: on more difficult tasks, judges used advice significantly more than expected (Gino and Moore, 2006; Schrah *et al.*, 2006). Conflicting advice which is atypical or unexpected can also lead patients to wonder if their doctors knew some additional important piece of information that was not being shared (Gurmankin *et al.*, 2002; Siminoff and Fetting, 1991).

Less confident judges are more receptive to advice than more confident ones (Bonaccio and Dalal, 2006; Gino and Moore, 2006; Savadori *et al.*, 2001). If the lower confidence is justified, because the judge lacks appropriate knowledge to decide alone, then relying on good quality reasonable advice should help improve decision performance (Bonaccio and Dalal, 2006;

Harvey and Fischer, 1997). However, lack of confidence is indicative of a reduced capacity for discerning the quality of the advice received, resulting in excessive weighting being allocated to unreasonable or bad advice (Gino *et al.*, 2012; Soll and Larrick, 2009). Thus, if pension fund trustees are not very confident about their roles, tasks, responsibilities and lack appropriate training, they are likely to be influenced more by poor advice. Groups are more confident than individuals, but it remains to be seen how the group interaction influences the taking of advice. Advice also receives more weight when the judges feel more accountable for their decisions, likely a result of the need to be able to justify it and share responsibility *ex post* (Yaniv, 2004a). Given the legal framework in which trustees operate, and their fiduciary obligation, this is likely to be an important moderator, increasing the reliance that trustees place on advice.

One crucial area relevant for investment consultants providing advice for trustees relates to the fact that these advisers are paid by the pension funds, and in general judges are significantly more receptive to paid advice than to free advice (Gino, 2008; Sniezek *et al.*, 2004). This increase in importance given to paid advice appears to be moderated by credibility, with payment for advice increasing its credibility (Patt *et al.*, 2006). The sunk-cost fallacy (Arkes and Blumer, 1985) may apply to the relationship between payment and usage of advice: individuals would use advice that was already paid for, even when it is unhelpful, so not to believe that they wasted any money.

If advice is provided to the judges before they had the chance to form an initial opinion, then their decision can be considered as being cued. This creates an initial starting position for consideration, akin to an anchoring effect (Chapman and Johnson, 1994; Tversky and Kahneman, 1974). Wilson and Brekke (1994) have called this external influence and its effect on decisions “mental contamination.” It is suggested that this process is unconscious and unwanted, and that judges would prefer not to be cued. According to Wilson and Brekke, after being cued, most individuals will not be able to correct and adjust appropriately and might be unable to adjust or even overreact and overcorrect. Because of this effect, cued judges are influenced more strongly and tend to give more weight to advice (Rader *et al.*, 2015). Cued judges engage in less information processing overall, focus their informational search around the advice given, biasing their information processing by reducing the proportion of attention dedicated to the non-cued alternatives (Schrah *et al.*, 2006; Sniezek and Buckley, 1995). In comparison, if judges are not cued, and only receive the advice after forming their initial opinion, they are considered to be more independent, revising their decision after the advice is received. Independent judges are likely to make better informed, less biased decisions, allocating lower weights to advice (Rader *et al.*, 2015).

According to Schrah *et al.* (2006), if given the option, judges will delay advice acquisition until they have formed their initial position, and thus prefer to be independent rather than cued judges. Being able to make independent initial decisions is crucial to reduce the influence of external advisers (Van Swol and Sniezek, 2005). Pension fund trustees are more likely to be cued judges and rely extensively on the information provided by advisers without the opportunity (or time or desire) to form prior opinions. However, the need for independent judges needs to be weighed against the importance of advice. Soll and Mannes (2011) suggest that independent judges might be reluctant to accept advice in order to avoid any regrets in the case that their initial judgment proved more accurate than the revised final judgment. If the judge is not an expert in the field, ignoring important advice might lead to lower quality of decisions.

### 3. Surrogate decision making

Pension fund trustees make decisions on behalf of others, also known as surrogate or substituted decisions. The ultimate beneficiaries of the decisions made by pension fund

trustees are the members of that pension fund. This is similar to the extensively researched field of surrogate medical decisions, involving end-of-life treatment for incapacitated patients (for meta analyses, see Fagerlin *et al.*, 2001; Wendler and Rid, 2011). Ideally, the gold standard is for surrogates to apply “substituted judgement,” which occurs when they make the same decision that a patient would make if they were not incapacitated. However, this does not appear to happen in practice.

Systematic reviews of the extant corpus of research show that individuals are very poor at making surrogate decisions: surrogates tend to incorrectly predict the patient’s wishes quite often and do not perform much better than chance (Sulmasy *et al.*, 1998; Uhlmann *et al.*, 1988). Family members tend to perform slightly better than doctors but are still incorrect around 30 percent of the time (Moorman *et al.*, 2009; Seckler *et al.*, 1991; Shalowitz *et al.*, 2006).

One of the key aspects of medical surrogate decision making is that individuals tend to project their own preferences onto others, and as a result the decisions are closer to the surrogate’s wishes than to the patient’s (Fagerlin *et al.*, 2001; Pruchno *et al.*, 2005). This might be explained by a belief of the surrogates that the others’ preferences would be the same as their own, an assumption of similarity (Cronbach, 1955), which is related to the false-consensus effect (Marks and Miller, 1987). Because surrogates project their preferences, research has shown that similarities in taste allow for better matched predictions of other’s preferences and attitudes (Hoch, 1987); Similar surrogates are the best surrogates. Surrogates relying on assumptions of similarity to decide on behalf of others will only make good decisions when they have similar preferences. This approach works well in certain scenarios in which preferences overlaps, such as between spouses, but can also lead to lower quality decisions where there is limited overlap of preferences, such as doctors predicting for patients.

Matheis-Kraft and Roberto (1997) and Ditto *et al.* (2001) go on to show that even holding discussions with the patient about their critical medical care preferences did not help improve the surrogate judgment, with the surrogate’s own preferences overriding the information gathered during these discussions. Furthermore, Epley *et al.*’s (2004) theory of egocentric anchoring and adjustment has shown how individual’s estimates of other’s perceptions are anchored around their own perceptions, and later serially adjusted, taking into consideration what the surrogate might believe the other’s wishes to be. Therefore, the inability to sufficiently adjust, even after discussions, can explain these findings (see also Chapman and Johnson, 1994; Tversky and Kahneman, 1974).

Even when surrogates have similar values, they might still make different decisions for others than for themselves. This issue brings to attention the difference between what an individual would choose and what an individual should choose. For example, doctors tend to make more rational, analytic and utilitarian decisions on behalf of their patients, while they rely on simpler heuristics and are more susceptible to cognitive biases when deciding for themselves (Garcia-Retamero and Galesic, 2012; Ubel *et al.*, 2011). As a result, doctors make more conservative treatment decisions, taking less risk, on behalf of patients than for themselves, and also than the patients would have selected. In contrast, Beisswanger *et al.* (2003) found that when deciding for others, participants used less information and focused more on single dominant attributes, making certain dimensions much more salient, such as the negative aspects of taking risks for example. In all cases, surrogates made different choices for themselves than they made for others (see also Kray and Gonzalez, 1999).

Individuals often believe that others have more muted emotional responses, and the influence of emotion on others’ decisions is less powerful (Loewenstein, 1996). This “empathy-gap” between the self and others, is observed because it is easier to understand one’s own feelings, than someone else’s. People find it hard to empathize with others’ distress at bad outcomes or thrill at good outcomes and underestimate their willingness to take risks.

---

Therefore, the ability of a surrogate to empathize with another person predicts how well the surrogate discards their own choices and more accurately estimates the other person's judgments (Tunney and Ziegler, 2015). As a result, surrogate decision makers are more emotionally detached from the decision and its consequences (Kray, 2000). Lack of introspection into other's actual preferences is another factor for concern. If a surrogate is not completely sure about the other's wishes, then they might prefer to err on the side of conservativeness and choose what they should do instead.

Making accurate predictions of other people's risk preferences is an important aspect of the role of a pension fund trustee. However, research has shown that surrogates are very poor at such a task (e.g. Faro and Rottenstreich, 2006; Hsee and Weber, 1997). In the risk domain, the empathy gap can be applied to the concept of "risk as feelings" (Loewenstein *et al.*, 2001): risk-taking is driven by feelings, and because feelings about oneself are more salient than feelings about others (and others' feelings as well), this should lead to more subdued risk-taking behavior in surrogate decisions. The theory states that any departures away from risk neutrality are driven by how intensely individuals feel the pleasure or dread of the outcomes of their risky choices. Therefore, an empathy gap reducing the strength of these feelings should lead to more muted response toward risk taking or risk avoidance, depending on the domain. Because surrogates find it difficult to empathize with others, their decisions tend to be more regressive toward risk neutrality, which might also appear more normative and socially expected (Hsee and Weber, 1997). Empirical research has confirmed: surrogate decisions are more risk averse in situations in which safety is socially desirable (Faro and Rottenstreich, 2006; Fernandez-Duque and Wifall, 2007; Garcia-Retamero and Galesic, 2012) and more risk seeking in situations in which risk is more socially desirable (Andersson *et al.*, 2016; Beisswanger *et al.*, 2003; Hsee and Weber, 1997). Both directions of deviations of surrogate decisions are inefficient, as the true risk preferences of the individuals are not being accurately represented. And because individuals project their own preferences, this would imply that surrogates who are more risk seeking would recommend more risk taking than a surrogate who is more risk averse.

One of the ways that surrogates can adjust their own judgments while deciding on behalf of others, according to Epley *et al.*'s (2004) theory of egocentric adjustment, is to adjust according to social values to make the decision more socially acceptable. This "social value theory" posits that individuals decide for others not based on what they think the others would do, but instead on what is valued by society as the best action to take (see also Kray, 2000; Stone and Allgaier, 2008). This leads to behavior that is more conservative and more regressive to the mean, toward a more neutral and thus more socially accepted norm (Garcia-Retamero and Galesic, 2012). Surrogates make what is essentially an egocentric decision benefiting their own reputation, regardless of what might be best for the other person (Tunney and Ziegler, 2015). Fear of *ex post* guilt for bad outcomes from poor decision making can also be a cause of more normative regressive behavior (Stone *et al.*, 2002). More normative behavior should lead to lower volatility in the outcomes, fewer unexpected results, thereby reducing responsibility if the behavior was the more normally socially accepted action. Surrogate decision making is also more public than an individual deciding for themselves, which tends to be a more private affair. This might exacerbate the social influence on surrogate decisions to preserve the surrogate's self-image by providing a more socially acceptable decision (Stone *et al.*, 2002). As a result, people make riskier decisions for others in domains where risk taking is valued and less-riskier decisions in those where risk is not valued (Stone and Allgaier, 2008).

One frequent problem with surrogate decision making is that surrogates very rarely get feedback for their decisions from the person who is the target of those decisions. West (1996) has shown how surrogates who learn about their performance via feedback from their targets also learn to reduce certain biases such as the false consensus or projection, and

---

learn to rely less on their own preferences over time, as they learn their target's preferences. Nevertheless, because the results from deciding for others translate into lower hedonistic values than when deciding for oneself, the surrogate ends up not as emotionally engaged with the learning process, the decision made and its outcomes (Fernandez-Duque and Wifall, 2007). This can explain why surrogates choices are more subdued, more regressive and more normative.

#### 4. Conclusions

The decisions made by pension fund trustees are set in environments that differ from the majority of the research conducted so far in behavioral finance. The extant research has mostly focused on lay individuals making small financial decisions that only affect themselves (and their households), and most of the biases uncovered apply to that population. In contrast, pension fund trustees receive training and have some experience in financial markets, which should distance them from the traditional unsophisticated retail investor. Very little research has been dedicated to the decisions of pension fund trustees so far. Some research studies on the most sophisticated financial market players, such as professional mutual fund managers, have revealed that they still succumb to decision biases (e.g. Feng and Seasholes, 2005; Garvey and Murphy, 2004; Shapira and Venezia, 2001). Pension fund trustees are therefore unlikely to be immune from the biases studied at individual level. Direct investigation of pension fund trustee behavior is the necessary next step to further advance the field of behavioral finance.

In addition to an investigation of these biases in the pension fund trustee environment, it is still unknown how the specific context of trustee decisions can affect these psychological effects on their decisions; this setting may, potentially, mitigate them, or conversely strengthen them. Pension fund trustees make decisions in groups, are heavily reliant on advice and make decisions on behalf of others. So far, we know that group decisions are not efficient, due to process losses and lack of information sharing between the group members. Group discussions tend to lead to choice-shift and group polarization, with more extreme decisions at group level than at the individual level. While individuals are usually receptive to advice, they tend to discount the advice and put more weight on their own judgments. However, the weight given to advice is moderated by numerous factors, many of them relevant to trustee decision making, which can increase the weight given to advice, putting unwanted decision control in the hand of external advisers. When making surrogate decisions on behalf of others, individuals tend to project their own preferences, instead of considering the preference of the others. They decide as how the other should behave, not as how they would behave. And they make emotionally more muted, rational and less empathic decisions, converging toward more socially acceptable normative behavior.

As far as we are aware, no behavioral research has empirically tested pension fund trustees' decisions to investigate how the combination of group decisions, advice and surrogacy influence their decisions and, ultimately, the sustainability of our pensions. Given how much influence trustees' decisions have on asset allocation and by extension in financial markets, this is a surprising state of affairs. Research in behavioral finance has had a marked influence on policy in the past (e.g. Thaler and Sunstein, 2009) and so we anticipate that exploring the decisions made within pension funds may have wide ramifications for the industry.

#### Notes

1. [www.theinvestmentassociation.org](http://www.theinvestmentassociation.org)
2. [www.efama.org](http://www.efama.org)

3. Although there are exceptions: in some specific situations, groups can perform better than individuals, such as in problem-solving tasks with “eureka” moments and a demonstrably correct solution (Laughlin, Bonner, and Miner, 2002; Michaelsen, Watson, Black, and Lynch, 1989; Sniezek and Henry, 1989); interventions can also be used to improve group performance (e.g. Reagan-Cirincione, 1994). However, these do not apply to the types of subjective decisions and judgments made by pension fund trustees, in which no single correct answer exists. For more extensive reviews, see Kerr and Tindale (2004) and McGrath and Kravitz (1982).

## References

- Alicke, M.D. (1985), “Global self-evaluation as determined by the desirability and controllability of trait adjectives”, *Journal of Personality and Social Psychology*, Vol. 49 No. 6, pp. 1621-1630.
- Andersson, O., Holm, H.J., Tyran, J.-R. and Wengström, E. (2016), “Deciding for others reduces loss aversion”, *Management Science*, Vol. 62 No. 1, pp. 29-36.
- Arkes, H.R. and Blumer, C. (1985), “The psychology of sunk cost”, *Organizational Behavior and Human Decision Processes*, Vol. 35 No. 1, pp. 124-140.
- Ayton, P. and McClelland, A. (1997), “How real is overconfidence?”, *Journal of Behavioral Decision Making*, Vol. 10 No. 3, pp. 279-285.
- Barber, B.M. and Odean, T. (2000), “Trading is hazardous to your wealth: the common stock investment performance of individual investors”, *The Journal of Finance*, Vol. 55 No. 2, pp. 773-806.
- Barberis, N.C. and Thaler, R.H. (2003), “A survey of behavioral finance”, in Constantinides, G., Harris, M. and Stulz, R. (Eds), *Handbook of the Economics of Finance*, Elsevier Science B.V., Amsterdam, pp. 1053-1123.
- Baron, R.S. and Kerr, N.L. (2003), *Group Process, Group Decision, Group Action*, Open University Press, Buckingham.
- Beisswanger, A.H., Stone, E.R., Hupp, J.M. and Allgaier, L. (2003), “Risk taking in relationships: differences in deciding for oneself versus for a friend”, *Basic and Applied Social Psychology*, Vol. 25 No. 2, pp. 121-135.
- Benartzi, S. and Thaler, R.H. (2001), “Naive diversification strategies in defined contribution saving plans”, *The American Economic Review*, Vol. 91 No. 1, pp. 79-98.
- Bonaccio, S. and Dalal, R.S. (2006), “Advice taking and decision-making: an integrative literature review, and implications for the organizational sciences”, *Organizational Behavior and Human Decision Processes*, Vol. 101 No. 2, pp. 127-151.
- Bunt, K., Winterbotham, M. and Williams, R. (1998), “The role of pension scheme trustees”, Department of Social Security, Corporate Document Services, Leeds.
- Camerer, C.F. and Lovallo, D. (1999), “Overconfidence and excess entry: an experimental approach”, *The American Economic Review*, Vol. 89 No. 1, pp. 306-318.
- Chapman, G.B. and Johnson, E.J. (1994), “The limits of anchoring”, *Journal of Behavioral Decision Making*, Vol. 7 No. 4, pp. 223-242.
- Clacher, I., McNair, S. and Hodgett, R.E. (2017a), “Costs, fees and trustee decision-making”, Aon Hewitt, available at: [www.aon.com/unitedkingdom/retirement-investment/investment/costs-fees-and-trustee-decision-making.jsp](http://www.aon.com/unitedkingdom/retirement-investment/investment/costs-fees-and-trustee-decision-making.jsp)
- Clacher, I., McNair, S. and Hodgett, R.E. (2017b), “Mapping the trustee landscape”, Aon Hewitt, available at: [www.aon.com/unitedkingdom/retirement-investment/investment/mapping-the-trustee-landscape.jsp](http://www.aon.com/unitedkingdom/retirement-investment/investment/mapping-the-trustee-landscape.jsp)
- Clacher, I., McNair, S. and Hodgett, R.E. (2017c), “Selecting fund managers and consultants – What do trustees look for?”, Aon Hewitt, available at: [www.aon.com/unitedkingdom/retirement-investment/investment/selecting-fund-managers-and-consultants.jsp](http://www.aon.com/unitedkingdom/retirement-investment/investment/selecting-fund-managers-and-consultants.jsp)
- Cronbach, L. (1955), “Processes affecting scores on ‘understanding of others’ and ‘assumed similarity’”, *Psychological Bulletin*, Vol. 52 No. 3, pp. 177-193.

- Cruz, M.G., Boster, F.J. and Rodríguez, J.I. (1997), "The impact of group size and proportion of shared information on the exchange and intergration of information in groups", *Communication Research*, Vol. 24 No. 3, pp. 291-313.
- Daniel, K., Hirshleifer, D. and Subrahmanyam, A. (1998), "Investor psychology and security market under- and overreactions", *The Journal of Finance*, Vol. 53 No. 6, pp. 1839-1885.
- Del Guercio, D. and Tkac, P.A. (2002), "The determinants of the flow of funds of managed portfolios: mutual funds vs. pension funds", *The Journal of Financial and Quantitative Analysis*, Vol. 37 No. 4, pp. 523-557.
- Diehl, M. and Stroebe, W. (1987), "Productivity loss in brainstorming groups: toward the solution of a riddle", *Journal of Personality and Social Psychology*, Vol. 53 No. 3, pp. 497-509.
- Ditto, P.H., Danks, J.H., Smucker, W.D., Bookwala, J., Coppola, K.M., Dresser, R., Fagerlin, A., Gready, R.M., Houts, R.M., Lockhart, L.K. and Zyzanski, S. (2001), "Advance directives as acts of communication", *Archives of Internal Medicine*, Vol. 161 No. 3, pp. 421-430.
- Epley, N., Keysar, B., Van Boven, L. and Gilovich, T. (2004), "Perspective taking as egocentric anchoring and adjustment", *Journal of Personality and Social Psychology*, Vol. 87 No. 3, pp. 327-339.
- European Fund and Asset Management Association (2017), "Asset management in Europe", 9th ed.
- Fagerlin, A., Ditto, P.H., Danks, J.H. and Houts, R.M. (2001), "Projection in surrogate decisions about life-sustaining medical treatments", *Health Psychology*, Vol. 20 No. 3, pp. 166-175.
- Faro, D. and Rottenstreich, Y. (2006), "Affect, empathy, and regressive mispredictions of others' preferences under risk", *Management Science*, Vol. 52 No. 4, pp. 529-541.
- Feng, L. and Seasholes, M.S. (2005), "Do investor sophistication and trading experience eliminate behavioral biases in financial markets?", *Review of Finance*, Vol. 9 No. 3, pp. 305-351.
- Fernandez-Duque, D. and Wifall, T. (2007), "Actor/observer asymmetry in risky decision making", *Judgment and Decision Making*, Vol. 2 No. 1, pp. 1-8.
- Fifić, M. and Gigerenzer, G. (2014), "Are two interviewers better than one?", *Journal of Business Research*, Vol. 67 No. 8, pp. 1771-1779.
- Garcia-Retamero, R. and Galesic, M. (2012), "Doc, what would you do if you were me? On self-other discrepancies in medical decision making", *Journal of Experimental Psychology: Applied*, Vol. 18 No. 1, pp. 38-51.
- Garvey, R. and Murphy, A. (2004), "Are professional traders too slow to realize their losses?", *Financial Analysts Journal*, Vol. 60 No. 4, pp. 35-43.
- Gino, F. (2008), "Do we listen to advice just because we paid for it? The impact of advice cost on its use", *Organizational Behavior and Human Decision Processes*, Vol. 107, pp. 234-245.
- Gino, F. and Moore, D.A. (2006), "Effects of task difficulty on use of advice", *The Journal of Behavioral Decision Making*, Vol. 20 No. 1, pp. 21-35.
- Gino, F., Brooks, A.W. and Schweitzer, M.E. (2012), "Anxiety, advice, and the ability to discern: feeling anxious motivates individuals to seek and use advice", *Journal of Personality and Social Psychology*, Vol. 102 No. 3, pp. 497-512.
- Goldsmith, D.J. and Fitch, K. (1997), "The normative context of advice as social support", *Human Communication Research*, Vol. 23 No. 4, pp. 454-476.
- Gurmankin, A.D., Baron, J., Hershey, J.C. and Ubel, P.A. (2002), "The role of physicians' recommendations in medical treatment decisions", *Medical Decision Making*, Vol. 22 No. 3, pp. 262-271.
- Harvey, N. (1997), "Confidence in judgment", *Trends in Cognitive Sciences*, Vol. 1 No. 2, pp. 78-82.
- Harvey, N. and Fischer, I. (1997), "Taking advice: accepting help, improving judgment, and sharing responsibility", *Organizational Behavior and Human Decision Processes*, Vol. 70 No. 2, pp. 117-133.



- Heath, C. and Gonzalez, R. (1995), "Interaction with others increases decision confidence but not decision quality: evidence against information collection views of interactive decision making", *Organizational Behavior and Human Decision Processes*, Vol. 61 No. 3, pp. 305-326.
- Hill, G.W. (1982), "Group versus individual performance: are N+1 heads better than one?", *Psychological Bulletin*, Vol. 91 No. 3, pp. 517-539.
- Hinsz, V.B. and Davis, J.H. (1984), "Persuasive arguments theory, group polarization, and choice shifts", *Personality and Social Psychology Bulletin*, Vol. 10 No. 2, pp. 260-268.
- Hoch, S.J. (1987), "Perceived consensus and predictive accuracy: the pros and cons of projection", *Journal of Personality and Social Psychology*, Vol. 53 No. 2, pp. 221-234.
- Hsee, C.K. and Weber, E.U. (1997), "A fundamental prediction error: self-other discrepancies in risk preference", *Journal of Experimental Psychology: General*, Vol. 126 No. 1, pp. 45-53.
- Isenberg, D.J. (1986), "Group polarization. A critical review and meta-analysis", *Journal of Personality and Social Psychology*, Vol. 50 No. 6, pp. 1141-1151.
- Kahneman, D. and Tversky, A. (1979), "Prospect theory: an analysis of decision under risk", *Econometrica*, Vol. 47 No. 2, pp. 263-292.
- Kerr, N.L. and Tindale, R.S. (2004), "Group performance and decision making", *Annual Review of Psychology*, Vol. 55, pp. 623-655.
- Klayman, J. and Ha, Y.-W. (1987), "Confirmation, disconfirmation, and information in hypothesis testing", *Psychological Review*, Vol. 94 No. 2, pp. 211-228.
- Kray, L.J. (2000), "Contingent weighting in self-other decision making", *Organizational Behavior and Human Decision Processes*, Vol. 83 No. 1, pp. 82-106.
- Kray, L.J. and Gonzalez, R. (1999), "Differential weighting in choice versus advice: I'll do this, you do that", *Journal of Behavioral Decision Making*, Vol. 12 No. 3, pp. 207-217.
- Laughlin, P.R., Bonner, B.L. and Miner, A. (2002), "Groups perform better than the best individuals on letters-to numbers problems", *Organizational Behavior and Human Decision Processes*, Vol. 88 No. 2, pp. 605-620.
- Lim, J.S. and O'Connor, M. (1995), "Judgemental adjustment of initial forecasts: its effectiveness and biases", *Journal of Behavioral Decision Making*, Vol. 8 No. 3, pp. 149-168.
- Loewenstein, G. (1996), "Out of control: visceral influences on behavior", *Organizational Behavior and Human Decision Processes*, Vol. 65 No. 2, pp. 272-292.
- Loewenstein, G., Hsee, C.K., Weber, E.U. and Welch, N. (2001), "Risk as feelings", *Psychological Bulletin*, Vol. 127, pp. 267-286.
- Lu, L., Yuan, Y.C. and McLeod, P.L. (2012), "Twenty-five years of hidden profiles in group decision making: a meta-analysis", *Personality and Social Psychology Review*, Vol. 16 No. 1, pp. 54-75.
- McGrath, J.E. and Kravitz, D.A. (1982), "Group research", *Annual Review of Psychology*, Vol. 33, pp. 195-230.
- Mannes, A.E. (2009), "Are we wise about the wisdom of crowds? The use of group judgments in belief revision", *Management Science*, Vol. 55 No. 8, pp. 1267-1279.
- Marks, G. and Miller, N. (1987), "Ten years of research on the false-consensus effect: an empirical and theoretical review", *Psychological Bulletin*, Vol. 102 No. 1, pp. 72-90.
- Matheis-Kraft, C. and Roberto, K.A. (1997), "Influence of a values discussion on congruence between elderly women and their families on critical health care decisions", *Journal of Women & Aging*, Vol. 9 No. 4, pp. 5-22.
- Michaelsen, L.K., Watson, W.E., Black, R.H. and Lynch, M. (1989), "A realistic test of individual versus group consensus decision making", *Journal of Applied Psychology*, Vol. 74 No. 5, pp. 834-839.
- Moorman, S.M., Hauser, R.M. and Carr, D. (2009), "Do older adults know their spouses' end-of-life treatment preferences?", *Research on Aging*, Vol. 31 No. 4, pp. 463-491.
- Moscovici, S. and Zavalloni, M. (1969), "The group as a polarizer of attitudes", *Journal of Personality and Social Psychology*, Vol. 12 No. 2, pp. 125-135.

- Myers, D.G. and Lamm, H. (1976), "The group polarization phenomenon", *Psychological Bulletin*, Vol. 83 No. 4, pp. 602-627.
- Myners, P. (2001), *Institutional Investment in the United Kingdom: A Review*, HM Treasury, London.
- Nosic, A. and Weber, M. (2010), "How riskily do I invest? The role of risk attitudes, risk perceptions, and overconfidence", *Decision Analysis*, Vol. 7 No. 3, pp. 282-301.
- Patt, A.G., Bowles, H.R. and Cash, D.W. (2006), "Mechanisms for enhancing the credibility of an adviser: prepayment and aligned incentives", *Journal of Behavioral Decision Making*, Vol. 19 No. 4, pp. 347-359.
- Paulus, P.B., Dzindolet, M.T., Poletes, G. and Camacho, L.M. (1993), "Perception of performance in group brainstorming: the illusion of group productivity", *Personality and Social Psychology Bulletin*, Vol. 19 No. 1, pp. 78-89.
- Postmes, T., Spears, R. and Cihangir, S. (2001), "Quality of decision making and group norms", *Journal of Personality and Social Psychology*, Vol. 80 No. 6, pp. 918-930.
- Pratten, C. and Satchell, S. (1998), "Pension scheme investment policies", Department of Social Security, Corporate Document Services, Leeds.
- Pruchno, R.A., Lemay, E.P., Feild, L. and Levinsky, N.G. (2005), "Spouse as health care proxy for dialysis patients: whose preferences matter?", *Gerontologist*, Vol. 45 No. 6, pp. 812-819.
- Pruitt, D.G. (1971), "Choice shifts in group discussion: an introductory review", *Journal of Personality and Social Psychology*, Vol. 20 No. 3, pp. 339-360.
- Rader, C.A., Soll, J.B. and Larrick, R.P. (2015), "Pushing away from representative advice: advice taking, anchoring, and adjustment", *Organizational Behavior and Human Decision Processes*, Vol. 130, pp. 26-43.
- Reagan-Cirincione, P. (1994), "Improving the accuracy of group judgment: a process intervention combining group facilitation, social judgment analysis, and information technology", *Organizational Behavior and Human Decision Processes*, Vol. 58 No. 2, pp. 246-270.
- Savadori, L., Swol, L.M.V. and Sniezek, J.A. (2001), "Information sampling and confidence within groups and judge advisor systems", *Communication Research*, Vol. 28 No. 6, pp. 737-771.
- Schrah, G.E., Dalal, R.S. and Sniezek, J.A. (2006), "No decision-maker is an island: integrating expert advice with information acquisition", *Journal of Behavioral Decision Making*, Vol. 19 No. 1, pp. 43-60.
- Schroeder, H.E. (1973), "The risky shift as a general choice shift", *Journal of Personality and Social Psychology*, Vol. 27 No. 2, pp. 297-300.
- Seckler, A.B., Meier, D.E., Mulvihill, M. and Cammer Paris, B.E. (1991), "Substituted judgment: how accurate are proxy predictions?", *Annals of Internal Medicine*, Vol. 115 No. 2, pp. 92-98.
- Shalowitz, D.I., Garrett-Mayer, E. and Wendler, D. (2006), "The accuracy of surrogate decision makers", *Archives of Internal Medicine*, Vol. 166 No. 5, pp. 493-497.
- Shapira, Z. and Venezia, I. (2001), "Patterns of behavior of professionally managed and independent investors", *Journal of Banking and Finance*, Vol. 25 No. 8, pp. 1573-1587.
- Shefrin, H. (2009), "Behavioralizing finance", *Foundations and Trends in Finance*, Vol. 4 Nos 1-2, pp. 1-184.
- Siminoff, L.A. and Fetting, J.H. (1991), "Factors affecting treatment decisions for a life-threatening illness: the case of medical treatment of breast cancer", *Social Science and Medicine*, Vol. 32 No. 7, pp. 813-818.
- Sniezek, J.A. (1992), "Groups under uncertainty: an examination of confidence in group decision making", *Organizational Behavior and Human Decision Processes*, Vol. 52 No. 1, pp. 124-155.
- Sniezek, J.A. and Buckley, T. (1995), "Cueing and cognitive conflict in judge-advisor decision making", *Organizational Behavior and Human Decision Processes*, Vol. 62 No. 2, pp. 159-174.
- Sniezek, J.A. and Henry, R.A. (1989), "Accuracy and confidence in group judgment", *Organizational Behavior and Human Decision Processes*, Vol. 43 No. 1, pp. 1-28.

- Sniezek, J.A., Schrah, G.E. and Dalal, R.S. (2004), "Improving judgment with prepaid expert advice", *Journal of Behavioral Decision Making*, Vol. 17 No. 3, pp. 173-190.
- Soll, J.B. and Larrick, R.P. (2009), "Strategies for revising judgment: how (and how well) people use others' opinions", *Journal of Experimental Psychology: Learning, Memory, and Cognition*, Vol. 35 No. 3, pp. 780-805.
- Soll, J.B. and Mannes, A.E. (2011), "Judgmental aggregation strategies depend on whether the self is involved", *International Journal of Forecasting*, Vol. 27 No. 1, pp. 81-102.
- Stasser, G. and Titus, W. (1985), "Pooling of unshared information in group decision making", *Journal of Personality and Social Psychology*, Vol. 48 No. 6, pp. 1467-1478.
- Stasser, G. and Titus, W. (1987), "Effects of information load and percentage of shared information on the dissemination of unshared information during group discussion", *Journal of Personality and Social Psychology*, Vol. 53 No. 1, pp. 81-93.
- Stasser, G. and Titus, W. (2003), "Hidden profiles: a brief history", *Psychological Inquiry*, Vol. 14 Nos 3-4, pp. 304-313.
- Stasser, G., Taylor, L.A. and Hanna, C. (1989), "Information sampling in structured and unstructured discussions of three- and six-person groups", *Journal of Personality and Social Psychology*, Vol. 57 No. 1, pp. 67-78.
- Stone, E.R. and Allgaier, L. (2008), "A social values analysis of self-other differences in decision making involving risk", *Basic and Applied Social Psychology*, Vol. 30 No. 2, pp. 114-129.
- Stone, E.R., Yates, A.J. and Caruthers, A.S. (2002), "Risk taking in decision making for others versus the self", *Journal of Applied Social Psychology*, Vol. 32 No. 9, pp. 1797-1824.
- Stoner, J.A.F. (1968), "Risky and cautious shifts in group decisions: the influence of widely held values", *Journal of Experimental Social Psychology*, Vol. 4 No. 4, pp. 442-459.
- Stroebe, W. and Diehl, M. (1994), "Why groups are less effective than their members: on productivity losses in idea-generating groups", *European Review of Social Psychology*, Vol. 5 No. 1, pp. 271-303.
- Stroebe, W., Diehl, M. and Abakoumkin, G. (1992), "The illusion of group effectivity", *Personality and Social Psychology Bulletin*, Vol. 18 No. 5, pp. 643-650.
- Sulmasy, D.P., Terry, P.B., Weisman, C.S., Miller, D.J., Stallings, R.Y., Vettese, M.A. and Haller, K.B. (1998), "The accuracy of substituted judgments in patients with terminal diagnoses", *Annals of Internal Medicine*, Vol. 128 No. 8, pp. 621-629.
- Sutton, R. and Barto, A.G. (1990), "Time-derivative models of Pavlovian reinforcement", in Gabriel, M. and Moore, J. (Eds), *Learning and Computational Neuroscience: Foundations of Adaptive Networks*, MIT Press, Cambridge, MA, pp. 497-537.
- Thaler, R.H. and Sunstein, C.R. (2009), *Nudge: Improving Decisions About Health, Wealth, and Happiness*, Penguin, London.
- Thamia, S. and Woods, M.F. (1984), "A systematic small group approach to creativity and innovation: a case study", *R&D Management*, Vol. 14 No. 1, pp. 25-35.
- The Investment Association (2017), "Asset management in the UK 2016-2017", The Investment Association Annual Report, London.
- Trafimow, D. and Sniezek, J.A. (1994), "Perceived expertise and its effect on confidence", *Organizational Behavior and Human Decision Processes*, Vol. 57 No. 2, pp. 290-302.
- Tunney, R.J. and Ziegler, F.V. (2015), "Surrogate utility estimation by long-term partners and unfamiliar dyads", *Frontiers in Psychology*, Vol. 6 No. 315, pp. 1-8.
- Tversky, A. and Kahneman, D. (1974), "Judgment under uncertainty: heuristics and biases", *Science*, Vol. 185 No. 4157, pp. 1124-1131.
- Tversky, A. and Kahneman, D. (1981), "The framing of decisions and the psychology of choice", *Science*, Vol. 211 No. 4481, pp. 453-458.

- 
- Ubel, P.A., Angott, A.M. and Zikmund-Fisher, B.J. (2011), "Physicians recommend different treatments for patients than they would choose for themselves", *Archives of Internal Medicine*, Vol. 171 No. 7, pp. 630-634.
- Uhlmann, R.F., Pearlman, R.A. and Cain, K.C. (1988), "Physicians' and spouses' predictions of elderly patients' resuscitation preferences", *Journal of Gerontology: Medical Sciences*, Vol. 43 No. 5, pp. M115-M121.
- Van Swol, L.M. and Sniezek, J.A. (2005), "Factors affecting the acceptance of expert advice", *British Journal of Social Psychology*, Vol. 44 No. 3, pp. 443-461.
- Wendler, D. and Rid, A. (2011), "Review annals of internal medicine systematic review: the effect on surrogates of making treatment decisions for others", *Annals of Internal Medicine*, Vol. 154 No. 5, pp. 336-346.
- West, P.M. (1996), "Predicting preferences: an examination of agent learning", *Journal of Consumer Research*, Vol. 23 No. 1, pp. 68-80.
- Wilson, T.D. and Brekke, N. (1994), "Mental contamination and mental correction: unwanted influences on judgments and evaluations", *Psychological Bulletin*, Vol. 116 No. 1, pp. 117-142.
- Wittenbaum, G.M., Hubbell, A.P. and Zuckerman, C. (1999), "Mutual enhancement: toward an understanding of the collective preference for shared information", *Journal of Personality and Social Psychology*, Vol. 77 No. 5, pp. 967-978.
- Yaniv, I. (2004a), "The benefit of additional opinions", *Current Directions in Psychological Science*, Vol. 13 No. 2, pp. 75-78.
- Yaniv, I. (2004b), "Receiving other people's advice: influence and benefit", *Organizational Behavior and Human Decision Processes*, Vol. 93 No. 1, pp. 1-13.
- Yaniv, I. and Kleinberger, E. (2000), "Advice taking in decision making: egocentric discounting and reputation formation", *Organizational Behavior and Human Decision Processes*, Vol. 83 No. 2, pp. 260-281.
- Zarnoth, P. and Sniezek, J.A. (1997), "The social influence of confidence in group decision making", *Journal of Experimental Social Psychology*, Vol. 33 No. 4, pp. 345-366.

**Corresponding author**

Leonardo Weiss-Cohen can be contacted at: [leonardo.cohen@city.ac.uk](mailto:leonardo.cohen@city.ac.uk)

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.