ND STATE INVESTMENT BOARD MEETING

Friday, July 24, 2015, 8:30 a.m.
University of Mary
Board Room at the Harold Schafer Leadership Center
7500 University Drive, Bismarck, ND

AGENDA

I. CALL TO ORDER AND ACCEPTANCE OF AGENDA

II. ACCEPTANCE OF MINUTES (June 26, 2015)

III. ELECTION OF OFFICERS 2015-16

A. Chair
B. Vice Chair
C. Parliamentarian (Appointed by Chair)

IV. AUDIT COMMITTEE MEMBERSHIP 2015-16 (Board Acceptance) - Mr. Hunter (enclosed) (5 min)

V. INVESTMENTS

A. Tobacco Prevention and Control Trust Fund - Mr. Hunter (enclosed) (10 min) **Board Action**

VI. GOVERNANCE

A. Code of Conduct Affirmation - Mr. Schmidt (enclosed) (5 min) *Informational*
B. Investment Manager Catalog - Mr. Schmidt (enclosed) (5 min) *Informational*
C. 2015-16 Planning Cycle/Meeting Schedule - Mr. Hunter (enclosed) (5 min) *Informational*
D. Governance Education - Mr. Ambachtsheer, KPA Advisory Services (enclosed) (3 hours)

1. How Effective is Pension Fund Governance Today and Do Pensions Invest for the Long-Term

============================== Suggested Break from 10:00 to 10:15 am ============================

2. The Evolving Meaning of "Fiduciary Duty" - Is Your Board Keeping Up
3. Rethinking Investment Beliefs for the 21st Century

VII. OTHER

Possible Executive Session for Attorney Consultation Relating to GM Bankruptcy Litigation pursuant to NDCC §§ 44-04-19.1 and 44-04-19.2. - Ms. Murtha (10 min)

Next Meetings:

SIB - August 28, 2015, 8:30 am - State Capitol, Peace, Garden Room
SIB Audit Committee meeting - September 25, 2015, 1:00 pm - State Capitol, Peace Garden Room

VIII. ADJOURNMENT

Note: The meeting is scheduled to adjourn at approximately 12:00 pm CT.

Any individual requiring an auxiliary aid or service, please contact the Retirement and Investment Office (701) 328-9885 at least three (3) days prior to the scheduled meeting.

NORTH DAKOTA STATE INVESTMENT BOARD
MINUTES OF THE
JUNE 26, 2015, BOARD MEETING

MEMBERS PRESENT:
Drew Wrigley, Lt. Governor, Chair
Mike Sandal, Vice Chair
Lance Gaebe, Land Commissioner (TLCF)
Kim Franz, TFFR Board
Adam Hamm, Insurance Commissioner (TLCF)
Rob Lech, TFFR Board
Mel Olson, TFFR Board
Kelly Schmidt, State Treasurer
Yvonne Smith, PERS Board
Cindy Ternes, WSI designee
Tom Trenbeath, PERS Board

STAFF PRESENT:
Eric Chin, Investment Analyst
Connie Flanagan, Fiscal & Invt Op Mgr
Bonnie Heit, Assist to the SIB
David Hunter, ED/CIO
Fay Kopp, Dep ED/CRO
Terra Miller-Bowley, Supvr Audit Services
Cody Schmidt, Compliance Officer
Darren Schulz, Dep CIO

CALL TO ORDER:

Lt. Governor Wrigley called the State Investment Board (SIB) meeting to order at 8:30 a.m. on Friday, June 26, 2015, at the State Capitol, Peace Garden Room, Bismarck, ND.

AGENDA:

IT WAS MOVED BY MS. TERNES AND SECONDED BY TREASURER SCHMIDT AND CARRIED ON A VOICE VOTE TO ACCEPT THE AGENDA FOR THE JUNE 26, 2015, MEETING AS DISTRIBUTED.

AYES: COMMISSIONER HAMM, MS. TERNES, MS. FRANZ, MS. SMITH, MR. SANDAL, MR. LECH, MR. OLSON, TREASURER SCHMIDT, AND LT. GOVERNOR WRIGLEY
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER GAEBE, MR. TRENBEATH

MINUTES:

IT WAS MOVED BY MR. SANDAL AND SECONDED BY MR. LECH AND CARRIED ON A VOICE VOTE TO APPROVE THE MAY 22, 2015, MINUTES AS DISTRIBUTED.

AYES: MS. FRANZ, COMMISSIONER GAEBE, MS. SMITH, TREASURER SCHMIDT, MR. LECH, COMMISSIONER HAMM, MR. OLSON, MR. SANDAL, MS. TERNES, AND LT. GOVERNOR WRIGLEY
NAYS: NONE
MOTION CARRIED
ABSENT: MR. TRENBEATH

INVESTMENTS

Asset and Performance Overview **–** Mr. Hunter updated the SIB on the status of the portfolios they manage on behalf of their clients as of April 30, 2015. Assets under management grew by approximately 19 percent or $1.67 billion. The SIB's client assets, based on unaudited valuations, currently exceed $10.6 billion. The Pension Trust posted a net return of 7.3 percent with gains of $327 million. The Insurance Trust generated a net return of 4.9 percent with gains of $217 million. The Legacy Fund's net return was 6.1 percent and assets increased by $1.3 billion.

Mr. Hunter also briefed the board on strategic initiatives as of June 19, 2015.

Tobacco Prevention and Control Trust Fund – Mr. Hunter presented an investment policy statement for the Tobacco Prevention and Control Trust Fund (TPC Fund) for the board's consideration and acceptance. Discussion was held on the TPC Fund's non-tobacco investment restriction.

After discussion, the investment policy statement was tabled until further clarification is received from the client regarding their investment objectives.

ND Bankers Association – Mr. Hunter stated staff continues to work with the ND Bankers Association to obtain an understanding of the investment services offered by North Dakota firms. RIO has received due diligence questionnaires from five firms. RIO, in conjunction with Callan Associates, will be reviewing the questionnaires in the coming months.

Springbank – Mr. Hunter updated the board on contract negotiations with Timberland Investment Resources (TIR). RIO and TIR mutually agreed to reasonable business terms for the Springbank property and extended the contract to 2022. Mr. Hunter also reviewed key points of the contract.

GOVERNANCE

Governance Policy Review - The Board received the second reading of the "Investments" policies section. Mr. Hunter clarified the section on proxy voting as a result of the first reading of the policies. Exhibit E-II was amended to include Ms. Kopp.

The Board received the first reading of the "Bylaws" policies. The policies will be presented for a second reading.

Discussion was held on transparency and how important it is for the public to be able to easily access information regarding the investment program of the SIB. RIO will review the information they currently house on the agency website and determine what and if any changes need to be made.

IT WAS MOVED BY MR. OLSON AND SECONDED BY MR. TRENBEATH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE SECOND READING OF THE INVESTMENTS POLICIES SECTION AS AMENDED.

AYES: MR. OLSON, MS. FRANZ, MR. SANDAL, MS. SMITH, MR. TRENBEATH, MS. TERNES, COMMISSIONER HAMM, COMMISSIONER GAEBE, MR. LECH, TREASURER SCHMIDT, AND LT. GOVERNOR WRIGLEY
NAYS: NONE
MOTION CARRIED

ADMINISTRATION

Legislative Update – Mr. Hunter stated both the Legislative Assembly and the Governor approved RIO's budget, SB2022. He also stated an application was prepared to be submitted to the Emergency Commission in the event RIO's budget was not finalized but events did not warrant submission of the application.

The SIB expressed their gratitude to the staff of the Attorney General's Office in releasing an expedited opinion on whether or not the Public Employees Retirement System and the Retirement and Investment Office are authorized to make expenditures during the 2015-17 biennium without a biennial appropriation approved by the Legislature.

Staff Update – Mr. Hunter informed the board RIO's Data Processing Coordinator position was vacated on May 29, 2015, and staff is in the process of seeking a qualified candidate to fulfill the agency's needs.

Board Offsite – Mr. Hunter reminded the board that the next meeting of the SIB will entail a review of Pension Governance by Mr. Keith Ambachtsheer of KPA Advisory Services at the University of Mary. An invitation will also be extended to the Teachers' Fund for Retirement Board, Public Employees Retirement System Board, and Workforce Safety & Insurance Board.

Executive Review – The Executive Review Committee, Mr. Lech, Chair, Ms. Ternes, and Mr. Sandal, met on June 22, 2015, and finalized their recommendation regarding a compensation increase for Mr. Hunter. The Committee recommended an increase of 7 percent for an annual salary of $224,700 effective July 1, 2015. The Committee took into consideration Mr. Hunter's salary, which has remained at $210,000 since beginning his position as the Executive Director/CIO of RIO on December 2, 2013.

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MS. SMITH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE RECOMMENDATION OF THE EXECUTIVE REVIEW COMMITTEE.

AYES: MS. TERNES, MR. OLSON, COMMISSIONER HAMM, TREASURER SCHMIDT, COMMISSIONER GAEBE, MR. TRENBEATH, MR. LECH, MR. SANDAL, MS. SMITH, MS. FRANZ, AND LT. GOVERNOR WRIGLEY
NAYS: NONE
MOTION CARRIED

Lt. Governor Wrigley thanked Mr. Lech, Ms. Ternes, and Mr. Sandal for serving on the Committee.

Lt. Governor Wrigley, on behalf of the SIB, thanked Mr. Hunter for his support and cooperation during the evaluation process and for all that he does on behalf of the board.

OTHER:

Next scheduled meetings:

SIB Meeting – July 24, 2015, 8:30 a.m. – University of Mary
SIB Audit Committee Meeting – September 25, 2015, 1:00 p.m. – State Capitol, Peace Garden Room

ADJOURNMENT:

With no further business to come before the SIB, Lt. Governor Wrigley adjourned the meeting at 9:42 a.m.

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Lt. Governor Wrigley, Chair
State Investment Board

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Bonnie Heit
Assistant to the Board

AGENDA ITEM IV.

MEMORANDUM

TO: STATE INVESTMENT BOARD

FROM: David Hunter, Executive Director/CIO and Terra Miller-Bowley, Supervisor of Audit Services

DATE: July 24, 2015

RE: Audit Committee Appointments

As directed by SIB Policy B-6, Governance Process/Standing Committees, the Audit Committee shall consist of five members selected by the SIB. Three members of the Audit Committee represent the three groups on the SIB (TFFR board, PERS board, and the elected and appointed officials). The other two members will be selected from outside of the SIB and will be auditors with at least a Certified Public Accountant (CPA) or Certified Internal Auditor (CIA) designation.

The SIB previously approved the following five Board representatives for the past year:

Rebecca Dorwart, CPA, CIA
Karol Riedman, CPA, CIA, CGMA
Cindy Ternes (Workforce Safety & Insurance designee) representing elected and appointed officials
Mike Sandal, representing PERS
Michael Gessner, representing TFFR

Background and Recommendation:

SIB Policy B-6 states the following: "An Audit Committee has been established as a standing committee of the SIB. The Audit Committee will assist the SIB in carrying out its oversight responsibilities as they relate to RIO's internal and external audit programs, including financial and other reporting practices, internal controls, and compliance with laws, regulations and ethics." **Based on the strong performance of the Audit Committee during the past year with regards to assisting the SIB in carrying out its oversight responsibilities, the Executive Director and Supervisor of Audit Services recommend the re-appointment of the five existing audit committee members without exception.**

Rebecca Dorwart, CPA, CIA
Rebecca is the Director of Internal Controls for MDU Resources Group, Inc. where she is responsible for the risk assessment of company-wide financial processes and controls and the coordination of the company's Sarbanes-Oxley compliance program. She reports to the Vice President/Chief Financial Officer but also communicates with the Audit Committee of MDU Resources Group's Board of Directors. Prior to her new assignment, she was the Director of Internal Auditing where she managed all internal audit functions of MDU and coordinates the work with the external audit. She directly supervised eleven internal auditors and reported to the Vice President/Chief Financial Officer, President and Chief Executive Officer and the Audit Committee of MDU Resources Group's Board of Directors. She worked for the Montana Office of the Legislative Auditor as a financial compliance auditor for five years before joining MDU Resources Group, Inc. in 1992. At MDU Resources Group, Inc., Becky worked in the Internal Auditing Department until 1997 when she was transferred to Portland, Oregon as General Accounting Manager for International Line Builders, Inc., a MDU acquisition. In 1999, she transferred to Medford, Oregon as Senior Business Development Analyst for Knife River Corporation, working on the merger and acquisition of construction materials related businesses. In February of 2003, she was named Internal Auditing Manager for MDU Resources Group, Inc. She is active in the local chapter of the IIA.

Karol K Riedman, CPA, CIA, CGMA
Karol is the Chief Audit Executive for the Office of Internal Audit of the North Dakota Department of Health. Karol is responsible for the entire internal audit function, risk assessment and fraud prevention programs for this state government agency. She reports directly to the State Health Council Audit Committee. Prior to this current assignment, Karol served as a CPA and consultant to the North Dakota Department of Health and was President and CEO of her own private CPA firm, KKR Accounting PC in Bismarck. During the last 30 years, Karol has also served as a CPA for BNC National Bank in Bismarck, Director of Finance & Personnel for the Oregon Bach Festival in Eugene, Oregon, Audit Supervisor for Eide Bailly in Bismarck, and Senior Accountant for McGladrey & Pullen in Iowa City. She also serves on the Board of Directors for the Gateway to Science Center in Bismarck.

AGENDA ITEM V.A.

BOARD ACTION REQUESTED

To: State Investment Board

From: Dave Hunter, Executive Director / CIO

Date: July 17, 2015

RE: **Tobacco Prevention & Control ("TPC") Trust Fund - Investment Policy**

Impact of TPC's Investment Restriction on Investment Returns:

RIO revised the investment policy statement to make it explicitly clear that the TPC **Executive Committee understands and acknowledges that the tobacco-free investment restriction may impair the funds ability to maximize investment returns when compared to investments that are not made in conjunction with a tobacco-free investment restriction.**

Legal Documentation Supporting the Unique Aspects of this Investment Restriction:

TPC's Executive Director, Jeanne Prom, provided legal documentation to substantiate the unique aspects of TPC's investment restriction which is prescribed by law to be in effect for a defined time period. This supporting documentation is referred to as "Measure 3" which states "The Executive Committee is responsible for the implementation and administration of a Comprehensive Plan..." which includes powers to "provide direction to the state investment board for investment of the tobacco prevention and control fund". Furthermore, Chapter 23-42 of Measure 3 defines the roles of the "Executive Committee" and states that "best practices" should be used when implementing a "Comprehensive Plan".

Recommendation:

RIO recommends the SIB approve the attached TPC Investment Policy Statement. RIO acknowledges that this investment policy statement is unique given that it contains a material investment restriction prescribed by the TPC Executive Committee based on the underlying intent of Measure 3. RIO understands this unique form of prescribed social investing evolved out of a master legal settlement agreement which could be jeopardized if the TPC assets were not invested in a manner prescribed by the TPC Executive Committee and consistent with the "best practices" requirement highlighted in Measure 3. As a result of these unique conditions, the SIB and RIO will require the TPC Executive Committee to formally acknowledge in writing that the tobacco-fee investment restriction may impair the funds ability to maximize investment returns.

TPC Request:

In late-2014, TPC expressed interested in contracting for investment services with the SIB as allowed under NDCC 21-10-06 and as recommended in a recent TPC audit. The TPC trust fund has a current market value of $47 million and is projected to exceed $53 million over the next three years prior to declining by approximately $8 million per year between 2018 and 2024. TPC funds are currently invested in short-term cash with the Bank of North Dakota and earning approximately 6 to 10 bps per annum.

RIO has met with TPC representatives to discuss their investment objectives and risk tolerance, the benefits of developing a formal investment policy statement, and the stated desire to engage with the SIB for investment services. Based on extensive discussions, internal staff administrative capacity would not be materially affected by the establishment of this new fund which would be similar to the PERS Retiree Health Insurance Credit Fund if set-up as a standalone entity.

Recent SIB Actions:

At the SIB meeting on January 23, 2015, RIO staff presented the TPC request to the SIB. During this presentation it was noted that this fund had a non-tobacco investment requirement and that this requirement does not fit within the existing Insurance Trust structure. As a result, Board members requested further guidance regarding the SIB's ability to provide investment services for this fund because of this restriction. On February 20, 2015, legal counsel provided the attached memo which supports a conclusion that the SIB may not decline to provide investment management services for the TPC fund. On March 27, 2015, the SIB approved RIO's recommendation to work towards securing an investment services contract with the TPC. **On June 26, 2015, the SIB requested the investment policy should be revised to explicitly state that the unique tobacco-free investment restriction may impair the funds ability to maximize investment returns.**

Recent RIO Actions:

In accordance with SIB Governance Policy E-13 on "Accepting New Clients", RIO developed an investment policy statement for the TPC after assessing their investment criteria and risk tolerance, completing an asset liability study, and reviewing the investment services contract. The basic components of the TPC investment policy statement were presented to the TPC Executive Committee on June 10, 2015. Karlene Fine, Secretary of the Industrial Commission, has confirmed that the Industrial Commission approved the SIB entering into an agreement to provide investment services to the TPC.

<u>Review of RIO's Prior Recommendation</u>:

RIO previously recommended the SIB approve the attached TPC investment policy statement based on the following summary of our due diligence procedures.

1. Based on forecasted cash flows provided by the TPC, RIO worked with BlackRock to complete an asset liability review.
2. These results were shared with our investment consultant (Callan) without issue.
3. Based on our review procedures, RIO recommends TPC adopt a target asset allocation of 10% equities and 90% to fixed income/cash.
4. Although higher equity allocations were considered, RIO recommends a 10% equity allocation given that the Fund will commence a seven-year liquidation period in 2018.
5. The proposed 10% equity and 90% fixed income allocation did not experience a loss in any year during the past decade (and even posted a +2.4% return in 2008).
6. <u>RIO's recommendation was discussed with TPC Executive Director, Jeanne Prom, on June 17, 2015, without any exceptions other than emphasizing that all investments must be intended to be "tobacco free"</u>.
7. **Based on the above recommended asset allocation, the Fund will have an expected long-term rate of return of approximately 2% with strong downside risk protection so as to preserve capital and benefit from higher return expectations, which are estimated to be 20 times higher than prior years (e.g. the expected 2.0% return is 20 times higher than the sub 0.1% return earned during the last four years).**
8. <u>Future investment income is expected to increase by over $4 million as a result of this policy change</u>.
9. RIO will provide the SIB with specific investment strategies to implement the above overall asset allocation recommendation at a future meeting.

NORTH DAKOTA TOBACCO PREVENTION AND CONTROL FUND

INVESTMENT POLICY STATEMENT

1. PLAN CHARACTERISTICS AND FUND CONSTRAINTS.

The North Dakota Tobacco Prevention and Control fund (fund) was established in 1999 for the purpose of creating and implementing a comprehensive statewide tobacco prevention and control plan (comprehensive plan). NDCC 54-27-25(2). The comprehensive plan is administered by the Executive Committee and is to be consistent with the centers for disease control best practices for comprehensive tobacco prevention and control programs. NDCC 23-42-01. The Executive Committee has the power and duty to provide direction to the state investment board for investment of the fund. NDCC 23-42-04(1).

2. FUND GOALS

The fund consists of the tobacco settlement dollars obtained by the state under section IX(c)(2) of the agreement adopted by the east central judicial district court in its judgment entered December 28, 1998 [Civil No. 98-3778] in *State of North Dakota, ex rel. Heidi Heitkamp v. Philip Morris, Inc.* Interest earned on the fund must be credited to the fund. NDCC 54-27-25(2). The fund Executive Committee recognizes that a sound investment program is essential to meet the goals of the comprehensive plan. As a result, the fund goal is to protect and sustain the fund in order to implement the comprehensive plan.

3. RESPONSIBILITIES AND DISCRETION OF THE STATE INVESTMENT BOARD (SIB).

The Executive Committee has entered into a contract with the SIB for investment services as allowed under NDCC 21-10-06. The Executive Committee is charged by law under NDCC 23-42-04 with the responsibility of providing direction to the state investment board for investment 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.

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 Executive Committee is unwilling to undertake investment strategies that might jeopardize the ability of the fund to finance the comprehensive plan.

The Executive Committee actively seeks to sustain the fund by taking on risk for which it expects to be compensated over the long term. The Executive Committee 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. The Executive Committee believes that such an approach, prudently implemented, best serves the long-run interests of the State.

5. INVESTMENT OBJECTIVES

The Executive Committee'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.

1. 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.
2. 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.
3. **The Executive Committee understands and acknowledges that the tobacco-free investment restriction may impair the funds ability to maximize investment returns when compared to investments that are not made in conjunction with a tobacco-free investment restriction.**

6. POLICY ASSET MIX

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 Executive Committee in determining an acceptable volatility target for the fund and an optimal asset allocation policy mix. This analysis estimates the potential impact of various asset class mixes on key measures of total fund risk.

After consideration of all the inputs and a discussion of its own collective risk tolerance, the Executive Committee approves the appropriate policy asset mix for the fund.

Asset Class	Policy Target(%)	Rebalancing Range(%)
Global Equity	10	5-20
Global Fixed Income	75	60-90
Cash	15	10-20

While the Executive Committee recognizes fluctuations in market values will lead to short-term deviations from policy targets, the Executive Committee does not intend to engage in tactical asset allocation. Rebalancing of the fund to this target will be done in accordance with the SIB's rebalancing policy, but not less than annually.

7. RESTRICTIONS

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:

a. Futures and options may be used to hedge or replicate underlying index exposure, but not for speculation.
b. Derivatives use will be monitored to ensure that undue risks are not taken by the money managers.
c. No transaction shall be made which threatens the tax exempt status of the fund.
d. All assets will be held in custody by the SIB's master custodian or such other custodians as are acceptable to the SIB.
e. No unhedged short sales or speculative margin purchases shall be made.
f. Because the statutory purpose of the Executive Committee is to reinforce best practices related to comprehensive tobacco prevention and control programs, and to invest in or profit from the manufacturer and sale of tobacco products would contradict that purpose, the assets shall only be invested in securities issued by tobacco-free firms, defined as those which generate revenues of no greater than 0% from tobacco products. In the event of an inadvertent de minimis investment in a firm with any exposure to tobacco products, the inadvertent investment will be immediately divested upon discovery. For investment purposes "tobacco product" means tobacco or any product containing, made from, or derived from tobacco, in whole or in part, that is intended for human consumption, whether chewed, smoked, absorbed, dissolved, inhaled, snorted, sniffed, consumed, or ingested by any other means, including cigarettes, cigars, electronic smoking devices, pipe tobacco, chewing tobacco, snuff, snus, liquid, or other kinds and forms of tobacco. "Tobacco product" includes any product or device that contains nicotine, in any form, that is derived from tobacco. Any product that contains nicotine shall be presumed to contain nicotine derived from tobacco unless the nicotine is confirmed to be derived from a different source.

g. Economically targeted investing is prohibited unless the investment meets the Exclusive Benefit Rule.

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 risk.
(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 Executive Committee'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 Executive Committee quarterly and investment performance presentations will be provided to the Executive Committee upon request, 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:

1. A list of the advisory services managing investments for the Executive Committee.
2. A list of investments at market value, compared to previous reporting period, of each fund managed by each advisory service.
3. Earnings, percentage earned, and change in market value of each fund's investments.
4. Comparison of the performance of each fund managed by each advisory service to other funds under the Executive Committee's control and to generally accepted market indicators.
5. All material legal or legislative proceedings affecting the SIB.
6. Compliance with this investment policy statement.

Executive Committee Adopted and Approved: ______________________

ND Center for ND State Investment Executive Committee
Tobacco Prevention and Control Policy

Date________________________________	Date__________________________________
____________________________________	______________________________________
Jeanne Prom Executive Director	David Hunter Executive Director / Chief Investment Officer North Dakota Retirement & Investment Office

MEASURE 3
Effective December 4, 2008

CHAPTER 23-42
TOBACCO PREVENTION AND CONTROL PROGRAM

23-42-01. Definitions. As used in this chapter:

1. "Advisory committee" is the nine-member tobacco prevention and control advisory committee responsible to develop the comprehensive plan.
2. "Comprehensive plan" means a comprehensive statewide tobacco prevention and control program that is consistent with the centers for disease control best practices for comprehensive tobacco prevention and control programs and does not duplicate the work of the community health grant program created in chapter 23-38.
3. "Executive committee" means the three-member committee selected by the advisory committee and charged with implementation and administration of the comprehensive plan.
4. "Tobacco prevention and control fund" consists of all principal and interest of the tobacco prevention and control trust fund established by section 54-27-25.

23-42-02. Tobacco prevention and control advisory committee - Membership - Terms - Duties - Removal.

1. The advisory board consists of nine North Dakota residents appointed by the governor for three-year terms as follows:
   a. A practicing respiratory therapist familiar with tobacco-related diseases;
   b. Four nonstate employees who have demonstrated expertise in tobacco prevention and control;
   c. A practicing medical doctor familiar with tobacco-related diseases;
   d. A practicing nurse familiar with tobacco-related diseases;
   e. A youth between the ages of fourteen and twenty-one; and
   f. A member of the public with a previously demonstrated interest in fostering tobacco prevention and control.
2. The governor shall select the youth and public member independently; the respiratory therapist from a list of three nominations provided by the North Dakota society for respiratory care; the four tobacco control experts from a list of two nominations per member provided by the North Dakota public health association's tobacco control section; the medical doctor from a list of three nominations provided by the North Dakota medical association; and the nurse from a list of three nominations provided by the North Dakota nurses association. The governor must make the appointments within three weeks of receiving the respective list of nominees. If the governor fails to make an appointment within three weeks, the association that provided the list of nominees shall select the committee member. In the initial appointments for the advisory committee, the governor shall stagger the terms of the members so that the terms of three members expire each fiscal year and that three members are appointed each year by June thirtieth. Accordingly, the governor's initial appointments, in some instances, must be for terms less than three years. The governor shall fill vacancies for the unexpired term as provided in this section.
3. No individual may serve more than two consecutive three-year terms. However, terms of less than three years are not considered in determining an individual's eligibility for reappointment.
4. A quorum of the advisory committee is required to conduct business, but the advisory committee may conduct a meeting with less than a quorum present. A quorum is a majority of the members of the committee. Any action taken requires a vote of the majority of the members present at the meeting.

5. The advisory board shall:

a. Select the executive committee;

b. Fix the compensation of the advisory committee and the executive committee. However, compensation may not exceed compensation allowed to the legislature. Advisory and executive committee members are entitled to reimbursement for mileage and expenses as provided for state officers in addition to any compensation provided;

c. Develop the initial comprehensive statewide tobacco prevention and control program that includes support for cessation interventions, community and youth interventions, and health communication; and

d. Evaluate the effectiveness of the plan and its implementation and, before April first of each year, propose any necessary changes to the plan to the executive committee.

6. The governor may remove any member of the advisory committee for malfeasance in office, but the advisory committee is not subject to section 54-07-01.2.

7. No nomination to, or member of, the advisory committee shall have any past or current affiliation with the tobacco industry or any industry, contractor, agent, or organization that engages in the manufacturing, marketing, distributing, sale, or promotion of tobacco or tobacco-related products.

23-42-03. Executive committee. The executive committee of the advisory committee consists of three individuals selected by the advisory committee from its membership. The term of each member is for three years. The initial terms of the members must be staggered so that one member serves a three-year term, one member serves a two-year term, and one member serves a one-year term. The determination of initial terms shall be by lot. No individual may serve more than two consecutive three-year terms. However, terms of less than three years are not considered in determining an individual's eligibility for reappointment. The advisory committee shall fill vacancies for the unexpired term. An individual selected to serve on the executive committee is no longer eligible to serve if that individual is not a member of the advisory committee. The executive committee is responsible for the implementation and administration of the comprehensive plan, including the appropriateness of expenditures to implement the comprehensive plan. The executive committee may seek the counsel and advice of the advisory committee in implementing the plan, but the executive committee is the final decision maker.

23-42-04. Powers of the executive committee. To implement the purpose of this chapter and, in addition to any other authority granted elsewhere in this chapter, to support its efforts and implement the comprehensive plan, the executive committee may employ staff and fix their compensation, accept grants, property, and gifts, enter contracts, make loans, provide grants, borrow money, lease property, provide direction to the state investment board for investment of the tobacco prevention and control fund, and take any action that any private individual, corporation, or limited liability company lawfully may do except as restricted by the provisions of this chapter.

23-42-05. Development of the comprehensive plan. The advisory committee shall develop the initial comprehensive plan within one hundred eighty days of the initial meeting of the advisory committee. The comprehensive plan must be funded at a level equal to or greater than the centers for disease control recommended funding level. Funding for the comprehensive plan must supplement and may not supplant any funding that in the absence of this chapter would be or has been provided for the community health trust fund or other health initiatives.

23-42-06. Conflict of interest. No member of the advisory committee or of the executive committee who has a direct and substantial personal or pecuniary interest in a matter before them may vote or take any action on that matter.

23-42-07. Audit. At least once a biennium, the executive committee shall provide for an independent review of the comprehensive plan to assure that the comprehensive plan is consistent with the centers for disease control best practices. The executive committee shall report the results of that review to the governor and to the state health officer on or before September first in each odd-numbered year.

54-27-25. Tobacco settlement trust fund - Interest on fund - Uses.

1. There is created in the state treasury a tobacco settlement trust fund. The fund consists of the tobacco settlement dollars obtained by the state under subsection IX(c)(1) of the master settlement agreement and consent agreement adopted by the east central judicial district court in its judgment entered December 28, 1998 [Civil No. 98-3778] in State of North Dakota, ex rel. Heidi Heitkamp v. Philip Morris, Inc. Except as provided in subsection 2, moneys received by the state under subsection IX(c)(1) must be deposited in the fund. Interest earned on the fund must be credited to the fund and deposited in the fund. The principal and interest of the fund must be allocated as follows:
    a. Transfers to a community health trust fund to be administered by the state department of health. The state department of health may use funds as appropriated for community-based public health programs and other public health programs, including programs with emphasis on preventing or reducing tobacco usage in this state. Transfers under this subsection must equal ten percent of total annual transfers from the tobacco settlement trust fund of which a minimum of eighty percent must be used for tobacco prevention and control.
    b. Transfers to the common schools trust fund to become a part of the principal of that fund. Transfers under this subsection must equal forty-five percent of total annual transfers from the tobacco settlement trust fund.
    c. Transfers to the water development trust fund to be used to address the long-term water development and management needs of the state. Transfers under this subsection must equal forty-five percent of the total annual transfers from the tobacco settlement trust fund.
2. There is created in the state treasury a tobacco prevention and control trust fund. The fund consists of the tobacco settlement dollars obtained by the state under section IX(c)(2) of the agreement adopted by the east central judicial district court in its judgment entered December 28, 1998 [Civil No. 98-3778] in State of North Dakota, ex rel. Heidi Heitkamp v. Philip Morris, Inc. Interest earned on the fund must be credited to the fund and deposited in the fund. Moneys received into the fund are to be administered by the executive committee for the purpose of creating and implementing the comprehensive plan. If in any biennium, the tobacco prevention and control trust fund does not have adequate dollars to fund a comprehensive plan, the treasurer shall transfer money from the water development trust fund to the tobacco prevention and control trust fund in an amount equal to the amount determined necessary by the executive committee to fund a comprehensive plan.
3. Transfers to the funds under this section must be made within thirty days of receipt by the state.

ND Retirement and Investment Office

State Investment Board
Teachers' Fund for Retirement

1930 Burnt Boat Drive
P.O. Box 7100
Bismarck, ND 58507-7100
Telephone 701-328-9885
Toll Free 800-952-2970
Fax 701-328-9897
www.nd.gov/rio

June 22, 2015

Ms Karlene Fine
Secretary of the Industrial Commission
State Industrial Commission
600 E. Boulevard
Bismarck, ND 58505-0001

Dear Karlene:

Pursuant to NDCC 21-10-06, the North Dakota State Investment Board (NDSIB) requests permission of the Industrial Commission to enter into an agreement with the ND Center for Tobacco Prevention and Control Policy to provide investment management services for their Tobacco Prevention and Control Trust Fund. The Fund currently has approximately $47 million in assets invested in short term cash and is expected to grow to approximately $53 million over the next three years before declining by approximately $8 million per year between 2018 and 2024.

Copies of the draft contract and investment guidelines are enclosed. We ask that you please include this request on your June 30, 2015, meeting agenda. If you have any questions, please feel free to call me at 328-9892. Thank you.

Sincerely,

Connie L Flanagan

CONNIE L. FLANAGAN
Fiscal and Investment Operations Manager

INDUSTRIAL COMMISSION OF NORTH DAKOTA

Jack Dalrymple
Governor

Wayne Stenehjem
Attorney General

Doug Goehring
Agriculture Commissioner

July 20, 2015

Mr. David Hunter
Chief Investment Officer
State Investment Board
North Dakota Retirement & Investment Office
P. O. Box 7100
Bismarck, ND 58507-7100

Dear Mr. Hunter:

This is to inform you that the Industrial Commission at their June 30, 2015 meeting took the following action:

It was moved by Commissioner Goehring and seconded by Attorney General Stenehjem that the Industrial Commission accept the Industrial Commission Executive Director's recommendation and grant the Investment Board's request to provide investment management services for the Tobacco Prevention and Control Trust Fund. On a roll call vote, Governor Dalrymple, Attorney General Stenehjem and Agriculture Commissioner Goehring voted aye and the motion carried.

If you have any questions about the Commission's actions or if you need anything further form me, please give me a call at 328-3722.

Sincerely,

Karlene Fine
Executive Director and Secretary

Karlene K. Fine, Executive Director and Secretary
State Capitol, 14th Floor - 600 E Boulevard Ave Dept 405 - Bismarck, ND 58505-0840
E-Mail: kfine@nd.gov
Phone: (701) 328-3722 FAX: (701) 328-2820
www.nd.gov

Memorandum

To: **State Investment Board**

From: **RIO Compliance Officer**

Date: **July 24, 2015**

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

Governance Process Policy B-8, *Board Members' Code of Conduct,* which is attached to this memorandum, details the Code of Ethical Responsibility for the SIB. Item #10 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 SIB Governance Process Policy B-8 *Board Members' Code of Conduct*. I have disclosed any conflicts of interest as required by this policy."

Name (printed) _________________________________

Signature______________________________________

Date____

Detail of any conflicts of interest (if any):

POLICY TITLE: *BOARD MEMBERS' CODE OF CONDUCT*

The following will be the Code of Ethical Responsibility for the SIB:

1. SIB members owe a duty to conduct themselves so as to inspire the confidence, respect, and trust of the SIB members and to strive to avoid not only professional impropriety but also the appearance of impropriety.

2. SIB members should perform the duties of their offices impartially and diligently. SIB members are expected to fulfill their responsibilities in accord with the intent of all applicable laws and regulations and to refrain from any form of dishonest or unethical conduct. Board members should be unswayed by partisan interest, public sentiment, or fear of criticism.

3. Conflicts of interest and the appearance of impropriety shall be avoided by SIB members. Board members must not allow their family, social, professional, or other relationships to influence their judgment in discharging their responsibilities. Board members must refrain from financial and business dealings that tend to reflect adversely on their duties. If a conflict of interest unavoidably arises, the board member shall immediately disclose the conflict to the SIB. A board member must abstain in those situations where the board member is faced with taking some official action regarding property or a contract in which the board member has a personal interest. 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 involving for which the board member has acquire information unavailable to the general public, through participation on the board.

   "Conflict of Interest" means a situation in which a board member or staff member has a direct and substantial personal or financial interest in a matter which also involves the member's fiduciary responsibility.

4. The board should 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 must abide by North Dakota Century code 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. All activities and transactions performed on behalf of the public funds must be for the exclusive purpose of providing benefits to plan participants and defraying reasonable expenses of administering the plan.

8. 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 adverse to the plan; or receiving personal consideration in connection with any planned transaction.

9. Violation of these rules may result in an official reprimand from the SIB. No reprimand may be issued until the board member or employee has had the opportunity to be heard by the board.

10. 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 Exhibit B-I).

Policy Implemented: June 23, 1995.
Amended: January 22, 1999, February 25, 2011, January 27, 2012, February 27, 2015.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Adams Street Partners Miguel Gonzalo	Pension	Private Equity	various commitments since 1991	The Adams Street Partnership Fund Program ("ASP Fund Program") invests in private equity partnerships and portfolio companies, creating a portfolio diversified by time, manager and subclass. Investment commitments will typically be made over a three- to four-year period in venture capital, buyout and other partnerships, which include mezzanine/subordinated debt, restructuring/distressed debt and special situations. A portion of a participant's subscription to the ASP Fund Program may be used to opportunistically invest in secondary interests in private equity partnerships and/or their portfolio companies. All of the Adams Street Partner funds which North Dakota State Investment Board has invested in are based in U.S. dollars.
AllianceBernstein/ Clifton Liz Smith	Pension	Lg Cap Dom Equity	Jun-09 to Oct-10 capital returned	The AllianceBernstein Term Asset-Backed Securities Loan Facility ("TALF") Opportunities Fund is a bottom-up research driven investment strategy structured to take advantage of the opportunity extended to investors through the TALF. The strategy will primarily draw its research from the AllianceBernstein Special Situations Group, which, among other asset classes, covers secured credit sensitive securities (e.g., ABS), as well as non-credit sensitive prime residential mortgage securities. For credit sensitive securities, credit research is overlaid on structural analyses to develop a complete picture of expected loss content, resiliency of cash flows, risk and return. All holdings are closely followed within our proprietary database which contains a time series of investment credit metrics, repayment rates, cohort, and originator statistics. The TALF Opportunities Fund will invest in a concentrated leveraged portfolio of structured asset securities that are eligible for non-recourse lending from the NY Fed TALF. The Fund's goal is to generate high risk-adjusted returns created by the dislocations in asset-backed and other securitization markets. The Fund will invest in AAA/Aaa-rated asset-backed securities as well as other TALF-eligible securities defined by the NY Fed. The TALF program limits the investment universe to US dollar-denominated securities whose underlying collateral is primarily based in the United States. Owing to the high credit quality of the underlying investments, we expect the majority of the Fund's return to be generated by the income in excess of the TALF loans' fees and interest. The Clifton Group is charged with applying the S&P 500 "beta" exposure for the AllianceBernstein "alpha" exposure. The overall goal of the account is to get the return of the S&P 500 index plus an additional alpha amount provided by the TALF fund.
Axiom International Clifton Lindsay Chamberlain	Pension	Emerging Markets Equity	Aug-15	The Emerging Markets strategy seeks to invest in emerging market securities issued by companies whose key business drivers are both improving and exceeding expectations, as determined by Axiom's stock selection techniques focused on fundamental company analysis. The strategy considers emerging markets securities to include securities of companies either (i) located in countries that are not included in the MSCI Developed Markets Index series or (ii) that derive a majority of their revenues or assets from a country or countries not included in the MSCI Developed Markets Index series, in each case at the time of investment. Although the Manager generally expects the strategy's investment portfolio to be geographically diverse, there are no prescribed limits on geographic distribution of the strategy's investments and the strategy has the authority to invest in securities traded in securities markets of any country in the world.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Babson Capital Management Chad Strean	Insurance Legacy Fund	Short Term Fixed Inc	Sep-11 Dec-11 to Feb-15 Liquidated	The investment objective of the Babson Capital's Active Short Duration Strategy is to outperform the total return of the Barclays Capital 1-3 year US Government Index while minimizing fluctuations in capital value and providing sufficient liquidity to fund withdrawals driven by client activity. The portfolio seeks to achieve a high total rate of return primarily from current income while minimizing fluctuations in capital values by investing in a well-diversified portfolio of US Government, mortgage-backed, asset backed securities and corporate bonds. The investment team uses proprietary research to conduct value-driven sector rotation and intensive credit and structure analysis, while utilizing a dynamic yield curve management process, to construct effective portfolios. In addition to income, primary goals for the Active Short Duration strategy are stability and liquidity. In meeting these goals, risk is measured by perceived or actual changes in credit worthiness, adequate diversification and exposure to potential changes in interest rates. Babson Capital explicitly manages the portfolio to minimize these risks and endeavors to add value through security selection and portfolio duration structure designed to maximize the risk-return characteristics of the yield curve.
Babson Capital Management Chad Strean	Insurance Budget Stabilization	Short Term Fixed Inc	Sep-11 to May-13 Liquidated and reallocated to Short Term Bonds	Babson was hired to manage the Bank Loans in the former Prudential account. Their direction is to manage and supervise the deliberate liquidation, over time of these holdings. As securities mature or are sold off the proceeds will be transferred to the Active Short Duration Strategy.
Bank of North Dakota Tim Porter	Pension Insurance	Dom Inv Grade FI Fixed Income	Apr-91 to Apr-12 changed mandate to long treasury Dec-93 to April-13 Terminated	The Bank of North Dakota (BND) manages this fixed income portfolio for the State Investment Board with a passive management style designed to replicate the Barclay's Government/Corporate Bond Index. In order to accomplish this objective, BND utilizes optimization software that allows us to monitor several portfolio and individual security constraints (duration, yield, convexity, credit quality and issue size). The portfolio is rebalanced monthly in order to achieve an annualized time-weighted rate of return that matches the Barclay's Gov/Corp Bond Index with a tracking error not more than (+ or -) 30 basis points.
Bank of North Dakota Tim Porter	Pension	Dom Inv Grade FI	Apr-12 to Apr-13 Terminated	The Bank of North Dakota (BND) manages this fixed income portfolio for the State Investment Board with a passive management style designed to replicate the Barclay's Long Treasury Index. In order to accomplish this objective, BND utilizes optimization software that allows us to monitor several portfolio and individual security constraints (duration, yield, convexity, credit quality and issue size). The portfolio is rebalanced monthly in order to achieve an annualized time-weighted rate of return that matches the Barclay's Gov/Corp Bond Index with a tracking error not more than (+ or -) 30 basis points.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Blackfriars Asset Management (WestAM) Hugh Hunter	Pension	Emerging Markets Equity	Mar-06 to Jun-12 Terminated	Blackfriars Asset Management Limited has been appointed by North Dakota State Investment Board to manage a Global Emerging Market Equity portfolio. The fund is invested in the WestAM Group Trust. Blackfriars strategy is that of a core, active manager with the objective of outperforming the MSCI Emerging Markets index by 2% over rolling three year periods. Our investment approach is team-based and focuses on capturing alpha from our top-down and bottom-up decisions. Our country allocation process is primarily driven by a factor model encompassing fundamental market and economic factors, whilst stock selection is driven by fundamental research by our internal team of analysts. Blackfriars Asset Management, at the time of appointment, was called WestLB Asset Management which was owned by WestLB AG, a German bank. Following the creation of a 50:50 joint venture with BNY Mellon in 2006, the company became fully owned by BNY Mellon on 31 December 2008 and changed its name to Blackfriars Asset Management Limited. The investment process and investment personnel involved in the management of the portfolio have not changed as a result of the change in ownership.
Brandywine Asset Management Nedra Hadley	Pension	Int'l Fixed Income	May-03	Brandywine's Global Fixed Income investment style is a disciplined, active, value-driven, strategic approach. Their investment strategy concentrates on top-down analysis of macro-economic conditions in order to determine where the most attractive valuations exist. Specifically, they invest in bonds with the highest real yields globally. They manage currency to protect principal and increase returns, patiently rotate among countries and attempt to control risk by purchasing undervalued securities. They believe their approach is ideally suited to the asset class, as each country, and sector exhibit unique valuation parameters. They believe that a client’s portfolio should be invested in markets with, what they believe, demonstrate above-average value. Value is defined as a combination of above-average real interest rates and an under-valued currency. They typically concentrate investments where existing economic and market conditions may enable that value to be realized in an intermediate time frame. Their research has identified global fixed income as an opportunity class wherein active strategies have the most potential for reward and passive, index-replicating strategies are fundamentally insufficient and add an unnecessary level of risk to the portfolio management process. Country-by-country return dispersion (and, therefore, opportunity) across developed country bond markets is remarkable, and if capitalized upon as part of an actively managed process, can potentially provide significant excess return (alpha) above the benchmark. They seek to capture those excess returns through strategic investment in countries, currencies, sectors and securities, rather than by maintaining minimum, core commitments, reflective of the benchmark.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Brookfield Investment Management (Hyperion) Richard Torykian	Insurance	Fixed Income	Jan-07 to Mar-10 Terminated (acct taken over by Declaration)	The Enhanced MBS investment process begins with a macro-economic assessment of the market. Included in the macro-economic assessment is the analysis of: the interest rate environment, the phase of the real estate cycle, consumer credit trends, recently released or pending economic data, supply and demand relationships, housing prices, and the Mortgage Refinancing Index. The analysis and review that occurs at this stage provides the groundwork for establishing the asset allocation for our Enhanced MBS Investment Strategy. We then conduct a detailed review of the MBS sub-sectors. We evaluate developments in each sector; current offerings; recent transactions and market clearing levels; security types and yield spread levels to formulate a relative value outlook. Our research analysts provide fundamental analysis on prepayment speeds, borrower credit exposure, geographic diversification, refinancing trends, and the correlation of returns. We then further analyze the risks of the various MBS sectors—specifically, the outlook for delinquencies, housing affordability, consumer debt, collateral value appreciation, and loss severities. These factors build a larger picture for the appropriate asset allocation for this strategy. The asset mix for our Enhanced MBS Investment Strategy is a ratio that may change over time, as opportunities in the sectors and sub-sectors are identified. Once the initial allocation mix has been determined, the investment process moves to the security selection phase. The most important component of our Enhanced MBS Investment Strategy is security selection. In short, while the market for non-Agency MBS may seem generic, the credit performance from one issue to another varies. Our security selection process results from both quantitative and qualitative inputs, as well as the substantial experience of the portfolio managers. Members of the investment team, utilizing Hyperion Brookfield's proprietary analytics, determine the relative strengths of various securities based on applicable criteria such as issuer, issue, vintage, credit rating, structure, and geographic exposure.
Calamos Investments Meredith French	Pension	Dom Inv Grade FI	Oct-06 to Mar-12 Mandate changed to Global Opportunities	Calamos Advisors LLC manages a convertible mandate for the North Dakota State Investment Board through the Calamos Convertible Plus strategy. The primary objective of the strategy is to achieve high long-term total return through growth and income. The strategy is focused on primarily investing in convertible securities but in addition utilizes both equities and fixed income. This enhanced flexibility allows Calamos to better manage the overall risk/reward profile of a convertible mandate. To take advantage of international opportunities, the portfolio will utilize the Calamos International Convertible Group Trust, a commingled fund in which we purchase units on behalf of the North Dakota State Investment Board. This commingled fund is generally hedged between 70-100% from a currency perspective.
Calamos Investments Meredith French	Pension	Global Equity	Mar-12 to Dec-13	The Global Opportunities objective is high long-term total return through capital appreciation and current income. The Trust invests primarily in a global portfolio of equity, convertible and fixed-income securities. In pursuing the Trust's investment objective, the Investment Manager attempts to utilize these different types of securities to strike, in its opinion, the appropriate balance between risk and reward in terms of growth and income. The Investment Manager attempts to keep a consistent balance between risk and reward over the course of different market cycles, through various combinations of stock, bonds and/or convertible securities, to achieve what the Investment Manager believes to be an appropriate blend for the then-current market. As the market environment changes, portfolio securities may change in an attempt to achieve a relatively consistent risk level over time. At some points in a market cycle, one type of security may make up a substantial portion of the portfolio, while at other times certain securities may have minimal or no representation, depending on market conditions.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Callan Associates Greg Allen	Pension	Small Cap Dom Equity	May-06	The investment strategy for the Diversified Alpha Small Cap Equity Fund (“Fund”) is based on two empirical studies. The first observed that the average portfolio for a comprehensive universe of active institutional small cap products out-performed the Russell 2000 Index in every three-year period since 1984, resulting cumulative out-performance in excess of five percent per year over the 20-year period with a tracking error of five percent annualized. The consistency and magnitude of this out-performance led to Callan’s use of the average institutional small cap portfolio as the target in the Fund’s portfolio construction methodology rather than one of the standard small cap indices. The second study observed that the illiquidity of the small cap market presents significant structural challenges to managers as they grow in assets under management (“AUM”). These challenges resulted in smaller products (in terms of AUM) out-performing their larger counterparts by in excess of three percent per year over the observed 20-year period. The consistency and magnitude of this out-performance provided the basis for favoring smaller, less capacity-constrained products in the Fund's manager selection methodology. The Fund’s strategy is implemented through the use of a stratified sampling technique, and it begins with the decomposition of Callan’s Total Institutional Small Cap (“TISC”) universe (consisting of over 700 products) into 10 distinct sub-styles, with approximately 70-75 products in each sub-style. After extensive screening, four products from each sub-style are selected which, when held in combination, are expected to closely track the performance of each sub-style as a whole. This process results in a total portfolio made up of 40 equity sub-advisors, equally weighted in the Fund’s portfolio, which very closely tracks the performance of the average actively managed institutional small cap product (historical tracking error since inception of approximately one percent annualized).
Capital Guardian Michael Bowman	Pension Insurance Legacy	Developed Int'l Equity Int'l Equity Int'l Equity	Mar-92 Apr-97 Feb-15	The Portfolio will invest primarily in equity or equity type securities of companies in developed countries excluding the U.S. These equity securities will be listed on a stock exchange or traded in another recognized market and include, but are not limited to, common and preferred stocks, securities convertible or exchangeable into common or preferred stock, warrants, rights and depository arrangements. The Portfolio may invest in fixed-income securities (including cash or cash equivalents) when market conditions warrant. The Portfolio's investments may be denominated in U.S. dollars or in non-U.S. currencies. The Portfolio may include securities eligible for resale pursuant to Rule 144A and securities in offerings that are not registered for sale in the U.S. but are listed or quoted in the securities' local markets. Instruments acquired as a result of corporate actions are permitted.
Capital Int'l V & VI Jim McGuigan	Pension	Private Equity	Aug-07	Capital International Private Equity Fund (CIPEF) has a geographic focus in global emerging markets. CIPEF's investment focus, by stage, primarily includes buy-outs, expansion capital, and replacement capital.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Clifton Group Ben Lazarus	Pension	Asset Alloc Overlay - Lg Cap, Small Cap, Int'l Equity and Dom FI	Nov-08 to Jul-10 Overlay program discontinued	By utilizing exchange traded futures contracts, Clifton synthetically maintains North Dakota State Investment Board's (NDSIB) desired exposure to a variety of asset classes. This synthetic exposure is most often utilized between monthly cash rebalancing moves. Clifton works with NDSIB Staff intermonth and at month end to make sure the economic exposure is between prescribed bands. Futures are purchased or sold to change the portfolio's effective asset class exposure without liquidating or purchasing securities in the cash market. Subsequent asset class exposure is adjusted by modifying the futures positions while the underlying portfolio remains unaffected. Using exchange traded futures contracts as opposed to physical securities provides NDSIB with: • More flexibility and efficiency in moving between asset classes • Lower cost for establishing and removing positions • Detailed accounting on the performance of the rebalance move
Clifton Group Ben Lazarus	Pension Insurance Legacy Fund	Dom Small Cap Equity Dom Lg Cap Equity Dom Small Cap Equity Dom Lg Cap Equity Dom Small Cap Equity Dom Lg Cap Equity	Nov-09 Apr-11 Nov-09 Nov-09 Mar-15 May-15	The Clifton Group believes that the U.S. equity universe is highly efficient. As such, we utilize a method of constructing the portfolio that we believe provides us with the greatest likelihood of outperforming the index. Specifically equity futures are used to gain the benchmark exposure. The underlying cash portfolio is then invested in a liquid, high quality short duration fixed income portfolio. Over market cycles excess return generated by the short duration portfolio, when added to the performance of futures is expected to allow the strategy to achieve 0.50% to 1.00% of gross excess annual performance. Each Enhanced Equity portfolio is carefully constructed and managed within strict quality and diversification guidelines. The Portfolio Management Team oversees all aspects of the construction and management process. Individual Portfolio Managers oversee different parts of the portfolio, but all are required to stay within pre-determined guidelines as provided by NDSIB. The account is monitored daily to verify that performance is maintained within expectation bands. Furthermore, accounts are reconciled monthly and audited semi-annually to confirm compliance with all existing guidelines.
Clifton Group Ben Lazarus	Pension	Developed Int'l Equity	Mar-10 to Dec 13 Terminated	This portfolio replicates the MSCI EAFE index utilizing futures contracts.
Coral Partners Momentum Fund Yuval Almog	Pension	Private Equity	Jul-02 to May-15 Capital Returned	Coral's Momentum Fund focuses on opportunities in high growth markets undergoing imminent transitions driven by emerging technologies, new business modalities and customer preferences. Examples include: a) the transition to rich digital media as a mass market opportunity; b) the ascendance of ubiquitous telecommunications networks, allowing universal access to voice, data and rich content; and c) the transition to the delivery of software-driven applications as a service, creating new software based franchises with recurring revenue models. Coral's Momentum Fund invests in late stage, technology driven companies the General Partner believes has substantial intrinsic momentum. Companies with intrinsic momentum have early demand related indicators such as accelerating revenues, channel build-up, growing product utilization, and expanding customer bases. The General Partner believes that investing in companies at this stage of development mitigates product and technology risk as well as market acceptance risk.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Coral Partners Fund V Yuval Almog	Pension	Private Equity	Mar-98 to Dec-12 Capital Returned	Coral Partners V focuses its investments in the healthcare and technology sectors with companies in all stages of growth from seed to expansion. The General Partners believe that achieving strong venture capital returns depends on the ability to create enterprises capable of attaining a defensible market leadership position, often by developing new technologies which result in either a new market or the restructuring of an existing market; and that the most effective way of accomplishing this objective is to exploit industry trends and focus on businesses which are execution intensive and operate on a worldwide scale. Important components of this strategy are: active involvement, industry focus, and portfolio management.
Coral Partners Supplemental Fund V	Pension	Private Equity	Aug-01 to Dec-12 Capital Returned	Coral Technology Supplemental Fund V invests in technology portfolio companies of Coral Partners V.
Corsair (Fund III, IV & ND Investors) Cliff Brokaw James Kirk	Pension	Private Equity	Feb-07	Corsair seeks to earn strong risk-adjusted returns by leveraging the investment team's knowledge and contacts to identify and execute attractive investments in companies in the financial services industry around the world. Corsair takes control and minority positions, either individually or as a lead member of an investor consortium. Target investments include both privately-held and public companies, generally via private transactions when the target company loses access to, or has difficulty accessing, the public capital markets. In certain circumstances, the Fund may acquire pools of financial assets or securities, or provide financing to a secured pool of assets. Corsair endeavors to develop a strong relationship and high degree of influence with investee company senior executives and key shareholders. In many instances, Corsair obtains Board representation, observer seats, or other types of management rights. Given the complexities of investing in a regulated industry, Corsair's ability to receive more traditional generalist buyout governance rights is often limited, and its ability to influence managerial decisions requires a degree of experience which Corsair believes can only be achieved through a long and consistent history of investing in the financial services sector. Corsair expects the Fund to make 10 to 15 investments over its investment period, although there can be no assurances with respect to the number of investments that will be made. Corsair anticipates holding its investments for between three and six years. In those instances where Corsair is part of an investor consortium, Corsair generally endeavors to act as a lead or co-lead investor, as was the case in all Corsair III investments. On select occasions Corsair expects to co-invest with strategic partners that are capable of bringing added value to an investment and where the Fund's exit considerations can be addressed. Above all, Corsair's value-driven investment style focuses on those investment opportunities in which the Investment Advisor believes that a positive discrepancy exists between an asset's price and its intrinsic value.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Declaration Mgmt & Research Mortgage Opportunity Fund John Pluta	Pension	Below Inv Grade FI	May-08 to Dec-09 (fund matured/ capital returned)	The Fund's investment strategy is to acquire stressed and distressed mortgage backed securities, primarily non-Agency Residential Mortgage Backed Securities ("RMBS"). The return objective of the Fund is to achieve a net IRR in the 12%-20% range within a target five year horizon from the acquisition of such securities. The goal is to extract a significant liquidity premium (apart from the compensation available for assuming credit risk) using bottom-up security analysis during a period when legacy holders of mortgage backed securities are in need of liquidity. Once fully invested, the Fund will be a long-biased investment in distressed securities within various sub-sectors of mortgage credit. The focus of the Fund is senior class RMBS backed by prime, Alt-A and subprime collateral. Higher allocations are expected to be in prime and Alt-A transactions. Security-specific risk will be analyzed at the loan level. The risk analysis links borrower attributes (loan-to-value, credit score, documentation status, age of loan, size of loan, etc.) to the borrower's default and prepayment propensities. Similar borrower attributes are examined to estimate recovery rates post default. Risk management at the security level also involves an examination of issue structure, waterfall priorities and other structural features which trap or divert cash flow, particularly as it relates to our target asset. It is anticipated that the Fund's returns will be earned primarily through cash yield on bonds it acquires at discounted prices and through repayment of principal, or partial principal from recoveries on defaulted mortgages, over the holding period of each asset in the Fund.
Declaration Mgmt & Research TALF and ABS Fund/Clifton John Pluta	Pension	Lg Cap Dom Equity	Aug-09 to Dec-11 Fund matured/capital returned	The investment objective of the DMR TALF and ABS Fund is to achieve attractive risk-adjusted returns in the low to mid-teens by investing opportunistically in senior classes of Consumer ABS and CMBS. The returns are expected to be achieved primarily through cash flow yield from assets acquired and financed using non recourse TALF leverage. The Fund term is expected to be relatively short with distributions beginning in July 2010 and most bonds naturally amortizing and maturing within 2-4 years from our purchase date. From a tactical standpoint, we believe the risk/return characteristics of short tenor ABS and CMBS compare favorably to other debt sectors. For TALF eligible assets, the low cost, non-recourse borrowing facility is an attractive feature which corporate credit, levered loans and high yield cannot access. The Fund's primary focus by sub-sector is on TALF-eligible legacy AAA senior CMBS. These assets are trading near par and tend to have a solid credit profile. The strategy does not involve stressed or "credit intensive" securities. Rather, we seek to execute risk efficient trades by employing non- recourse TALF leverage on lower volatility "par based" assets with high confidence in the receipt of coupon cash flow and full repayment of principal. TALF leverage is likely to range at 5x-15x capital depending upon the asset. In general, we expect to hold investments to their respective maturity dates, although we have the flexibility to sell holdings if spreads tighten. In acquiring assets, we employ a bottom-up analysis and model the structural characteristics of each transaction. DMR has a value orientation in security selection, seeking a margin of safety or cushion between base case performance expectations and extreme loss outcomes. The Clifton Group is charged with applying the S&P 500 "beta" exposure for the Declaration "alpha" exposure. The overall goal of the account is to get the return of the S&P 500 index plus an additional alpha amount provided by the TALF fund.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
Declaration Total Return Bond Fund John Pluta	Pension	Dom Inv Grade FI	Apr-12	The Fund invests primarily in residential (RMBS) and commercial (CMBS) mortgage-backed securities. The Fund's portfolio holdings consist primarily of RMBS issued by private sector companies (Non-Agency RMBS) and government agencies (Agency MBS) and CMBS issued by private sector companies. Agency MBS includes securities issued by the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Government National Mortgage Association (Ginnie Mae). Portfolio holdings may range from short tenor senior classes to stressed issues or subordinated securities with substantial risk of non-payment and correspondingly higher yields. Smaller portfolio allocations may include consumer asset-backed securities (ABS), or other structured credit securities and corporate bonds. As a diversification strategy and a potential hedge to credit risk, the Fund may invest in securities which tend to benefit from slow mortgage prepayments and economic growth, such as interest only (IO) MBS. Other Fund investments may include US government securities (US Treasuries), unsecured debt securities issued by US government agencies and entities (Agency Debt) and derivatives related to any of the above.
Declaration Mgmt & Research - formerly Hyperion Brookfield mortgage portfolio John Pluta	Insurance	Fixed Income	Feb-10 to May-14 liquidated and moved to TRBF	In this mandate, DMR will assume management of mortgage assets originally acquired by Brookfield (Hyperion) over the period 2006-2009. DMR will provide a fresh perspective on the holdings, some of which are credit impaired. The portfolio management services will include loan-level analysis on individual securities and portfolio level risk management of liquidity and volatility. DMR will seek to optimize the risk-return profile of the portfolio. The performance target of the portfolio is a gross total return of 1.25% above the return of the Benchmark over a full market cycle. The Benchmark is the Securitized Portion of Barclays U.S. Aggregate Index (ID #5582). In analyzing portfolio holdings, DMR may produce loss-adjusted cash flow projections on various bonds and/or stress test individual assets to identify break points (principal loss). DMR will evaluate the effect, if any, of government policy such as loan modification on portfolio holdings.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Declaration Total Return Bond Fund John Pluta	Pension Insurance Legacy	Investment Grade FI Dom Inv Grade FI Dom Inv Grade FI	May-12 Oct-13 Apr-15	The Fund's investment objective is to achieve net returns in the range of 6% to 10% annualized over rolling 3-year periods. The Investment Advisor attempts to achieve this objective using fundamental analysis to evaluate the pricing and volatility of a wide range of MBS and other structured finance securities while also making a relatively small allocation to corporate bonds. The Fund invests primarily in residential ("RMBS") and commercial ("CMBS") mortgage-backed securities. The Investment Advisor expects the Fund's returns to be achieved — if the Fund is successful — through both cash flow yield and trading gains. The Fund's portfolio holdings consist primarily of RMBS issued by private sector companies ("Non-Agency RMBS") and government agencies ("Agency MBS") and CMBS issued by private sector companies. Agency MBS includes securities issued by the Federal National Mortgage Association ("Fannie Mae"), the Federal Home Loan Mortgage Corporation ("Freddie Mac") and the Government National Mortgage Association ("Ginnie Mae"). Portfolio holdings may range from short tenor senior classes to stressed issues or subordinated securities with substantial risk of non-payment and correspondingly higher yields. The tactical weighting of the Fund's portfolio across the different sub-sectors of the securitization market varies according to the Investment Advisor's perception of sub-sector as well as overall market volatility and liquidity. Smaller portfolio allocations may include consumer asset-backed securities ("ABS"), other structured credit securities and corporate bonds. As a diversification strategy and a potential hedge to credit risk, the Fund may invest in securities which tend to benefit from slow mortgage prepayments and economic growth, such as interest only ("IO") MBS. Other Fund investments may include U.S. government securities ("U.S. Treasuries"), unsecured debt securities issued by U.S. government agencies and entities ("Agency Debt") and derivatives related to any of the above.
DFA - Dimensional Fund Advisors Joe Young	Pension Insurance Legacy	Developed Int'l Equity Int'l Equity Int'l Equity	Nov-07 Nov-07 Feb-15	The International Small Cap Value Portfolio invests in the stocks of small, non-US developed markets companies that Dimensional believes to be value stocks at the time of purchase. Size is defined as the smallest 8-10% of each country's market capitalization. Securities are considered value stocks primarily because a company's shares have a high book value in relation to their market value (BtM). This BtM sort excludes firms with negative or zero book values. In assessing value, additional factors such as price-to-earnings ratios may be considered, as well as economic conditions and developments in the issuer's industry. The criteria for assessing value are subject to change from time to time. The Portfolio currently invests in companies in Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom. It does not invest in emerging markets.
DFA - Dimensional Fund Advisors Joe Young	Pension	Emerging Markets Equity	Oct-05	The Emerging Markets Small Cap Portfolio invests in small cap emerging markets companies. Presently, this means investment in companies whose market capitalization is less than $2.3 billion at the time of purchase. Dimensional will consider, among other things, information disseminated by the International Finance Corporation in determining and approving emerging market countries. The Portfolio currently invests in companies in Brazil, Chile, China, Hungary, India, Indonesia, Israel, Malaysia, Mexico, the Philippines, Poland, South Africa, South Korea, Taiwan, Thailand, and Turkey. Due to repatriation restrictions, the Portfolio currently holds but does not purchase securities in Argentina.

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ECM - European Credit Mgmt John (Rusty) Reese	Pension	Lg Cap Dom Equity	Nov-07 to May-11 Terminated	The investment consists of variable rate notes issued by European Credit (Luxembourg), S.A., and managed by European Credit Management Ltd. The notes represent undivided interests in the issuer, a predominately investment grade European credit commingled fund currently rated BBB by Fitch Ratings, and are akin to fund subscriptions. The return on the investment is a combination of the beta of the S&P 500, achieved by means of a total return swap, and the excess return over EURIBOR, net of swap costs (if any), generated by the performance of EC(L). Returns of the investment are substantially hedged back to U.S. dollars.
EIG Energy (formerly TCW) Renee Davidovits	Pension	Private Equity	Jul-07	TCW Energy Fund XIV-A, L.P. (the “Fund”) is a Delaware limited partnership, formed on October 27, 2006 for the purpose of establishing a diversified portfolio of investments in energy and energy-related infrastructure projects and companies on a global basis. The investments will include loans, production payments, net profits interests, royalty interests and other forms of debt and equity securities issued by companies globally with emphasis on operations in the United States, Canada, Western Europe and Australia. The Fund, TCW Energy Fund XIV, L.P., TCW Energy Fund XIV-B, L.P., and TCW Energy Fund XIV (Cayman) L.P., (collectively, “Fund XIV”) shall not invest more than 15% of total commitments (“Commitments”) in any one issuer and shall not invest more than 25% of Commitments in issuers operated principally outside Organization for Economic Cooperation and Development (“OECD”) countries. The Fund shall not invest more than 35% of Commitments in equity securities other than equity securities received in connection with the purchase of mezzanine debt.
Epoch Investment Partners Thomas Pernice	Pension	Lg Cap Dom Equity	Jul-07 to Dec-11 Mandate changed to Global Choice	Epoch’s Global Absolute Return strategy seeks to produce superior risk-adjusted returns by building portfolios of businesses with outstanding risk/reward profiles without assuming a high degree of capital risk. We adopt a globally-minded approach, seeking to capture the benefits of borderless investing and globalization. The businesses in which we invest effectively reflects the high conviction ideas of the entire range of U.S. and Non-U.S. strategies offered by the firm to be included in this concentrated portfolio We manage portfolio risk exposure through quantitative and qualitative asset allocation inputs to reduce the likelihood of loss of capital. Our goal is to produce a portfolio of 20 – 30 positions that exhibits low volatility, strong risk-adjusted returns and real absolute returns. Global Absolute Return will use cash to mitigate downside capture.
Epoch Investment Partners Thomas Pernice	Pension	Global Equity	Jul-07 Moved from Lg Cap 1/1/2012	The Epoch Global Choice strategy seeks to produce superior risk adjusted returns by building portfolios of businesses with outstanding risk/reward profiles. The concentrated active, global equity portfolio typically consists of approximately 20-35 securities (generally equities) representing the firm's highest conviction names. The expected annual turnover is generally between 90-130%. The equity portion of the portfolio will invest no more than 10% of the portfolio, at the time of purchase, in any one equity security.
Goldman Sachs (2006 Fund, Fund V) Joe Hernandez	Pension	Below Inv Grade FI	Apr-06	The GS Mezzanine Partners family of funds is the largest mezzanine fund family in the world, with over $20 billion invested in 100+ companies since 1996. In 2007, Goldman Sachs established its fifth mezzanine fund, GS Mezzanine Partners V, with $13 billion of leveraged capital. GS Mezzanine Partners seeks large-sized mezzanine investments comprised generally of fixed income securities and an associated equity component. Our focus is on providing “private high yield” capital for mid- to large-sized leveraged and management buyout transactions, recapitalizations, financings, re-financings, acquisitions and restructurings for private equity firms, private family companies and corporate issuers. We target high-quality companies with $500 million to $10+ billion of enterprise value; leading market positions; high barriers to entry; well-regarded management teams; and stable, cash generative businesses.

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Grosvenor Capital (formerly Credit Suisse) Erik Hall Vikram Bhaskar	Pension Insurance	Infrastructure Real Assets	Dec-11 Dec-11	Established on October 21, 2009, the Customized Infrastructure Strategies LP is a commingled fund focused on providing a comprehensive, diversified solution for investors looking to access the infrastructure asset class. The Fund seeks to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified portfolio of primary core and core plus infrastructure funds (30%), co-investments (40%) and opportunistic secondary fund purchases (30%).
Grosvenor Customozed Infrastucture II Erik Hall Vikram Bhaskar	Pension Legacy	Infrastructure Real Assets	Mar-2015 Mar-2015	Following the same strategy as our initial commingled multi-manager infrastructure fund, Customized Infrastructure Strategies, L.P. ("CIS I"), the Fund will seek to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified, global portfolio of primarily core and core-plus infrastructure investments. CIS II will target primary fund investments, secondary purchases of investments in funds ("secondaries"), and equity and debt co-investments. Consistent with CIS I's target returns, CIS II will target a net return to its limited partners in excess of 10%1, with a low single-digit cash yield upon full investment of the Fund.
Hearthstone (MSII, MSIII) Mark Porath	Pension	Private Equity	Oct-99	In the Hearthstone-MSII Homebuilding Investors (MS2) and Hearthstone Multi-State Value-Added Fund III ("MS3") funds, Hearthstone, on behalf of the Fund, is authorized to invest exclusively in residential development projects. Residential development projects include residential land development and single-family homebuilding, including the acquisition and conversion of rental properties into condominiums and other forms of single-family housing. MS3 was authorized to invest in the construction and sale of apartment buildings, but no such investments were made. Land development projects typically involve the acquisition, entitlement and development of anywhere from 100 to 1,000 finished residential lots for sale to merchant builders, but may involve the acquisition, permitting and development of other residential land. Single-family homebuilding projects generally involve the construction and sale of approximately 25 to 500 single-family attached or detached homes.
Invesco Asia Fund I Asia III Paul Michaels	Pension Pension	Real Estate	Nov-08 Not Yet Funded	This investment strategy will focus on value added investments with an initial focus on China and Japan, with a secondary focus on Singapore and Hong Kong, in residential, industrial, retail and office properties. Where IRE identifies best value, it will execute the following value added strategies for the Fund: -Provide equity for the development of new real estate product that generates high cash returns and demonstrates mid-term growth opportunities. -Reposition assets or change the use of an asset to maximize its value by identifying highest/best use, curing deferred maintenance, improving overall asset quality and developing additional revenue-generating amenities. -Participating in high growth markets -Adopting higher leverage strategies and exploiting market inefficiencies.
Invesco Core USA LLC Paul Michaels	Pension Insurance Legacy	Real Estate	Aug-97 Oct-12 Apr-15	The Fund invests in properties located in the United States, typically requiring an investment of $10 million or greater. The Fund focuses on quality core real estate opportunities and, in addition, the Fund may invest up to 15% of its assets in "value-added" type real estate investment opportunities. The Fund seeks to provide Investors with returns equal to or greater than the NPI on a 3- and 5-year rolling basis.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
Invesco IREF II Invesco IREF III Value-Add IV Paul Michaels	Pension Pension Pension	Real Estate	Nov-07 May-12 Apr-15	The Fund will invest in value-added real estate opportunities. Investments will be made solely in the United States in four specific product types- multifamily, industrial, retail and office properties. Where IRE identifies best values, it will execute the following strategies for the Fund: • Re-capitalization: Invest in properties or portfolios at a favorable basis by acquiring an equity interest and/or debt. • Lease-up: Acquire properties with vacant space or near-term lease rollover exposure, with the opportunity to reposition rent roll and tenancy. • High Yield Debt: Acquire unrated pieces of CMBS debt • Renovation/Retenanting/Repositioning: Reposition assets (an example would be to upgrade an asset from Class B to Class A) or change the use of an asset to maximize its value by curing deferred maintenance, improving overall asset quality and developing additional revenue-generating amenities. • Development: Provide equity commitments/investments for the development of new real estate products that allows for access to new, state-of-the-art products at wholesale pricing.
InvestAmerica Lewis & Clark L&C II John Cosgriff David Schroder	Pension	Private Equity	Feb-02 Jun-09	The investment strategy for Lewis and Clark Private Equities, LP and L&C Private Equities II, LP (the Funds) is to assemble a portfolio of investments in private growth and later-stage companies that have a strong probability of providing high returns without undue volatility and risk to investors. The Funds target for investment middle market growth and later stage companies throughout the United States with existing sales from $5,000,000 to $100,000,000. Typically, these small to medium sized companies are seeking to raise $1,000,000 to $10,000,000. The Principals of the Funds have demonstrated through the successful investment of previous venture funds, that this market niche has historically delivered high returns with more limited competition for financing. The Funds seek to achieve a minimum of a 25% and in many cases in excess of a 30% internal rate of return on each of its company investments. The Funds diversify their investments by investing in portfolio companies across many industries and geographic locations. Investments will be made across a range of manufacturing, service, distribution and technology companies. Most investments are expected to be in later stage companies with established sales and profitability. Some investments may be opportunistically made in growth stage companies. The investment team has historically invested throughout the United States with offices strategically located in the Midwest and Northwest.
JP Morgan Short Term Bond Fund Jim Sakelaris	Insurance Legacy Fund	Short Term Fixed Inc	Sep-11 Sept-11 to Feb-15 Liquidated	The investment objective of the Short Term Bond Fund is to outperform (based on the portfolio's total return, gross of fees) the Barclays Capital 1-3 Year Government/Credit Index (the benchmark) while maintaining total return risk similar to that of the Benchmark as measured over a market cycle.

updated 7/1/2015

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JP Morgan Alternative Property Fund Jim Sakelaris	Pension	Real Estate	Jan-06	The JPMorgan Alternative Property Fund seeks current income and capital appreciation from a portfolio of investments consisting of alternative real estate (senior housing, medical office, hotels, single-family subdivision development, condos, storage, parking and other "non-core" cash-flow-generating property investments) and real estate-related assets in the U.S., as well as traditional and alternative real estate and real estate-related assets in Canada, Mexico and the Caribbean. The Fund pursues a broadly diversified absolute-return strategy targeting a 12-15% total annualized IRR (including a current income return of 5-7% and the balance from capital appreciation) gross of all Fund-level fees and expenses, assuming at least a 5-year holding period. The Fund is designed to benefit from less competitive flow of capital relative to core property. As an infinite-life structure, the Fund offers potential investors the opportunity for periodic liquidity at net asset values established on a quarterly basis. The Fund will also periodically rebalance sector, product and geographic diversification to dampen volatility and create a stable alternative real estate investment portfolio with a conservative level of leverage (60% on a portfolio basis).
JP Morgan Asian Infrastructure & Related Resources Opportunity Fund Jim Sakelaris	Pension	Infrastructure	Aug-08	The JPMorgan Asian Infrastructure & Related Resources Opportunity ("AIRRO") Fund seeks to invest in infrastructure and related resources opportunities across the greater Asia Pacific region. The Fund seeks to invest in a broad range of assets, including (but not exhaustive): core infrastructure such as transportation, power both from conventional and renewable sources, communications, water and waste-water, public works, urban development and other "social" infrastructure assets (i.e. hospitals, schools, government centers) and related resources such as energy, raw materials, natural resources, construction and construction-related materials and real estate (that are part of or associated with any of the installation and operation of infrastructure). The Fund will seek an internal rate of return in excess of 19% (net of Incentive Allocation and Fund Expenses and any Taxation that is payable by the Fund, but exclusive of any Taxation payable by Investors with respect to distributions), assuming a constant exchange rate during the term of the Fund between the USD and the currencies in the countries where the Fund's Investments are located. The Investment Adviser will have the right, but not the obligation, to hedge currency risk at its discretion, however there currently is no intent to engage in active hedging except as follows: (i) in exceptional cases where we believe the underlying risk is excessive and (ii) where there are known future equity commitments subject to currency risk, including with respect to the acquisition of new assets. The Fund team's view of infrastructure, in the Asian context, takes a holistic approach, encompassing not only core infrastructure but also the raw material and construction-related stages of infrastructure and those companies needed "to make infrastructure happen". By focusing on both infrastructure and related resources, the Investment Adviser has developed a strategy which seeks to capitalize on the entire opportunity presented by the large forecasted growth and required investment in Asian infrastructure. The Fund monitors its currency exposure on a regular basis taking account of the outlook for any currencies in which AIRRO is invested. At this time, AIRRO does not anticipate hedging its currency exposure in the near-term. Based on consensus forecasts prepared by Bloomberg, analysts expect Asian currencies to strengthen versus the USD over the medium-term. AIRRO's entry cost (based on average weighted rates) for its investments are 47.68 INR/USD for SevenHills and 7.76 HKD/USD for Scitus (6.93 RMB/USD for Scitus' corresponding investments onshore). We anticipate these positions to strengthen in the favor of AIRRO by exit (estimated to be 2013 for each investment). AIRRO will continue to monitor movements in Asian currencies and review its hedging strategy accordingly.

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JP Morgan Emerging Markets Fund Jim Sakelaris	Pension	Emerging Markets Equity	Nov-05 to Jul-14 Terminated	The emphasis of investments in the Emerging Markets Equity Focused Fund is in capital and common stocks, securities convertible into capital and common stocks, and other equity investments, all of which involve foreign companies and enterprises' located primarily in emerging markets. In this context, 'Emerging' refers generally to countries outside of the MSCI EAFE Universe.
JP Morgan Greater China Property Fund Jim Sakelaris	Pension	Real Estate	Jan-08	The JPMorgan Greater China Property Fund is a closed-end investment fund which seeks to invest in real estate development projects in Greater China (defined to include China, Hong Kong, Macau and Taiwan). Drawing on over 30 years of real estate investing experience and its position as one of the largest real estate investment managers globally, J.P. Morgan Investment Management Inc. seeks to develop and manage a portfolio of capital-appreciation oriented real estate assets in Greater China. The Fund will generally make its investments across the office, residential, industrial, retail and hospitality sectors by creating project-level joint venture arrangements with multiple operating partners in Greater China. In addition to direct real estate investments, the fund may invest in shorter-term, “structured capital” opportunities in the real estate sector (typically 6-18 months in nature). Such investments may involve publicly listed companies and private companies seeking funding for their operations. The fund will limit the structured capital investments to 20% of the fund’s total allocation. The Fund seeks to capitalize on the rapid and sustained economic growth, rising income levels, as well as the recent developments in China that will present opportunities for experienced real estate investment firms like J.P. Morgan to partner with local developers for new investments. The investment objective of the Fund is to seek capital appreciation. Since most of the Fund’s investments will be development stage properties, the Fund expects to generate little to no current income. The Fund expects that aggregate secured permanent indebtedness will not exceed, on average over a fiscal year, 75% of the greater of the fair market value or total cost of all of the Fund investments. Investment returns may be hedged on a case by case basis as some investments may be hedged while others may not. Whether to hedge will depend on a number of factors including the currency outlook, the cost/benefit of the hedge, the requirements of lenders, etc. In addition, in cases where debt borrowings are in local currency, there is effectively a built in hedge as well.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
JP Morgan Greater Europe Opportunistic Property Fund Jim Sakelaris	Pension	Real Estate	Sep-09	The JPMorgan Greater Europe Opportunistic Property Fund is a closed-end opportunity fund that offers investors an opportunity to participate in an actively managed portfolio of property investments throughout Europe both in direct assets and select investments in existing property companies. The Fund has the flexibility to invest in a variety of different types of real estate, including, without limitation, office, retail, industrial/warehouse, multi-family, hotel/leisure, parking and self-storage. The Fund aims to provide Investors with a targeted annualized IRR of at least 15% over the life of the fund net of all fees and expenses. The Fund intends to achieve its Target Return by using JPMorgan Asset Management's expertise and market contacts to successfully make use of the following risks: leasing risk; development risk; restructuring risk; liquidity/transparency risk and leverage. J.P. Morgan Asset Management - Global Real Assets believes that opportunities exist in the Target Markets for investors to create value through the development, rehabilitation, repositioning and recapitalization of undervalued real estate and real estate-related assets through the purchase of high quality assets or portfolios of assets from distressed sellers. After a period of rapid capital appreciation and falling risk premium for European real estate assets, partially a result of excess liquidity, the dislocation in capital markets experienced since the end of July 2007 has resulted in a substantial re-pricing of risk, particularly at the higher risk end of the spectrum. More uncertain prospects for occupier markets in some, though not all, countries are likely to continue to impact risk and therefore pricing. In Europe, JPMAM-GRA believes this creates two very distinct but compelling opportunities for the foreseeable future. The first is to capitalize on the opportunity to purchase high quality assets in core Western European markets which will be sold at favorable prices due to the lack of liquidity in the market or where the underlying risk is mispriced. Property owners overleveraged with short duration leverage, developers overexposed to construction and leasing risk, and corporate owners whose balance sheets have come under pressure are all expected to be excellent sources of these buying opportunities. We consider hedging on a deal-by-deal basis when we think it makes sense and is cost-effective. We consult with our foreign exchange desk at J.P. Morgan on a regular basis. At the present time, we believe the British Pound is underpriced relative to the Euro on a long-term historical basis and, therefore, we are currently not hedging the Pound position (at least with respect with the net equity, leverage acts as a natural hedge against 65% of the GAV since the debt on UK transactions is also denominated in Pounds). The Greater Europe Opportunistic Property Fund is Euro-denominated and thus reflects periodic currency movements in addition to property valuation changes.
JP Morgan Income & Growth Fund Jim Sakelaris	Insurance Legacy	Real Estate	Nov-05 Apr-15	J.P. Morgan U.S. Real Estate Income and Growth Fund - The J.P. Morgan U.S. Real Estate Income and Growth Fund seeks to construct and opportunistically manage a portfolio of core direct real estate investments, complemented by other real estate and real estate-related assets. The Fund pursues a broadly diversified absolute-return strategy targeting an 8-10% total annualized IRR (including a current income return of 5-7% per annum and the balance from capital appreciation) net of management fees and expenses, the payment of any Infrastructure Development Fee, if applicable, and the effect of taxes payable by certain of the Fund's Entities. The Fund pursues all property investments on an opportunistic basis. The majority (>50%) of the Fund's investments will be in direct core properties in the office, industrial, retail and residential sectors. In addition to direct real estate, the Fund has the ability to invest in other access points - mezzanine debt, CMBS and REITs - when they provide core real estate cash flows at a better price than owning the property. This helps diversify the portfolio and offer a superior risk reward equation. This dynamic investment approach focuses on relative value and is not constrained by fixed allocation targets or benchmark composition allowing the Investment Advisor the ability to change the Fund's portfolio composition in response to changing market conditions and opportunities.

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JP Morgan Infrastructure Investments Fund Jim Sakelaris	Pension Insurance Legacy	Infrastructure Real Assets Real Assets	May-07 Nov-08 Feb-15	Infrastructure Investments Fund - Launched October 31, 2006, JPMorgan Infrastructure Investments Fund is the only open-ended private commingled infrastructure fund in the U.S. It invests in stabilized assets in OECD countries with selected value-added opportunities, across infrastructure industry sub-sectors, including toll roads, bridges and tunnels; oil and gas pipelines; electricity transmission and distribution facilities; contracted power generation assets; water distribution; waste-water collection and processing; railway lines and rapid rail links; and, seaports and airports. Our open-ended strategy supports a long-term investment horizon as we seek to achieve steady returns over time that are largely cash yield with modest capital appreciation. Our open-end format also aids in our acquisition and disposition process as a long-term outlook is attractive to governments, regulators and operating partners. The Fund seeks to achieve a leveraged portfolio target IRR of 10–12%, net of Fund Expenses. Leverage is targeted at 75% at the fund level. Its diverse client base, includes U.S., European, Asian and Canadian government, union and corporate pension plans, insurance companies, and high net worth individuals. The interaction of multiple currencies is viewed by many investors as another form of diversification. With respect to the JPMorgan Infrastructure Investments Fund ('IIF' or the 'Fund'), the Investment Adviser has the right, but not the obligation, to hedge currency risk at its discretion. Due to clients' differing perspectives on currency, and the complexities/costs of hedging an illiquid portfolio, there currently is no intent to engage in active hedging except as follows: (i) in exceptional cases where we believe the underlying risk is excessive and (ii) where there are known future equity commitments subject to currency risk, including with respect to the acquisition of new assets; this is a strategy that we have utilized for several investments in the existing portfolio. Generally speaking, we believe clients are more concerned with active management of infrastructure assets and strategies than with currency hedging. We understand that many clients prefer to hedge their currency exposures on an individual total portfolio basis. Further, many clients are interested in actively managing their currency exposure to generate alpha. J.P. Morgan has the capability to provide currency hedging (as a separate service outside of the Fund) for those clients that are interested in hedging currency risk and for clients wishing to generate additional alpha (whether the risk is associated with the Fund's portfolio or with other client investments). Since we began investing in non-US assets in 2007, we have supplied currency positions to invested clients on a quarterly basis. Of the 65 institutional investors in IIF, we are aware of less than 10 that hedge the currency. Many investors view the currency volatility as short-term noise. While IIF may be long sterling, other holdings in an investor's portfolio may be short sterling. Many investors have taken the view that, in the long run, currencies are a zero sum game reverting to the mean, and they do not want to absorb the hedging costs. If an investor does want to hedge currency risk on their investment in IIF, we welcome the opportunity to arrange meetings with our colleagues that will manage the currency hedge. We have explained the structure and nuances of IIF to our colleagues, and they are prepared to assist any IIF investor. Hedging the currency associated with an illiquid asset is much more complicated than hedging international equities, or other liquid assets. For instance, if international equities appreciate and a currency depreciates, and you receive a margin call for a currency contract,

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
JP Morgan Mortgage Backed Securities Jim Sakelaris	Pension	Domestic Fixed Income	Sep-14	JPM seeks to create portfolios that offer superior stability of cash-flows (over a wide range of interest rate scenarios) versus those of the Barclays Capital Mortgage Securities benchmark. Due to a focus on identifying undervalued securities our selection is not limited to securities within the index, we may also utilize agency and non-agency commercial mortgage obligations. Because the mortgage-backed sector, in particular, has been less efficient relative to other sectors in recent years, security selection skills can add particular value. The JPM investment approach seeks to add value through the following: •We take a longer-term view of investing versus adopting a trading mentality. • Sub-sector allocation decisions are based on broad sector outlook, using expected return and valuation analysis. • Undervalued securities are identified through diligent research. • Relative risk/reward relationships are evaluated along the yield curve. • Strategy emphasizes research and individual security analysis rather than large macro bets. • Duration is managed primarily as a risk control measure. • Portfolios are well diversified and of high credit quality. • Risk management is embedded throughout process and seeks to limit downside risk relative to the benchmark.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
JP Morgan Strategic and Special Situations Property Funds Jim Sakelaris	Pension	Real Estate	Oct-90	**Strategic Property Fund** is an actively managed diversified, core, open-end commingled pension trust fund. It seeks an income-driven rate of return of 100 basis points over the NCREIF Property Index over a full market cycle (three-to-five-year horizon) through asset, geographic and sector selection and active asset management. The Fund invests in high-quality stabilized assets with dominant competitive characteristics in markets with attractive demographics throughout the United States. Following a core strategy, Strategic Property Fund focuses primarily on existing high-quality, well-leased assets in the four major property types: office, industrial, multi-family and retail. Strategic Property Fund focuses on the larger primary economic markets. Each sector is well leased with modest lease expiration exposure of approximately 10% per annum over the next five years. Due to the broad diversification in the Fund's investments, no individual properties or tenancies have the capacity to materially affect the Fund's performance. **Special Situation Property Fund** is an actively managed, value-added, open-ended commingled trust fund. It seeks an increased total return with a moderate-to-high risk level, as reflected in the potential volatility of both income and property values. Our investment philosophy for Special Situation Property Fund is based on our belief that consistently excellent investment results can be achieved by focusing on value-added investment opportunities while maintaining an optimum leverage ratio. The investment process is designed to continuously add value throughout the acquisition, ownership and disposition of an asset. Following a value-added strategy, Special Situation Property Fund focuses primarily on value-added real estate opportunities in the following major property types: office, industrial, hotel, retail and multi-family. The Fund does not attempt to match the geographic and property type diversification of the benchmark, but does maintain guidelines in order to limit over-or underweighting in regards to the NCREIF's property type and geographic guidelines. Our assets are generally located in major markets across the country (i.e., Washington D.C. and surrounding areas, Los Angeles, San Francisco, Atlanta, Chicago, Denver and Northern New Jersey). The Fund invests in a wide variety of value-added real estate opportunities, including but not limited to, improved properties that have significant appreciation potential through lease up, new development, redevelopment, repositioning and re-merchandising situations. The Fund may also acquire vacant land to be held for future development or appreciation. Development, renovation and property repositioning are important aspects of our value-added strategy.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
LA Capital Enhanced Tom Stevens	Pension Insurance Legacy	Dom Lg Cap Equity Dom Lg Cap Equity Dom Lg Cap Equity	Aug-00 Apr-04 May-15	A large core portfolio benchmarked to the Russell 1000 Index. This we would characterize as more of an enhanced index assignment where the objective is to track the benchmark with lower variability. This mandate is targeting a 1% annual alpha with a risk budget of 3%. The pension portfolio began in July of 2000 and the insurance portfolio was initiated in April of 2004. In October of 2006 we received approval from you to allocate a portion of each of these core accounts into the Large Cap Alpha Fund which we were launching at that time. A small portion of the portfolio has as a result been allocated to that product. The benchmark for this fund is the S&P500 which is very similar to the Russell 1000 Index. The objective here has been to outperform the benchmark by 5% while allowing for a risk budget as high as 7%. The intent here was to add incremental alpha to the assignment given that the information ratio was expected to be higher. The overall objectives have been met since this was initiated. **Investment Philosophy** All of our applications are driven by our Dynamic Alpha Model which is a quantitative process based upon understanding how specific factors are behaving in the market. We believe that investment results are driven by Investor Preferences which simply put, highlight which factors investors like or dislike at any point in time. We have developed sophisticated attribution tools which allow us to measure how the different factors are performing. While there is a significant amount of persistence, i.e. factors will move in one direction for sometimes an extended period of time, they will change at some point. Investors are not static in the views and one needs to recognize that when preferences shift a different posture related to that factor is warranted. Consequently we are not static and we are dynamic. In turbulent markets it is important to be able to understand how investor preferences change. In the last year there have been dramatic shifts in investor attitudes about risk factors and we feel our ability to perform during this period has been directly related to our ability to adapt.
LA Capital Structured (Russell 1000 Growth) Tom Stevens	Pension Insurance Legacy	Dom Lg Cap Equity Dom Lg Cap Equity Dom Lg Cap Equity	Jun-98 Aug-03 May-15	A large growth portfolio benchmarked to the Russell 1000 Growth Index. It is an active assignment meaning that we are targeting a 2% alpha and constraining our risk budget (tracking error) to 4% relative to the benchmark. **Investment Philosophy** All of our applications are driven by our Dynamic Alpha Model which is a quantitative process based upon understanding how specific factors are behaving in the market. We believe that investment results are driven by Investor Preferences which simply put, highlight which factors investors like or dislike at any point in time. We have developed sophisticated attribution tools which allow us to measure how the different factors are performing. While there is a significant amount of persistence, i.e. factors will move in one direction for sometimes an extended period of time, they will change at some point. Investors are not static in the views and one needs to recognize that when preferences shift a different posture related to that factor is warranted. Consequently we are not static and we are dynamic. In turbulent markets it is important to be able to understand how investor preferences change. In the last year there have been dramatic shifts in investor attitudes about risk factors and we feel our ability to perform during this period has been directly related to our ability to adapt.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Loomis Sayles Stephanie Lord	Pension	Below Inv Grade FI	Apr-04	The High Yield Full Discretion Strategy seeks to exploit the collaborative efforts of our economics group and Sector Teams in conjunction with the fundamental credit analysis from our Fixed Income Research Department. Our economics group and yield curve teams provide a global economic and interest rate framework for identifying sectors that we think are attractive. Our research department, along with the Sector Teams, seeks to identify specific investment opportunities primarily within the global fixed income market. Asset class and sector allocations reflect the macroeconomic view, while security selection based on fundamental and relative value analysis within sectors provides our primary source of excess return. Portfolio guidelines are broad and offer the portfolio management team significant investment flexibility. Experienced portfolio managers collaborate with our in-house credit analysts to identify attractive total rate of return investment opportunities in the global fixed income market. Portfolio managers incorporate the long-term macroeconomic view along with a stringent bottom-up investment evaluation process that drives security selection and resulting sector allocations. Opportunistic investments in non-benchmark sectors including investment grade corporate, emerging market, and non-US dollar debt and convertible bonds help to manage overall portfolio risk and enhance total return potential. The product's portfolio managers are responsible for strategy implementation, portfolio construction, and adherence to guidelines. This rigorous investment process results in portfolios that, we believe, are well diversified and expected to generate superior long-term investment performance when compared to the Barclays Capital High Yield Index.
LSV Int'l Equity James Owens, Jr.	Pension Insurance Legacy	Developed Int'l Equity Int'l Equity Int'l Equity	Nov-04 to Jan-13 changed mandate to Global Equity Nov-04 Feb-15	The objective of our International Large Cap Value strategy is to outperform the MSCI EAFE Index (50% Hedged) by at least 250 basis points (gross of fees) per annum over an annualized 3-5 year period with a tracking error of approximately 5-6%. The process used to select stocks is a quantitative approach developed by our founding partners through years of academic research on a variety of investment and investor behavior topics. The process ranks a broad universe of stocks on a combination of value and momentum factors and seeks to invest approximately 150 stocks in the most attractive securities possible within our strict risk parameters to control the portfolio's tracking error relative to the benchmark. The resulting portfolio will be broadly diversified across industry groups and fully invested (cash balances are typically less than 1% of the portfolio). LSV weights countries at a neutral weight relative to the benchmark country weights. Initial positions must be in stocks with a market capitalization above $500 million. 50% of the portfolio is US dollar hedged.
LSV Large Cap James Owens, Jr.	Pension Insurance Legacy	Dom Lg Cap Equity Dom Lg Cap Equity Dom Lg Cap Equity	Jun-98 to Jan-13 Changed mandate to Global Equity Jun-98 May-15	The objective of our Large Cap Value Equity (U.S.) strategy is to outperform the Russell 1000 Value by at least 200 basis points (gross of fees) per annum over a 3-5 year period with a tracking error of approximately 4%. The process used to select stocks is a quantitative approach developed by our founding partners through years of academic research on a variety of investment and investor behavior topics. The process ranks a broad universe of stocks on a combination of value and momentum factors and seeks to invest approximately 100 stocks in the most attractive securities possible within our strict risk parameters to control the portfolio's tracking error relative to the benchmark. The resulting portfolio will be broadly diversified across industry groups and fully invested (cash balances are typically less than 1% of the portfolio). Initial positions must be in stocks with a market capitalization above $500 million.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
LSV Global Equity James Owens, Jr.	Pension	Global Equity	Feb-13	The objective of the Global ACWI strategy is to outperform the unhedged total rate of return, net of dividend withholding taxes of the benchmark by at least 200 basis points (gross of fees) per annum. The process used to select stocks is a quantitative approach developed by our founding partners through years of academic research on a variety of investment and investor behavior topics. The process ranks a broad universe of stocks on a combination of value and momentum factors and seeks to invest approximately 125 stocks in the most attractive securities possible within our strict risk parameters to control the portfolio's tracking error relative to the benchmark. The resulting portfolio will be broadly diversified across countries and industry groups. Initial positions must be in stocks with a market capitalization above $400 million.
Matlin Patterson (Fund I, II, III)	Pension	Private Equity	Jul-02	Invest globally in the severely discounted securities and obligations of financially distressed companies with the objective of obtaining corporate control. Through the Investment Adviser's active management of the Fund's investments, the Fund is seeking superior risk adjusted returns and is operating globally in a segment of the distressed sector in which it has few significant competitors. Invest globally in the severely discounted securities and obligations of financially distressed companies with the objective of obtaining corporate control. Through the Investment Adviser's active management of the Fund's investments, the Fund is seeking superior risk adjusted returns and is operating globally in a segment of the distressed sector in which it has few significant competitors.
Mellon (Franklin Portfolio Assoc.)	Pension	Lg Cap Dom Equity	Sep-06 to Aug-09 Terminated	To achieve superior long term equity market returns through an investment process consisting of two parts: a) a market neutral equity strategy with approximately equal dollars invested long and short having the objective of neutralizing the overall movements of the market. Furthermore, other systematic sources of risk, including industry/sector and capitalization effects, will be controlled so that the large portion of portfolio returns comes from individual stock selection. b) an equitization strategy using S&P 500 index futures contracts to overlay the performance of the S&P 500 index on the market neutral strategy.
NTGI (Northern Trust Global Investments) Common TIPS Fund Richard Clark Jim Aitcheson	Insurance	Real Assets	May-07 to July-10 Terminated	The Corporate Trustee may invest and reinvest in units of common funds maintained by the Corporate Trustee or any affiliate of the Corporate Trustee, including, but not limited tom the NTGI-QM Common Daily Treasury Real Assets Securities (TIPS) Index Fund-Lending. To meet liquidity needs, the Corporate Trustee may also invest in short term cash investments, including shares of money market portfolios, other common funds, or registered investment companies for which the Corporate Trustee or an affiliate serves as trustee, custodian or investment advisor.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
NTGI (Northern Trust Global Investments) Enhanced S&P 500 Jason Pasquinelli	Pension	Dom Lg Cap Equity	Aug-00	The Investment Manager will use an investment approach primarily based on quantitative investment techniques. The principal source of value added is the stock selection process. Relative attractiveness is assessed using a proprietary multiple factor model. Attractive securities are over weighted relative to the Index while unattractive securities are under weighted, or excluded entirely. The account will invest primarily in a broadly diversified portfolio of equity securities. Equity securities include securities convertible into equity securities (including common stock), warrants, rights and units or shares in trusts, exchange traded funds and investment companies. The account may invest and reinvest in long or short positions in any of the instruments. The Investment Manager may purchase or sell futures and exchange traded and over-the-counter options on the Index or on a similarly broad index. The Investment Manager intends to use futures and options to manage market risk associated with the account's investments by selling futures on a stock index which correlates in price movement with a portion of the account to hedge against a potential decline in the prices of the securities comprising that portion of the account and, conversely, by purchasing futures on a stock index which correlates in price movement to a group of stocks which the account anticipates purchasing, to hedge against an increase in the value of such stocks. A portion of the cash in the account may be deposited with a broker as margin on futures or options transactions, to be invested on behalf of the account in obligations issued or guaranteed by the US Government or other appropriate short-term investments. To meet liquidity needs, the Investment Manager may also invest in short term cash investments, including shares of money market portfolios, which may be registered investment companies for which the Investment Manager or an affiliate serves as custodian or investment advisor.
NTGI (Northern Trust Collective Emerging Markets Index Fund) Jason Pasquinelli	Pension	Emerging Markets Equity	Jul-12 to Jul-14 Terminated	The Northern Trust Collective Emerging Markets Index Fund will be invested primarily in equity securities of business enterprises organized and domiciled outside the US or for which the principal trading market is outside the US. In the Fund, and where applicable with respect to the Fund, the Trustee will employ statistical methods to select securities which comprise or will comprise the Index without necessarily buying all the relevant Index equities. Such securities will be selected, acquired, held and liquidated solely on the basis of such methods and not on the basis of any economic, financial, market timing, or other analysis. Securities purchased for the Fund will generally, but not necessarily be traded on a foreign securities exchange. The Trustee may, in its discretion, purchase or sell depository receipts. The Fund will be rebalanced from time to time in order to minimize the expected or predicted deviation between the performance of the Fund and the performance of the relevant Index or to reflect changes in the composition of the Index.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
NTGI (Northern Trust Global Investments) World Ex-US Jason Pasquinelli	Pension	International Equity	Dec-13	The Fund will be maintained by the Trustee with the objective of providing investment results that replicate the overall performance of the MSCI® Emerging Markets Equity Index (the "Index"). The Trustee will attempt to meet the Fund's investment objective by including the common stocks of one or more companies included in the Index, on the sole basis of computer-generated statistical data, deems representative of the industry diversification of the entire Index. The Fund will be invested primarily in equity securities of business enterprises organized and domiciled outside of the United States ("U.S.") or for which the principal trading market is outside the U.S. In the Fund, and where applicable with respect to the Fund, the Trustee will employ statistical methods to select securities which comprise or will comprise the Index without necessarily buying all the relevant Index equities. Such securities will be selected, acquired, held and liquidated solely on the basis of such methods and not on the basis of any economic, financial, market timing, or other analysis. Securities purchased for the Fund will generally, but not necessarily, be traded on a foreign securities exchange. The Trustee may, in its discretion, purchase or sell depositary receipts. The Fund will be rebalanced from time to time in order to minimize the expected or predicted deviation between the performance of the Fund and the performance of the relevant Index or to reflect changes in the composition of the Index.
PanAgora Asset Mgmt Lisa Mahoney	Pension	Emerging Markets Equity	Feb-06 to Dec-13 Terminated	The Emerging Markets Fund seeks to exceed, in the aggregate, the return of the Morgan Stanley Capital International Emerging Markets Index before fees and expenses. The Emerging Markets fund may be invested in: • International equity securities including common, preferred and instruments convertible into common or preferred stock for those companies which comprise the Benchmark and the Morgan Stanley Capital International Frontier Markets Equity Index. • American Depository Receipts, Global Depository Receipts, European Depository Receipts • Exchange traded funds based on the underlying securities in the Benchmark • Spot and forward currency exchange contracts • US Treasury bills • Daily Liquidity Fund • The maximum investment in companies which comprise the Morgan Stanley Capital International Frontier Markets Equity Index will not exceed 10% measured at time of purchase.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
PIMCO Bravo II Stephanie King Michael Chandra	Pension Insurance	Below Inv Grade FI Fixed Income	Oct-13 Oct-13	To seek to capitalize on the perceived market opportunity and achieve its Target Return, the Fund will have broad discretion to invest principally in (or otherwise gain exposure to) U.S. and non-U.S.: (i) performing, underperforming or non-performing loans and other assets that have historically been securitized and/or otherwise traditionally held by financial institutions (as well as participations and other interests therein), including commercial and residential mortgage loans (each of which may convert to real estate holdings), consumer loans (such as credit card receivables, automobile loans and student loans) and/or servicing or similar rights relating to such loans and other assets; (ii) structured products, securitizations and other assetbacked securities ("ABS") backed by assets of any type (whether U.S. or non-U.S. based collateral), including non-agency residential mortgage-backed securities ("RMBS") and commercial mortgage-backed securities ("CMBS" and, together with RMBS, "MBS"), collateralized debt obligations ("CDOs"), collateralized loan obligations ("CLOs") and repackaged securities (collectively, "Structured Investments"), including Structured Investments managed by PIMCO or an affiliate thereof; (iii) residential and commercial real estate; and/or (iv) investments in equity securities, equity-linked securities and/or debt instruments (including loans) of operating companies and other entities (whether stressed, distressed or otherwise on an opportunistic basis), including banks and other financial institutions, specialty finance entities, and other opportunities.
PIMCO Distressed Mortgage Fund Julie Meggers Todd Staley Michael Chandra	Pension	Below Inv Grade FI	Oct-07 to May-13 Capital Returned	The PIMCO Distressed Mortgage Fund is an opportunistic private-equity-style Fund which seeks to capitalize on the historic dislocation in the US and global mortgage markets. The Fund invests in mortgage-related securities and loans where PIMCO believes the long-term value of the investment is highly attractive relative to current market pricing. Within the universe of mortgage-related assets, the Fund will be otherwise unconstrained. The Fund will essentially look to capitalize on forced liquidations of mortgage risk from mark-to-market and ratings sensitive investors at historic high yields.
PIMCO Distressed Senior Credit Opportunities (DiSCO) Fund I Fund II Stephanie King Michael Chandra	Pension Pension Insurance	Dom Inv Grade FI Dom Inv Grade FI Fixed Income	Jul-08 to Oct-11 Transferred to Fund II Oct-11 Oct-11	The PIMCO Distressed Senior Credit Opportunities Fund is an opportunistic private-equity style Fund which seeks to provide investors enhanced returns principally through long-biased investments in undervalued senior and super senior structured credit securities that are expected to produce attractive levels of current income and that may also appreciate in value over the long term. The fund will look to capitalize on forced sales by liquidity constrained investors.
PIMCO Unconstrained Bond Fund Julie Meggers Todd Staley	Pension	Dom Inv Grade FI	Mar-12 to Mar-14 Converted to SMA	The PIMCO Unconstrained Bond Strategy is an absolute return-oriented, investment grade quality fixed income strategy that embodies PIMCO's secular thinking, global themes, and integrated investment process without the constraints of a benchmark or significant sector/instrument limitations. The strategy is designed to offer the traditional benefits of a core bond approach - capital preservation, liquidity, and diversification - but with higher alpha potential and the opportunity to mitigate downside risk to a greater degree than what is reasonably possible from traditional active fixed income management approaches.
PIMCO MBS Stephanie King Michael Chandra	Pension	Dom Inv Grade FI	Mar-12	The PIMCO Mortgage-Backed Securities Strategy is an actively managed bond portfolio that invests in high quality, short to intermediate duration mortgage-backed securities. The fund invests primarily in securities that are highly rated, such as US Government guaranteed Ginnie Mae securities and Agency-guaranteed Fannie Mae and Freddie Mac mortgage-backed securities.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
PIMCO Unconstrained (SMA) Stephanie King Michael Chandra	Pension	Dom Inv Grade FI	Mar-14	The Fund seeks to achieve its investment objective by investing under normal circumstances at least 80% of its assets in a diversified portfolio of Fixed Income Instruments of varying maturities, which may be represented by forwards or derivatives such as options, futures contracts, or swap agreements. “Fixed Income Instruments” include bonds, debt securities and other similar instruments issued by various U.S. and non-U.S. public- or private-sector entities. The Fund intends to utilize various investment strategies in a broad array of fixed income sectors to achieve its investment objective. The Fund will not be constrained by management against an index. The average portfolio duration of this Fund will normally vary from (negative) 3 years to positive 8 years based on Pacific Investment Management Company LLC’s (“PIMCO”) forecast for interest rates. Duration is a measure used to determine the sensitivity of a security’s price to changes in interest rates. The longer a security’s duration, the more sensitive it will be to changes in interest rates. The Fund may invest in both investment-grade securities and high yield securities (“junk bonds”) subject to a maximum of 40% of its total assets in securities rated below Baa by Moody’s Investors Service, Inc. (“Moody’s”), or equivalently rated by Standard & Poor’s Ratings Services (“S&P”) or Fitch, Inc. (“Fitch”), or, if unrated, determined by PIMCO to be of comparable quality. The Fund may also invest without limitation in securities denominated in foreign currencies and in U.S. dollar-denominated securities of foreign issuers. In addition, the Fund may invest up to 50% of its total.
Prudential Core Plus Peter Taggert	Insurance Legacy	Fixed Income Fixed Income	Aug-06 Apr-15	The core plus fixed income account is a multi-sector strategy with alpha objective of +150 basis points versus the Barclays Aggregate Index over a full market cycle. The strategy is diversified across a broad range of fixed income sectors, including Treasuries, agencies, mortgage-backed securities, structured product (asset-backed securities, commercial mortgage-backed securities), investment grade corporate bonds, high yield bonds, bank loans and international debt. The primary sources of excess return are sector allocation and security selection, with duration and yield curve less of a focus.
Prudential Privest Peter Taggert	Pension	Dom Inv Grade FI	Jun-05 to Mar-12 Terminated	The Prudential Privest fixed income account is invested primarily in unsecured privately placed debt securities.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
Prudential PruAlpha Peter Taggert	Pension Insurance (Budget Stabilization only)	Dom Lg Cap Equity Enhanced Cash	Mar-08 to May-12 Redeemed out/Terminated Jul-07 to May-12 Redeemed out/ Terminated	At launch, Pru Alpha was an absolute return strategy investing across multiple sectors of the global fixed income markets. There were significant redemptions from Pru Alpha in the wake of the high market volatility in late 2008. Pru Alpha is currently focused on investing in distressed securities in the fixed income markets. The Pension Trust invested in a feeder fund that allocated a substantial portion of its assets to the Pru Alpha Master Fund and invested substantially all of its remaining assets in a replication strategy based on the S&P 500 Total Return Index. On November 26, 2008, the S&P 500 beta overlay was discontinued. Effective June 1, 2009, the S&P 500 beta overlay was reapplied via a separate account that invests in S&P 500 futures in amounts intended to match the market value of the Pension Trust's Pru Alpha investment. The budget stabilization account is an "enhanced cash" portfolio to augment the other components of North Dakota's budget stabilization assets. This account was originally invested across three components: Dryden Core Short-Term Bond Fund (80%), bank loans (10%), and Pru Alpha (absolute return fund, 10%). Core Short-Term Bond Fund is an "enhanced cash" portfolio that seeks to capture incremental yield from various sectors in the short term portion of the market, with virtually no interest rate risk. Holding assets in the structured product and corporate sectors led to significant underperformance through the credit market downturn from 3Q07-1Q09, but the fund has recovered significantly year-to-date 2009. The bank loan component of the portfolio consists of approximately 20-25 individual bank loans managed by PFIM's high yield/bank loan team. The names held in the account are biased towards the higher quality and more liquid names in the bank loan arena. Pru Alpha is an absolute return strategy and is described with the Pension Trust investment above. On July 28, 2009, $95mm was added to this account. As a result of discussions with our senior investment team at PFIM and Steve Cochrane, it was decided to invest the new assets in short-term corporate bonds (1-3 years). As of 8/31/09, the account is allocated as follows: Short-term corporates (47%), Dryden Core Short-Term Bond Fund (39%), bank loans (5%), and Pru Alpha (4%) and cash (5).
Quantum (Energy Partners, Resources) Michael Dalton	Pension	Private Equity	Oct-06	Founded in 1998, Quantum Energy Partners is a leading provider of private equity to the global energy industry. With more than $5.7 billion in assets under management, Quantum targets investment opportunities between $100 and $400 million with proven management teams that possess a clear vision and whose companies have sustainable competitive advantages within well-defined segments of or strategies in the energy industry. Quantum primarily focuses on the oil and gas upstream, midstream and power sectors, but will consider opportunities across the entire energy industry. Quantum Resources' investment strategy is to acquire, develop, enhance and exploit mature oil and gas properties in order to provide investors with both a current income vehicle with capital appreciation potential and a hedge to other investments through long-term exposure to changes in commodity prices. The company will acquire cash flow producing oil and gas properties primarily located in North America through asset or corporate purchases. By acquiring properties in a diverse set of mature fields with long operating histories, long-lived production characteristics and additional development potential, the company is emphasizing a focus on capital preservation and the reinvestment of cash flow into property development or add-on acquisitions. Management expects to acquire income streams generated by the production of oil and gas reserves at attractive discount rates of future net cash flows.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
Research Affiliates Jeff Wilson	Insurance Legacy	Dom Small Cap Equity Dom Small Cap Equity	Jul-07 Mar-15	Small company value equity portfolio utilizing the index strategy and philosophy described as the Enhanced RAFI® US Small strategy which in turn is based on our patent pending Fundamental Index® concept. The Enhanced RAFI® US Small strategy relies on portfolio weights derived from firm fundamentals (free cash flow, book equity value, total sales and gross dividend), instead of market capitalization. In addition, the enhanced portfolio strategy uses a quality of earnings screening and a financial distress screening to augment portfolio returns and reduce portfolio volatility.
SEI Investments	Pension Insurance	Dom Small Cap Equity Dom Small Cap Equity	Jul-01 to Nov-09 Terminated Jul-01 to Nov-09 Terminated	Utilizing multiple SEI Portfolio sub-advisors, the SEI Portfolio invests in common stocks and other equity securities with the goal of providing capital appreciation.
SEI Investments Bob Thomas	PERS Retiree Health		Jul-09	**Fixed Income Strategy** - A diversified set of lowly correlated alpha sources increase confidence in consistent excess return -Combination of managers with a broad opportunity sets inclusive of government, credit and structured securities -Derivatives provide an efficient means of strategy implementation -Managers have the ability to utilize derivatives to manage duration, yield curve, sector and security strategies to enhance return or reduce risk **Emerging Markets Debt Strategy** - Specialist Emerging Market Debt Managers and seasoned investment teams with complementary investment philosophies that invest broad opportunity sets inclusive of tactical allocations to external debt, local debt, local currency, and corporate debt. **High Yield Strategy** - Diversified group of managers with deep and experienced credit resources whose outperformance will be generated from both Sector/Industry and Selection decisions. The differentiation between managers is not on the alpha source they are seeking to exploit, but rather on the credit philosophy and process. Broad opportunity sets primarily in fixed income securities rated below investment grade, including corporate bonds. May also invest in bank loans, convertible and preferred securities, zero coupon obligations and credit derivatives. Given the illiquidity of the high yield market, managers also have the ability to utilize the credit default swap market for enhancing return or reducing risk. **Small Cap Strategy** - Utilizing multiple SEI Portfolio sub-advisors, the SEI Portfolio invests in common stocks and other equity securities with the goal of providing capital appreciation. **World Equity ex-US Strategy** - Utilizing multiple SEI portfolio sub-advisors, the SEI portfolio invests in equity securities of foreign companies, including those in emerging market countries with the goal of capital appreciation. These securities may include common stocks, preferred stocks, warrants, exchange-traded funds based on an international equity index and derivative instruments whose value is based on an underlying equity security or basket of equity securities. The SEI portfolio is diversified as to issuers, market capitalization, industry and country. Certain SEI portfolio sub-advisors use strategies that are designed to correlate with a portfolio of international equity securities, but which are composed of derivative instruments backed by other types of securities. **Large Cap Equity Strategy** - A Russell 1000 index fund.
SEI Investments Bob Thomas	Pension (Job Service only)	Core Plus Fixed Income	Jul-09 to Mar-12 Terminated	A diversified set of lowly correlated alpha sources increase confidence in consistent excess return -Combination of managers with a broad opportunity sets inclusive of government, credit and structured securities -Derivatives provide an efficient means of strategy implementation -Managers have the ability to utilize derivatives to manage duration, yield curve, sector and security strategies to enhance return or reduce risk

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
State Street Global Advisors Kevin Sullivan	Pension	Developed Int'l Equity	Jul-92 to Dec-13 Terminated	SSgA attempts to identify stocks that it believes are undervalued, using detailed investment analysis. The strategy is normally broadly invested among countries and industries. The investable universe is equity securities of companies outside the United States within the market capitalization range of the index.
State Street Global Advisors Joe Cadigan	Pension	Dom Inv Grade FI	Jun-13	This is a commingled index fund that seeks to replicate the risk and return characteristics of the Barclays Long Treasury Bond Index.
State Street Global Advisors Joe Cadigan	Insurance Legacy	Fixed Income Fixed Income	Jun-13 Apr-15	This is a commingled index fund that seeks to replicate the risk and return characteristics of the Barclays Government/Credit Bond Index.
State Street Global Advisors	Pension Insurance	Dom Lg Cap Equity Dom Lg Cap Equity	Jul-92 to Jul-09 Terminated Oct-96 to July-09 Terminated	Originally hired as S&P 500 Index funds and later re-mandated to 130/30 strategies.
State Street Global Advisors	PERS Retiree Health		Mar-94 to Jul-09 Terminated	Balanced account consisting of index funds in fixed income, large and small cap and int'l equity.
TIR-Timberland Investment Resources Mark Seaman Tom Johnson	Pension	Timber	Jun-01 Sept-04	**Teredo Timber LLC** - The investment objective of Teredo is to provide competitive investment returns from increasing saw timber production through the 20 year term of the partnership. TIR's management strategy is to maximize saw timber volume by applying intensive forest management techniques which accelerate growth through the diameter class distribution (from pulpwood to saw timber). Periodic cash flows are produced from thinning and final harvests of the individual timber stands. **Springbank LLC** - The investment objective of Springbank is to maximize long-term investment potential. TIR will implement four key strategies to attain the objective: • Formation of a dedicated land management group; • Intensive timber management to increase timber production; • Coordination of timber harvesting with land management activities; • Direct marketing and selective real estate partnerships.
TIR-Timberland Investment Resources Mark Seaman Tom Johnson	Insurance	Real Assets	Oct-08	**Eastern Timberland Opportunities Fund** - The investment objective of the Eastern Timberland Opportunities fund is to provide competitive timberland investment returns from Eastern US timberland investments by pursuing management strategies to increase timber production and land values through the investment term. TIR will maximize timber values within the portfolio with the application of intensive forest management techniques to accelerate the growth in timber volume and movement into higher value product categories. Additional value will be captured by realizing higher and better use opportunities for select timberland properties throughout the portfolio.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
UBS Global Asset Management Betsy Sanders	Pension	Emerging Markets Equity	July 05 to Dec 13 Terminated	Emerging markets equity investments will be confined to the UBS Emerging Markets Equity collective Fund of the UBS Group Trust, which is maintained by UBS Global Asset Management Trust Company. The account's emerging markets equity assets will be fully-invested at all times, but such assets may be invested in the UBS US Cash Management Prime Collective Fund for operational and risk management purposes.
UBS Global Asset Management Betsy Sanders	Pension	Dev. Int'l Fixed Income	Jul-89	The non-US fixed income portfolio's assets may be invested in emerging markets debt on an opportunistic basis up to the stated maximum allocation of 5%. The account's non-US fixed income assets will be fully-invested at all times, but such assets may be invested in the UBS US Cash Management Prime Collective Fund for operational and risk management purposes.
Vanguard Group Bruce Mears	Insurance Legacy	Int'l Equity Int'l Equity	Jun-03 Feb-15	Vanguard International Explorer Fund seeks to provide long-term capital appreciation. The fund invests primarily in the equity securities of small-capitalization companies located outside the United States that the advisor believes offer the potential for capital appreciation. In doing so, the advisor considers, among other things, whether a company is likely to have above-average earnings growth, whether the company's securities are attractively valued, and whether the company has any proprietary advantages.
Wachovia Global Securities Lending John Menard	Pension Insurance	All asset classes	Oct-07 to Jun-11 Terminated when acquired by Citi	Securities lending is the temporary loan of a security from an institutional investor's portfolio to a broker/dealer or dealer bank to support that firm's trading activities. These trading activities include short selling, selling on margin or the satisfaction of some other type of transaction. Loaned securities are generally collateralized, reducing the lender's credit exposure to the borrower. Except for the right to vote proxies, the lender retains entitlement to all the benefits of owning the original securities, including the receipt of dividends and interest. Additionally, the lender receives a fee for the use of the securities and can reinvest the collateral. The lender, however, bears the market risk of the loaned securities. This is due to the borrower being obligated to ultimately return the securities, not the original market value of the securities, at the time the loan was made. Lendable securities include U.S. government and agency bonds, U.S. and foreign equities, U.S. corporate and Eurobonds, foreign government bonds, asset backed and mortgage backed securities
Wellington Trust Company Elizabeth O'Hara	Pension	Developed Int'l Equity	Mar-02	Securities lending is the temporary loan of a security from an institutional investor's portfolio to a broker/dealer or dealer bank to support that firm's trading activities. These trading activities include short selling, selling on margin or the satisfaction of some other type of transaction. Loaned securities are generally collateralized, reducing the lender's credit exposure to the borrower. Except for the right to vote proxies, the lender retains entitlement to all the benefits of owning the original securities, including the receipt of dividends and interest. Additionally, the lender receives a fee for the use of the securities and can reinvest the collateral. The lender, however, bears the market risk of the loaned securities. This is due to the borrower being obligated to ultimately return the securities, not the original market value of the securities, at the time the loan was made. Lendable securities include U.S. government and agency bonds, U.S. and foreign equities, U.S. corporate and Eurobonds, foreign government bonds, asset backed and mortgage backed securities. The International Small Cap Opportunities investment approach is bottom-up focused, and leverages the global research resources at Wellington Management. In implementing purchase decisions, consideration is given to the size, liquidity, and volatility of these prospects. Sell decisions are based on changing fundamentals or valuations, or on finding better opportunities elsewhere. The assets are not hedged.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Wells Capital Management Stephen Scharre	Pension Insurance Legacy	Dom Inv Grade FI Fixed Income Fixed Income	Nov-98 to Mar-12 Terminated Apr-02 April-15	The Medium Quality Credit fixed income strategy is designed to maximize total return from the high-grade corporate bond market while maintaining a strategic allocation to the BBB portion of the high yield market. Credit research is a primary driver of our results; however, our process starts with a "top-down" strategy to guide decision-making. Security selection is determined by in-depth credit research. We believe in-depth knowledge of industries, companies, and their management teams enable us to identify credit trends that can lead to investment opportunities. In conjunction with performing rigorous fundamental research, we also apply a disciplined relative value framework which helps us determine the optimal position to invest within an industry and within an individual issuer's capital structure.
Wells Capital Management Jeff Mellas Doug Beath	Pension	Dom Lg Cap Equity	Apr-06 to Mar-10 Terminated	The State of North Dakota's Alpha Capture Portfolio (ACP) is a quantitatively driven global long/short strategy designed to exploit mispricing of risk between and within asset classes and market sectors. Core models are utilized in conjunction with the management team to identify opportunities between global stock and bond markets. Markets that are designed to focus more directly on specialized markets such as commodities and individual market sectors supplement the core models. ACP is constructed using instruments such as futures contracts and exchange traded funds (ETFs). The ACP strategy does not currently hedge its non-U.S. dollar positions.
Wells/Sutter Niklas Nordenfelt	Pension	Below Inv Grade FI	Apr-04 to Mar-10 Terminated	The Sutter High Yield strategy applies a bottom-up fundamental based investment strategy focused on identifying the best risk adjusted opportunities in the high yield market. The investment objective is to deliver outperformance with less volatility over a market cycle. Documented rationale supports each initial investment in a credit. The team's philosophy and process is grounded on the principal of "underwriting the credit as though we are making a direct loan to that company" with a focus on U.S. based companies.
Western Asset Derek Fan	Pension	Dom Inv Grade FI	Mar-12 to Sept-14 Terminated	The investment objective for the Western Asset Mortgage-Backed Securities portfolio is to outperform the Barclays Capital US Mortgage Backed Securities Index over a three to five year market cycle. The portfolio is designed to hold high quality assets, with at least 90% of the portfolio rated AAA, or the rating of US Treasury or Agency securities, by at least one of the nationally recognized statistical rating organizations.
Western Asset Susan Signori	Pension Insurance Legacy	Dom Inv Grade FI Fixed Income Fixed Income	Oct-09 to Mar-12 Mandate changed to MBS Dec-93 April-15	A portfolio using all major fixed-income sectors with a bias towards non-Treasuries, especially corporate, mortgage-backed and asset-backed securities. Value can be added through sector rotation, issue selection, duration and term structure weighting.
Western Asset	Insurance	Real Assets	May-04 to Oct-09 (Mandate changed to Global TIPS)	Western Asset's US TIPS Full Discretion Composite includes portfolios that employ an active, team-managed investment approach around a long-term, value-oriented investment philosophy. These portfolios use diversified strategies in seeking to add value while minimizing risk. The approach is to construct a well diversified, higher yielding inflation-protected portfolio with a bias towards Treasury Inflation Protected Securities. Exposure to the diversifying sectors (which include credit, global inflation-linked securities and mortgage-backed securities) may be derived through derivative and forward transactions. This strategy allows for opportunistic investments in high yield, emerging markets, non-dollar securities, commodities and bank loans.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Western Asset Susan Signori	Insurance Legacy	Real Assets Real Assets	Oct-09 Mar-15	Western Asset's Global Inflation-Linked composite includes portfolios that employ an active, team-managed investment approach around a long-term, value-oriented investment philosophy. These portfolios use diversified strategies in seeking to add value while minimizing risk. The approach is to construct a portfolio primarily of inflation-indexed securities. Value can be added through country selection, term structure, issue selection, duration management and currency management.
Westridge/WG Trading/Clifton	Pension Pension Insurance	Dom Lg Cap Equity Dom Inv Grade FI Dom Lg Cap Equity	Aug-00 to Apr-11 Jan-08 to Apr-11 Apr-04 to Apr-11 (Settlement proceeds rec'd)	S&P 500 Index Arbitrage Portfolio. Pension Domestic Fixed Income beta portfolio was changed to S&P 500 in November 2008. WG Trading was shut down by Federal Regulators in February 2009 and assets are in receivership. An S&P beta exposure was put on the accounts in July, 2009 by Clifton Group to maintain proper exposure to markets while in litigation.

Annual Board Planning Cycle
Biennial Agenda

Fiscal 2015-16	July 2015	August	September	October	November	December	January 2016	February	March	April	May	June
	Gov. Offsite - Election of Officers, - Appoint Audit Comm. - Plan Annual Agenda - Plan Board Education	**Annual Investment Performance Review** - Establish Investment Work Plan - Add Invest. Education	**Annual Review of Gov. Manual** *(Done)* - New Board Member Orientation Complete	**Annual Evaluation of RIO vs. *Ends* policies** - Annual Board Evaluation	**Investment Director Report on Investment Work Plan**	No Meeting Scheduled		**Investment Director Report on Investment Work Plan** - Exec. Limit. & CIO Review	**Review Budget Guidelines for next Biennium**		**Investment Director Report on Investment Work Plan** - Investment Guidelines	No Meeting Scheduled

Fiscal 2016-17	July 2016	August	September	October	November	December	January 2017	February	March	April	May	June
The SIB Meeting Agenda has not been establised for Fiscal 2016-17	**Gov. Offsite** - Election of Officers, - Appoint Audit Comm. - Plan Annual Agenda - Plan Board Education	**Annual Investment Performance Review** - Establish Investment Work Plan - Add Invest. Education	**Annual Review of Gov. Manual** - New Board Member Orientation Complete	**Annual Evaluation of RIO vs. *Ends* policies** - Annual Board Evaluation	**Investment Director Report on Investment Work Plan**	No Meeting Planned	- Legislative Update	**Investment Director Report on Investment Work Plan** - Exec. Limit. & CIO Review	**Confirm Budget Guidelines** - Legislative Update	- Legislative Update	**Investment Director Report on Investment Work Plan**	No Meeting Planned

1.) SIB Governance Policy B-7 on Governance Process states that "the Board will follow a biennial agenda which (a) completes a re-exploration of Ends policies annually (April) and (b) continually improves its performance through attention to board education and to enriched input and deliberation."

2.) "In the first three months of the new cycle, the Board will develop its agenda for the ensuing year. Scheduled monitoring will be used to evaluate and adjust the annual agenda as needed."

3.) "The Board will identify areas of education and input needed to increase the level of wisdom forethought it can give to subsequent choices. A board education plan will be developed during July and August of each year."

State Investment Board 2015-16 Meeting Schedule

July 24, 2015 (Retreat)

August 28, 2015

September 25, 2015

October 23, 2015

November 20, 2015

December – No Meeting

January 22, 2016

February 26, 2016

March 18, 2016

April 22, 2016

May 27, 2016

June 24, 2016 – No Meeting

AGENDA ITEM V. D.

TO: State Investment Board

FROM: Dave Hunter, Executive Director/CIO

DATE: July 20, 2015

SUBJECT: **Cover Memo for Governance Presentation Slides**

The following slide presentation is not intended to be reviewed in advance of the July 24, 2015 meeting but will serve to support the group discussion.

Attendees will be well prepared if they have the opportunity to review the pre-reading materials:

1. How Effective is Pension Fund Governance Today and Do Pensions Invest for the Long-Term;
2. The Evolving Meaning of Fiduciary Duty: Is Your Board Keeping Up; and
3. Rethinking Investment Beliefs for the 21st Century.

KEITH AMBACHTSHEER
President
KPA Advisory Services

Keith has been a participant in the pensions and investments industry since 1969. He founded his own firm *KPA Advisory Services* in 1985. Through it, he provides strategic advice to a global clientele in person, and through the monthly *Ambachtsheer Letter*. He is the author of three best-selling books, and has been a regular contributor to industry publications since the 1970s. He was the Editor of the *Rotman International Journal of Pension Management* from 2008 to 2014.

In 1991, Keith co-founded *CEM Benchmarking* which benchmarks the organizational performance of some 400 major pension funds around the world. In 2005, he played a major role in founding the *Rotman International Centre for Pension Management* (*Rotman ICPM)*. He was appointed Director of *Rotman ICPM* and Adjunct Professor of Finance at the *Rotman School of Management, University of Toronto.* He was appointed Director Emeritus in 2014.

At the start of 2011, he was appointed Academic Director of the Rotman-ICPM Board Effectiveness Program for Pension Funds and Other Long-Horizon Investment Institutions. He has personal governance experience as a member of two corporate boards, and has served as Board Chair of a major medical foundation.

His research, writing and advice have influenced pension and endowment design, policy, and organizational structure in Canada and elsewhere. He has won major awards, including CFA Institute's Award for Professional Excellence in 2011 for "exemplary achievement, excellence of practice, and true leadership", and the EBRI Lillywhite Award in 2010, given in recognition of outstanding lifetime contributions to Americans' economic security. In July of 2009 Keith was awarded James Vertin Award from the *CFA Institute* for his contributions "of enduring value" to investment theory and practice. In 2007, he was honoured with the Outstanding Industry Contribution Award by *Investments and Pensions Europe.* In 2003, he was named 'One of the 30 Most Influential People in Pensions and Investments' by *Pensions and Investments* in the USA. In 2013, *aiCIO* named him one of the globe's "10 most influential academics in institutional investing", and the globe's #1 "knowledge broker" in institutional investing in 2014.

KPA ADVISORY SERVICES LTD

HOW EFFECTIVE IS PENSION FUND GOVERNANCE TODAY?

AND

DO PENSION FUNDS INVEST FOR THE LONG-TERM?

FINDINGS FROM A NEW SURVEY

"We need to move from long-term investing solutions to actions……..

First, we need to address the issue of governance of financial institutions."

Angel Gurria

General Secretary - OECD

Keith Ambachtsheer and John McLaughlin

January 2015

Background to this Study

This study marks the continuation of a series of survey-based research projects on pension fund governance by the authors and colleagues that stretch back over 20 years. A catalyst for this new effort was the *Focusing Capital on the Long Term (FCLT)* initiative launched by Dominic Barton (McKinsey) and Mark Wiseman (CPP Investment Board) in 2013.[1] In a subsequent Harvard Business Review article that provided context for the *FCLT* initiative, they wrote: *"If asset owners and managers are to do a better job of investing for the long-term, they need to run their organizations in a way that supports and reinforces this."*[2]

Obviously, the quality of the governance function in asset owner organizations is critical to this "do a better job of investing for the long-term" quest. Given our prior survey experience in the governance area, we offered to update our work in support of the *FCLT* initiative, and at the same time, gain a better understanding of the degree to which pension funds actually practice 'long-termism' in investing. We sent out a survey in June 2014 to 180 CEOs (or equivalents) of major pension (and related) organizations around the world. The survey's governance component was identical to prior surveys sent out in 1997 and 2005. Two months later we began the work of analyzing the 81 completed surveys, comparing the 2014 governance-related responses to those provided in 1997 and 2005, and interpreting the responses in the long-term investing part of the survey. This paper sets out our findings, and their implications for raising the effectiveness of the governance and investment functions of pension (and related) organizations.

Organization of this Paper

The paper is organized into six parts:

Part I: Study Summary and Conclusions

Part II: Key Findings from Prior Governance Research

Part III: Description of the 2014 Survey and the Survey Respondents

Part IV: 2014 Survey Findings on Governance

Part V: 2014 Survey Findings on Long-Term Investing

Part VI: Key Take-Aways from the 2014 Survey Findings

About the Authors

Keith Ambachtsheer is Director Emeritus of the International Centre for Pension Management (ICPM) and Academic Director of the Rotman-ICPM Board Effectiveness Program at the Rotman School of Management, University of Toronto. He is co-founder and President of KPA Advisory Services, and co-founder and Board Member of CEM Benchmarking Inc.

John McLaughlin is co-founder and Board Chair of CEM Benchmarking Inc. He is also a Board Member of a number of public and private enterprises and a graduate of the ICD / Rotman Directors Education Program and a holder of the ICD.D designation.

[1] For more information on the *FCLT* initiative, visit *www.FCLT.org.*

[2] From Barton and Wiseman (2014) "Focusing Capital on the Long-Term", Harvard Business Review, Jan-Feb. Barton and Wiseman also published a follow-up article in the Jan-Feb 2015 issue of the HBR titled "Where Boards Fall Short".

PART I: STUDY SUMMARY AND CONCLUSIONS

We recently conducted a survey-based study on the effectiveness of pension fund governance, and on long-horizon investment attitudes and practices. A broadly-based group of 81 major pension organizations from around the world with aggregate assets of USD $5 trillion participated in the study. Here we set out the major study findings.

On Pension Fund Governance

Prior studies on the effectiveness of pension fund governance over the course of the last 20 years all reached the conclusion that there was considerable room for improvement. Despite evidence that board effectiveness is marginally improving, our survey-based study conducted in 2014 finds that much work still needs to be done:

- Board selection and improvement processes continue to be flawed in many cases.
- The board oversight function in many organizations needs to be more clearly defined and executed.
- Competition for senior management and investment talent is often hampered by uncompetitive compensation structures.

It will require a concerted, ongoing joint effort by pension plan stakeholders, pension organization boards, regulators, and legislators to change the current situation.

On Long-Horizon Investing

There was broad consensus among the survey participants that conceptually and aspirationally, long-horizon investing is a valuable activity for both society, and for their own fund. However, there is a significant gap between aspiration and reality to be bridged. Barriers to putting good long-horizon investing intentions into practice include:

- Regulations that force short-term thinking and acting.
- A short-term, peer-sensitive environment that makes it difficult to truly think and act long-term.
- The absence of a clear investment model, performance metrics, and language that fit a long-term mindset.
- Alignment difficulties in outsourcing, and compensation barriers to in-sourcing.

Here too a concerted effort (both inside pension organizations and among them) will be required to break down these barriers.

On The Relationship between Governance and Long-Horizon Investing

We found statistically positive relationships between the governance quality rankings and the long-horizon investment quality rankings. This raises the question of causation. Is the measured correlation merely a statistical artifact of the biases of the 81 survey respondents? Or is better governance really driving long-horizon investing quality? The qualitative commentary provided by the survey respondents make a plausible case for the latter interpretation.

PART II: KEY FINDINGS FROM PRIOR GOVERNANCE RESEARCH

Anthropologists O'Barr and Conley caused quite a stir in 1992 with their book "Fortune and Folly: The Power and Wealth of Institutional Investing".[3] After observing the behavior of nine major US pension funds over a two-year period, they concluded that the aim of the funds appeared to be focused more on responsibility deflection and blame management than on good governance and creating value for fund stakeholders. This observed behavior is very much in line with Keynes' 1936 remark about investment committees that "worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally...".[4]

A 1995 study in which we were involved surveyed 50 senior US pension fund executives on what they estimated the "excellence shortfall" to be in their organization. In other words, if the known barriers to excellence could be lifted out of their organizations, by how much might long-term investment performance improve? The median response was 66 bps. When asked to identify the sources of excellence shortfall, respondents most frequently cited poor decision-making processes, inadequate resources, and a lack of focus and clarity of mission.[5] Studies by Clark et al. in the UK (2006 and 2007) and by Clapman et al. in the USA (2007) confirmed the presence of these challenges in many pension organizations.[6]

An article by Clark and Urwin in the inaugural issue of the Rotman International Journal of Pension Management[7] (RIJPM Fall 2008) made these key observations about Boards of pension organizations:

- Understanding human behavior and cognitive biases is an important element in designing effective Board governance structures.
- Board members must be collegial, representative, and make a collective commitment to understand and fairly balance stakeholder interests.
- In reality, Boards often suffer from unacknowledged differences in individual decision-making styles, lack focus, and are overwhelmed by the range of issues they must deal with.
- In this context, the Board Chair role is critically important. The Chair must ensure there is a clear link between stakeholder expectations and the organization's culture, its strategic plan, and how it executes that plan. Most importantly, this person must command strong personal respect.

An article by Ambachtsheer, Capelle, and Lum in that same RIJPM issue[8] describes a pension fund governance survey first carried out by the authors in 1997, and repeated in 2005. Its key findings and conclusions are set out below.

Understanding the Pension Governance Deficit

The survey posed two open-ended questions to pension fund CEOs. One was about Board priorities; the other about organizational priorities. It also asked participants to rank 45 statements about governance, management, and operational effectiveness in their organizations. They were asked to indicate their

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[3] O'Barr and Conley (1992) "Fortune and Folly: The Wealth and Power of Institutional Investing". Irwin Books.
[4] Keynes (1936) "The General Theory of Employment, Interest and Money", Chapter 12. Palgrave Macmillan.
[5] Ambachtsheer, Boice, Ezra, McLaughlin (1995), "Excellence Shortfall in Pension Fund Management: Anatomy of a Problem", unpublished working paper.
[6] The studies by Clarke et al. are summarized in (2008) "Best-Practice Pension Fund Governance". Journal of Asset Management. See also Clapman (2007) "Model Governance Provisions to Support Pension Fund Best-Practice Principles". Stanford University Law School.
[7] Clark and Urwin (2008) "Making Pension Boards Work: The Critical Role of Leadership". Rotman International Journal of Pension Management, Fall.
[8] Ambachtsheer, Capelle, and Lum (2008) "The Pension Governance Deficit: Still With Us". Rotman International Journal of Pension Management, Fall.

disagreement/agreement with each statement on a scale from 1 (total disagreement) to 6 (complete agreement). Each statement was crafted so that the higher the assigned number, the greater the perceived effectiveness. The survey elicited 80 responses in 1997 and 81 in 2005 from diverse groups of pension organizations by type, size, and geography.

Table 1 sets out the CEO responses to the Board and managerial priorities questions in the 2005 survey. They saw big challenges for Board governance in three areas: Agency/Context issues, Board Effectiveness issues, and Investment/Risk Management issues. The biggest managerial challenge is strategic planning and its execution. Table 2 provides greater detail about each of these four perceived challenge areas. Note that while, on the one hand, the four areas are distinct, they are also the four key pieces of a larger pension governance and management puzzle. They revolve around the following questions:

1. How clear are pension Boards about the pension contracts they are overseeing and about the fiduciary duties of loyalty and even-handedness that oversight involves?
2. Does the Board understand the difference between Board governance and management accountability for achieving clearly agreed-on organizational goals? Can the Board ask the right questions about strategy and its execution?
3. Has the organization worked out a set of well-articulated investment beliefs that both the Board and management understand and truly believe in? Is it clear which stakeholders are bearing what risks?
4. Does the organization have the necessary resources to execute its strategic plan? If not, what are the blockages and what is the plan for removing them?

The relevance and importance of these questions is reinforced by the outcomes of the scoring process of the 45 survey statements. Table 3 compares the six lowest-scoring statements in 1997 and 2005. Note they are almost identical, and that, directly or indirectly, all six relate to Board effectiveness problems. Specifically, they point to Board selection and evaluation difficulties, to ineffective delegation to management, and to attracting and retaining top talent into the organization.

Table 1: Pension Fund Oversight and Management: What Really Matters?

1. What are the more important oversight issues?	**Proportion of Responses**
a. Agency / context issues	44%
b. Governance effectiveness issues	36%
c. Investment beliefs / risk management issues	20%
2. What are the more important management issues?	**Proportion of Responses**
a. Strategic planning / management effectiveness	73%
b. Agency / context issues	15%
c. Investment beliefs / risk management issues	12%

Source, RIJPM, Fall, 2008

Table 2: Pension Fund Governance and Management: Specific Challenges

1. **Agency / Context Issues**
   a. Balancing stakeholder interests
   b. Understanding the legal / regulatory environment
2. **Oversight effectiveness issues**
   a. Appropriate skill / knowledge set for the Board
   b. Clear delegation to management
3. **Investment beliefs / risk management issues**
   a. Understanding context-based risk and its management
   b. Informed investment beliefs and their relevance
   c. Shift to risk budget-based investment process
4. **Strategic planning / management effective issues**
   a. Resource planning, organization design, and compensation
   b. Clear delegation from the Board
   c. Effective information-technology (IT) systems

Source, RIJPM, Fall, 2008

Table 3: The Six Lowest Scoring Statements in 1997 and 2005

Ranking	1997	2005	Ranking
40	Compensation levels in our organization are competitive	Compensation levels in our organization are competitive	40
41	My Board of Governors does not spend time assessing individual investment managers or investments.	My Board of Governors does not spend time assessing individual investment managers or investments.	41
42	My Board of Governors examine and improve their effectiveness on a regular basis.	My Board of Governors examine and improve their effectiveness on a regular basis.	42
43	Our fund has an effective process for selecting, developing, and terminating members of the Board of Governors.	I have the authority to retain and terminate investment managers. .	43
44	I have the authority to retain and terminate investment managers.	Our fund has an effective process for selecting, developing, and terminating members of the Board of Governors.	44
45	Performance-based compensation is an important component of our organization design.	Performance-based compensation is an important component of our organization design.	45

Source: RIJPM, Fall, 2008

Recommendations for Action

Based on these findings, the article identified six opportunities for fixing the documented governance deficit that still existed in many pension organizations in the middle of the first decade of the 21st Century:

1. Redesign pension contracts to eliminate any existing incompleteness, over-complexity, and/or unfairness problems. This is usually not something Boards themselves can do, but their views will likely be carefully listened to by the contracting parties.
2. Create a Board skill/experience matrix to reflect the reality that while pension Boards need to be seen to be representative and hence legitimate, that is not enough. They must also possess the requisite collective skills and experience to be an effective governance body.
3. Initiate a Board self-evaluation protocol in order to identify and address weaknesses.
4. Ensure clarity between Board and management roles. Lack of clarity causes organizational gaps, compressions, and a great deal of frustration.
5. Adopt a high-performance stance through-out the organization and ensure it has the necessary human and technical resources to turn the aspiration into reality.
6. Make Board effectiveness a regulatory requirement. It would be a simple matter for pension regulators to require that pension organizations annual disclose the steps they are taking to ensure that an effective governance function is in place.

A significant outcome of this work was the establishment of the week-long Rotman-ICPM Board Effectiveness Program (BEP) for Pension and Other Long-Horizon Investment Organizations in 2011. Its curriculum covers all six of the 'action' opportunities listed above. The Program has been offered five times thus far, resulting in 153 BEP 'graduates' from 56 different organizations and 11 countries.[9]

[9] BEP6 and BEP7 will be offered February 9-13 and November 30-December 4 in 2015, Visit https://www.rotman.utoronto.ca/ProfessionalDevelopment/Executive-Programs/CoursesWorkshops/Programs/Pension-Management.aspx for more information

PART III: DESCRIPTION OF THE 2014 SURVEY AND THE SURVEY RESPONDENTS

An interesting dimension in the cited 2008 RIJPM article was the ability to compare the assigned CEO scores to the same statements in 1997 and 2005. Based on the average 1997/2005 scores, we found four statements related to strategic planning, Board self-evaluation, and HR/compensation practices showed the greatest improvement over the period. However, Table 3 indicates that these dimensions of pension fund governance and management were still among the lowest ranked among all 45 statements in 2005. The implication was that much work remained to be done.

The introduction to this paper noted that with nine years having passed since the 2005 survey, we decided to conduct the pension fund governance survey a third time in 2014. To focus more directly on Board governance matters, we pruned the 45 original survey statements down to the 23 that focused most directly on the governance function. Once again, we were able to achieve the high response rates of 1997 and 2005. Table 4 compares the demographics of the 2014 responding organizations with those of 1997 and 2005. Note that the 2014 responding group was considerably larger, less corporate, and more geographically diverse than the 1997 and 2005 groups.[10] Aggregate assets amounted to about USD $5 trillion. Table 5 indicates that the people who completed the survey were generally senior, long-tenured pension organization executives.

Table 4: Demographics of the 1997, 2005, and 2014 Responding Groups

Survey Respondents	1997	2005	2014
Number of Respondents	80	81	81
US	54%	44%	29%
Canada	46%	41%	28%
Europe		11%	31%
Asia, Australia, New Zealand		4%	14%
Public Sector	24%	41%	60%
Corporate	63%	38%	19%
Other	14%	21%	21%
Median plan size Billion USD	2.1	3.7	22.7

Table 5: Demographics of the People Completing the 2014 Survey

Global 23 Canadian 22 European 25 United States 11 Asia, Australia, NZ	Senior 54 CEO, CIO, Executive or Managing Director 27 Other Senior Titles
Long tenured in organization Average 12 years with organizations Range 1 to 35 years	**Long tenured in positions** Average 7 years in position Range 1 to 27 years

29 respondents represent ICPM Research Partners

[10] The "Other" category in Table 4 was a mix of multi-employer pension plans, union pension plans, fiduciary managers, and special-purpose organizations such as workers compensation insurers.

PART IV: 2014 SURVEY FINDINGS ON GOVERNANCE

We explained above that the respondents to the earlier 1997 and 2005 surveys were asked to rank 45 statements about governance, management, and operational effectiveness in their organizations. They were asked to indicate their disagreement/agreement with each statement on a scale from 1 (total disagreement) to 6 (complete agreement). Each statement was crafted so that the higher the assigned number, the greater the perceived effectiveness. As already noted, the 2014 survey was reduced to the 23 statements directly related governance effectiveness. In the analysis that follows, the 2014 responses to these 23 statements were compared to the 1997 and 2005 responses to the same 23 statements.

Insights from the Rankings

Figure 1 displays the distribution of responses to the 23 governance statements in 1997, 2005, and 2014. The general bias towards high rather than low scores is a common phenomenon with this type of survey design. However, note that the average ranking marginally increased over to the 17-year period (i.e., from 4.5 to 4.7 to 4.8), possibly indicating a marginal improvement in the effectiveness of pension boards over this period.

Figure 1: The Response Distributions in 1997, 2005, and 2014

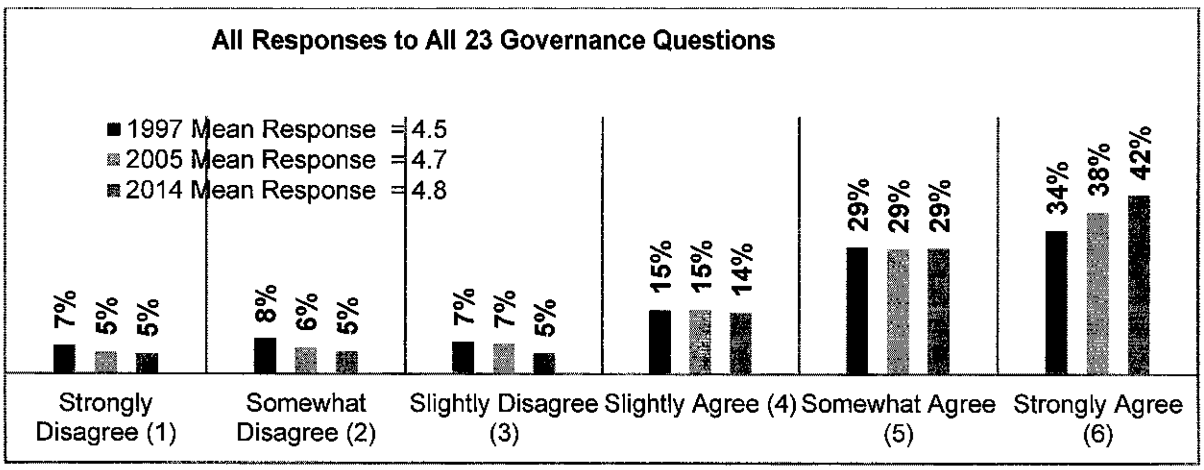


Table 6 compares the five highest-scoring statements in 2014 (i.e., indicating the highest satisfaction levels) with the five lowest-scoring statements (i.e., indicating the lowest satisfaction levels). Readers are invited to draw their own conclusions from Table 6. It seems to us there are elements of contradiction in these two sets of survey responses. For example, how is it possible for senior executives in pension organizations to, on the one hand, say they are getting the resources necessary to do their job, but on the other, say that compensation levels in the organization are uncompetitive? Similarly, how is it possible for senior executives in pension organizations to say that their Boards hold them accountable for results, but on the other, that they meddle in operational matters (e.g., the hiring and firing of investment managers)?

Table 6: Areas of Highest vs. Lowest CEO Satisfaction

GOVERNANCE

Highest agreement in latest survey	Mean Score 2014 Rank
My governing fiduciaries do a good job of representing the interests of plan stakeholders.	1
Developing our investment policy required considerable effort on the part of myself and the governing fiduciaries and it reflects our best thinking.	2
There is a clear allocation of responsibilities and accountabilities for fund decisions between the governing fiduciaries and the pension investment team.	3
My governing fiduciaries hold me accountable for our performance and do not accept subpar performance.	4
My governing fiduciaries approve the necessary resources for us to do our work.	5

Lowest agreement in latest survey	Mean Score 2014 Rank
I have the authority to retain and terminate investment managers.	19
Compensation levels in our organization are competitive.	20
My governing fiduciaries have superior capabilities relevant knowledge, experience, intelligence, skills necessary to do their work.	21
Our fund has an effective process for selecting, developing and terminating its governing fiduciaries.	22
Performance based compensation is an important component of our organizational design.	23

Table 7 compares the five lowest-scoring statements in 1997, 2005, and 2014. Remarkably, they were the same five each time. To us, they offer the clearest indication of where the challenges with governance in the pensions field continue to lie, and the consequences they continue to lead to. Specifically, inadequate selection processes for board members continue to lead to ineffective board oversight protocols, which in turn continue to lead to board meddling in operational matters, and to inadequate resourcing in such key functional areas as investing.

Table 7: The Five Lowest-Scoring Statements in 1997, 2005, and 2014

GOVERNANCE

Lowest agreement over 3 surveys	Mean Score 1997 Rank	Mean Score 2005 Rank	Mean Score 2014 Rank
Compensation levels in our organization are competitive.	18	18	20
My governing fiduciaries examine and improve their own effectiveness on a regular basis.	20	20	17
I have the authority to retain and terminate investment managers.	22	21	19
Our fund has an effective process for selecting, developing and terminating its governing fiduciaries.	21	22	22
Performance based compensation is an important component of our organizational design.	23	23	23

Table 8 assesses the regional variations in how the 23 statements were ranked. The clear message here is that the European respondents scored a number of governance statements materially lower than their counterparts in North America and the Pacific Rim. At the other end of the spectrum, pension organizations in Canada, Australia, and New Zealand were more likely to feature a performance-based element in their compensation arrangements.

Table 8: Regional Variations in Governance Quality

GOVERNANCE

Regional variation from mean response to questions	**Europe**	**Canada**	**USA**	**Asia Australia New Zealand**	**All plan mean response**
Performance based compensation is an important component of our organizational design.	−	+		+	3.7
My governing fiduciaries set a clear, appropriate, understandable and well-communicated framework for values and ethics.	−				5.1
My governing fiduciaries set clear, appropriate, understandable and well communicated standards for our organizational performance.	−				4.9
My governing fiduciaries do a good job of balancing over-control and under-control.	−				4.8
I have the necessary managerial authority to implement long term asset mix/balance sheet risk policy within reasonable limits.	−		+		5.0
There is a clear allocation of responsibilities and accountabilities for fund decisions between the governing fiduciaries and the pension investment team.				−	5.4

+	Response more than 0.5 above mean
−	Response more than -0.5 below mean

Additional Insights on Governance from Respondent Comments

In addition to ranking the 23 governance statements, survey participants were asked to address the question: "What do you see as the most important governance questions facing your Board at this time?" This is what they told us:

Board Composition and Skills

- *"Our board members should be more experienced and have more skills and intelligence."*
- *"Getting timely appointments..."*
- *"Board turnover: too much among beneficiary reps and legislative reps. Too little among appointed investment experts. Control rests with state legislature"*
- *"Too much board turnover (due to term limits). Too much staff turnover (due to retirements) Even though policies are well documented, the loss of institutional memory and continuity has the potential for negative outcomes..."*
- *"The most important issue in governance ...is illiteracy in committee members regarding pension fund management. Governance is in place but hardly operational..."*
- *"Selection of pension committee members with sufficient investment expertise ..."*

- *"Education of Board members… "*
- *"Getting new governing fiduciaries up to speed on pensions, pension investing, and fiduciary management (80% turnover) … "*
- *"…Ensuring ongoing Board capacity for increasing oversight and risk management functions.. "*
- *"…Securing the ability of the board to actually handle the (increasing) responsibilities allocated to the board through regulatory changes… "*

Board Process

- *"The board spends too much time on administrative issues and individual approvals of investments and not enough time on overall strategic positioning of the portfolio and longer-term macro risks and opportunities for the fund and the business. "*
- *"…blessed with a …truly outstanding group…., but they are collectively flying just above the tree tops instead of a higher fiduciary altitude. … time is largely spent at the deal and manager level… "*
- *"Refused to delegate manager hiring and firing… "*
- *"…(Management) can terminate while (Board) Investment Committee retains managers"*
- *"Time management: spending more time on interviewing and meeting with investment managers versus strategic business decisions… "*
- *"Staying purposefully high level/ strategic in their decision making and understand/ be comfortable with the importance of clear delineation of responsibilities between the board and the organization…. "*
- *"The board spends too much time on administrative issues and individual approvals of investments and not enough time on overall strategic positioning of the portfolio and longer-term macro risks and opportunities for the fund and the business."*

Compensation

- *"The design and implementation of market-competitive compensation plans to attract and retain high-caliber investment and senior management talent. As (a public entity we are) subject to restraint legislation and policies affecting compensation and business-related expenses. "*
- *"Alternative compensation models: no appetite to review or discuss these. "*

Clearly, these respondent comments strongly re-enforce the insights extracted from the survey statement rankings.

PART V: 2014 SURVEY FINDINGS ON LONG-TERM INVESTING

Consistent with the design of the governance component of the survey, respondents were also asked to rank their agreement/disagreement with 22 statements related to the organization's attitudes and practices regarding long-horizon investing on a scale from 6 to 1. Below, we report their responses, both to the 22 statements and to our invitation to share any comments they might have on the topic.

Insights from the Rankings

Figure 2 displays the distribution of assigned rankings to the 22 long-horizon investing statements. Note the shape of the distribution is the same as those of the governance quality rankings, with a strong bias towards assigning high rankings. Recall that the average 2014 governance quality ranking was 4.8, almost identical to the average long-horizon investing satisfaction ranking of 4.9.

Figure 2: The Long-Horizon Investment Ranking Distribution

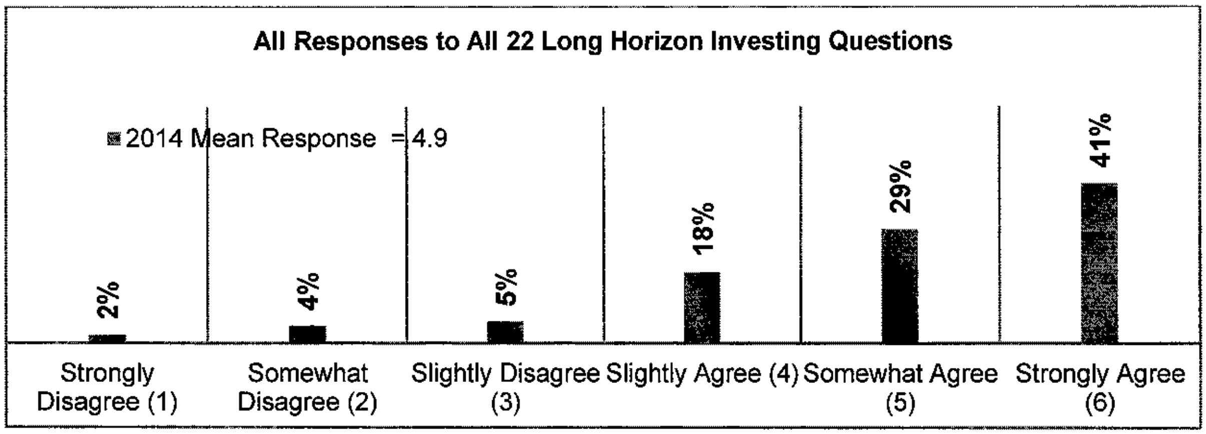


Table 9 shows a strong dichotomy between highly-ranked aspirational statements about long-horizon investing, and the much lower-ranked implementation realities. For example, on the one hand, pension funds seem to have good policy intentions and strong beliefs that long-horizon investing is a potentially promising value-adding activity. On the other hand, survey respondents indicate they have considerable difficulties with such implementation activities as creating proper incentives for long-horizon investing, participating in constructive Environmental, Social, and Governance-related and engagement strategies, and designing effective performance monitoring and measurement systems.

Table 10 provides a geographic breakdown of the long-horizon investing rankings. It shows an interesting contrast with Table 8, which provided a geographic breakdown of the governance quality rankings. Whereas European pension organizations scored lower on a number of key governance criteria in Table 8, they score higher on two key long-horizon investing criteria (e.g., in engagement strategies and in integrating ESG criteria into investment decision-making).

Table 9: Highly-Ranked vs. Lowly-Ranked Long-Horizon Investing Statements

LONG HORIZON INVESTING

Highest agreement	Mean Score 2014 Rank
We believe that the capability to invest for the long-term is a significant advantage in creating value.	1
Our organization's statement of investment policy explicitly states that we invest for the long-term.	2
Specific components of our Fund are explicitly designated to focus on investing for the long-term.	3
We have a specific overall allocation policy to implement a long-term orientation in our Fund.	4
We believe that our long-term investing protocols create significant value.	5

Lowest agreement	Mean Score 2014 Rank
We (or our managers on our behalf) have explicit policies for engaging corporations (or other organizations) we invest in when we think proactive engagement is warranted.	18
The mandates for each long-term component explicitly express long-term objectives and shorter-term downside tolerance.	19
Our approach to evaluating long-term fund components is meaningfully different from other components.	20
The investment manager compensation for the long-term fund components has been explicitly designed to reflect the long investment horizon.	21
We (or our managers on our behalf) explicitly integrate environmental and social factors into deciding which corporations we invest in.	22

Table 10: Regional Variations in Long-Horizon Investing Rankings

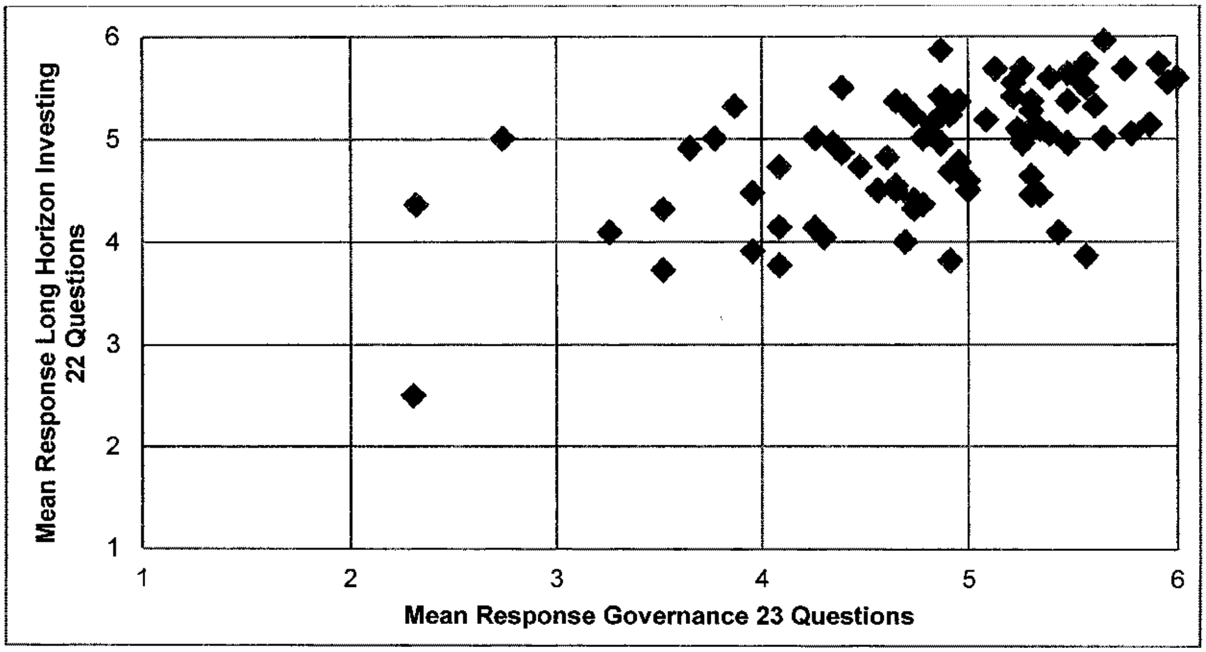
LONG HORIZON INVESTING

Regional variation from mean response to questions	Europe	Canada	USA	Asia Australia New Zealand	All plan Mean Response
We or our managers on our behalf have explicit policies for engaging corporations or other organizations we invest in when we think proactive engagement is warranted.	+	−			4.4
We or our managers on our behalf explicitly integrate environmental and social factors into deciding which corporations we invest in.	+	−	−		4.1
Specific components of our Fund are explicitly designated to focus on investing for the long-term.				−	5.5

+	Response more than 0.5 above mean
−	Response more than -0.5 below mean

It is tempting to attach considerable weight to the positive correlation between the governance scores and the long-horizon investing scores indicated in Figure 3.[11] Does stronger pension governance really lead to a greater emphasis on long-horizon investing? Or does it simply reflect a consistent high/low ranking bias by the survey participants? (i.e., some participants may have a consistently positive ranking bias, while other may have a consistently negative bias). The written participant comments below shed light on how these questions might be answered.

Figure 3: A Positive Correlation between Governance and Long-Horizon Investing Scores?



Additional Insights on Long-Horizon Investing from Respondent Comments

In addition to ranking the 22 long-horizon investing statements, survey participants were asked to address the question: "Please feel free to elaborate on any of the rankings you have assigned. We would also like to learn more about your organization's journey towards long-horizon investing to date, and your intentions over the next three years." This is what they told us:

- *"...(We have) long term strategic planning, but we are facing regulation that forces us to think short term..."*
- *"...It is difficult to describe differences in our approach with respect to long-term and short-term investing. Our due diligence processes are consistently applied with a view to longer-term performance."*
- *"Really at the start of the journey but progressing fast. ... DB funds not always as long-term as they would like to be given de-risking."*
- *"In a peer sensitive environment, it is generally difficult to be truly long-term in investing. Even if the current board and investment team take long-term positions, competitive pressures can stand to dominate. In such cases, a change in the board can bring risks of change in approach. Extraction from long-term positions can be very expensive."*

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[11] The correlation coefficient is 0.55. Its t-value is 5.9, indicating a high degree of statistical significance.

- *"The long-term investing belief is now firmly rooted... A lot of work had to be done on policy making, mandate formulation and actually starting long-term mandates. We find it challenging to define a monitoring and guidance framework for long-term investing (we feel we need new "Language" there, Not many people seem to have answers to these questions)..."*
- *"...competitive advantage accrues to investors able to take a long view. This (led us to) high weightings in illiquid or semi-liquid investments. Returns have mostly been good but ... returns to external managers have been much better (fees!) ... long-termism did not sufficiently permeate our liquid investments...organized around market index-relative metrics. We are in the process of developing a much more joined-up approach, with ...internal investment selection...buy-to-hold and more substantial approach to sustainable ownership."*
- *"All our investments, apart from short term liquidity, are invested with a long-term perspective. ...We do not believe that the interests of external fund managers are genuinely aligned with ours..."*
- *"Long-term investing is less about time frame and more about alignment with long-term objectives of the investor and long-term structural trends (e.g. climate change). It is when you invest with an interest in the cashflow-generating potential of the investment over the long-term. It is not a buy and hold strategy. Investors who are permanently invested in equity indices are not long-term investors, even if they have low turnover/ no turnover"*
- *"...having long term liabilities does not entail a particular – and particularly patient – approach to investment. We may buy assets, that you would think of as "long term" – e.g. infrastructure or forests – but if markets or other developments create a situation where we find that selling is in the better interest of our clients, that is what we will do."*

To us, these comments suggest that the measured statistical correlation between the Survey governance quality rankings and the long-horizon investment quality rankings are likely not to simply reflect survey respondent biases. Plausibly, the comments suggest that better-governed pension funds do indeed 'think smarter', and as a result, have more effective long-horizon investment programs.

PART VI: KEY TAKE-AWAYS FROM THE 2014 SURVEY FINDINGS

In our view, the survey findings lead to three key conclusions:

1. On Governance: while there is some evidence of improvement in the governance of pension organizations since 1997, major concerns about how board members are selected and trained, about the effectiveness of board oversight processes, and about the ability to attract and retain key executive and professional skills remain.
2. On Long-Horizon Investing: the comfort with, and the aspirations for the concept of long-horizon investing has yet to be matched with the design and application of an effective suite of implementation strategies that can realize those aspirations.
3. On the Relationship between Governance and Long-Horizon Investing: the survey offers plausible evidence of a positive relationship between governance quality and long-horizon investing quality. This relationship is likely not a spurious one.

In short, there is still much work to do to materially strengthen the effectiveness of both the governance and long-horizon investing functions in pension organizations. Likely, better governance also means better long-horizon investing, which in turn likely means higher return investing.[12]

[12] See Ambachtsheer (2014) "The Case for Long-Termism", Rotman International Journal of Pension Management (Fall) for more on the connection between investment performance and long-horizon investing.

The AMBACHTSHEER Letter

Sustainable Pension Design • Effective Pension Management

December 2014

THE EVOLVING MEANING OF 'FIDUCIARY DUTY':

IS YOUR BOARD OF TRUSTEES KEEPING UP?

"Years of focus on the duty of prudence by fiduciaries has generated myopic investment herding behaviors, undermined intergenerational pension equity, and disrupted attention to the duty of loyalty and impartiality.... ".

From "Reclaiming Fiduciary Duty Balance"
By Hawley, Johnson, and Waitzer (2011)

"The duty of impartiality requires fiduciaries to consider and balance the divergent interests of beneficiaries....including the intergenerational implications of their decisions.... ".

From "Reconnecting the Financial Sector and the Real Economy: A Plan for Action"
By Waitzer and Sarro (2014)

Pension Boards Lag Courts in Interpreting 21st Century 'Fiduciary Duty'

One of the most important, and possibly most underappreciated research projects funded by the Rotman International Centre for Pension Management (ICPM) over the course of the last four years was on the evolving meaning of 'fiduciary duty' for boards of pension organizations in the 21st Century. This work was conducted by legal scholars Jim Hawley, Keith Johnson, Doug Sarro, and Ed Waitzer. Their work led to the two articles in the Rotman International Journal of Pension Management (RIJPM) from which we quote above.[1] The two quotes capture the essence of their message: pension boards lag 'the trajectory of the law' in their understanding of their fiduciary duties. Boards have some serious 'catch-up' work to do.

This *Letter* summarizes the conclusions of the ICPM 'fiduciary duties' project, and sets out a work plan for pension boards that want to keep up with the evolving meaning of 'fiduciary duties' in the 21st Century, rather than suffering the regret f having to play 'catch up' ball in possibly unpleasant circumstances a few years down the road.

Why Now?

Why now? The authors point to four 'inflection point' catalysts that argue for proactive action by the boards of pension organizations now, rather than reactive action later:

- <u>The Growth of Pension Funds</u>: collectively, the global pension fund sector has become a major global financial force, with assets somewhere in the \$30T-\$40T range. The growing sovereign wealth fund and the foundation/endowment fund sectors add materially to these numbers. Collectively, these massive asset pools represent the multi-generational financial interests of hundreds of millions if not billions of beneficiaries. Collectively, the investment decisions of these pools directly impact both how the global financial markets work, and how the global real economy works. With their scale and necessarily long-term perspective to understand and meet the retirement income needs their members, pension organizations should be highly motivated to ensure they understand, and are in fact fulfilling their fiduciary duties.

- The Pervasive Influence of Agents and Emphasis on the Short-Term: while the investment policy documents of pension organizations tend to emphasize long-termism, actual practices continue to reflect short-termism in many cases. This dichotomy is re-enforced through multiple channels: the media, how performance is measured, how incentive compensation is structured, and through the presence multiple intermediary agents (e.g., consultants, money managers). There is no natural alignment between the financial interests of these agents and those of trust beneficiaries. In such an increasingly complex world, fiduciaries are seriously challenged to articulate the best short and long-term interests of current and future beneficiaries, and to demonstrate they are actually serving these interests in a balanced manner through their investment policies.

- Over-Reliance on Simplistic Investment Theories: while investment theories such as the Efficient Markets Hypothesis (EMH) are elegant, the assumptions behind them are far from reflecting reality. For example, in the case of the EMH, material information about individual investments is not always known by all investors all the time; further, information that is generally known is not always interpreted identically by all investors, and is not always accurately reflected in asset prices. Also, investors are not always 'rational', and risk tolerances are not always stable. Investment returns are not independently and identically distributed. As a result, while events like the Global Financial Crisis (GFC) cannot happen in an EMH world, they do happen in the real world. The point is that attempting to exercise the fiduciary duties of prudence, loyalty, and impartiality by taking the assumptions and implications of the EMH as 'reality' is not defensible conduct today. Board of trustees have an obligation to understand the world as it is, and not as it is posited in order to create elegant investment theory.

- Recent Legal Responses to Financial System Dysfunction: the four legal experts in the two RIJPM articles point to a number of recent legal opinions and actions that bear on the evolving meaning of 'fiduciary duty' in the 21st Century. In a pensions dispute, the US Supreme Court ruled that fiduciary duty requires "trustees to take impartial account of all beneficiaries...both present and future". The Dutch pension act requires fiduciaries to take into account the interests of all plan stakeholders in setting policy and making decisions. The GFC prompted a number of actions against financial institutions and individuals working in these institutions for fiduciary misbehavior. In contrast, the Supreme Court of Canada recently ruled against a class action initiated by a corporation's bond holders against its board of directors, ruling that the board had made reasonable decisions reflecting not only the interests of the corporation's creditors and shareholders, but also the corporation's broader obligations "as a good corporate citizen". Emerging out of these opinions and judgments is a new 'reasonable expectations' standard for the exercise of fiduciary duty. This emerging view contrasts sharply with the historical view that attention to fiduciary duty could be demonstrated by engaging in a standard box-checking exercise drawn up by legal counsel.

There is a fifth 'why now' argument we would add to the four offered by the cited legal experts:

- Passive Acceptance of Unsustainable Pension Designs: readers of this *Letter* know of our discomfort with the traditional DB and DC pension designs. In our view, neither design fully acknowledges the differing needs of the young and the old today, as well as the financial interests of the young and the old of tomorrow. As a result, these traditional designs are problematic in a number of ways (e.g., the one-size-fits-all problem, the fuzzy property rights problem, the fuzzy risk definition and allocation problem). We set these views out in detail in a recent invited paper titled "Taking the Dutch Pension System to the Next Level: a View from the Outside".[2] If the duty of impartiality requires pension fiduciaries to consider and balance the divergent interests of various classes of beneficiaries and other risk-bearing stakeholders (including the intergenerational implications of their decisions), then it is reasonable to expect that these fiduciaries also have a duty to test the pension design of the plan they are governing for its long-term sustainability and for fairness regarding all plan stakeholder groups, present and future.

Now we move on from the 'why now?' question to the 'what now?' question. How should pension organizations individually, and collectively at the national and global pension community levels, respond to these five catalysts for action? The four cited law experts have some thoughts on these questions, as do we.

Responses at the Pension Organization Level

Stating the obvious, nothing much will happen at the organizational level unless its Board of Trustees (led by the Board Chair) is prepared to own the 'fiduciary duties' file. If that is the case, the following six-point check list may be helpful:

- Pension Design: do we have a fair, sustainable, understandable pension formula? How can we best address this question? What we would do if our formula doesn't pass a reasonable fair/sustainable/understandable test?
- Stakeholder Communications: are we clear about who are stakeholders are? Do we communicate with them effectively about pension design? About the value the pension organization is creating for them? How do we know our communication strategies are effective?
- Organization Design: do we have a cost-effective organization that produces 'value for risk' and 'value for money' in its key functions? How can we best address this question? What would we do if our organization doesn't benchmark well in its key functions, using credible metrics?
- Board Effectiveness: how effective are we as a Board? Do we have the right mix of skills and experience? Are we seen as trustworthy by our plan stakeholders? Are we public-minded? Do we measure our own effectiveness and improve our own performance?
- Risk Management: what risks do we need to measure and manage? Do we have the people, protocols, and technology to do this well? If not, what are we going to do about it?
- Investment Beliefs and Policies: do we have an investment program geared to generate plan member wealth through long-horizon return compounding? Is it working well? How do we know? Do we have an investment program geared to meeting the payment obligations to retirees? Is it working well? How do we know?

While living by this six-point checklist would undoubtedly produce a good score on the organizational 'fiduciary duties' scale, there is another 'fiduciary duty' dimension that also needs attention.

Collective Responses at the National and Global Levels

In their 2014 "Reconnecting the Financial Sector to the Real Economy" article, Waitzer and Sarro propose four specific initiatives that financial institutions such as pension organizations, as well as law makers and regulators, could collectively undertake to strengthen the expectations and responsibilities attached to the fulfilling 'fiduciary duties':

- Foster 'Win-Win' Collaborations: there is a 'trust dilemma' in situations where there is no clear short-term net (i.e., after-cost) benefit for a single organization to become a 'first mover' on an issue that may be of great long-term collective benefit. The way out of such a dilemma is for multiple parties to agree on the importance of the issue, and to share the cost of addressing it. Examples of such collaborations already exist (e.g., ICGN, PRI, WEF, ICPM, CII, CCGG, Eumedion, NAPF, ASFA, ACSI, ICPM).[3] The recent FCLT (*Focusing Capital on the Long-Term*) initiative opens up the prospect of direct investor/investee collaboration on such issues as fostering a long-term perspective in investing and the measurement of organization success.

- Create Legal Mechanisms to Protect Future Generations: a possible measure to fight short-termism in political decision-making is to establish a commissioner or ombudsman to represent the rights of future generations. Such mechanisms already exist in the environmental and human rights spheres. More day-to-day decision-making could be delegated to non-partisan, independent agencies or to senior administrators with guaranteed term lengths.

- Rethink Legislation: much post-GFC financial legislation and regulation has spawned "complicated rules breeding complicated systems", which in turn feed a box-checking 'is it legal?' mentality. A far-better approach would be to specify far-fewer broad, coherent, concise, enforceable rules that focus on core expectations. Courts can also play a constructive role here through emphasizing the 'reasonable expectations' principle.

- Reassert the Social Utility of the Financial Sector: the GFC and the events that followed it greatly exacerbated the lack of public trust and understanding of the financial system writ large. Many years of hard work will be required to regain that public trust, and to enhance public understanding of the vital role the financial sector in general, and the pensions sector in particular, play in mobilizing capital and in pricing and allocating financial risks in a well-functioning economy. The CFA Institute's *Future of Finance* initiative is an example of the work already underway to address this challenge.

In the exercise of their fiduciary duties, pension boards of trustees need to be aware of these collective national and global initiatives, and they need to understand the roles their organizations are playing (or should be playing) in moving one or more of these four initiatives towards successful implementation.

Doing the Right Thing

In conclusion, Waitzer and Sarro argue that too much of board governance in the financial sector has, and continues to focus on 'doing things right'. That is, on technical compliance with whatever rules exist at the time a decision needs to be made. They argue a fundamental mind shift is required. Instead of focusing on 'doing things right', boards must begin to focus on 'doing the right thing'. In their view, this will be the basis on which their decisions and actions will increasingly be judged, both in courts of law, and of public opinion.

So 'doing the right thing' based on balancing the financial interests of all relevant stakeholder groups is the new 21st Century standard for testing the proper fulfillment of 'fiduciary duty'. It is all a board of trustees can reasonably be expected to do. Is your board meeting this standard?

Endnotes

1. *The two articles are required reading for participants in the Rotman-ICPM Board Effectiveness Program (BEP). The articles and as well as information about BEP can be accessed through the ROTMAN ICPM website.*
2. *Presented and discussed in Amsterdam this past December 11 and 12. Accessible through the KPA ADVISORY SERVICES website.*
3. *Collaboration theory and practices is another unique area where Rotman ICPM has invested research monies. See Danyelle Guyatt's RIJPM articles "Pension Collaboration: Strength in Numbers" (2008), and "Effective Investor Collaboration: Enhancing the Shadow of the Future" (2013).*

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The AMBACHTSHEER Letter
Sustainable Pension Design • Effective Pension Management

March 2015

RETHINKING INVESTMENT BELIEFS FOR THE 21ST CENTURY

"Piketty sees the 60-year WW1-1970s period as an anomaly....which is now well behind us.... Future annual returns on capital will likely fall below the 5% experience of the 18th and 19th Centuries...."

The Ambachtsheer Letter - April 2014

Rethinking MPT

When we entered the investment business 45 years ago, the big new thing was Modern Portfolio Theory, or MPT for short. It was elegant and radical at the same time: elegant because it embodied a simple, understandable set of investment beliefs....and radical because these beliefs were at odds with the conventional wisdom of the day.

Today, MPT is no longer new, and no longer seen by most as elegant or radical. Just as Thomas Piketty (of "Capital in the 21st Century" fame) saw the 60-year period from World War 1 to the 1970s as a socio-economic anomaly in the grander sweep of things, so is MPT increasingly seen as an interesting anomaly in an investment context. At its core lay the Efficient Markets Hypothesis (EMH). It posits that investors act rationally, have access to the same information sets, interpret that information the same way, and consequently, hold the same risky market portfolio. Investors expressed their different tolerances for risk-bearing through their different weightings of this risky market portfolio and a risk-free asset.

Today, we recognize that we cannot invoke MPT as a substitute for thinking about how investment markets really work, and for thinking about how the resulting investment beliefs should lead us to invest the financial wealth of other people. This *Letter* traces the evolution of our own investment beliefs over the course of the last four decades, and the investment policy conclusions they lead to today.

The Lo and Minsky Contributions

MIT's Andrew Lo offers a plausible alternative to the EMH: the Adaptive Markets Hypothesis, or AMH for short.[i] Lo explains it as taking a biological/evolutionary approach to understanding investment markets and the people in it, rather than a robotic 'physics' approach. It is fear and greed that drives these markets, more than sober, rational calculation. In a similar vein, Washington University's Hyman Minsky posited the Financial Instability Hypothesis (FIH), arguing that financial stability in developed economies would naturally become a source of future instability through speculative risk-taking. His work was largely ignored until people acknowledged that the Global Financial Crisis offered a text book example (a 'Minsky Moment') of the FIH in action.[ii]

In the tradition of Lo's AMH and Minsky's FIH, long-time readers of this publication will recognize Table 1 on the next page. It has played a central role in our prognostications about capital markets prospects for many years now, for three reasons:

1. The table reflects the FIH by reminding us that financial markets have mindsets that swing from extended periods of growing optimism to extended periods of growing pessimism.
2. It also reflects the AMH because these mindset swings impact pricing in the capital markets in predictable ways. Growing optimism leads to rising prices for risk assets, generous risk premium realizations, and hence falling

prospective risk premiums. Conversely, growing pessimism leads to falling prices for risk assets, negative risk premium realizations, and hence rising prospective risk premiums.

3. The table facilitates focused conversations about past investment eras, about the current one we are living through, and about periods during which one era transitions into another.

We stated the belief in our January 2014 *Letter* that the *Double Bubble Blues* era ended around 2010/2011, and that we have been transitioning into a new era which we called *Mature Capitalism*. Our challenge now is to visualize how a *Mature Capitalism* era might play out. A clue from Table 1 is that we should give it an optimistic spin, contrary to the prevailing mood of pessimism.

Conventional Narratives about the *Mature Capitalism* Era

As noted, most prognostications today about the unfolding future paint a rather dreary picture of it, with four defining elements:

- Demographics: as populations age and worker/ retiree ratios fall from 4:1 to 2:1 in the developed world, consumption, capital formation, productivity will weaken, and hence economic growth will also weaken.
- Fiscal Deficits: both families and governments are borrowing to make ends meet. This cannot go on forever. Eventually, a day of reckoning will come. This too will dampen future economic demand, and hence growth prospects.
- Geopolitical Risks: seem to always be with us, with an assertive China, a belligerent Russia, and an unsettled Middle East making current headlines.
- Environmental Risks: are also in play in the form of global warming and changing weather patterns, which in turn cause wide-spread floods and droughts. The concomitant financial risk relates to assets becoming 'stranded' as the full costs of production are internalized (e.g., for carbon emission and water pollution).

If these four elements fully defined the now-unfolding *Mature Capitalism* era, one would think they would be reflected in how markets are pricing long-horizon financial assets such as equities. Yet, the earnings yield of the S&P500 is about 5% today, versus a long term average somewhere between 6% and 7%. In short, the pessimism embedded in the demographics, debt, geopolitical conflict, and climate change narratives don't seem to be embedded in the pricing of risky USA-based assets. European and Emerging Markets equities appear to be somewhat more conservatively priced at earnings yields of 6% and 7% respectively.[iii] Why are equity prices not deep in the dumps? Our January 2014 *Letter* referenced an *FAJ* article by William Bernstein titled "The Paradox of Wealth" as an explanation.

The Paradox of Wealth

Bernstein offers four reasons for why *Mature Capitalism* might turn out better than most people expect:

Table 1: Entering the Eighth Capital Markets Era Since WW1

Investment Era	Investor Mindset	Approximate Time Span	Dividend Yield Change	Realized *ERP**
The WW I Decade	Pessimistic	10 years	5% → 7%	- 5%
Roaring Twenties	Optimistic	10 years	7% → 4%	+ 12%
Dirty Thirties/ Fateful Forties	Pessimistic	20 years	4% → 7%	0%
Pax Americana I	Optimistic	20 years	7% → 3%	+ 8%
Scary Seventies	Pessimistic	10 years	3% → 6%	- 3%
Pax Americana II	Optimistic	20 years	6% → 1%	+ 9%
Double-Bubble Blues	Pessimistic	10 years	1% → 2%	- 6%
Mature Capitalism?	Optimistic?	20 years?	2% → ?%	?%

* Stock returns come from *Triumph of the Optimists* by Dimson, Marsh, Staunton. Bond returns are based on a hypothetical CPI-linked bond with a real yield of 2.5%. If the actual LT TIPS return had been used for the *Double-Bubble Blues* era, the realized ERP would have been -10%.

1. Scientific rationalism: it is unduly pessimistic to assert that all things worth discovering or inventing have already been discovered and invented. New discoveries and inventions will continue to accumulate and add to societal wealth in this century.
2. Property rights buttressed by the rule of law: the evidence in support of this prosperity factor is overwhelming. Wealthy developed economies already have this property rights/rule of law attribute. Poorer developing economies would benefit greatly from acquiring it.
3. Well-functioning capital markets: despite the realities of the AMH and FIH, well-functioning capital markets are essential to transforming savings into wealth-producing capital on a large scale. Institutional investors can and should play a critical role in making capital markets more functional.
4. Modern communication and transportation technologies: it is not sufficient to simply produce the goods and services consumers want. They also need to know about them and be able to easily access them. To this end, communication and transportation technologies continue their march towards greater effectiveness and lower costs.

Now for Bernstein's paradox: increasing societal wealth in a developed economy does not logically mean increasing returns on capital. In fact, quite the opposite: increasing wealth logically lead to lower returns on capital. Why? Because increasing capital productivity decreases demand for new capital. At the same time, the decreasing urgency of spending income on immediate consumption increases the supply of capital.

Piketty comes to the same 'lower future returns on capital' conclusion in his "Capital in the 21st Century" book. He calculates a steady 5% return on productive capital (including real estate) in 18th and 19th Century France and the UK. He then observes an extended period of capital destruction through WW1, the Great Depression, and WW2, followed by an extended, post-WW2 high-growth reconstruction/baby boom period accompanied by high returns on capital (i.e., the *Pax Americana I* and *II* eras in Table 1 above). That period is now behind us. With high-return opportunities declining, and a potentially increasing savings rate as societal wealth and income continue to concentrate, he foresees a decline in the return on productive capital from 5% to 4% as a logical consequence.

The S&P500 Entrails: A Closer Look

A quick look back at Table 1 confirms Bernstein/ Piketty 'lower returns on capital' assessment. Note the S&P500 divided yield was 7% at the start of Pax Americana I (i.e., 1950ish). Fifty years later, by the end of Pax Americana II (i.e., 2000ish), it had dropped to 1%. Table 2 on the next page offers a closer look at the S&P500 entrails in the *Double Bubble Blues* era (approximately 2000-2010), and the first four years of the *Mature Capitalism* era.

To read the table, some definitions are required:

- Dividend Yield: dividends paid in the year divided by average index value.
- Net Buy-Back Yield: net share repurchases in the year divided by average index value. While gross repurchases data is generally available, new share issuance is not. Based on some rough calculations, we assumed a relatively low rate of new share issuance at 0.5% of share value per year.
- Payout Yield: sum of Dividend Yield and Net Buy-Back Yield.
- Plowback Yield: Difference between Earnings Yield and Payout Yield. These are the earnings retained be S&P500 companies after paying out dividends and net share repurchases divided by average index value.
- Earnings Yield: Net earnings for the year divided by average index value.
- LT TIPS Yield: year-end 30-year TIPS yield.
- Implied ERP: Difference between Earnings Yield and LT TIPS Yield. The calculation implicitly assumes zero real earnings growth, and hence is arguably a conservative long term estimate.
- Index Value: year-end index value.
- Trailing Earnings: Net earnings for the year.

Table 2 makes it clear why the *Double Bubble Blues* Decade era was as painful as we predicted it would be in 2000: the implied Equity Risk Premium at that time was negative. It took until 2010 for the Implied ERP to hit a comfortable 5.0%. Note that even now, with the S&P500 up 800 points since 2010, the ERP still stands at 4.6%.

Table 2: S&P500 Fundamentals in Transition from *Double Bubble Blues* to *Mature Capitalism*

Year	Dividend Yield	Net Buy-Back Yield	Payout Yield	Plow-Back Yield	Earnings Yield	LT TIPS Yield	Implied ERP	Index Value	Trailing Earnings
2000	1.20%	0.70%	1.90%	1.70%	3.60%	3.70%	-0.10%	1320	$50
2001	1.30%	0.80%	2.10%	0.00%	2.10%	3.50%	-1.40%	1148	$25
2002	1.60%	0.80%	2.40%	0.60%	3.00%	2.70%	0.30%	880	$28
2003	1.80%	1.10%	2.90%	2.10%	5.00%	2.30%	2.70%	1112	$49
2004	1.70%	1.50%	3.20%	1.80%	5.00%	1.90%	3.10%	1212	$59
2005	1.80%	1.70%	3.50%	2.50%	6.00%	2.00%	4.00%	1248	$70
2006	1.90%	2.20%	4.10%	2.00%	6.10%	2.80%	3.30%	1418	$82
2007	1.90%	4.10%	6.00%	-1.50%	4.50%	2.50%	2.00%	1468	$66
2008	2.60%	2.40%	5.00%	-3.60%	1.40%	2.40%	-1.00%	903	$15
2009	2.50%	0.90%	3.40%	2.30%	5.70%	2.00%	3.70%	1115	$51
2010	2.00%	2.10%	4.10%	2.70%	6.80%	1.80%	5.00%	1258	$77
Mean	1.80%	1.70%	3.50%	1.00%	4.50%	2.50%	2.00%		
2011	2.10%	3.10%	5.20%	1.80%	7.00%	0.80%	6.20%	1258	$87
2012	2.30%	2.60%	4.90%	1.40%	6.30%	0.40%	5.90%	1426	$87
2013	2.10%	2.40%	4.50%	1.60%	6.10%	1.60%	4.50%	1848	$100
2014	2.10%	2.60%	4.70%	0.70%	5.40%	0.80%	4.60%	2059	$103
Mean	2.10%	2.70%	4.80%	1.40%	6.20%	0.90%	5.30%		

Sources: Bloomberg, Standard & Poor's, Garland, Lazonick

Should investors still be comfortable? Certainly 'yes' relative to the 2000 situation. And plausibly 'yes' if (a) US stocks in the index can maintain or grow their real earnings from here, and (b) if there is no permanent spike up in the LT TIPS yield from current levels. Further, recall our observation earlier that European and Emerging Markets equites are priced more cheaply than US equities.

Table 2 points to another unfolding trend: an apparent secular rise in Net Share Buybacks, from under 1% of the S&P500 index value in the early 2000s....to figures approaching 3% today, compared to a dividend yield of 2%. So corporations are now using more of their earning to buy back stock than they are to pay dividends. Further, when you add the two yields together (i.e., the Payout Yield), the sum of the two almost approaches the Earnings Yield. The implication is that corporations are now returning most of their earnings to shareholders in the form of dividends and share buy-backs, and retaining little for capital re-investment. This is yet another indication of the arrival of *Mature Capitalism.*

So where does all this lead to? The most important conclusion is that, despite the strong rise in the S&P500 in first four years of the *Mature Capitalism*, its valuation is not in 'bubble' territory. Pricing is consistent with a lower return-on-capital, lower growth, lower long-term interest rate environment. In such an environment, an equity risk premium in the 4% area does not seem out of line.

However, we advise readers to re-read last month's *Letter* on the excess return potential of what we called high-sustainability 'stakeholder value-creation' companies. There is a strong case that emphasizing this type of investment will continue to produce excess returns relative to the market portfolio in the *Mature Capitalism* era.

K Ambachtsheer

Endnotes:

i. *See, for example, Lo's 2011 book "A Non-Random Walk Down Wall Street".*
ii. *Look for a new film titled "Boom Bust Boom" on Hyman Minsky and his Financial Instability Hypothesis. Contact Marja Koolschijn at Cardano for more information. (m.koolschijn@cardano.com)*
iii. *See GMO's 4Q Quarterly Letter for more on this topic.*
iv. *For more on the share buy-back phenomenon, see William Lazonick's article "Profits Without Prosperity" in HBR – September 2014.*

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The AMBACHTSHEER Letter

Sustainable Pension Design • Effective Pension Management

July 2015

FROM AN 'UNKNOWN' TO A 'KNOWN':

MANAGING CLIMATE CHANGE RISK

"……as we know, there are known knowns…….there are known unknowns……but there are also unknown unknowns……".

Donald Rumsfeld
Former US Secretary of Defence

"The pace of consumption, waste, and environmental change has so stretched the planet's capacity that our unsustainable lifestyles can only precipitate catastrophes….".

Pope Francis

Categorizing Risks

While the language may be a bit tortured, Donald Rumsfeld's 2002 observation about the possibility of WMDs (weapons of mass destruction) in Iraq makes an important point. Not all risks (or uncertainties) are the same. The really dangerous ones are in the 'unknown' category, or what Nassim Taleb called 'the black swans', with the 2008/09 Global Financial Crisis (GFC) a vivid example still fresh in our minds. This *Letter* raises the question where climate change fits on the unknown/known risk scale. Pope Francis' recent pronouncements on the topic (cited above) suggest it is rapidly moving from the unknown to the known end of the scale.

Psychoanalysts point out there is even a fourth unknown/known risk category beyond the three Rumsfeld mentions: the 'unknown known'. It covers situations where we know about a reality, but pretend not to. This fourth category came to mind reading through the new 108-page Mercer study "Investing in a Time of Climate Change" (June 2015).[i] While the study will undoubtedly be useful to investors who currently treat climate change risk as a 'known unknown', it also has the potential to impact investors who continue to treat climate change risk as an 'unknown known' (i.e., pretend it doesn't exist). In our view, the structure of the study, and the detailed analyses carried out within that structure, makes 'plausible deniability' an increasingly untenable stance to maintain.

The goal of this *Letter* is to share our 'take' on the action implications of the Mercer study from both 'unknown known' and 'known unknown' risk management perspectives.

Risk and Pension Management

Looking through prior *Letter* titles, we had to go back to March 2011 to find one primarily focused on risk management in a pensions context ("Risk Management Revisited"). The motivation at that time was to conduct a post-GFC review of risk management. After a brief walk through portfolio and capital markets theory, the *Letter* made four key points:

* <u>Be clear about whose risks you are managing</u>: In a world of principals and agents, this is a critical question to address. In a pensions context, the focus must be plan stakeholder risks and not manager risks. Within stakeholder risks, intergenerational risk sharing is an especially challenging issue to address. Specifically, are the interests of future stakeholders fairly represented in the decisions made today?

* Make the 'Ex Post'/'Ex Ante' distinction clear: Simply put, assuming the past will always be a good guide to the future is a sign of intellectual laziness. While the future sometimes echoes the past, it does not repeat it. Visualizing possible futures is hard, but necessary work.

* Time-horizon matters: how much short-term changes in portfolio value matter is a key question to address. Investors who can answer 'they don't matter to us' have an important comparative advantage by being able to focus on the longer-term generation of growing cash-flows and wealth.

* Good governance matters: effective pension organizations have clearly-stated investment beliefs and live by them. This in turn requires strong governance processes that ensure this actually happens in practice.

More recently, the December 2014 *Letter* revisited these same key points from the perspective of fiduciary duty ("The Evolving Meaning of 'Fiduciary Duty': Is Your Board of Trustees Keeping Up?"). As, in a somewhat different context, did the April 2015 *Letter* titled "Investing for the Long-Term: From Saying to Doing".

Still more recently (at the Rotman ICPM Discussion Forum this past June 8), Harvard Business School's Luis Viceira shared preliminary findings from his research on the impact of time-horizon on the benefits of portfolio diversification. His work is supporting the intuition that while short-horizon return correlations have indeed increased materially since the 2008/09 GFC period, long-horizon return correlations have not.

Why? Because short-term return correlations are largely driven by the degree to which capital value changes are correlated, while long-term return correlations are largely driven by the degree to which investment cash-flow changes are correlated (e.g., changes in coupon, dividend, and rent payments). There is no evidence the correlations of these cash-flow changes have been rising.

The New Mercer Climate Change Study

This important distinction between short- and long-horizon risks is a good transition path to the Mercer climate change study. In essence, the study is about possible rates of conversion out of today's fossil fuels-driven economy into an economy with materially lower net carbon emissions, and the investment risks and opportunities arising from that conversion process. To address these questions, the study posits three possible 2015-2050 scenarios:

- **Transformation**: strong climate change mitigation puts us on a path to limiting global warming to 2°C above pre-industrial-era temperatures this century.
- **Coordination**: substantial climate change mitigation limits global warming to 3°C above pre-industrial-era temperatures this century.
- **Fragmentation**: sees only limited climate-mitigation action and a lack of coordination, resulting in a 4°C or more rise. The study further splits this scenario into a Lower- and Higher-Economic Damages sub-scenarios.

With these scenarios in place, the study draws on a series of integrated assessment models to project plausible interactions between climate science, economics, costs, and mitigation/adaptation strategies. Through these processes, three investment risk factors are monitored:

- **Technology**: the interplay between technology and the path to a low-carbon economy. Speed, scale, and success of low-carbon technologies, coupled with the extent of transformation/disruption of existing sectors, or the development of new sectors, are the key metrics for this factor.
- **Resource Availability / Impacts**: weather-driven impacts on the valuation of investments. These impacts can be chronic (e.g., driven by long-term changes in temperature or precipitation), or acute (e.g., driven by extreme or catastrophic events).
- **Policy**: international, national, and local measures (e.g., laws, regulations, targets, mandates) intended to reduce climate change risk by increasing the cost of carbon and/or incentivizing use of low-carbon alternatives.

This structure is then applied to assess the investment implications for asset classes and industry sectors over time on a scenario-by-scenario basis. These implications were found to be material and scenario-dependent. Here is a summary of the key findings:

- On the whole, the climate impact on long-term public and private equity returns is projected to be marginally negative.
- Real estate, infrastructure, and emerging market equity are expected to benefit from the Technology and Policy factors.
- Agriculture and timber show the widest ranges of scenario-driven impacts (i.e., from positive in 'Transformation' to negative in 'Fragmentation').
- The energy (especially coal and oil) and utilities (especially electric) industries have negative sensitivities to the Policy factor, and also to the Resource Availability/Impacts factor.
- The renewables and nuclear industries have positive sensitivities to the Policy and Technology factors.

In a 'So What/Now What?' section, the Study addresses the implications of these key findings.

'So What/Now What?'

The action implications come in five parts:

- Climate risk is inevitable, but being prepared can improve investment outcomes: uncertainty about the future should not be a barrier to action. Good governance is important here. It starts with realistic investment beliefs that encompass climate change risk. The Study clearly points to investment policy implications at the asset class and industry levels.

- Be clear about who is accountable for what in the investment decision-making process: a clear accountability line from the board through the investment chain will have to be drawn. Implications for how risk budgets are allocated and how investment results will be benchmarked need to be decided.

- Certain asset classes deserve particular attention: the study pointed to real estate, infrastructure, emerging markets equity, renewables, nuclear, agriculture, timber, energy, and utilities as deserving special attention. The three scenario structure forces attention on judging their probabilities of occurrence, and feeding those judgments back into investment policy decisions.

- Achieving the 'Transformation' scenario has materially positive investment implications relative to the 'Fragmentation' scenario: this means collaboration efforts towards achieving the 'Transformation' outcome have a potentially large payoff. Arguably, the Study findings suggest such efforts amount to the required exercise of fiduciary duty.[ii]

- Climate risk is more complex and longer-term than most other investment risks: traditional economic and financial risks related to inflation, the course of the business cycle, interest rates, etc., are typically analyzed in 3-5 year timeframes. The longer-term risks associated with climate change (e.g., sea-level rise, water availability, carbon price developments) usually fall outside this timeframe. Conscious effort will be needed to bridge the shorter- and longer-term time frames for risk management and mitigation of this diverse combination of investment risks.

The Study concludes that all this adds up to an action catalyst for the people and organizations it calls "future makers", and a wake-up call for the people and organizations it calls "future takers".

Risk Management Revisited

There are interesting and important parallels between the four key points we made in our cited March 2011 *Letter* "Risk Management Revisited", the new Mercer Study on climate change, and its implications for risk management. For example:

* Be clear about whose risks you are managing: specifically, the focus must be plan stakeholder risks and not manager risks. The Mercer Study makes a convincing case that climate change risks translate directly into plan stakeholder risks. In a macro sense, the Transformation scenario is an outcome well worth championing in collaboration with like-minded investors. In a more micro sense, a strategy of divesting from high-carbon emission investments doesn't require a moral justification. There is a far simpler 'high risk/low return prospects' justification.

* Make the 'Ex Post'/'Ex Ante' distinction clear: our own work on developing investment return expectations over the last three decades has been based on the explicit premise that the past is not a good guide to the future, and that visualizing possible futures is hard, but necessary work. The Mercer Study was clearly conducted with those realities in mind. A good deal of time and effort went into building the scenarios, the integrated assessment models, and identifying the relevant risk/return factors.

* Time-horizon matters: we noted that investors who can ignore short-term capital value fluctuations have an important comparative advantage by being able to focus on the longer-term generation of growing cash-flows and wealth. This makes ESG (Environmental, Social, and Governance) considerations of primary importance to these investors. The Mercer Study throws new light on these considerations.

* Good governance matters: we noted that effective pension organizations live by clearly-stated investment beliefs, and that this in turn requires strong governance processes. The Mercer Study offers multiple examples of this reality. For example, the 'So What/Now What?' section noted that the Boards and senior managements of pension organizations have critically important roles to play in converting the findings of the Study into organizational accountabilities and actions. Our February 2015 *Letter* "Does Better Governance Produce Better Outcomes?" confirms a positive association between good governance and good outcomes.

From 'Unknown' to 'Known'

In conclusion, the Mercer Study adds considerably to investor knowledge about the risk and return implications of climate change. It need not be an 'unknown' any longer. For climate change deniers, 'plausible deniability' about the existence of climate change and its potential impact on future investment returns is becoming an increasingly untenable stance to maintain.

Endnotes:
i The Mercer Study can be accessed by just googling its title on the internet. The Study was supported by 16 institutional investors managing a collective $1.5 trillion.
ii A powerful new example of collective action is the case of 886 Dutch citizens suing the Dutch Government for insufficient action on climate change. They demanded new standards requiring a 25% reduction in carbon emissions in five years. The judge decided in favor of the plaintiffs. Similar actions are being contemplated in other countries. The other notable target for collective action at this time is COP21, the next UN conference on climate change scheduled for December in Paris.

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Board Governance: A Conversation

Keith Ambachtsheer
President, KPA Advisory Services
Director Emeritus, Rotman International Centre for Pension Management
University of Toronto

ND State Investment Board – July 24, 2015

Survey #1
Demographics of the People Completing the 2014 Survey

Global
23 Canadian
22 European
25 United States
11 Asia, Australia, NZ

Senior
54 CEO, CIO, Executive or Managing Director
27 Other Senior Titles

29 respondents represent ICPM Research Partners

Long tenured in organization
Average 12 years with organizations
Range 1 to 35 years

Long tenured in positions
Average 7 years in position
Range 1 to 27 years

Survey #1
Areas of Highest vs. Lowest CEO Satisfaction

GOVERNANCE				
Highest agreement in latest survey	Mean Score 2014 Rank		**Lowest agreement in latest survey**	Mean Score 2014 Rank
My governing fiduciaries do a good job of representing the interests of plan stakeholders.	1		I have the authority to retain and terminate investment managers.	19
Developing our investment policy required considerable effort on the part of myself and the governing fiduciaries and it reflects our best thinking.	2		Compensation levels in our organization are competitive.	20
There is a clear allocation of responsibilities and accountabilities for fund decisions between the governing fiduciaries and the pension investment team.	3		My governing fiduciaries have superior capabilities relevant knowledge, experience, intelligence, skills necessary to do their work.	21
My governing fiduciaries hold me accountable for our performance and do not accept subpar performance.	4		Our fund has an effective process for selecting, developing and terminating its governing fiduciaries.	22
My governing fiduciaries approve the necessary resources for us to do our work.	5		Performance based compensation is an important component of our organizational design.	23

Survey #1
The Five Lowest-Scoring Statements in 1997, 2005, and 2014

GOVERNANCE			
Lowest agreement over 3 surveys	Mean Score 1997 Rank	Mean Score 2005 Rank	Mean Score 2014 Rank
Compensation levels in our organization are competitive.	18	18	20
My governing fiduciaries examine and improve their own effectiveness on a regular basis.	20	20	17
have the authority to retain and terminate investment managers.	22	21	19
Our fund has an effective process for selecting, developing and terminating its governing fiduciaries.	21	22	22
Performance based compensation is an important component of our organizational design.	23	23	23

Survey #1
Board Composition and Skills

- *"Our board members should be more experienced and have more skills and intelligence."*
- *"Getting timely appointments…"*
- *"Board turnover: too much among beneficiary reps and legislative reps. Too little among appointed investment experts. Control rests with state legislature."*
- *"Too much board turnover (due to term limits). Too much staff turnover (due to retirements). Even though policies are well documented, the loss of institutional memory and continuity has the potential for negative outcomes…"*
- *"The most important issue is governance…is illiteracy in committee members regarding pension fund management. Governance is in place but hardly operational…"*
- *"Selection of pension committee members with sufficient investment expertise…"*
- *"Education of board members…"*
- *"Getting new governing fiduciaries up to speed on pensions, pension investing, and fiduciary management (80% turnover)…"*
- *"…Ensuring ongoing board capacity for increasing oversight and risk management functions…"*
- *"…Securing the ability of the board to actually handle the (increasing) responsibilities allocated to the board through regulatory changes…"*

Survey #1
Board Processes

- *"The board spends too much time on administrative issues and individual approvals of investments and not enough time on overall strategic positioning of the portfolio and longer-term macro risks and opportunities for the fund and the business."*
- *"…blessed with a…truly outstanding group…, but they are collectively flying just above the tree tops instead of a higher fiduciary attitude. …time is largely spent at the deal and manager level…"*
- *"Refused to delegate manager hiring and firing…"*
- *"…(Management) can terminate while (Board) Investment Committee retains managers."*
- *"Time management: spending more time on interviewing and meeting with investment managers versus strategic business decisions…"*
- *"Staying purposefully high level / strategic in their decision making and understand / be comfortable with the importance of clear delineation of responsibilities between the board and the organization…"*

Survey #1
Compensation

- *"The design and implementation of market-competitive compensation plans to attract and retain high-caliber investment and senior management talent. As (a public entity we are) subject to restraint legislation and policies affecting compensation and business-related expenses."*

- *"Alternative compensation models: no appetite to review or discuss these."*

Board Effectiveness Program

For Pension and Other Long-Horizon Investment Institutions

Introduction, Aspirations, and Current Board Challenges

Module I, Session 1

Keith Ambachtsheer, Rotman ICPM

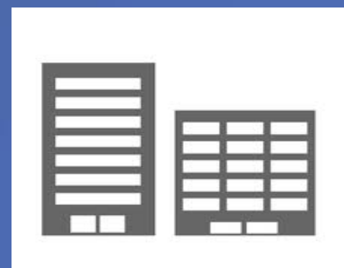
February 2015

Rotman ICPM International Centre for Pension Management

Rotman School of Management UNIVERSITY OF TORONTO

Participant Demographics

30 people | **21 organizations** | **7 countries**



- ✓ Brazil
- ✓ Canada
- ✓ Netherlands
- ✓ New Zealand
- ✓ South Africa
- ✓ United Kingdom
- ✓ United States

Integrated Pension Organizations (15)	Asset-Only Organizations (3)	"Other" Organizations (3)
10 DB 4 Hybrid 1 DC	25 Clients 1 Client 1 Client	2 Employers with DB Pension Plans 1 Pension Regulator

Participant Demographics

30 people | **21 organizations** | **7 countries**

- ✓ Brazil
- ✓ Canada
- ✓ Netherlands
- ✓ New Zealand
- ✓ South Africa
- ✓ United Kingdom
- ✓ United States

Integrated Pension Organizations (15)

# of Participants			# of Employers
2.8M	375K	54K	700
2.1M	335K	10K	450
1.5M	84K	9K	55
530K	70K		30
440K	70K		

Asset-Only Organizations (3)

Number of Clients
35
1
1

Participant Demographics

30 people	21 organizations	7 countries
		

- ✓ Brazil
- ✓ Canada
- ✓ Netherlands
- ✓ New Zealand
- ✓ South Africa
- ✓ United Kingdom
- ✓ United States

Assets Under Management (AUM $B)

$380B	$100B	$20B	$3B
$170B	$67B	$13B	$2B
$145B	$55B	$7B	$2B
$135B	$50B	$6B	$2B
$120B	$33B	$3B	

Proportion of Internally Managed Assets (%)

100%	65%	0%
100%	40%	0%
95%	34%	0%
90%	30%	0%
88%	38%	0%

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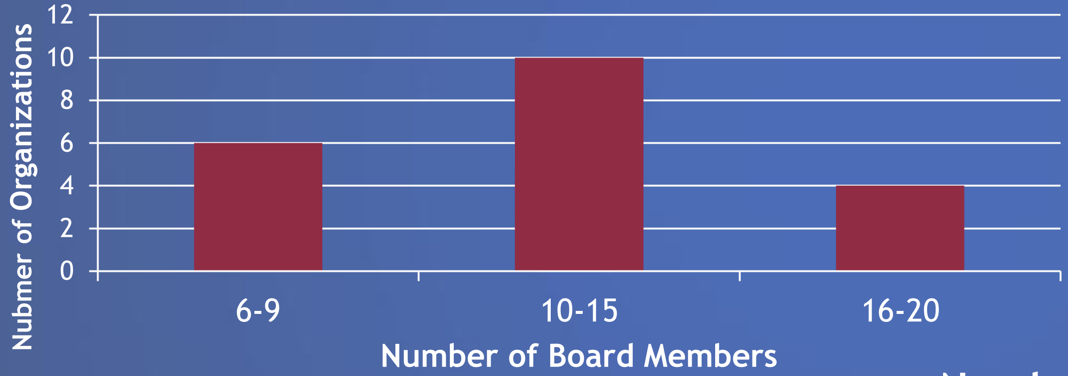
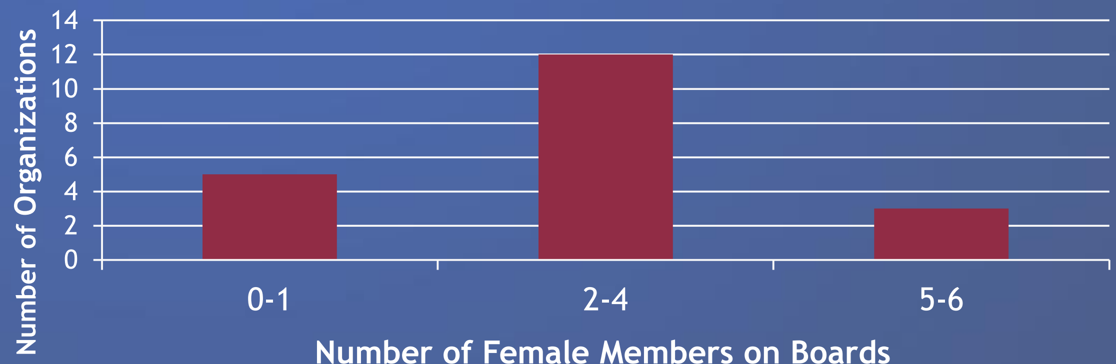
Board Composition – Membership

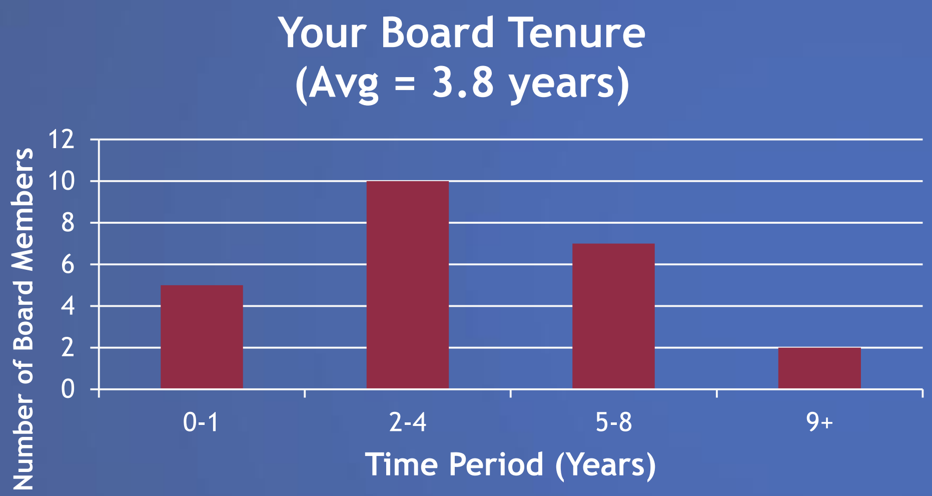
Size of Board
(Avg = 12 members)

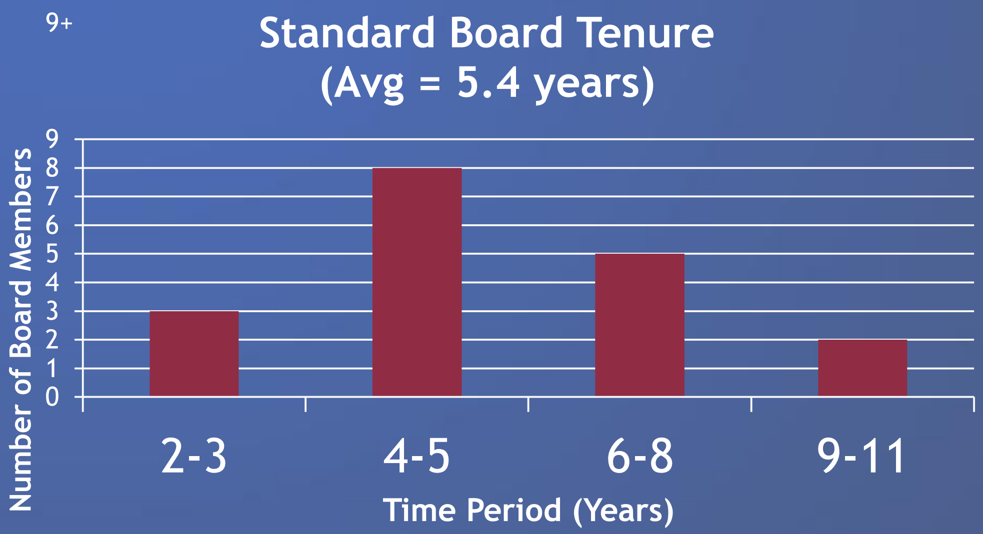


Number of Women on the Board
(Avg = 3 members)



Board Composition – Average Tenure





Survey #2
Comparable Pre-Event Questionnaire
(by weighted importance)

Rank	Challenge	BEP6 *	Average BEP 1-5 *
1	Pension Plan Design and Sustainability	2.8	2.9
2 (tied)	Stakeholder Communications	2.3	2.3
2 (tied)	Organization Design and Talent Attraction	2.3	2.2
4	Board Effectiveness	2.2	2.4
5	Risk Measurement and Management	2.1	2.4
6	Mission, Clarity, Organization Alignment of Interests, and Autonomy	2.0	2.3
7	Investment Beliefs	1.9	2.1
	Overall Average Rating	**2.2**	**2.4**

** Weighted Importance*

Survey #2
Board Effectiveness

Ranked #4: Board Effectiveness	Major Board Challenge Rank 4	Significant Board Challenge Rank 3	Modest Board Challenge Rank 2	Not an Issue for Us Rank 1	Weighted Importance Average
Ideal Boards understand their role in organization mission achievement and conduct themselves accordingly. However, this is often easier said than done. The Board role may not be clear. It may not have the requisite skill/experience set, and/or some Board members may have their own agendas.	0	8	16	3	2.2

Survey #2
Board Effectiveness

While our Board is generally collegial, there are occasional clashes based on ideology and political considerations.

We are facing differences of opinion on the relative importance of skill and experience on one hand, and representativeness on the other.

Our Board is not strategic enough. We get engrossed in details. Some members lack requisite skills and experience. We are not measuring our own effectiveness as a Board.

We are at a significant informational disadvantage relative to management. This is exacerbated by high Board turnover. Ironically, excessive documentation also creates the risk of information overload.

Our Board needs to become more proactive and decisive: front-footed, not back-footed.

Survey #2
Board Effectiveness -
Challenges from Pre-Event Survey

A: Board Effectiveness	Major Board Challenge Rank 4	Significant Board Challenge Rank 3	Modest Board Challenge Rank 2	Not an Issue for Us Rank 1	Weighted Importance
Our board has thorough experience in all areas needed for it to provide effective organizational oversight (e.g. Strategic Management, Investment and Risk Management, Communications, Audit and Control).	2	6	12	7	2.1

Survey #2
Board Effectiveness -
Challenges from Pre-Event Survey

B: Board Effectiveness	Major Board Challenge Rank 4	Significant Board Challenge Rank 3	Modest Board Challenge Rank 2	Not an Issue for Us Rank 1	Weighted Importance
There is complete clarity about the respective roles and responsibilities of our board and management.	1	4	13	9	1.9

Survey #2
Board Effectiveness -
Challenges from Pre-Event Survey

C: Board Effectiveness	Major Board Challenge Rank 4	Significant Board Challenge Rank 3	Modest Board Challenge Rank 2	Not an Issue for Us Rank 1	Weighted Importance
Our board members have significantly different (even conflicting) views on strategic issues.	0	9	13	4	2.2

Survey #2
Board Effectiveness -
Challenges from Pre-Event Survey

D: Board Effectiveness	Major Board Challenge Rank 4	Significant Board Challenge Rank 3	Modest Board Challenge Rank 2	Not an Issue for Us Rank 1	Weighted Importance
Our board has effective conflict-resolution and consensus-building processes.	1	4	12	10	1.9

The Evolving Meaning of 'Fiduciary Duty'
Why Now?

- The Growth of Pension Funds
- The Pervasive Influence of Agents and Emphasis on the Short-Term
- Over-reliance on Simplistic Investment Theories
- Recent Legal Responses to Financial System Dysfunction
- Passive Acceptance of Unsustainable Pension Designs

The Evolving Meaning of 'Fiduciary Duty'
A 'Fiduciary Duty' Checklist

- Pension Design
- Stakeholder Communications
- Organizational Design
- Board Effectiveness
- Risk Management
- Investment Beliefs and Policies

A 'Fiduciary Duty' Checklist

Pension Design

Do we have a fair, sustainable, understandable pension formula? How can we best address this question? What would we do if our formula doesn't pass a reasonable fair/ sustainable/ understandable test?

A 'Fiduciary Duty' Checklist

Stakeholder Communications

Are we clear about who our stakeholders are? Do we communicate with them effectively about pension design? About the value the pension organization is creating for them? How do we know our communication strategies are effective?

Organization Design

Do we have a cost-effective organization that produces 'value for risk' and 'value for money' in its key functions? How can we best address this question? What would we do if our organization doesn't benchmark well in its key functions, using credible metrics?

Board Effectiveness

How effective are we as a Board? Do we have the right mix of skills and experience? Are we seen as trustworthy by our plan stakeholders? Are we public-minded? Do we measure our own effectiveness and improve our own performance?

A 'Fiduciary Duty' Checklist

Risk Management

What risks do we need to measure and manage? Do we have the people, protocols, and technology to do this well? If not, what are we going to do about it?

A 'Fiduciary Duty' Checklist

Investment Beliefs and Policies

Do we have an investment program geared to generate plan member wealth through long-horizon return compounding? Is it working well? How do we know? Do we have an investment program geared to meeting the payment obligations to retirees? Is it working well? How do we know?

The Evolving Meaning of ‘Fiduciary Duty’
Collective Action Checklist

- Foster ‘Win-Win’ Collaborations
- Create Legal Mechanisms to Protect Future Generations
- Rethink Legislation
- Reassert the Social Utility of the Financial Sector

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Investment Beliefs: A Conversation

Keith Ambachtsheer

President, KPA Advisory Services

Director Emeritus, Rotman International Centre for Pension Management

University of Toronto

ND State Investment Board – July 24, 2015

The Tinbergen Pension Model

Tinbergen Principle: #goals = #instruments

Two Pension Goals

- Affordability
- Payment safety

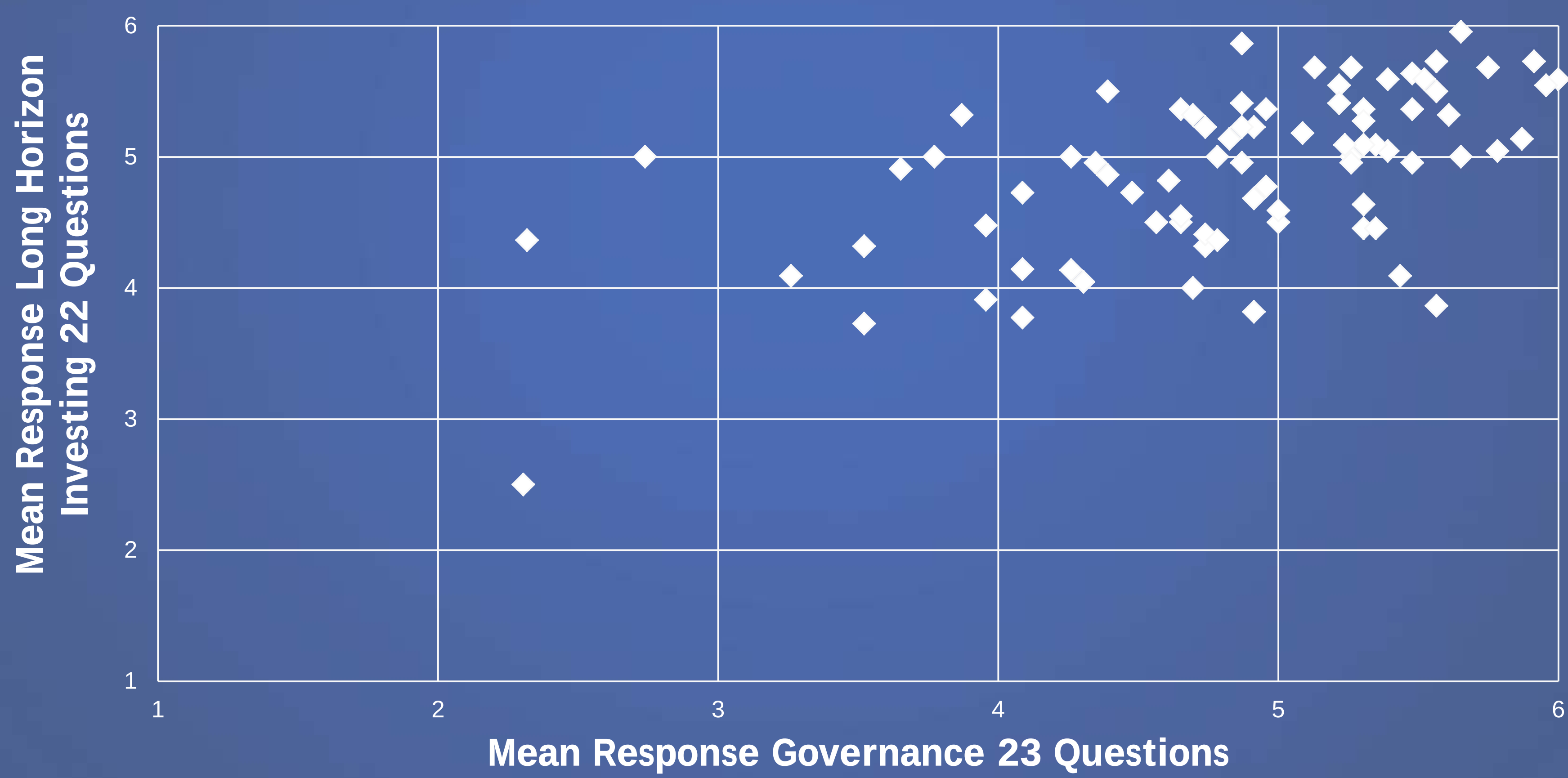
Two Pension Instruments

- LT return compounding
- A-L matching

Highly-Ranked vs. Lowly-Ranked Long-Horizon Investing Statements

LONG HORIZON INVESTING			
Highest agreement	Mean Score 2014 Rank	**Lowest agreement**	Mean Score 2014 Rank
We believe that the capability to invest for the long-term is a significant advantage in creating value.	1	We (or our managers on our behalf) have explicit policies for engaging corporations (or other organizations) we invest in when we think proactive engagement is warranted.	18
Our organization's statement of investment policy explicitly states that we invest for the long-term.	2	The mandates for each long-term component explicitly express long-term objectives and shorter-term downside tolerance.	19
Specific components of our Fund are explicitly designated to focus on investing for the long-term.	3	Our approach to evaluating long-term fund components is meaningfully different from other components.	20
We have a specific overall allocation policy to implement a long-term orientation in our Fund.	4	The investment manager compensation for the long-term fund components has been explicitly designed to reflect the long investment horizon.	21
We believe that our long-term investing protocols create significant value.	5	We (or our managers on our behalf) explicitly integrate environmental and social factors into deciding which corporations we invest in.	22

A Positive Correlation between Governance and Long-Horizon Investing Scores?



Survey Respondent Comments

- *"…(We have) long-term strategic planning, but we are facing regulation that forces us to think short-term…"*
- *"…It is difficult to describe differences in our approach with respect to long-term and short-term investing. Our due diligence processes are consistently applies with a view to longer-term performance."*
- *"Really at the start of the journey but progressing fast… DB funds not always as long-term as they would like to be given de-risking."*
- *"In a peer sensitive environment, it is generally difficult to be truly long-term in investing. Even if the current board and investment team take long-term positions, competitive pressures can stand to dominate. In such cases, a change in the board can bring risks of change in the board can bring risks of change in approach. Extraction from long-term positions can be very expensive."*
- *"The long-term investing belief is now firmly rooted… A lot of work had to be done on policy making, mandate formulation and actually starting long-term mandates. We find it challenging to define a monitoring and guidance framework for long-term investing (we feel we need new "Language" there. Not many people seem to have answers to these questions)…"*

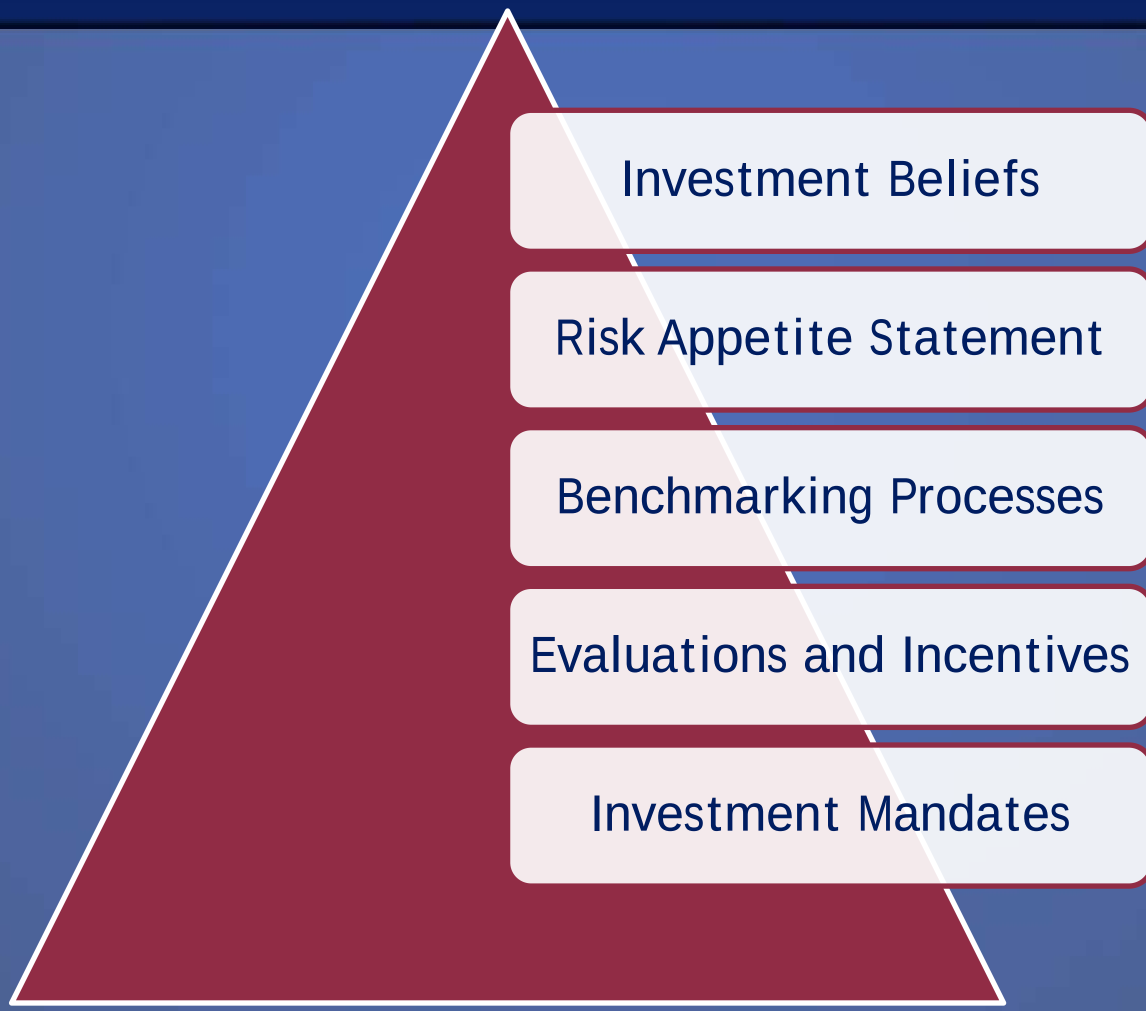
Survey Respondent Comments

- *"… competitive advantage accrues to investors able to take a long view. This (led us to) high weightings in illiquid or semi-liquid investments. Returns have been good but … returns to external managers have been much better (fees!) … long-termism did not sufficiently permeate our liquid investments … organized around market index-relative metrics. We are in the process of developing a much more joined-up approach, with … internal investment selection … buy-to-hold and more substantial approach to sustainable ownership."*
- *"All our investments, apart from short term liquidity, are invested with long-term perspective. …We do not believe that the interests of eternal fund managers are genuinely aligned with ours…"*
- *"Long-term investing is less about time frame and more about alignment with long-term objectives of the investor and long-term structural trends (e.g. climate risk). It is when you invest with an interest in the cashflow-generating potential of the investment over the long-term. It is not a buy and hold strategy. Investors who are permanently invested in equity indices are not long-term investors, even of they have low turnover/ no turnover."*
- *"…having long-term liabilities does not entail a particular- and particularly patient- approach to investment. We may buy assets, that you would think of as "long term" – e.g. infrastructure or forests- but it markets or other developments create a situation where we find that selling is in the better interest of our clients, that is what we will do.*

Four LT Investing Action Areas

- Reorienting the portfolio strategies and management of institutional investors.
- Unlocking value through engagement and active ownership.
- Improving the dialogue between investors and corporations.
- Shifting the Board's focus to support long-term strategy and sustainable growth.

Reorienting Investment Strategies



Why Investment Beliefs Matter

- Consistency
- Relevance
- Long-Term Focus
- Behavioral Biases
- Principal-Agent Problems
- Communication

Entering the Eighth Capital Markets Era Since WW1

Investment Era	Investor Mindset	Approximate Time Span	Dividend Yield Change	Realized ERP*
The WW I Decade	Pessimistic	10 years	5% → 7%	**- 5%**
Roaring Twenties	Optimistic	10 years	7% → 4%	**+ 12%**
Dirty Thirties/ Fateful Forties	Pessimistic	20 years	4% → 7%	**0%**
Pax Americana I	Optimistic	20 years	7% → 3%	**+ 8%**
Scary Seventies	Pessimistic	10 years	3% → 6%	**- 3%**
Pax Americana II	Optimistic	20 years	6% → 1%	**+ 9%**
Double-Bubble Blues	Pessimistic	10 years	1% → 2%	**- 6%**
Mature Capitalism?	**Optimistic?**	**20 years?**	**2% → ?%**	**?%**

* Stock returns come from *Triumph of the Optimists* by Dimson, Marsh, Staunton. Bond returns are based on a hypothetical CPI-linked bond with a real yield of 2.5%. If the actual LT TIPS return had been used for the *Double-Bubble Blues* era, the realized ERP would have been -10%.

S&P500 Fundamentals in Transition from *Double Bubble Blues* to *Mature Capitalism*

Year	Dividend Yield	Net Buy-Back Yield	Payout Yield	Plow-Back Yield	Earnings Yield	LT TIPS Yield	Implied ERP	Index Value	Trailing Earnings
2000	1.20%	0.70%	1.90%	1.70%	3.60%	3.70%	-0.10%	1320	**$50**
2001	1.30%	0.80%	2.10%	0.00%	2.10%	3.50%	-1.40%	1148	**$25**
2002	1.60%	0.80%	2.40%	0.60%	3.00%	2.70%	0.30%	880	**$28**
2003	1.80%	1.10%	2.90%	2.10%	5.00%	2.30%	2.70%	1112	**$49**
2004	1.70%	1.50%	3.20%	1.80%	5.00%	1.90%	3.10%	1212	**$59**
2005	1.80%	1.70%	3.50%	2.50%	6.00%	2.00%	4.00%	1248	**$70**
2006	1.90%	2.20%	4.10%	2.00%	6.10%	2.80%	3.30%	1418	**$82**
2007	1.90%	4.10%	6.00%	-1.50%	4.50%	2.50%	2.00%	1468	**$66**
2008	2.60%	2.40%	5.00%	-3.60%	1.40%	2.40%	-1.00%	903	**$15**
2009	2.50%	0.90%	3.40%	2.30%	5.70%	2.00%	3.70%	1115	**$51**
2010	2.00%	2.10%	4.10%	2.70%	6.80%	1.80%	5.00%	1258	**$77**
Mean	1.80%	1.70%	3.50%	1.00%	4.50%	2.50%	2.00%		
2011	2.10%	3.10%	5.20%	1.80%	7.00%	0.80%	6.20%	1258	**$87**
2012	2.30%	2.60%	4.90%	1.40%	6.30%	0.40%	5.90%	1426	**$87**
2013	2.10%	2.40%	4.50%	1.60%	6.10%	1.60%	4.50%	1848	**$100**
2014	2.10%	2.60%	4.70%	0.70%	5.40%	0.80%	4.60%	2059	**$103**
Mean	**2.10%**	**2.70%**	**4.80%**	**1.40%**	**6.20%**	**0.90%**	**5.30%**		

Sources: Bloomberg, Standard & Poor's, Garland, Lazonick

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Value-Creating Corporations

- Strong Board of Director involvement
- Performance-based compensation schemes
- Stakeholder identification and engagement processes
- Long-term orientation
- Emphasis on measurement and disclosure