ND STATE INVESTMENT BOARD MEETING

Friday, July 22, 2016, 8:30 a.m.
Bismarck State College
National Energy Center of Excellence
Energy Generation Conference Room #335
1500 Edwards Avenue Bismarck, ND

AGENDA

I. CALL TO ORDER AND ACCEPTANCE OF AGENDA

II. ACCEPTANCE OF MINUTES (May 27, 2016)

III. ELECTION OF OFFICERS 2016-17

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

IV. AUDIT COMMITTEE MEMBERSHIP 2016-17 (Board Acceptance) - Mr. Hunter (enclosed) (5 min)

V. GOVERNANCE

A. Strategic Investment Beliefs - Mr. Hunter (enclosed) (10 minutes)
B. Governance Education - Jeanna Cullins, Aon Hewitt (enclosed) (90 minutes)

============================== Suggested Break from 10:15 to 10:30 am ===========================

C. Board Education: Open Records - Ms. Janilyn Murtha (enclosed) (45 minutes)
D. Code of Conduct Affirmation - Mr. Schmidt (enclosed) (5 min) *Informational*
E. Investment Manager Catalog - Mr. Schmidt (enclosed) (5 min) *Informational*
F. 2016-17 Planning Cycle/Meeting Schedule - Mr. Hunter (enclosed) (5 min) *Informational*

VI. INVESTMENTS (30 minutes)

A. PERS & Highway Patrol Investment Policy Statement - Mr. Hunter (enclosed) **Board Acceptance**
B. Legacy Fund Investment Policy Statement - Mr. Hunter (enclosed) **Board Acceptance**
C. Budget Stabilization Investment Policy Statement - Mr. Hunter (enclosed) **Board Acceptance**
D. Private Equity, Fixed Income and Risk Update - Mr. Hunter (enclosed) *Informational*
E. Litigation Update: Status of GM Litigation and VW Litigation - Ms. Janilyn Murtha
Executive Session for Attorney Consultation Pursuant to 44-04-19.2 and 44-04-19.1(2) and (5)

VII. OTHER

Next Meetings: SIB - August 26, 2016, 8:30 am - State Capitol, Peace Garden Room
SIB Audit Committee - September 23, 2016, 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
MAY 27, 2016, BOARD MEETING

MEMBERS PRESENT:	Drew Wrigley, Lt. Governor, Chair Mike Sandal, Vice Chair Lance Gaebe, Commissioner of Trust Lands Mike Gessner, TFFR Board Adam Hamm, Insurance Commissioner Rob Lech, TFFR Board Mel Olson, TFFR Board Yvonne Smith, PERS Board Cindy Ternes, WSI designee
MEMBERS ABSENT:	Kelly Schmidt, State Treasurer Tom Trenbeath, PERS Board
STAFF PRESENT:	Eric Chin, Investment Analyst Connie Flanagan, Fiscal & Invt Ops Mgr Bonnie Heit, Assist to the SIB David Hunter, ED/CIO Bradley Kasper, Intern Fay Kopp, Dep ED/CRA Terra Miller Bowley, Supvr Audit Services Cody Schmidt, Compliance Officer Darren Schulz, Dep CIO
GUESTS PRESENT:	Alex Browning, Callan Associates Jeff Engleson, Dept. of Trust Lands Paul Erlendson, Callan Associates Andrew Goldberg, JP Morgan Eric Hardmeyer, Bank of North Dakota Jan Murtha, Attorney General's Office (TLCF) Tim Porter, Bank of North Dakota Bryan Reinhardt, PERS Jim Sakelaris, JP Morgan

CALL TO ORDER:

Lt. Governor Wrigley called the State Investment Board (SIB) meeting to order at 8:30 a.m. on Friday, May 27, 2016, at the State Capitol, Peace Garden Room, Bismarck, ND.

AGENDA:

IT WAS MOVED BY MS. TERNES AND SECONDED BY MR. GESSNER AND CARRIED ON A VOICE VOTE TO ACCEPT THE AGENDA FOR THE MAY 27, 2016, MEETING AS DISTRIBUTED.

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

MINUTES:

IT WAS MOVED BY MR. LECH AND SECONDED BY MR. OLSON AND CARRIED ON A VOICE VOTE TO ACCEPT THE APRIL 22, 2016, MINUTES AS DISTRIBUTED.

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

INVESTMENTS:

Asset/Investment Performance Overview – Mr. Hunter reviewed SIB clients assets under management as of March 31, 2016. Assets under management grew by approximately 4.9 percent or $513 million in the last year. Assets totaled $11,078,966,753 based on unaudited valuations as of March 31, 2016. The Pension Trust posted a net return of -0.41 percent (down $20 million) in the last year. During the last 5 years, the Pension Trust generated a net annualized return of 6.27% exceeding the performance benchmark of 5.87%. The Insurance Trust generated a net return of 0.79 percent (up $20 million) in the last year. During the last 5 years, the Insurance Trust generated a net annualized return of 4.8% exceeding the performance benchmark of 3.9%. The Legacy Fund generated a net investment loss of -0.33 percent for the year ended March 31, 2016. Since inception, the Legacy Fund has generated a net annualized return of 2.5% (over the last 4.5 years) exceeding the performance benchmark of 1.8%.

Every Pension Trust client generated positive excess returns for the 5 years ended March 31, 2016, with PERS and TFFR generating net investment returns of approximately 6.3% for the 5 years ended 3/31/16.

Every Non-Pension Trust client generated positive excess returns and positive risk adjusted excess returns for the 5 years ending March 31, 2016, if applicable, with one exception for the PERS Retiree Health Insurance Credit Fund.

Mr. Hunter also highlighted the investment work plan as of May 20, 2016.

JP Morgan Capital Markets – Mr. Andrew Goldberg presented his perspective on the current status of capital markets. Mr. Goldberg is a co-developer and oversees the development of JP Morgan’s quarterly “Markets Insights – Guides to the Markets” publication.

Callan Associates – Mr. Erlendson and Mr. Browning reviewed the performance of the Pension Trust, Legacy Fund, and Insurance Trust for the period ending March 31, 2016.

IT WAS MOVED BY MS. TERNES AND SECONDED BY MR. GESSNER AND CARRIED BY A VOICE VOTE TO ACCEPT CALLAN’S PERFORMANCE REVIEW AND REPORTS FOR THE PERIOD ENDING MARCH 31, 2016.

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

The Board recessed at 10:33 a.m. and reconvened at 10:45 a.m.

Commissioner Hamm was absent.

Bank of North Dakota (BND) Match Loan CD Program – Mr. Hunter stated staff is recommending that the BND CD Program be transferred from the Budget Stabilization Fund to the Legacy Fund prior to a portion of the Budget Stabilization Fund being used to offset expected budget shortfalls. Mr. Hunter stated the transfer is contingent upon BND guaranteeing a minimum 1.75% return noting that current 5-year Treasury rates, which the CD rates are based, were 1.37% as of May 23, 2016. The minimum return requirement will be reviewed at least annually if not more to ensure the Legacy Fund will be able to maintain its' long-term expected rate of return of approximately 6.4% per annum. Mr. Hunter stated if the investment is not transferred to the Legacy Fund, the future of the Program is uncertain from an SIB perspective.

Discussion followed on the funding protocol for the Bank of ND Match Loan CD Program. After discussion,

IT WAS MOVED BY MR. OLSON AND SECONDED BY MR. LECH AND CARRIED BY A ROLL CALL VOTE TO UPHOLD SIB *GOVERNANCE POLICY E-12 INVESTMENTS/BANK OF NORTH DAKOTA MATCH LOAN PROGRAM* WHICH STATES THE SOURCE OF FUNDING FOR THE CD'S SHALL BE DETERMINED BY THE INVESTMENT DIRECTOR; THAT FUNDING TO BE FROM THE MOST APPROPRIATE SOURCE CONSISTENT WITH LIQUIDITY AND RELATIVE YIELD AND RETURN OBJECTIVES AND CONSTRAINTS.

AYES: COMMISSIONER GAEBE, MS. SMITH, MR. LECH, MR. OLSON, MR. SANDAL, AND LT. GOVERNOR WRIGLEY
NAYS: MR. GESSNER, MS. TERNES
MOTION CARRIED
ABSENT: TREASURER SCHMIDT, COMMISSIONER HAMM, MR. TRENBEATH

Mr. Hunter will be reviewing this transaction with the Legacy and Budget Stabilization Fund Advisory Board at their June 15, 2016, meeting and will report back to the SIB.

Executive Session VW Litigation – Ms. Murtha requested the SIB enter into Executive Session for attorney consultation regarding the Volkswagen Securities Fraud Litigation pursuant to NDCC 44-04-19.2 and 44-04-19.1(2) and (5).

IT WAS MOVED BY COMMISSIONER GAEBE AND SECONDED BY MS. SMITH AND CARRIED BY A VOICE VOTE TO ENTER INTO EXECUTIVE SESSION FOR ATTORNEY CONSULTATION PURSUANT TO NDCC 44-04-19.2 AND 44-04-19.1(2) AND (5).

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

The SIB, RIO staff, Ms. Murtha (TLCF), were present during Executive Session. Executive Session began at 11:39 am and concluded at 11:57 am.

IT WAS MOVED BY MR. SANDAL AND SECONDED BY MR. OLSON AND CARRIED BY A ROLL CALL VOTE TO ACCEPT STAFF RECOMMENDATION AND DESIGNATE GRANT & EISENHOFER TO ACT AS LIAISON COUNSEL WITH REGARDS TO THE VW LITIGATION MATTER AND TO AUTHORIZE RIO'S EXECUTIVE DIRECTOR TO EXECUTE NECESSARY FUNDING AND PARTICIPATION DOCUMENTS AND PROCEED WITH THE STEPS REQUIRED UNDER NDCC 54-12-08 AND 54-12-08.1.

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

ADMINISTRATION:

Audit Committee Report – Ms. Miller Bowley reported on the May 19, 2016, SIB Audit Committee meeting. Mr. Thomas Rey, CliftonLarsonAllen, reviewed the financial audit scope and approach for RIO for the period of July 1, 2015 – June 30, 2016. The GASB 68 audit report for the period of July 1, 2014 – June 30, 2015, was also approved as well as the Audit Committee's work plan for the period of July 1, 2016 – June 30, 2017. The Audit Committee also received an update on the internal audit division's activities for the third quarter. Included in the SIB packet was a revised charter of the Audit Committee. Ms. Miller Bowley stated the Audit Committee has updated and revised their charter and will present it to the SIB for their review and acceptance on an annual basis going forward. SIB Governance Policy B-6, *Governance Process/Standing Committees*, references the Audit Committee and that the Audit Committee shall operate under the terms of a charter approved by the SIB. Ms. Miller Bowley requested the SIB's acceptance of the revised charter as presented.

IT WAS MOVED BY MS. SMITH AND SECONDED BY COMMISSIONER GAEBE AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE SIB AUDIT COMMITTEE CHARTER AS PRESENTED.

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

IT WAS MOVED BY MR. GESSNER AND SECONDED BY MR. OLSON AND CARRIED BY A VOICE VOTE TO ACCEPT THE AUDIT COMMITTEE REPORT AS PRESENTED.

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

Executive Review Committee – Mr. Sandal, Chair of the Executive Review Committee, Mr. Lech, and Lt. Governor Wrigley reviewed their final report on the evaluation of the ED/CIO of RIO for the period of January 1, 2015 – December 31, 2015. The Committee felt that the ED/CIO continues to provide the SIB with strong and trusted leadership and vision. The ED/CIO has proven his ability to evaluate the needs of the SIB, board clients, and the RIO team, and the ED/CIO strives for continuous improvement in all areas. The ED/CIO has the respect of his team, SIB, board clients, and the legislature. As importantly, the ED/CIO continues to represent the SIB with unquestionable integrity. The Committee felt the SIB is very fortunate to have Mr. Hunter in the role of Executive Director/CIO. The Committee also recommended a 3 percent salary increase for the ED/CIO effective July 1, 2016.

IT WAS MOVED BY MR. SANDAL AND SECONDED BY COMMISSIONER GAEBE AND CARRIED BY A VOICE VOTE TO ACCEPT THE EXECUTIVE REVIEW COMMITTEE REPORT AND THEIR RECOMMENDATION OF A 3 PERCENT SALARY INCREASE FOR THE ED/CIO EFFECTIVE JULY 1, 2016.

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

Employee Benefits Programs Committee – Included in the SIB meeting materials was the presentation given to the Employee Benefits Programs Committee on April 28, 2016, by Mr. Schulz. The report was for informational purposes only.

RIO Code of Conduct and Ethics Policy – Mr. Hunter reviewed RIO's current Code of Conduct and Ethics Policy and Travel Policy. Mr. Hunter also highlighted areas that had been enhanced to specifically clarify business expenses and fraud reporting.

OTHER:

The next meeting of the SIB is scheduled for July 22, 2016, at 8:30 a.m. at Bismarck State College, National Energy Center of Excellence, Energy Generation Conf Rm #335, 1500 Edwards Avenue, Bismarck, ND.

The next meeting of the SIB Audit Committee is scheduled for September 23, 2016, at 1:00 p.m. in the Peace Garden Room at the State Capitol.

ADJOURNMENT:

With no further business to come before the SIB, Lt. Governor Wrigley adjourned the meeting at 12:17 p.m.

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Lt. Governor Wrigley, Chair
State Investment Board

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Bonnie Heit
Assistant to the Board

AGENDA ITEM III.

TO: State Investment Board (SIB)

FROM: Dave Hunter, Executive Director/CIO

DATE: July 15, 2016

RE: Election of Officers – July 2016 to June 2017

In accordance with the SIB Governance Policy B-7 on "Annual Board Planning Cycle", the SIB will conduct an "Election of Officers" each July. The relevant By-Laws and Governance Policy of the SIB are highlighted immediately below for reference purposes.

CHAPTER 3 - OFFICERS AND DUTIES

Section 3-1. The officers of the SIB are a Chair and Vice Chair, one of which must be an appointed or elected member of the TFFR or PERS Board. The officers will be elected by the SIB to a one-year term at the first regularly scheduled meeting following July 1 of each year. Vacancies will be filled by the SIB at the first scheduled meeting following the vacancy.

Section 3-2. Chair. The Chair will preside at all meetings of the SIB.

Section 3-3. Vice Chair. In the absence of the Chair, the Vice Chair will perform the duties of the Chair.

Section 3-4. Executive Director. An Executive Director will be retained by the SIB. The Executive Director will serve at the SIB's pleasure, be responsible for keeping the records of the SIB and TFFR Board actions, and perform such duties as the SIB prescribes. The Executive Director will make out and give out all notices required to be given by law, procedures, or rules and regulations of the two boards.

Policy Implemented: June 23, 1995.

The chairperson's primary responsibility is to insure the integrity of the board's process. The chairperson is the only board member authorized to speak for the board other than in specifically authorized instances.

1. The duty of the chairperson is to see that the board operates consistent with state law, administrative rules, and its own policies.

   A. The board agenda will be the responsibility and be coordinated by the chairperson.
   B. Meeting discussion content will only be those issues which, according to board policy, clearly belong to the board and not the executive director, or in a board member's opinion, may deal with fiduciary responsibilities.
   C. Deliberation will be fair, open, and thorough, but also efficient, timely, orderly, and brief.
   D. The chairperson shall appoint a parliamentarian.

Board Action Requested

TO: STATE INVESTMENT BOARD

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

DATE: July 15, 2016

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 four Board representatives for the past year:

Rebecca Dorwart, CPA, CIA
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 four existing audit committee members. RIO also recommends that one new member, Mr. Joshua J. Wiens, be appointed as a new member of the Audit Committee to replace the position previously held by Karol Riedman, who no longer desires to serve on the Committee.**

Rebecca Dorwart, CPA, CIA

Ms. Rebecca Dorwart is currently the Human Resources Project Manager for MDU Resources Group, Inc., reporting to the Vice President of Human Resources. Responsibilities in the role of Human Resources Project Manager include analysis of executive and board member total compensation, tracking multi-employer plan status, working with outside consultants on pension and post-retirement valuations, leading the preparation of compensation related sections of the proxy statement and providing audit resolution assistance to business units on human resources related control deficiencies.

Prior to her new assignment, Rebecca was the Director of Internal Controls for MDU Resources Group, Inc. for four years where she was responsible for the risk assessment of company-wide financial processes and controls and the coordination of the company's Sarbanes-Oxley compliance program. She reported to the Vice President/Chief Financial Officer but also communicated with the Audit Committee of MDU Resources Group's Board of Directors.

Ms. Dorwart also served as the Director of Internal Auditing MDU Resources Group, Inc. for nine years 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.

Rebecca 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.

Joshua J. Wiens, CPA

Mr. Joshua Wiens currently serves as Chief Financial Officer of McDonalds of Bismarck-Mandan. Joshua manages the finances and accounting for six McDonalds stores in Bismarck and Mandan including all accounting and payroll related functions. He also manages the insurance and Affordable Care Act regulations and reporting for employees in addition to submitting monthly and annual financial statements to McDonalds Corporation. Joshua has served in this role since 2013 to date.

Mr. Wiens concurrently acts as Chief Financial Officer for Shiloh Christian School in Bismarck. Joshua effectively manages the business side of this private school which includes a $3.6 billion budget and working with a bank and contractor on construction projects and financing along with handling numerous vendor relationships for the school.

Prior to serving as CFO for his two current employers, Joshua was a Senior Audit Manager for Eide Bailly, LLP in Bismarck. Mr. Wiens specialized in non-profit/government, financial institution, small business and construction contractor audits and consulting. Clients ranged in size from $100,000 to $5 billion in assets and total revenues of up to $100 million. Joshua's 15 years of professional auditing experience with Eide Bailly is ideal for serving as a member of the SIB Audit Committee. His resume is attached for further reference including his career accomplishments and professional education.

Review of Board By-Laws relating to Audit Committee Member Qualifications:

The SIB By-Laws state "The other two members (of the Audit Committee) will be selected from outside of the SIB and be **auditors** with at least a CPA or CIA designation." RIO requests the SIB to confirm its' interpretation of **auditors** to be a degreed accounting professional with significant auditing experience in the public or private sector. This clarification is sought as the current Chair of the Audit Committee, Rebecca Dorwart, and newly recommended candidate, Joshua Wiens, are not currently employed as **auditors** even though both candidates have extensive professional auditing backgrounds, in addition to holding CPA and/or CIA designations.

JOSHUA J. WIENS, CPA

EMPLOYMENT

Shiloh Christian School
2014-Present Chief Financial Officer

- Manage the business side of the school which includes a $3.6 million budget, proposing annual tuition and teacher's salaries to the Board, working with families on financial aid, working with a bank and contractor on construction projects and financing, working with vendors, etc.

McDonalds of Bismarck-Mandan
2013-Present Chief Financial Officer

- Manage the finances and accounting for the six stores in Bismarck-Mandan which include all accounting and payroll related functions.
- Manage the insurance and Affordable Care Act for our employees.
- Submit monthly and annual financial statements to McDonalds Corporation.

Eide Bailly LLP
1999-2013 Senior Manager

- Specialized in non-profit/government, financial institution, small business, and construction contractor audits and consulting. Clients ranged in size with $100,000 to $5 billion in assets and total revenues of up to $100 million.
- Reported audit plan, engagement status, issues, and results to client management and the Audit Committee of the Board of Directors.
- Managed relationships with current clients and their Board of Directors which includes presenting at their Board meetings
- Developed aptitude for working under strict deadlines and in high-pressure situations.
- Successfully monitored the budget and performance of the engagement team to ensure each audit jobs profitability.
- Performed risk assessment procedures, including inquiries with senior management, analytical procedures, and industry analysis, to effectively develop the audit plan and work program.

CAREER ACCOMPLISHMENTS

- Obtained Certified Public Accounting license
- Graduate of the Dakota School of Banking
- Graduate of Dale Carnegie
- Graduate of Eide Bailly's Leadership Training Program

EDUCATION

1999: B.S. in Accounting, North Dakota State University

COMMUNITY INVOLVEMENT

- Graduate of the Chambers' Leadership Bismarck Mandan program.
- Member of Stewardship Board for seven years at a local church; 4 years as the treasurer which involves preparing and presenting the $1 Million budget
- Treasurer of Child Evangelism Fellowship State Association.
- Created and ran Wild Game Feeds, Men's Sporting Clays Event, and other Men's events at a local church
- Started, organized, and periodically teach an adult Sunday School class with 15 to 40 participants;

AGENDA ITEM V. A.

Fundamental Investment Beliefs

RIO's Mission Statement and Strategic Plan

RIO's Mission Statement and Strategic Investment Plan are based on the Fundamental Investment Belief that asset allocation decisions are the main drivers of long-term investment returns, but the prudent use of active management is an important contributor to ensuring our clients attain their stated investment objectives.

Dave Hunter, Executive Director / CIO

ND Retirement & Investment Office (RIO)

State Investment Board (SIB)

RIO’s Mission Statement

RIO’s “Mission” is defined in SIB Governance Policy D-1 on “Ends”.

The Retirement and Investment Office serves the SIB and exists in order that:

1) SIB clients receive investment returns, consistent with their written investment policies and market variables, in a cost effective investment manner and under the Prudent Investor Rule. **D-3**
2) Potential SIB clients have access to information regarding SIB’s investment services. **D-4**
3) TFFR benefit recipients receive their retirement benefits in a cost effective and timely manner. **D-5**
4) TFFR members have access to information which will allow them to become knowledgeable about the issues and process of retirement. **D-6**
5) SIB clients and TFFR benefit recipients receive satisfactory services from the boards and staff. **D-7**

Mission Accomplishments:

1) Every SIB client generated positive excess returns for the 5-years ended 12/31/15 and 3/31/16, with one exception (PERS Retiree Health) while adhering to approved investment guidelines and noting that management fees have declined from 0.65% to 0.47% in the last two fiscal years (2013 to 2015).
2) RIO implemented a transparency enhancement initiative in late-2015 which enhanced public access to our website by adding new hyperlinks for our governance manual, audit charter and meeting materials (including our quarterly investment performance reviews).
3) RIO’s internal audit team conducted reviews which provide reasonable assurance that TFFR benefit recipients receive their retirement benefits in a cost effective and timely manner.
4) TFFR member surveys support management’s belief that members have access to information which will allow them to become knowledgeable about retirement issues and processes.
5) SIB and TFFR client surveys confirm that the boards and staff provide satisfactory services.

SIB Gov. Policy D-2 RIO clients are those which are statutorily defined and those which have been contracted for services under statutory authority.

NDRIO 2015-17 Strategic Investment Plan

Fundamental Investment Beliefs

Asset allocation decisions are the primary driver of investment returns, but the prudent use of active investment management is an important contributor towards ensuring our clients attain their stated investment objectives. SIB clients generated over $200 million of incremental income via the prudent use of active investment management over the past five years including approximately $40 million of excess return in 2015.

Strategic Investment Plan

1. Reaffirm the organizational commitment to our current governance structure including a persistent awareness to the importance of continuing board education.

2. Enhance transparency and understanding of our core goals and beliefs.
    a. Remain steadfast in our commitment to the prudent use of active investment management.
    b. Expand awareness to downside risk management which is essential to achieving our long term investment goals.
    c. Given actual and projected growth of SIB client assets and the heightened public awareness of the Legacy Fund, align our investment platforms to promote greater clarity and efficiency in reporting and implementing client investment policies.

3. Expand RIO's influence and ability to create positive and sustainable change by developing relationships with existing clients, organizations and legislative leaders.
    a. Enhance community outreach to build upon public awareness and confidence.
    b. Develop concise presentations which highlight our overall risk, return and cost control framework including our progress towards attaining our long-term goals.

4. Heighten employee engagement by promoting an open and collaborative work environment while encouraging employee participation in staff meetings, offer more opportunities to impact RIO's change initiatives and improve overall compensation levels.
    a. RIO's ability to continue to deliver strong results is dependent on the combined efforts of our highly valuable team members.

5. Enhance our existing risk management tools and processes by developing a more robust risk management framework utilizing proven risk management solutions with a focus on portfolio construction and downside risk management (or "stress test" scenarios).
    a. A robust risk management framework provides a foundation to understand downside risks and our ability to withstand market corrections in varying stress test scenarios.

6. Evaluate and expand the efficient use of technology in our investment program activities including risk management, compliance monitoring, client satisfaction surveys, website design and communications in order to increase overall efficiency and effectiveness.

Fundamental Investment Beliefs

- ❑ **Asset allocation is the # 1 driver of investment returns.**

- ❑ **The prudent use of active investment management is an important contributor towards ensuring our clients attain their stated investment objectives.**

  - **SIB clients generated $200 million of incremental income via the prudent use of active investment management since 2011.**

  - **SIB clients generated over $40 million of excess return via the prudent use of active investment management in 2015.**

SIB Governance Policy D-3 on the "Ends" for Investment Services are based on the following:

1. **Comparison of client fund's rate of return net of fees and expenses, to that of the client's policy benchmark over a minimum evaluation period of 5 years.**
2. **Comparison of the client fund's risk, measured by standard deviation of net returns, to that of the client's policy benchmark over a minimum period of 5 years.**
3. **Comparison of the risk adjusted performance of the client fund, net of fees and expenses, to that of the client's policy benchmark over a minimum period of 5 years.**

Reaffirm Commitment to Governance & Board Education

- **Reaffirm organizational commitment to our current governance structure.**
  - **Annual governance training provided by leading industry experts serve as the focal point of our July board meetings the last two years. (Keith Ambachtsheer of KPA Advisory Services i 2015 and Jeanna Cullins of Aon Hewitt in 2016)**

- **Maintain a persistent awareness to the importance of continuing board education.**
  - **Emphasize continuing board education at SIB meetings and promote the attendance of educationally focused industry conferences.**

Enhance Understanding of Core Goals and Beliefs

- **Enhance transparency and understanding of our core goals and beliefs.**
  - **Remain steadfast in our commitment to the prudent use of active investment management.**
  - **Expand awareness to downside risk management which is essential to achieving our long term investment goals.**
  - **Given actual and projected growth of SIB client assets and the heightened public awareness of the Legacy Fund, align our investment platforms to promote greater clarity and efficiency in reporting and implementing client investment policies.**

Expand Influence and Ability to Create Positive Change

- **Expand RIO's influence and ability to create positive and sustainable change by developing relationships with existing clients, organizations and legislative leaders.**
  - **Enhance community outreach to build upon public awareness and confidence.**
  - **Develop concise presentations which highlight our overall risk, return and cost control framework including our progress towards attaining our long-term goals.**

Heighten Employee Engagement and Impact

- **Heighten employee engagement by promoting an open and collaborative work environment while encouraging employee participation in staff meetings, offer more opportunities to impact RIO’s change initiatives and improve overall compensation levels.**
  - **RIO’s ability to continue to deliver strong results is dependent on the combined efforts of our highly valuable team members.**

Enhance Existing Risk Management Framework

- **Enhance our existing risk management tools and processes by developing a more robust risk management framework utilizing proven risk management solutions with a focus on portfolio construction and downside risk management (or "stress test" scenarios).**

    - **A robust risk management framework provides a foundation to understand downside risks and our ability to withstand market corrections in varying stress test scenarios.**

Evaluate and Expand the Efficient Use of Technology

- Evaluate and expand the efficient use of technology in our investment program activities including risk management, compliance monitoring, client satisfaction surveys, website design and communications in order to increase overall efficiency and effectiveness.

State Investment Board – Client Assets Under Management

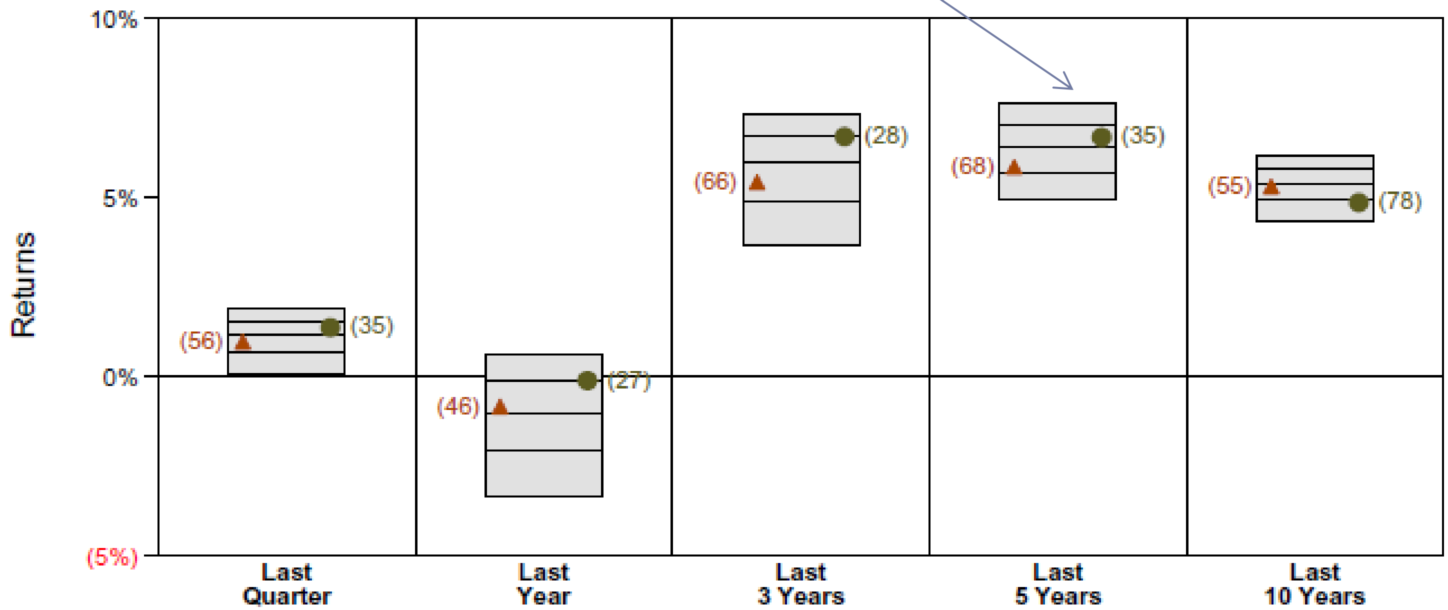
Fund Name	Market Values as of 3/31/16 [(1)]	Market Values as of 3/31/15 [(1)]
Pension Trust Fund		
Public Employees Retirement System (PERS)	2,421,987,130	2,401,309,136
Teachers' Fund for Retirement (TFFR)	2,057,394,854	2,090,299,471
Job Service of North Dakota Pension	95,573,693	98,026,580
City of Bismarck Employees Pension	81,075,233	81,230,926
City of Grand Forks Employees Pension	54,800,673	56,504,623
City of Bismarck Police Pension	33,434,044	35,631,338
Grand Forks Park District	5,813,061	6,033,693
City of Fargo Employees Pension		1,489
Subtotal Pension Trust Fund	**4,750,078,688**	**4,769,037,256**
Insurance Trust Fund		
Legacy Fund		3,194,769,809
Workforce Safety & Insurance (WSI)	1,801,047,070	1,770,406,238
Budget Stabilization Fund	579,947,916	595,135,717
ND Tobacco Control and Prevention	44,805,976	
PERS Group Insurance Account	38,575,386	41,205,242
City of Fargo FargoDome Permanent Fund	38,079,559	41,752,458
State Fire and Tornado Fund	23,599,019	25,431,804
Petroleum Tank Release Compensation Fund	7,034,692	7,232,124
State Risk Management Fund	6,357,621	6,929,517
State Risk Management Workers Comp Fund	5,853,318	6,290,439
ND Association of Counties (NDACo) Fund	3,967,813	3,562,951
State Bonding Fund	3,238,892	3,339,532
ND Board of Medical Examiners	2,183,569	2,168,964
Insurance Regulatory Trust Fund	1,071,344	658,357
Bismarck Deferred Sick Leave Account	628,166	881,132
Cultural Endowment Fund	378,831	383,865
Subtotal Insurance Trust Fund	**2,556,769,172**	**5,700,148,149**
Legacy Trust Fund		
Legacy Fund	3,673,717,322	
PERS Retiree Insurance Credit Fund	98,401,571	96,499,236
Total Assets Under SIB Management	**11,078,966,753**	**10,565,684,641**

- SIB client assets grew by approximately 4.9% (or $513 million) in the last year with the Legacy Fund creating the largest asset growth of $479 million primarily due to tax collections.
- The Legacy Fund generated a net investment loss of -0.33% for the year ended March 31, 2016. Since inception, the Legacy Fund has generated a net annualized return of 2.5% (over the last 4.5 years) exceeding the performance benchmark of 1.8%.
- The Pension Trust posted a net return of -0.41% (down $20 million) in the last year. During the last 5-years, the Pension Trust generated a net annualized return of 6.27% exceeding the performance benchmark of 5.87%.
- The Insurance Trust generated a net return of +0.79% (up $20 million) in the last year. During the last 5-years, the Insurance Trust generated a net annualized return of 4.8% exceeding the performance benchmark of 3.9%.
- SIB client assets exceeded $11 billion as of March 31, 2016, based on unaudited valuations.

[(1)] 3/31/16 and 3/31/15 market values are unaudited and subject to change.

The Pension Trust was ranked in the 35th percentile for the 5-years ended March 31, 2016, based on Callan's "Public Fund Sponsor Database".

Public Fund Sponsor Database



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.91	0.61	7.33	7.65	6.17
25th Percentile	1.54	(0.08)	6.76	7.01	5.82
Median	1.17	(1.03)	6.02	6.41	5.39
75th Percentile	0.67	(2.05)	4.92	5.69	4.96
90th Percentile	0.10	(3.35)	3.69	4.94	4.34
Total Fund ●	1.38	(0.10)	6.71	6.70	4.87
Policy Target ▲	0.98	(0.83)	5.44	5.87	5.32

* Current Quarter Target = 16.5% Russell 1000 Index, 16.0% MSCI World, 12.3% Barclays Aggregate Index, 11.2% MSCI EAFE, 9.9% NCREIF Total Index, 5.0% CPI-W, 5.0% NDSIB PEN - Private Equity, 5.0% Barclays HY Corp 2% Issue, 5.0% Barclays Global Agg ex-US, 5.0% NCREIF Timberland Index, 4.9% Russell 2000 Index, 3.2% MSCI EM and 1.0% 3-month Treasury Bill.

Note: The above chart is prepared on an standard or unadjusted basis.

Board Governance Session

North Dakota State Investment Board
Friday, July 22, 2016
Presented by: Jeanna M. Cullins, Partner – Fiduciary Services Practice

Prepared by Aon Hewitt Investment Consulting
Retirement and Investment

Empower Results®

Agenda

What Is Governance?

What is Governance?

- Governance is the structure, manner, and process -- the framework - by which an organization exercises authority or control -- the process of decision-making and the process by which decisions are implemented (or not implemented)

  – Good governance begins with a **clear** understanding of fiduciary duty

  – Unless **all** involved share the **same** understanding, governance problems could arise

  – Good governance practices institutionalize behavior and facilitate the ability to meet fiduciary standards

  – Poor governance practices introduce risk and can leave an organization open to criticism

What are Some Essential Elements of “Good” Governance?

- Accountability
- Transparency
- Accurate documentation
- Adherence to rules (applicable law(s) and policies)
- Effectiveness and efficiency
- A participatory process (Inclusiveness)
- Consensus oriented
- Fairness
- Responsiveness (designed to serve best interest of beneficiaries and participants)

What are Some Characteristics of “Poor” Governance?

- Lack of transparency and accountability
  – Inadequate reporting and oversight
  – Roles are not properly defined and understood
- Poor documentation
- Inconsistent decision-making
- High tolerance for conflicts
- Micromanagement
- No strategic plan/direction

Why is Good Governance Important?

- Good governance helps boards to meet their fiduciary responsibilities
- Good governance helps to prevent fiduciary breaches and minimize risk
- Good governance fosters stakeholder confidence
- Good governance adds tangible value*
  – Studies show that good governance is associated with increased returns

* "Good Governance Adds Value", a study published by Rotman International Journal of Pension Management, found that better governed pension funds outperformed poorly governed funds by 2.4% per annum during the 4-year period ending 12/2003. A similar study for the period 1993-1996 found a 1% annual good governance performance dividend. Capelle, Ronald, Lunn, Hubert and Ambachtsheer, Keith, "The Pension Governance Deficit: Still with Us" (October, 2008), Rotman International Journal of Pension management, Vol. 1, 2008, at SSRN: http://ssrn.com/abstract=1280907.

Why is Good Governance Important?

"Good governance helps to ensure better organizational performance, fewer conflicts of interest, higher probability that goals and objectives will be attained, and less opportunity for misuse of corporate or fund assets."

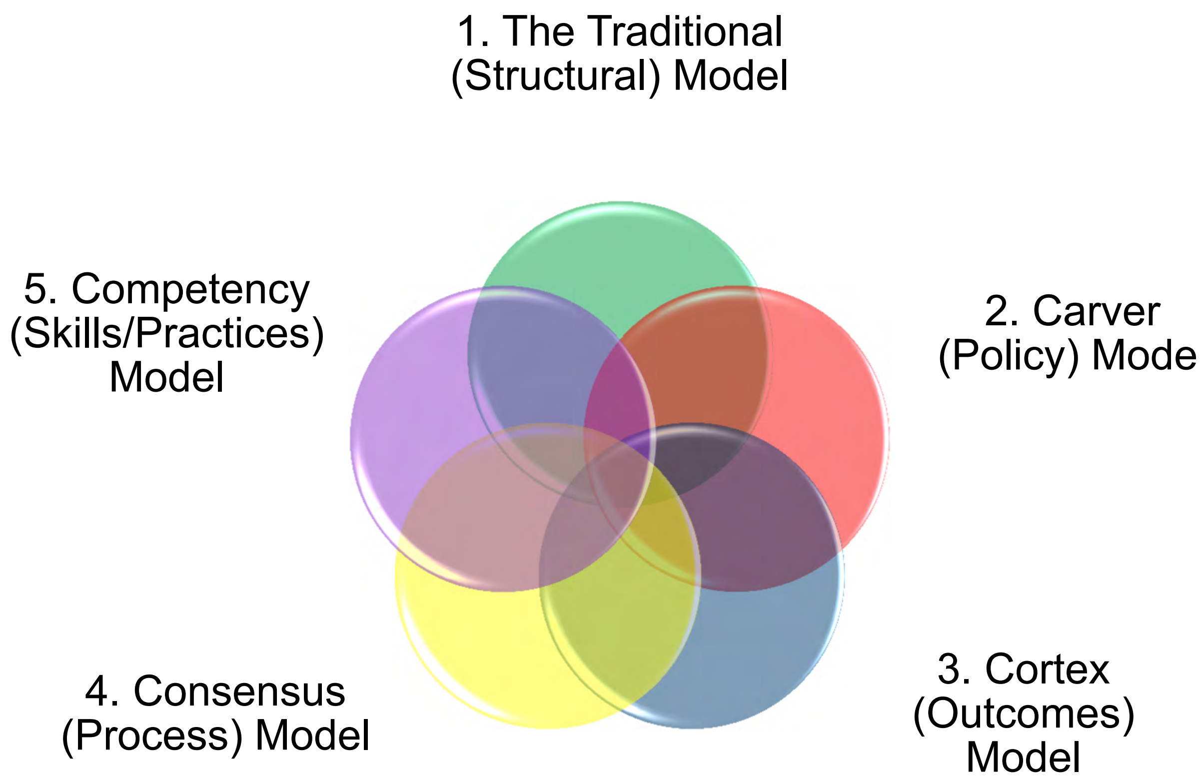
The Stanford Institutional Investors' Forum
Peter Clapman, Chair, May 31, 2007

Common Board Governance Models

How is Governance Determined in the Public Fund Environment?

- The basic legal tenets of governance are typically defined in a statewide public fund's governing statutes, including:
  - Board size;
  - Composition;
  - Required qualifications and experience;
  - Degree of authority regarding budget, personnel and procurement matters;
  - Key responsibilities;
  - Accountability;
  - Reporting requirements; and
  - High level meeting protocols such as open meetings applicability and meeting frequency, among others
- The degree of statutory detail varies from state to state; boards typically address gaps through policy and/or regulations
- The method by which a board chooses to govern is generally a policy decision

Five Common Governance Models



In practice, many boards adopt a combination of these models, in a mix that is appropriate to the unique culture and features of their organization and board composition.

1. The Traditional (Structural) Model

- Description
  - Oldest Model
  - Board is legal ownership entity
  - Evolved to limit the liabilities of corporations and directors
  - Often large in size
- Primary Features
  - Assists organizations with defining board structure (i.e., decision-making process, meeting structure, governance structure are put into bylaws or an approved policy)
  - The board only speaks as a board with one voice
  - The board Chair is usually the official “voice” of the board and speaks only as authorized by the board
  - Defines the delegation of responsibilities from the board to: the Executive Director and and/or the board Committees

1. The Traditional (Structural) Model cont'd

- Common Challenges
  - Silent on the accountability mechanisms and expectations for reporting back when the board delegates powers
  - Creation of operating committees of management/staff by the Executive Director that interface with board committees with similar sounding responsibility may lead to confused staff and board members crossing the boundary between governance and operational management
  - Board representing constituents as opposed to abiding by its legal fiduciary duty to avoid conflicts of interest, focus on the whole, and be consensus driven

- Where this governance model can be observed in practice
  - Corporations and law firms
  - Charitable organizations and non-profits
  - State-owned enterprises, including a number of large public retirement systems

2. The Carver (Policy) Model

- Description
  - Board's main role is to create policy to guide management in its operational work, and to guide the board in its governance work
  - Board's focus is on defining the **"ends"** of the organization

- Primary Features
  - Board's policies define what the Executive Director is not allowed to do, the **"limits"** to his/her decision-making, and the parameters within which he/she must operate
  - As long as the Executive Director does not violate the parameters, he/she has broad discretion
  - All board members are equally accountable for the decision-making of the board; the board should function as much as possible as a "board of the whole", and reduce and/or eliminate board committees

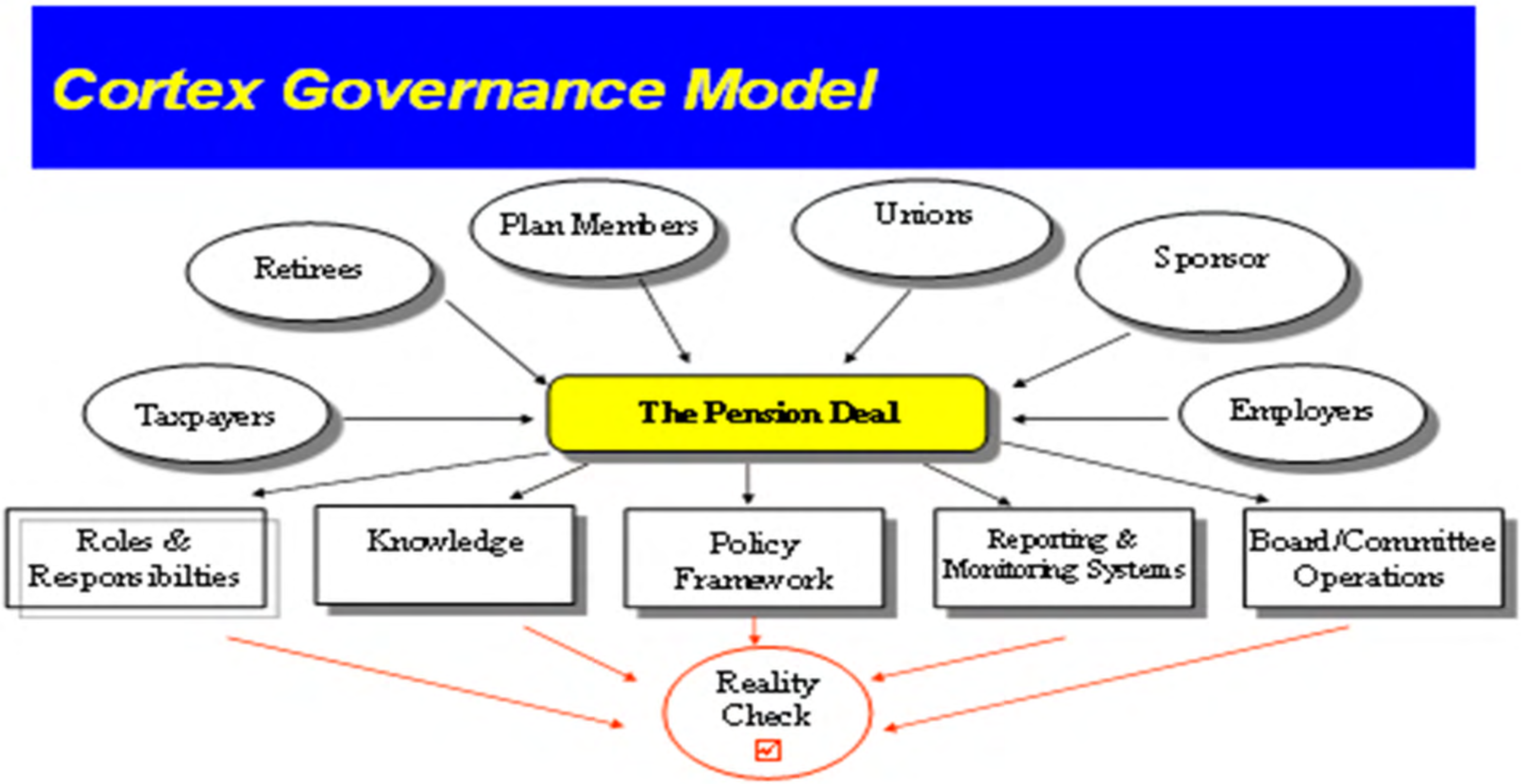
2. Carver (Policy) Model cont'd

- Common Challenges
  - If a board is overly focused on policy-development and refinement, it can reduce the time available for other board actions and responsibilities
  - Does not assist the board in establishing clear, strategic/annual expectations or outcomes / measures of success; a board needs to supplement this approach with the development and approval of a strategic plan, annual business plan, and budget process
- Where this governance model can be observed in practice
  - Non-profits
  - Some large public retirement system and public fund investment boards, like the North Dakota State Investment Board

3. Cortex (Outcomes) Model

- Description
  - Focus of board is on its: stakeholders, the Pension Deal, internal board governance structure, and periodically engaging in a “reality check”
  - Defines the standards, expectations and performance outcomes to which the organization aspires
- Primary Features
  - Board clarifies and sets the outcomes measures of success
  - Board creates an accountability framework around the outcomes measures, and identifies who is responsible for leading/taking action in each area (i.e. board, CEO, staff, or even a third party)
  - Board ensures the capacity of resources exists in each group, and a mechanism for each group to report-back to the board on its progress

Primary Feature of the Cortex Model



Prepared by CORTEX

3. Cortex (Outcomes) Model cont'd

- Challenges (Common)
  - Board's ability to understand the "pension deal" well enough to clearly articulate success measures; must rely on management to do much of the research and develop draft performance statements
  - Ensuring the governance structure is clearly defined
  - Having current mechanisms or reporting structures in place to measure performance against the approved outcomes
  - Having the necessary autonomy to carry out its mission

- Where this governance model can be observed in practice
  - Public Funds
  - Useful in establishing a framework for assessing performance of a board/board committees, CEO and/or staff
  - Beneficial in helping organizations become more transparent and accountable

4. Consensus (Process) Model

- Description
  - The model addresses how decision-making is achieved by the board and how issues will be discussed, different experiences and insights contributed; differences of opinion or concerns will be handled; agreement is reached and timeliness and agenda management is handled
  - It supports contribution from all board members, and expects others to listen, respect, and consider their colleagues' input

- Primary Features
  - This model is anchored by the understanding that all board members are equal – with an equal vote, equal responsibility, equal liability for decision-making, and equal accountability for the actions of the organization/board
  - Board members have different areas of expertise, knowledge and wisdom to bring to the table

4. Consensus (Process) Model cont'd

- Challenges (Common)
  - Characteristics of model can slow the proceedings of a board
  - Due to the focus of the model on the way decision-making is made within the board, the board will have to develop policy or by-laws to convey its important processes, and then add attention to strategy, planning, reporting on operational issues, etc. in addition to the decision-making framework

- Where this governance model can be observed in practice
  - This model is valuable for the not-for-profit sector, family-owned businesses, as well as widely held corporations with no majority shareholder

5. Competency (Skills/Practices) Model

- Description
  - A developmental model
  - Defines the style of behavior and frequency/or level of engagement for board members in their work

- Primary Features
  - Ensures all members of the board have the appropriate knowledge, skills and attitudes to be a good board member
  - Addresses board as a team – communications, trust, relationships etc.
  - Seeks to continuously improve the performance of the board over time
  - Prescribes behavior expectations through the implementation of board assessments (either external or self-driven) and ensures they have a common context for their work together
  - Assist new board members by giving them a picture of the practices they should strive to adopt; and if combined with some mentorship from more experienced board members, can bring new members up to speed fairly quickly to more fully discharge their fiduciary, trusteeship, community interface and other duties

5. Competency (Skills/Practices) Model cont'd

- Challenges (Common)
  - Model doesn't drive policy creation, establishment of strategy, or monitoring of practice per se and doesn't prescribe them through legal structure

- Where you would typically see this model
  - Strong model for recruiting and developing board members

Discussion: Current Governance Model in Light of Other Models

Open Discussion/Questions for Consideration: Pros and Potential Cons

1) How would the Board best describe its current governance model? Is it pure Carver, or does it reflect a blend of several models?

2) Is the Board still satisfied with its current approach to governance?

   a) What aspects are working well?

   b) In what areas might there be room for enhancement?

3) Are there elements of the other models that are attractive to the Board, and would be beneficial to explore further?

4) Next steps?

Presenter Biography

Jeanna Cullins, JD
Partner
Fiduciary Services Practice Leader

- Works with a wide array of institutional investor clients with a primary focus in the areas of fiduciary and management reviews, policy development, compliance, strategic planning, trustee education, and other board and plan governance matters
- Has worked with over 50 public fund boards, corporate pension funds, endowments and foundations to enhance their governance and management processes
- Served as the Executive Director and General Counsel for a public retirement board
- Over 30 years of industry experience
- Holds a BA, cum laude, from Brooklyn College, City University of New York; and a J.D. from Georgetown University Law Center
- Licensed to practice law in Washington, D.C.
- NACD Member

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Aon Hewitt Investment Consulting, Inc.

200 E. Randolph Street

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ATTN: AHIC Compliance Officer

NORTH DAKOTA STATE INVESTMENT BOARD

2016 North Dakota Open Meetings Law Update

OPEN MEETINGS LAW UPDATE
DELEGATION OF AUTHORITY

- Records in Possession of Agent – N.D.A.G. 2016-O-3
- Notice of Committee Meetings – N.D.A.G. 2016-O-5
- Series of Smaller Gatherings – N.D.A.G. 2016-O-11

RECORDS IN POSSESSION OF AGENT – N.D.A.G. 2016-O-3

- Facts
  - NDSU Alumni Association and Development Foundation formed a search committee to assist in finding a new president/CEO.
  - The search committee retained a search firm.
  - The search firm identified 12 interested individuals; the search committee determined 8 were qualified, and 4 submitted formal applications.
  - A request was made for the names of the 12 reviewed by the search committee.
  - Only the names of the 4 that submitted formal applications were provided, the remainder was denied on the basis of “trade secret” information under N.D.C.C. § 44-04-18.4.
- Violation: A violation occurred.
- Observations
  - Records is the hands of an agent are treated as if they are in the hands of the entity.
  - Best Practice/ Communicate open records/meetings requirements at the start.

NOTICE OF COMMITTEE MEETINGS – N.D.A.G. 2016-O-5

- Facts
  - Washburn City Commission directed 2 Commissioners to serve on a committee to review bid proposals.
  - The committee met 3 times, and the bids were shared with the Commission at a meeting thereafter.
  - The first committee meeting was not noticed, the second was posted on the City's website, the third was posted on the website, emailed to the press, and posted on the door. No agenda was provided.
- Violation: A violation occurred.
- Observations
  - Without a regular schedule, all committee meetings were special meetings and subject to special meeting notice requirements.
  - Best Practice/ Discuss notice requirements at time of committee formation.

SERIES OF SMALLER GATHERINGS- N.D.A.G. 2016-O-11

- Facts
  - Williston City Commission is comprised of 5 members, including the Mayor.
  - Mayor met with members of various industries over at least 4 meetings regarding a similar issue. The Mayor requested 1 Commissioner to attend at least 3 meetings, and when the first Commissioner was unavailable asked a different Commissioner to attend 1 meeting.
  - These meetings were not noticed or otherwise open to the public.
- Violation: A violation occurred
- Observations
  - No Committee formed.
  - Notice was needed at the time the 3rd Commissioner participated in a meeting.
  - Best Practice/ Being mindful of different hats.

ANY QUESTIONS ?

Memorandum

To: **State Investment Board**

From: **RIO Compliance Officer**

Date: **July 22, 2016**

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	Opened	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.
Atlanta Capital Emma Hutchinson	Pension	Small Cap Equity	April-16	The High Quality Small Cap strategy is a fundamental core approach that invests in small cap companies in strong financial condition and whose equities are priced below the team's estimate of fair value. The investment team seeks to own innovative businesses that dominate a niche, maintain high barriers to entry, and have consistent demand over an economic cycle. They conduct bottom-up proprietary research, and meet with the management teams as well as visit the facilities of each of their companies. Stock purchases are analyzed as if they were a potential acquirer of the entire business. Atlanta Capital's Core Equity team is comprised of three portfolio managers and one investment specialist. Each portfolio manager serves as a generalist and conducts his own analytical research while investment decisions are made on a consensus basis. Chip Reed, CFA, Bill Bell, CFA and Matt Hereford, CFA are responsible for all purchase and sell decisions.
Axiom International Clifton Chris Lively	Pension	Emerging Markets Equity	August-14	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.
Babson Capital Management Chad Strean	Insurance	Short Term Fixed Inc	September-11	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.

North Dakota State Investment Board Managers

Investment Manager	Trust	Asset Class	Opened	Description
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.
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.
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 March-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.

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Investment Manager	Trust	Asset Class	Opened	Description
Corsair (Fund III, IV & ND Investors) Michael Poe Cliff Brokaw	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.
DFA - Dimensional Fund Advisors Joe Young	Pension Insurance Legacy	Developed Int'l Equity Int'l Equity Int'l Equity	Nov-07 Nov-07 Feb-02	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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Investment Manager	Trust	Asset Class	Opened	Description
DMR (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.
DMR (Declaration Total Return Bond Fund) John Pluta	Insurance Legacy	Dom Inv Grade FI Dom Inv Grade FI	Dec-13 April-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.
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.

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Investment Manager	Trust	Asset Class	Opened	Description
Epoch Investment Partners Thomas Pernice	Pension	Global Equity	July-07 Moved from Lg Cap Jan-12	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) Stephanie Ivy	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.
Grosvenor Capital (formerly Credit Suisse) Andrew Johnson Paul Burraston	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 Infastructure II Andrew Johnson Paul Burraston	Pension Legacy	Infrastructure Real Assets	Mar-15 Mar-15	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.

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Investment Manager	Trust	Asset Class	Opened	Description
Invesco Asia Fund I Asia Fund III Paul Michaels	Pension Pension	Real Estate	Nov-08 Nov-15	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 April-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.
Invesco IREF II Invesco IREF III Value-Add IV Paul Michaels	Pension Pension Pension	Real Estate	Nov-07 May-12 April-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.

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Investment Manager	Trust	Asset Class	Opened	Description
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	Short Term FI	Sep-11	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.
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).

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Investment Manager	Trust	Asset Class	Opened	Description
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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Investment Manager	Trust	Asset Class	Opened	Description
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	Opened	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.

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Investment Manager	Trust	Asset Class	Opened	Description
JP Morgan Income & Growth Fund Jim Sakelaris	Insurance	Real Estate	Nov-05	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.
JP Morgan U.S. Income and Growth Jim Sakelaris	Insurance Legacy	Real Estate Real Estate	Nov-05 April-15	The U.S. Real Estate Core - Plus strategy invests in leveraged core direct real estate (at least 85% direct real estate), complemented by mezzanine investments (up to 15%). The strategy is income-oriented and focuses on stabilized, core U.S. real estate assets. We seek to construct and tactically manage a portfolio of core direct real estate investments, complemented by mezzanine investments. Investments are concentrated in the four primary sectors (office, industrial, retail and apartments), while volatile and/or specialized sectors, such as hotels and self-storage investments, are avoided. Our investment approach is predicated on the following: • Large and significant player in U.S. Real Estate transactions • Has the ability to evaluate and bid for the top institutional core assets in the U.S. • The acquisition team completes due diligence on billions of dollars worth of properties each year. • Over four decades of acquisition and asset management experience • National in scale and diverse in both transaction size and investment structure • Stable senior management team backed by deep industry experience • Team-based investment approach • Ensures all pertinent disciplines have a voice in the investment process • Helps to ensure all pertinent disciplines have a voice in the investment process • Unanimous approval required by the investment committee

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Investment Manager	Trust	Asset Class	Opened	Description
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).
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.

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Investment Manager	Trust	Asset Class	Opened	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	Opened	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	Opened	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.	Insurance Legacy	Int'l Equity Int'l 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.	Insurance Legacy	Dom Lg Cap Equity Dom Lg Cap 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	Opened	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) Mark Patterson	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.
NTAM (Northern Trust Asset Management) 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.

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Investment Manager	Trust	Asset Class	Opened	Description
NTAM (Northern Trust Asset Management) 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.
PIMCO Bravo II Julie Meggers Todd Staley Michael Chandra	Pension Insurance	Residential & Commercial Debt	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 Senior Credit Opportunities (DiSCO) Fund II Julie Meggers Todd Staley Michael Chandra	Pension Insurance	Dom Inv Grade FI Fixed Income	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.

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Investment Manager	Trust	Asset Class	Opened	Description
PIMCO MBS Julie Meggers Todd Staley	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.
PIMCO (formerly Research Affiliates) Julie Meggers Todd Staley Michael Chandra	Insurance Legacy	Dom Small Cap Equity Dom Small Cap Equity	July-07 March-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.
PIMCO Unconstrained (SMA) Julie Meggers Todd Staley 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 April-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.

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Investment Manager	Trust	Asset Class	Opened	Description
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.
SEI Investments Bob Thomas	PERS Retiree Health	Multiple	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.

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Investment Manager	Trust	Asset Class	Opened	Description
SEI Investments Bob Thomas	Job Service	Multiple	Dec-16	The Fund uses a multi-manager approach to portfolio construction that seeks to generate excess returns (i.e., returns in excess of benchmark) and at the same time provide diversification by avoiding over- concentration in a single investment style, sector or market trend. SEI analysis seeks to identify each manager's competitive advantage and characteristics of that advantage that can be monitored on an ongoing basis. Asset allocation to a given manager is based on the manager's skill set, the current macro economic environment, and the risks inherent in each manager's strategy.
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	June-13 April-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 Joe Cadigan	Tobacco	Short Term Fixed Income	Oct-15	The Strategy is managed using a "passive" or "indexing" investment approach, by which SSgA attempts to replicate, before expenses, the performance of the Index. The Strategy will not necessarily own all of the securities included in the Index. The Strategy may attempt to invest in the securities comprising the Index, in the same proportions as they are represented in the Index. However, due to the diverse composition of securities in the Index and the fact that many of the securities comprising the Index may be unavailable for purchase, it may not be possible for the Strategy to purchase some of the securities comprising the Index. In such a case, SSgA will select securities for the Strategy comprising a portfolio that SSgA expects will provide a return comparable to that of the Index. SSgA expects that it will typically seek to replicate index returns for the Portfolio through investments in the "cash" markets - actual holdings of debt securities and other instruments - rather than through "notional" or "synthetic" positions achieved through the use of derivatives, such as futures contracts or swap transactions (except in the unusual case where SSgA believes that use of derivatives is necessary to achieve an exposure that is not readily available through the cash markets). **Benchmark** Barclays U.S. 1-3 Year Treasury Bond Index

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Investment Manager	Trust	Asset Class	Opened	Description
State Street Global Advisors Joe Cadigan	Tobacco	Large Cap Equity Ex-Tobacco	Oct-15	The Strategy is managed using a "passive" or "indexing" investment approach, by which SSgA attempts to match, before expenses, the performance of the Index. SSgA will typically attempt to invest in the equity securities comprising the Index, in approximately the same proportions as they are represented in the Index. Equity securities may include common stocks, preferred stocks, depository receipts, or other securities convertible into common stock. The Strategy may purchase securities in their initial public offerings ("IPOs"). In some cases, it may not be possible or practicable to purchase all of the securities comprising the Index, or to hold them in the same weightings as they represent in the Index. In those circumstances, SSgA may employ a sampling or optimization technique to construct the portfolio in question. From time to time securities are added to or removed from the Index. SSgA may sell securities that are represented in the Index, or purchase securities that are not yet represented in the Index, prior to or after their removal or addition to the Index. The Strategy may at times purchase or sell index futures contracts, or options on those futures, or engage in other transactions involving the use of derivatives, in lieu of investment directly in the securities making up the Index or to enhance the Strategy's replication of the Index return. The Strategy's return may not match the return of the Index. **Benchmark** S&P 500® ex Tobacco is comprised of the S&P 500® minus tobacco companies. The S&P 500® is comprised of approximately 500 leading companies in leading industries of the U.S. market with approximately 75% coverage of the U.S. stock market capitalization.
TIR-Timberland Investment Resources 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 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.

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Investment Manager	Trust	Asset Class	Opened	Description
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	June-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.
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.
Wells Capital Management Stephen Scharre	Insurance Legacy	Fixed Income Fixed Income	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.
Western Asset Derek Fan	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.

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Investment Manager	Trust	Asset Class	Opened	Description
Western Asset Derek Fan	Insurance Legacy	Real Assets Real Assets	Oct-09 March-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.
William Blair Wally Fikri	Pension Insurance Legacy	Developed Int'l Equity International Equity International Equity		William Blair invests in a growth-oriented, diversified portfolio that will typically hold between 40-70 securities. The firm's investment philosophy is to focus on companies with above-average growth prospects where growth can be sustained through leading or franchise positions in terms of proprietary products, marketing dominance, or cost/asset base advantage. Portfolio candidates typically have above-average prospective growth, evidence of sustainability of future growth, above-average profitability and reivestment of internal capital, and conservative capital structure relative to sector norms. The portfolio will be diversified by region and country and may invest up to 2X the MSCI ACWI ex-US IMI Index weighting in Emerging Markets securities. In addition, the portfolio will be diversified by sector with no individual sector representing over 35.0% based upon market value. The maximum allocaton to any one security is 5.0% of the portfolio (at market value) and notwithstanding this limitation, no immediate liquidation of investments shall be required solely due to changed in market value.

North Dakota State Investment Board Managers - Closed

Investment Manager	Trust	Asset Class	Open to Close Date	Description
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.
Babson Capital Management Chad Strean	Legacy	Short Term Fixed Inc	Sep-11 to Feb-15 Change of asset allocation	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 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 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 - Closed

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 marke 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.
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 Terminated 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.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
Calamos Investments Meredith French	Pension	Global Equity	Mar-12 to Dec-13 Terminated	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.
Callan Associates Greg Allen	Pension	Small Cap Dom Equity	May-06 to March-16 Terminated	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 to May-16 Terminated Apr-97 to May-16 Terminated Feb-15 to May-16 Terminated	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.

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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	Developed Int'l Equity	Mar-10 to Dec 13 Terminated	This portfolio replicates the MSCI EAFE index utilizing futures contracts.
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 Momentum Fund Yuval Almog	Pension	Private Equity	7/1/2002 to June-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.
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.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
DMR (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.
DMR (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
DMR (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.
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.
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.
JP Morgan Emerging Markets Fund Jim Sakelaris	Pension	Emerging Markets Equity	11/1/2005 to 7/31/14 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 Short Term Bond Fund Jim Sakelaris	Legacy Fund	Short Term Fixed Inc	Sep-11 to Feb-15 Change of asset allocation	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.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
LSV Int'l Equity James Owens, Jr.	Pension	Developed Int'l Equity	Nov-04 to Jan-13 Changed mandate to Global Equity	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	Dom Lg Cap Equity	Jun-98 to Jan-13 Changed mandate to Global Equity	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.
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	Inflation Protected	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 Inflation Protected 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 Collective Emerging Markets Index Fund) Jason Pasquinelli	Pension	Emerging Markets Equity	July-12 to July-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.
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.
PIMCO Distressed Senior Credit Opportunities (DiSCO) Fund I Julie Meggers Todd Staley Michael Chandra	Pension	Dom Inv Grade FI	Jul-08 to Oct-11 Moved to Fund II	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 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.

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Investment Manager	Trust	Asset Class	Open to Close Date	Description
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.
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.
Prudential PruAlpha Peter Taggert	Pension Insurance (currently 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).
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	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	July-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	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.
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.
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
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.

North Dakota State Investment Board Managers - Closed

Investment Manager	Trust	Asset Class	Open to Close Date	Description
Wells Capital Management Stephen Scharre	Pension	Dom Inv Grade FI	Nov-98 to Mar-12 Terminated	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.
Western Asset Derek Fan	Pension	Dom Inv Grade FI	Oct-09 to Mar-12 Mandate changed to MBS	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 Derek Fan	Pension	Dom Inv Grade FI	Mar-12 to Sep-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	Insurance	Inflation Protected	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.
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 Apr-11)	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.

AGENDA ITEM V. F.

Annual Board Planning Cycle, Meeting Schedule and Board Education Plan

July 15, 2016

Note: The SIB previously approved the attached "Biennial Agenda" and "Meeting Schedule" on April 24, 2016.

Dave Hunter, Executive Director / CIO

ND Retirement & Investment Office (RIO)

State Investment Board (SIB)

Annual Board Planning Cycle – Biennial Agenda

Approved by the SIB on April 24, 2016

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** - Executive Limitations Review	**Review Budget Guidelines for next Biennium**	**Review "Ends" Policies, Biennial Agenda, Strategic Plan and Budget Guidelines**	**Investment Director Report on Investment Work Plan** **ED/CIO Review** - 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** - Executive Limitations Review	**Confirm Budget Guidelines** - Legislative Update	**Review Biennial Agenda, End Policies, Strategic Investment Plan and Budget Guidelines**	**Investment Director Report on Investment Work Plan** **ED/CIO Review** - Investment Guidelines	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) (which is also referred to as "RIO's Mission Statement") 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."

4.) Budget Guidelines: RIO will prepare and submit a biennial budget pursuant to OMB guidelines as established by the Governor which will not reduce the level of service provided by RIO. Expenditures for budget items will not exceed the appropriation without approval of the State Investment Board.

Date: April 14, 2016

Annual SIB Meeting Schedule for 2016-17

July 22, 2016 (Retreat)	January 27, 2017
August 26, 2016	February 24, 2017
September 23, 2016	March 24, 2017
October 28, 2016	April 28, 2017
November 18, 2016	May 26, 2017
December – No Meeting	June – No Meeting

The SIB approved the above meeting schedule on April 24, 2016.

Reaffirm Commitment to Governance & Board Education

- **Reaffirm organizational commitment to our current governance structure.**
  - **Annual governance training provided by leading industry experts serve as the focal point of our July board meetings the last two years. (Keith Ambachtsheer of KPA Advisory Services in 2015 and Jeanna Cullins of Aon Hewitt in 2016)**

- **Maintain a persistent awareness to the importance of continuing board education.**
  - **Emphasize continuing board education at SIB meetings and promote the attendance of educationally focused industry conferences.**

Recommended Board Education for 2016-17

- New Member Orientation
  1) One on one investment meetings at RIO;
  2) Callan Annual Conference; and
  3) Callan College (onsite dates to be discussed)

- Existing Board Member for up to 3 to 4 years
  1) Callan Annual Conference; and
  2) Callan College (onsite dates to be discussed)

- Existing Board Member for over 3 to 4 years
  1) Callan Annual Conference or Callan College

<u>Potential "Callan College Onsite" Dates</u>:

a) October 28, 2016
b) January 27, 2017
c) March 24, 2017

Callan College would occur on an existing SIB Meeting date (from 8:30am to Noon). Potential educational topics may include Capital Markets Theory, Asset Allocation, Investment Policy Statements and the Role of the Fiduciary.

Board Education – July 1, 2015 to June 30, 2015

SIB members have actively participated in numerous educational opportunities over the last year including the following sessions which occurred during our regularly scheduled board meetings:

- Governance Education by KPA Advisory (3 hours)
- Reviewing Trust Performance Education by Callan Associates (1 hour)
- Capital Markets Update by PIMCO (1 hour)
- Capital Markets Update by Epoch (1 hour)
- Fiduciary Duty Education by RIO (1 hour)
- Capital Market Updates by Callan (2 hours)
- Capital Markets and Securities Lending Update by Northern Trust (1 hour)
- Litigation Monitoring Education by the Office of the Attorney General (1 hour)
- Capital Markets Update by JPMorgan (1 hour)

Several board members and RIO staff have obtained additional investment education by attending conferences sponsored by a wide variety of industry experts such as:

- Callan's Annual Conference and/or Callan College (two to three days)
- CommonFund Forums (two to three days)
- Great Plains (and/or Mountain States) Investor Forum (one to two days)
- National Association of State Retirement Officers (two to three days)
- National Association of State Investment Officers (two to three days)
- National Association of State Investment Professionals (two to three days)
- Various conferences sponsored by "Pensions and Investments" (one to three days)

PERS Investment Policy Statement

Approved by the PERS Board on June 16, 2016

July 15, 2016

Board Action:

RIO recommends the SIB approve the revised investment policy statement for PERS, including a revised asset allocation in which Equity and Fixed Income are increased by 1% each and Real Assets and Cash are both reduced by 1%.

Dave Hunter, Executive Director/CIO

Darren Schulz, Deputy Chief Investment Officer

ND Retirement & Investment Office (RIO)

State Investment Board (SIB)

Summary of Callan's Asset Liability Study and RIO's Recommended Asset Allocation Targets

- PERS engaged Callan to conduct an asset liability study the preliminary results of which have been previously shared with the PERS Investment Sub-Committee and Board along with PERS and RIO investment staff.

- RIO and Callan are proposing relatively minor revisions to PERS's existing investment policy statement noting the vast majority of the changes are conforming in nature:

  1. Maintaining the actuarial rate of return on assets of 8.00%; and
  2. Adopting the asset class terminology used in Callan's "Asset Liability Study".

  As example, Global Equity allocations are segmented into Public and Private, while Global Fixed Income allocations are segmented into Investment Grade and Non-Investment Grade. Infrastructure and Timber allocations are also referenced as "Other" Real Assets by Callan.

- The following pages highlight RIO's recommendation to the PERS Investment Sub-Committee based on the expert guidance and assistance of Callan's asset liability study team including Julia Moriarty, Alex Browning and Paul Erlendson.

- RIO's primary goal in developing this recommendation was to identify an efficient asset allocation framework to support PERS's 8.0% expected return target while minimizing overall portfolio risk as measured by standard deviation.

Comparison of "PERS Current" and "Proposed" Target Asset Allocations including "TFFR's Current Target"

Asset Class	PERS Current Target	Callan Mix 2A	RIO Proposed Mix 2B	Callan Mix 3	TFFR Current Target
Global Equity	57%	58%	58%	60%	58%
Public	52%	51%	51%	53%	52%
Private	5%	7%	7%	7%	6%
Global Fixed Income	22%	23%	23%	20%	23%
Investment Grade	17%	20%	18%	17%	19%
Non-Investment Grade	5%	3%	5%	3%	4%
Global Real Assets	20%	18%	19%	19%	18%
Real Estate	10%	11%	11%	11%	10%
Infrastructure & Timber	10%	7%	8%	8%	8%
Cash Equivalents	1%	1%	0%	1%	1%
Totals	100%	100%	100%	100%	100%
Expected Return	6.8%	6.9%	7.0%	7.0%	7.1%
Standard Deviation	14.5%	14.5%	14.8%	15.1%	14.7%

- **RIO recommended Mix 2B with Equity at 58%, Fixed Income at 23% and Real Assets at 19% which Callan projects to generate an <u>Expected Return of 7.0%</u> with a <u>Standard Deviation of 14.8%.</u>**
- **Mix 2B represents a modest change and includes a 1% increase to Equity and Fixed Income and a 1% decrease to Real Assets and Cash versus "PERS Current Target".**
- **Mix 2B is comparable to "TFFR's Current Target" as both maintain a 58% allocation to Equity, although Mix 2B has a 1% higher target for Real Assets and 1% lower allocation to Cash.**

Note: PERS asset liability study was based on Callan's 2016 Capital Market Expectations (CME) while TFFR used Callan's 2015 CME.

Callan's Expected Return is for 10-years and is based on lower expected inflation without active management in the public markets.

- While the Fund's expected return over the next 10 years falls short of the 8.0% actuarial return assumption, a few key items should be factored into this study's 6.8% return projection.
  - Callan's public market return projections do not incorporate active management premiums.
    - *Active management premiums accrue when investment firms selected by the State Investment Board outperform their passive benchmarks. It is important to note, though, that investment firms will at times underperform their passive benchmarks. The Plan's returns have benefitted from active management by 52 basis points (annualized) over the past five years. Based on history, 50 basis points would be a reasonable estimate of value-added from active management going forward.*
  - Callan's 10-year projections are below longer-term expectations due to the current economic environment and the forecast for the next several years.
    - *Callan's 10-year return projections are approximately 50 to 200 basis points below longer-term (30+ years) expectations. The difference between near-term and long-term return expectation depends on the asset class.*
  - The actuary assumes 3.50% price inflation versus Callan's 2.25% assumption. Within the context of this study, that means the comparable liability return is closer to 7.5% rather than 8.0%.
    - *The 8.0% return is not reduced by a full 125 basis points since retirees do not receive an automatic COLA (100% CPI) every year.*

Note: "PERS Current Target" asset allocation is estimated to generate an expected return of 6.8% with an expected standard deviation of 14.5%. RIO's recommended asset allocation ("Mix 2B") is estimated to generate a slightly higher expected return (7.0%) with a slightly higher expected standard deviation (14.8%). Both of these estimates are based on Callan's 2016 Capital Market Expectations (including inflation) for the next 10-years while excluding the positive (or negative) impact of active management in the public markets.

Source: Callan's *Asset Allocation and Liability Study* for the North Dakota Public Employees Retirement System dated May 2016.

Callan's 10-Year Estimated Results Converted to Long-Term Returns plus a Higher Expected Inflation Rate in North Dakota

Asset Class	RIO Proposed Mix 2B
Global Equity	58%
Public	51%
Private	7%
Global Fixed Income	23%
Investment Grade	18%
Non-Investment Grade	5%
Global Real Assets	19%
Real Estate	11%
Infrastructure & Timber	8%
Cash Equivalents	0%
Totals	
Expected Return	7.0%
Standard Deviation	14.8%

Summary of PERS 8.0% Long-Term Return Expectation:

1. **Callan's Expected Return is 7.0% for the next 10-years as shown in the table to the left and serves as the starting point.**
2. **The first adjustment (of 0.5%) is to convert Callan's 10-year Capital Market Expectations to Long-Term Returns (of 30+ years) which represents a 50 basis point increase.**
3. **The second adjustment (of 0.5%) is for PERS higher 3.50% inflation expectation (for North Dakota) whereas Callan's 2.25% assumption is based on national expectations.**
4. **PERS Long-Term Return Expectation is 8.0% as shown below.**

1.) PERS Expected Return based on Callan's 2016 Capital Market Expectations	7.0%
2.) Adjustment to convert Callan's 10-Year Returns to Long-Term Expectations	0.5%
3.) Adjustment to incorporate PERS higher inflation assumption	0.5%
4.) PERS Long-Term Return Expectation with a higher inflation assumption	8.0%

Note: PERS returns have benefitted from active management by 50 basis points (or 0.50%) annualized during the past 5-years which is not incorporated in the above analysis.

Source: Callan's *Asset Allocation and Liability Study* for the North Dakota Public Employees Retirement System dated May 2016.

2016 Capital Market Expectations

Return and Risk

- Public market expectations represent passive exposure (beta only).
- Return expectations for private market investments such as real estate and private equity reflect active management premiums.
- Return expectations are net of fees.

Summary of Callan's Long-Term Capital Market Projections (2016 - 2025)

Asset Class	Index	Projected Return*	Projected Risk
Equities			
Broad Domestic Equity	Russell 3000	7.35%	18.70%
Large Cap	S&P 500	7.25%	17.95%
Small/Mid Cap	Russell 2500	7.55%	22.75%
Global ex-US Equity	MSCI ACWI ex USA	7.55%	21.30%
International Equity	MSCI World ex USA	7.25%	20.05%
Emerging Markets Equity	MSCI Emerging Markets	7.60%	27.85%
Fixed Income			
Domestic Fixed	Barclays Aggregate	3.00%	3.75%
TIPS	Barclays TIPS	3.00%	5.30%
High Yield	Barclays High Yield	5.00%	10.50%
Non-US Fixed	Barclays Global Aggregate ex-USD	1.40%	9.20%
Emerging Market Debt	EMBI Global Diversified	4.60%	9.90%
Other			
Real Estate	Callan Real Estate Database	6.00%	16.45%
Timberland	NCREIF Timberland	6.20%	17.50%
Infrastructure	S&P Global Infr / JPM Infr	6.60%	19.00%
Private Equity	TR Post Venture Capital	8.15%	32.80%
Hedge Funds	Callan Hedge FoF Database	5.25%	9.30%
Commodities	Bloomberg Commodity	2.75%	18.50%
Cash Equivalents	90-Day T-Bill	2.25%	0.90%
Inflation	CPI-U	2.25%	1.50%

** Geometric returns are derived from arithmetic returns and the associated risk (standard deviation).*

TO: SIB

FROM: Dave Hunter, ED/CIO – Retirement and Investment Office ("RIO")

DATE: July 15, 2016

SUBJECT: Investment Policy Statement – PERS Main Plan

The North Dakota Public Employees Retirement System Board approved the attached investment policy statement on June 15, 2016.

STATEMENT OF INVESTMENT GOALS, OBJECTIVES AND POLICIES FOR THE NORTH DAKOTA PUBLIC EMPLOYEES RETIREMENT SYSTEM

1. PLAN CHARACTERISTICS AND FUND CONSTRAINTS

The North Dakota Public Employees Retirement System (NDPERS) and the Highway Patrol Retirement System (HPRS) are pension benefit plans established to provide retirement income to state employees and employees of participating political subdivisions. The plans are administered by a seven member Board of Trustees (the Board). The Chair is appointed by the governor, three members are elected by the active members of the plans, one member is elected by the retired members, one is appointed by the Attorney General and the seventh member is the State Health Officer or their designee.

The NDPERS plan is a multi-employer hybrid benefit public pension plan that provides retirement benefits, disability retirement benefits, and survivor benefits, in accordance with Chapter 54-52 of the North Dakota Century Code (NDCC). Monthly retirement benefits for the Main, National Guard and Law Enforcement Plans are based on the formula: number of Years of Service times 2.0% times the final average salary. For the NDPERS Judges Plan the retirement formula is: for the first ten years of service of the formula is final average salary times 3.5%, for the second ten years of service the formula is final average salary times 2.80% and for all remaining years of service the formula is final average salary times 1.25%.

The Highway Patrol plan is a single employer plan that provides retirement benefits, disability benefits, and survivor benefits in accordance with Chapter 39-03.1 of the North Dakota Century Code. Monthly retirement benefits are based upon on the formula: first 25 years of credit service times 3.25% and all remaining years of service times 1.75%.

Funding for the NDPERS plan is provided by monthly employee contributions and employer contributions with the amount varying based upon which NDPERS plan the member participates in. For the Main NDPERS plan the employee contribution is 4% and the employer contribution is 4.12%, for the Judges Plan the employee contribution is 5% and employer contribution is 14.52%, for the National Guard Plan the employee contribution is 4% and employer contribution is 6.5%, for the Law Enforcement Plan with prior service the employee contribution is 4% and the employer contribution is 8.31% and for the Law Enforcement Plan without prior service the employee contribution rate is 4% and the employer rate is 6.43%.

Funding for the Highway Patrol plan is provided by a monthly employee contribution of 10.3% and an employer contribution of 16.7%

Each year the Board has an actuarial valuation performed. The current actuarial assumed rate of return on assets for all plans is 8%.

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

Aggregate plan contributions plus earnings, minus allowable expenses constitute the Fund. The Board is charged by NDCC chapters 54-52, 21-10-01, and 39-03.1 to establish policies for the investment goals and asset allocation of the Fund. The State Investment Board (SIB) is charged with implementing the asset allocation as promptly and prudently as possible in accordance with the Board's policies by investing the assets of the Fund in the manner provided in the prudent investor rule, which provides:

Fund 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 retirement funds belonging to the teachers' fund for retirement and the public employees retirement system must be invested exclusively for the benefit of their members and in accordance with the respective funds' investment goals and objectives. (NDCC 21-10-07)*

The SIB may delegate investment responsibility of the Fund or any portion of the Fund to professional money managers. Where a money manager has been retained, the SIB's role in determining investment strategy is supervisory not advisory.

The SIB may at its discretion, pool the assets of the Fund with another fund or funds having similar investment objectives and time horizons in order to maximize returns and minimize costs. In pooling fund assets the SIB will establish asset class pools it deems necessary to achieve the specific quality, diversification, restrictions, and performance objectives subject to the prudent investor rule and the objectives of the funds participating in the pools.

The SIB is responsible for establishing the selection criteria, determining the performance measures, and retaining all fund money managers. SIB is also responsible for the selection and retention of any investment consultants that may be employed in the investment of the Fund assets.

3. DELEGATION OF AUTHORITY

Management responsibility for NDPERS funds not assigned to the North Dakota State Investment Board (SIB) in Chapter 21-10 of the North Dakota Century Code (NDCC) is hereby delegated to the SIB, which must establish written policies and procedures for the operation of the NDPERS funds, consistent with this investment policy.

Such procedures must provide for:

1. The definition and assignment of duties and responsibilities to advisory services and persons employed by the SIB pursuant to NDCC 21-10-02.1(1) (a).

2. Investment diversification, investment quality, qualification of money managers, and amounts to be invested by money managers pursuant to NDCC 21-10-02.1(1)(e). In developing these policies it is understood:

    a. Futures and options may be used to hedge or replicate underlying index exposure, but not for speculation.
    b. The use of derivatives will be monitored to ensure that undue risks are not taken by the money managers.
    c. All assets must be held in custody by the SIB's master custodian or such other custodians as are selected by the SIB.

3. Guidelines for selection and redemption of investments will be in accordance with NDCC 21-10-02.1(1) (d).

4. The criteria for making decisions with respect to hiring, retention, and termination of money managers will be clearly defined. This also includes selecting performance measurement standards, consultants, report formats, and frequency of meetings with money managers.

All participants in the investment process must seek to act responsibly as custodians of the public trust.

4. INVESTMENT GOALS

The investment goals of the Fund have been established by the NDPERS Board based upon consideration of the Board's strategic objectives and a comprehensive review of the current and projected financial requirements. These goals are to be viewed over the long term.

Goal # 1 Accumulate sufficient wealth through a diversified portfolio of investments which will enable the State of North Dakota to pay all current and future retirement benefits and expense obligations of the Fund.

Goal # 2 To obtain an investment return in excess of that needed to allow for increases in a retiree's annuity to maintain the purchasing power of their retirement benefit.

The Board acknowledges the material impact that funding the pension plan has on the State's financial performance. To enable the State to continue offering secure pension benefits to plan participants, the Board believes that the Fund should pursue the following **secondary goals:**

1. Stabilize the employee and employer contributions needed to fund the Plan over the long term.
2. Avoid both substantial volatility in contributions and sizable fluctuations in the funding status of the Plan.

These two secondary goals affect the Fund's investment strategies and often represent conflicting goals. That is, minimizing the long-term funding costs implies a less conservative investment program, whereas dampening the volatility of contributions and avoiding large swings in the funding status implies a more conservative investment program. The Board places greater emphasis on the strategy of stabilizing the employee and employer contribution needed to fund the plan over the long term as it assists our participating employers by having a predictable contribution for budgeting.

5. INVESTMENT PERFORMANCE OBJECTIVE

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

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 risk-adjusted performance of the fund, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

6. ASSET ALLOCATION

In recognition of the plan's performance objectives, benefit projections, and capital market expectations, the NDPERS Board has established the following asset allocation:

Asset Class	Policy Target (%)	Rebalancing Range (%)
Global Equity	58	46-66
Public Equity	51	42-57
Private Equity	7	4-9
Global Fixed Income	23	16-30
Investment Grade	18	13-23
Non-Investment Grade	5	3-7
Global Real Assets	19	10-25
Global Real Estate	11	5-15
Other (Infrastructure/Timber)	8	5-10
Inflation Linked Bonds		0-5
Global Alternatives		0-10
Cash	0	0-2

~~Global Equity~~	~~57~~	~~46-65~~
~~Domestic Equity~~	~~31~~	~~26-36~~
~~International Equity~~	~~21~~	~~16-26~~
~~Developed~~	~~16~~	
~~Emerging~~	~~5~~	
~~Private Equity~~	~~5~~	~~4-8~~
~~Global Fixed Income~~	~~22~~	~~16-28~~
~~Domestic Fixed~~	~~17~~	~~13-21~~
~~Investment Grade~~	~~12~~	~~10-18~~
~~Non-Investment Grade~~	~~5~~	~~3-7~~
~~International Fixed~~	~~5~~	~~3-7~~
~~Developed~~	~~5~~	~~3-7~~
~~Emerging~~		~~0-3~~
~~Global Real Assets~~	~~20~~	~~12-28~~
~~Global Real Estate~~	~~10~~	~~5-15~~
~~Other~~	~~10~~	~~0-15~~
~~Infrastructure~~	~~5~~	~~0-10~~
~~Timber~~	~~5~~	~~0-7~~
~~Commodities~~		
~~Inflation Linked Bonds~~		
~~Other Inflation Sensitive Strategies~~		
~~Global Alternatives~~		~~0-10~~
~~Cash~~	~~1~~	~~0-2~~

The Board does not endorse tactical asset allocation, therefore, it is anticipated the portfolio be managed as close to the policy target as is prudent and practicable while minimizing re-balancing costs. Any allocation to Global Alternatives shall not increase the expected volatility of the portfolio as measured in Section #5, and all other targets will be adjusted pro-rata.

PERS requires that in implementing this asset allocation that the State Investment Board seek to maximize return within the scope of these policies while limiting investment costs.

7. RESTRICTIONS

A. Futures and options may be used to hedge or replicate underlying index exposure, but not for speculation.

B. Use of derivatives will be monitored to ensure that undue risks are not taken by the money managers

C. No transaction may be made which threatens the tax exempt status of the Fund.

D. No unhedged short sales or speculative margin purchases may be made.

Social Investing is defined as *"The investment or commitment of public pension fund money for the purpose of obtaining an effect other than a maximized return to the intended beneficiaries."*

E. Social investing is prohibited unless it meets the Exclusive Benefit Rule and it can be substantiated that the investment must provide an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.

Economically targeted investing 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.

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

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 Board’s policy favors investments which will have a positive impact on the economy of North Dakota.

G. Publicly Traded REITs may not be used in the Real Estate asset allocation.

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

8. INTERNAL CONTROLS

The SIB must have a system of internal controls to prevent losses of public funds arising from fraud or employee error. The 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

Investment management of the Fund will be evaluated against the Fund's investment objectives and investment performance standards.

An annual performance report must be provided to the Board by the State Investment Officer at a regularly scheduled NDPERS Board meeting. The annual performance report must include asset returns and allocation data as well as information regarding all significant or material matters and changes pertaining to the investment of the Fund, including:

- Changes in asset class portfolio structures, tactical approaches and market values;
- All pertinent legal or legislative proceedings affecting the SIB.
- Compliance with these investment goals, objectives and policies.
- A general market overview and market expectations.
- A review of fund progress and its asset allocation strategy.
- A report on investment fees and the SIB's effort relating to Section 6. To measure investment cost PERS requires as part of the annual review information from Callan, CEM or other acceptable source showing the value added versus the cost.
- Changes/additions to benchmarks utilized to monitor the funds.

In addition, the State Investment Officer shall review with the Board the procedures and policies established by the SIB relating to this statement of investment goals, objectives, and policies.

______________________________	______________________________
J. Sparb Collins	David Hunter
Executive Director	Executive Director
North Dakota Public Employees Retirement System	North Dakota Retirement and Investment Office
Date: ______________________________	Date: ______________________________

Legacy and Budget Stabilization Fund Investment Policy Statement

July 15, 2016

Board Action:

RIO recommends the SIB approve the revised investment policy statements for the Legacy Fund and Budget Stabilization Fund. The revised policies incorporate the previously discussed transfer of the Bank North Dakota Match Loan CD Program to the Legacy Fund from the Budget Stabilization Fund during the next year. The governing bodies of the Legacy Fund and Budget Stabilization Fund approved these recommendations on June 15, 2016.

Dave Hunter, Executive Director/CIO
Darren Schulz, Deputy Chief Investment Officer
ND Retirement & Investment Office (RIO)
State Investment Board (SIB)

Bank of North Dakota Match Loan Certificate of Deposit Program

RIO intends to transfer the existing Bank of North Dakota (BND) Match Loan CD Program from the Budget Stabilization Fund (BSF) to the Legacy Fund prior to a material portion of this "rainy day fund" being used to offset expected budget shortfalls. RIO's recommendation is contingent upon BND guaranteeing a minimum 1.75% return noting that current 5-year Treasury rates (upon which the CD rates are based) were 1.14% as of July 15, 2016. The minimum return requirement will be reviewed periodically to ensure the Legacy Fund will be able to maintain its' long-term expected rate of return of approximately 6.4% per annum. **The BSF investment policy statement will be revised to exclude the BND CD Program.**

The Legacy Funds' current asset allocation is 50% equity, 35% fixed income and 15% real assets. **RIO can incorporate the BND CD program within the fixed income allocation of the Legacy Fund without materially impacting its' overall return (6.4%) and risk profile as long the CD Program size is limited to the lesser of $200 million or 5% (of the Legacy Fund) and a minimum 1.75% return requirement is maintained for this AA rated investment. These relevant terms will be incorporated into the revised investment policy statement for the Legacy Fund.** RIO discussed this action with the SIB on May 27, 2016, which confirmed SIB Governance Policy E-12 which states "The source of funding for CD's shall be determined by the Investment Director".

BND Match Loan CD Program Background:

BND has a strong desire to maintain the CD Program which provides reduced cost financing to companies seeking to develop new businesses in North Dakota. RIO notes this economic development program has been in place for over 20 years although the funding source has migrated among various funds overseen by the SIB. **Given the nature and size of the $3.7 billion Legacy Fund, RIO views the Legacy Fund as a better funding alternative given that one can make a case that both programs are intended to create or preserve intergenerational wealth for North Dakota's citizens.** In contrast, the BSF serves as a reserve fund with a greater demand for increased liquidity during periods of economic stress.

BND has issued 25 CD's over the past 20 years in connection with nearly $1 billion of "Total Project" developments. Although the rates and terms have varied considerably since inception, BND has generally issued 5-year fixed rate CD's post 2008 with the average interest rate declining materially during this time period. **There are $84 million of CD's outstanding within the $580 million BSF as of May 20, 2016.**

Advisory Board Background:

The Legacy and Budget Stabilization Funds Advisory Board (Advisory Board) is charged by law under Section 21-10-11 with the responsibility of recommending policies on investment goals and asset allocation of the legacy and budget stabilization funds. The SIB is charged with implementing policies and asset allocation and investing the assets of both funds.

NORTH DAKOTA LEGACY FUND

INVESTMENT POLICY STATEMENT

1. PLAN CHARACTERISTICS AND FUND CONSTRAINTS

The North Dakota legacy fund was created in 2010 when the voters of North Dakota approved a constitutional amendment--now Article X, Section 26, of the Constitution of North Dakota--to provide that 30 percent of oil and gas gross production and oil extraction taxes on oil and gas produced after June 30, 2011, be transferred to the legacy fund. The principal and earnings of the legacy fund may not be spent until after June 30, 2017, and any expenditure of principal after that date requires a vote of at least two-thirds of the members elected to each house of the Legislative Assembly. Not more than 15 percent of the principal of the legacy fund may be spent during a biennium. The Legislative Assembly may transfer funds from any source to the legacy fund, and such transfers become part of the principal of the fund. The State Investment Board (SIB) is responsible for investment of the principal of the legacy fund. Interest earnings accruing after June 30, 2017, are transferred to the general fund at the end of each biennium. North Dakota Century Code Section 21-10-11 provides that the goal of investment for the legacy fund is principal preservation while maximizing total return.

2. FUND MISSION

The legacy fund was created, in part, due to the recognition that state revenue from the oil and gas industry will be derived over a finite timeframe. The legacy fund defers the recognition of 30 percent of this revenue for the benefit of future generations. The primary mission of the legacy fund is to preserve the real inflation-adjusted purchasing power of the money deposited into the fund while maximizing total return.

3. RESPONSIBILITIES AND DISCRETION OF THE STATE INVESTMENT BOARD

The Legacy and Budget Stabilization Fund Advisory Board (the “Advisory Board”) is charged by law under Section 21-10-11 with the responsibility of recommending policies on investment goals and asset allocation of the legacy fund. The SIB is charged with implementing policies and asset allocation and investing the assets of the legacy fund in the manner provided in Section 21-10-07--the prudent institutional investor 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.

Management responsibility for the investment program not assigned to the SIB in Chapter 21-10 is hereby delegated to the SIB, which 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, which are also required to employ investment strategies consistent with the investment policy. Where a money manager has been retained, the SIB's role in determining investment strategy and security selection is supervisory not advisory.

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

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

The SIB shall notify the Advisory Board within 30 days of any substantial or notable changes in money managers; performance measurement services; and consultants, including hiring or terminating a money manager, performance measurement service, or a consultant.

The SIB, after consultation with the board, will implement necessary changes to this policy in an efficient and prudent manner.

4. RISK TOLERANCE

The Advisory Board's risk tolerance with respect to the primary aspect of the legacy fund's mission is low. The Advisory Board is unwilling to undertake investment strategies that might jeopardize the ability of the legacy fund to maintain principal value over time. The Advisory Board recognizes that the plan will evolve as the legacy fund matures and economic conditions and opportunities change.

5. INVESTMENT OBJECTIVES

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

a. The legacy fund's rate of return, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

b. The legacy fund's risk, measured by the standard deviation of net returns, should not exceed 115 percent of the policy benchmark over a minimum evaluation period of five years.

c. The risk-adjusted performance of the legacy fund, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

6. POLICY ASSET MIX

After consideration of all the inputs and a discussion of its own collective risk tolerance, the Advisory Board approved the following policy asset mix for the legacy fund as of April 2, 2013:

Asset Class	**Policy Target Percentage**
Broad US Equity	**30%**
Broad International Equity	**20%**
Fixed Income	**35%**
Core Real Estate	**5%**
Diversified Real Assets	**10%**

Rebalancing of the fund to this target will be done in accordance with the SIB's rebalancing policy, but not less than annually. The SIB approved an 18-month implementation strategy which completed in January of 2015. On June 15, 2016, the Advisory Board acknowledged RIO's stated intent to transfer the Bank of North Dakota Match Loan Certificates of Deposit Program ("BND CD") to the Legacy Fund on or before July 1, 2017. The BND CD investment will be limited to the lesser of $200 million or 5% of the Legacy Fund (and represent a sector allocation within fixed income). The Advisory Board approved this future change in the Legacy Fund's asset allocation without exception. BND will be requested to guarantee a minimum 1.75% investment return. The minimum return requirement will be periodically reviewed in connection with the Legacy Fund's overall asset allocation framework. BND CD's were rated AA by S&P as of June 15, 2016.

7. RESTRICTIONS

While the SIB is responsible for establishing specific quality, diversification, restrictions, and performance objectives for the investment vehicles in which the legacy 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 may be made that would threaten the tax-exempt status of the legacy 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 may be made.

f. Social investing is prohibited unless it meets the exclusive benefit rule, and it can be substantiated that the investment provides an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk. For the purpose of this document, social investing is defined as the consideration of socially responsible criteria in the investment or commitment of public fund money for the purpose of obtaining an effect other than a maximized return to the Fund.

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:

   - The cost does not exceed the fair market value at the time of investment.
   - The investment provides the legacy fund with an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.
   - Sufficient liquidity is maintained in the legacy fund to permit distributions in accordance with the terms of the plan.

- The safeguards and diversity that a prudent investor would adhere to are present.

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

8. INTERNAL CONTROLS

A system of internal controls must be in place by the SIB to prevent losses of public funds arising from fraud or employee error. Such controls deemed most important are the separation of responsibilities for investment purchases from the recording of investment activity, custodial safekeeping, written confirmation of investment transactions, and established criteria for investment manager selection and monitoring. 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 legacy fund will be evaluated against the fund's investment objectives and investment performance standards. Emphasis will be placed on 5-year and 10-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 Advisory Board periodically, but not less than quarterly. Such reports will include asset returns and allocation data. Additionally, not less than annually, reports will include information regarding all significant and/or material matters and changes pertaining to the investment of the legacy fund, including:

- Changes in asset class portfolio structures, tactical approaches, and market values.
- Loss of principal, if any.
- Management costs associated with various types of investments.
- All material legal or legislative proceedings affecting the SIB.
- Compliance with this investment policy statement.
- An evaluation of the national economic climate.
- A forecast of the expected economic opportunities and dangers.
- Management of risk by the SIB.

In addition to the quarterly and annual evaluation and review process, the SIB shall notify the Advisory Board within 30 days of any substantial or notable deviation from the normal management of the legacy fund, including any anomalies, notable losses, gains, or liquidation of assets affecting the fund.

Approved by:

LEGACY AND BUDGET STABILIZATION FUND ADVISORY BOARD	STATE INVESTMENT BOARD
______________________________	______________________________
Representative Keith Kempenich	**David Hunter**
Chairman	**Executive Director / CIO**
Date: ________________________	**Date:** ________________________

Approved by the SIB 1/23/15
Approved by the Advisory Board:
6/15/2016

BUDGET STABILIZATION FUND
INVESTMENT POLICY STATEMENT

1. FUND CHARACTERISTICS AND CONSTRAINTS.

The Budget Stabilization Fund (Fund) is a special fund created in 1987 under Chapter 54-27.2 of the North Dakota Century Code used to deposit general fund moneys in excess of appropriations. Notwithstanding the provisions of sections 54-27.2-01 and 54-27.2-02, $124,936,548 was required to be transferred by the state treasurer to the budget stabilization fund from the general fund on July 1, 2009 along with $61,414,562 on July 1, 2011 and $181,060,584 on July 1, 2013. These transfers provide over $580 million in the budget stabilization fund as of May 31, 2016. The statutory cap for the 2015-17 biennium is $572,485,454. The state investment board shall supervise investment of the budget stabilization fund in accordance with chapter 21-10.

Any interest or other budget stabilization fund earnings must be deposited in the fund. Any amounts provided by law for deposit in the fund and any interest or earnings of the fund which would bring the balance in the fund to an amount greater than five percent of the current biennial state general fund budget, as finally approved by the most recently adjourned special or regular session of the legislative assembly, may not be deposited or retained in the fund but must be deposited instead in the state general fund.

If the director of the office of management and budget projects that general fund revenues for the biennium will be at least two and one-half percent less than estimated by the most recently adjourned special or regular session of the legislative assembly, and if the governor orders a transfer, the state treasurer shall transfer the appropriate funds from the budget stabilization fund to the state general fund to offset the decrease in general fund revenues. The amount transferred from the budget stabilization fund upon order of the governor may not exceed the difference between an amount two and one-half percent below the general fund revenue projections for the biennium and the general fund revenue projections for the biennium by the director of the office of management and budget.

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

The Fund is charged by law under NDCC 21-10-02.1 with the responsibility of establishing policies on investment goals and asset allocation of the Fund. The SIB is charged with implementing these policies and asset allocation and investing the assets of the Fund in a manner consistent with the prudent investor rule as provided in NDCC 21-10-07.

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

The SIB may delegate investment responsibility to professional money managers. When a money manager has been retained, the SIB's role in determining investment strategy and security selection is supervisory, not advisory. In accordance with this Investment Policy Statement, the Fund’s assets may be invested directly or through collective investment vehicles.

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

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

3. INVESTMENT OBJECTIVES.

The investment objectives of the Fund reflect the relatively unknown life-span and the moderate risk tolerance of the Fund. Operating and statutory considerations shape the Fund’s policies and priorities as outlined below:

Objective: Sufficient liquidity is to be maintained to meet known or anticipated financial obligations and preserve the value of the surplus. Cash equivalent investments will be used to achieve this objective.

4. STANDARDS OF INVESTMENT PERFORMANCE.

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

a. The Fund's rate of return, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

b. The risk-adjusted performance of the Fund, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

5. POLICY AND GUIDELINES.

The asset allocation of the Budget Stabilization Fund is established by the SIB, with input from the Legacy and Budget Stabilization Advisory Board ("Advisory Board"). Asset allocation is based upon the appraisal of projected liquidity and income requirements, and estimates of the investment returns likely to be achieved by the various asset classes over the next five years.

In recognition of these factors, the following allocation is deemed appropriate for the fund:

Short-term Fixed Income & BND CDs	Minimum of 90%
Bank Loans w/floating yield	Maximum of 5%
Absolute Return Strategies	Maximum of 5%

Bank of North Dakota Match Loan Certificates of Deposit Program ("BND CD") limit of 35%. On June 15, 2016, the Advisory Board acknowledged RIO's stated intent to transfer the BND CD investment to the Legacy Fund on or before July 1, 2017. The latter date was based on preliminary budget guidance provided by OMB, although the transfer may occur in late-2016.

Rebalancing of the Fund to this target will be done in accordance with the SIB's rebalancing policy.

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. Derivative use will be monitored to ensure that undue risks are not taken by the money managers.

c. All assets will be held in custody by the State Investment Board's master custodian or such other custodians as are acceptable to the State Investment Board.

d. No funds shall be borrowed excluding a SIB approved securities lending program.

e. No unhedged short sales or speculative margin purchases shall be made.

f. Social investing is prohibited unless it meets the Exclusive Benefit Rule and it can be substantiated that the investment must provide an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.

For the purpose of this document, Social Investing is defined as *"The investment or commitment of public pension fund money for the purpose of obtaining an effect other than a maximized return to the intended beneficiaries."*

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 Fund's policy favors investments which will have a positive impact on the economy of North Dakota.

6. EVALUATION AND REVIEW.

Investment management of the Fund will be evaluated against the Fund’s investment objectives and investment performance standards. Evaluation will be conducted quarterly by the SIB through its review of funds participating in the Insurance Trust.

Money managers will be evaluated by the SIB quarterly. In-state meetings will be held with the money managers at least annually.

Approved by:

LEGACY AND BUDGET STABILIZATION FUND ADVISORY BOARD STATE INVESTMENT BOARD	**NORTH DAKOTA STATE INVESTMENT BOARD**
______________________________	___________________________
Representative Keith Kempenich **Chairman**	**David Hunter** **Executive Director/CIO, RIO**
Date: _______________	**Date:** _________________

Approved by the NDSIB: 8/28/2015
Approved by the LBSFAB: 6/15/2016

TO: State Investment Board ("SIB")

FROM: Dave Hunter, Darren Schulz and Eric Chin

DATE: July 15, 2016

SUBJECT: **Private Equity Update**

Background - Recently Completed Asset Liability Studies:

PERS and TFFR recently completed asset liability studies which included higher allocations to private equity ("PE"). The TFFR board approved a 6% target allocation to PE on January 21, 2016, which was accepted by the SIB on February 26, 2016. The PERS board approved a 7% target allocation to PE on June 16, 2016, which is being presented to the SIB for acceptance on July 22, 2016. Previously, TFFR and PERS had 5% target allocations to this asset class. RIO notes that PERS has a 1% higher target allocation (than TFFR) as a result of PERS having a slightly higher return expectation than TFFR (e.g. PERS has an 8.00% long-term return assumption versus 7.75% for TFFR).

Private Equity - Implementation Update:

RIO will seek to implement the "newly approved" asset allocation policies for PERS and TFFR by ramping up PE exposure over the next three to five years. RIO deems it prudent to gradually implement asset allocation changes within PE given the long-term nature of this asset class and based on consultation with our strategic partners. Adams Street was most recently confirmed as a strategic PE partner on February 26, 2016, while BlackRock was initially approved as a complementary strategic PE partner on March 18, 2016. Both of these manager searches were subject to extensive due diligence examinations conducted by RIO staff and aided by the expert assistance of Callan Associates. RIO notes that Callan was engaged by TFFR and PERS to conduct the latest asset liability studies which included the stated target allocations to PE. RIO intends to split future PE commitments equally between Adams Street and BlackRock. As in the past, Callan and RIO will continue to provide the SIB with quarterly performance updates for all SIB clients including a comparison of actual and target asset allocation levels for each asset class including private equity. The size of PE commitments to Adams Street and BlackRock will effectively increase up to $100 million per annum as a result of these higher strategic asset allocations by the PERS and TFFR boards.

Agenda Item VI.D.

INFORMATIONAL MEMO

TO: State Investment Board

FROM: Dave Hunter, Darren Schulz and Eric Chin

DATE: July 15, 2016

SUBJECT: Fixed Income Manager Restructuring - Background

Summary:

Amidst a historically low interest rate environment across global developed markets and a regulatory regime that has materially changed following the Global Financial Crisis, the fixed income market climate and breadth of investment options has evolved dramatically over the past several years. In light of these challenges and the opportunities it has created, Staff will be proposing a new fixed income manager framework for the Pension Trust at an upcoming SIB meeting. Additionally, as part of a search for alternative credit managers to diversify and enhance returns within the fixed income allocation, Staff will be bringing forward finalist candidates for consideration as part of the implementation of the new framework.

The Evolution of Fixed Income For Institutional Investors:

Historically, investment in fixed income served to achieve multiple objectives, such as capital preservation, income generation, and diversification. In a bygone age, implementation typically consisted of investing in a basket of publicly traded government and plain vanilla corporate bonds. In the 1980s, with the advent of securitization and the high yield market, not to mention burgeoning derivatives markets, implementation evolved. Today, however, while the core objectives of fixed income remain unchanged, due to a number of long-term secular forces and recent regulatory changes the implementation of fixed income within institutional portfolios has grown increasingly more complex and segmented:

1. A 35-year decline in U.S. interest rates fueled by a dampening of long-term inflation and, more recently, a low rate environment driven by unprecedented monetary stimulus undertaken by central banks across the globe has prompted many institutions to review and restructure their respective fixed income portfolios in response to the low rate environment.

2. In reaction to the worst recession and financial crisis since the Great Recession, regulators have attempted to address areas considered to have caused the last crisis by heavily regulating financial institutions, mortgage lending, structured products, and derivatives. A stricter regulatory environment in the U.S. (Federal Reserve, Volcker Rule, Dodd-Frank, Leveraged Lending Guidelines) and abroad for banks (Basel III, ECB) and problematic balance sheets among European banks has created a financing void as U.K and European banks deleverage and as U.S. banks significantly curtail or eliminate lending activities in areas that require high capital charges. Non-bank investors that are positioned to accept varying degrees of illiquidity have taken note of this sea change, seeing it as a way to harvest diversifying sources of return not available across traditional credit strategies.

3. After the financial crisis, dealers began to move away from a principal model of market making in public fixed income securities, whereby they would facilitate trades using their own inventories and assume some risk, toward an agency model. Pro-crisis regulation has been widely cited as a key factor in this change, the effect of which is upward pressure on bid-ask spreads and trading costs, and a concentration of activity in the most liquid instruments and a move away from less liquid ones. This problem is particularly acute in segments of the U.S. high yield market.

Considerations for Reshaping a Fixed income Allocation in Response

The following are key questions to consider across four categories in reshaping a fixed income structure going forward:

- **Liquidity**: How much liquidity is actually needed to fund liabilities? Is there additional potential to harvest illiquidity premiums in less liquid strategies?

- **Diversification**: Are there complementary strategies to diversify a fixed income portfolio that consists of a more traditional allocation to Barclays Aggregate sectors such as Treasuries, government-related, investment grade corporate, and securitized bonds (Agency MBS, CMBS, ABS)?

- **Interest Rate Risk**: Given that rising rates erode the purchasing power of a fixed coupon bond, what strategies can be employed through floating rate structures to deliver returns that are not directly correlated with rates?

- **Opportunity**: Can opportunistic strategies be employed to tactically capitalize upon market dislocations in a timely and efficient manner, two examples being European commercial real estate whole loans and the regulatory-driven disposition of loans by European banks?

Alternatives to Traditional Fixed Income

The breadth of fixed income options has expanded considerably since the Great Recession, giving investors greater flexibility to construct fixed income structures tailored to meet expected return targets and risk tolerances. Today, the menu of options has evolved beyond the traditional “plus” sectors of a “core-plus” approach, such as high yield, into a broader group called “alternative credit”, which can be simply defined as all credit which is not traditional investment grade government or corporate debt.

Some examples of alternative credit strategies include the following:

- **Bank loans** – Private debt obligations senior in the capital structure (above high yield) issued by companies as part of a leverage buyout, also known as leveraged loans. Loans are typically secured on assets and are floating rate, thus having a higher default recovery rate and lower interest rate risk as compared to high yield bonds. Bank loans are less liquid than high yield and thus command an added illiquidity premium.

- **Structured credit** – Debt securities whose value is determined by an underlying pool of loans producing regular cash flows. By grouping often small illiquid loans into one structure, public securities can be offered to investors with different risk/return profiles. Examples include CLOs (collateralized loan obligations, whose underlying securities are pools of bank loans) or ABS (asset-backed securities, whose underlying securities are pools of other assets, including auto, credit card or student loans).

- **Direct lending** – Includes loans to private companies, privately placed debt of public companies, or loans backed by real assets (real estate, infrastructure). Direct lending is an opportunity for non-bank investors to capitalize on the financing void created by post-crisis regulation. Company-specific terms provide idiosyncratic return drivers and better diversity.

- **Distressed debt** – Debt of public companies at or near bankruptcy, defined as bonds rated CCC or below or those with spreads 10% or more over Treasuries. They can also include distressed real asset loans where collateral value falls below loan value and non-performing consumer, corporate or real asset loan pools (NPLs). Distressed debt is a less liquid strategy, allowing a manager to actively unlock value through a bankruptcy/restructuring process.

In a research article titled "Illiquid Credit – Playing the role of a (good) bank", Willis Towers Watson summarized the characteristics of various alternative credit strategies in the following table:

Opportunities exist across the risk and return spectrum	**Investment grade alternatives**	**Loan/High-yield alternatives**	**Higher-risk performing credit**	**Equity-like credit**
	Trade finance	Niche-focused direct lending	Real asset leasing	Distressed for control
	New issue mortgages	Mezzanine	Royalties	Distressed debt
	Infrastructure senior debt	Unitranche	Specialty finance	Rescue finance
	CRE senior debt	Real estate whole loans	US RPLs	CLO equity/risk-retention
	AAA CLO debt	Middle-market direct lending	Regulatory capital	NPLs
Characteristics				
Net return range (over reference rate)	1.5%–5%	5–8%	8–12%	12%+
Income generating	Yes	Yes	Yes	Mix
Risk profile	Low	Medium	Medium-high	High
Reasons to consider	Diversification	Illiquidity premium	High carry	Alternative source of equity-like returns
	Low-risk source of yield	Skill	Illiquidity premium	Illiquidity premium
		Diversity of alternative credit risk	Skill	Skill

Historically, some of these lending strategies fell under the domain of financial institutions, but with regulatory-driven disintermediation they have become increasingly mainstream, more familiar and appealing to non-bank investors, particularly institutions with long investment horizons in a funding position to be adequately compensated for judiciously surrendering liquidity.

An important point to make concerning alternative credit strategies is that they are not intended to replace but rather complement a traditional allocation to fixed income. Whereas the more liquid and efficient traditional side of fixed income provides less opportunity for alpha and is more vulnerable to rising rates and inflation, alternative credit strategies tend to focus on less efficient corners of the bond market, are generally floating rate in nature, are structured based on company-specific credit events, and allow for return enhancement through both manager skill and through the intrinsic illiquidity premium these strategies command.

RIO Staff Fixed Income Manager Structure Review and Restructuring Process

Over several months, in addition to the ongoing due diligence of existing fixed income manager mandates across all three investment pools, Staff has engaged numerous fixed income solutions teams among our existing roster of fixed income managers to analyze risk and return of current NDSIB fixed income structures. These discussions have yielded frameworks for budgeting liquidity and structuring fixed income with a focus on options to consider for enhancing risk-adjusted returns and diversification.

Additionally, in recognition of the merits of alternative credit strategies as a complement to traditional fixed income, Staff has engaged a number of specialist alternative credit managers with the following attributes:

- Differentiation in credit origination and sourcing
- Time-tested track record
- Strong credit underwriting culture across the organization with an understanding of the loans underwritten and the associated risks
- Investment process and focus on risk management
- Meaningful portfolio management experience
- Use of leverage
- Technology infrastructure to perform loan administration services

Among the firms identified, Staff has conducted due diligence calls and meetings with the following alternative credit firms: Apollo, Ares, Bain/Sankaty, Blackrock, Carlyle, Cerberus, Crescent, Goldman Sachs, Golub, Highbridge, PIMCO, Oaktree, KKR and TPG.

Conclusion

At an upcoming SIB meeting, Staff will be proposing a fixed income manager framework that seeks to achieve material improvements in return potential and diversification without increasing plan-level risk. The proposed structure will be a "bar belled" approach, explicitly segmenting the fixed income manager structure based on liquidity, quality and expected return potential: 1) An anchor of low risk, high quality, highly liquid traditional fixed income beta exposures on one end of the credit risk spectrum to fulfill the role of capital preservation and high quality income generation; 2) Complemented by moderate risk, less liquid, higher return potential alternative credit strategies for greater diversification and differentiated sources of return enhancement. Finalist alternative credit managers will be brought forward to the Board for consideration as part of the implementation of the less liquid portion of the manager structure.

TO: State Investment Board ("SIB")

FROM: Dave Hunter, Darren Schulz, and Eric Chin

DATE: July 15, 2016

SUBJECT: **Risk Management Provider: BlackRock Solutions**

Risk Management Solution Update:

Over the past year and a half, Staff has been evaluating risk management providers to develop and implement a comprehensive risk management solution for the NDSIB. Following a rigorous due diligence process, Staff has determined that **BlackRock Solutions (BRS)** offers the combination of sophisticated risk analytics, data management capabilities, and advisory services that best meets RIO's technological, intellectual, and operational demands. Over the next month Staff hopes to finalize contract negotiations with BRS, and subsequently begin implementation of the risk platform.

BRS Proposal:

BRS's risk solution for the NDSIB is comprised of two core components **Aladdin Risk** and **Client Solutions Advisory Services.**

1) ***Aladdin Risk*** is the analytics engine that produces risk reports and houses BRS's risk analytics. It is a hosted solution, which means that BRS is responsible for building and maintaining the infrastructure required to operate the Aladdin Risk system. BRS models each security individually, and risk can be calculated at the security level or aggregated up to the portfolio level.

2) **Client Solutions Advisory Services:** In addition to implementing and hosting the Aladdin Risk engine, BRS will assign a team of risk consultants to complement the Aladdin technology. Leveraging the Aladdin Risk engine, this team will provide RIO with custom risk and asset allocation analyses, and offer modelling perspectives on different risk themes. Moreover, this team will serve as a conduit to the resources and thought leadership of the broader BlackRock organization.

Conclusion:

Staff is excited to bring BlackRock's sophisticated risk solution onto the RIO platform. The Aladdin Risk engine is a best in class risk analytics system, and will provide Staff with the quantitative tools to measure and identify different risks in the NDSIB portfolios at both the manager level, and the aggregate portfolio level. Moreover, the Client Solutions Advisory Team will be a valuable resource for developing analyses and reports specifically tailored to the NDSIB's needs. Staff believes that the BRS solution is best positioned to identify, measure, and analyze the different risk factors in the NDSIB portfolios, and will be invaluable for quantifying the downside risk across a variety of market scenarios.

BOARD LEADERSHIP

INNOVATIVE APPROACHES TO GOVERNANCE

NUMBER 145, MAY–JUNE 2016

www.boardleadershipnewsletter.com

Empower, Account, Integrate and Sustain: The Board Administrator's Role

by Julia Steiner Halsted

Rockford Park District in Illinois (United States) operates 177 parks and facilities. As a major part of her role as Policy Governance and Community Relations Manager for the District, Julia Steiner Halsted is responsible for the administration of its use of the Policy Governance® system. Here, she reflects on what she has learned.

As with any organizational change, strategic implementation is critical to success. It is also often the most challenging step of the process. Policy Governance is no exception. To be a success, the Policy Governance model requires a great deal of bipartisan commitment between the governing board and chief executive officer (CEO). These essential participants must begin their Policy Governance journey with an acute understanding of their roles and responsibilities as defined by the governance model. However, in our fervency to advance board and CEO competency, we are inclined to overlook the importance of sustaining the system through ongoing tactical application and the support required to manage such systems.

Arriving at Policy Governance

Nearly twenty years ago, Rockford Park District Commissioner Bruce Atwood (board member) and a senior administrator simultaneously encountered John Carver's Policy Governance model. They were both greatly intrigued. The administrator introduced then CEO (for whom we use the term Executive Director as seen in policy extracts below) Webbs Norman to this proposed utopian board-CEO governance paradigm. Shortly after that, Commissioner Atwood led the board to implement policy governance. If the model had not been introduced to the board by a peer, at that time the notion that the board should stay out of operations might have been laughable, if not irreverent. Moreover, if the CEO had not known of the model, he may have been suspicious of the board's motives for moving toward this seemingly somewhat liberal system of accountability. Instead, because of peer leadership on the part of the board, and participative management on the part of the CEO, the District pursued Policy Governance with the counsel of a trained consultant.

(continued on page 2)

ALSO IN THIS ISSUE

NEWS

Recording Significant Board Decisions

The Pearse Trust advises on corporate and trust structures in the United Kingdom, Canada, the United States, and beyond. In a recent blog post, they highlight a case in which board trustees' failure to maintain a high standard of record keeping on a significant decision came back to haunt them.

The 2014 ruling of the Royal Court of Guernsey in the case of the [AAA] Children's Trust (Royal Court, January 8, 2014, Sir Richard John Collas, Esq., Bailiff). The trustees asked the Court to bless its decision to sell a significant part of the trust fund that was tied up in a property. However, the donor had stated in part of a trust deed that the property should be sold only in exceptional circumstances and at an appropriately extraordinary price, and the decision to sell was opposed by all the family members and an advocate representing the children and unborn and unascertained beneficiaries.

The Court did not agree with the transaction on the grounds that it could not ascertain the main issues surrounding the trustee's deliberations because there was no relevant documentation to support the decision. The Pearse Trust recommends that trustees always ensure that they properly

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Empower

(continued from front page)

Two decades of courageous leadership and faithful discipline have led to an organizational culture deeply rooted in Policy Governance today. As elected officials, the board is focused on governing through policy to fulfill the purpose of the organization for the benefit of citizens. Their policies define the results to achieve, prioritize to whom services are to be provided, direct the allocation of resources, and establish boundaries of prudence and ethics within which the organization must operate. The CEO is empowered to achieve the specified outcomes, with little ambiguity as to his authority or limitations. In the experience of Rockford Park District, there have been enormous advantages provided by this clarity, which extends through the CEO into the ranks of the organization.

Consistent with board policy, the CEO is the only employee directly accountable to the board. Necessitated by the sheer size of the organization and motivated by a collaborative leadership style, the CEO delegates certain functions to staff just as the board delegates operations to the CEO. The District's CEO relies on a host of team members to facilitate decisions that impact the organization and its stakeholders. This approach is exemplified by Executive Tim Dimke, who "gives managers opportunities to operate independently while still being dependent on the same value system that drives the entire organization."[1] This is effective because staff also embrace and understand their responsibilities as they relate to Policy Governance, ensuring achievement of priority results (Ends) and compliance with prudential and ethical boundaries (Management Limitations) throughout the organization.

It is not surprising that such a participative leadership style lends itself well to Policy Governance, which itself emphasizes servant-leadership. While the CEO works on high-level initiatives and collaborations to move the organization toward achievement of the vision, mission, and priorities, staff implements tactics to achieve their corresponding objectives in the operations of daily programs and services.

Rockford Park District takes a multifaceted approach to sustaining Policy Governance by engaging all levels of the organization. The board president serves as the chief governance officer, assuring the integrity of and adherence to its governance process policies. The board president and CEO together are dedicated to maintaining communicative relationships with each of the board members. This establishes the relational avenue necessary for discussing Policy Governance roles, responsibilities, and when necessary dealing with issues of encroachment.

Board Administration

The board requires in its policies that "the Executive Director shall not permit the Board to be uninformed or unsup-

Figure 1: Monitoring Report Collection Process

Policy Governance Manager	Asistant	Director	Managers/ Supervisors
1. **Email** Director and Assistant requesting data collection			
	2. Review report and **disseminate** to managers/ supervisors		
			3. **Input** success indicator responses and return to Assistant
	4. **Combine** and complete manager/supervisor responses, proofread, edit to style guide standards, and submit to Director for approval		
		5. **Review** and approve for completeness and accuracy; return to Assistant	
	6. **Enter** report data into master collection document		
7. **Edit** and submit report for Executive Team and Board review			

ported in its work." The CEO interprets good communication as being essential to compliance with this policy, with the understanding that the District needs a well-informed and supportive board and that being well informed requires the CEO to provide thorough, relevant, and timely information necessary for the board to govern with knowledge, integrity, and assurance.

The executive director is the main conduit for such communication between the board and the organization, with essential support provided by a variety of staff members, especially the recording secretary (clerk), Policy Governance manager (administrator), and executive leadership team.

Public relations issues, major projects or decisions, general updates, meeting calendars, and community engagement commitments are streamlined as a part of a weekly memo that serves as an official record of CEO communication to the board. This requires staff to be alert to information and forward anything to the CEO that may be strategically or relationally advantageous to share with the board. Certain subject matters may be elevated to periodic one-on-one meeting discussions between the CEO and each of the board members, or as formal board presentations, typically conducted by Executive Team members. Items that require the formal approval of the board are identified in governing policies and are preliminarily introduced to the board through the weekly memo, individual meetings, or full presentations. Recommendations for board action may be prepared by staff at any level and advanced through the ranks to the CEO.

A strong board-CEO relationship is enhanced by a strong team of executive managers. This team has an acute awareness of the board-established priorities and limitations as they exercise their responsibilities to advance their respective divisions of the organization toward achievement of the priorities in harmony with the whole. Board members gain familiarity with staff members by participating in staff committees when mutually agreed upon by the board and CEO. In such instances, Board policy makes clear that board members shall refrain from attempting to exercise individual control over the committee or staff. This allows the organization to capitalize on board member professional expertise, satisfy board members' related personal interests, and maintain peer accountability for participation with respect to governance.

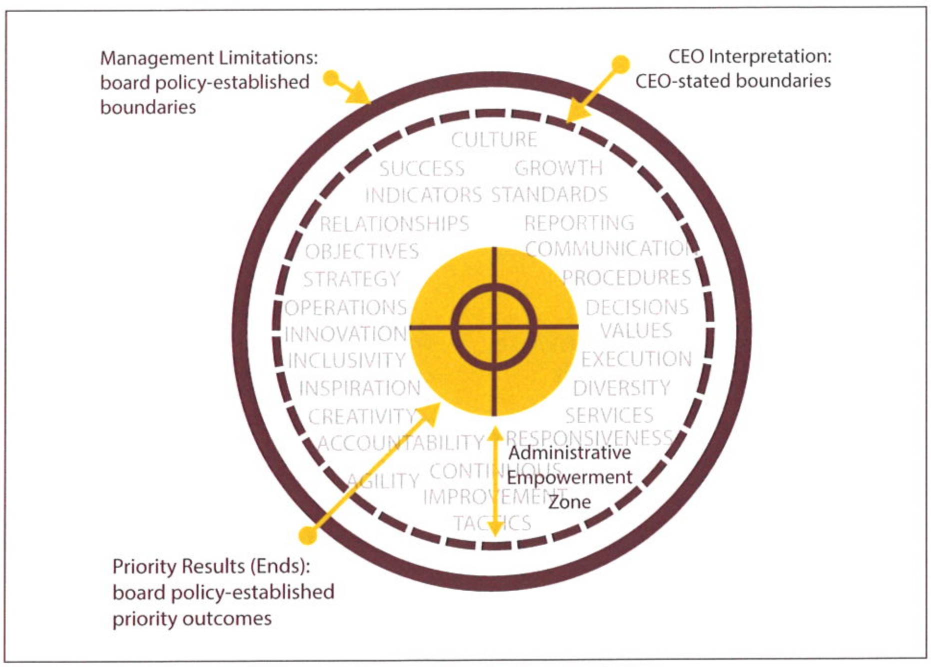
At Rockford Park District, while the recording secretary (clerk) supports the CEO with board meetings, schedules, recommendations, administration, and records, the Policy Governance manager (administrator) serves at the will of the CEO as the in-house Policy Governance consultant, maintaining and aligning the governance and operational leadership system. The responsibilities include board policy maintenance and recommendations, including the annual review and approval of all board policies and regulations. The manager works as part of the executive team developing the strategic plan and CEO interpretations to align to board priorities (Ends), and coordinates more than thirty Ends and Management Limitations monitoring reports yearly. The reporting process includes input from no less than three other staff members in each division of the organization, as seen in the swim lane chart provided as Figure 1.

As part of the national accreditation readiness program, the Policy Governance manager leads a team that maintains an all-inclusive system to automate and align all operational standards, procedures, and administrative policies, to the board's governing policies as they are updated. Comprehensive approaches such as this keep the priorities (Ends) at the forefront for every employee, enhance compliance with established limitations, and establish the framework for organizational culture. A clear target, explicit boundaries, and latitude for stakeholder input and responsiveness make it simple for staff throughout the organization to make decisions, achieve milestones, and enjoy their work. The field of latitude is depicted in Figure 2 as the administrative empowerment zone, a space that cultivates innovation, growth, responsiveness, culture, and many other characteristics and activities that define the most notable organizations—those who also experience few uncalculated laments and have much to celebrate.

I believe that boards that endeavor to lead their organizations to new

(continued on page 8)

Figure 2: The Administrative Empowerment Zone



CALENDAR OF EVENTS

June 16, 2016

IPGA Pre-Conference Sessions

— Toronto, Canada

- Introduction to Policy Governance: http://bit.ly/PolicyGovIntro
- Transforming School Boards: http://bit.ly/schoolboards
- A Special Advanced Pre-Conference Workshop with Miriam Carver designed for those who have attended the Carver Policy Governance Academy: http://bit.ly/AdvPolGov

June 16–18, 2016

International Policy Governance Association (IPGA) 2016 Annual Conference: It's All About Ethics!

— Toronto, Canada

Discussion and networking around:

- Establishing core values
- Using Policy Governance to make values count
- Making difficult choices
- Conflicts of interest
- Balancing control and empowerment

For more information, go to http://bit.ly/IPGA2016; http://bit.ly/IPGAConfProg

June 16–18, 2016

International Young Governance Professionals' 2016 Summit

— Toronto, Canada

The International Young Governance Professionals' (IYGP) Summit is an independent, global community of young leaders dedicated to cultivating fresh perspectives in corporate and nonprofit governance.

For more information about this year's summit go to http://iygp-summit.com/

June 19–21, 2016

The 22nd Annual Stanford Directors' College

— Stanford Law School

This program for directors and executives of publicly traded firms addresses a broad range of problems that confront modern boards. http://conferences.law.stanford.edu/directorscollege2016/

June 27–29, 2016

International Corporate Governance Network Annual Conference

— San Francisco, California, USA

For more information, see https://www.icgn.org/events/icgn-san-francisco-conference-academic-meeting

September 17–20, 2016

National Association of Corporate Directors (NACD) 2016 Global Board Leaders' Summit

— Washington, DC, USA

For more information, see https://www.nacdonline.org/Conference/content.cfm?ItemNumber=4755

BoardSource

Throughout the year, BoardSource organizes a range of webinars and training events for US nonprofit board leaders.

For more information, see http://bit.ly/BdSourceEvents

Harvard Business School

The HBS programs on governance can be seen here: http://www.exed.hbs.edu/programs/Pages/program-finder.aspx?HBSTopics=Governance

Haines Centre

The Haines Center for Strategic Management is a team of strategic management consultants, whose work is based in Systems Thinking. http://hainescentre.com/training/public-workshops/

Holacracy

Holacracy is not a system for the work of boards but does bring structure and discipline to a peer-to-peer workplace. HolacracyOne offers a range of events, from free introductory webinars to advanced immersive trainings.

For more information, see http://events.holacracy.org/

National Coalition for Dialogue & Deliberation (NCDD)

NCDD also regularly provides useful training events. For more information, see http://ncdd.org/events/ncdd2014

National Council for Voluntary Organisations (NCVO)

NCVO provides a range of programs across the United Kingdom and online. Topics relevant to boards include understanding financials, mentoring (for new board members) and outcome measurement. https://www.ncvo.org.uk/training-and-events ❑

Whose Organization Is It Anyway?

by Richard Tudway

Here, Richard Tudway, author of The Looming Corporate Calamity: Restoring Corporate Legitimacy,[1] *which provides an examination of the evolution of corporation and corporate governance norms in a range of different jurisdictions and recommendations for reform, shares his thoughts on this foundational governance question.*

Who Owns the Corporation?

FEW RHETORICAL HEADLINE-GRABBING statements capture better the collective state of angst about the modern corporation. Qualifications are, of course, needed. People are not thinking about all corporations or firms in this way. But they are thinking of some of the biggest publicly traded firms that straddle the planet and impact upon the lives of all. The fear is fueled by serious investigative reports of events across a wide spectrum of public interest concern. They embrace everything from massive and systematic tax evasion to lies and misrepresentations about the products and services they offer, to the price they charge for those same products and services, to employing people on wages that deny affordable living without benefits from taxpayers to make good the difference. The complaints are legion.

When challenged, the leaders of these great industries seem to disappear like mist in the morning sun. All the public is left with is the steady drip of scandal and disclosure. The damage to corporate legitimacy is immeasurable. Yet little changes. Corporate abuse continues. Public esteem of these great institutions sinks deeper by the day. Global protest is brushed aside.[2] Corporate leadership elites appear mostly unmoved.

It is my belief that all this reveals a fundamental flaw in corporate governance arrangements, which must be addressed.

What the Historic Record Tells Us

So how did it all happen? This is a tangled story. It starts life in the mid-nineteenth century with the passage of laws of limited liability. This happened initially in Britain and Europe and later in the United States and elsewhere. Limited liability created a new corporate entity with a legal status quite distinct from the social and political mores of *incorporation* that then existed.

Until the mid-nineteenth century, unlimited liability corporations—or partnerships—were the predominant form of incorporated status.[3] Things were fundamentally changed by the introduction of limited liability. The new law provided shareholders with a cap on their downside risk in the event of company failure or other tort.[4] Under unlimited liability, this risk was literally without limit. Under the new arrangements, shareholder loss was limited to the value of the equity invested.

The aim of limited liability was to encourage the wealthier middle classes to invest their capital into companies without exposure to any commercial liabilities generated by the company during its existence. Though opposed by luminaries of the day, it would fly in the face of the facts to say other than that the innovation was highly successful.[5]

The Discovery that the Corporation Owns Itself

So far, so good. But what was then to follow is an example of the law of *unintended consequences*, it being so frequently the fact that actions taken by authorities produce unintended results. In this case, the action of limiting liability produced quite different responses in different jurisdictions. This

WHEN WE SAY ...

BOARD LEADERSHIP's mission is "to discover, explain, and discuss innovative approaches to board governance with the goal of helping organizations achieve effective, meaningful, and successful leadership to fulfill their missions."

Board Leadership aims to fulfill this mission by engaging its readers in a lively and illuminating inquiry into how board governance can be made more effective. This inquiry is based on three key assumptions:

- Boards exist to lead organizations; not merely monitor them.
- Effective board governance is not about either systems, structures, processes, theories, practices, culture, or behaviors—it is about all of them.
- Significant improvements are likely to come only through challenging the status quo and trying out new ideas in theory and in practice.

Uniquely among regular publications on board governance, *Board Leadership* primarily focuses on the job of board leadership as a whole, rather than on individual elements of practice within the overall job.

Over time, *Board Leadership* will provide a repository of different approaches to governance created through its regular "One Way to Govern" feature.

Here's what a few of the key terms we use mean to us:

- **Innovative:** Creating significant positive change.
- **Approaches to:** principles, theories, ideas, methodologies, and practices.
- **Board governance:** The job of governing whole organizations. ❑

is sometimes called a *path-dependent* response, that is, one in which the response to a similar problem results in different policy response, reflecting the different jurisdictions' existing institutional frameworks and cultures.

In the case of Britain, the passing of limited liability was followed by fifty years of legal confusion about the meaning of the act.[6] This was only resolved by the House of Lords judgment in 1897 in *Salomon vs. Salomon*. The burden of the judgment was to make clear, finally, that the company was an entity separate from the shareholders—a ruling with profound implications for corporate governance and the concept of shareholder ownership.[7]

FOOD FOR THOUGHT

"The culture of blame is a major barrier to the openness required if sentinel events are to be reported, lessons learned and safety improved. The system of clinical negligence is part of this culture of blame. It should be abolished. It should be replaced by effective systems for identifying, analysing, learning from and preventing errors and other sentinel events." ❑

The Report of the Public Inquiry into children's heart surgery at the Bristol Royal Infirmary 1984–1995: Learning from Bristol (Cm 5207). The Stationery Office. July 2001. http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4005620

Elsewhere, views on the matter were different. In German and Nordic jurisdictions the reaction of legislators was different. In those jurisdictions there was an early and very insightful recognition of something later to emerge in English academic literature as the agent/principal problem. In Anglo-American jurisdictions, Berle and Means[8] in their seminal work on the corporation identified a problem that was everywhere apparent in the case of publicly listed corporations (i.e., those trading on stock exchanges). In summary, they concluded that as shareholders became detached from the corporation, managers became increasingly indifferent to their interests and wishes. This had the effect of creating a new tension in Anglo-American corporate governance—unresolved to this day. Company directors and top management are increasingly disconnected from shareholders in whatever form. This event seriously undermines corporate legitimacy, leaving the corporation with no credible evidence of ownership or accountability.

Independent Supervision as an Alternative

In Northern European jurisdictions, things evolved differently. Spotting the ownership tensions that might well arise where larger limited liability corporations were concerned, legislators in Northern European jurisdictions put in place conditions that would preserve the *aggregate* nature of the corporation.[9] This required larger corporations to create constitutionally separate supervisory boards. These boards would represent the interests of shareholders and other key stakeholders like employees. It would also, at arm's length, oversee the activities of the board of management, comprising the senior executive directors of the company. In short, the supervisory board would supervise the executive directors who run the business and ensure the social accountability of the enterprise.

In Anglo-American jurisdictions, the response has been different. Following the total collapse of Enron, among others, in 2002 amid evidence of systemic fraud within the corporation industry, self-regulatory groups[10] have favored the appointment of an increasing number of nonexecutive directors (NEDs) with the objective of strengthening corporate governance.[11] These NEDs are selected and appointed by senior board members. The NEDs sit on the same board—an organ of the everyday running of the company. The verdict on performance to date is that NEDs lack the power and the institutional independence to supervise the activities of the executive directors. Yet there is no willingness to change the fundamental power structure of corporations. The situation, as a result, worsens progressively.

The Case for Reform

Given the dysfunctional way in which publicly traded corporations operate in Anglo-American jurisdictions there is a clear case for reform. Reform needs to address the following interconnected issues:

- Corporations above a specified size should be required to create constitutionally independent supervisory boards to ensure that the interests of shareholders and other key stakeholders are fully and effectively represented.
- Membership of the board should be determined by the legitimate groups representing the interest of all relevant stakeholders by agreed transparent processes.
- Directors' duties shall be redefined to reflect members' supervisory duties, ensuring that all directors appointed are held clearly responsible—joint and severally—in law for the responsible stewardship of the company by the executive directors of the corporation who are answerable to them.
- The Supervisory Board shall from its membership elect a Chair person and other officers to perform specific supervisory tasks. It shall also determine the terms and conditions of directors of the Supervisory Board and all matters

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News

(continued from front page)

document their decisions and the factors that they considered in reaching significant decisions and suggest the following guidelines:

- Trustees should consider whether it is necessary to obtain independent professional advice and, if necessary, should obtain such advice prior to making the decision.
- Trustees should convene a meeting to specifically consider the momentous decision.
- Trustees should prepare and circulate an agenda for the meeting together with all relevant supporting documentation, in advance of the meeting, providing sufficient time for the attendees to study the content.
- Detailed minutes should be taken at the meeting, with specific attention made to the decision making process, the trustees' deliberations and the decision taken at the meeting.

The full blog post is available at http://www.pearse-trust.ie/blog/a-momentous-decision-a-must-read-for-trustees

Ethical Companies

For the past 10 years *The Ethisphere Institute* has been honoring superior achievements in transparency, integrity, ethics, and compliance by awarding the *World's Most Ethical Company* (WMEC) designation to those companies that excel.

The Institute's rating system ranks companies on (1) promoting ethical business standards and practices internally, (2) enabling managers and employees to make good choices, and (3) shaping future industry standards by introducing tomorrow's best practices today. The aim is not to cover all aspects of corporate governance, risk, sustainability, social responsibility, compliance or ethics, but to review definitive criteria of core competencies.

The Ethisphere Institute's scoring system assigns weights to five factors as follows:

- Ethics and compliance program: 35%
- Corporate citizenship and responsibility: 20%
- Culture of ethics: 20%
- Governance: 15%
- Leadership, innovation, and reputation: 10%

Interestingly, they have identified clear similarities in the ethics practices of the companies that have received the WMEC designation. It turns out that high percentages of those receiving the honor have used the following:

- Code of conduct: 95%
- Compliance and ethics policies: 95%
- Misconduct reporting system: 92%
- Communication program: 90%
- Training curriculum or program: 88%
- Investigation process: 88%
- Organizational culture of ethics: 82%
- Risk assessment process: 82%

Significantly, 61% of the WMEC designees undertake annual reviews of these practices, versus 27% of non-designees.

You can see more at http://ethisphere.com

G20/OECD Principles of Corporate Governance Updated

The updated principles were launched at the meeting of G20 Finance Ministers and Central Bank Governors in Ankara, Turkey, on September 4–5, 2015 as part of continuing efforts to promote market confidence and business integrity.

They provide recommendations for national policymakers on shareholder rights, executive remuneration, financial disclosure, the behavior of institutional investors, and how stock markets should function. Sound corporate governance is seen as an essential element for promoting capital-market-based financing and unlocking investment as keys to boosting long-term economic growth.

Developed by the OECD in 1999, the principles "serve as a standard for governments and regulators worldwide."

The principles can be seen at http://www.oecd.org/daf/ca/Corporate-Governance-Principles-ENG.pdf

United Nations' Sustainable Development Goals

At the beginning of this year, the United Nations' seventeen Sustainable Development Goals came into force. These goals build on the very well expressed Millennium Development Goals that were established in 2000 following the Millennium Summit and have led to some real progress on a number of fronts. The new goals apply to all countries over the next fifteen years and are designed to mobilize efforts to end all forms of poverty, fight inequalities, and tackle climate change, while ensuring that no one is left behind.

The new goals are based on the understanding that ending poverty must go hand-in-hand building economic growth and addresses a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection.

You can see reports on what has been accomplished to date as well as a link to the Sustainable Development Goals at http://www.un.org/millennium goals/ ❑

WRITING FOR *BOARD LEADERSHIP*

***Board Leadership* welcomes articles from governance practitioners, researchers, and consultants on topics related to the discovery, explanation, and discussion of innovative approaches to board governance. If you have something new to say or want to provide a new perspective on something already said, please get in touch to discuss your idea further and to get a copy of our publishing criteria. Email: coliver@goodtogovern.com** ❑

Who's Organization

(continued from page 6)

of tenure, including resignation and reappointment.

- The Supervisory Board shall be responsible for setting its own budget, which shall then become a charge against the revenue of the corporation.
- The Supervisory Board shall be responsible for settling the compensation and contractual terms of the most senior members of the Management Board.
- The managing director or CEO shall be permitted to sit on the Supervisory Board and to take part in all discussions of the Supervisory Board.
- The Supervisory Board shall represent the corporation in all matters concerning the public affairs of the corporation. ❑

Richard Tudway has worked for the British National Economic Development Office and the Paris based OECD (Organisation for Economic Co-operation and Development). His career has also included senior positions in industry and investment banking. He was a vice president of security at Pacific Merchant Bank, where he advised on developments in money markets and capital markets. He is the founder and principal of the Centre for International Economics, providing advice and consultancy on developments in the global economy. He has made an active contribution to the debate led by the OECD in defining the Framework of Corporate Governance. Richard can be contacted at richardtudway@compuserve.com

Notes

1. Tudway, R. *The Looming Corporate Calamity: Restoring Corporate Legitimacy* (Burgess Hill, UK: Heterodox Publishing Limited, December 2014).
2. The US Uncut Movement is an example.
3. Deed of Settlement Companies had been created by lawyers of the day to circumvent unlimited liability.
4. *Tort* is a term that refers to legal liability of the corporation for wrongdoing.
5. Adam Smith, at a rather earlier stage in the debate about limited liability, was opposed to its passing on the grounds that it would encourage entrepreneurs to squander recklessly the money invested by shareholders in such companies.
6. The confusion arose over where exactly the limitation on liability lay because of the failure to have clarified the legal nature of the corporation following limited liability.
7. This problem arises from the understanding in law that the principals are the shareholders or owners, and the managers are the agents of the principal(s) and are expected to run the company in the best interests of the principals.
8. Berle, A. A., and G. C. Means. *The Modern Corporation and Private Property* (New Brunswick and London: Transaction Publishers, 1932).
9. The *aggregate* nature of the corporation is a reference to its integrated form, which existed prior to the act of limited liability. It was changed as a result of limited liability with the shareholders becoming detached from the company and thus creating the principal/agent conflict in Anglo-American jurisdictions.
10. An example would be the compilers of the comply or explain Cadbury Code in the United Kingdom.
11. The United Kingdom's Higgs Review (2003) on the role and effectiveness of independent directors provides an important insight into the nature of accountability within large corporations.

Empower

(continued from page 3)

heights of achievement need to consider the following:

- Are the priority outcomes (Ends) clearly stated and understood by your CEO?
- Are boundaries (Management Limitations) clearly stated and understood by your CEO?
- Is there enough latitude between the goals and the boundaries to empower your CEO and, therefore, his or her team, to try new approaches to business?

If the answer is no, this uncertainty comes at a significant cost to the success, resources, and sustainability of your organization. Allowing the greatest possible degree of latitude within safe boundaries will not only improve the alignment of resources to achieve your organizational goals but also allow the CEO to empower the entire workforce to serve your customers in new, exciting ways. It all starts with the board, leading by example with empowering policies in balance with monitoring and accountability. ❑

Julia Steiner Halsted can be contacted at JuliaHalsted@RockfordParkDistrict.org.

Note

1. Webbs Norman with Geri Nikolai and Tim Dimke. *Building a Lasting Dream: 1909 to 2009, A History of the Rockford Park District* (Beloit, WI: Amphitryon, 2011); paperback.

BOARD LEADERSHIP
INNOVATIVE APPROACHES TO GOVERNANCE

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Heit, Bonnie J.

Subject:	FW: Follow Up Information from Friday's JPM Presentation
Attachments:	54841-jpmc-gap-detroit-aw3-final.pdf; OECD Insights Economic Globalisation and Jobs.pdf

From: Sakelaris, James G [mailto:james.g.sakelaris@jpmorgan.com]
Sent: Tuesday, May 31, 2016 5:04 PM
To: Hunter, David J.
Cc: Schulz, Darren J.; Chin, Eric; Goldberg, Andrew D; Lucas, Bradley A
Subject: Follow Up Information from Friday's JPM Presentation

Dave,

Thank you again for the invitation to present in front of the ND SIB. Andy and I enjoyed it and happy to see the Board was interested and engaged. To that end, Andy and I wanted to follow up with a bit more information on a question raised by Commissioner Adam Hamm. Commissioner Hamm referenced some of the economic fallout and job destruction resulting from the financial crisis and other factors, and ultimately asked something to the affect, "What happens to those people? How does this ever get better?".

Andy thinks this is an important question that often gets obfuscated by the steady, incremental improvement in the economic picture since 2009 (the narrative has been "slow and steady recovery"), and has also been the thrust behind what we've seen in American politics in the form of frustrated voters who don't feel that traditional politicians or their policies are accurately representing *them* and their interests.

Attached are two documents, as follows:

(1) **JPMC – Skills Gap in Detroit**: the first PDF comes from JPMorgan Chase & Co., and sheds light on Detroit as an example of the challenges many American workers face, but also some of the steps that can be taken to address them. While we are obviously biased, we are proud of our firm's efforts in this respect and hope the JPM Detroit initiatives serve as a model for future such endeavors in other economically depressed locales.

(2) **OECD Insights**: this piece from the OECD considers the role of Globalisation from the perspective of job displacement. Their conclusion seems to be that globalization destroys some jobs, but creates many more. It is long, but worth a read.

I hope this additional information will provide Commissioner Hamm with a more robust answer to his question. We are also happy to arrange for the Commissioner to speak with David Kelly, who may also have some additional thoughts on this important but controversial topic.

Thank you again for having us in front of the Board. We are happy to do it again, in the future.

Best regards,
Jim

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NEW SKILLS AT WORK

JPMorgan Chase & Co.

DRIVING OPPORTUNITY IN DETROIT

BUILDING A MIDDLE-SKILL WORKFORCE TO STRENGTHEN ECONOMIC RECOVERY AND EXPAND THE MIDDLE CLASS

WELCOME

CONTENTS

FROM **JAMIE DIMON**, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, JPMORGAN CHASE & CO.

JPMorgan Chase has been doing business in Detroit for more than 80 years, and we are going to be in Detroit for the long term. Last May, we committed to deploy $100 million over five years to help the city regain its economic strength – doing our part to invest in community development and support nonprofits that are helping the city tackle some of its toughest challenges. One of these challenges is preparing Detroit's workforce for the job opportunities in the sectors that are expanding as the economy begins to recover. Investing in training will give job seekers of all ages the skills they need to open doors to economic mobility at the same time that it builds the skilled workforce that Detroit will need to thrive.

In February, I visited Detroit to see first hand how the city's training organizations are working with employers to create career pathways for the city's residents. Focus: HOPE's demand-driven training programs are preparing job seekers for opportunities in growing industries, such as advanced manufacturing and technology. While touring its Machinist Training Institute with a local employer, I had a chance to meet with students and hear about the skills they were learning – skills that employers such as Detroit Manufacturing Systems are looking for as they fill jobs.

It is the example of organizations such as Focus: HOPE and countless others across the globe that inspired us to launch *New Skills at Work*, JPMorgan Chase's five-year $250 million global workforce readiness and demand-driven training initiative. An important goal of *New Skills at Work* is to support and showcase models of effective workforce partnerships. A complementary goal is to provide communities with the data they need to understand and respond to the workforce challenges they are facing. This report is one in a series that is examining labor market conditions in metropolitan regions across the United States and Europe, showing both what jobs employers are struggling to fill and what types of training would provide job seekers with the skills needed for success.

As this report details, a critical part of the story of Detroit's labor market is the importance of middle-skill jobs – jobs that require more education and training than a high school diploma but less than a four-year degree. Occupations such as medical laboratory technician or machine tool operator not only provide a pathway to the middle class, they also are an engine of competitiveness for the Detroit economy.

We are proud to be working with Detroit's leaders to strengthen the city's workforce system. We hope the data presented here will support the work underway to expand opportunity by strengthening Detroit's workforce system and encourage additional efforts to build a pipeline of skilled workers for career-building jobs.

JAMIE DIMON

ACKNOWLEDGEMENTS

JPMorgan Chase & Co. is investing $250 million over five years in a global initiative to build demand-driven workforce development systems and to prepare youth and adults for careers in high-demand, middle-skill occupations. To advance this work, we are supporting data analysis in domestic and international markets: Chicago, Columbus, Dallas-Fort Worth, Detroit, Houston, Los Angeles, Miami, New York City, San Francisco, France, Germany, Spain and the United Kingdom.

JOBS FOR THE FUTURE

JPMorgan Chase deeply appreciates the work of partners in producing this report. **Jobs for the Future** (www.jff.org), which is a national partner in the *New Skills at Work* initiative, is serving as the lead intermediary for the U.S. reports. Founded in 1983, Jobs for the Future works to ensure that all underprepared young people and workers have the skills and credentials needed to succeed in our economy, by creating solutions that catalyze change in our education and workforce delivery systems. We are especially thankful for the work of the writers of this report: Thomas J. Hilliard, Hilliard Policy Research Consulting, and Gloria Mwase, as well as data collection and analysis provided by Jeremy Kelley and research assistance by Deborah Kobes and Krista Ford. The report has been strengthened by insightful feedback from Lucretia Murphy, Maria Flynn and Steven Baker and by editing from Carol Gerwin, Sophie Besl and Sara Lamback.

Two national organizations provided the data and analysis for the U.S. reports: **Economic Modeling Specialists International**, a CareerBuilder company, turns labor market data into useful information that helps organizations understand the connection between economies, people and work (www.economicmodeling.com). **Burning Glass Technologies** develops leading technologies for matching people with jobs through pioneering solutions, and leverages a deep understanding of people and their careers in order to deliver superior workforce and marketplace insight (www.burning-glass.com).

Each report also relies on the insights and feedback of local stakeholders. We would like to express our appreciation to the employers and economic development and workforce development experts in Detroit who informed report findings and reviewed drafts: Pamela Moore, President and CEO, Detroit Employment Solutions Corporation; Gregory Pitoniak, Chief Executive Officer, Southeast Michigan Community Alliance; Lisa Katz, Executive Director, Workforce Intelligence Network; Karen Tyler-Ruiz, Director, Detroit Regional Workforce Fund; James Jacobs, President, Macomb Community College; Carmine Palombo, Deputy Executive Director, Southeast Michigan Council of Governments; Marcia Black-Watson, Industry Talent Director, Michigan Workforce Development Agency; Amy Cell, Senior Vice President, Talent Enhancement, Michigan Economic Development Corporation; and Jeannine LaPrad, President and CEO, and Taryn McFarlane, Vice President, Business and Community Innovation, Corporation for a Skilled Workforce.

In addition, we appreciate the stakeholders who provided valuable insights about the workforce development context, strengths, and challenges in the Detroit region: David Cherry, Program Director, City Connect Detroit; Tammy Coxen, Senior Project Manager, Nicole Sherard-Freeman, Adjunct Consultant, and Jordan Falby, Research Associate, Corporation for a Skilled Workforce; Jeff Bross, Project Manager, Data Driven Detroit; Jose Reyes, Chief Operating Officer, Detroit Employment Solutions Corporation; Malinda Jensen, Director of Business Development and Kenyatta Bridges, Associate Director, Business Development, Detroit Economic Growth Corporation; Christopher Dorle, Lead, City Systems Working Group, Detroit Future City; Marion K. McGhee, Executive Director, Detroit Public Schools, Office of College and Career Readiness; Marsha Cheeks, Program Supervisor and William Aaron, Workforce Readiness Coordinator, Detroit Public Schools, Department of Adult Education; Gregory Eason, Consultant, Detroit Regional Workforce Fund; Rashida Goudeaux, Director of Education and Workforce Development, Focus: HOPE; Scott Jedele, Corp-Industry Program Manager, Corporate Training Office, Henry Ford College; Christopher J. Webb, Counselor at Law, Mediator, Arbitrator, Trainer and Facilitator, Law and ADR Office of Christopher J. Webb, PLC; Domenic Morelli, Vice President and Mike Tenbusch, Community Catalyst, Life Remodeled; Bill Sleight, Director, Livingston County Michigan Works; Linda Chase, Director, Michigan Coalition for Advanced Manufacturing, Macomb Community College; Bernice Kerner, MIS Supervisor, Macomb/St. Clair Workforce Development Board; Leonidas Murembya, Regional Research, Michigan Department of Technology, Management and Budget, Labor Market Information and Strategic Initiatives; Erin Duckett, Industry Talent Specialist, Michigan Workforce Development Agency; Donald C. O'Connell, Executive Director, Operating Engineers Local #324 LMEC; Naheed Huq, Manager, Community and Economic Development, Southeast Michigan Council of Governments; Mary Freeman, Director, Workforce Development, Southwest Solutions; Marlowe Stoudamire, Principal, Vehicles for Change; George Swan III, District Vice Chancellor for External Affairs, Wayne County Community College District; Colby Cesaro, Research Director, Workforce Intelligence Network; Donna Lillian Givens, President, Youth Development Commission; and Melody Barnes, former Director of the White House Policy Council and Co-Chair of the Global Workforce Advisory Council.

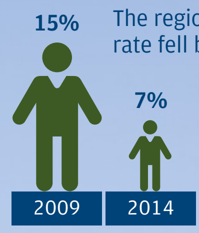
EXECUTIVE SUMMARY

THE DETROIT REGION IS RECOVERING

Detroit is coming back from one of the deepest economic downturns of any U.S. metro region. After suffering severe job losses from the decline of the auto industry, and reeling from the city of Detroit's recent bankruptcy, the regional economy is stabilizing and employment is growing again. Still, the region needs to expand its supply of middle-skill workers to support job growth, help attract new business and provide opportunity for struggling residents.[1]

The region lost nearly **275,000** jobs between 2001 and 2013

Since 2009, the region has added more than **173,000** net jobs[2]



The regional unemployment rate fell between 2009 and November 2014, narrowing the gap with the national rate of 5.8%

Jobs in the region are projected to grow at an average rate of **0.4%** each year between 2013 and 2023, compared with a national rate of 1.2%

(Source: EMSI[3] and U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics, November 2014)

GROWING ECONOMY NEEDS MIDDLE-SKILL WORKERS

The region's continued growth will depend heavily on the quality of its workforce. Manufacturing employment has stabilized and some sectors are expanding, notably healthcare and information technology. These industries will need a steady supply of middle-skill workers, who have a high school credential and some postsecondary training.

Middle-skill occupations represent **17%** of all jobs in the region and are growing

(Source: EMSI and Burning Glass[5], unless otherwise noted)

There were more than **321,700** middle-skill positions in the Detroit region in 2013

Middle-skill positions pay an average median hourly wage of **$23.37** significantly higher than the region's living wage of $17.08[4]

About **9,800** middle-skill job openings are projected every year through 2018

1 This report defines the Detroit or southeast Michigan region as the six-county Metropolitan Statistical Area that includes Lapeer, Livingston, Macomb, Oakland, St. Clair and Wayne counties.
2 EMSI Complete Employment 2014.2.
3 This report includes a proprietary EMSI analysis of middle-skill opportunities in the Detroit region for JPMorgan Chase; in subsequent citations, data from this analysis are cited as "EMSI."
4 EMSI, drawing upon data from the Massachusetts Institute of Technology's *Living Wage Calculator* for a family of three (two adults and one child) in the Detroit area. For additional information: http://livingwage.mit.edu.
5 This report includes proprietary analysis of the Detroit region conducted by Burning Glass Technologies for JPMorgan Chase; in subsequent citations, data from this analysis are cited as "Burning Glass."

STARK OPPORTUNITY GAPS CALL FOR RESPONSE

While people across the Detroit region face real challenges, African-American and Latino residents are faring significantly worse than white residents in employment, income and educational attainment. Detroit city residents also face lower employment, income and education levels than people who live in the suburbs.

- The unemployment rate in the city of Detroit is 13%, double the 6.7% rate in the suburban belt north and west of the city.
- Unemployment affects African-American (13.6%) and Latino (10.3%) workers at roughly twice the rate of white workers (5.9%) across the region. Unemployment is higher among all groups in the city of Detroit, but significantly higher for African-American (15.3%) and Latino (14.0%) residents than for white (8.9%) residents.
- Poverty is an even bigger barrier across the region for African-American (32%) and Latino (22%) individuals. But the rates of white (40%), African-American (38%) and Latino (36%) residents living in poverty in the city of Detroit are particularly discouraging.[6]

(Source: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics, 2014 and U.S. Census Bureau, American Community Survey, 2013)

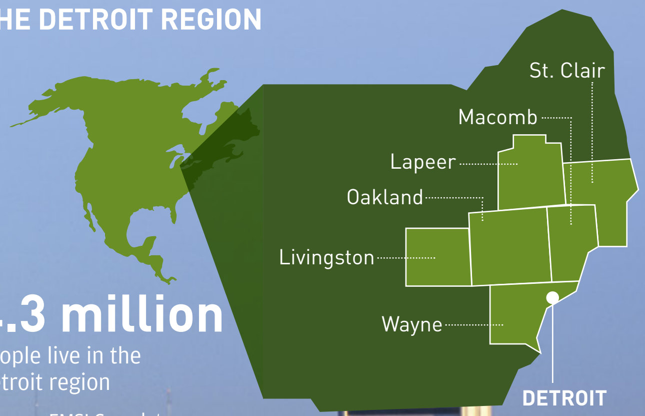
LOW-INCOME ADULTS NEED TRAINING FOR MIDDLE-SKILL WORK, MIDDLE-CLASS PAY

Helping to prepare low-income and low-skill individuals – particularly minorities and city residents – for middle-skill occupations must be a regional workforce development priority. While some job seekers require short-term specialized retraining, others lack basic academic, job readiness and technical skills, and will need more extensive education programs before they can begin career pathways.

- About 12% of regional residents (more than 340,000 people) age 25 and above lack a high school diploma or GED.
- Among Detroit city residents, 22% lack a high school diploma or GED.
- The situation is worse for Latino residents: 30% in the region lack a high school diploma or GED, and 55% in the city of Detroit.
- Fewer than one-third of city residents (32%) have earned only a high school diploma.

(Source: U.S. Census Bureau, American Community Survey, 2013)

THE DETROIT REGION



4.3 million
people live in the Detroit region

(Source: EMSI Complete Employment 2014.2)

6 Poverty levels are for individuals 18–64 years old. American Community Survey data for Detroit MSA are from 2010 to 2012. Data for city of Detroit are from 2011 to 2013.

EXECUTIVE SUMMARY CONT.

HEALTHCARE AND MANUFACTURING LEAD MIDDLE-SKILL DEMAND

DETROIT

Healthcare and manufacturing are the Detroit region's largest industry sectors, with strong demand for middle-skill workers. Healthcare is an important driver of middle-skill job growth and an increased need for qualified applicants over the next few years creates opportunity for low-skill residents to access training and seek better jobs. Long the foundation of Michigan's economy, manufacturing continues to provide many middle-skill opportunities, despite its jarring job losses since 2000, and more skilled workers will be needed to replace retirees.

Demand for middle-skill jobs

HEALTHCARE
23%
of all middle-skill positions advertised online in Detroit region

MANUFACTURING
33%
of all middle-skill positions advertised online in Detroit region

(Source: Burning Glass)

In 2013, there were
more than 207,000
middle-skill jobs in healthcare and manufacturing

(Source: EMSI)

From 2013 to 2018

HEALTHCARE
Over 2,600
projected annual average openings in middle-skill areas across Detroit region

MANUFACTURING
Over 3,100
projected average annual openings in middle-skill areas across Detroit region

(Source: EMSI Complete Employment 2014.2)

High wages for in-demand middle-skill jobs

HEALTHCARE
$27.77
median hourly wage

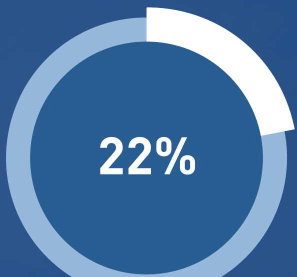
MANUFACTURING
$22.40
median hourly wage

$17.08
regional living wage

Source: Burning Glass)

INCREASING NEED FOR MIDDLE-SKILL WORKERS, BUT LIMITED TALENT DEVELOPMENT CAPACITY

Projected retirees



Approximately 22% of all manufacturing employees are age 55 or older

Approximately 22% of all healthcare employees are age 55 or older

(Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics, Quarterly Workforce Indicators, 2014)

IN ADDITION TO HEALTHCARE AND MANUFACTURING, THE LEADING ECONOMIC DRIVERS WITH MIDDLE-SKILL WORKFORCE NEEDS ARE:

- Financial and insurance services
- Information technology
- Marketing and advertising services

(Source: EMSI)

GROWING NEED FOR WORKFORCE DEVELOPMENT STRAINS SYSTEM CAPACITY

The Detroit region has enormous need for education and training services that can help struggling residents get back on track by preparing them for middle-skill, middle-wage jobs.

- Multiple talent development initiatives, particularly in the manufacturing industry, make it difficult to align across these efforts and expand services.
- Organizations leading these efforts face challenges in securing resources to expand data systems and delivery of services.
- Adult education providers estimate that each year fewer than 10% of adults who need basic literacy or English-language instruction are able to access these crucial services. Moreover, current adult basic education programs struggle to enable a smooth transition to postsecondary education and employment pathways.[7]
- Some community colleges lack critical resources to expand career pathway programs to meet the demand for technical training.
- Reduced funding for postsecondary occupational training is severely limiting the system's ability to produce the next generation of skilled workers.[8]

NEW SKILLS AT WORK

In December 2013, JPMorgan Chase launched its $250 million global *New Skills at Work* initiative to help communities address workforce readiness challenges. In May 2014, the firm pledged $100 million to support and accelerate Detroit's economic recovery. These commitments include $12.5 million to help identify growing sectors and create collaborative programs to train residents and develop career pathways in the Detroit region. This report offers a framework for developing a demand-driven career pathways system in Detroit.

7 The Detroit Regional Workforce Fund. 2012. *Addressing Detroit's Basic Skills Crisis*, pp. 6–7.
8 Michigan Workforce Development Agency. 2012. *Skilled Trades in Michigan*, pp. 10, 12.

OPPORTUNITIES TO EARN HIGHER INCOMES WITH MORE EDUCATION AND TRAINING

HEALTHCARE PATHWAY

	Occupation	Median Hourly Wage (Detroit MSA)
High-Skill	**Registered Nurse** Bachelor's degree or Associate's degree with five plus years of experience	$32.87
High-Skill	**Auditing and Compliance Specialist** Bachelor's degree	$29.21
Middle-Skill	**Surgical Technologist** Associate's degree	$20.10
Middle-Skill	**Health Information Manager** Associate's degree or postsecondary certificate	$16.79
Entry-Level	**Medical Assistant** High school diploma with moderate on-the-job training	$13.37
Entry-Level	**Medical Biller** High school diploma with moderate on-the-job training	$13.34 (entry-level wage)

MANUFACTURING PATHWAY

	Occupation	Median Hourly Wage (Detroit MSA)
High-Skill	**Engineer** Bachelor's degree	$43.80
High-Skill	**Production and Operating Supervisor** Bachelor's degree, or Associate's degree with five years of experience	$29.75
Middle-Skill	**Programmer** Associate's degree or Associate of Applied Science degree, apprenticeship experience	$23.93
Middle-Skill	**Machinist** Advanced postsecondary certificate, plus apprenticeship or work experience	$19.63
Entry-Level	**Operator** Basic postsecondary certificate	$17.85
Entry-Level	**Welder** High school diploma plus moderate on-the-job training	$17.72

(Source: Information for career pathways is drawn from Burning Glass Labor/Insight and EMSI Complete Employment 2014.2 and is informed by community college program descriptions from Wayne County and Macomb Community Colleges)

OUR RECOMMENDATIONS

Detroit is on the road to recovery following more than a decade of economic difficulties. Now it is essential to build on the region's assets and create a comprehensive career pathways system that will help refuel the economy and strengthen the middle class. By targeting healthcare, a high-growth sector, and manufacturing, an industry long linked with Detroit that still offers thousands of middle-skill jobs, the region can beat pessimistic recession-era forecasts to achieve strong and equitable economic growth.

CREATE A SYSTEMIC APPROACH TO CLUSTER-FOCUSED WORKFORCE DEVELOPMENT

Detroit stakeholders have been strengthening the regional workforce development system by organizing initiatives using a cluster-based approach. The recommendations below will advance stakeholders' efforts to build on their current successes.

Recommendation

1. **Develop a regional talent development "master plan" to align regional goals and outcomes for preparing Detroit residents for middle-skill occupations in high-demand sectors.**

   Regional stakeholders should:

   - Catalogue the local, regional and state-led talent development initiatives in the manufacturing and healthcare industries and disseminate this information to stakeholders across the region.
   - Develop a regional cluster-based industry council that can help to develop and advance an overarching talent development strategy and accountability mechanisms to monitor progress toward goals.
   - Identify an individual or an organization with the influence and capacity to champion the regional master plan and engage key regional stakeholders in its implementation.

Recommendation

2. **Build a system of career pathways aligned with industry cluster demand to prepare Detroit residents effectively to earn credentials and secure middle-skill occupations in the region.**

   - Employers can collaborate with providers to expand career exploration strategies, develop employer-endorsed curriculum and strengthen capacity of all regional education and training providers.
   - Education and training providers can strengthen pathways by expanding work-based learning and accelerated learning strategies, and by offering flexible course scheduling.
   - Community-based organizations and other social service agencies can expand wraparound supports and programs to remove barriers to employment.

Recommendation

3. **Align public, private and philanthropic investment in talent development with industry-focused vision and goals.**

   - Convene public agencies, philanthropies and private employers with common interests in talent development to identify and align resources to address "capacity gaps," develop an investment strategy to strengthen the capacity of the education and training delivery system, and increase access to middle-skill career pathways for all youth and adults.
   - Develop criteria for investment to increase the scale of education and training programs that demonstrate effective results in achieving employer requirements around talent development by identifying best practices and developing strategies for benchmarking and measuring outcomes.
   - Regional stakeholders should leverage federal and state funding opportunities to support implementation of industry cluster-based talent development efforts.

Through the *New Skills at Work* initiative, JPMorgan Chase will contribute resources and expertise to accelerate this work to help transform lives and help strengthen Detroit's economy.

INTRODUCTION

The near-collapse of the U.S. auto industry and the impact of the Great Recession dramatically shrank the region's job base over the past 15 years. Detroit's bankruptcy for more than a year publicized the city's economic woes. Proposing to boost the supply of workers qualified for middle-skill positions would have seemed absurd just a few years ago. Yet today, the regional economy has started to recover and employers are hiring again.

As growth resumes in the city of Detroit and the surrounding **region** 1, stakeholders will need to expand the skilled workforce in order to help existing businesses thrive and to attract new companies to the city of Detroit and the region. The Detroit area's economic trajectory will increasingly depend on the quality of its talent supply, and that will depend on the ability of stakeholders to prepare low-skilled residents for the region's high-demand, middle-skill careers.

This report highlights two industries essential to the emerging recovery – healthcare and manufacturing. Drawing on real-time and traditional labor market information and input from local stakeholders, the report identifies strategies to prepare more residents for middle-skill jobs so they can advance their careers and earnings potential and employers can sustain long-term economic growth. As the data show, and stakeholders often express, Detroit city residents do not consistently have equal access to all of the opportunities in the region. The report concludes with recommendations for developing a demand-driven **career pathways system** 2 that can propel the Detroit region's economic resurgence and help more residents achieve financial stability and join the middle class.

1 Defining the Detroit Region

This report defines the Detroit region as the six-county Metropolitan Statistical Area (MSA) that includes Lapeer, Livingston, Macomb, Oakland, St. Clair and Wayne counties. All references to Detroit relate to this region, unless otherwise stated. This definition differs slightly from several other ways of describing the Detroit region. The Southeast Michigan Council of Governments area includes the counties above plus Washtenaw and Monroe counties and excludes Lapeer County. The nine-county region used by the Workforce Intelligence Network (WIN) in its labor market analyses also excludes Lapeer County and adds Genesee, Shiawassee, Washtenaw and Monroe counties. The Regional Prosperity Initiative defines the Detroit metro region as Wayne, Macomb and Oakland counties.

2 What are Career Pathways?

The term "career pathways," as used in this report, describes education and training programs that offer a well-articulated sequence of courses and work experiences that align with employer skill demands and lead to the completion of industry-valued "stackable credentials." Stackable credentials offer students multiple clear entry and exit points for education and training as they progress toward an Associate's degree or the highest industry credential required for a specific occupation. Stackable credentials enable people to find jobs with increasing responsibility, knowing they can access additional short-term training as needed to move ahead. Career pathways can be particularly effective for launching young people and low-skill adults into good jobs because they can be designed to serve a range of populations and skill levels.

A "career pathways system" aligns employers, workforce development agencies, education providers, funders and other partners to identify shared goals and drive changes in programs, institutions and policies to address employer demand through multiple career pathways in the targeted industry sectors.

RECOVERING FROM ADVERSITY

After suffering a steep employment plunge since the year 2000, the Detroit regional economy is stabilizing and experiencing long overdue job gains.

THE REGIONAL ECONOMY IS REBOUNDING

- From the beginning of the recession through early 2010, the collapsing automotive sector pushed the region's unemployment rate to a high of 15%. During the same time, more than 180,000 people dropped out of the labor force (they were not working or actively seeking work). But the region is recovering. By late 2014, the unemployment rate for the region had fallen to 7%.[9]
- In 2009, after trailing the nation for decades, economic growth in the Detroit region began to parallel U.S. employment growth. Over the next decade, the region is expected to grow at an average rate of 0.4% per year, less than the national rate, but greatly improved from the trend of 1% annual contraction during the 2000s.[10]
- Economists project 9,800 new middle-skill jobs annually through 2018 in the Detroit region.
- More jobs will be created in the suburbs than in the city. The Southeast Michigan Council of Governments projects that only 2% of new regional jobs by the year 2040 will be in the city of Detroit.[11]

HIGH-DEMAND INDUSTRIES ARE FUELING THE RECOVERY

- Despite the decline of the automotive sector during the recession, Detroit remains one of America's leading manufacturing hubs, with a complex web of subsectors dominated by automotive and metals and machinery manufacturing. In addition, healthcare, financial and insurance services, marketing and advertising services, and computers and **information technology** 3 sectors are driving the region's economy. The imperative need to build and repair regional infrastructure could also fuel a comeback for the **construction sector** 4.

3 Growing Opportunities in Information Technology

Information technology is expanding in the Detroit region, with more than 40,000 jobs in 2013 and an anticipated 5% growth over the next few years. As a multi-industry cluster, information technology encompasses core IT, manufacturing, healthcare, finance and other industries. Core IT includes design, development, support and management of hardware, software, multimedia and systems integration services. The concentration of core IT companies in the region is strong, with nearly 1,400 businesses accounting for 45% of firms statewide. Through the Opportunity Detroit Tech initiative, regional stakeholders such as the Workforce Intelligence Network (WIN) are working to ensure that core technology skills are embedded across industries, while expanding the number of core IT businesses and the talent pipeline to support them.[12]

4 Infrastructure: An Emerging Workforce Opportunity?

The construction industry in the Detroit region lost more than 9,000 jobs between 2008 and 2013. With more than $4 billion in infrastructure projects in the pipeline, however, this sector is poised for a comeback.[13] New projects include the M-1 Rail system along Woodward Avenue, the Detroit River International Crossing (expected to create 10,000 to 15,000 construction jobs in Michigan and Ontario) and District Detroit (expected to create more than 8,000 construction-related jobs). Replacement and enhancement of roads (e.g., Interstates 94 and 75), sewer systems, water supply and energy-generation infrastructure, as well as demolition of abandoned homes and industrial buildings, will increase demand. Construction training programs such as Access for All, launched by the Detroit Regional Workforce Fund in 2014, connect Detroit residents to construction opportunities while helping contractors fulfill local hiring requirements. Almost all of the graduates in the first two cohorts have transitioned into union-affiliated apprenticeships in six building trades. Investing in a homegrown middle-skill workforce that can complete durable infrastructure projects on time and under budget will pay for itself many times over.[14]

9 U.S. Department of Labor, Bureau of Labor Statistics. Annual data for 2007 and monthly data for November 2014. *Local Area Unemployment Statistics*. Retrieved from www.bls.gov/web/metro/laulrgma.htm.
10 All data on this page are from EMSI, unless otherwise noted.
11 Detroit Future City. 2012. *Detroit Strategic Framework Plan*, p. 89.
12 Opportunity Detroit Tech website. 2015. Retrieved at: www.opportunitydetroittech.com.
13 Interview with Carmine Palombo, Deputy Executive Director, Southeast Michigan Council of Governments, February 2015.
14 See Metropolitan Affairs Council and Southeast Michigan Council of Governments. 2013. *Infrastructure and Jobs: An Asset Map for Southeast Michigan* for an analysis of the types of jobs projected to be created by the major projects planned for Southeast Michigan.

- Manufacturing is the region's largest industry, employing more than 235,000 workers, and provides nearly one-third of the middle-skill jobs across all subsectors.
- Healthcare is the Detroit region's second-largest sector, employing more than 231,000 workers, and it is projected to be one of its fastest growing. Of the more than 19,000 jobs expected to be created by 2018, about 16% require middle skills.
- Given regional demand and current state investment priorities, a focus on the healthcare and manufacturing sectors can help **maximize middle-skill opportunities** 5 for Detroit city residents.

5 Strengthening Business Competitiveness through Industry Clusters

The Michigan State Legislature has capitalized a $10 million per year Skilled Trades Training Fund to support workforce development.[15] Brokered by local Michigan Works! agencies, since 2014 some 59 manufacturing, healthcare and related employers in the Detroit region have received $2.8 million in grants to train 1,291 new hires and 5,158 incumbent workers. The training leads to transferable credentials and employment at regionally competitive wages.[16]

MIDDLE-SKILL JOBS ARE VITAL TO ECONOMIC GROWTH

The region also has a large and growing share of **"Baby Boomers"** many of whom are nearing retirement

The number of residents age 65 and over will continue to rise, reaching about **one-quarter** of the region's total population by 2040[18]

The twin imperatives of meeting demand in growing industry sectors and replacing retiring workers drive the need to develop a middle-skill workforce pipeline in the region's key industries

TABLE 1. PROPORTION OF MIDDLE-SKILL JOBS IN DETROIT MSA, 2013[19]

	2013 Total Jobs	% Middle-Skill Occupations
Healthcare	231,502	16%
Automotive Manufacturing	110,601	77%
Financial and Insurance Services	73,251	46%
Metals and Machinery Manufacturing	64,246	77%
All Other Manufacturing	60,181	60%
Computers and Information Technology	40,440	46%
Marketing and Advertising Services	25,040	36%

15 The priority industry clusters for the city of Detroit are healthcare, manufacturing and information technology. Detroit Employment Solutions Corporation. 2014. *Comprehensive Five-Year Local Plan: July 1, 2012–June 30, 2017*, p. 7.
16 Michigan Workforce Development Agency. 2014. *Skilled Trades Training Fund Frequently Asked Questions (FAQs)*.
17 EMSI.
18 Southeast Michigan Council of Governments. 2013. *Creating Success with Our Transportation Assets: 2040 Regional Transportation Plan for Southeastern Michigan*, p. 13.
19 EMSI.

OPPORTUNITIES IN HEALTHCARE

Healthcare delivery is an important driver of middle-skill job growth in the Detroit region, and an anticipated shortage of trained applicants over the next few years is creating a window of opportunity for Detroit area residents who want to enter the industry.

- Healthcare accounts for 20% of Michigan's jobs, and more than half of all healthcare services statewide are offered in the Detroit region.[20] A University of Michigan economic analysis projects that the healthcare and private education industry will have the strongest long-term growth at 1.23% per year.[21]
- Major investments in healthcare facilities in the region are stoking demand for skilled workers, such as the recent $129 million expansion of St. Joseph Mercy Oakland.[22]
- Employer demand is strong in several healthcare areas, as indicated by projected average annual openings and job postings, notably for nurses, healthcare practitioners and administrative roles.[23] (See Appendix B for examples of in-demand middle-skill healthcare occupations.)

Long average job posting duration indicates a demand for middle-skill workers across the healthcare spectrum

For entry-level positions	For middle-level positions	For higher-level positions
59 days	**76 days**	**35 days**
for certified nursing assistant	for medical laboratory technician	for registered nurses

Employers are struggling to hire qualified staff in these occupations

TABLE 2. EMPLOYER DEMAND IN HEALTHCARE PRIMARY SKILL AREAS IN DETROIT MSA, 2014

Primary Skill Areas[24]	Annual Openings 2013–2018[25]	Total Job Postings 2014[26]
Nursing	1,682	7,930
Sub-BA Practitioner	1,680	5,014
Healthcare Support	2,463	4,006
Administrative	1,912	2,544
Technical, Non-Patient Care	433	1,651
Health Information Management	273	502

20 Michigan Workforce Development Agency. 2013. *Health Care Cluster Workforce Analysis*, p. 2.
21 Grimes, Donald A. and Fulton, George A. 2012. *Retrenchment and Renewal: The Economic and Demographic Outlook for Southeast Michigan through 2040*, University of Michigan, Institute for Research on Labor, Employment, and the Economy, p. 24.
22 Detroit Regional Chamber website. 2015. Retrieved from: www.detroitchamber.com/industry-clusters/healthcare-innovation/.
23 Burning Glass.
24 Primary skill areas include middle-skill jobs, as well as entry-level occupations that are critical to the vitality of the sector and provide opportunity for continued career growth. These occupations also include fields that employed large numbers of workers, but may be declining or that pay below the living wage.
25 Annual openings are the combined number of projected job openings due to growth and the need to replace workers who change occupations or leave the labor force. EMSI Complete Employment 2014.2.
26 Job postings data are gathered from employer online job postings by private vendors and organized to provide current information on hiring trends and employer demand. Burning Glass.

Increasing pressure to expand the talent pipeline

- The aging of the region's Baby Boomer population will increase the need for healthcare workers, ranging from physicians to geriatric specialists to home health aides.[30] Projected growth in middle-skill occupations ranges from 9% in technical, non-patient care roles to 47% among healthcare support staff.[31]

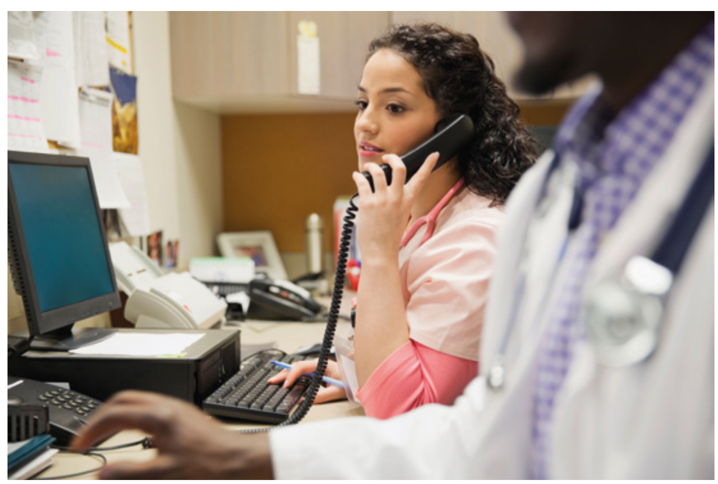
- Furthermore, statewide implementation of the national Patient Protection and Affordable Care Act (ACA) is expected to increase the number of residents who regularly access healthcare services and prompt the need to increase staff, especially in ambulatory care. Pending resolution of Supreme Court challenges to portions of the law, employers will also need to train existing employees to implement new models of service delivery, creating opportunities to strengthen career pathways within healthcare subsectors.[32]

- In addition, national trends are raising skill requirements. While many healthcare employers still hire registered nurses with Associate's degrees (67% regionally versus 60% nationally), some employers now prefer registered nurses with Bachelor's degrees, in line with national trends.[33]

- Similarly, federal legislation is making ICD-10 certification (an international diagnostic and coding standard) an essential credential for both current and future **medical coders** 6. Detroit employers are scrambling to hire or train workers with these skills by the October 2015 deadline.

6 Upskilling Detroit's Medical Coders

As the U.S. healthcare system moves to adopt the new international ICD-10 standard (an international diagnostic and coding standard), WIN has been working with eight healthcare systems and nine community colleges in the region to prepare for the transition. Community college partners are working collaboratively with employers to develop a joint curriculum for training workers in this certification. In addition, several employers in the region have partnered with their local Michigan Works! agency to access Skilled Trade Training Fund dollars to offer ICD-10 training to their workers.



27 U.S. Census Bureau. 2013 Q3–2014 Q2. *Longitudinal Employer-Household Dynamics: Quarterly Workforce Indicators*. Retrieved from: http://qwiexplorer.ces.census.gov.
28 Michigan Center for Nursing. 2014. *Survey of Nurses 2014*, p. 4.
29 Michigan Center for Nursing. 2014. *Survey of Nurses 2014*, p. 4.
30 Wilson, Randall. 2014. *Healthcare Pathways for Opportunity Youth: A Framework for Practitioners and Policymakers*, Jobs for the Future, p. 6.
31 Burning Glass.
32 Wilson, Randall. 2014. *Implementing the Patient Protection and Affordable Care Act*, Jobs for the Future, p. viii.
33 Burning Glass.

CAREER PATHWAYS

HEALTH CAREER PATHWAY[34]

Middle-skill occupations in healthcare provide opportunities for career advancement. Some occupations pay entry-level wages, but allow for workers to attain higher incomes as they acquire additional education and experience. Below are examples of career pathways in healthcare.

	Occupation	Median Hourly Wage (Detroit MSA)	Education Level	Industry-Valued Certifications	Skills and Competencies
High-Skill	**Registered Nurse**	$32.87	Bachelor's degree or Associate's degree with five plus years of experience	Registered Nurse	- Acute and critical patient care - Treatment planning - Patient evaluation and monitoring - Case management and care plans
High-Skill	**Auditing and Compliance Specialist**	$29.21	Bachelor's degree	RHIA Certification, Certified HIPAA Administrator	- Advanced clinical billing - Accounting - Business administration - Auditing - Mentoring - Problem solving
Middle-Skill	**Surgical Technologist**	$20.10	Associate's degree	Certified Surgical Technologist	- Surgical equipment and technology - Operating room experience - Patient preparation - Aseptic technique - Time management - Multitasking
Middle-Skill	**Health Information Manager**	$16.79	Associate's degree or postsecondary certificate	RHIT Certification	- ICD-10 - Electronic health records - Clinical procedure terminology - CPT - Microsoft Excel - Organizational skills - Research - Writing
Entry-Level	**Medical Assistant**	$13.37	High school diploma with moderate on-the-job training	First Aid CPR AED Medical Assistant Certification	- Vital signs measurement - Patient preparation - Cleaning - Injections - Communication skills - Basic computer skills
Entry-Level	**Medical Biller**	$13.34 (entry-level wage)	High school diploma with moderate on-the-job training		- Scheduling and appointment setting - Basic medical terminology - Basic billing systems - Data entry and word processing - Customer service - Communication skills

34 Information for healthcare career pathway is drawn from Burning Glass Labor/Insight and EMSI Complete Employment 2014.2 and is informed by community college program descriptions from Wayne County and Macomb Community Colleges.

OPPORTUNITIES IN MANUFACTURING

Manufacturing has long been the foundation of Michigan's economy. Even after the sharp workforce declines of recent years, it continues to be a vibrant industry and a major source of middle-skill jobs.

Currently, the manufacturing sector employs more than

half a million

workers across the state[35]

33%

of all middle-skill demand in the Detroit region is in manufacturing[36]

Long average posting durations –

more than 40 days

for automotive service technician and procurement clerk openings, for example – suggest that employers struggle to find workers with the right skills

22%

of the region's manufacturing workers were over 55 in 2014[37]

A projected wave of retirements will open new employment opportunities, as employers seek to replace a large number of skilled workers in a relatively short time. Many employers will seek to upskill and promote their incumbent workers and hire new entry-level workers, creating greater opportunity across the skill continuum

TABLE 3. EMPLOYER DEMAND IN MANUFACTURING PRIMARY SKILL AREAS IN DETROIT MSA, 2014

Primary Skill Areas[38]	Annual Openings 2013–2018[39]	Total Job Postings 2014
Installation, Maintenance, and Repair	1,336	4,986
Machining	1,037	4,559
Logistics and Transportation	625	4,462
Engineering and Manufacturing Technology	407	993
Testing and Inspection	199	511

35 Michigan Workforce Development Agency. 2013. *Manufacturing Cluster Workforce Analysis*, p. 2.
36 All data on this page are from Burning Glass unless otherwise noted.
37 U.S. Census Bureau. 2013 Q3–2014 Q2. *Longitudinal Employer-Household Dynamics: Quarterly Workforce Indicators*. Retrieved from: http://qwiexplorer.ces.census.gov.
38 Primary skill areas include middle-skill jobs, as well as entry-level occupations that are critical to the vitality of the sector and provide opportunity for continued career growth. These occupations also include fields that employed large numbers of workers, but may be declining or that pay below the living wage.
39 EMSI Complete Employment 2014.2.

- Some middle-skill occupations in manufacturing are expected to grow much faster in the Detroit region than in the nation as a whole. For example, employment of machinists is projected to rise 17% by 2020 in the Detroit region while remaining flat nationally.

- A key determinant of future growth will be the competitiveness of the domestic automotive industry, which dominates employment in installation, maintenance and repair occupations, as well as logistics and transportation. Employers also are looking for workers in occupations related to automotive design, such as mechanical drafters. In the Detroit region, automotive occupations account for 19% of advertised manufacturing demand and 9% of all middle-skill jobs.

- The technology skills required in manufacturing also are increasing, as manufacturing processes become more sophisticated. Mechatronics – the combination of mechanical, computer and electrical skills – is in strong demand in parts of the region.[40] Employers' demand for workers with strong technology skills is especially intense in automotive manufacturing, where emerging technologies continue to gain traction – from new powertrains and electrified vehicles to "smart car" connected vehicles that can talk to other vehicles or infrastructure to fully automated, "self-driving" vehicles.[41]

- Middle-skill occupations in manufacturing pay good wages, although compensation varies sharply based on occupation, experience and credentials. All of the high-demand, middle-skill jobs analyzed for this report pay hourly wages that exceed the Detroit region's living wage of $17.08 per hour.[42] Middle-skill positions such as tool and die makers ($25.05) and industrial machining mechanics ($24.05) earn considerably more than the living wage.[43] (See Appendix B for examples of in-demand middle-skill manufacturing occupations.)

Detroit region's living wage per hour

$17.08

Middle-skill positions such as tool and die makers

$25.05

Industrial machining mechanics

$24.05

- Despite strong current demand and employer reports of growing demand for middle-skill workers, ongoing labor-market analysis and dialogue with employers will be essential to determine long-term demand and develop a regional cluster-wide plan for education and training investments in the long run.

- Efforts are underway to expand the **manufacturing sector** 7 and grow the number of jobs. Skilled manufacturing workers will also be in high demand in construction-related jobs as infrastructure expansion continues in the region.

7 Growing Manufacturing and Jobs in the Detroit Region

Detroit holds important competitive advantages in manufacturing: decades of experience; a sophisticated understanding of manufacturing's many technologically complex frontiers; and an extensive educational, R&D and marketing infrastructure that other regions would find difficult to replicate. Initiatives are now underway to build on these assets, ranging from place-based strategies such as the **Detroit Future City Employment District Marketing Initiative** to supply-chain approaches such as **Innostate**, to research-based strategies such as the **Michigan Academy for Green Mobility Alliance (MAGMA)** to technology transfer strategies such as **Lightweight Innovations for Tomorrow (LIFT) Initiative**. **Advance Michigan** is pursuing an integrated strategy to grow a skilled manufacturing workforce, expand manufacturing businesses and strengthen production processes in Detroit and key regions across the state. The 13-county region covered by this initiative has received federal Investing in Manufacturing Communities Partnership designation, which increases access to funding to grow manufacturing jobs.[44] Finally, the **Center for Automotive Research** continues to deepen the knowledge base around transportation systems, evolving technologies and manufacturing engineering systems. These initiatives hold great promise to strengthen the Detroit region's economic competitiveness and job base. As they develop, regional stakeholders should make more transparent the aggregate talent development goals they are pursuing and which skill levels (entry level, middle skill, or high skill) they are targeting.

40 Mwase, Gloria. Email correspondence with Macomb Community College President James Jacobs, February 15, 2015.
41 Hill, Kim et al. 2015. *Contribution of the Automotive Industry to the Economies of All Fifty States and the United States*. Center for Automotive Research.
42 EMSI, drawing upon data from the Massachusetts Institute of Technology's *Living Wage Calculator* for a family of three (two adults and one child) in the Detroit area. For additional information: http://livingwage.mit.edu.
43 Burning Glass.
44 The White House. 2014. *Obama Administration Designates the First 13 Manufacturing Communities through the Investing in Manufacturing Communities Partnership to Spur Investment and Create Jobs*.

CAREER PATHWAYS

MANUFACTURING CAREER PATHWAY[45]

Manufacturing occupations offer promising opportunities for workers to move up a career pathway as they gain more skills and obtain certifications and degrees. Below are examples of career pathways in manufacturing.

	Occupation	Median Hourly Wage (Detroit MSA)	Education Level	Industry-Valued Certifications	Skills and Competencies
High-Skill	**Engineer**	$43.80	Bachelor's degree	- ASME (American Society of Mechanical Engineers) Certification - Capability Model Maturity Integration (CMMI) Certification	- Mechanical engineering and design - Manufacturing process knowledge - Product design and concept development - Advanced mathematics - Mentoring
High-Skill	**Production and Operating Supervisor**	$29.75	Bachelor's degree, or Associate's degree with five years of experience	Six Sigma Certification	- Production management - Inventory management - Process improvement - Scheduling and logistics - Material flow management - SAP - CATIA - ERP Systems
Middle-Skill	**Programmer**	$23.93	Associate's degree or Associate of Applied Science degree, apprenticeship experience	Computer-Aided Design Certification	- G Code (CNC programming language) - Computer-aided drafting (AutoCAD) - Computer-aided manufacturing - SURFCAM - Microsoft Excel - Microsoft Office
Middle-Skill	**Machinist**	$19.63	Advanced postsecondary certificate, plus apprenticeship or work experience		- Grinding - Drill pressing - Mill cutting - Welding - Inspection - Repair - Data entry - Forklift operation
Entry-Level	**Operator**	$17.85	Basic postsecondary certificate	CNC Machining	- Machine operation - Lathes - Blueprints - Micrometers - Calipers - Hand tools
Entry-Level	**Welder**	$17.72	High school diploma plus moderate on-the-job training	Welding certification (e.g. AWS Certified Welder)	- Soldering - Metal Inert Gas (MIG) or Tungsten Inert Gas (TIG) welding - Schematic diagrams - Wiring

45 Information for career pathway is drawn from Burning Glass Labor/Insight and EMSI Complete Employment 2014.2 and is informed by community college program descriptions from Wayne County and Macomb Community Colleges.

EXPANDING OPPORTUNITY

Expanding the middle-skill workforce and rebuilding the middle class are essential to the Detroit region's future. Low-income residents need better preparation for middle-skill jobs to improve their financial stability and help sustain the region's economic recovery. Successful efforts will narrow the gaps in employment, education and income between white and minority residents, and between those who live in the city and those who live in the suburbs.

ECONOMIC DISPARITIES ARE LEAVING MANY BEHIND – ESPECIALLY DETROIT CITY RESIDENTS AND PEOPLE OF COLOR

Post-recession unemployment in the Detroit area has dropped more rapidly than in the nation as a whole. Yet the region's 7% unemployment rate remains high among U.S. metro areas.

- People who live in the city of Detroit face particularly difficult circumstances. City residents face an unemployment rate of 13%, nearly double the 6.7% rate in the five-county suburban belt.[46]
- City residents often seek work in the suburbs, only to find that long commutes and inadequate **public transportation** **8** make suburban jobs impractical.
- At the same time, the significant outmigration from the city also means that many low-skill adults seeking economic opportunity now reside in the surrounding suburbs.
- Across the region, 14% of African-American residents and 10% of Latino residents are unemployed, compared with 6% of white residents. In the city of Detroit, 15% of African-Americans and 14% of Latinos are unemployed, compared with 9% of white residents.
- In addition, fewer city residents participate in the labor force (people who are working or actively looking for work). In the city, 61% of Latinos are in the labor force, compared with 49% of white and 53% of African-American residents. Across the region, 67% of Latinos are in the labor force, compared with 64% of whites and 58% of African-Americans.

8 Getting There from Here: Detroit's Transportation Challenge

More than half of all working people who live in the city of Detroit leave the city to reach their jobs[47] and the number is expected to grow as more jobs are created in the suburbs. Unfortunately, jobs outside the city are often inaccessible, as one in four city residents lacks a car, and the public transit system does not adequately connect city residents to suburban job opportunities.

Yet changes are on the horizon. The Southeast Michigan Council of Governments established a Regional Transit Authority (RTA) with a mandate to develop regional solutions to southeast Michigan's transportation challenges, and it is preparing a transit plan to go before Michigan voters in November 2016. If voters approve the plan and the revenues to implement it, RTA will have the potential to become a transit powerhouse, with the resources, operations and infrastructure needed to help move Detroit residents much more efficiently to suburban jobs.[48]

46 The 6.7% regional unemployment rate excludes Wayne County. The unemployment rate for the six-county MSA is 7.0%. All data from Jeremy Kelly analysis of data from U.S. Department of Labor, Bureau of Labor Statistics. November 2014. *Local Area Unemployment Statistics*. Detroit MSA (by county) and Detroit City. Retrieved from www.bls.gov/web/metro/laulrgma.htm.

47 Southeast Michigan Council of Governments. 2014. *Improving Public Transit and Accessibility*, p. 3.

48 Lawrence, E., "Detroit Area's Transit Head Must Sell Voters on Funding," *Detroit Free Press*, November 19, 2014. Accessed at http://on.freep.com/1qW0m5Y.

- Young people living in the city also face greater barriers to work than young people living in the suburbs. Some 42% of city residents age 16–24 were unemployed in 2012, compared with 24% of the same age group across the region.[49] Teens face more difficulty finding work than adults in their early 20s. In 2013, Detroit city **youth** **9** age 16–19 had an unemployment rate of 58%; for 20–24 year-olds, the rate was 38%.

- **Adults unemployed for long periods** **10** find jobs increasingly difficult to obtain.

- Employment gaps lead to income disparities: individuals in the city of Detroit face higher poverty rates than in the region overall, regardless of race: 38% of African-Americans in the city live in poverty, versus 32% of African-Americans regionwide; 36% versus 22% for Latinos; and 40% versus 11% for whites.[50]

9 Creating Opportunity for Youth

Boosting economic opportunities for Detroit's young adults is an urgent public priority. With funding from JPMorgan Chase and others, City Connect launched the Grow Detroit's Young Talent initiative, a summer jobs campaign that placed nearly 1,900 Detroit youth in six-week paid summer work experiences and employment-focused workshops during summer and fall 2014.[51] Detroit Mayor Mike Duggan is seeking to expand the program in 2015 by linking it with the 40-year, publicly funded summer jobs program led by the Detroit Employment Solutions Corporation and its year-round youth employment efforts.

In addition, BMe Detroit, a network of African-American male community builders, is working with young African-American men through mentorship and other programs to promote retention and completion for high school students, college access and success for high school graduates and employment opportunities for young ex-offenders.[52]

10 From Economic Devastation to Economic Stability for the Long-Term Unemployed

Helping the long-term unemployed get back to work is a national priority. Through our *New Skills at Work* initiative, JPMorgan Chase is helping to address this challenge through better research and support of best practices to help job seekers become and stay employed.

In 2014, over one-third of the unemployed in Michigan (about 119,000 people) were out of work for 27 weeks or more. Over one-quarter of Michigan's unemployed were jobless for 52 weeks or more.[53] The Community Ventures program, convened by the Michigan Economic Development Corporation in four urban centers (Detroit, Flint, Pontiac and Saginaw), has become a nationally recognized model for helping long-term unemployed adults get back to work. Launched in 2012, the program supports job seekers who have limited education or literacy, have been unemployed for more than six months, or have high barriers to employment, such as a criminal record.

Participants are screened, selected and referred by Michigan Works! agencies. Community Ventures provides employers with a talent match and an on-the-job training grant, in return for which the employer is required to guarantee one-year minimum employment in a market rate, full-time, permanent position.[54] Several workforce and community partners provide supportive services (such as transportation, child care and financial literacy) to help participants stay on the job, including Detroit Employment Solutions Corporation, Detroit Centers for Working Families, Focus: HOPE, SER Metro, Jobs for Progress, Goodwill and Southwest Solutions. In Detroit, nearly 1,500 residents have been placed in jobs with 57 employers, and almost three-quarters were still employed a year later, at wages that compared favorably with entry-level wages in similar positions.[55] The model will be implemented across the state in 2015.

49 U.S. Census Bureau. 2012 estimates for Detroit MSA. *American Community Survey*. Retrieved from: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.
50 Unless otherwise noted, all data on this page are from U.S. Census Bureau. 2011–2013 estimates for Detroit MSA and City of Detroit. *American Community Survey*. Retrieved from: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.
51 See http://gdyt.org/learn-more/.
52 See www.bmecommunity.org/bme_detroit.
53 Information on the long-term unemployed is from unpublished data from the U.S. Department of Labor, Bureau of Labor Statistics provided by the Michigan Department of Technology, Management and Budget, Labor Market Information and Strategic Initiatives.
54 Michigan Economic Development Corporation. 2013. *Community Ventures Fact Sheet*.
55 Gerald R. Ford School of Public Policy. 2013. *Michigan Economic Development Corporation Community Ventures Program Outcomes Report*, p. 13.

MANY PEOPLE ARE UNPREPARED TO TAKE ADVANTAGE OF MIDDLE-SKILL JOB OPPORTUNITIES

- Postsecondary education or training is essential to obtaining middle-skill employment. Yet many adults in the region, especially minorities and Detroit city residents, have not even finished high school. About 12% of regional residents 25 years and older (more than 340,000 people) lack a high school diploma or GED, including 21% of Detroit city residents (93,000 people). Another third of city residents (more than 138,000 people) have earned only a high school diploma or GED.

- Behind the overall picture lurk major gaps in educational attainment by race and ethnicity. Regionally, 30% of Latinos age 25 and older lack a high school diploma or GED, as do a daunting 55% in the city of Detroit. Whites have high educational attainment rates regionally but lower rates in the city. (See Figures 1 and 2.)

FIGURE 1. EDUCATIONAL ATTAINMENT BY RACE FOR POPULATION 25 YEARS AND OLDER IN DETROIT MSA, 2013

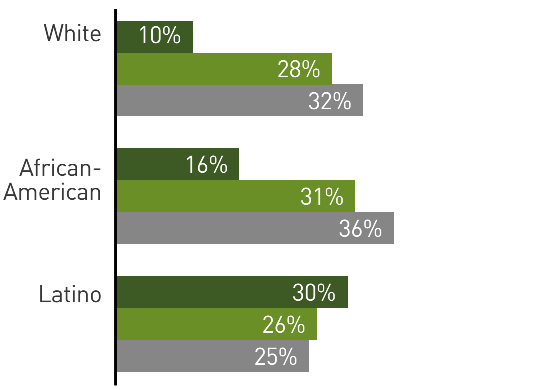
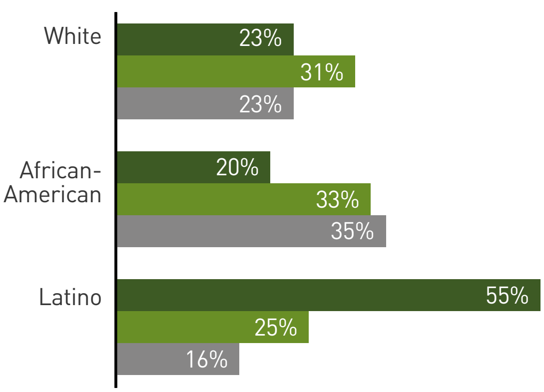


FIGURE 2. EDUCATIONAL ATTAINMENT BY RACE FOR POPULATION 25 YEARS AND OLDER IN DETROIT CITY, 2013



■ Less than high school diploma
■ High school graduate (includes equivalency)
■ Some college or Associate's degree

(Source: U.S. Census Bureau, *American Community Survey*)

- In a curious paradox, more than two-thirds of African-Americans in both the Detroit region and the city have middle-skill credentials (a high school credential and some college or an Associate's degree), more than white and Latino residents. Yet African-Americans have the highest unemployment rate of any race or ethnicity, suggesting that **educational attainment is not the sole factor** **11** explaining employment in southeast Michigan.

- Detroit stakeholders have noted other factors affecting employment, including limited access to education advising and career counseling; lack of flexible and accelerated degree programs, tuition, transportation and/or housing assistance, or day-care subsidies; and employment barriers due to criminal records. In 2013, more than 11,000 residents were convicted of criminal offenses in Wayne County.[56]

11 Employers Speak Out about Their Skilled Workforce Challenges

The Detroit Employment Solutions Corporation, in partnership with other Michigan Works! agencies in the region and the Michigan Economic Development Corporation, collected information on employer skills gap challenges through customer insight surveys administered in early 2015. For the Detroit metro region:

- More than 40% of employers who responded noted that they plan to hire entry-level or mid-level middle-skill positions (requiring more than a high school diploma but less than a Bachelor's degree) in the next three years.
- Work readiness skills, also known as "soft skills," are the most influential factor in hiring decisions by local employers, even above technical skills and credentials. Specific skills and attributes identified include teamwork, leadership skills, self-motivation, problem solving, strong basic academic skills, communications and customer service skills.
- Many employers are already involved or interested in regional talent development. More than one-third of the respondents reported their current participation or willingness to be involved in advising career and technical education programs, providing apprenticeships, mentoring high school students and offering summer youth employment opportunities.

56 Heyns, Daniel H. 2014. *Michigan Department of Corrections 2013 Statistical Report*, p. A-4.

STAKEHOLDERS HAVE MADE IMPORTANT STRIDES IN TALENT DEVELOPMENT

- Groups of employers within the manufacturing industry cluster have worked to develop goals and plans for segments of this sector.
- The seven workforce boards in the region have developed collaborative goals through the Southeast Michigan Works! Agency Council.
- The region's nine community colleges are striving to cooperate through the Southeast Michigan Community College Consortium.
- WIN helps to foster collaboration among the seven workforce boards and the nine colleges in the region to build a talent pipeline for employers in key industry sectors.
- The Detroit Jobs Alliance, convened by the Detroit Regional Workforce Fund, has created a forum to foster information sharing, capacity building, and collaboration for all of the city's stakeholders focused on education and training, supportive services and employment in the city of Detroit.

Yet stakeholders report that significant challenges remain. Community colleges, community-based organizations, adult education programs and other training partners struggle to find overarching alignment at the industry cluster level across multiple talent development initiatives that can identify common employer needs and guide their work with job seekers. The result has been siloed and duplicated services; an inability to leverage shared information, activities, or resources; and challenges in demonstrating systemic results in connecting disadvantaged residents to employment.

OVERWHELMING NEEDS STRAIN PROVIDER CAPACITY

- As collaborative initiatives scale up to meet the growing needs of the region, particularly the need to connect Detroit residents to opportunities in surrounding communities, the organizations leading these efforts face challenges in expanding the infrastructure necessary for collective action.
- Adult education providers estimate that fewer than 10% of adults who need these services each year are able to access them, especially those with low literacy or **English-language** **12** proficiency. The content and delivery of these programs often do not align well with the transition to postsecondary education and employment pathways.[57]
- Community colleges in some parts of the region lack important resources, such as college preparatory programs and clinical sites, preventing them from expanding technical training programs to meet employer and student demand.
- Reduced funding to support the engagement of adults in postsecondary occupational training is constricting the pipeline to produce the next generation of skilled workers.[58]

12 Engaging Detroit's Immigrant Talent

Immigrants – whether from Latino, Asian, Middle Eastern or other nationalities – are a growing presence in the city of Detroit and in the region. These residents have a strong drive to succeed, often helping to revitalize distressed communities through their entrepreneurial spirit. While English-language proficiency is a barrier for many immigrants, they also bring diverse skills that can be leveraged to support regional competitiveness.

Organized by Global Detroit, ACCESS and the International Institute of Metropolitan Detroit, a network of more than a dozen organizations is collaborating to help connect immigrants to growing economic opportunity through workforce-related services such as employment training, job search assistance and access to employers.[59]

57 The Detroit Regional Workforce Fund. 2012. *Addressing Detroit's Basic Skills Crisis*, pp. 6–7.
58 Michigan Workforce Development Agency. 2012. *Skilled Trades in Michigan*, pp. 10, 12. One innovative resource is the Michigan New Jobs Training Fund, which allows employers to partner with colleges to train new workers and reimburse them through new employee payroll tax diversions.
59 Global Detroit website. 2015. Retrieved at: www.globaldetroit.com/partner-initiatives/welcome-mat-detroit/.

RECOMMENDATIONS

Detroit has impressive strengths in healthcare, manufacturing and other vital sectors that offer well-paying jobs with the opportunity for career mobility. Stakeholders can build on these strengths by developing a demand-driven career pathways system.

Recommendation

1. Develop a regional talent development "master plan," advanced by a prominent champion, to align regional goals and outcomes for preparing Detroit residents to enter middle-skill occupations in high-demand sectors.

Regional stakeholders should:

- Catalogue the local, regional and state-led talent development initiatives in the manufacturing and healthcare industries, including the initiative partners, outcome goals, geographical and population focus, skill-level targets and results to date. Develop or leverage mechanisms to disseminate this information across the region, specifically to education and training providers and community-based organizations serving the targeted populations.
- Create a regional cluster-based industry council that can help to develop and advance an overarching strategic talent development vision and goals, along with data tracking and accountability mechanisms to ensure that employment goals for Detroit residents are met.
- Use labor market information (such as quarterly analysis from WIN) and direct engagement with employers to build on existing efforts[60] and align various state and regional initiatives with the cluster-based goals around training and placing residents in middle-skill occupations in Detroit and the region.
- Identify an individual or an organization with the influence and capacity to champion the regional master plan and engage key regional stakeholders in its implementation.

Recommendation

2. Build a system of career pathways aligned with industry cluster demand to prepare Detroit residents effectively to earn credentials and secure middle-skill occupations in the region.

Employers can:

- Collaborate to expand career exploration strategies, develop structured career pathways and increase work experience opportunities (summer youth employment, internships, apprenticeships and on-the-job training).
- Work with education and training providers to develop a portable, employer-endorsed curriculum for employability/work readiness skills.
- Leverage existing employer–provider partnerships to strengthen capacity of all regional education and training providers. This work should include identifying common standards for middle-skill jobs, **sharing business intelligence** 13 across talent development initiatives and expanding partnership opportunities with new providers in order to scale programs and increase the number of people served.

13 Aligning Business Intelligence to Strengthen the Talent Pipeline

WIN is working with the Southeast Michigan Health System HR Executives Council, a collaboration of eight healthcare systems, to understand their workforce needs better and support short- and long-term planning around talent development.[61] The employers are providing information about their current workforce in 12 nursing specialties and 14 other critical healthcare occupations so that each employer can benchmark its own workforce against the aggregate. The database will also provide valuable information to education and training providers on existing skills gaps and anticipated healthcare workforce shortages by occupation and skill level.[62]

60 The industry cluster council can build on Governor Rick Snyder's efforts to establish a new cabinet-level Department of Talent and Economic Development and the Regional Prosperity Initiative to align state resources to promote economic prosperity.
61 The systems are Beaumont Health System, Detroit Medical Center, Henry Ford Health System, McLaren Health, Oakwood Health, St. John Providence Health System, CHE Trinity Health and University of Michigan Health System.
62 Workforce Intelligence Network. *Executive Summary: Southeast Michigan Regional Healthcare Workforce Database*, p. 6.

Community colleges, community-based training providers and adult education programs can:

- Strengthen **apprenticeships** 14 and other work-based learning strategies, with an emphasis on efficient pre-apprenticeship pathways and competency-based education approaches that increase access and reduce the time and expense of completing a program of study.
- Increase integration of **accelerated learning strategies** 15 that build the skills of underprepared youth and adults more quickly, structure pathways with stackable credentials that offer relevant exit and re-entry points for employment so workers can advance their credentials and careers and offer flexible course scheduling that accommodates students' work schedules.
- Build seamless career pathways between training programs offered by **community-based organizations and community colleges'** 16 non-credit and credit-bearing programs of study.
- Expand adult education bridge programs (incorporating literacy, numeracy, computer technology and workforce readiness) and integrate occupational content from middle-skill careers to strengthen connections to postsecondary education and employment and improve student retention.

Community-based organizations and other social service agencies can:

- Expand "wraparound" supports, such as child care and streamlined public benefit eligibility, to help residents persist in education and training programs within a career pathway.
- Expand programs and policy initiatives to remove criminal backgrounds as a barrier to employment, including identification and support of employers willing to hire ex-offenders.

All partners can:

- Expand career-matching services and develop a consistent set of career exploration materials that education and training providers and other innovative programs can utilize to educate youth and adults about middle-skill opportunities.
- Work with employers and regional planning agencies to build regional transportation systems that can bring Detroit city residents to jobs outside the city.

14 Detroit Registered Apprenticeship Program

The Detroit Registered Apprenticeship Program (D-RAP) was developed by the Detroit Employment Solutions Corporation (DESC), the local workforce agency, in collaboration with employers and unions. D-RAP places participants in pre-apprenticeship readiness programs that provide occupational training, support services and training supports for employers, and paid full-time unsubsidized work experiences. Participants enter apprenticeships in diverse fields, including healthcare, IT and skilled trades, with ongoing support from DESC to improve employee retention. Since the program's inception 139 participants have been placed in apprenticeships or jobs. Other programs like D-RAP are being expanded throughout the state through the Michigan Apprenticeship, Internship, and Mentoring Initiative.

15 Collaborating to Address Employer Needs: Michigan Coalition for Advanced Manufacturing

The Michigan Coalition for Advanced Manufacturing (M-CAM), led by Macomb Community College and supported by a $25 million federal grant, is retooling its member colleges' capacity to provide aspiring professionals with the technology, educational offerings and cutting-edge delivery strategies they need to launch middle-skill careers in advanced manufacturing. M-CAM colleges are adding new courses and purchasing new robotic technology to keep up with what employers actually use on the shop floor. Even more important is the work each college is carrying out to align their courses with career pathways that begin with certificates and lead smoothly to Associate and Bachelor degree programs. In many courses, students move forward as they achieve workplace and vocational competencies.

16 Focus on Opportunity

Focus: HOPE has developed a nationally recognized workforce program that provides GED preparation followed by training in manufacturing or information technology. The program benefits from strong employer demand and clear career pathways. After completing training and earning professional certifications, participants are ready to apply for entry-level positions through the organization's extensive employer network, including more than a dozen employers who serve on Focus: HOPE's training advisory committee. Focus: HOPE's Machinists Training Institute has a 90% job placement rate for the nearly 2,000 students it has trained over the past three decades. Students are also connected to college degree programs in manufacturing and information technology so that they can continue to advance in their professional fields.

Recommendation

3. Align public, private and philanthropic investment in talent development with industry-focused vision and goals.

Federal, state and local public and private funders, in collaboration with employers, should:

- Identify and address education and training "capacity gaps" related to target industry sectors to maximize the use of available resources and increase the scale of programs to address employer needs.
- Leverage and align federal funding (e.g., through the Workforce Innovation and Opportunity Act) and state funding (e.g., the Skilled Trades Training Fund and the Regional Prosperity Initiative) to support the implementation of industry cluster-based talent development efforts.
- Develop criteria for investment to increase the scale of education and training programs that demonstrate effective results in achieving employers' talent development goals by identifying best practices and developing strategies for benchmarking and measuring outcomes.
- Identify gaps in education and training service delivery and develop an investment strategy to **strengthen the systems' capacity 17**. Leverage existing infrastructure such as the Detroit Regional Workforce Fund to convene public agencies, funders and private employers with common interests in talent development.

17 Understanding the Strengths and Gaps in the Workforce System

JPMorgan Chase is partnering with the Corporation for a Skilled Workforce to undertake a mapping project to identify the strengths and gaps of the Detroit workforce system. The project will paint a picture of the city of Detroit's current and potential workforce (including demographics, educational attainment and skills gaps). It will also identify the network of educational institutions, public sector entities and nonprofits that serve this workforce, including existing capacity, service delivery mix and outcomes. The workforce system map that results from this process will inform investment decisions by public, private and philanthropic funders seeking to expand economic opportunity for Detroit city residents.

CONCLUSION

The Detroit region is entering a pivotal phase. With the city of Detroit emerging from bankruptcy and the broader regional labor market climbing out of a brutal multi-year downturn, attention now shifts to the private employers on whom a sustained recovery will depend. These employers are already experiencing difficulty in finding qualified middle-skill workers, and their challenge will intensify as Baby Boomers retire from key industry sectors over the next several years. Simultaneously, many residents of southeast Michigan are watching the economic recovery from the outside because they lack employer-valued skills. Leaders in the city of Detroit and the region have kicked off initiatives to address this dual dilemma. But the challenge will be to coordinate and align these initiatives regionally so that they add up to more than the sum of their parts.

Through our *New Skills at Work* initiative, JPMorgan Chase proposes to offer guidance on the development of a demand-driven career pathways system that can launch young people and low-skill adults into good jobs with advancement potential. Middle-skill occupations in the healthcare and manufacturing industries represent a powerful opportunity to implement this strategy in the Detroit region, thereby fortifying the regional economy and helping residents gain the opportunity to obtain jobs that will support themselves and their families.

APPENDIX A – Methodology

All data in this report are provided for the Detroit region, defined as the Detroit-Warren-Livonia Metropolitan Statistical Area (and referred to in this report as the Detroit MSA), unless otherwise noted. The Detroit MSA includes Lapeer, Livingston, Macomb, Oakland, St. Clair and Wayne counties.

Methodology to Identify "Middle-skill" Occupations

Four criteria were used to identify middle-skill occupations, as follows:

1. Selected occupations must pass a minimum requirement for the percentage of their workforce that possesses a high school diploma and less than a four-year degree.
2. 25% or more of the workforce for each target occupation must surpass the living wage for families with two adults and one child.
3. Each occupation must surpass a minimum growth rate over the past three years.
4. Occupations with limited annual openings are filtered out. The term "middle-skill" typically refers to the level of education required by a job. This study expands the common definition by adding three additional criteria (wage, growth rate and number of annual openings). This expanded approach will make sure selected occupations not only are middle-skill but also provide a living wage and are growing.

To provide a picture of the economy (e.g., a description of employment, unemployment, productivity, workforce and education), the report uses EMSI's data aggregated from more than 90 federal, state and private sources. EMSI applies proprietary methods to remove suppressions and include data for proprietors to yield a comprehensive representation of the regional workforce.

The report also includes analytical information from Burning Glass Technologies, which provides real-time labor market information (RT LMI) from online job postings. Burning Glass' patented parsing and data extraction capabilities can extract, derive, and infer more than 70 data elements from any online job posting, providing in-depth insights into employers' demand for skills and credentials.

Limitations

When assessing a phenomenon as complex as a local economy, gaps in our analysis and understanding remain. While traditional labor market information (LMI) offers the best data available to capture historical industry and occupational trends, it is infrequently updated and does not adequately account for future macro- or micro-economic shifts in supply or demand. Some of the federal and state data sources EMSI uses contain non-disclosed or "suppressed" data points, created by the government organizations that publish the data products in order for them to comply with laws and regulations that are in place to help protect the privacy of the businesses that report to them. In some cases, EMSI utilizes proprietary algorithms to replace suppressions with mathematically educated estimates.

RT LMI complements the traditional LMI with more recent information on employer skills, education and credential demand. However, a common limitation of job postings data is that it can only access information that is indeed posted online. To control for duplicate job listings Burning Glass employs an advanced parsing engine that considers the actual job functions and skills described by the employer rather than just the text. Burning Glass focuses on the content of the posting, not simply the words or basic fields.

Some of the limitations from both traditional and RT LMI will be ameliorated through qualitative interviews with employers, educators, policymakers and workforce intermediaries whose on-the-ground experience can fill in gaps about both future employer skill demand and participant supply. Overall, data can be a useful starting point, but the intricacies of talent shortages and job openings will need to be verified locally.

APPENDIX B – Selected Middle-Skill Occupations in Healthcare and Manufacturing Sectors in Detroit MSA[63]

(referred to in Tables 2 and 3 in text)

Middle-Skill Occupations by Primary Skill Area	Average Annual Openings (2013–2018)[64]	Job Postings (2014)	Median Hourly Wage
Nursing			
Registered Nurse	1,374	6,462	$32.91
Licensed Practical/Vocational Nurse	408	778	$22.53
Sub-BA Practitioner			
Medical Assistant	375	1,146	$13.37
EMT/Paramedic	156	327	$15.24
Healthcare Support			
Nursing Assistant	863	1,824	$10.03
Caregiver/Personal Aide	1,027	1,212	$12.97
Administrative			
Registrar/Patient Service Representative	N/A	674	$12.61
Medical Secretary	182	609	$15.66
Technical Non-Patient Care			
Medical Laboratory Technician	141	849	$15.57
Pharmacy Technician	109	556	$13.48
Health Information Management			
Medical Coder	N/A	336	$16.79

Machining[65]			
First Line Supervisors of Production and Operating Workers	220	1,820	$29.60
Computer-Controlled Machine Tool Operators, Metal and Plastic	157	1,265	$17.85
Installation, Maintenance and Repair			
Automotive Service Technicians and Mechanics	377	1,242	$18.50
First-Line Supervisors of Mechanics, Installers and Repairers	160	928	$29.32
Logistics and Transportation			
Production, Planning and Expediting Clerks	111	984	$22.05
Shipping, Receiving and Traffic Clerks	245	550	$15.10
Engineering Manufacturing Technology			
Mechanical Drafters	38	399	$24.97
Testing and Inspection			
Quality Control Analysts	39	326	$17.32

63 All data in these tables are from Burning Glass and EMSI, unless otherwise noted.
64 EMSI and EMSI Complete Employment 2014.2.
65 Occupations in the machining category correspond to the skilled trades and technicians manufacturing subsector defined by the Detroit Workforce Intelligence Network. Occupations in the engineering manufacturing technology category correspond to the engineers and designers manufacturing subsector defined by the Detroit Workforce Intelligence Network.

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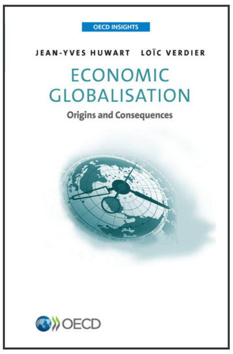

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Economic Globalisation
Origins and consequences

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Does globalisation promote employment?

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6

Even though competition from low-wage countries has some negative effects on employment in OECD countries, the link between globalisation and job losses is less obvious than it first appears. In times of economic shock such as the recent recession, globalisation seems to create more jobs overall than it destroys. Likewise, the total increase in wage inequality of the past two decades seems more linked to technology and legislation than globalisation – which does nevertheless undeniably contribute to increased job insecurity in some cases. The challenge is to help the "losers" of globalisation stay in the race and seize the new opportunities offered by openness to international trade.

Does globalisation promote employment?

By way of introduction……

In January 2008, mobile phone manufacturer Nokia announces it's closing its factory in Bochum (Germany), moving production to Cluj-Napoca (Romania) and axing 2 300 jobs. One year earlier, Ben-Q/Siemens and Motorola also closed their German production sites. And yet the mobile telephone market, born only 15 years earlier, is still young. Faced with the emotion triggered by this announcement, the German government demands that Nokia reimburse the EUR 17 million it received in subsidies.

International competition has grown in most sectors. Companies want to reduce costs. For many years, offshoring has been a means to this end. The gradual diversification and internationalisation of shareholders has reduced many companies' local foothold, creating uncertainty and worrying workers in developed countries, whose jobs constantly risk being transferred to the other side of the globe.

This uncertainty has been prevalent for decades, and the 2008 crisis, with its devastating effects on jobs, has increased it. In many countries, the employment situation has got considerably worse. Economies previously characterised by relatively low unemployment rates have seen them soar. Between December 2007 and March 2010, jobless rates rose from about 4.5% to slightly over 8% in the United Kingdom. The rise in unemployment has been even more acute in the United States, with rates climbing from 4.5% to close to 10% of the workforce.

This chapter looks at the impact of globalisation on employment in the past 20 years. This is no easy feat. As we've seen, globalisation involves different phenomena, from international trade through migration to FDI. Some clues can help us evaluate the impact of globalisation on employment, but they can also mask the less visible underlying trends, both in terms of employment *volume* and job *quality*.

Globalisation destroys some jobs, but creates many more

Offshoring, while certainly painful, is only one aspect of globalisation. An analysis of the global effects of the increased economic integration of different world regions reveals a complex reality. Here, we mostly concentrate on employment tendencies in OECD countries because unemployment has been widespread since the late post-war period and here more than elsewhere, globalisation has been blamed for robbing workers of their jobs. Some employment trends in developing and emerging countries appear in parallel as jobs lost in some sectors in OECD countries often appear as jobs gained in other regions.

Job losses due to competing goods from emerging countries

Imported products competing against domestic products have spawned job losses in OECD countries. The new configuration of international trade discussed in Chapter 4 is characterised by the decreased competitiveness of some goods manufactured in developed countries compared with those from emerging countries.

It is difficult to establish the total volume of job losses due to international competition, because the link between the two is often indirect and not clear-cut. Even so, the evolution of employment data in some industries is telling. Since the 1990s, industrial employment has backtracked in most OECD countries – a symptom of the de-industrialisation of developed countries. In the 1990s, a flood of clothing made in China that was sold at unbeatable prices proved fatal to a vast swathe of the textile industry in several OECD countries. Many companies were forced to downsize or close down. From 1970-2003, the textile workforce dropped 60% in G7 countries. This carnage caused OECD companies to refocus on branches with higher value added, such as textile technology, design, haute couture, etc. Similar trends affected mass electronics, toys, household objects and other sectors whose products did not require specialised skills and technology.

But some industrial activities – such as agribusiness, chemicals (including pharmaceutical products) and cars – remain a source of employment in OECD countries. These sectors maintained a more or less stable workforce over the past 25 years, at least up until the recent economic crisis. In the case of agribusiness, industrial processing must often be located close to the distribution market. This means that international competition has less of an impact on the activity and the way it’s organised, so the industry is relatively safe from the strong winds of international competition.

But competition can also be beneficial to workers in developed countries. The automotive, pharmaceutical and chemical sectors are largely dependent on international competition, which has not affected their employment levels. This is because, unlike the textile or mass electronics sectors, they essentially export and import among OECD countries which, as it turns out, manufacture more or less the same type of products. For example, German automobile imports to France don't threaten French automobile production, because France also exports its cars to Germany and other OECD counties. In other words, it's mostly competition among *some* imported goods – lower-value-added goods produced in developing and emerging countries – that causes some job losses in OECD countries.

Not all the OECD countries have evolved in the same way. In Korea, Mexico or Ireland, the number of industrial jobs has risen. Since the industrial fabric developed late, these countries are catching up in effect, thanks in part to foreign investment. In the 1990s, US personal computer manufacturer Dell established a base and created over 4 500 jobs in Ireland. In recent years, most Dell PCs sold in Europe were assembled at Limerick. Thanks to the huge number of computers exported from its Irish base, Dell contributed nearly 5% of the Irish GDP. Yet in 2009, caught up in the global crisis, the company closed its Limerick unit and transferred production to Poland.

The North's de-industrialisation and its negative effects on employment are also due to another form of competition – wage competition, which prompts many OECD companies to outsource production.

Loss of jobs due to offshoring

The impact of offshoring in OECD countries can't be overstated. Some of the research is quite worrisome. In 2005, one study showed that 40% of major corporate chief executives outsourced or intended to outsource one or several units to a foreign country. While many jobs first migrated to Asia, they now also move to North Africa, central Europe or even the Caucasus. In 2005, Internet provider Lycos France, a subsidiary of Spanish group Telefonica, transferred a portion of its operations to Erevan, in Armenia.

This trend isn't limited to industry. In 2004, one in two firms was considering relocating a service activity. Today, one wage earner out of five in OECD countries works in an activity that could be outsourced.

Offshoring is a direct consequence of stepped-up globalisation from the 1990s onward. From the moment most obstacles to international trade were lifted, communications became instantaneous, companies were able to establish themselves abroad easily and production chains were globalised, companies couldn't wait to seek out labour in least-cost countries.

The impact of offshoring on employment isn't straightforward. Many companies only outsource part of their production to emerging countries. The jobs lost in this way are in labour-intensive, low-skill areas such as assembly lines. The savings the company makes in productivity, competitiveness, etc., allow it to make new investments. Its overall sales and turnover grow, allowing it to hire new workers.

Job losses are not only due to globalisation

While offshoring is a highly visible symptom of the impact of globalisation on some job types, it is far from the only cause of job losses in developed countries. In Europe, fewer than 5% of job losses in industry and services can be explained by the decision to outsource an activity to a lower-wage country. In France, offshoring caused 13 500 industrial job losses from 1995-2001 – a relatively low number compared with total job losses. A study over the period 2002-04 showed that 75% of European job losses were caused by internal restructuring following technological or process improvements or corporate strategic re-orientation, and 15% by bankruptcies.

In the United States, the share of job losses due to delocalisation is also low – even if it has risen in recent years. In 2003, 13 000 job losses – or less than 1% of total job losses – were due to offshoring. During the first quarter of 2004 alone, the number of jobs eliminated due to offshoring had reached 2% of total job losses. As in Europe, most US job losses resulted from productivity gains stemming from new technologies and from companies' strategic re-orientation.

Indeed, globalisation does have an impact on these factors. As we've seen, the increased economic integration of countries promoted growth through productivity gains and the spread of new technologies, allowing companies to realise considerable productivity gains. Job losses due to increased efficiencies, restructuring and corporate bankruptcies can be viewed as *indirect* consequences of globalisation. But these gains in efficacy and productivity also create new jobs. In any event, the opening of borders to trade and investment isn't the sole culprit.

Creation of new jobs in high-tech industries and services

The recent economic crisis caused a significant spike in unemployment in most OECD countries. While countries' growing interdependence made it easier for the shock to spread, the shock itself was caused by the malfunctioning financial sector and some macroeconomic imbalances (see Chapter 8). In the decade preceding the crisis, the total number of jobs in the OECD did not fall, quite the contrary – job losses in some sectors were compensated by millions of job creations.

New professions appeared, particularly in the services industry, which in Germany created 3 million jobs from 1995-2003. Business-to-business activities alone (accounting, human resources, call centres, web design, logistics, etc.), hotels and restaurants, health care and services to individuals created over 2.5 million positions. These new service professions often generate greater value-added than labour-intensive activities. The wealth thus created could be re-invested in new activities, which in turn create new jobs.

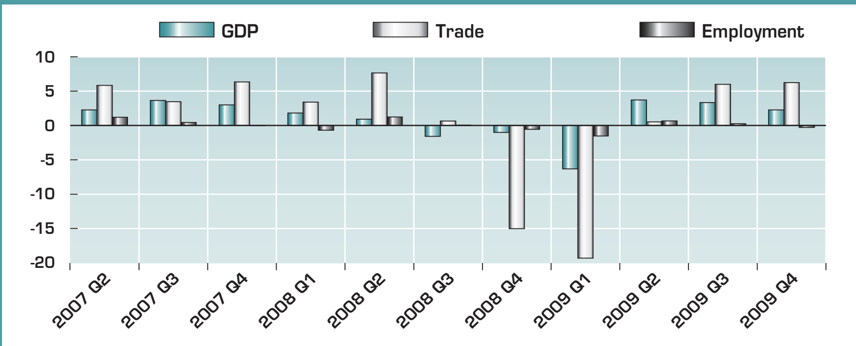
On average, the number of service-related jobs created in this way was greater than the number of lost industrial jobs in developed countries during the last decade. Between 1995 and 2005, the employment rate in OECD countries rose 1.1% annually. This progression is higher than the 1% annual population increase. This means that globalisation and competition from low-cost countries did not stop developed countries from creating more jobs. Better still, the resulting productivity gains led to new job creations in higher-value-added sectors. In 2007, just before the global economic crisis, the average unemployment rate of 5% in OECD countries was at its lowest since 1990.

In developing countries – and particularly emerging countries – globalisation led to job creation, either through new businesses being created or companies offshoring from developed countries. While it may be difficult to put a precise figure on this, it can be said that globalisation created more jobs overall than it destroyed.

But jobs are just one adjustment variable among others. Countries can't ignore globalisation's "losers". They must implement adjustment and training measures to meet the challenges of globalisation (see the conversation with Paul Swaim at the end of this chapter). And, what's more, the positive balance we refer to here only concerns employment *volume*. What about employment *quality*? This is where, more often than not, globalisation gets the blame.

THE CRISIS: A DEEP BUT BRIEF IMPACT ON TRADE, A MORE LASTING IMPACT ON EMPLOYMENT

Quarterly percentage change in GDP, trade, and employment in the G20 countries



Note: Employment data exclude India, Indonesia, and Saudi Arabia. GDP is seasonally adjusted; trade and employment data are not.

While increased international trade benefits employment overall, the high integration of international goods and services markets facilitated the propagation of shocks that can negatively impact on employment.

Source: "Seizing the Benefits of Trade for Employment and Growth", joint report of the OECD, ILO, World Bank and WTO, available at *www.oecd.org/dataoecd/61/57/46353240.pdf.*

StatLink *http://dx.doi.org/10.1787/888932780190*

In real life

Albert Lebleu, 62 years old, former engineer at Metaleurop, Courcelles-lès-Lens, France

"The worst, for us, was that decisions were no longer made locally."

The road that leads to Courcelles-lès-Lens, in France's Nord-Pas-de-Calais, bears constant reminders of the region's historical milestones: its glory days, with its textile factories, its wealth, its coal mines. The volcano-like silhouette of the highest slag-heap in Europe (186 metres) brings to life the flat and monotonous terrain of this little corner of the northwest. In 1914, at the beginning of the First World War, the front line was 15 kilometres away. The area was hit by cannonades. Men from over twelve countries and three continents killed each other in the environs during this time of globalised conflict. A military cemetry at the entrance to the town keeps alive the memory of the events.

Today, low houses emphasise the peaceful nature of this village of a few thousand souls. In a room on the first floor of the small city hall, Albert Lebleu busies himself in the middle of a *bric-à-brac* of cases, stacked chairs and ageless computers.

At 62 years old, this trained chemical engineer with greying hair is still full of energy. The various associations he heads, including that for former Metaleurop workers,

In real life *(cont.)*

keep him almost as busy as ever, but this time on a volunteer basis. His plant closed suddenly in 2003. After 33 years of loyal service to the Metaleurop Nord foundry, Albert Lebleu agreed to take early retirement. During those years, he witnessed the impact of globalisation on his company. Since joining in 1970, he held various posts. In 1975, his contribution to an internal research programme resulted in the company adopting a then-unique process in the field of germanium production. The patent still bears his name, along with the names of two colleagues who fine-tuned the process with him.

Today, there is pride in his eyes as he recounts his factory's past. In the 1960s, the Metaleurop foundry was the first to adopt the pyrolysis process for treating metals such as lead and zinc. This process was later implemented elsewhere, in Australia, North America… The booming company then changed its positioning to produce rarer metals. Metaleurop Nord was the largest global exporter of germanium, a metal used to make night-vision goggles. The factory produced a component used in liquid crystal monitors. "As a production unit, we were very technology-oriented", remembers Lebleu.

But 35 years ago, other countries started occupying the same niche, sometimes with more recent installations and technologies – the first signs of globalisation. "Our competitiveness started to erode", he relates. "First, Japan entered the competition in the 1970s. Then, China arrived on our markets in the 1980s, followed by India in the 1990s. To maintain our competitive edge, we had to step up equipment automation. In 1986, my team went from 19 to 16 employees." In three decades, the workforce was halved, from 1 600 to 830 employees. The pace picked up, along with stress. "Before, workers didn't drag their feet to come to work", he notes. "They enjoyed chatting over coffee breaks. But the pace just kept speeding up. These relaxing moments became increasingly rare. At the same time, the average age in the company kept rising as no new people were taken on", he continues. "In the early 2000s, the average age was 50. We had to preserve our market share to keep the factory going." But globalisation became more present and decisions were being made further and further away. "The factories started changing hands according to the mood of the financial markets."

In the mid-1990s, a Swiss group bought into Metaleurop's capital. "The foundry no longer interested the previous shareholder, a German industrial group that made a 180-degree turn to focus on… tourism. The Swiss group became a major shareholder, with one-third of the capital. Very quickly, it froze investments. We felt we were losing control over our destiny. Financial holdings, with their army of lawyers, became the plant's real bosses", he protests. "Faced with these entities – some of them protected in tax havens – we couldn't do much. The problem is that globalisation happens quickly and that laws, behaviours and codes can't keep up."

In the meantime, the rising number of cheaper foundries in emerging countries meant that Metaleurop could no longer break even, and accounts plunged into the red. The company built up losses. "Early in 2003, the parent company turned off the tap", recounts Lebleu, as Metaleurop's majority shareholder dropped its subsidiary with no resources and without giving the workers any notice. At the time, there was no transnational legislation to force the parent company to honour the commitments of a subsidiary if it was not a majority shareholder. "From one day to the next, we found ourselves without jobs and without unemployment benefits. Management simply decided to abandon the production unit, hiding behind the fact that the coffers were empty at the branch level."

Metaleurop Nord was then known as one of Europe's most polluted sites. Hazardous chemicals were stored in the open and not one euro was spent on cleaning up. "We lived through savage capitalism in all its horror", judges Lebleu today. "With globalisation, capital came and went across borders. They could run a factory into the ground and leave behind an ecological and social disaster." Finally, the French authorities financed a portion of the decontamination process. Five years later, new activities have sprung up. Of the 830 employees of Metaleurop Nord, only 60 or so are still unemployed. "The social damages have been mitigated", concedes Lebleu.

Four years later, the retired engineer has found new occupations, but he now wonders about the future of his 35-year-old daughter, also an engineer. "In the early 1970s, fewer than 10% of people in my age range had earned the baccalaureate (the secondary education diploma). Today, nearly everyone has one. Becoming an engineer in no way guarantees you a good career – you have to prove yourself constantly. On top of that, our purchasing power is not keeping pace. More and more people work for the minimum wage. And globalisation doesn't help this at all", he concludes.

Globalisation seems to increase disparities in job quality

> **"In OECD countries, globalisation is found to have disproportionate impacts on certain types of workers, particularly low-skilled workers who may also be concentrated in certain regions."**
>
> OECD, *Staying Competitive in the Global Economy – Compendium of Studies on Global Value Chains*, 2008

Some fear that globalisation will lower employment standards – the "race to the bottom" – as workers in industrialised countries see their wages and work conditions align with those in low-wage countries. Is this fear founded?

Lower salaries in low value-added sectors

Wage levels in OECD countries present a mixed picture. Faced with international competition, some real wage concessions are taking place. Here again, offshoring has painful consequences. In 2008, the United Auto Workers (UAW) union of US automotive workers agreed to halve the wages of young workers to preserve employment at a Ford plant threatened with a transfer to Mexico. On the other side of the Rio Grande, Mexican workers' representatives made even greater concessions, with newly hired workers sometimes agreeing to start at USD 1.50 per hour. At that rate, a Mexican worker is competitive, even compared with a Chinese worker.

> **"One of the arguments for adopting the North America Free Trade Agreement (NAFTA) was that Mexican wages would climb gradually until they were the same as in the United States. Instead of there being upward pressure on Mexican wages, US wages were subjected to downward pressure."**
>
> Ben Davis, director of the Mexico City solidarity bureau of US union AFL-CI

The simple *threat* of offshoring is sometimes enough to lower employment quality in developed countries, because it reduces corporate union activism. As companies internationalised and outsourced a number of functions, the links between the top and the bottom of the pyramid grew looser – which caused wages to rise more slowly (see Albert Leleu's account above). Between 2001 and 2006, the real weekly wages of average US workers – those in the middle of the wage distribution range – decreased by 4%, despite a 15% productivity gain. In Germany and Japan, real wages stagnated. The overall result is that since the 1980s, the share of income from labour in OECD countries has declined. In contrast, in 2006 the share of company profits exceeded 15% of the GDP of the seven most industrialised countries, compared with 13% in the early 1980s.

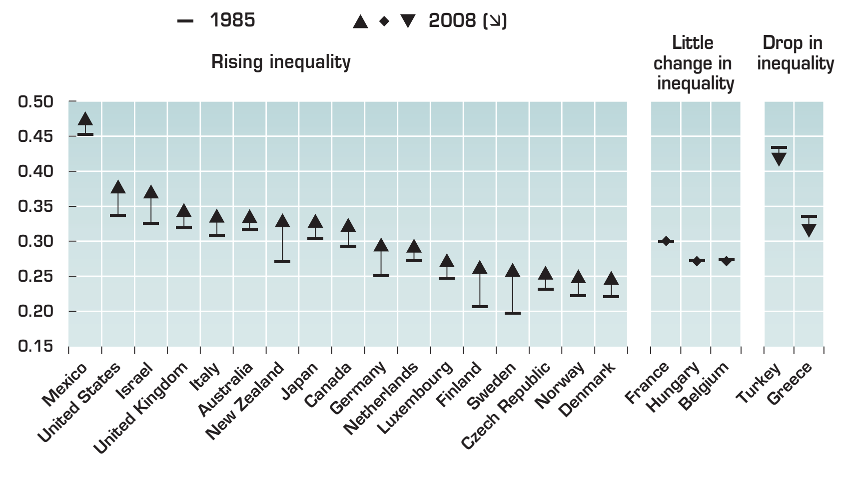
Here too, of course, situations differ from one industry to another. The workers whose wages and working conditions are under pressure toil in industries competing with low-cost countries. Standardised and repetitive industrial and service jobs are under constant threat of relocation. Computing, chemicals or finance are not subjected to the same international pressure as more traditional sectors such as textiles, cars or electronics. On the contrary, wages in these sectors grew at the same time as globalisation intensified.

The impact of globalisation on wages in OECD countries is therefore mixed: while job quality has worsened in the now less-competitive sectors, many high-quality jobs have been created in sectors where these countries have a major comparative advantage in international markets. On the demand side, the development of emerging countries has offered new outlets for OECD area companies. With regard to the offer, international competition has made products and services more competitive and has resulted in the hiring of a better-trained and more productive workforce. Today, companies need an ever widening range of specialised skills. In 2006, jobs that demanded a high capacity for judgment represented over 40% of open corporate jobs in the United States and nearly 70% of overall jobs created since 1998. These kinds of job are more valued and generally better paid.

The result is the appearance of a two-speed labour market in OECD countries. On the one hand, the wages of unskilled workers have shrunk. On the other, the wages of educated and experienced workers in prime niches have soared. Wage inequalities have increased over the past decades. In 2006, the richest Americans earned the equivalent of 16% of all the income generated in the United States in a year, compared with only 8% in 1980. The income gap between the richest 10% of citizens and the poorest 10% has widened in developed countries, with some rare exceptions: in Ireland and Spain, that gap actually shrank between 1994 and 2005, their economic catching-up period.

RISING INEQUALITY

Inequality in selected countries, 1985 – 2008



Note: For the Czech Republic and Hungary, the period under study started in the early 1990s, not in 1985.

NB: Temporary data from the *OECD Database on the Distribution of Income and Poverty*.

In most OECD countries, inequality grew between the mid-1980s (the average Gini coefficient was then 0.28) and the late 2000s (with an average 0.31 Gini coefficient). For a definition of the Gini coefficient, see the graph on the evolution of inequality in China and India in Chapter 5.

Source: OECD (2011), *Divided We Stand: Why Inequality Keeps Rising*.

StatLink http://dx.doi.org/10.1787/888932780209

But is this growing inequality only due to globalisation? According to the in-depth OECD study *Divided We Stand: Why Inequality Keeps Rising*, the relationship between inequality and globalisation and their effect on overall employment isn't that obvious. The study shows that the main factors behind wage disparities over the past decades at the global level have been institutional and political changes (especially labour market rules) and technological advances.

Some job insecurity

Wages aside, many workers and union representatives point to the increasing lack of job security. Here too, OECD firms' ability to offshore to low-wage countries with less rigid social legislation weakens unions' bargaining power and exerts downward pressure on employment quality.

OECD area companies increasingly resort to part-time work and fixed-term contracts. According to the European Trade Union Confederation (ETUC), of the 4 million jobs created in the European Union in 2006, the share of part-time jobs has grown. In 2008, 40 million EU workers held a part-time position, compared with 32 million ten years ago. Some 14.5% of European workers have a fixed-term contract, compared with 11.5% in 1997. According to ETUC, young people all over Europe – and up to 50% of 16-25 year olds – are subjected to this type of contract. In Sweden, 68% of young people work under a fixed-term contract.

The overall picture therefore reveals a degree of insecurity in unskilled jobs in OECD countries, partly linked to increased competition from low-wage countries – where laws and practices often give less protection to employees.

Improvement in job quality in emerging countries

One of the dark sides of globalisation is sweatshops – workshops run by the sub-contractors of major brands in which employees wear themselves down working long hours for subsistence wages. Likewise, child labour and modern slavery are realities in many countries. Some unscrupulous entrepreneurs settle in countries with such dire poverty that workers are willing to make considerable sacrifices. Sometimes, the global race for the lowest wages and least restrictive social legislation leads to situations where worker relations resemble the law of the jungle. Countries do not always have the administrative and legal infrastructure necessary to enforce the most basic employment laws.

Yet globalisation can also lead to improved employment conditions in developing and particularly emerging countries. Many MNEs that have settled there to manufacture and sell products and services have imported their original quality standards and good practices. Local companies that have entered into partnerships with MNEs have noticed higher levels of productivity than competitors who do not have this experience. Overall, MNEs pay their employees higher wages than local companies. Likewise, their unionisation rate is slightly higher, except in the Middle East.

That said, these positive repercussions may mostly benefit skilled workers, as opposed to manual workers performing minor or routine tasks. Recent studies in Brazil and Indonesia show that when a foreign company purchased a local business, wages quickly rose 10% to 20% on average. But we do not have accurate enough data to find out how these gains are distributed.

The improvements brought about by MNEs are not always automatic or spontaneous. The moral pressure exerted by NGOs, unions and civil society can produce higher wages and improved working conditions in MNE subsidiaries or local sub-contractors. In recent years, major international groups have established in-house corporate social responsibility programmes (CSR) which, while it may be good that they exist, are not always optimally effective on the ground – as witness the example of Nike (see the box).

Corporate social responsibility (CSR): A mixed review for Nike, Inc.

Nowadays, the impact of CSR programmes on working conditions seems limited. The main difficulty lies in elevating employment standards in a very tense competitive environment. Nike, the US manufacturer of sports equipment, is a case in point. The brand only has 24 000 direct employees. Almost all of its production is subcontracted to some 800 manufacturers in 51 countries. In the early 1990s, Nike was the target of a very negative media campaign because it was discovered that its subcontractors used underage workers. In reaction, Nike established a very strict supplier control system. In 2004, the firm employed 80 CSR supervisors and inspectors responsible for ensuring that subcontractors were respecting Nike's code of conduct on the ground. Despite this army of controllers, 80% of Nike's external suppliers failed to implement and follow the code prescribed by the US management. Controllers' visits have until now had a very limited effect.

By way of conclusion…

In order to make an objective assessment of the impact of globalisation on employment, we have to look at the bigger picture, This suggests that, overall, globalisation creates more jobs than it destroys. But this should not be cause for celebration. For the thousands of workers who lose their job or purchasing power due to company offshoring or loss of competitiveness, it is of no consolation whatsoever to know that there are plenty of vacancies and that wages are rising in other sectors or countries.

Governments cannot ignore globalisation's "losers" – those who work in sectors weakened by international competition. The 2008 economic crisis caused unemployment rates in the OECD area to soar. By the first quarter of 2010, employment had receded 2.1% over a period of two years and the unemployment rate had risen by slightly over 50% to 8.7% – or 17 million additional jobless.

The crisis led governments to take unprecedented steps to tackle unemployment and help workers weather the storm, compared to recent recessions. Three major types of measure were implemented which, while not specifically aimed at job losses linked to decreased international trade, did cover them.

First, governments (including Germany and several central European countries such as Hungary) sought to prevent job losses through part-time work programmes. These aimed to reduce working hours for the entire workforce, so long as economic difficulties lasted, in order to maintain jobs at the company. Since this meant lower wages, governments committed to make up some of the shortfall. As the goal of these public financing mechanisms is to preserve jobs that are viable over the long term, they must be time-limited (say, to one year), otherwise governments risk permanently financing jobs that are no longer competitive. The Netherlands went one step further: companies that laid off workers within six months of receiving the last subsidies had to refund the authorities half of the monies received.

Secondly, governments (including in Japan) aimed to support the unemployed proactively, by extending the available subsidies to include temporary workers who had lost their jobs. While often done on an *ad hoc* basis, this measure was still very useful to the most economically fragile jobless persons.

Finally, governments proactively increased their support for programmes to help people return to work. Public budgets were considerably expanded, for example to hire more staff in public employment services. During periods of economic growth, governments should preferably focus on people's adaptability in terms of employment. In times of crisis, though, this isn't enough. They need to increase the number of training programmes and funding for work experience, etc.

Most of these measures have been temporary, because they were designed to respond to an exceptional situation. A number of governments progressively adjusted or terminated them in order to maintain flexibility in the employment market and guarantee competitiveness.

Long-term measures capable of maintaining employment levels and reducing inequalities while preserving competitiveness are those included in redistributive social and fiscal policies, as well as – crucially – in dialogue among social partners (see the conversation below with Paul Swaim). More importantly, governments must insist on life-long educational and training policies if they are to offer a better response to the negative effects of globalisation. This must be a priority, so that globalisation can promote employment – for both companies and workers.

A conversation

Paul Swaim, OECD Directorate for Employment, Labour and Social Affairs

"To remedy the negative effects of globalisation on employment in some sectors, we must help workers adapt their qualifications or expectations to the most promising employment sectors."

The financial then economic crisis, which originated in the United States, had a severe and unprecedented impact on most developed economies, which suffered record unemployment. Doesn't the crisis prove that globalisation destroys jobs?

The link between job losses and globalisation isn't as obvious as it seems. Of course, the crisis caused heavy job losses in most economies, particularly in some sectors like construction and industry. But job losses in construction were less linked to international trade, while industry was more affected than expected. This is probably due to the drop in international trade, which was also steeper than expected.

That said, while international trade fell off dramatically in Germany, for example, unemployment rose relatively moderately. This was partly because employers adopted a long-term view and preferred to keep their workforce in order to be more competitive when recovery came.

Globalisation undeniably accelerated the spread of the crisis, first to the financial sector, then to companies, then to employment – with unexpected speed and gravity due to highly integrated production and trade networks in different countries.

A conversation *(cont.)*

We've seen recently that recovery in China and other emerging countries has played a major role in the strong recovery of Australia, Germany and Korea, thanks to their dynamic exports. But while globalisation can help spread the mishaps, it also spreads the benefits of periods of economic prosperity. In terms of the volume of employment, it seems to me that globalisation is more of a catalyst than an underlying cause.

But doesn't globalisation itself impact on the employment rate in certain sectors?

Globalisation goes hand in hand with decreased competitiveness of some industrial sectors like textiles or mass electronics in developed countries and hence, with job losses in these sectors. But it's hard to evaluate the impact of globalisation on job volume worldwide. Openness to the global market doesn't automatically lead to job losses. In the years that preceded the crisis, the more open countries – like Scandinavia or Switzerland, where wages are very high – did not experience a weaker employment market.

If we look at OECD countries since the early 1990s, employment levels rose before the crisis even as their economies were becoming increasingly integrated. After a peak in the early 2000s, the unemployment rate dropped. By 2007, at the height of the last economic cycle, the average unemployment rate in OECD countries had dropped to its lowest level since 1980. Trade liberalisation was also a means for a certain number of developing and emerging countries to create pressure to improve the jobs market and increase employment. But here again, this wasn't automatic. Many developing countries didn't benefit from globalisation because they didn't have the necessary preconditions, like an effective and impartial legal system.

Even if the relationship isn't automatic, it does seem that, overall, trade promotes employment gains and better living standards. It allows countries to develop specialties – hence, jobs – where they are the most competitive. In OECD countries, the term "creative destruction" is quite appropriate. Certainly, if governments establish adequate national policies to support growth and employment, globalisation should not deter from a consistently high employment level.

What about employment quality? Doesn't globalisation foster a race to the bottom?

Some pre-crisis concerns seem justified. Two wage indicators are quite worrying. First, the global share of wages and workers' compensation has been dropping in relation to GDP since the late 1980s. Globalisation is no stranger to this. Experts agree that increased trade with low-wage countries such as China or Central European nations, leads to a compression of wages in industrialised countries. As workers in low-wage countries today have the same competencies as unskilled workers in OECD countries, the unskilled workers' wages tend to drop.

Likewise, globalisation lowers the wage bargaining power of unions – in case of disagreement, employers can always threaten offshoring. But globalisation also increases many workers' purchasing power by lowering the prices of a range of consumer goods used in everyday life. Also, not all workers in developed countries lose out in terms of wages. Highly skilled workers in the high-tech sectors have had wage increases.

So employment quality evolves differently depending on the skill level?

This brings us to our second concern: the gap is widening between the top and the bottom of the wage pyramid. This phenomenon can be observed in two-thirds of OECD countries. The gap has been widening for quite a while already in the United States and United Kingdom. In Continental Europe, inequalities were less pronounced – but the wage gap has deepened in the past 20 years or so. Several studies show that the fragmentation of union power plays a major role in this respect.

A conversation *(cont.)*

The fact that the wage inequalities were less pronounced in Europe than in the United States was due mainly to unions having more centralised influence on wage determination. Scandinavian countries used to have a particularly advanced social consultation system. Now they are moving away from this model, decentralising further and giving more margin to sector discussions at lower levels. It's hard to predict for now how far this process will take them. But with rising international competition, solidarity among different social segments will probably not be as much a given as it was in the 1960s.

Of course, we can't align all wages, as it would have a negative impact on productivity and competitiveness. But to maintain an acceptable level of inequality, some mechanisms are less harmful to competitiveness – for example income transfers by public authorities, redistributive tax systems, support for education and training…

So it's been proven that globalisation increases wage inequalities?

Rising inequalities do not stem just from globalisation. In the United States, the consensus 10 years ago was that rising inequality was caused by the reduced power of unions and by globalisation (two related factors), as well as by technological evolution. It's quite clear that the changing nature of technology has become a major differentiating factor. Twenty years ago, knowing how to use a computer efficiently was not a decisive asset, whereas it most definitely is today. It's hard to determine which – globalisation or technology – has had more impact on employment. Nevertheless, we believe that technological development still has more influence on rising inequality than global economic integration.

Why is employment flexibility so vital?

With globalisation, some employment flexibility is vital to corporate competitiveness, hence growth, which in turn promotes employment. In countries such as France where layoffs are a complicated matter and existing jobs are highly protected, it's a lot harder to make a place for oneself on the job market. Which is why young people are increasingly turning to interim or temp work and internships until interesting jobs become available.

The recent economic crisis showed that this situation forces young workers to bear the lion's share of the flexibility burden. For example, during the last year of the crisis (from Q4 2008 to Q4 2009), the employment rate dropped 8.4% for workers aged under 25, compared with a 2.2% drop for workers aged 25 to 54 and a 1.7% hike for workers aged 55 and over. The result is very high unemployment among youth in some countries such as Spain, where one working-age youth out of two is unemployed. There is, however, an encouraging sign: some countries where this duality is pronounced are trying to introduce reforms to even out the employment protection offered to some categories of worker.

Is globalisation incompatible with job security?

That seems to be going too far. Some degree of flexibility is vital, but this doesn't mean that there should be no supportive measures in place – quite the contrary. Some countries have placed textile workers in training programmes. Others have set up training systems for older workers. Their success isn't always a given, as it's not easy to undergo training and master computer tools when school is a distant – and often not very positive – memory. It's all the more difficult as there is no guarantee that an employer will not choose to hire a 23-year-old with equal qualifications. Our research shows that the most effective solution is often to help unemployed workers find a position close to the one they held in their original sector. Of course, from a macroeconomic viewpoint it is better to help people move from declining sectors to developing sectors. But this doesn't necessary hold true at the microeconomic level.

A conversation *(cont.)*

Effective support measures can also include wage levels. Some countries test wage insurance systems, knowing that the job a person will find after a restructuring will often earn less than the previous one. The United States, France, Germany are testing such systems. In the United States, the company must prove that the restructuring was due to international competition. But here again, we don't have enough hindsight yet to evaluate the impact of these measures.

The measures that seemed most essential to countering the negative effects of globalisation on employment involve helping workers adapt their qualifications or expectations to the most promising employment sectors. Whatever the case may be, the best solution isn't to close oneself to international trade, but rather to offer the best possible educational level to young generations and life-long training to workers – in short, to allow people to climb the social ladder rather than tumble down to the lower wages.

Is a good education sufficient to find a job today?

University graduates do not feel as privileged as they used to. They are feeling more insecure. Previously, 10% of the population went to university. Now, it's 50% – even 80% in some countries. Yet senior management and executive positions are not more plentiful, and a huge gap has arisen in some countries between supply and demand for them. Over-qualification – where people are considered too skilled to fit a position – is also a cause of unemployment.

International competition is increasing even in sectors that require a high level of qualifications. An Indian physician can now analyse scans taken in Austria. This was unimaginable only 10 years ago, when Western specialists could not even imagine having to compete one day with radiologists in Mumbai! More and more, people want life-long training so that they can adapt to major technological, economic and social evolutions. Clearly, governments must play a role in this respect.

That said, even though the race for university degrees and international competition has risen in the OECD area, there is still a higher likelihood of finding employment if people have a higher-education degree than if they are low-skilled. Moreover, university graduates' difficulties in finding work quickly are more often related to inadequate employment policies than to globalisation.

Find out more

FROM OECD...

On the Internet

The OECD website's "Trade and Jobs" page summarises the organisation's analyses on globalisation's impact on employment and provides varied, clear and useful sources: *www.oecd.org/trade/tradeandjobs.htm.*

OECD work on employment is available at: *www.oecd.org/employment.*

International Collaborative Initiative on Trade and Employment (ICITE): A joint initiative of 10 international organisations including the OECD, the World Bank and the World Trade Organization (WTO), the ICITE aims to provide a better understanding of how trade interacts with employment; promote dialogue on these issues; and to develop policy-relevant conclusions: *www.oecd.org/trade/ICITE* (in English only).

Publications

OECD Employment Outlook 2011: An annual report of the OECD on employment in OECD countries and beyond. The 2011 edition focuses on the impact of the global economic crisis. While most economies are experiencing a surge in production, employment will take longer to recover. Chapter 1 evaluates how the safety net functioned in OECD countries in the throes of the "Great Recession". Chapter 2 analyses the effect of social protection systems on the employment market in emerging economies.

Divided We Stand: Why Inequality Keeps Rising (2011): This OECD book examines to what extent economic globalisation, technological advances based on competencies and institutional and regulatory reforms have had an impact on wage distribution.

Globalisation, Employment and Wages (2007): This OECD *Policy Brief* reviews among others the consequences of increased international competition on employment levels and studies the evolution of real wages in OECD countries in recent years.

... AND OTHER SOURCES

Prospects for Foreign Direct Investment and the Strategies of Transnational Corporations (2005-08): This report of the United Nations Conference on Trade and Development provides insight to understand the strategies of companies undergoing offshoring and their obvious effects on employment in the country they are leaving.

POLICY PAPER

May 25, 2016

AN OPEN LETTER TO ANDREW COYNE IN RESPONSE TO HIS MAY 18, 2016 *NATIONAL POST* COLUMN:

"CPP BOARD CAN'T ESCAPE BLAME FOR FUND'S BLOATED STATE"

Keith Ambachtsheer

Dear Andrew,

I am a big fan of the 'At Issue' panel on the CBC 'The National' newscast, and your contributions to it. Well-reasoned common sense has been your trademark.

So your column on the CPP Investment Board last week came as a surprise. You told readers that the manager of their collective CPP nest egg had a "conspicuously bloated" organization, and had "plunged into an increasingly esoteric risky range of private investments" for "no appreciable [financial] pay-off". You also declared the just-released Annual Report "unreadable".

I agree the CPPIB Annual Report needs a short, readable summary, and that is what I am going to provide you here.

You declare that investment theory implies "active managers cannot consistently beat the market". That is true if all participants have access to all information, and interpret and use that information identically. In the real world, these assumptions do not hold. For example, a recent academic study found that a sample 500,000 Canadian retail mutual fund investors consistently underperformed 'the market' by an average 3% per year over the course of the last 15 years. Why? Due to excessive use of high fee mutual funds and value-destroying 'buy high-sell low' trading activity. And what about their 5,000 advisors? It turned out their own accounts underperformed the market by an even worse average 4% per year for the same reasons. The researchers pronounced the cause of these disastrous investment results as "misguided investment beliefs".[1]

What about long-term investors who have systematic (legal) access to a broad range of macro and micro information and, on average, interpret and use it correctly? I showed in a recent paper that investors with these characteristics consistently outperform 'the market' by statistically significant margins.[2]

So what kind of investor is CPPIB? Its Annual Report is clear about that. CPPIB sees itself as a long-term global investor with good macro and micro information sources, and an ability to turn that information into actionable investment decisions, especially in the expert-intensive (and expensive) private debt, equity, real estate, and infrastructure markets. Active investors of this kind (rather than the buy-high/sell-low short-term traders) are a key ingredient of functional capitalism. It is these kind of investors who transform retirement savings into wealth-producing capital.

So how is CPPIB doing? Has there really been "no appreciable pay-off" from its active, labour-intensive (and hence more costly) strategies to date? Let's take the last five years as the period during which these 'active' strategies have been in full force. Over this period, CPPIB's net return (i.e., after all expenses) was 10.6% per year versus a 9.1% return for 'the market'.[3] The Annual Report translates this 5-year return outperformance into $16 billion of additional net value-creation for the CPP's 19 million participants. These results are in line with previous research findings for this kind of active investing.[4]

Just to make sure you 'get' this, let me make the same point differently. If, over the course of the last five years, CPPIB had invested in its 'reference portfolio', its estimated value increase from March 31, 2011 to March 31, 2016 would have +$89 billion. Instead, the actual increase was +$105 billion, a net value-added increase of +$16 billion due to CPPIB's active management strategies.

Andrew, do you really believe that this additional $16 billion active management contribution (after all costs) to CPP's assets over the course of the last five years represents "no appreciable pay-off" due to its chosen strategic stance? Aren't you being a bit churlish about the significance of this $16 billion value-added pay-off? I said above that well-reasoned (and well-researched) common sense has been your trademark over many years. By that standard, your recent CPP column was an anomaly. I wish you a speedy recovery to your old self.

Yours sincerely,

Keith Ambachtsheer [5]

President, KPA Advisory Services Ltd.
Director Emeritus, International Centre for Pension Management
Rotman School of Management, University of Toronto

Endnotes

1. *See Linnainmaa, Melzer, and Previtera (2015), "Costly Investment Advice: Conflicts of Interest or Misguided Investment Beliefs?"*
2. *See Ambachtsheer (2014), "The Case for Long-Termism". See also my new book "The Future of Pension Management: Integrating Design, Governance, and Investing".*
3. *'The market' in this case is CPPIB's 'reference portfolio', which it defines as a low-cost way to achieve CPP's long-term return objective. You argue the 'reference portfolio' is less risky because it has greater liquidity. This is irrelevant: the CPP doesn't need liquidity and thus illiquidity is not a CPP risk. As a further point, the CPPIB's 10.6%/yr. is net of all implementation expenses, while no implementation expenses are deducted from the 'reference portfolio' gross return of 9.1%. Thus arguably, the 9.1% overstates the 'reference portfolio's' achievable return.*
4. *See endnote 2 above. As a specific example, Ontario Teachers' has outperformed its benchmark portfolio by a net 2.2% per year over the course of the last 25 years, adding $36 billion of value due to its active management strategies.*
5. *I was involved in the CPP reforms that created the CPPIB. Since its creation, I have occasionally provided strategic advice to the organization through KPA Advisory Services. I am also a co-owner of CEM Benchmarking Inc., which provides 'value-for-money' benchmarking services to hundreds of pension organizations around the world, including CPPIB.*

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POLICY PAPER

July 12, 2016

UNDERSTANDING THE BENEFITS OF CPP EXPANSION:

ONE MORE TRY

Keith Ambachtsheer

" Given the importance of the changes being made to the CPP and the wider implications for Canada's retirement income system, it's unfortunate that an expert of Ambachtsheer's stature has fuelled misunderstanding over the benefits of CPP expansion".

The Fraser Institute

The last thing in the world I want to do is to fuel misunderstanding over the benefits of CPP expansion. The *Fraser Institute (FI)* believes I did this in demonstrating that all five of its criticisms of CPP expansion were off the mark 'Is The New Canada Pension Plan Expansion Based On Myths Or Facts? A Readers' Guide' . They said so last Friday in a piece titled 'Rebuttal—5 Myths About The CPP', which is the source of the quote above. I rebut their rebuttal in this short (and I promise final!) piece in this exchange.

Understanding the Looming Retirement Savings Challenge

I reminded *FI* that the CPP enhancements were not about today's retirees, but about giving today's young people "a reasonable shot at retirement security 20, 30, 40 years down the road". The underlying premise was that today's young people face a radically different set of economic circumstances than their 'boomer' parents did when they were young (e.g., later workforce entry, later family formation, higher house prices, fewer workplace pension plans, lower investment returns). *FI* responded that I "provided no evidence to support his assertion". There are, in fact, a number of recent studies that have reached that same conclusion.

One example is the C.D. Howe study by Moore, Robson, and Laurin titled "Canada's Looming Retirement Challenge: Will Future Retirees be Able to Maintain Their Living Standards upon Retirement?" The authors conclude "*while only about 16% of recent retirees are in circumstances that imply a substantial reduction in consumption post-retirement, the persistence of recent trends would raise this number over time to 44% of current 25 to 30-year-olds*.....". *FI* is of course right to say that this is only a projection which may, or may not be on the mark. The frustrating thing about the future is that it is uncertain.

Understanding the Role of Investment Returns

FI claims I am mistaken "that future retirees will benefit from strong investment performance of the CPP Investment Board (CPPIB). This simply isn't true". This assertion unveils *FI*'s fundamental misunderstanding of the difference between 'pay-as-you-go' and 'pre-funded' pension arrangements. As there are no investment reserves in 'pay-go' arrangements, investment performance is an irrelevant concept. However, as 'pre-funded' pension arrangements do have significant investment reserves, simple logic suggests investment performance matters a lot in the ultimate cost of the pension arrangement. Specifically, the stronger the investment performance, the lower the contribution rate required to pay the promised benefits.

The original 1960s version of the CPP was a largely pay-go arrangement, meaning that only sufficient contributions were collected over time to pay the calculated benefits (plus a small reserve). This original version of CPP (call it 'Old CPP') was modified in the 1990s to build up a larger reserve fund to stabilize the CPP contribution rate at 9.9% of pay (it is still that today). So today's CPP is about 20% funded and 80% pay-go. FI is correct to point out that as a result, CPPIB's investment return will only have a minor impact on the 'value-for-money' return CPP participants get on their contributions in the form of 'Old CPP' benefits.

What *FI* seems to not have caught up with is that the economics of CPP enhancements ('New CPP") are quite different, because the CPP Act requires these enhancements must be fully pre-funded. This means that the investment return CPPIB earns on 'New CPP' contributions will matter a great deal. The most recent CPP Actuarial Report is very clear about this. Table 13 on page 33 projects that the sources of 'Old CPP' revenues will be 70% contributions and 30% investment returns, and 30% contributions and 70% investment returns for 'New CPP' revenues (i.e., for the fully-funded piece).

Understanding the Elephant in the Canadian Pension Room

The *FI* rebuttal sings the praises of people saving for their own retirement, ignoring the empirical reality that most of those savings run the gauntlet of Canada's investment 'advisor'/high mutual fund fee network. My critique of *FI*'s ''Five Myths about the CPP' article cited a study which found that a sample of 500,000 Canadian mutual fund investors underperformed the market by an average 3%/yr. over the last 15 years. This kind of investment outcome has disastrous consequences for these unsuspecting investors. For example, $100 invested by a young worker today grows to $326 over a 40-year working life if it earns a real return of 3%/yr. If that 3%/yr. goes to other people, the starting $100 is still only $100 40 years later. This amounts to 70% pension 'haircut' for our young worker, and constitutes compelling evidence of a 'market failure'. It is the elephant in the Canadian pension room.

How can the market for pension investment services fail its participants so badly? George Akerlof was awarded the 2001 Nobel Prize in economics for the explanation. He demonstrated that fair market outcomes require fully-informed market participants. If a market suffers from 'asymmetric' information, that market will fail and produce unfair outcomes. Akerlof teamed up with another Nobel Prize -winning economist Robert Shiller to demonstrate the implications for retail investors. They show that the kind of investment outcomes cited above are predictable events. I urge *FI* to read their 2015 book "Phishing for Phools: The Economics of Manipulation and Deception".

Speaking of books, I am sure my *FI* friends have read "Cost and Choice" by the most conservative, libertarian economist ever to be awarded the Nobel Prize: James Buchanan in 1986. He argued that just because a government is democratically elected doesn't mean they cannot mess up economic policy decisions….and indeed, often do. However, in the end, even Buchanan recognized the possibility of market failures and the legitimate right and obligation of democratically-elected governments to address them. While Buchanan might have questioned the decision of Canada’s federal and provincial governments to enhance the CPP, my guess is that he would also have seen it as a legitimate response to a clear case of ‘market failure’.

That’s it. I’m done.

Keith Ambachtsheer

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The AMBACHTSHEER Letter
Sustainable Pension Design • Effective Pension Management

June 2016

ATTACHING INCOME-FOR-LIFE 'BACK-ENDS' TO DC PENSION PLANS:

WHY THE TIME HAS COME

"....I would argue that mortality credits....that is, the money bequeathed to the pool by the deceased....should only be spent after it has been received...".

Moshe Milevsky[i]

Solving the 'Annuity Puzzle'

The goal of our February *Letter* was to solve the 'annuity puzzle': why presumably rational retirees don't buy immediate life annuities with their accumulated DC pension pots.[ii] The answer turns out to lie in how you ask the question. If you ask people if they want to invest their pot in a product where they could lose all their money should they die tomorrow, they naturally say 'no' (too risky!). In contrast, if you ask people if they want to invest their pot (or at least part of it) in a product that will pay them a pension as long as they live, they will likely not say 'no' but say 'interesting....tell me more?'

Consequently, the February *Letter* argued, effective DC decumulation designs should have two distinct components: 1. An immediate investment component owned by the retiree, and 2. A deferred protection component that provides 'income-for-life' should the retiree outlive his/her life expectancy.

This sequel *Letter* offers a progress report on the considerations involved in turning that two-component design conclusion into a broader, functional DC decumulation design. In short, it addresses the 'tell me more?' question retirees should logically ask. This *Letter*'s contents were inspired by a recent 'longevity risk pooling' workshop we organized at the request of Australian actuary David Knox, as part of his global quest to discover thought-leading thinking on solving the annuity puzzle as a practical matter.

In addition to David, three invited workshop speakers were Don Ezra, Malcolm Hamilton, and Moshe Milevsky. The coming together of this foursome reminded me of the highly popular and acclaimed play 'The Million Dollar Quartet", based on the only rock-and-roll jam session ever attended jointly by Elvis Presley, Johnny Cash, Jerry Lee Lewis, and Carl Perkins (December 4, 1956 in Memphis). Who knew there would be an equally-exciting actuarial jam session on longevity risk pooling on June 3, 2016 in Toronto?[iii] In total, there were nine workshop participants, with all contributing to the rich conversation.

Jam Session Notes

Not to keep you in suspense, my notes on the June 3 jam session follow. To be clear, they reflect my interpretation of the workshop discussion and conclusions, and should not be attributed to any one of the other participants:

- The Life-Cycle Theory (LCT) of personal finance creates important context for a constructive discussion on pooling longevity risk. The theory posits three life-cycle phases: 1. Pre-Work (building human capital), 2. Work (using human capital the generate income, part of which is saved to finance consumption during the post-work phase, and 3. Post-Work (financed by accumulated retirement savings).

- Two key LCT risks that need to be considered and managed are investment risk and longevity risk.
- The nature and relative importance of these two risks changes over the life-cycle. The key risk during Phase 2 is 'lack of return-compounding' risk (i.e., a multi-decade realized investment return lower than the projected return will lead to a pension shortfall). As life progresses, 'drawdown' (or 'sequencing') risk starts to becomes important (i.e., a bad transition path to purchasing Phase 3 retirement income safety....e.g., during the Global Financial Crisis). Eventually, longevity risk (LR) become the dominant Phase 3 risk for most people (i.e., the risk of not having enough money to continue to support a desired living standard).
- The importance of LR depends on the size of the pension pot relative to spending needs and life expectancy. For example, if the pension pot is large enough to support spending needs from investment income only, LR is effectively zero.
- For the non-wealthy, the importance of mitigating LR increases with age. In other words, the risk of not having enough money to continue to support a desired living standard rises as age rises.
- LR is poolable. It requires an arrangement where pool participants agree to forfeit their financial claim on the pool upon the occurrence of an 'estate event' (i.e. their death), with the resulting proceeds redistributed to the survivors. These proceeds go by names such as 'mortality credits' and 'living bonuses'.[iv]
- The success of an LR pool depends critically on its design and how it is framed. The lessons from behavioral economics (i.e., neutral framing) are important here. For example, an LR pool should be explained as a protection mechanism, and not as an investment product. In this case, the 'risk' to protect against is living too long. Another key design element is how/where to fit this protection mechanism into pension plan design. For example, it is automatically embedded into Pillar 1 universal social security arrangements in the developed economies around the world, as well as in traditional Pillar 2 workplace defined benefit (DB) pension plans. With the continued growth of defined contribution (DC) plans, the time has come to embed a well-designed longevity protection mechanism here as well.[v]
- LR protection pools can be sponsored by any motivated affinity group. Such a 'group' could be a government, a labor union, an employer group, or a for-profit or not-for-profit financial institution. The 'for-life' amount paid to pool participants can vary depending on actual investment and mortality experience, or be guaranteed by the pool sponsor or some other credit-worthy entity.
- LR protection must be fairly and transparently priced. That is, it should reflect current market interest rates, recent group-specific mortality experience, the costs of any guarantees if they exist, and any other factors embedded in the pricing formula.[vi] Standardized calculation protocols should lead to 'value-for-money' comparability between competing LR protection offerings.

In this context, it was interesting to assess the new Mercer *LifetimePlus* offering, as it was designed to provide LR protection in Australia's retirement income system, with its heavy emphasis on DC-based workplace pension ('superannuation') plans.

The Australian Context

Here is David Knox's summary:

- Workplace pension participation in Australia is mandatory, and comes with a strong 'it's my money' mindset. It also comes with a 'choice' mindset regarding service provider and asset mix. Member engagement increases significantly after age 50.
- The universal Pillar 1 Age Pension is asset- and income-tested. It replaces 28% of the average wage. Currently, 50% of eligible Australians receive the full Age Pension, 30% part pension, and 20%

nothing. The implication is that low-income Australians already receive a significant amount of LR protection through the Age Pension.

- The typical Pillar 2 workplace pension (super) plan has an accumulation component and a drawdown component called an 'Account-Based Pension'. Immediate annuities are not popular, and deferred annuities are non-existent.
- The Account-Based Pension has 'Growth', 'Balanced', and 'Conservative' investment options and age-based minimum drawdown requirements (most members draw down the required minimum....there are no drawdown ceilings). The Account-Based Pension has no LR protection component.
- An increasing number of academic, government, and industry studies see this 'no LR protection' element as problematic. For example, the Australian Government Actuary stated: "Pooling longevity risk allows retirees to enjoy better living standards in retirement than they can enjoy with an Account -Based Pension, but without any increase in the risk of outliving their savings".

Ergo, LR protection is an idea whose time has come in Australia, and hence the Mercer *LifetimePlus* offering.

The Mercer *LifetimePlus* Offering

David Knox explained its key features as follows:

- Target market: middle-income plan members with Account-Based Pension balances between $250K and $1.5M.
- Logic: replace the 'Conservative' component of the Account-Based Pension with the *LifetimePlus* LR risk pool offering.
- Key longevity pool features: set up the offering as a mutual unit trust with no guarantees, a management fee 0.4% of assets, conservatively invested, pays out interest to participants quarterly, new participants can join any time, exit from the pool at any time due to death or personal choice, the return-of-capital amount declines over time, pool survivors receive return of capital plus a 'living bonus' (capital from deceased and exits) semi-annually, the longer you live the greater your share of the semi-annually paid 'living bonus'.

Obviously, this is only a summary description. The Mercer Australia website provides much more detail. The point here is that through its new *LifetimePlus* offering, Mercer Australia has liberated LR protection from its traditional, expensive, restrictive, immediate life annuity form. It can now be attached to workplace DC plans in a materially less costly, more flexible, and better targeted manner.

The Saskatchewan Pension Plan

There is an irony in this 'here and now' Australian story. Participants in the June 3, 2016 workshop noted that 30 years ago, the province which led Canada in the conception and implementation of Medicare also led it in the conception and implementation of the kind of workplace pension plan which Australia is now moving to. The Saskatchewan Pension Plan (SPP) was launched in 1986 as a voluntary workplace pension plan by the Government of the day. Its focus was to offer small and medium-sized employers and their employees in the Province (and beyond) a well-managed, low-cost workplace pension plan option.

Today, the SPP has 33K members with their assets split between a unitized $300M Contribution Fund (CF) (i.e., the return-compounding pension pot accumulation engine), and a $100M collective Annuity Fund (AF) (i.e., what the Australians call the Account-Based Pension, but with an embedded LR protection option along the lines of Mercer's *LifetimePlus* offering). Three annuity options result: 1. Immediate Single Life, 2. Immediate Joint Survivor Life, and 3. Refundable Single Life. The AF balance sheet is underwritten by the Province of Saskatchewan, but no 'top ups' have been required in the Fund's 30 years of existence.

The Management Expense Ratios (MERs) of the two SPP funds are 0.95% for the Contribution Fund and 0.40% for the Annuity Fund (i.e., same as Mercer's *LifetimePlus* offering). We note that, given the available scale economies in pension investing and administration, these expense ratios would be considerably lower if plan membership and assets were 10 times larger. This likely could have been achieved if SPP participation had been made mandatory in 1986, rather than voluntary.[vii]

The Time Has Come

For us, the June 3 workshop confirmed three things. First, longevity risk and its mitigation will become increasingly important topics as our populations continue to age. Second, nothing new needs to be invented to design effective longevity risk protection mechanisms.[viii] And third, we have been painfully slow in actually building and implementing these mechanisms on a broad scale.

Let's get on with it![ix]

Keith Ambachtsheer

<u>*Endnotes:*</u>

i. From Milevsky (2015) "King William's Tontine: Why the Retirement Annuity of the Future Should Resemble its Past", Cambridge Press.
ii. Ambachtsheer (2016), "Solving the Annuity Puzzle: It's All in How You Ask the Question", February Letter.
iii. There is not enough room here to do justice to the accomplishments of The Million Dollar Actuarial Quartet. Between the four of them, they have written many books, published many articles, appeared in many forums (both academic and professional), and won many prizes for their remarkable academic and professional accomplishments.
iv. The LR we focus on here is longevity relative to the other members in the pool. A different LR is the risk that the average longevity of the entire pool exceeds its expected longevity. An important question is how this macro risk should be addressed in pension plan design: self-insure or buy insurance from some other credit-worthy entity?
v. A related question is 'compulsion or choice?' The findings from behavioral economics research suggest a default design with an opt-out clause is the ideal middle-ground.
vi. Implementing a 'fair' pricing policy is easier said than done (e.g., should the differing male/female life expectancies be reflected in annuity pricing?).
vii. Despite its lack of visibility, Moshe Milevsky indicated in the workshop that he had steered his employees into participating in the SPP.
viii. Except maybe how we describe them and design the choices to be made.
ix. Speaking of 'getting on with it', after almost a decade of discussion and debate, Canada's federal government and most of the provinces have announced agreement on enhancing the Canada Pension Plan. Our views on the agreement and its potential implications will be the topic of our July Letter.

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HEDGE FUND RISKS AND FEES

WHAT TRUSTEES NEED TO KNOW AND HOW THEY CAN FIND ANSWERS

CtW Investment Group

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INTRODUCTION

OVER THE PAST DECADE, many teacher pension funds have begun investing in hedge funds or funds of funds as part of their allocation to "alternative investments." Hedge funds have been marketed to pension fund trustees as an ideal solution to the challenges pension funds face: finding investments that earn sufficiently high returns to meet promises to beneficiaries, but without exposing the fund to excessive volatility, especially during down markets.

Because they are not constrained with respect to the type of securities (stocks, bonds, commodities, etc.), positions (both short and long), or strategies they employ, hedge funds claim to be able to achieve the best of both worlds: equity-like high returns but with bond-like low volatility.

Moreover, media accounts of the vast fortunes hedge fund managers have accumulated further encourage trustees to believe that by investing in hedge funds they will enable their pension fund to benefit from extraordinary investment expertise and talent, providing higher returns than available through traditional investment vehicles and strategies.

But in recent years, it has become apparent that hedge funds do not deliver on these promises. Instead, the average hedge fund achieves returns inferior to those of ordinary public market investments, in part because they charge fees several orders of magnitude larger than those pension funds pay for their traditional investments.

Worse still, investigative journalists and federal regulators have determined that hedge funds also impose a variety of hidden fees and charges on their limited partners, further reducing returns for pension funds and undermining retirement security. Pension fund trustees should insist that any existing hedge fund investments are carefully scrutinized to ensure that they are not being assessed fees or other costs in excess of those to which they contractually agreed, for instance by posing the questions listed in the final section of this report to hedge fund representatives.

Moreover, pension fund trustees should actively engage in their fund's asset allocation and investment manager selection processes, in order to ensure that they are fully informed as to the true costs and benefits of hedge fund investments, and that their fund is not taken advantage of by unscrupulous marketers and managers.

Hedge Funds Underperform Conventional Investments

The notion that hedge funds provide returns that are comparable to public equity investments but at levels of risk comparable to fixed income (bonds) investments has been central to the marketing strategies of hedge funds, placement agents, and alternative asset consultants for at least two decades. For instance, a 2012 report issued by the accounting firm KPMG and the Alternative Investment Management Association (AIMA, a hedge fund industry group) claimed that "from 1994 to 2011, our performance analysis shows that hedge funds have significantly outperformed equities, bonds and commodities on a risk adjusted basis." Journalists and public policy analysts often make similar claims, as for instance Jonathan Rothwell of the *Brookings Institution*, who recently suggested that the lower level of regulation to which hedge funds are subject (compared to mutual funds) "have allowed hedge funds to consistently outperform stocks and other assets by roughly 2 percentage points each year."

However, since the financial crisis began in 2007, a growing chorus of critics have suggested that hedge fund performance no longer lives up to these claims: in particular, *Bloomberg Businessweek* published a cover story in 2013 challenging the notion that hedge funds deliver returns to investors that are superior to those available to them through more conventional and less expensive instruments. Indeed, as long as a decade ago there have been independent analysts and academics who have pointed out that the returns associated with either broad hedge fund indexes or even specific hedge funds can be very cheaply and accurately emulated with publicly available, low-cost investment products.

In order to assess this debate, we should bear in mind a few preliminary points. First, "hedge fund" describes more of a legal category than a financial one: a hedge fund is classified as such because it cannot offer its products to retail investors in general, but only to (high income and high net worth) accredited investors. Thus, a hedge fund could in principle have a portfolio identical to a retail mutual fund. Nevertheless, hedge funds are able to utilize financial instruments (including commodities and derivatives) and strategies (e.g., shorting, leverage) that law, regulation, and pension f

'Survivorship Bias' \-ˈvī-vər-ˌship bī-əs\

The tendency for investment products and firms to be excluded from performance reporting, generally due to poor results or low asset accumulation. This phenomenon results in an overestimation of past returns.

fund policy will typically prevent mainstream investment managers from using. So, while we will below compare the performance of typical hedge funds to typical conventional investments, you should be clear that the hedge funds in which your pension fund has or is considering an investment may have significantly different characteristics and historical performance.

Second, in comparing these different investment products, we will be using publicly available historical data for indexes compiled by financial companies and trade groups. For conventional assets, the construction and reporting of these index returns is straightforward. But because individual hedge funds are both created and closed down year-to-year, there are a variety of potential biases built into these indexes. For instance, when an existing hedge fund is no longer counted as part of a hedge-fund index (because it has been closed down, for instance), its subtraction from the index may mechanically boost performance for that period (since poor performing funds are more likely to shutter). This is called "survivorship bias" and has been found to inflate hedge fund index returns by 3.7% annually.

Additionally, when a new hedge fund is added to an index, the index typically incorporates the new fund's performance in prior periods, which will typically boost the index for those periods. This is called "instant history" or "backfill bias" and has been estimated to boost reported performance by 3% annually . Moreover, reporting performance data to the databases maintained by the index compilers is voluntary, such that the performance of the index may not be representative of the full population of hedge funds. This "self-selection bias" has been estimated to boost hedge fund index returns by 1.9% annually.

Taking all of these possible biases into account, Pictet Alternative Advisors reports that "cumulative studies have estimated the impact of biases on performances to range between 0.7 per cent to 10.7 per cent per annum." Even at the minimum of this range, the upward bias would significantly distort reported performance: over a thirty year time period a 0.7% annual boost would bias the cumulative return upward by 18%. So, while the hedge fund

> “ **Contrary to the assertions made by the hedge fund industry, hedge funds do not typically outperform conventional assets …**

indexes are the only reasonable way we have to evaluate the relative performance of these investment products, you should be aware that these measures are likely biased upward to a substantial degree.

Third, the indexes typically require the hedge funds they include to report returns after fees have been subtracted. In contrast, the indexes for conventional investments do not make any effort to net out investment management fees (because they are indexes of instruments – stocks and bonds -- and not of managers or investment products).

However, as we will see shortly, there are good reasons to believe that at least some of the fees being paid to hedge fund managers are not fully netted-out of the reported returns, again suggesting an upward bias. In any event, you should bear in mind that your own pension fund's return from investing in conventional instruments may be a bit lower than the returns reported here, because your pension fund will be incurring some investment management and trading costs.

With these preliminaries out of the way, let's look at the historical performance of hedge funds versus conventional pension fund investments in stocks and bonds. For this analysis, we use the Credit Suisse Tremont Hedge Fund Index, the S&P 500 index, and the Barclays Capital US Aggregate Bond Index.

We will be looking at the years 1994 to 2015, more or less that same period analyzed in the KPMG/AIMA report noted above, but including the four additional years of data that have since become available. Figure 1 reports the compound annual growth rate for each of these products, as well as a "Pension" return representing an equally-weighted combination of the stock and bond returns (currently pension funds hold roughly equal shares of their assets in public equity and fixed income).

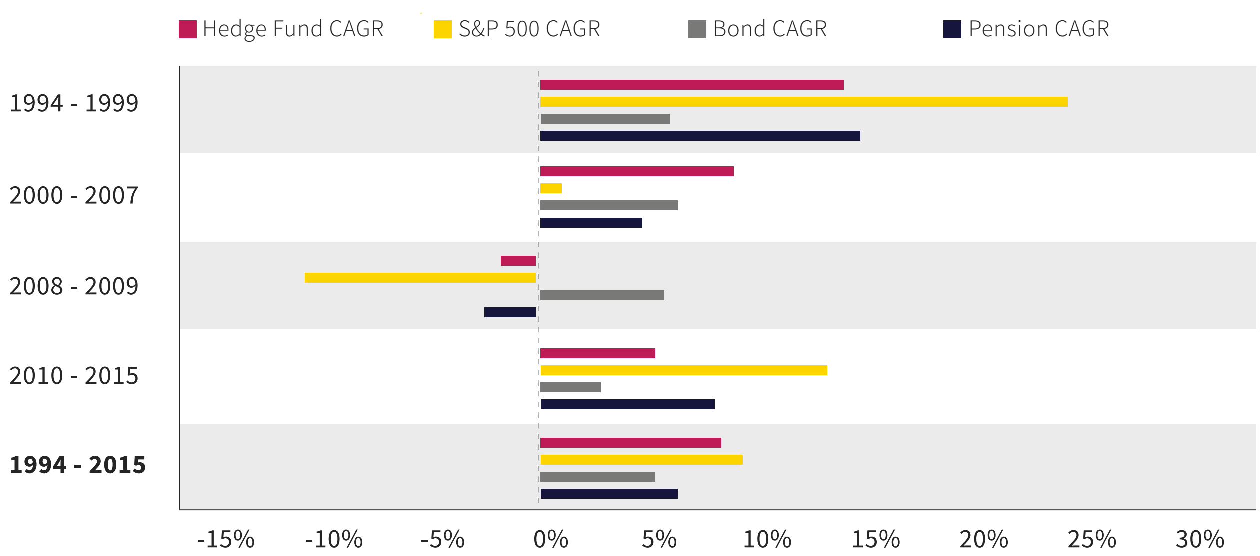
We have chosen to break this time period into four segments, the 1990s (including the tech stock bubble), the pre-crisis 2000s (including the housing bubble), the two-years during which the financial crisis was most acute (2008-2009), and the post-crisis recovery from 2010-2015.

Contrary to the assertions made by the hedge fund industry, hedge funds do not typically outperform conventional assets, and there would appear to be little reason for pension funds to create hedge fund allocations, based on returns alone. Within these time periods the relative performance of hedge funds was not superior to conventional asset classes. During both the 1990s and the post-crisis recovery, stocks clearly earned higher returns than hedge funds, while during the crisis itself, bonds earned a superior return. Hedge funds only outperformed during the 2000-2007 period.

Note also that, during both the 1990s and 2010s, our model pension fund outperforms the hedge fund, while trailing its performance by a small amount during the crisis and by a wider margin during the 2000s.

Again, this study utilized the hedge fund industry's own data that likely has a bias of between 0.7% to 10% per year. These biases may explain the large discrepancy between the return figures presented here and CEM Benchmarking's recent findings that "Average value added net of costs was -1.88 per cent," as the CEM study was able to utilize actual fund data from over 300 funds. That said, one of the key arguments made in favor hedge fund investing is that hedge funds can generate these returns while incurring much less risk.

Figure 1: Hedge Fund Returns Don't Consistently Beat Conventional Estimates

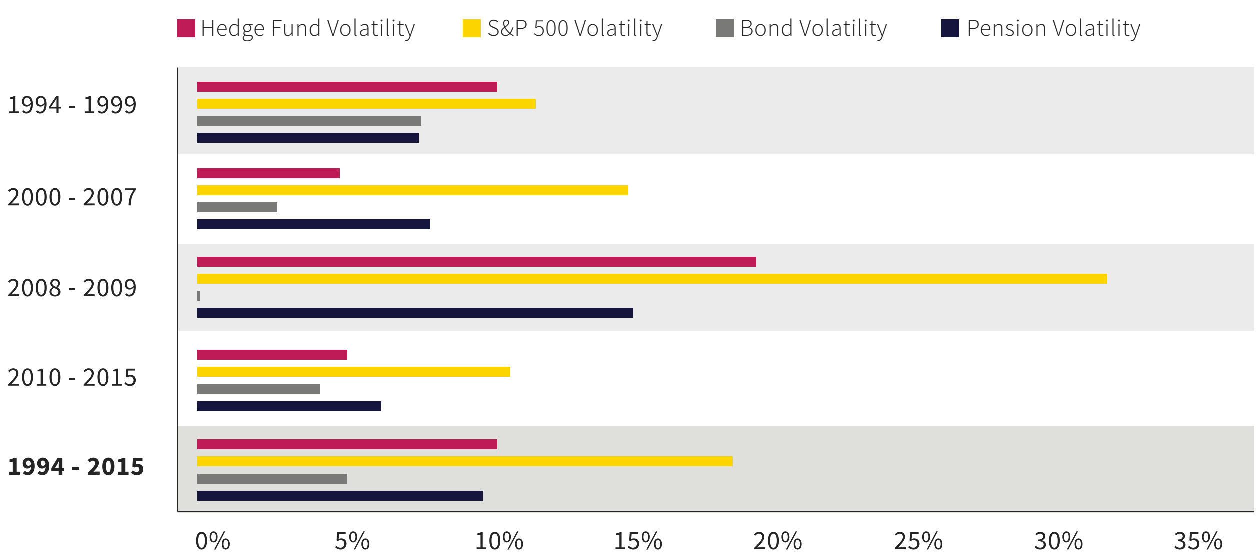


It is conventional in finance to define "risk" as the volatility of returns, and operationally to measure and operationally to measure risk by the standard deviation of those returns. Figure 2 below reports the volatility of annual returns for the indexes representing each asset class as well as our model pension fund.

Bear in mind that volatility is costly to investors, so low volatility is generally to be preferred to high volatility. And, in each time period shown, the volatility of the hedge funds is indeed lower than that for public equity. However, hedge fund volatility is clearly a good deal higher than bond volatility, with the consequence that our model pension fund has lower volatility than the hedge funds in both the 1990s and the financial crisis, with slightly higher volatility in the other two periods. According to CEM Benchmarking' s recent study, "The reality is most hedge fund portfolios behaved like simple blends of equity and debtwith unattractive returns and no risk-reducing characteristics."

This finding suggests that we need to consider "risk adjusted returns" or a measure of how efficiently different asset classes combine returns with risk. Again the claim made by hedge funds and their proponents is that hedge funds provide a better combination of return and risk than otherwise available to investors.

Figure 2: Hedge Fund Volatility Higher Than Balanced Pension Fund

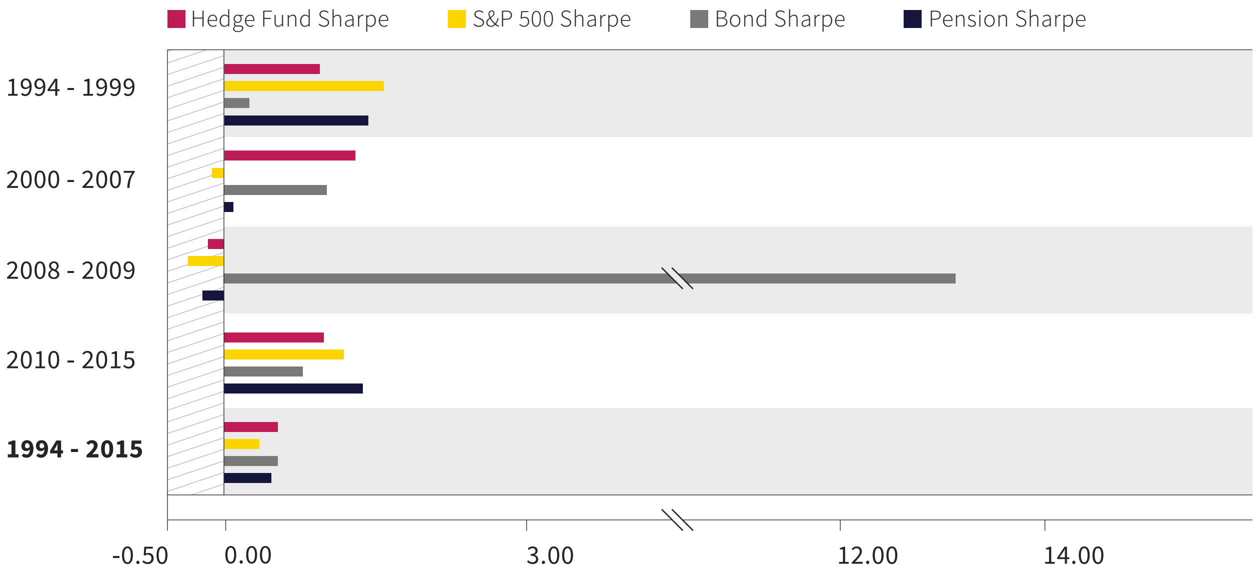


In Figure 3, we have calculated the Sharpe ratio for each asset class (returns above the risk-free rate per unit of volatility). One point to note about Figure 3 is that in none of these time periods are the hedge funds the most efficient investment: they trail stocks in the 1990s, bonds in the early 2000s, and stocks again in the 2010s.

As a result, our model pension fund generates higher risk-adjusted returns than hedge funds in three of the four time periods. Moreover, our model pension fund with an equally weighted mix of stocks and bonds is the most efficient investment vehicle analyzed here for both the earliest and most recent periods. Contrary to the frequent claims from the hedge fund industry, but congruent with the arguments hedge fund critics have raised, it does not appear that hedge funds consistently provide a more attractive combination of risk and return than pension funds have been able to generate through the judicious balancing of conventional assets.

Moreover, as we noted above, the hedge fund index we are using likely biases actual performance upwards due to the exit of poor performing funds from the index, the entry of new funds with their performance history (likely superior to the exited funds), and fees paid by hedge fund investors over and above those reported by the hedge fund constituents to the company constructing the index.

Figure 3: Risk Adjusted Returns for Conventional Investments Match Hedge Funds



THE IMPACT OF "HEADLINE" HEDGE FUND FEES

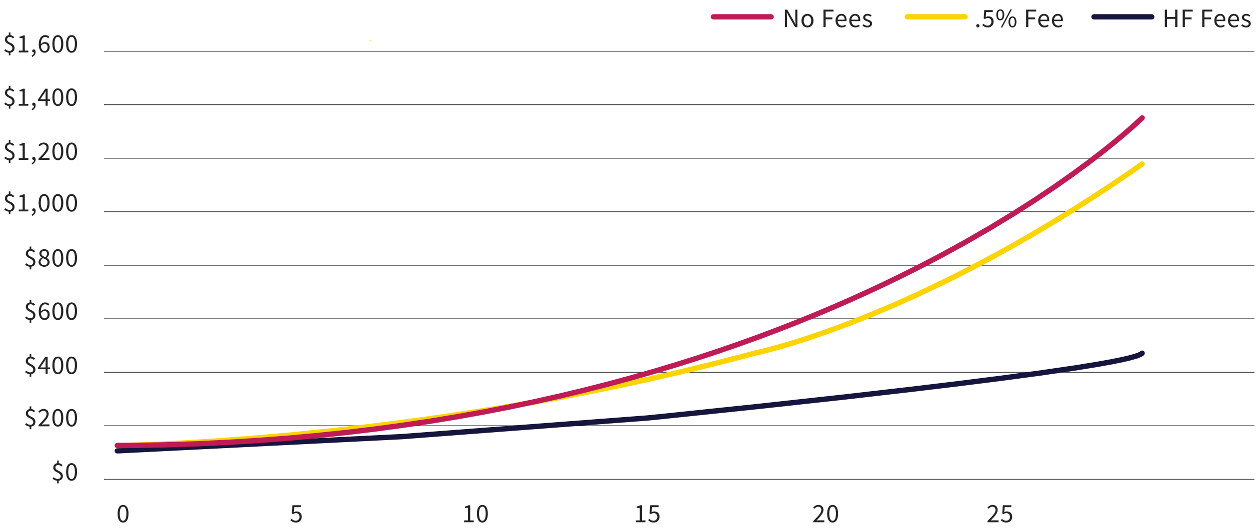
WE WILL CONSIDER THE impact of three different categories of hedge fund fees: those that are most explicitly disclosed and easily calculated (e.g., 2%/20%), fees that are disclosed in partnership documents but that may be difficult for outside observers to calculate or track over time, and fees that are a consequence of hedge fund management decisions, such as how often to trade or to update key benchmarks. We will examine headline fees in this section, and the additional and hidden fees in the two subsequent sections, respectively.

The easiest component of hedge fund fees to explain and understand are the "headline" fees: a management fee assessed as a percentage of assets under management (typically about 2%) and an incentive fee assessed as a percentage of profits earned by the fund in a given year (typically 20%). Often the incentive fee is calculated in a way that takes account of the past "high water mark" for the fund, so that investors will only pay the fee on profits over and above those required to make up for losses in previous years. Sometimes, hedge funds also have a "hurdle rate" which the fund must clear before the incentive fee must be paid.

Because this fee structure is standard across the alternative assets industry (private equity, venture capital, and private real estate funds calculate fees in an almost identical fashion), these fees have attracted the most attention from pension funds and other investors, and in recent years this attention has resulted in somewhat lower fees for investors willing and able to drive hard bargains.

Suffice it to say that these fees are far in excess of those that a pension fund should expect to be paying for conventional asset management. While those fees vary by asset class, strategy, and manager, generally large US pension funds are able to keep total fee payments below 0.25%, and the very largest pension funds have even lower investment management costs. The justification for these high hedge fund fees has been that hedge funds perform so much better than conventional investment products that the additional fees are more than made up for by additional returns. As we noted above, this does not actually appear to be the case, at least as far as we can tell from comparing

Figure 4: Headline Fees on Constant Returns



the available index data. Nevertheless, it is worth understanding just how large a bite out of potential returns hedge fund managers take just with these headline fees. Figure 4 illustrates the impact of investment management fees on an investment with a constant rate of return over a 30-year period.

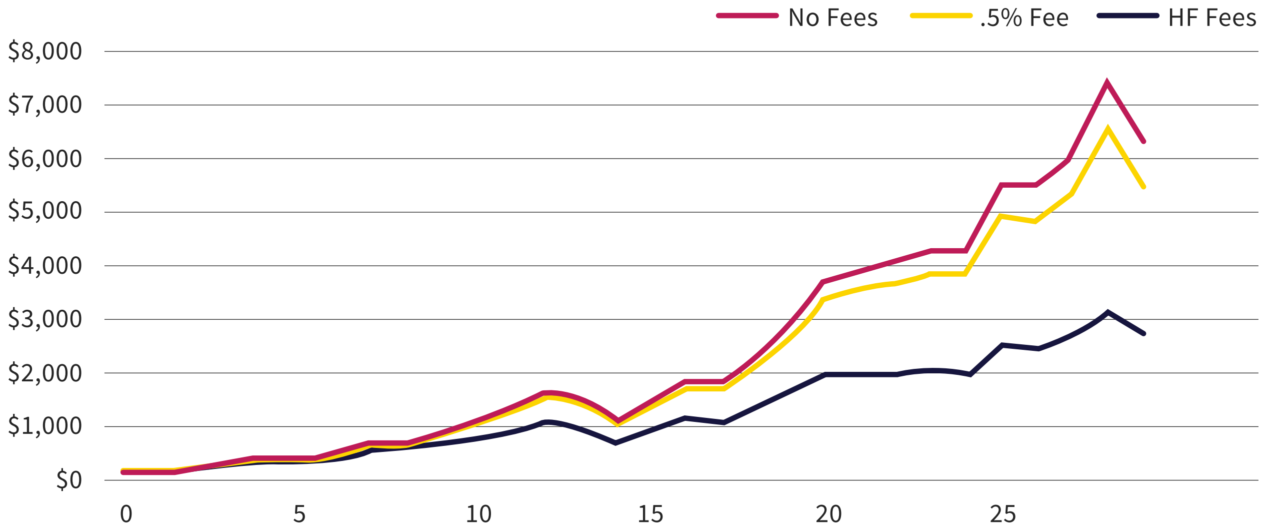
Using the "no fees" return as a benchmark, we can see that a fee level 0.5%, not unusual for retail stock index funds, would produce a somewhat smaller ending value for the investment, but the hedge fund fees dramatically reduce investment value over time. Table 1 below shows that over the 30 year period considered in this exercise, the hedge fund fees require investors to accept a 66% markdown relative to the no-fee benchmark, in contrast to the much smaller 13% cumulative discount borne by investors paying fees closer to those paid by pension funds.

Table 1:
30-Year Total Return After Fees, Constant Returns

	No Fees	Public Fees	HF Fees
Constant	$1,345.15	$1,171.91	$462.83
Discount		*13%*	*66%*

However, as we all know, investment performance is subject to substantial variation over time. In order to take such variation into account, and to evaluate how it interacts with underlying performance, we have generated random returns for a 30-year period matching the average return and standard deviation of the S&P 500 from 1994-2015. Figure 5 illustrates the impact of these fees on an investment whose return varies. To calculate the hedge fund fees reflected in Figure 5, we charged the 20% incentive fee only in periods where the assets under

Figure 5: Headline Fees on Variable Returns



management exceed those in any prior time period; i.e., when the model hedge fund starts at or above its all-time high water mark. In practice, as well will discuss below, hedge funds may reset their high water mark more frequently, resulting in higher fees.

Nevertheless, the more conservative assumptions used here suffice to demonstrate that, as shown in Table 2, the greater the return to the underlying investments held in the hedge fund, the larger the share of investment returns captured by the hedge fund managers fees. So, whereas an investor enduring low returns (in our randomly generated sample these averaged 3%) would take home 48% less than if no fees were charged, an investor in a high return (16%) period would be forgoing 58% of the baseline return earned by the underlying assets.

One additional point to consider is that in what are called hedge-funds-of-funds, in which an investor buys a share of a fund that then invests in a portfolio of hedge funds, these headline fees would double-up: investors bear not only the fees charged by the underlying hedge fund in which they have ultimately made an investment, but will pay nearly equal fees to the manager of the hedge fund of funds, making such products considerably more expensive.

Table 2:
30-Year Total Return After Fees, Varying Returns

	No Fees	Public Fees	HF Fees
Variable (Low)	$166.34	$143.17	$86.57
Discount		*14%*	*48%*
Variable (High)	$6,386.02	$5,592.69	$2,707.21
Discount		*12%*	*58%*

Additional Fees Disclosed in Partnership Documents

The large fees illustrated in Figures 4 and 5 may only be scratching the surface. While much media commentary focuses solely on headline fees, hedge funds may charge investors for a variety of costs as specified in their partnership agreements. Some of these will be trading-related expenses or costs associated with retaining the services of external professionals, including:

- Interest expenses
- Dividend expenses
- Administration fees
- Audit fees
- Legal fees
- Director fees
- Stock loan fees
- Bank, Brokerage, and Custody fees
- Research expenses

While many hedge fund investors have accepted the separate expensing of items such as these over and above the roughly 2% of assets under management fee they are already being charged, it is certainly open to argument that these costs should be borne by the manager, not least because by allowing managers to add these charges to their clients bill removes any clear incentive to minimize such charges, and thereby exacerbates the conflict of interest inherent in a principle-agent relationship.

This point applies with greater force to additional charges that may appear in a hedge fund's report to its investors in a category labeled "other expenses" or something similar. These line items may contain costs including:

- Employee salaries
- Technology
- Regulatory filings
- Portfolio and accounting systems
- Outsourced office functions
- Insurance
- Trade Errors
- Travel & Entertainment

Passing on these costs to investors seems even less justifiable than those mentioned previously, because most if not all of these costs would have to be incurred by the hedge fund manager in order to have an operating business at all. Investors should not be simultaneously bearing a roughly 2% annual charge for management, and then also be charged for technology, software, or employee salaries, all of which would seem to count as basic elements of fund management. Moreover, in order to ensure than any direct charges for which their pension fund is liable, trustees and other pension fund officials should insist that hedge funds in which they invest provide a complete and detailed itemization of charges and should reject charges for basic investment management functions, instead insisting that the fund management company pay for those costs out of its already quite large management fee.

Truly Hidden Fees

Over and above the headline and documented fees charged by hedge fund managers, investors in hedge funds also incur expenses as a consequence of the trading and management decisions made by the manager itself. For instance, if a hedge fund manager is able to pass through to investors charges for trading activity, then the manager will have much less incentive either to negotiate the best terms for executing trades, or to diligently monitor broker costs on an ongoing basis. Similarly, hedge fund managers may enter into "soft dollar" arrangements in which the fund agrees to channel transactions through a specific broker in exchange for access to research. Such an agreement both limits the visibility of research charges to investors, but also minimizes any incentive that hedge fund managers might have to economize on such expenses.

Finally, the hedge fund's partnership documents may allow the manager to reset the "high water mark" for a fund on a frequent basis, enabling the hedge fund manager to reap a higher incentive fee without improving performance.

To understand the impact of such hidden fees, specifically of the frequent updating of the fund's high water mark, we have modified the hedge fund fee model used to create Figure 5 so that, rather than charging the 20% incentive fee only when the fund starts a period with a higher balance than in any prior period, the incentive fee is paid in any period where the fund starts with a higher balance than in the immediately previous period.

In the hidden fee scenario considered here, the investors in the hedge fund incur cost sufficient to reduce their ultimate return by 68% compared to the underlying baseline return generated by the assets held by the fund. This represents a significant increase in fees even compared to the already steep discount imposed on investors just by the 2%/20% structure. Clearly, such non-transparent extra expenses generated by the trading, contractual, or other decisions made by hedge fund managers can have a significant and negative impact on pension funds and other hedge fund investors.

STEPS YOU CAN TAKE TO PROTECT YOUR PENSION FUND

IN LIGHT OF THESE SIGNIficant hidden costs to hedge fund investment, which we note again come on top of performance that may be much less impressive than indicated by available hedge fund indexes, many pension funds have taken steps to reign in hedge fund costs. First, as noted above, pension funds and other investors in alternative assets have become increasingly vocal in demanding that managers lower the fees they charge; the Institutional Limited Partners Association (ILPA) has found that hedge funds in 2015 are charging somewhat lower management and incentive fees in response. But some pension funds have gone much further: in 2014, the California Public Employees Retirement System (CalPERS) to eliminate its $4 billion allocation to hedge funds, and has since been winding down those investments. While not all pension funds may currently view the elimination of hedge funds as a prudent option, there are a variety of questions trustees should be posing to staff or consultants when new hedge fund mandates are brought to the board for approval, when hedge fund managers are placed on the fund's watch list, or generally when pension fund staff are reporting on fund performance and their oversight and monitoring of fund managers and investments.

WHEN A NEW HEDGE FUND MANDATE IS PROPOSED

What headline fees will the pension fund be charged?

Are there any other fees?
Can the fund charge limited partners for any of the following:

- Interest expenses
- Dividend expenses
- Administration fees
- Audit fees
- Legal fees
- Director fees
- Stock loan fees
- Bank, Brokerage, and Custody fees
- Research expenses

FOLLOW-UP, IF YES:

What are the limitations the fund managers have agreed to on these fees, or are there none?

FOLLOW-UP, IF YES:

How are these additional fees calculated, and will you review those calculations?

ADDITIONAL FOLLOW-UP:

if reasonable safeguards and transparency are not in place:

How can we be assured that the fund managers are restricted from overcharging limited partners?

Will the investment staff be monitoring all dollars taken by the management firm, even beyond the headline fees, annually?

Are there any other potential means for fund managers to extract assets from limited partners beyond those mentioned earlier?

Do fund managers have the authority to spin-off assets to other investors and leave the underlying companies we own in a dire situation or even facing bankruptcy, like what happened to Southern Cross? If so: Doesn't that open the door to self-dealing?

What is the goal of the asset class? Is it an effort to hedge or increase real returns?

How much leverage is being used by the fund? Is there any limit on how much leverage can be used?

How much are other pension funds or similar limited partners paying in headline fees to this manager?

How much are limited partners generally paying managers of hedge funds with similar focus and strategy?

Will the incentive fee be paid on all profits earned by the fund, on those profits above a particular level (a hurdle rate), on profits only once the fund has made up for past losses (high water mark), or some combination?

Does the hedge fund manager have discretion to reset the high water mark or the hurdle rate?

How often or under what circumstances?

WHEN A HEDGE FUND IS PLACED ON A WATCH LIST

How much has the pension fund been paying the hedge fund manager in fees since its initial investment?

How does this amount compare to the amount returned to the pension fund as a result of investment gains?

Since the pension fund's initial investment, has the hedge fund manager used its discretion to either raise fees, hurdle rates, or the frequency with which the fund high water mark is updated?

If the pension fund had matched the performance of the hedge fund using a blend of its conventional asset managers, how much would it have paid those managers in fees?

WHEN CONSIDERING ONGOING MONITORING OF THE PORTFOLIO AND ASSET ALLOCATION

What expenses are hedge fund managers allowed to charge their investors, and what expenses are they actually charging?

Have managers changed their practices with respect to contractually allowed charges?

Is the fund charging limited partners for any of the following:

- Interest expenses
- Dividend expenses
- Administration fees
- Audit fees
- Legal fees
- Director fees
- Stock loan fees
- Bank, Brokerage, and Custody fees
- Research expenses

How much is being charged for each and what are the limitations that we have secured?

For instance, is there a limit to how much the fund can charge us for auditing or legal services? Or, do we just trust the fund managers?

Will you be annually reviewing all charges to the limited partners, including those outside of the headline fees?

Can you tell us how much we are paying compared to other limited partners with similar levels of money invested?

Can you provide us with a summary of all of the charges and expenses paid to the fund managers in the past 3 years?

If we can't review these charges and other expenses, how can we feel certain that we are being treated fairly?

How often are managers changing hurdle rates or high water marks, and how much have such changes increased the fees paid by the pension funds?

How easily could the performance of the pension fund's hedge fund portfolio be replicated using conventional assets, and how much would the pension fund save in fees and expenses?

Are placement agents or other intermediaries receiving payments from hedge fund managers in order to facilitate communication with the pension fund?

More generally, pension fund trustees should consider whether a fixed allocation (i.e., as a % of total pension fund assets) to hedge funds is prudent, considering the failure of hedge funds indexes to outperform conventional assets, the various measurement issues that plague the construction of hedge fund performance indexes, and the substantial fees pension funds must bear in order to invest in hedge funds. In discussing this question, trustees may also prudently consider the broader consequences of hedge fund investments – including their effects on income inequality, corporate performance, and public policy.

THE BROADER IMPACT OF HEDGE FUND INVESTMENT

AS THE HEDGE FUND INDUstry has grown over the past few decades, the broad social and economic consequences of hedge fund practices have been felt more acutely and have come under greater scrutiny. While pension fund trustees, in fulfilling their fiduciary duties, must first and foremost consider the comprehensive financial returns from hedge fund investments, they may also consider these broader consequences once they have satisfied themselves that there are non-hedge fund investment options that provide comparable returns. Among the issues that trustees may wish to consider are the effects of the growth of hedge funds on income inequality, corporate performance, and public policy.

Because hedge funds charge such large fees as a percentage of assets – academic research finds that total hedge fund fees are often 3.4% - 5.15% of assets under management per year – and because hedge funds themselves tend to have relatively few employees or operating costs other than employee salaries, the rapid growth in hedge fund assets has translated directly into skyrocketing incomes for individual hedge fund portfolio managers and officers. As public concern over economic inequality has increased, it has become clear that financial services, and hedge fund managers in particular, play an outsize role in the top 1% and its large share of national income. Pension fund trustees have good reason to be concerned that increasing inequality may have negative economic consequences, undermining the economic performance on which pension beneficiaries' retirement security ultimately depends.

Additionally, the strategies hedge funds pursue, especially what have been called "activist" strategies in which hedge funds seek to pressure public companies to name hedge fund officers to their board of directors, restructure corporations through transactions such as spin-offs or mergers, and increase cash returns to shareholders, have been cited as impeding the ability of public companies to make long-term investments in their operations. The resulting changes in corporate decision making, including the vastly expanded volume of share buybacks over the past decade compared to prior periods, appear to have contributed to both the stagnation in productivity growth observed since 2004, as well as the increase in income inequality noted previously. This short-termism may make sense to a time-limited investment vehicle, but may be damaging to long-term investors as much of their assets are affected by long-term economic growth trends. Trustees willing to push back against short-term investment strategies and in favor of a long-term approach should be especially leery of the effect that rising hedge fund investments will likely have on the behavior of public corporations.

Finally, some of the hedge fund managers and officers who are the recipients of the lion's share of fees paid by hedge fund investors devote a significant part of their income to contributions to election campaigns, 527s, Super PACs, and other entities engaged in partisan political activity. Additionally, many of these hedge fund managers also contribute to public policy-oriented non-profit organizations, including those advocating for educational vouchers, deregulation of charter schools, weakening employment protections for school teachers, eliminating defined benefit pension benefits, and restricting the right of public employees to bargain collectively.

Given both the very direct relationship leading from pension funds paying high fees to hedge funds, to hedge funds paying high salaries to their top managers and officers, to those individuals contributing to political organizations that match their partisan and ideological leanings, it is well within the fiduciary responsibility of trustees to consider whether those high investment management fees are justified given the actual performance of hedge funds and the ultimate transfer of that fee income to entities whose activities are inimical to the interests of pension fund participants and beneficiaries.