# ALASKA RETIREMENT MANAGEMENT BOARD

## BOARD OF TRUSTEES
## AGENDA

April 24-25, 2014

Dena'Ina Convention Center
K'enakatnu Room
600 W. 7th Avenue
Anchorage, AK
907 263-2850

*Teleconference # 1-800-315-6338 Pass Code 2762#*

*Thursday, April 24, 2014*

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| I. | 9:00 am | Call to Order |
| II. | | Roll Call |
| III. | | Public Meeting Notice |
| IV. | | Approval of Agenda |
| V. | | Communications, Public/Member Participation, and Appearances (Three Minute Limit) |
| VI. | | Approval of Minutes: February 6-7, 2014 |
| VII. | 9:15 | Reports |

1. Chair Report

2. Committee Reports
   - A. Legislative Committee, *Gail Schubert, Chair*
   - B. General Consultant Evaluation Committee
   - C. Real Estate Consultant Evaluation Committee
   - D. IAC Evaluation Committee

3. Retirement & Benefits Division Report
   - A. HRA Update
   - B. Aetna Transition Update
   - C. Legislative Update

   *Jim Puckett, Director, Division of Retirement & Benefits*
   *Mike Barnhill, Deputy Commissioner, Dept. of Administration*

4. Treasury Division Report
   *Pamela Leary, Director*

5. Chief Investment Officer Report, *Gary Bader*

9:45-10:00 6. Fund Financial Report
   *Scott Jones, State Comptroller*
   *Kevin Worley, CFO, Division of Retirement & Benefits*

10:05-10:45 7. Private Equity Tactical Plan
Action: Resolution 2014-06 – Private Equity Plan
*Zachary Hanna, State Investment Officer*

*10:45 – Break*
*15 Minutes*

11:00-12:00 8. Performance Measurement – 4th Quarter
*Michael O'Leary, Paul Erlendson and Dana Brown*
*Callan Associates, Inc.*

*Lunch – 12:00 – 1: 15 pm*

1:15-1:45 9. Actuarial Valuation Review – FY13

A. Certification of Draft FY13 Actuarial Valuation
Public Employees' Retirement System (PERS)
Teachers' Retirement System (TRS)
Update: Claims Cost Supplement
PERS Defined Contribution Plan
TRS Defined Contribution Plan
JRS/NGNMRS Roll-Forward
*Leslie Thompson & Dana Woolfrey,*
*Gabriel Roeder Smith*

1:50-3:20 B. FY13 Draft Actuarial Valuation Reports
Defined Benefit and Defined Contribution Plan
Public Employees' Retirement System (PERS)
Teachers' Retirement System (TRS)
PERS Defined Contribution Plan
TRS Defined Contribution Plan
JRS/NGNMRS Roll-Forward
*David Slishinsky, Chris Hulla & Monica DeGraff*
*Buck Consulting*

*3:20 – Break*
*10 Minutes*

3:30-4:00 10. Adopt Asset Allocation:
Resolution 2014-07:
DB PERS/TRS/JRS
PERS/TRS/JRS Retiree Health Trusts
Retiree Major Medical HRAP/ODD
Resolution 2014-08: DB NGNMRS
Resolution 2014-09: DC PERS/TRS Holding Account
*Gary Bader, Chief Investment Officer*
*Michael O'Leary, Callan Associates, Inc.*

4:05-4:20 11. Investment Actions
A. Pyramis Global Advisors Tactical Bond Strategy
B. Allianz Buy-Write Fund
C. Absolute Return Policy – Res 2014-10
*Gary Bader, Chief Investment Officer*

4:25-4:45 12. Procurement Actions

A. RFP General Consultant 14-010
B. RFP Real Estate Consultant 14-012
C. RFS IAC Appointment 14-011

Recess

## *Friday, April 25, 2014*

9:00 Call to Order

9:00-9:10 13. Introduction to Alaska Branded Funds
*Gary Bader, Chief Investment Officer*

9:10-9:40 Defined Contribution Plans: Alaska Branded Funds
*Perry Christie, Great West*

Action: Branded Funds

9:40-9:50 14. International Equity Manager Search
*Gary Bader, Chief Investment Officer*
*Michael O'Leary, Callan Associates Inc.*

9:55-10:25 A. Allianz Global Investors
*Melody McDonald, Jim Robertson, Ben Fischer*
*And Burns McKinney*

*10:25 – Break*
*10 Minutes*

10:35-11:05 B. Arrowstreet Capital Limited Partnership
*Manolis Liodakis and Neil Tremblay*

11:10-11:40 C. Baillie Gifford
*Larysa Bemko and Gerard Callahan*

11:40-12:00 D. Manager Diversification
*Gary Bader, Chief Investment Officer*

Action: Board Discussion/Selection

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| VIII. | Unfinished Business |
| | 1. Disclosure Reports |
| | 2. Meeting Schedule |
| | 3. Legal Report |
| IX. | New Business |
| X. | Other Matters to Properly Come Before the Board |
| XI. | Public/Member Comments |
| XII. | Investment Advisory Council Comments |
| XIII. | Trustee Comments |
| XIV. | Future Agenda Items |
| XV. | Adjournment |

(Times are approximate. Every attempt will be made to stay on schedule; however, adjustments may be made.)

**State of Alaska**
**ALASKA RETIREMENT MANAGEMENT BOARD**
**MEETING**

**Location**
Centennial Hall
Egan Room
Juneau, Alaska

**MINUTES OF**
**February 6-7, 2014**

**Thursday, February 6, 2014**

## CALL TO ORDER

VICE-CHAIR SAM TRIVETTE called the meeting of the Alaska Retirement Management Board (ARMB) to order at 9:00 a.m.

## ROLL CALL

Seven ARMB trustees were present at roll call to form a quorum. MR. BRICE arrived after roll call was taken, and CHAIR SCHUBERT called in after roll call was taken.

**Board Members Present**
Gail Schubert, *Chair* (Telephonic)
Sam Trivette, *Vice-Chair*
Gayle Harbo, *Secretary*
Kristin Erchinger
Commissioner Angela Rodell
Commissioner Curtis Thayer
Martin Pihl
Tom Brice
Sandi Ryan

**Board Members Absent**
None

**Investment Advisory Council Members Present**
Dr. William Jennings
Dr. Jerrold Mitchell

**Department of Revenue Staff Present**
Gary M. Bader, Chief Investment Officer
Scott Jones, State Comptroller
Bob Mitchell, State Investment Officer
Zachary Hanna, State Investment Officer
Steve Sikes, State Investment Officer
Shane Carson, State Investment Officer
Pamela Leary, Director, Treasury Division
Judy Hall, Board Liaison

**Department of Administration Staff Present**
Mike Barnhill, Deputy Commissioner
Jim Puckett, Director, Division of Retirement & Benefits
Kevin Worley, CFO, Division of Retirement & Benefits

**Consultants, Invited Participants, and Others Present**
Robert Johnson, ARMB legal counsel
Michael O'Leary, Callan Associates, Inc.
Paul Erlendson, Callan Associates, Inc.
Kevin Clark, Analytic Investors LLC
George Matthews, Analytic Investors LLC
Glenn Carlson, Brandes Investment Partners
Juan Benito, Brandes Investment Partners
Rob Gillam, McKinley Capital Management
Alex Slivka, McKinley Capital Management
Michael Bowman, Capital Group
Chris Ryder, Capital Group
David Slishinsky, Buck Consultants
Larry Semmens, Chief of Staff to Senator Peter Micciche
Senator Anna Fairclough
Senator Dennis Egan

## PUBLIC MEETING NOTICE

JUDY HALL confirmed that public meeting notice requirements had been met.

## APPROVAL OF AGENDA

VICE-CHAIR TRIVETTE noted that staff had requested to move Item No. 12, Investment Actions/Procurement, up to before Item No. 8.

MS. HARBO moved to approve the agenda as amended. MS. RYAN seconded the motion.
The agenda was approved as amended.

## PUBLIC/MEMBER PARTICIPATION, COMMUNICATIONS AND APPEARANCES

None.

## APPROVAL OF MINUTES

MR. BRICE moved to approve the minutes of the December 5 - 6, 2013 meeting of the ARMB. MR. PIHL seconded the motion.

MS. HARBO noted a couple of corrections:

Page 5: It should say Bader instead of Brice in the first and second paragraphs.

Page 13, Paragraph 2: It refers to Ms. Rehfeld and it should say Mr. Boucher.

VICE-CHAIR TRIVETTE noted that on page 9, under Item No. 7, in the second paragraph, it should read, "KPMG issued an unqualified opinion."

The minutes were approved as amended.

## REPORTS

### 1. CHAIR REPORT

None.

### 2. COMMITTEE REPORTS

#### A. Audit Committee

MR. PIHL reported that the Audit Committee had a very well-attended meeting in Juneau on February 4, the day before this board meeting. Reports were received from the Division of Retirement and Benefits on the employer audit program and from the Department of Revenue compliance division about their activities and goals.

MR. BARNHILL stated that the Governmental Accounting Standards Board (GASB) issued a 168-page guidance statement this week. MR. BARNHILL also reported that the state has not received any comments on the draft that was put out late last year of the state interpretation.

MR. PIHL added that the committee had been given copies of the RFP for independent audit services, and the committee intends to write a letter to the personnel board in support of what the state is doing, as it is so important to the mission of the ARM Board.

### B. Legislative Committee

VICE-CHAIR TRIVETTE reported that the Legislative Committee also met the day before the meeting of the full ARM Board, with eight Trustees participating, as well as John Boucher from OMB and Paulyn Swanson from the Governor's Office. VICE-CHAIR TRIVETTE commented that it was an extremely productive meeting, including an in-depth discussion of Governor Parnell's plan to put an additional $3 billion into the PERS and TRS funds. VICE-CHAIR TRIVETTE noted that Trustee ERCHINGER and Trustee BRICE had met with 11 key legislators about the benefits of Governor Parnell's plan, and had received a list of questions afterwards. MS. ERCHINGER presented a draft of answers to the questions to the Legislative Committee for feedback, and she will send the approved answers to the legislators soon.

VICE-CHAIR TRIVETTE added that the Legislative Committee received a letter from Senator Anna Fairclough, the chair of the Legislative Budget and Audit Committee, indicating she wants to hire GRS, the Board's secondary actuary, to evaluate Buck's analysis of the governor's proposal. VICE-CHAIR TRIVETTE commented that the letter was a courtesy, and that Senator Fairclough had remarked that she wanted the ARM Board to be involved; also, John Boucher and Paulyn Swanson thanked the committee for their work and their willingness to support the Governor's efforts.

## 3. RETIREMENT & BENEFITS DIVISION REPORT

### A. Membership Statistics/Buck Invoices/HRA Rates

DIRECTOR PUCKETT directed board members to the packet, which included membership statistics for September and December of 2013; he commented that the patterns are the same as the previous year, with nothing unusual.

DIRECTOR PUCKETT commented that the Buck Consultants invoices show that they are doing a lot of projects for the Board, and the charges are all standard.

MS. ERCHINGER requested an update on the status of the retiree health plan from the Department of Administration at the April meeting; MR. BARNHILL said that they would be prepared for that.

### B. Legislative Update

MR. BARNHILL reviewed the pending bills that are of interest to the ARM Board.

- A new bill has been introduced called the Governor's Veteran's Bill, HB 286 and SB 145, which amends the PERS, TRS, and JRS statutes to bring them into compliance with a 2008 federal law called the HEART Act.

- HB 106 would allow members to elect to have their retiree membership dues deducted from their pension check.

- HB 124 would require in statute that any benefits that are afforded to active employees through the State of Alaska's active health plan would also be afforded to retirees through the retiree health plan.

- Companion bills HB 126 and SB 30 would provide new employees the choice of a defined benefit or a defined contribution plan.

- HB 152 would provide relief to municipalities on termination costs when they discontinue PERS service for a group of employees.

- Companion bills HB 174 and SB 48 would exempt small communities which have had a drop of 25 percent or more in their populations between 2000 and 2010 from the 2008 salary floor for PERS contributions.

- HB 196 and SB 90 would consolidate school district health plans into one plan potentially administered by the state.

- HB 116 would permit police officers and firefighters to use up to five years of military service as credit toward purchasing PERS service credit to qualify for health coverage, which requires five more years of service than the pension does to qualify. This would help even those out and would be paid by taking an actuarial reduction in their pension benefit.

- HB 247 is another new bill which provides for a hybrid variable defined benefit for police and firefighters, which would vary based on actuarial experience.

## 4. TREASURY DIVISION REPORT

Department of Revenue Commissioner ANGELA RODELL announced that this would be her last Treasury Division report because now the responsibility will pass to the new Treasury Division Director, PAM LEARY.

COMMISSIONER RODELL noted that she met with managers and directors to consider the mission of the department and how to best deploy their assets, and they did some reorganization that she thinks will make the department better and improve service delivery. A new position was created, Deputy Commissioner for Strategic Finance, and filled by MIKE PAWLOWSKI. PAM LEARY is now the Treasury Division Director and State Treasurer, and SCOTT JONES has been promoted to State Comptroller.

COMMISSIONER RODELL responded to a request by the Board to discuss the reserve accounts, which is important to understand as they talk about the Governor's proposal to move $3 billion out of the reserve accounts and into the PERS and TRS trust fund.

The primary reserve account is the Constitutional Budget Reserve Fund, which the legislature can

appropriate funds both into and out of by a three-quarter vote. COMMISSIONER RODELL explained that the fund is divided into the main fund and a subaccount that was created in 2000 so that a portion of the funds would have a different asset allocation than the main account, to allow the Department of Revenue and the state to better grow some of the funds. The main fund has about $5.8 billion in it, and the subaccount has about $6.3 billion. The main fund has very moderate risk tolerance, because it is the fund that covers cash flow shortages throughout the year. The subaccount, however, has had tremendous growth from the equity market, providing additional reserve levels to the state. COMMISSIONER RODELL assured the ARM Board that she and GARY BADER and his staff would carefully consider the decisions before moving assets so as not to negatively impact either fund.

The second reserve fund that is very important to the state is the Statutory Budget Reserve, which is excess revenues saved within the general fund. The balance of the SBR on December 31, 2013 was $4.7 billion. The SBR only requires a simple majority vote to move money out, and some was used to balance the FY 13 budget. COMMISSIONER RODELL explained that in July of 2013 with the start of FY 14, they separated this fund into its own separate asset allocation, which has had increasing yields.

COMMISSIONER RODELL stated that the money in the Constitutional Budget Reserve earns less than the money in the PERS and TRS funds, so moving the $3 billion will benefit the state by higher returns. She noted that the Alaska Permanent Fund Corporation has a balance of $49.2 billion, which means she has oversight as Commissioner of over $100 billion. COMMISSIONER RODELL concluded by saying that the state has tremendous financial resources to weather the storms that may be coming.

MS. HARBO thanked COMMISSIONER RODELL for the excellent presentation, noting that she was one who had requested it. VICE-CHAIR TRIVETTE also thanked COMMISSIONER RODELL for the cogent explanation to the Board, and MR. PIHL said kudos to GARY BADER and his staff for the excellent returns.

## 5. CHIEF INVESTMENT OFFICER REPORT

Chief Investment Officer GARY BADER referred to his report, in which Item No. 1 shows multiple adjustments to the asset allocation. MR. BADER noted that frequent adjustments ensure that they stay within the policy guidelines set by the board.

MR. BADER remarked that Mr. Chambers of Barrow, Hanley is retiring. MR. BADER wished Mr. Chambers well, and stated that a broad team manages the assets so this does not warrant placing Barrow, Hanley on the watch list.

MR. BADER's report included notification of the transfer of $1.2 million to Crestline Investors.

MR. BADER reminded the board that they had approved entering into a contract with Lazard Asset Management to manage an infrastructure fund for the board in a hedged account. However, MR. BADER noted that some issues with hedging had become apparent due to changes in the Dodd-

Frank law and the requirement to put certain assets in reserve when investing in currencies. Thus, they are going to proceed with Lazard with the understanding that at least for the near term, it will be an unhedged mandate.

MR. BADER mentioned two other items that had come up since the board packet was prepared. The first was notification from DePrince, Race & Zollo that their returns have not been up to expectations for the past two years, so they are reducing their fees.

The second is that Western Asset Management, one of two municipal bond managers hired by the board, has been censured by the Securities and Exchange Commission. MR. BADER described the circumstances, which involved a failure to notify clients that an asset was not ERISA-eligible, and indicates a potential for a lack of confidence or trust the manager. MR. BADER noted that this did not affect Alaska and was not a security that Alaska owned, but it raises enough concern that he requests a motion from the board to authorize staff to further investigate and take whatever action it deems appropriate with relation to the WAMCO account.

MS. HARBO moved that the ARM Board staff investigate the Western Asset Management matter relating to the SEC censure and take whatever action the staff deems appropriate. MR. BRICE seconded the motion.

MR. BRICE requested that the board be kept apprised of what actions the staff deems appropriate. MR. BADER replied that of course they would; however, this motion would allow staff to take action before the next board meeting.

A roll call vote was taken, and the motion passed unanimously.

## 6. FUND FINANCIAL REPORT

State Comptroller SCOTT JONES reviewed the financial statements for the six months ending December 31st, 2013. The ending invested assets were $24.8 billion, with a change in invested assets of 11.93%. This total comprises the PERS system with about $14.6 billion, the TRS system with about $6.1 billion, the JRS with $159 million, and the military with $37 million. MR. JONES stated that the total increase in income was about $2.5 billion, and net contributions were about $194 million.

MR. JONES stated that as of January 31st, the non-participant directed plans totaled about $19.9 billion, down about $400 million from December 31st, and it had dropped further by today's meeting date for a calendar year-to-date change in assets of about -3.1%. MR. JONES then discussed graphs in his report showing asset history, income, and allocations. VICE-CHAIR TRIVETTE thanked MR. JONES for adding the graphs, which he thinks are helpful in getting an overall perspective.

KEVIN WORLEY, CFO of the Division of Retirement and Benefits, went over the supplemental report which shows contributions and withdrawals from the different funds. MS. HARBO commented on the escalating rate of withdrawals from the defined contribution funds. Deputy

Commissioner MIKE BARNHILL replied that this is a pattern seen around the country and may be generational; he described efforts to offer education and counseling to people about how to handle their retirement accounts.

MR. BARNHILL added that they are also working on an auto-escalation feature so that when people receive a raise, the amount deducted from their pay for deferred compensation would automatically increase.

MS. ERCHINGER commented that the contributions and expenditures are getting closer and closer to break-even, portending serious liquidity problems in the next five to eight years, which is one reason why the proposed cash infusion into the retirement systems is so critical.

VICE-CHAIR TRIVETTE recessed the meeting from 10:11 a.m. to 10:25 a.m.

## 7. CAPITAL MARKETS ASSUMPTIONS

MICHAEL O'LEARY of Callan Associates explained how they do their 10-year projections of return, risk, and correlations. He reminded the board that although the way they reach the numbers is highly quantitative, that is overwhelmed by common sense and reasonable expectations, and developed so that the projections don't result in radical changes in asset allocation in a very short period of time.

MR. O'LEARY went through multiple examples and discussed various asset categories, commenting that the most difficult projection to make is the correlation of one asset class with another. He explained Callan's process of talking about the major asset classes throughout the fourth quarter, coming up with preliminary numbers in January, then adjusting those numbers as they develop more specifics. In February they model the current policy and discuss the likely consequences of various courses of action. MR. O'LEARY said that the results of these discussions would be presented at the next board meeting, then at the subsequent board meeting the Board would be asked to adopt a specific asset allocation for the coming fiscal year.

MS. ERCHINGER asked how to answer the query that "There is no way the ARM Board can hit their 8% earnings assumption." Discussion ensued about the effects of inflation on investment returns, and the fact that inflation rates on medical costs in Alaska are unusually high. MR. BADER commented that the Callan assumption on inflation is a cost price index, which is a good way to measure the real earnings on assets. He suggested putting the question to MR. SLISHINSKY of Buck Consultants about how sensitive Alaska's benefit schedule is to inflation, both medical and CPI, versus just a real rate of return.

MR. O'LEARY discussed tables from Eaton Vance comparing returns from various indexes, and he commented on the wide disparity in returns in various markets. MR. O'LEARY showed graphs of yields for various indices and graphs that compared US stocks to world stocks, and he discussed forecasts.

MR. O'LEARY noted an error in the report in the meeting packet on page 17. The numbers in the

"other" box for 2013 to 2022 are the wrong numbers.

MR. ERLENDSON described what clients wrestle with in terms of potential policy changes: trying to decide the best time to make moves to avoid the painful costs of being wrong, and trying to decide which new investment strategies have merit.

MR. O'LEARY commented that Callan really enjoys moderating the capital markets panel, and he likes to take all the question cards home and count them into different categories. MR. O'LEARY said that the category with the highest count last time was the inflation outlook.

DR. MITCHELL remarked that he is a fan of the Callan approach to long-term projections, but he also thinks that the seven-year return forecasts prepared monthly by Grantham Mayo Van Otterloo (GMO) put more emphasis on starting points, valuation, and quality of earnings. DR. MITCHELL commented that GMO would probably find the U.S. earnings in the Callan slides unrepeatable, which is a challenge that everyone should be thinking about. MR. O'LEARY added that he also looks at GMO's forecasts every month because he thinks highly of them, and he would send a copy to ARMB staff.

DR. JENNINGS commented that he thinks Callan is ahead of the game in being more conservative on hedge funds than some other consulting firms. DR. JENNINGS asked the Callan representatives to comment on the private equity numbers and whether there is a risk that their assumptions push the ARM Board too much toward private equity. MR. O'LEARY replied that he thinks not, because they have a very large standard deviation for volatility; also, he thinks there is a huge illiquidity premium opportunity in institutional private equity, predominated by buy-out funds. Managers with no experience in Europe are doing distressed debt funds to buy assets from European banks that are in trouble, and it bears watching to see whether those investments make sense or not.

MS. ERCHINGER stated that she and TOM BRICE were asked a question: Do we know what kind of added risk we would need to take on in order to fund this system if the governor's $3 billion were not added to the retirement plan? MR. O'LEARY responded that the question could be posed as, "If it were really a 10-year horizon, without looking at the valuations on an annual basis, what would you do differently from what you are doing today?" MR. O'LEARY said that his preliminary answer would be that the ARM Board is right at the fringe of aggressiveness with a program that is on its way to zero assets.

MR. ERLENDSON added that they would have to consider whether the incremental value added by a more aggressive strategy would be worth exacerbating the likelihood of a cash flow shortage, and he recommended that board members review the information previously presented by GARY BADER about the cash flow analysis. MR. BADER directed board members to page 17 of the Callan report regarding private equity, reminding them that his previous work had shown that private equity was the highest returning asset class, in excess of 10% over the period measured. MR. BADER stated that without the cash infusion, they might have to try to get additional returns out of private equity for a while.

COMMISSIONER RODELL remarked that the next board meeting falls after the legislative session is done, so the board will know what dialogue occurred and what actions were taken. She noted that it is important during the remainder of the legislative session to be understanding of the tensions that the legislature faces and their decision of how to handle this issue, whether by accepting the Governor's proposal or coming up with a multi-year plan or something else. COMMISSIONER RODELL reminded board members that even if the $3 billion is added, the problem will not be solved, and the conversation about how to allocate assets to hit earnings targets will be ongoing.

MR. PIHL commented that he thinks the ARM Board should have more access to the actuaries and their products, citing an example of a time when the actuarial projection caused damage. MR. PIHL said that projections should reduce state assistance rather than shortening the amortization period, and the Board should have more say in what the actuary produces. VICE-CHAIR TRIVETTE reminded the Board that they did get the actuary to put in writing that every year there is unfunded liability, interest will be added; in 2012, the interest added was $889 million.

VICE-CHAIR TRIVETTE thanked Callan and the Board for an excellent presentation and dialogue, and recessed the meeting from 12:04 p.m. to 1:30 p.m.

## 8. INVESTMENT ACTIONS/PROCUREMENT

### A. CIO Discretionary Authority

CIO GARY BADER explained that the proposal to change the CIO discretionary authority has two objectives: to update the authority to be more in line with the current assets under management, and to provide some symmetry in CIO authority in different areas. MR. BADER summarized the changes, which were included in writing in the meeting packet, and requested approval of Resolutions 2014-01, -02, -03, -04, and -05 implementing the changes.

ROB JOHNSON, legal counsel to the ARM Board, urged the Trustees to consider the proposals carefully and vote with an eye toward maintaining a balance between their responsibility and their ability to delegate.

MS. HARBO moved to adopt Resolutions 2014-01 through 2014-05. MR. PIHL seconded the motion.

VICE-CHAIR TRIVETTE commented that it does take a lot of reading to examine these proposals, but he said that he had gone through every page, and with full knowledge of the authority it gives to staff, he thinks that it is appropriate to adopt these changes. CHAIR SCHUBERT joined the meeting telephonically, and she commented that she thinks these changes acknowledge the excellent staff and how well they have done, and will give them the opportunity to continue to develop and assume more responsibility.

A roll call vote was taken, and Resolutions 2014-01, -02, -03, -04, and -05 were adopted unanimously.

### B. Frontier Market Mandate

MR. BADER reminded the board that Everest Capital had done a presentation in New York in October and the board then authorized Callan to do a review of Everest Capital. Callan concluded that Everest Capital is a manager that has the requisite skills, experience, and depth to successfully manage frontier market-oriented funds. ARMB staff intends to visit Everest Capital as part of due diligence, and has requested authority to take action to engage Everest in contract discussions soon, before Everest reaches its full capacity.

MS. HARBO moved to authorize staff to hire Everest Capital to manage a frontier markets portfolio with an initial funding of up to $100 million, subject to staff review and successful contract negotiations. MS. RYAN seconded the motion.

DR. MITCHELL asked if this would come under emerging markets or if there would eventually be a separate category for frontier markets; MR. BADER replied that it would come under the broad category of non-U.S. emerging markets, but they would put it in a fund called "frontier markets".

MR. BRICE expressed some concerns about the risks involved in places with unstable governments, and requested an explanation of the due diligence that would prevent getting into anything they couldn't get out of. MR. BADER explained that there is a three-month lock-up period in the contract, and noted that they are only asking for $100 million, not a very big commitment to an admittedly risky asset class.

MR. BRICE asked the Investment Advisory Council members for their thoughts. DR. MITCHELL said that he thinks it's good to get as much diversification as possible in markets like those considered frontier markets, so adding another manager is a good idea.

MR. O'LEARY commented that he thinks the growth opportunities are tremendous, and the portfolios tend to be well diversified because the managers are well aware of the risks. MR. O'LEARY added that Everest has been around for a pretty long time, and he thinks they are a very viable and worthwhile firm to consider, but staff has a lot of work to do in due diligence.

DR. JENNINGS mentioned a metaphor about small cap stocks being zebras in lion country, with one or two of them having a high potential of being taken down by lions. However, potentially the rest of the portfolio could do great things, and investors would have to go into it knowing the risks.

MS. ERCHINGER asked, if ARMB commits $100 million to a firm that has $2 billion in assets under management, how long would it take Everest to deploy that much in capital? MR. BADER replied that he didn't think it would take very long, because they use swaps to get a lot of exposure, but that is what they intend to find out.

A roll call vote was taken, and the motion passed unanimously.

### C. RFP General Consultant

MR. BADER explained that the current Callan and Associates contract for general investment consulting services is effective through June 30, 2014, with no further renewal options. Staff recommended that an RFP be issued for a general consultant in a time frame that will result in a general consultant contract being in place by July 1st, 2014.

MS. HARBO moved for the above RFP to be issued. MS. RYAN seconded the motion.
A roll call vote was taken, and the motion passed unanimously.

### D. RFS IAC Position

MR. BADER cited the statute defining the Investment Advisory Council and stated that Dr. Jennings' term expires on June 30, 2014. Staff recommended advertising and soliciting applications from Dr. Jennings and other persons interested in serving as an academic advisor on the Investment Advisory Council.

MS. RYAN moved to solicit applications. MR. BRICE seconded the motion.
A roll call vote was taken, and the motion passed unanimously.

## 9. INTRODUCTION TO LOW VOLATILITY INVESTING

KEVIN CLARK and GEORGE MATTHEWS of Analytic Investors LLC, which runs the ARMB's Buy-Write program, explained what low volatility equity is, why it works, and how low risk stocks can keep up and even outperform the market. Two points that they emphasized were that low risk does not necessarily mean low return, and high risk doesn't necessarily mean high return; also, the compounding effect of low-risk stocks is very powerful. MR. MATTHEWS noted that the research they were referring to was published in the *Journal of Portfolio Management* in 2006.

MR. MATTHEWS explained that the Buy-Write strategy is designed to get rid of the peaks and valleys and reduce risk, and the long-term results of the low volatility strategy are almost identical to the Buy-Write strategy, with about a 20% risk reduction. However, in a very volatile market, the low volatility strategy would do better, he said. MR. MATTHEWS explained the process of building a low-vol portfolio, and showed an example of a global low-vol portfolio's performance. When the market dropped 40% in '08, this portfolio only dropped 20%. But the next year, the market was up 30% and this fund was up only 8%. The following years showed that the low-volatility portfolio does well in choppy markets.

MR. BADER asked what period they look at when evaluating volatility; MR. MATTHEWS replied that they use Barra's risk model which looks back at the last five years, and they look at fundamentals to assign it a risk rating. They also consider "ES&Gs", environmental, social, and governance factors.

DR. MITCHELL asked how much the ARM Board would have to put into low-vol strategies to make a difference, and whether the recent popularity of this strategy might result in overpricing of

low-vol stocks. MR. MATTHEWS replied that initially a board might start with a small amount to understand it, like up to 5%. He also recommended hiring more than one manager to do low volatility because each one will invest in a different way.

VICE-CHAIR TRIVETTE recessed the meeting from 2:51 p.m. to 3:03 p.m.

## 10. BRANDES INVESTMENT PARTNERS

GLENN CARLSON is the executive director of Brandes Investment Partners, and JUAN BENITO has direct responsibility for the day-to-day management of the ARM Board's international EAFE strategy portfolio. CHRIS CHARD also joined the meeting. MR. BENITO showed graphs and tables of the performance of the defined benefit portfolio, which is about a billion dollars, and noted that he also manages about $150 million for the defined contribution fund. He pointed out that value has performed better than growth most of the time, but not recently; however, they are now crossing the line to the positive side again. MR. BENITO stated that last year was a very good year in which they outperformed the market by over six points.

MR. CARLSON stated that Brandes has been in business for over 40 years, and has over $27 billion in assets under management. They have over 300 employees, most based in San Diego, 54 of whom are investment professionals. MR. CARLSON emphasized that all of their investment strategies are value oriented, and they are an independent firm with absolutely no debt.

MR. O'LEARY inquired about asset losses from clients taking money away. MR. CARLSON stated that the losses peaked in 2009 or 2010, and much of it was high-net-worth individual investors who took their money when the financial crisis hit, with some institutional client relationships also lost later due to a period of underperformance. MR. CARLSON noted that through those hard times, the company lost virtually zero investment professionals, and has actually expanded the partnership; he noted that as owners of the business, the partners could choose to accept low profits to make sure that they do what they have promised for their clients. MR. O'LEARY commented that he wanted to highlight that for people making retention or non-retention decisions. VICE-CHAIR TRIVETTE and MR. CARLSON thanked MR. O'LEARY for bringing it up.

MR. CARLSON referred to page 8 of Brandes' report as he gave an overview of what they are trying to do and what value means to them. He explained how they estimate the value of businesses and industry research teams identify opportunities around the world where they can buy companies at low prices. Those opportunities are presented to Brandes' investment committees, which instruct the portfolio management teams to make decisions on behalf of investors.

MR. BENITO referred to page 14 of their report as he described the portfolio holdings, which are broken down in various ways on subsequent pages. Pages 17 and 18 show what has happened in the portfolio in the last year, resulting in a very concentrated portfolio with about 60 companies. MR. BENITO concluded by thanking the ARM Board for their confidence in Brandes.

MS. ERCHINGER asked what the fees are, and MR. BENITO replied that their fees are low, with a

marginal fee rate of 35 basis points for everything over $200 million, resulting in a total fee of about 37 basis points.

VICE-CHAIR TRIVETTE thanked the Brandes representatives for their presentation and for a good year.

## 11. MCKINLEY CAPITAL MANAGEMENT

MR. BADER introduced ROB GILLAM, chief investment officer of McKinley Capital Management, and ALEX SLIVKA, and noted that McKinley Capital runs two mandates for the ARM Board, a domestic large cap growth and an international.

MR. SLIVKA commented that the firm has not changed much in the past couple of years except for adding some staff, and they had a great year last year as a result of the time, effort, people, and money that they have spent over the past few years. The firm has developed a scientific advisory board comprised of four gentlemen, Harry Markowitz, Ganlin Xu, Rocky Cahan, and Ted Gifford.

MR. GILLAM commented that they are still the same global growth specialist as always, and they have spent a lot of time trying to make sure that they made up some ground when the cycle was in their favor over the past couple of years. MR. GILLAM thanked the board for their patience in that regard. He added that they do a lot of factor-related research like behavioral study of markets and trading patterns, and have also spent time trying to fine-tune the definition of a growth company.

MR. GILLAM went through the report and described the returns of the past year. He said that the firm is cautiously optimistic that 2014 will be a good year, and gave a quick overview of the portfolio positioning.

VICE-CHAIR TRIVETTE asked how they sort out winners and losers when looking at other countries, and MR. GILLAM described a process of sorting through every weekend to find the best growth and momentum companies around the world. A scoring system nominates a set of attractive securities, and then when McKinley sells something, they choose from that list what would best fill the hole that was vacated in the portfolio, using risk management models to narrow down the choices. Then the portfolio managers do a qualitative review, with help from the New York-based team of advisors who review information from over 13,000 analysts all over the world to try to find out what is accurate.

After a few questions from board members, VICE-CHAIR TRIVETTE thanked MR. SLIVKA and MR. GILLAM for their time.

## 12. CAPITAL GUARDIAN

MICHAEL BOWMAN is the relationship manager of Capital Guardian, and CHRIS RYDER, an investment specialist from Chicago, joined him.

MR. BOWMAN referred to page 2 for an overview of the $800 million account that Capital

manages for the ARM Board. He described Capital as an employee-owned firm out of Los Angeles which focuses solely on investment management services, and he noted that its name is now Capital Group, as Capital Guardian and American Funds have consolidated.

MR. BOWMAN noted that in 1958 the company began the Capital System, and in 1965 they helped create the MSCI index. Page 6 of Capital's report gives a brief overview of the Capital System, which is built on their research portfolio. The analysts are listed in the report, and they are actually managing money, which is different than how most fund managers are organized, MR. BOWMAN pointed out. VICE-CHAIR TRIVETTE noted that he appreciates that Capital focuses on the long term instead of the short term. The compensation system is constructed to encourage a long view, as the managers earn bonuses based on 4-year and 8-year performance.

MR. RYDER talked about the portfolio itself, and commented that he thinks the U.S. is likely to continue to do quite well in 2014. Page 21 of the report shows what went right and what went wrong last year, and MR. RYDER commented that what hurt most was holding cash during a time when markets were so strong. Other pages showed the portfolio's breakdown by sector and by geography.

VICE-CHAIR TRIVETTE commented that he is happy with the way things have turned around in the portfolio to show positive results now, and he thanked them for continuing to work on it.

**RECESS FOR THE DAY**

VICE-CHAIR TRIVETTE recessed the meeting at 4:16 p.m.

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**Friday, February 7, 2014**

**CALL BACK TO ORDER**

VICE-CHAIR TRIVETTE reconvened the meeting at 9:00 a.m. and thanked a number of distinguished guests for attending.

Trustees Harbo, Erchinger, Pihl, Brice, Ryan, Rodell, and Thayer were also present. CHAIR SCHUBERT was absent.

**REPORTS (Continued)**

**13. ACTUARIAL ANALYSIS: BUCK CONSULTANTS**

VICE-CHAIR TRIVETTE stated that the ARM Board had passed a resolution at the December meeting supporting the governor's proposal to transfer $3 billion into the PERS and TRS funds, and the board asked the state's actuary, Buck, to analyze how this infusion would affect those funds.

DAVID SLISHINSKY of Buck Consultants began by reviewing the circumstances that led to the increasing unfunded liability. MR. SLISHINSKY then discussed what a funding policy is, the specifics of the ARM Board's funding policy, and the changes that would be made under the governor's proposal.

MR. SLISHINSKY explained that a funding policy determines the pace and pattern of funding. The ARM Board's policy was amortizing on the basis of a level percentage of payroll for years, then recently changed that policy to a level dollar amount. MR. SLISHINSKY explained how the unfunded liability is calculated, how it can change from one year to the next, and how they smooth the losses over a five-year period. He said that different states use different approaches, and described some examples.

MS. ERCHINGER asked what the industry today considers a target for a funded ratio, and MR. SLISHINSKY replied that opinions are changing and going up, and he's heard some say 110-115%, but he prefers 120% to 125% to have a margin for adverse deviation. MR. SLISHINSKY noted that one state saw their funded ratio drop from 124% to 76% during the financial crisis.

MS. ERCHINGER then asked him to explain the difference between the actuarial determined contribution rate and the actuarial required contribution rate, and how it affects what the industry will expect in terms of how much the system is funded. MR. SLISHINSKY replied that the GASB is changing their standards, and there is a de-linking of the accounting requirement for funding and the actuarial requirement for funding. It is now required that systems disclose their policy for funding the system, and an actuary has to do an analysis of a projection to show whether or not the funding policy is sustainable; if it is not sustainable, the projection should show cross-over dates when the fund goes from having assets to having no assets.

MR. SLISHINSKY explained how net pension liability is calculated, and said that the GASB now

requires unfunded liability to be shown on the balance sheets of all employers responsible for paying into the system. MR. SLISHINSKY said that bond-rating agencies have been examining how they should consider pension obligations in the ratings for public employers that issue debt instruments, and some have devised their own methods of judging risk.

MR. SLISHINKY reviewed the ARM Board's funding policy and the rate caps which result in the state having to make additional contributions to meet actuarial requirements. The ARM Board adopts an actuarial funding policy by selecting one of six actuarial cost methods defined under GASB 25 and 27; the ARM Board uses the entry age cost method, which is used by most public employers. MR. SLISHINSKY noted that in the change for GASB under 67 and 68, the entry age method is now required, so it's nice that that's what ARMB uses.

MR. SLISHINSKY explained that the actuarial value of assets is smoothed over five years, which is consistent with most plans. The level of unfunded liability is determined by calculating the difference between the accrued liability and the actuarial value of assets. If there is an unfunded liability, then an additional amortization payment has to be made. MR. SLISHINSKY added that the change from level percent of pay to level dollar amount changes the pattern of amortization, and in the future payments will be lower than they would be under the level percentage of pay method.

MR. SLISHINSKY said that it is important to have a dedicated funding policy that addresses how unfunded liability will be paid off, and if unfunded liability is maintained, it will require continued interest payments, raising the overall cost. Studies have shown that for well-funded plans, most of the benefit payments that go out are not financed by the contributions; they are financed by the investment returns on those contributions. The sooner the money is in the pension fund earning investment returns, the lower the long-term costs to the pension system.

MR. SLISHINSKY discussed the governor's proposal to transfer $3 billion from the Constitutional Budget Reserve to PERS and TRS. Allocating those funds to pay a percentage of the unfunded liability for each fund would mean $1.9 billion to PERS and $1.1 billion to TRS, which would be paid in July of 2014 for FY 15. This money would include any amortization payment or additional state payment that would otherwise have been made, plus some extra. Then in each future year, the state would appropriate $500 million annually to PERS and TRS beginning in FY 16 until the systems are fully funded. MR. SLISHINSKY explained that this would immediately increase the funded ratios and increase the value that is in the funds, and the contribution amount of additional state assistance would continue until 2036, when the system would be fully funded.

MR. SLISHINSKY reviewed the projections and how they were calculated, noting that Buck does an experience analysis every four years that results in recommended changes to assumptions based on the most recent experience. Also, every year when they do the actuarial evaluation, they test the gains and losses and look at trends and patterns that affect their assumptions, and if something significant appears, they bring it to the board, as they did with healthcare assumptions last year. MR. SLISHINSKY also noted that a limited-scope auditing actuary reviews their results every year before the results are presented to the ARM Board, and every four years, a third actuary does a full-scope audit; these audits give the ARMB confidence in Buck's results.

The Trustees discussed the projections and asked questions, then MS. ERCHINGER noted for the audience that the board spent a lot of time on liquidity because as the projections show, at no time from the present until the end of the system do contribution payments exceed the benefits being paid out. There is negative cash flow every month except the months in which the state makes its state assistance payments into the plan. MS. ERCHINGER emphasized that the state assistance payments have been crucial in preventing the need to liquidate investments, and that is why she supports the governor's proposal to inject cash into the system. The projected earnings column shows a significant impact on the ability of the plan to pay benefit payments from the interest earnings on that $3 billion; without a cash infusion, it is unlikely that the ARM Board would be able to meet its 8% earnings assumption.

VICE-CHAIR TRIVETTE recessed the meeting from 10:42 a.m. to 10:55 a.m.

SENATOR ANNA FAIRCLOUGH addressed the Board on behalf of the co-chairs of the Senate Finance Committee, Senator Pete Kelly and Senator Kevin Meyer, as well as the majority caucus and Senate President Charlie Huggins. SENATOR FAIRCLOUGH stated for the record that they are watching, they have met with ARM Board representatives, and they are taking the Board's considerations under advisement as well as the governor's proposal.

SENATOR FAIRCLOUGH stated that the Senate Finance Committee has sent a letter requesting a review of the ARM Board's finances with an actuary, and they are preparing a proposal outlining a specific scope of work. SENATOR FAIRCLOUGH stated, "The bottom line is, the State of Alaska understands our obligations to the people that are inside of our pension system, and we want to move responsibly, given the criteria and the cash flow, in our future as well as in the ARM Board's future. So we will make every attempt to engage in a communication that is constructive and that benefits the people of Alaska."

MR. BRICE noted for the record that David Teal, the head of Legislative Finance, was present, and numerous staff people from both co-chairs of finance and from Representative Hawker's and Senator Micciche's staff as well. VICE-CHAIR TRIVETTE noted that Senator Egan and his staff had also been present earlier. VICE-CHAIR TRIVETTE informed those present or listening that the ARM Board is very open to questions and comments to board members, staff, and the actuaries.

COMMISSIONER RODELL commented that the governor's proposal is important not only because of the $3 billion in funds, but also because it attempts to create near-term certainty of reducing the state assistance payments to $500 million per year. She asked what the effect of that is on the actuarial reports. MR. SLISHINSKY replied that the effect is that, with gains and losses, the amortization period will either be extended or shortened. The ultimate downside risk would be that the amount wouldn't be enough to meet all of the future obligations, and eventually it would reach a crossover date and have to switch to pay-as-you-go or make another large cash infusion.

MR. PIHL commented that he supports the governor's proposal, noting that an analysis a few years ago showed that if they had been on level dollar instead of level percent of pay, the liability would have been several billion less, so this would get it going in the right direction and put that money to work instead of sitting in the CBR.

## UNFINISHED BUSINESS

### 1. Disclosure Reports

MS. HALL stated that the disclosure reports were included in the meeting packet, and there was nothing unusual to disclose.

### 2. Meeting Schedule

MS. HALL stated that the 2014 meeting schedule is included in the meeting packet, and there are no changes to report.

### 3. Legal Report

MR. JOHNSON had nothing specific to report.

## NEW BUSINESS

None.

## OTHER MATTERS TO PROPERLY COME BEFORE THE BOARD

None.

## PUBLIC/MEMBER COMMENTS

None.

## INVESTMENT ADVISORY COUNCIL COMMENTS

DR. JENNINGS stated that he has some views on lump-sum versus phased investments that he hopes will be germane at the next meeting.

## TRUSTEE COMMENTS

VICE-CHAIR TRIVETTE stated that he was planning to spend about five minutes talking about one specific part of the Callan conference, but he will do it at the April meeting.

## FUTURE AGENDA ITEMS

MS. ERCHINGER commented that in the discussion today about actuarial projections, it might be interesting to ask for a sensitivity analysis around interest rates, mortality, and healthcare costs, assuming those are the biggest drivers, to get a sense of the magnitude of the impact of, for instance, a lower earnings assumption or people living 10 years longer than expected.

MS. ERCHINGER also stated that she would be interested in looking at various funding policies from other state pension plans to get a sense of what others are doing, especially states that have revised their funding policies in light of the economic impacts of the 2008 and 2009 investment return assumptions.

MS. ERCHINGER had previously requested that the Department of Administration provide an update on the status of the retiree health plan at the April meeting.

**ADJOURNMENT**

There being no objection and no further business to come before the board, the meeting was adjourned at 11:20 a.m. on February 7, 2014, on a motion made by MS. ERCHINGER and seconded by MS. RYAN.

_____
Chair of the Board of Trustees
Alaska Retirement Management Board

**ATTEST:**

_____
Corporate Secretary

# ALASKA RETIREMENT MANAGEMENT BOARD

| | | | |
|---|---|---|---|
| SUBJECT: | Fiscal Year 2015 Health Reimbursement Arrangement amounts for employers | ACTION: | |
| DATE: | April 24, 2014 | INFORMATION: | X |

BACKGROUND:

AS 39.30.350 "Employer Contribution Fund" states that Teachers' and Public Employees' Retiree health reimbursement arrangement plan trust fund is an employer contribution fund. Employee contributions are not permitted.

AS 39.30.360 "Management and Investment of the Fund" states that "The Alaska Retirement Management Board is the fiduciary of the fund and has the same powers and duties under this section in regard to the fund as are provided under AS 37.10.220."

AS 39.30.370 "Contributions by Employers" states that "For each member of the plan, an employer shall contribute to the teachers' and public employees' retiree health reimbursement arrangement plan trust fund an amount equal to three percent of the average annual compensation of all employees of all employers in the TRS and PERS." The Division of Retirement & Benefits calculates the HRA amount annually and reports this to all affected employers for proper payroll reporting each fiscal year.

STATUS:

Attached is the memorandum from the Division of Retirement & Benefits for Fiscal Year 2015's Health Reimbursement Arrangement employer contribution per pay period. The amounts have been reported to employers.

Also attached is a summary spreadsheet for fiscal years 2008 - 2015.

# MEMORANDUM

## STATE OF ALASKA
**DEPARTMENT OF ADMINISTRATION**
**Division of Retirement and Benefits**

**To:** Jim Puckett
Director

**Date:** December 9, 2013

**Thru:** Kevin Worley
Chief Financial Officer

**From:** Christina Maiquis
Accounting Supervisor

**Subject:** FY 2015 HRA Employer Contribution Amounts

Alaska Statute 39.30.370 "Contributions by Employers" relates to the employer contributions required to fund the Health Reimbursement Arrangement (HRA) Plan for Public Employees' Retirement System (PERS) and Teachers' Retirement System (TRS) Defined Contribution Retirement (DCR) Plan members. The statute states in part:

> *For each member of the plan, an employer shall contribute to the teachers' (TRS) and public employees' (PERS) retiree health reimbursement arrangement plan trust fund an amount equal to three percent of the average annual compensation of all employees of all employers in the teachers' retirement system and public employees' retirement system. The administrator shall maintain a record for each member to account for employer contributions on behalf of that member.*

In order to compute the dollar amount required to fund the PERS and TRS HRA Plan, a rate of 3.00% is applied to the average annual compensation of all employees of all employers in PERS and TRS. Contributions to a DCR members HRA account are required each pay period in which the employee is enrolled in the Defined Contribution Retirement (DCR) Plan, regardless of the compensation paid during the calendar year. By definition, the HRA employer contribution is a dollar amount.

The Fiscal Year 2015 HRA employer contribution amounts are shown below:

**FY 2015 HRA Amounts**

| Annual | Quarterly | Monthly | Semi-monthly | Bi-weekly | Weekly | Hourly |
|---|---|---|---|---|---|---|
| $1,960.53 | $490.13 | $163.38 | $81.69 | $75.41 | $37.70 | $1.26 |

The attached document shows a comparative of HRA rates since Fiscal Year 2008.

Approved:

Jim Puckett, Director

12/9/13
Date

Attachment

G:\DRB\Accounting\HRA\HRA Contribution Amounts\FY 2015\2015 HRA Contribution Approval Memo.doc

**Per AS 39.30.370, a rate of 3.00% is applied to the average annual compensation of **all employees of all employers** in the TRS and PERS. The contribution amount is then converted to a per pay period, per employee contribution amount. Contributions to the employee's HRA account are required for every pay period in which the employee is enrolled in the DCR Plan, regardless of the compensation paid during the calendar year. By definition, the HRA cost is a dollar amount reflected in the table below:

| FY 2015 HRA Amounts | | | | | |
|---|---|---|---|---|---|
| **Annual** | **Quarterly** | **Monthly** | **Semi-monthly** | **Bi-weekly** | **Weekly** |
| $1,960.53 | $490.13 | $163.38 | $81.69 | $75.41 | $37.70 |

For **full-time TRS** members who are paid over a period of less than 12 months, the employer will calculate the amount due per pay period by dividing the **annual** amount by the number of scheduled payments. For example, for a full-time TRS member who receives nine monthly payments the employer contribution would be $217.84 per pay period ($1,960.53 annual cost divided by nine payments).

For all school districts, please note, the prorated calculation of annual HRA contributions **does not apply** to PERS DCR Plan Noncertificated (classified) School Employees. These employees are NOT eligible to elect the alternate option program. Once the DRB PERS system is provided the Leave Without Pay (LWP) date for the last day worked for the school year, service is then turned off and HRA contributions are suspended for the summer break.

For **TRS part-time employees**, the HRA rate is based on the contract percentage worked multiplied by the rate provided in the table **above**. For example, a 70% employee paid monthly would have a contribution to the HRA of $114.37 per pay period ($163.38 x 70%).

For **part-time** PERS members, the employer contributes the PERS **hourly** amount for each hour the employee worked in each pay period until the employer has contributed the annual amount for the fiscal year, illustrated in the table below:

| FY 2015 HRA Amounts |
|---|
| **Hourly** |
| $1.26 |

**Division of Retirement & Benefits**
**Health Reimbursement Arrangement (HRA)**
**Employer contribution amounts by fiscal year**

| Fiscal Year | Annual | Quarterly | Monthly | Semi-monthly | Bi-weekly | Weekly | Hourly |
|---|---|---|---|---|---|---|---|
| 2008 | 1,531.27 | 382.82 | 127.61 | 63.80 | 58.89 | - | 0.98 |
| 2009 | 1,616.81 | 404.20 | 134.73 | 67.37 | 62.18 | - | 1.04 |
| 2010 | 1,699.71 | 424.93 | 141.64 | 70.82 | 65.37 | - | 1.09 |
| 2011 | 1,720.70 | 430.17 | 143.39 | 71.70 | 66.18 | - | 1.10 |
| 2012 | 1,778.09 | 444.52 | 148.17 | 74.09 | 68.39 | - | 1.14 |
| 2013 | 1,848.43 | 462.11 | 154.04 | 77.02 | 71.09 | - | 1.18 |
| 2014 | 1,896.60 | 474.15 | 158.05 | 79.03 | 72.95 | - | 1.22 |
| 2015 | 1,960.53 | 490.13 | 163.38 | 81.69 | 75.41 | 37.70 | 1.26 |

**NOTE:** For fiscal year 2007, HRA amounts were computed by employer rather than the HRA as a plan. Beginning fiscal year 2008, HRA amounts were computed and applied uniformly to all members and are reflected above.

# CHIEF INVESTMENT OFFICER REPORT

- Rebalance Funds six times.
- Six installments to finish funding the allocation to Guggenheim Partners for a Municipal Bond mandate.
- Reduce Small Cap investment with Jennison ($55K), Luther King ($45K), Lord Abbett Small Cap ($25K), Lord Abbett Micro ($25K) and transfer funds to the Cash Account ($150K).
- Fund Brookfield and Lazard Infrastructure funds at $75K each by transferring $150K out of cash.
- Reauthorization of cash overlay of $11 million Small Cap.
- Reauthorization of cash overlay of $11 million Large Cap.
- Terminate Buy Write Mandate with Allianz due to key person turnover.
- Transfer $84,728,046.71 Allianz (RCM) Buy Write to Fixed Income.
- Transfer $2,996,734.00 from Cash to Blue Glacier (Crestline) absolute return fund.
- Authorized MacKay Shields to hold the stock of ION Media.
- Announcement of sale of minority investment in EIG's management company to Affiliated Managers Group.
- Transfer $80 million from Frontier Small Cap and BHMS Small Cap to Cash.

Rebalancing Trades (Final)

| 4/8/14 | AYZ1 | AYZ2 | AYZ3 | AYZ4 | AYW2 | AYW3 | AYW4 | AYX2 | AYX3 | AYY2 | AYY3 | AY6G | AY6H | AY6I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Broad Domestic Equity** | | | | | | | | | | | | | | |
| Large Cap Pool (AYQK) | (1,940,007) | (3,569,474) | (4,885) | 168,699 | 3,516,251 | 757,473 | 26,965 | 94,562 | 32,931 | 665,678 | 193,236 | 34,279 | 2,524 | 21,568 |
| Small Cap Pool (AYQC) | (469,278) | (863,438) | (1,183) | 40,808 | 850,564 | 183,229 | 6,523 | 22,874 | 7,966 | 161,073 | 46,743 | 8,292 | 610 | 5,217 |
| | | | | | | | | | | | | | | |
| **Alternative Equity Strategies** | | | | | | | | | | | | | | |
| Advent Capital Convertible Bond (AYS2) | (55,119) | (103,863) | (112) | | 104,812 | 22,758 | 798 | 2,782 | 969 | 19,576 | 5,682 | 1,008 | 75 | 634 |
| Alternative Equity Strategies Pool (AYYK) | (209,541) | (394,848) | (423) | | 398,454 | 86,517 | 3,032 | 10,574 | 3,684 | 74,422 | 21,600 | 3,834 | 284 | 2,411 |
| | | | | | | | | | | | | | | |
| **Global Equity Ex-US** | | | | | | | | | | | | | | |
| International Equity Pool (AYRC) | (1,538,769) | (2,954,237) | (2,464) | (107,030) | 3,035,660 | 662,954 | 22,963 | 79,769 | 27,798 | 561,201 | 162,895 | 28,924 | 2,157 | 18,179 |
| International Equity - Small Cap Pool (AYRK) | (122,185) | (234,578) | (196) | (8,499) | 241,045 | 52,641 | 1,824 | 6,334 | 2,207 | 44,562 | 12,935 | 2,296 | 171 | 1,443 |
| Emerging Markets Pool (AYSC) | (220,853) | (424,006) | (354) | (15,362) | 435,695 | 95,150 | 3,295 | 11,449 | 3,990 | 80,547 | 23,379 | 4,151 | 310 | 2,609 |
| | | | | | | | | | | | | | | |
| **Private Equity** | | | | | | | | | | | | | | |
| Private Equity Pool (AYSK) | (653,955) | (1,232,281) | (1,314) | | 1,243,531 | 270,010 | 9,461 | 33,001 | 11,497 | 232,263 | 67,411 | 11,965 | 887 | 7,524 |
| | | | | | | | | | | | | | | |
| **Real Assets** | | | | | | | | | | | | | | |
| Real Estate Pool (AYVK) | 210,661 | (431,236) | 9,923 | | 42,663 | (95,595) | 4,005 | 22,871 | 7,749 | 167,010 | 48,053 | 8,207 | 294 | 5,395 |
| JP Morgan Real Estate (AY7A) | 129,695 | (134,302) | 4,607 | | | | | | | | | | | |
| REIT Holdings (AY9H) | (133,667) | (251,861) | (266) | | 254,164 | 55,187 | 1,934 | 6,745 | 2,349 | 47,472 | 13,778 | 2,445 | 182 | 1,538 |
| Farmland Pool (AYTK) | (290,547) | (547,476) | (584) | | 552,482 | 119,961 | 4,203 | 14,661 | 5,108 | 103,191 | 29,949 | 5,316 | 394 | 3,342 |
| Timber Pool (AYUK) | (107,014) | (201,654) | (211) | | 203,491 | 44,185 | 1,548 | 5,401 | 1,881 | 38,007 | 11,031 | 1,958 | 145 | 1,232 |
| Energy Pool (AYVC) | (41,334) | (77,884) | (77) | | 78,594 | 17,065 | 598 | 2,086 | 726 | 14,679 | 4,260 | 756 | 56 | 475 |
| TIPS Internally Managed (AY6N) | (13,230) | (24,919) | (27) | | 25,151 | 5,461 | 191 | 667 | 233 | 4,697 | 1,363 | 242 | 18 | 153 |
| MLP Pool (AYWK) | (163,060) | (307,265) | (327) | | 310,067 | 67,326 | 2,360 | 8,229 | 2,867 | 57,913 | 16,809 | 2,984 | 221 | 1,876 |
| Private Infrastructure (AYZK) | - | - | - | | - | - | - | - | - | - | - | - | - | - |
| Public Infrastructure (AYMK) | (520,263) | (377,219) | (8,789) | | 836,229 | 58,391 | 2,348 | 696 | (127) | 6,453 | 160 | 1,243 | 183 | 695 |
| | | | | | | | | | | | | | | |
| **Absolute Return** | | | | | | | | | | | | | | |
| Absolute Return Pool (AYTC) | (335,147) | (631,529) | (673) | | 637,299 | 138,377 | 4,849 | 16,912 | 5,892 | 119,032 | 34,547 | 6,132 | 454 | 3,855 |
| | | | | | | | | | | | | | | |
| **Fixed Income** | | | | | | | | | | | | | | |
| Taxable Municipal Bond Pool (AYZC) | (78,179) | (148,195) | (147) | (1,721) | 150,424 | 32,724 | 1,142 | 3,979 | 1,386 | 28,003 | 8,127 | 1,442 | 108 | 907 |
| US Treasury Fixed Income Pool (AY1A) | (418,515) | (860,713) | (13) | (141,142) | 940,374 | 209,218 | 6,979 | 23,912 | 8,341 | 168,005 | 48,781 | 8,673 | 658 | 5,442 |
| Mondrian Inv. Partners Inc (AY63) | (128,695) | (263,077) | (22) | (40,268) | 285,961 | 63,528 | 2,126 | 7,291 | 2,543 | 51,233 | 14,875 | 2,645 | 200 | 1,660 |
| High Yield Pool (AYPK) | (204,933) | (402,048) | (229) | (31,091) | 421,532 | 92,637 | 3,169 | 10,957 | 3,819 | 77,051 | 22,367 | 3,974 | 299 | 2,496 |
| Lazard Emerging Income (AY5M) | (58,283) | (110,470) | (110) | (1,283) | 112,134 | 24,394 | 852 | 2,967 | 1,034 | 20,875 | 6,058 | 1,076 | 80 | 676 |
| | | | | | | | | | | | | | | |
| **Short-term Fixed Income** | | | | | | | | | | | | | | |
| State of AK Short Term Pool (AY70) | 7,362,218 | 14,546,573 | 7,876 | 136,889 | (14,676,577) | (2,963,591) | (111,165) | (388,719) | (134,843) | (2,743,143) | (794,039) | (141,842) | (10,310) | (89,327) |

Rebalancing Trades (Final)

| 3/18/14 | AY21 | AY22 | AY23 | AY24 | AYW2 | AYW3 | AYW4 | AYX2 | AYX3 | AYY2 | AYY3 | AY6G | AY6H | AY6I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Broad Domestic Equity** | | | | | | | | | | | | | | |
| Large Cap Pool (AYQK) | 1,500,487 | 60,694 | 44,970 | 30,293 | (1,202,589) | (727,422) | 2,606 | 27,984 | 4,710 | 209,443 | 31,214 | 10,398 | (161) | 7,373 |
| Small Cap Pool (AYQC) | 373,853 | 15,122 | 11,203 | 7,548 | (299,630) | (181,240) | 650 | 6,972 | 1,174 | 52,183 | 7,777 | 2,591 | (40) | 1,837 |
| | | | | | | | | | | | | | | |
| **Alternative Equity Strategies** | | | | | | | | | | | | | | |
| Advent Capital Convertible Bond (AYS2) | 44,086 | 1,930 | 1,321 | | (34,786) | (21,122) | 78 | 817 | 137 | 6,114 | 912 | 303 | (5) | 215 |
| Alternative Equity Strategies Pool (AYYK) | 190,744 | 8,351 | 5,698 | | (150,504) | (91,383) | 334 | 3,536 | 597 | 26,455 | 3,947 | 1,314 | (20) | 931 |
| | | | | | | | | | | | | | | |
| **Global Equity Ex-US** | | | | | | | | | | | | | | |
| International Equity Pool (AYRC) | 1,190,632 | 38,097 | 35,952 | 85,105 | (991,857) | (594,449) | 2,033 | 22,543 | 3,776 | 168,883 | 25,103 | 8,375 | (139) | 5,946 |
| International Equity - Small Cap Pool (AYRK) | 95,089 | 3,045 | 2,871 | 6,796 | (79,214) | (47,475) | 162 | 1,800 | 301 | 13,488 | 2,005 | 669 | (12) | 475 |
| Emerging Markets Pool (AYSC) | 165,026 | 5,282 | 4,983 | 11,796 | (137,475) | (82,394) | 281 | 3,125 | 524 | 23,408 | 3,479 | 1,160 | (19) | 824 |
| | | | | | | | | | | | | | | |
| **Private Equity** | | | | | | | | | | | | | | |
| Private Equity Pool (AYSK) | 503,965 | 22,058 | 15,060 | | (397,644) | (241,444) | 881 | 9,342 | 1,576 | 69,897 | 10,428 | 3,472 | (52) | 2,461 |
| | | | | | | | | | | | | | | |
| **Real Assets** | | | | | | | | | | | | | | |
| Real Estate Pool (AYVK) | 305,305 | 14,150 | 9,102 | | (241,785) | (171,453) | 1,062 | 8,084 | 1,444 | 59,771 | 9,215 | 3,008 | (4) | 2,101 |
| JP Morgan Real Estate (AY7A) | 33,010 | (34,965) | 1,955 | | | | | | | | | | | |
| REIT Holdings (AY9H) | 104,954 | 4,598 | 3,140 | | (82,817) | (50,285) | 183 | 1,945 | 328 | 14,557 | 2,172 | 723 | (11) | 513 |
| Farmland Pool (AYTK) | 231,794 | 10,153 | 6,925 | | (182,896) | (111,052) | 405 | 4,297 | 725 | 32,149 | 4,796 | 1,597 | (24) | 1,131 |
| Timber Pool (AYUK) | 85,145 | 3,727 | 2,543 | | (67,182) | (40,791) | 148 | 1,579 | 266 | 11,809 | 1,762 | 587 | (9) | 416 |
| Energy Pool (AYVC) | 32,822 | 1,433 | 987 | | (25,899) | (15,726) | 58 | 609 | 102 | 4,552 | 679 | 226 | (3) | 160 |
| TIPS Internally Managed (AY6N) | 10,557 | 467 | 315 | | (8,332) | (5,059) | 18 | 196 | 33 | 1,464 | 218 | 72 | (1) | 52 |
| MLP Pool (AYWK) | 128,940 | 5,641 | 3,854 | | (101,738) | (61,774) | 226 | 2,391 | 403 | 17,883 | 2,668 | 889 | (13) | 630 |
| Private Infrastructure (AYZK) | - | - | - | | - | - | - | - | - | - | - | - | - | - |
| Public Infrastructure (AYMK) | (411,413) | (262,072) | (7,217) | | 682,207 | 11,402 | 1,565 | (1,405) | (1,011) | (7,956) | (4,923) | 483 | 97 | 243 |
| | | | | | | | | | | | | | | |
| **Absolute Return** | | | | | | | | | | | | | | |
| Absolute Return Pool (AYTC) | 258,971 | 11,339 | 7,739 | | (204,336) | (124,071) | 453 | 4,800 | 809 | 35,917 | 5,358 | 1,784 | (27) | 1,264 |
| | | | | | | | | | | | | | | |
| **Fixed Income** | | | | | | | | | | | | | | |
| Taxable Municipal Bond Pool (AY2C) | 57,109 | 2,477 | 1,708 | 151 | (45,154) | (27,403) | 100 | 1,059 | 178 | 7,927 | 1,182 | 393 | (6) | 279 |
| US Treasury Fixed Income Pool (AY1A) | 406,480 | 41,882 | 11,508 | (146,192) | (230,698) | (153,466) | 797 | 6,725 | 1,178 | 49,934 | 7,612 | 2,501 | (16) | 1,755 |
| Mondrian Inv. Partners Inc (AY63) | 122,017 | 9,222 | 3,544 | (23,568) | (81,762) | (51,803) | 228 | 2,131 | 367 | 15,884 | 2,396 | 793 | (8) | 559 |
| High Yield Pool (AYPK) | 175,949 | 9,975 | 5,198 | (13,805) | (130,328) | (80,398) | 316 | 3,186 | 541 | 23,795 | 3,565 | 1,184 | (15) | 837 |
| Lazard Emerging Income (AY5M) | 46,598 | 2,023 | 1,393 | 123 | (36,846) | (22,361) | 82 | 865 | 146 | 6,469 | 965 | 321 | (5) | 227 |
| | | | | | | | | | | | | | | |
| **Short-term Fixed Income** | | | | | | | | | | | | | | |
| State of AK Short Term Pool (AY70) | (5,652,120) | 25,371 | (174,752) | 41,753 | 4,051,265 | 2,891,169 | (12,666) | (112,581) | (18,304) | (844,026) | (122,530) | (42,843) | 493 | (30,229) |

Rebalancing Trades (Final)

| 3/10/14 | AY21 | AY22 | AY23 | AY24 | AYW2 | AYW3 | AYW4 | AYX2 | AYX3 | AYY2 | AYY3 | AY6G | AY6H | AY6I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Broad Domestic Equity** | | | | | | | | | | | | | | |
| Large Cap Pool (AYQK) | 1,577,932 | 155,161 | (4,682) | (84,603) | (1,225,588) | (689,268) | (8,178) | 26,667 | 6,009 | 192,000 | 39,692 | 9,638 | (34) | 5,254 |
| Small Cap Pool (AYQC) | 393,291 | 38,670 | (1,163) | (21,087) | (305,471) | (171,797) | (2,039) | 6,647 | 1,497 | 47,855 | 9,893 | 2,402 | (8) | 1,310 |
| | | | | | | | | | | | | | | |
| **Alternative Equity Strategies** | | | | | | | | | | | | | | |
| Advent Capital Convertible Bond (AY52) | 44,855 | 4,052 | (150) | - | (36,339) | (20,247) | (241) | 770 | 173 | 5,551 | 1,146 | 279 | (1) | 152 |
| Alternative Equity Strategies Pool (AYYK) | 194,285 | 17,567 | (656) | - | (157,398) | (87,703) | (1,041) | 3,336 | 749 | 24,042 | 4,963 | 1,205 | (6) | 657 |
| | | | | | | | | | | | | | | |
| **Global Equity Ex-US** | | | | | | | | | | | | | | |
| International Equity Pool (AYRC) | 1,272,448 | 117,431 | (4,187) | (16,107) | (1,020,816) | (570,012) | (6,761) | 21,768 | 4,893 | 156,840 | 32,384 | 7,865 | (36) | 4,290 |
| International Equity - Small Cap Pool (AYRK) | 101,041 | 9,323 | (332) | (1,279) | (81,060) | (45,263) | (537) | 1,729 | 389 | 12,454 | 2,571 | 625 | (2) | 341 |
| Emerging Markets Pool (AYSC) | 173,698 | 16,032 | (571) | (2,199) | (139,349) | (77,810) | (923) | 2,971 | 667 | 21,409 | 4,421 | 1,074 | (5) | 585 |
| | | | | | | | | | | | | | | |
| **Private Equity** | | | | | | | | | | | | | | |
| Private Equity Pool (AYSK) | 513,081 | 46,394 | (1,739) | | (415,668) | (231,611) | (2,747) | 8,810 | 1,979 | 63,492 | 13,105 | 3,183 | (15) | 1,736 |
| | | | | | | | | | | | | | | |
| **Real Assets** | | | | | | | | | | | | | | |
| Real Estate Pool (AYVK) | 32,801 | (107,654) | (5,986) | | 53,167 | (61,673) | (771) | 8,792 | 2,255 | 60,611 | 13,379 | 3,213 | 161 | 1,705 |
| JP Morgan Real Estate (AY7A) | 32,427 | (30,540) | (1,887) | | | | | | | | | | | |
| REIT Holdings (AY9H) | 105,894 | 9,575 | (359) | | (85,789) | (47,802) | (567) | 1,819 | 409 | 13,104 | 2,704 | 657 | (3) | 358 |
| Farmland Pool (AYTK) | 235,850 | 21,321 | (798) | | (191,069) | (106,464) | (1,262) | 4,050 | 909 | 29,185 | 6,024 | 1,463 | (7) | 798 |
| Timber Pool (AYUK) | 85,994 | 7,782 | (293) | | (69,671) | (38,822) | (460) | 1,476 | 332 | 10,643 | 2,197 | 533 | (2) | 291 |
| Energy Pool (AYVC) | 33,218 | 3,007 | (119) | | (26,909) | (14,994) | (178) | 570 | 128 | 4,111 | 849 | 206 | (1) | 112 |
| TIPS Internally Managed (AY6N) | 10,637 | 959 | (36) | | (8,615) | (4,800) | (57) | 183 | 41 | 1,316 | 272 | 66 | (1) | 35 |
| MLP Pool (AYWK) | 129,013 | 11,667 | (438) | | (104,518) | (58,238) | (691) | 2,215 | 497 | 15,965 | 3,295 | 800 | (4) | 437 |
| Private Infrastructure (AYZK) | (3) | - | 3 | | - | - | - | - | - | - | - | - | - | - |
| Public Infrastructure (AYMK) | (3) | - | 3 | | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | | | | | |
| **Absolute Return** | | | | | | | | | | | | | | |
| Absolute Return Pool (AYTC) | 262,052 | 23,693 | (888) | | (212,299) | (118,293) | (1,403) | 4,500 | 1,011 | 32,428 | 6,694 | 1,625 | (7) | 887 |
| | | | | | | | | | | | | | | |
| **Fixed Income** | | | | | | | | | | | | | | |
| Taxable Municipal Bond Pool (AYZC) | 57,922 | 5,452 | (185) | (1,455) | (46,017) | (25,751) | (305) | 988 | 222 | 7,111 | 1,469 | 357 | (2) | 194 |
| US Treasury Fixed Income Pool (AY1A) | 317,283 | 13,055 | (1,905) | 105,865 | (323,057) | (172,038) | (2,037) | 5,982 | 1,319 | 43,347 | 8,872 | 2,158 | (26) | 1,182 |
| Mondrian Inv. Partners Inc (AY63) | 114,337 | 10,444 | (382) | (711) | (92,186) | (51,420) | (610) | 1,960 | 440 | 14,122 | 2,915 | 708 | (3) | 386 |
| High Yield Pool (AYPK) | 172,628 | 15,486 | (592) | 840 | (140,376) | (78,155) | (927) | 2,968 | 667 | 21,394 | 4,416 | 1,072 | (6) | 585 |
| Lazard Emerging Income (AY5M) | 47,666 | 4,483 | (152) | (1,197) | (37,866) | (21,189) | (252) | 812 | 183 | 5,851 | 1,209 | 294 | (2) | 160 |
| | | | | | | | | | | | | | | |
| **Short-term Fixed Income** | | | | | | | | | | | | | | |
| State of AK Short Term Pool (AY70) | (5,908,347) | (393,360) | 27,494 | 21,933 | 4,666,894 | 2,693,350 | 31,987 | (109,013) | (24,769) | (782,831) | (162,470) | (39,423) | 10 | (21,455) |

2/28/2014

| | Pension | | | | Health Care | | | DC Medical | | DC Health Reimburesement | | DC OD&D | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PERS | TRS | JRS | Mil | PERS | TRS | JRS | PERS | TRS | PERS | TRS | PERS | TRS | P&F |
| | AY21 | AY22 | AY23 | AY24 | AYW2 | AYW3 | AYW4 | AYX2 | AYX3 | AYY2 | AYY3 | AY6G | AY6H | AY6I |
| **Broad Domestic Equity** | | | | | | | | | | | | | | |
| Large Cap Pool (AYQK) | (3,962,790) | (3,162,743) | (16,889) | (119,415) | 5,100,090 | 1,672,098 | 22,095 | 39,982 | 22,596 | 256,740 | 122,497 | 14,338 | 3,007 | 8,394 |
| Small Cap Pool (AYQC) | (987,720) | (788,307) | (4,210) | (29,764) | 1,271,190 | 416,768 | 5,507 | 9,965 | 5,632 | 63,992 | 30,532 | 3,574 | 749 | 2,092 |
| | | | | | | | | | | | | | | |
| **Alternative Equity Strategies** | | | | | | | | | | | | | | |
| Advent Capital Convertible Bond (AY52) | (117,052) | (93,031) | (516) | - | 147,860 | 48,477 | 642 | 1,164 | 659 | 7,477 | 3,571 | 417 | 87 | 245 |
| Alternative Equity Strategies Pool (AYYK) | (503,203) | (399,935) | (2,220) | - | 635,645 | 208,407 | 2,757 | 5,003 | 2,830 | 32,143 | 15,353 | 1,793 | 376 | 1,051 |
| | | | | | | | | | | | | | | |
| **Global Equity Ex-US** | | | | | | | | | | | | | | |
| International Equity Pool (AYRC) | (3,311,429) | (2,630,502) | (14,670) | 12,119 | 4,173,421 | 1,368,327 | 18,099 | 32,861 | 18,593 | 211,157 | 100,874 | 11,781 | 2,466 | 6,903 |
| International Equity - Small Cap Pool (AYRK) | (260,547) | (206,971) | (1,154) | 954 | 328,369 | 107,662 | 1,424 | 2,585 | 1,463 | 16,614 | 7,937 | 927 | 194 | 543 |
| Emerging Markets Pool (AYSC) | (450,893) | (358,178) | (1,998) | 1,651 | 568,264 | 186,315 | 2,465 | 4,475 | 2,532 | 28,752 | 13,735 | 1,604 | 336 | 940 |
| | | | | | | | | | | | | | | |
| **Private Equity** | | | | | | | | | | | | | | |
| Private Equity Pool (AYSK) | (1,326,132) | (1,053,979) | (5,851) | - | 1,675,168 | 549,231 | 7,265 | 13,184 | 7,458 | 84,709 | 40,462 | 4,726 | 989 | 2,770 |
| | | | | | | | | | | | | | | |
| **Real Assets** | | | | | | | | | | | | | | |
| Real Estate Pool (AYVK) | (1,282,311) | (876,527) | (12,076) | - | 1,529,401 | 501,282 | 6,561 | 11,527 | 6,444 | 73,564 | 34,699 | 4,146 | 884 | 2,406 |
| JP Morgan Real Estate (AY7A) | 57,434 | (62,557) | 5,123 | | | | | | | | | | | |
| REIT Holdings (AY9H) | (277,057) | (220,199) | (1,223) | - | 349,978 | 114,746 | 1,518 | 2,754 | 1,558 | 17,698 | 8,454 | 988 | 206 | 579 |
| Farmland Pool (AYTK) | (630,521) | (501,124) | (2,781) | - | 796,473 | 261,136 | 3,453 | 6,268 | 3,547 | 40,276 | 19,238 | 2,247 | 471 | 1,317 |
| Farmland Water Pool (AYUC) | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Timber Pool (AYUK) | (226,617) | (180,110) | (998) | - | 286,262 | 93,856 | 1,241 | 2,253 | 1,274 | 14,475 | 6,914 | 808 | 169 | 473 |
| Energy Pool (AYVC) | (83,937) | (66,714) | (369) | - | 106,029 | 34,764 | 460 | 835 | 472 | 5,361 | 2,561 | 300 | 62 | 176 |
| TIPS Internally Managed (AY6N) | (28,014) | (22,266) | (123) | - | 35,387 | 11,602 | 154 | 278 | 157 | 1,790 | 855 | 100 | 21 | 59 |
| MLP Pool (AYWK) | (336,128) | (267,145) | (1,483) | - | 424,596 | 139,210 | 1,841 | 3,342 | 1,891 | 21,471 | 10,255 | 1,198 | 251 | 701 |
| | | | | | | | | | | | | | | |
| **Absolute Return** | | | | | | | | | | | | | | |
| Absolute Return Pool (AYTC) | (687,258) | (546,215) | (3,033) | - | 868,142 | 284,635 | 3,765 | 6,832 | 3,865 | 43,900 | 20,969 | 2,450 | 513 | 1,435 |
| | | | | | | | | | | | | | | |
| **Fixed Income** | | | | | | | | | | | | | | |
| Taxable Municipal Bond Pool (AYZC) | (139,558) | (110,856) | (619) | 551 | 175,854 | 57,657 | 762 | 1,384 | 784 | 8,898 | 4,251 | 497 | 104 | 291 |
| US Treasury Fixed Income Pool (AY1A) | (969,453) | (764,758) | (4,536) | 51,842 | 1,183,671 | 388,106 | 5,142 | 9,383 | 5,319 | 60,358 | 28,889 | 3,362 | 702 | 1,973 |
| Mondrian Inv. Partners Inc (AY63) | (299,722) | (237,879) | (1,338) | 3,013 | 376,230 | 123,354 | 1,632 | 2,965 | 1,678 | 19,054 | 9,105 | 1,063 | 222 | 623 |
| High Yield Pool (AYPK) | (452,872) | (359,999) | (1,995) | (617) | 572,554 | 187,721 | 2,482 | 4,505 | 2,548 | 28,947 | 13,826 | 1,615 | 338 | 947 |
| Lazard Emerging Income (AY5M) | (123,943) | (98,453) | (549) | 490 | 156,177 | 51,205 | 678 | 1,230 | 695 | 7,903 | 3,775 | 440 | 93 | 259 |
| | | | | | | | | | | | | | | |
| **Short-term Fixed Income** | | | | | | | | | | | | | | |
| State of AK Short Term Pool (AY70) | 16,399,723 | 13,008,448 | 73,508 | 79,176 | (20,760,761) | (6,806,559) | (89,943) | (162,775) | (91,995) | (1,045,279) | (498,752) | (58,374) | (12,240) | (34,177) |

Rebalancing Trades (Final)

| 2/20/14 | AY21 | AY22 | AY23 | AY24 | AYW2 | AYW3 | AYW4 | AYX2 | AYX3 | AYY2 | AYY3 | AY6G | AY6H | AY6I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Broad Domestic Equity** | | | | | | | | | | | | | | |
| Large Cap Pool (AYQK) | 2,224,860 | 393,908 | 41,176 | (20,613) | (1,997,658) | (1,067,210) | (6,224) | 39,613 | 11,954 | 277,704 | 76,825 | 14,583 | (26) | 11,108 |
| Small Cap Pool (AYQC) | 545,285 | 96,542 | 10,089 | (5,052) | (489,600) | (261,559) | (1,525) | 9,709 | 2,930 | 68,062 | 18,829 | 3,574 | (6) | 2,722 |
| | | | | | | | | | | | | | | |
| **Alternative Equity Strategies** | | | | | | | | | | | | | | |
| Advent Capital Convertible Bond (AY52) | 65,196 | 11,477 | 1,204 | - | (58,936) | (31,444) | (184) | 1,164 | 351 | 8,161 | 2,258 | 428 | (1) | 326 |
| Alternative Equity Strategies Pool (AYYK) | 279,636 | 49,210 | 5,173 | - | (252,783) | (134,869) | (788) | 4,992 | 1,506 | 35,005 | 9,683 | 1,838 | (4) | 1,401 |
| | | | | | | | | | | | | | | |
| **Global Equity Ex-US** | | | | | | | | | | | | | | |
| International Equity Pool (AYRC) | 1,916,350 | 356,936 | 35,436 | (168,884) | (1,621,260) | (876,372) | (5,018) | 33,317 | 10,074 | 233,263 | 64,565 | 12,269 | 1 | 9,323 |
| International Equity - Small Cap Pool (AYRK) | 150,480 | 28,031 | 2,780 | (13,262) | (127,308) | (68,817) | (394) | 2,617 | 791 | 18,317 | 5,070 | 963 | - | 732 |
| Emerging Markets Pool (AYSC) | 259,641 | 48,361 | 4,800 | (22,882) | (219,660) | (118,737) | (680) | 4,514 | 1,365 | 31,604 | 8,748 | 1,663 | - | 1,263 |
| | | | | | | | | | | | | | | |
| **Private Equity** | | | | | | | | | | | | | | |
| Private Equity Pool (AYSK) | 747,858 | 131,596 | 13,844 | - | (676,045) | (360,694) | (2,108) | 13,352 | 4,029 | 93,619 | 25,897 | 4,916 | (9) | 3,745 |
| | | | | | | | | | | | | | | |
| **Real Assets** | | | | | | | | | | | | | | |
| Real Estate Pool (AYVK) | 1,863,396 | 775,502 | 33,719 | - | (1,975,495) | (762,689) | (7,082) | 5,799 | 1,180 | 49,399 | 12,680 | 2,041 | (626) | 2,176 |
| JP Morgan Real Estate (AY7A) | 35,592 | (36,324) | 732 | | | | | | | | | | | |
| REIT Holdings (AY9H) | 155,315 | 27,332 | 2,875 | - | (140,401) | (74,909) | (438) | 2,773 | 837 | 19,443 | 5,378 | 1,020 | (2) | 777 |
| Farmland Pool (AYTK) | 347,700 | 61,184 | 6,436 | - | (314,314) | (167,697) | (979) | 6,208 | 1,873 | 43,526 | 12,041 | 2,286 | (5) | 1,741 |
| Farmland Water Pool (AYUC) | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Timber Pool (AYUK) | 127,510 | 22,434 | 2,356 | - | (115,260) | (61,495) | (359) | 2,277 | 687 | 15,961 | 4,415 | 838 | (2) | 638 |
| Energy Pool (AYVC) | 46,734 | 8,223 | 868 | - | (42,248) | (22,541) | (132) | 834 | 252 | 5,851 | 1,618 | 307 | - | 234 |
| TIPS Internally Managed (AY6N) | 15,654 | 2,755 | 290 | - | (14,151) | (7,550) | (45) | 280 | 85 | 1,959 | 542 | 103 | - | 78 |
| MLP Pool (AYWK) | 187,951 | 33,072 | 3,479 | - | (169,903) | (90,649) | (529) | 3,355 | 1,012 | 23,528 | 6,509 | 1,235 | (2) | 942 |
| | | | | | | | | | | | | | | |
| **Absolute Return** | | | | | | | | | | | | | | |
| Absolute Return Pool (AYTC) | 386,888 | 68,078 | 7,162 | - | (349,736) | (186,597) | (1,091) | 6,908 | 2,084 | 48,432 | 13,397 | 2,543 | (6) | 1,938 |
| | | | | | | | | | | | | | | |
| **Fixed Income** | | | | | | | | | | | | | | |
| Taxable Municipal Bond Pool (AYZC) | 95,936 | 22,772 | 1,766 | (50,459) | (53,538) | (31,962) | (156) | 1,445 | 443 | 10,029 | 2,786 | 533 | 6 | 399 |
| US Treasury Fixed Income Pool (AY1A) | 380,608 | 18,313 | 7,130 | 416,683 | (618,103) | (301,722) | (2,016) | 9,009 | 2,663 | 64,004 | 17,610 | 3,308 | (66) | 2,579 |
| Mondrian Inv. Partners Inc (AY63) | 160,659 | 26,158 | 2,978 | 18,088 | (157,128) | (82,615) | (494) | 2,964 | 892 | 20,822 | 5,756 | 1,091 | (5) | 834 |
| High Yield Pool (AYPK) | 243,269 | 39,611 | 4,509 | 27,352 | (237,898) | (125,085) | (747) | 4,489 | 1,351 | 31,527 | 8,715 | 1,652 | (7) | 1,262 |
| Lazard Emerging Income (AYSM) | 70,621 | 12,675 | 1,306 | (2,110) | (62,452) | (33,462) | (194) | 1,249 | 378 | 8,757 | 2,423 | 460 | (1) | 350 |
| | | | | | | | | | | | | | | |
| **Short-term Fixed Income** | | | | | | | | | | | | | | |
| State of AK Short Term Pool (AY70) | (10,307,139) | (2,197,846) | (190,108) | (178,861) | 9,693,877 | 4,868,675 | 31,183 | (156,868) | (46,737) | ######### | (305,745) | (57,651) | 761 | (44,568) |

Rebalancing Trades (Final)

| 2/4/14 | AY21 | AY22 | AY23 | AY24 | AYW2 | AYW3 | AYW4 | AYX2 | AYX3 | AYY2 | AYY3 | AY6G | AY6H | AY6I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Broad Domestic Equity** | | | | | | | | | | | | | | |
| Large Cap Pool (AYQK) | 1,665,298 | (51,246) | 45,030 | 236,876 | (1,324,517) | (836,477) | 1,850 | 26,987 | 2,018 | 204,434 | 13,325 | 9,556 | (50) | 6,916 |
| Small Cap Pool (AYQC) | 462,184 | (14,223) | 12,500 | 65,742 | (367,605) | (232,155) | 513 | 7,490 | 560 | 56,738 | 3,698 | 2,652 | (14) | 1,920 |
| | | | | | | | | | | | | | | |
| **Alternative Equity Strategies** | | | | | | | | | | | | | | |
| Advent Capital Convertible Bond (AY52) | 52,839 | (250) | 1,407 | - | (37,613) | (24,463) | 64 | 822 | 64 | 6,212 | 416 | 292 | - | 210 |
| Alternative Equity Strategies Pool (AYYK) | 220,963 | (1,048) | 5,877 | - | (157,292) | (102,300) | 270 | 3,441 | 270 | 25,980 | 1,743 | 1,220 | (2) | 878 |
| | | | | | | | | | | | | | | |
| **Global Equity Ex-US** | | | | | | | | | | | | | | |
| International Equity Pool (AYRC) | 1,407,484 | (34,345) | 37,907 | 151,209 | (1,090,693) | (693,431) | 1,602 | 22,590 | 1,709 | 170,998 | 11,222 | 8,000 | (36) | 5,784 |
| International Equity - Small Cap Pool (AYRK) | 111,360 | (2,720) | 3,001 | 11,964 | (86,295) | (54,864) | 127 | 1,787 | 135 | 13,529 | 888 | 633 | (3) | 458 |
| Emerging Markets Pool (AYSC) | 193,710 | (4,727) | 5,218 | 20,811 | (150,110) | (95,436) | 220 | 3,109 | 235 | 23,534 | 1,544 | 1,101 | (5) | 796 |
| | | | | | | | | | | | | | | |
| **Private Equity** | | | | | | | | | | | | | | |
| Private Equity Pool (AYSK) | 625,582 | (2,956) | 16,634 | - | (445,317) | (289,628) | 764 | 9,740 | 763 | 73,552 | 4,933 | 3,452 | (6) | 2,487 |
| | | | | | | | | | | | | | | |
| **Real Assets** | | | | | | | | | | | | | | |
| Real Estate Pool (AYVK) | 145,955 | (113,904) | 5,840 | - | (8,991) | (121,356) | 1,975 | 9,368 | 1,183 | 67,794 | 6,333 | 3,363 | 152 | 2,288 |
| JP Morgan Real Estate (AY7A) | 46,064 | (48,118) | 2,054 | | | | | | | | | | | |
| REIT Holdings (AY9H) | 122,595 | (581) | 3,260 | - | (87,269) | (56,758) | 150 | 1,909 | 149 | 14,414 | 967 | 677 | (1) | 488 |
| Farmland Pool (AYTK) | 285,027 | (1,343) | 7,574 | - | (202,895) | (131,960) | 348 | 4,438 | 347 | 33,512 | 2,247 | 1,573 | (2) | 1,134 |
| Farmland Water Pool (AYUC) | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Timber Pool (AYUK) | 106,425 | (501) | 2,833 | - | (75,762) | (49,275) | 130 | 1,657 | 130 | 12,514 | 839 | 587 | (1) | 424 |
| Energy Pool (AYVC) | 39,175 | (183) | 1,037 | - | (27,885) | (18,136) | 48 | 610 | 48 | 4,606 | 309 | 216 | (1) | 156 |
| TIPS Internally Managed (AY6N) | 13,153 | (64) | 349 | - | (9,362) | (6,089) | 17 | 204 | 16 | 1,547 | 103 | 73 | - | 53 |
| MLP Pool (AYWK) | 151,911 | (719) | 4,040 | - | (108,137) | (70,331) | 185 | 2,365 | 186 | 17,861 | 1,198 | 839 | (2) | 604 |
| | | | | | | | | | | | | | | |
| **Absolute Return** | | | | | | | | | | | | | | |
| Absolute Return Pool (AYTC) | 322,621 | (1,525) | 8,579 | - | (229,656) | (149,365) | 394 | 5,023 | 394 | 37,931 | 2,544 | 1,780 | (3) | 1,283 |
| | | | | | | | | | | | | | | |
| **Fixed Income** | | | | | | | | | | | | | | |
| Taxable Municipal Bond Pool (AYZC) | 62,302 | (582) | 1,661 | 1,583 | (45,279) | (29,282) | 75 | 977 | 75 | 7,383 | 492 | 346 | (1) | 250 |
| US Treasury Fixed Income Pool (AY1A) | 597,591 | 72,295 | 14,590 | (410,247) | (184,514) | (163,251) | 1,050 | 7,469 | 753 | 55,301 | 4,377 | 2,663 | 54 | 1,869 |
| Mondrian Inv. Partners Inc (AY63) | 149,865 | 5,542 | 3,877 | (34,146) | (86,631) | (59,944) | 210 | 2,181 | 185 | 16,375 | 1,154 | 774 | 4 | 554 |
| High Yield Pool (AYPK) | 223,355 | 6,063 | 5,815 | (38,871) | (136,170) | (92,661) | 303 | 3,303 | 275 | 24,843 | 1,729 | 1,172 | 4 | 840 |
| Lazard Emerging Income (AY5M) | 57,778 | (544) | 1,542 | 1,469 | (41,991) | (27,156) | 69 | 907 | 70 | 6,847 | 457 | 322 | (1) | 231 |
| | | | | | | | | | | | | | | |
| **Short-term Fixed Income** | | | | | | | | | | | | | | |
| State of AK Short Term Pool (AY70) | (7,063,237) | 195,679 | (190,625) | (6,390) | 4,903,984 | 3,304,318 | (10,364) | (116,377) | (9,565) | (875,905) | (60,518) | (41,291) | (86) | (29,623) |

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD
333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

February 6, 2014

Ms. Mary Ellen MacDonald
State Street Corporation
IIS Public Funds
2 Avenue de Lafayette, 6th floor N
Boston, MA 02111-1724

Dear Ms. MacDonald:

The Alaska Retirement Management Board (ARMB) requests to have the following cash transfers made as soon as possible on Friday, February 7, 2014:

| | |
|---|---|
| US Treasury Fixed Income (AY1A) | <$5,000,000> |
| Guggenheim Partners (AYlE) | $5,000,000 |

This transaction applies to the ARMB Defined Benefit Pension Plans AY21-AY24; the ARMB Retirement Health Funds AYW2-AYW4; and the ARMB Defined Contribution Plans AY6G-AY6I, AYX2-AYX3, AYY2-AYY3. Please use a pro-rata split based on Taxable Municipal Bond Pool (AYZC) ownership in the referenced accounts.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, ARMB Chair
Angela Rodell, Commissioner
Pam Leary, Director, Treasury Division
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Kelly Barkov, Accounting Technician
Bob Mitchell, Manager of Fixed Income Investments
Casey Colton, State Investment Officer
Emily Howard, Assistant State Investment Officer

GMB/jnw

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD
333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

February 26, 2014

Ms. Mary Ellen MacDonald
State Street Corporation
IIS Public Funds
2 Avenue de Lafayette, 6th floor N
Boston, MA 02111-1724

Dear Ms. MacDonald:

The Alaska Retirement Management Board (ARMB) requests to have the following cash transfers made as soon as possible on Thursday, March 6, 2014:

| | |
|---|---|
| US Treasury Fixed Income (AY1A) | <$5,000,000> |
| Guggenheim Partners (AYlE) | $5,000,000 |

This transaction applies to the ARMB Defined Benefit Pension Plans AY21-AY24; the ARMB Retirement Health Funds AYW2-AYW4; and the ARMB Defined Contribution Plans AY6G-AY6I, AYX2-AYX3, AYY2-AYY3. Please use a pro-rata split based on Taxable Municipal Bond Pool (AYZC) ownership in the referenced accounts.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

Gary M. Bader

Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, ARMB Chair
Pam Leary, Director, Treasury Division
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Kelly Barkov, Accounting Technician
Bob Mitchell, Manager of Fixed Income Investments
Casey Colton, State Investment Officer
Emily Howard, Assistant State Investment Officer
Alyson Campbell, Assistant State Investment Officer
Joy Wilkinson, State Investment Officer

GMB/jnw

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD
333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

March 4, 2014

Ms. Mary Ellen MacDonald
State Street Corporation
IIS Public Funds
2 Avenue de Lafayette, 6th floor N
Boston, MA 02111-1724

Dear Ms. MacDonald:

The Alaska Retirement Management Board (ARMB) requests to have the following cash transfers made as soon as possible on Friday, March 7, 2014:

| | |
|---|---|
| US Treasury Fixed Income (AY1A) | <$10,000,000> |
| Guggenheim Partners (AYlE) | $10,000,000 |

This transaction applies to the ARMB Defined Benefit Pension Plans AY21-AY24; the ARMB Retirement Health Funds AYW2-AYW4; and the ARMB Defined Contribution Plans AY6G-AY6I, AYX2-AYX3, AYY2-AYY3. Please use a pro-rata split based on Taxable Municipal Bond Pool (AYZC) ownership in the referenced accounts.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

FOR Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, ARMB Chair
Pam Leary, Director, Treasury Division
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Kelly Barkov, Accounting Technician
Bob Mitchell, Manager of Fixed Income Investments
Casey Colton, State Investment Officer
Emily Howard, State Investment Officer
Alyson Campbell, State Investment Officer
Joy Wilkinson, State Investment Officer

GMB/jnw

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD
333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

March 20, 2014

Ms. Mary Ellen MacDonald
State Street Corporation
IIS Public Funds
2 Avenue de Lafayette, 6th floor N
Boston, MA 02111-1724

Dear Ms. MacDonald:

The Alaska Retirement Management Board (ARMB) requests to have the following cash transfers made as soon as possible on Monday, March 24, 2014:

| | |
|---|---|
| US Treasury Fixed Income (AY1A) | <$10,000,000> |
| Guggenheim Partners (AYlE) | $10,000,000 |

This transaction applies to the ARMB Defined Benefit Pension Plans AY21-AY24; the ARMB Retirement Health Funds AYW2-AYW4; and the ARMB Defined Contribution Plans AY6G-AY6I, AYX2-AYX3, AYY2-AYY3. Please use a pro-rata split based on Taxable Municipal Bond Pool (AYZC) ownership in the referenced accounts.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

Gary M. Bader

Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, ARMB Chair
Pam Leary, Director, Treasury Division
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Kelly Barkov, Accounting Technician
Bob Mitchell, Manager of Fixed Income Investments
Casey Colton, State Investment Officer
Emily Howard, State Investment Officer
Alyson Campbell, State Investment Officer
Joy Wilkinson, State Investment Officer

GMB/jnw

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD
333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

April 2, 2014

Ms. Mary Ellen MacDonald
State Street Corporation
IIS Public Funds
2 Avenue de Lafayette, 6th floor N
Boston, MA 02111-1724

Dear Ms. MacDonald:

The Alaska Retirement Management Board (ARMB) requests to have the following cash transfers made as soon as possible on April 4, 2014:

| | |
|---|---|
| US Treasury Fixed Income (AY1A) | <$5,000,000> |
| Guggenheim Partners (AYlE) | $5,000,000 |

This transaction applies to the ARMB Defined Benefit Pension Plans AY21-AY24; the ARMB Retirement Health Funds AYW2-AYW4; and the ARMB Defined Contribution Plans AY6G-AY6I, AYX2-AYX3, AYY2-AYY3. Please use a pro-rata split based on Taxable Municipal Bond Pool (AYZC) ownership in the referenced accounts.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

Gary M. Bader

Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, ARMB Chair
Pam Leary, Director, Treasury Division
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Kayla Wisner, Accounting Technician
Bob Mitchell, Manager of Fixed Income Investments
Casey Colton, State Investment Officer
Emily Howard, State Investment Officer
Alyson Campbell, State Investment Officer
Joy Wilkinson, State Investment Officer

GMB/jnw

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD
333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

April 10, 2014

Ms. Mary Ellen MacDonald
State Street Corporation
IIS Public Funds
2 Avenue de Lafayette, 6th floor N
Boston, MA 02111-1724

Dear Ms. MacDonald:

The Alaska Retirement Management Board (ARMB) requests to have the following cash transfers made as soon as possible on April 11, 2014:

| | |
|---|---|
| US Treasury Fixed Income (AY1A) | <$10,000,000> |
| Guggenheim Partners (AYlE) | $10,000,000 |

This transaction applies to the ARMB Defined Benefit Pension Plans AY21-AY24; the ARMB Retirement Health Funds AYW2-AYW4; and the ARMB Defined Contribution Plans AY6G-AY6I, AYX2-AYX3, AYY2-AYY3. Please use a pro-rata split based on Taxable Municipal Bond Pool (AYZC) ownership in the referenced accounts.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

Gary M. Bader

Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, ARMB Chair
Pam Leary, Director, Treasury Division
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Kayla Wisner, Accounting Technician
Bob Mitchell, Manager of Fixed Income Investments
Casey Colton, State Investment Officer
Emily Howard, State Investment Officer
Alyson Campbell, State Investment Officer
Joy Wilkinson, State Investment Officer

GMB/jnw

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

**Department of Revenue**
ALASKA RETIREMENT MANAGEMENT BOARD
333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

February 11, 2014

Mary Ellen MacDonald
State Street Corporation
2 Avenue de Lafayette
LCC 6N
Boston, MA 02111

Dear Ms. MacDonald:

The Alaska Retirement Management Board (ARMB) requests the following changes to be made on Wednesday, February 19, 2014. Please process the following cash transfer as early as possible on that day:

| | |
|---|---|
| Jennison Small Cap (AY4G) | < $55,000,000 > |
| Luther King Small Cap (AY4F) | < $45,000,000 > |
| Lord Abbett Small Cap (AY5F) | < $25,000,000 > |
| Lord Abbett Micro Cap (AY4Z) | < $25,000,000 > |
| State of Alaska Short Term Pool (AY70) | $150,000,000 |

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

Gary M. Bader

Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, ARMB Chair
Angela Rodell, Commissioner
Pam Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, State Investment Officer
Steve Sikes, State Investment Officer
Shane Carson, State Investment Officer

GMB/smh

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD
333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

March 5, 2014

Mary Ellen MacDonald
State Street Corporation
2 Avenue de Lafayette
LCC 6N
Boston, MA 02111

Dear Ms. MacDonald:

The Alaska Retirement Management Board (ARMB) requests to have the following cash transfers made as early as possible on Tuesday, March 11, 2014:

| | |
|---|---|
| State of Alaska Short Term Pool (AY70) | < $150,000,000 > |
| Brookfield Infrastructure (AYRE) | $75,000,000 |
| Lazard Infrastructure (AYRF) | $75,000,000 |

This transaction applies to the ARMB Defined Benefit Plans AY21-AY24; the ARMB Retirement Health Funds AYW2-AYW4; and the ARMB Defined Contribution Plans AY6G-AY6I, AYX2-AYX3, AYY2-AYY3. Please use a pro-rata split based on AY70 ownership in the referenced accounts.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

Gary M. Bader

Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, ARMB Chair
Angela Rodell, Commissioner
Pam Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, State Investment Officer
Steve Sikes, State Investment Officer

GMB/pjh

# LETTER OF DIRECTION

State Street Global Advisors
State Street Financial Center
One Lincoln Street
Boston, MA 02111

VIA FACSIMILE: 617-204-0088

Please accept this letter as authorization to execute the following instruction(s).

| | | | | |
|---|---|---|---|---|
| Letter of Direction Date | 03/07/2014 | | | |
| Client Account Name | State of Alaska Defined Benefit Plans | | | |
| Client Account Number | AY6A | | | |
| Fund Name and Code | Small Cap Overlay Separate Account | | | |
| Transaction Type | Change in Notional | | | |
| Transaction Amount(s) | Notional Value | $11,000,000 | In-Kind: | |
| Trade Date | 03/07/2014 | Settlement Date (if required) | | |
| Special Instructions | Please adjust notional value to $11 million | | | |

We understand that we will contact our custodian/trustee to ensure that funds are properly received by SSgA or the appropriate custodian on settlement and/or trade date. This letter should be faxed to the SSgA Boston office at 617-204-0088.

Sincerely yours,

Gary M. Bader
Authorized Signature

03/07/2014
Date

Gary M. Bader
Authorized Signator Name (Printed)

(907) 465-4399
Phone

cc: JP Morgan

# LETTER OF DIRECTION

State Street Global Advisors
State Street Financial Center
One Lincoln Street
Boston, MA 02111

VIA FACSIMILE: 617-204-0088

Please accept this letter as authorization to execute the following instruction(s).

| | | | | |
|---|---|---|---|---|
| Letter of Direction Date | 03/07/2014 | | | |
| Client Account Name | State of Alaska Defined Benefit Plans | | | |
| Client Account Number | AY6B | | | |
| Fund Name and Code | Large Cap Overlay Separate Account | | | |
| Transaction Type | Change in Notional | | | |
| Transaction Amount(s) | Notional Value | $11,000,000 | In-Kind: | |
| Trade Date | 03/07/2014 | Settlement Date (if required) | | |
| Special Instructions | Please adjust notional value to $11 million | | | |

We understand that we will contact our custodian/trustee to ensure that funds are properly received by SSgA or the appropriate custodian on settlement and/or trade date. This letter should be faxed to the SSgA Boston office at 617-204-0088.

Sincerely yours,

Gary M. Bader
Authorized Signature

03/07/2014
Date

Gary M. Bader
Authorized Signator Name (Printed)

(907) 465-4399
Phone

cc: JP Morgan

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD
333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

March 13, 2014

Melody L. McDonald, CIMA
Managing Director
Allianz Global Investors
555 Mission Street
San Francisco, CA 94105

RE: Notice of Liquidation – Buy Write Mandate

Dear Ms. McDonald:

The Alaska Retirement Management Board, through Resolution 2012-18 has delegated authority to the Chief Investment Officer to adjust asset allocation within Board approved parameters. Through that authority the Chief Investment Officer is requesting the liquidation of all ARMB assets invested in the Buy Write mandate managed by Allianz Global Investors U.S. LLC.

I direct that the portfolio in its entirety be liquidated in a manner consistent with best practices as such to minimize any negative impact to the portfolio by close of business Friday, March 21, 2014. Please work with ARMB staff, Shane Carson as necessary during the liquidation process.

The Alaska Retirement Management Board and staff appreciate the relationship with Allianz Global Investors and wish to thank you for your attention.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

Gary M. Bader

Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, ARMB Chair
Angela Rodell, Commissioner
Pam Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, State Investment Officer
Shane Carson, State Investment Officer

GMB/sjc

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD
333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

March 19, 2014

Mary Ellen MacDonald
State Street Corporation
Lafayette Corporate Center
2 Avenue de Lafayette
LCC 6N
Boston, MA 02111-2900

Dear Ms. MacDonald,

On March 24, 2014, Morgan Stanley will be wiring $84,728,046.71 into AY1A for the liquidation of the Allianz (RCM) Buy Write fund. Please take this letter as instructions to process an accounting only transfer from Allianz (RCM) Buy Write (AY4Y) to AY1A on March 24, 2014.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

Gary M. Bader

Gary M. Bader
Chief Investment Officer

Cc: Gail Schubert, ARMB Chair
Angela Rodell, Commissioner
Pam Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, State Investment Officer
Shane Carson, State Investment Officer

GMB/smh

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD
333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

READER'S FILE

February 20, 2014

Mary Ellen MacDonald
Client Service Officer
Lafayette Corporate Center
2 Avenue de Lafayette
Boston, MA 02111

Dear Mary Ellen:

RE: Capital Contribution Blue Glacier Fund, L.P.

This letter is your authorization to transfer **$2,996,734.00** on **Wednesday February 26, 2014** from account AY70 to account AY9F using the currently applicable absolute return ratios and then wire transfer the full amount as soon as possible using the following instructions:

Bank Name: The Bank of New York Mellon
ABA Number: 021-000-018
Account Name: Blue Glacier Fund, L.P. (Class B)
Account Number: 890-1180-254
Reference: Investor – Capital Contribution – February 26, 2014
Reference Details: Alaska Retirement Management Board on behalf of the State of Alaska Retirement and Benefits Plans Trust

This transfer is a new capital contribution under the subscription agreement dated October 22, 2004. Please provide the Fed Confirmation number for this transaction to Scott Markowitz of Bank of New York Mellon via e-mail at Scott.Markowitz@bnymellon.com.

Sincerely,

Gary M. Bader

Gary M. Bader
Chief Investment Officer

GMB/scv

cc: Scott Jones, Comptroller
Bob Mitchell, Investment Officer
Zachary Hanna, Investment Officer
Scott Markowitz, Bank of New York Mellon
Travis Keith, Crestline Investors, Inc.

# Alaska Retirement Management Board

P.O. Box 110405
Juneau, Alaska 99811-0405
(907) 465-3749


March 28, 2014

MacKay Shields LLC
1345 Avenue of the Americas
43rd Floor
New York, NY 10105
Attn: Lucille Protas, President

Re: ION Media Common Stock

Dear Mrs. Protas,

It is our understanding that our investment account held warrants in ION Media and these warrants were subsequently converted to ION Media common stock. Our investment guidelines state that common stock received from the exercise of a warrant or the restructuring of an issuer's debt should be sold within 90 days of receipt or within 90 days of the expiration of a restriction period (the "90 day restriction"). Due to the illiquid nature of ION Media common stock, MacKay Shields has requested that we waive this restriction with respect to the ION Media common stock shares.

Notwithstanding the restrictions in the current investment guidelines, the Alaska Retirement Management Board will waive the 90 day restriction only with respect to common stock shares of ION Media and MacKay Shields is authorized to opportunistically sell such shares when appropriate.

Respectfully yours,

Gary M. Bader

Gary M. Bader
Chief Investment Officer of the
State of Alaska

1700 Pennsylvania Ave NW
Suite 800
Washington, DC 20006
202.600.3300

EIG
GLOBAL ENERGY PARTNERS

**R. Blair Thomas**
CHIEF EXECUTIVE OFFICER

March 28, 2014

To Our Clients:

We are pleased to inform you that we've accepted a minority investment in EIG's management company from Affiliated Managers Group ("AMG") a NYSE-listed global asset management firm with equity investments in a diverse group of 29 leading boutique investment management firms which collectively manage over $560 billion of aggregate assets. Each of these firms operates autonomously and their respective management teams retain substantial ownership in their firms. Among AMG's affiliates are highly regarded firms such as AQR, BlueMountain, Pantheon and ValueAct Capital. We are also pleased to inform you that William C. Sonneborn has been appointed President of EIG effective May 5, 2014.

As you'll recall, just over a year ago we announced that we had completed our separation from Trust Company of the West ("TCW") by purchasing their remaining interest in the future economics of our business. In doing so, we used balance sheet capital and proceeds from a long-term institutional financing. You will also recall that our initial spin-out from TCW was financed entirely with internal resources. While our transaction with AMG is structured somewhat differently from the most recent TCW transaction, we have accomplished a number of significant objectives in replacing TCW with AMG.

First, and most importantly, we've attracted a partner with a sterling reputation in the marketplace whose senior team has a long track record of respecting the autonomy of the investment process and management of their affiliates. Our discussions with many of their existing affiliates only served to reinforce our conclusion that AMG's culture and approach was a great fit for EIG. AMG takes a revenue share approach that greatly simplifies governance issues and offers on an "as desired basis" a range of support in areas of legal, compliance, operations and marketing. Our agreement with them carries with it no expectation of an "exit event" and indeed our expectation is that, over time, AMG will facilitate the gradual transition of equity ownership in EIG from its current principals to our next generation of leaders.

Second, this transaction gives us the opportunity to provide EIG with a base of permanent capital that we've lacked since our spin-out in 2010. We've significantly enhanced our balance sheet, putting us in a

better position to invest in our own funds and to evaluate opportunities to grow our business. The transaction encompassed by the TCW buy out and AMG's investment was also a very good one and permits our three principals to diversify financially while retaining a significant majority of the ownership of our business. We are also sharing a meaningful portion of the proceeds with other senior members of the team through an equity plan that we put in place in 2012. In addition, all of us have signed long term employment contracts further evidencing our alignment with our investors and our long term commitment to EIG.

Finally, as managers of capital committed to us for long periods, we're cognizant of the need to think about the long term stability of EIG and its continued attractiveness as a source of professional opportunity and reward for our younger generation. Our view is that a critical piece to the puzzle is having the ability to transition equity ownership to our key investment professionals and other leaders. AMG has an extensive track record of helping firms address generational transition through programs established to recycle equity to the next generation and has committed to work with us in the years ahead as we start to address this issue. While this is not presently a front-burner issue for EIG, we recognize that succession plans are more likely to be successful if they are established years before they become necessary and with a high level of transparency.

In our continuing effort to attract the best and brightest to EIG, we couldn't be more pleased that Bill Sonneborn has agreed to join our firm as President. Many of you know Bill from his previous position as a member of KKR and CEO of KKR Asset Management where he served on the Mezzanine, Credit and Special Situations Investment Committees, among others. For those of us at EIG, however, the relationship goes back much further. Bill worked with many of us for over a decade at TCW where he served as President and COO. As such, we believe Bill is uniquely positioned to help supplement EIG's management team and bring relevant experience in industry best practices as we further develop our platform. We also know that he is a perfect fit with EIG's culture. Importantly, Randy Wade and Kurt Talbot who have previously served as Co-Presidents will continue in their respective roles as COO and CIO of the firm.

We greatly appreciate your ongoing support.

Sincerely,

R. Blair Thomas
Chief Executive Officer

# ALASKA RETIREMENT MANAGEMENT BOARD

# FINANCIAL REPORT

As of February 28, 2014

**ALASKA RETIREMENT MANAGEMENT BOARD**
**Schedule of Investment Income and Changes in Invested Assets by Fund**
**For the Eight Months Ending February 28, 2014**

| | Beginning Invested Assets | Investment Income[1] | Net Contributions (Withdrawals) | Ending Invested Assets | % Change in Invested Assets | % Change due to Investment Income[2] |
|---|---|---|---|---|---|---|
| **Public Employees' Retirement System (PERS)** | | | | | | |
| Defined Benefit Plans: | | | | | | |
| Retirement Trust | $ 6,682,601,125 | $ 877,520,049 | $ (68,592,851) | $ 7,491,528,323 | 12.10% | 13.20% |
| Retirement Health Care Trust | 5,869,023,791 | 766,370,938 | 34,496,124 | 6,669,890,853 | 13.65% | 13.02% |
| Total Defined Benefit Plans | 12,551,624,916 | 1,643,890,987 | (34,096,727) | 14,161,419,176 | 12.83% | 13.11% |
| Defined Contribution Plans: | | | | | | |
| Participant Directed Retirement | 344,683,147 | 56,508,929 | 46,036,222 | 447,228,298 | 29.75% | 15.37% |
| Health Reimbursement Arrangement | 107,570,946 | 14,794,528 | 16,605,488 | 138,970,962 | 29.19% | 12.77% |
| Retiree Medical Plan | 20,530,927 | 2,789,165 | 2,395,670 | 25,715,762 | 25.25% | 12.84% |
| Defined Benefit Occupational Death and Disability: | | | | | | |
| Public Employees | 8,033,120 | 1,081,087 | 796,037 | 9,910,244 | 23.37% | 12.82% |
| Police and Firefighters | 3,497,071 | 486,504 | 624,722 | 4,608,297 | 31.78% | 12.77% |
| Total Defined Contribution Plans | 484,315,211 | 75,660,213 | 66,458,139 | 626,433,563 | 29.34% | 14.62% |
| **Total PERS** | **13,035,940,127** | **1,719,551,200** | **32,361,412** | **14,787,852,739** | 13.44% | 13.17% |
| **Teachers' Retirement System (TRS)** | | | | | | |
| Defined Benefit Plans: | | | | | | |
| Retirement Trust | 3,279,505,294 | 436,033,711 | (22,061,358) | 3,693,477,647 | 12.62% | 13.34% |
| Retirement Health Care Trust | 1,883,677,379 | 250,262,440 | 44,651,642 | 2,178,591,461 | 15.66% | 13.13% |
| Total Defined Benefit Plans | 5,163,182,673 | 686,296,151 | 22,590,284 | 5,872,069,108 | 13.73% | 13.26% |
| Defined Contribution Plans: | | | | | | |
| Participant Directed Retirement | 153,359,455 | 24,199,956 | 13,387,307 | 190,946,718 | 24.51% | 15.12% |
| Health Reimbursement Arrangement | 34,477,528 | 4,631,658 | 4,204,517 | 43,313,703 | 25.63% | 12.66% |
| Retiree Medical Plan | 8,710,401 | 1,151,218 | 630,901 | 10,492,520 | 20.46% | 12.75% |
| Defined Benefit Occupational Death and Disability | 2,595,310 | 335,475 | 33 | 2,930,818 | 12.93% | 12.93% |
| Total Defined Contribution Plans | 199,142,694 | 30,318,307 | 18,222,758 | 247,683,759 | 24.38% | 14.56% |
| **Total TRS** | **5,362,325,367** | **716,614,458** | **40,813,042** | **6,119,752,867** | 14.12% | 13.31% |
| **Judicial Retirement System (JRS)** | | | | | | |
| Defined Benefit Plan Retirement Trust | 118,593,014 | 15,688,315 | 504,784 | 134,786,113 | 13.65% | 13.20% |
| Defined Benefit Retirement Health Care Trust | 22,670,718 | 2,905,839 | (399,755) | 25,176,802 | 11.05% | 12.93% |
| **Total JRS** | **141,263,732** | **18,594,154** | **105,029** | **159,962,915** | 13.24% | 13.16% |
| **National Guard/Naval Militia Retirement System (MRS)** | | | | | | |
| Defined Benefit Plan Retirement Trust | 34,141,087 | 3,535,250 | (633,367) | 37,042,970 | 8.50% | 10.45% |
| **Other Participant Directed Plans** | | | | | | |
| Supplemental Annuity Plan | 2,916,434,215 | 296,234,518 | (5,889,002) | 3,206,779,731 | 9.96% | 10.17% |
| Deferred Compensation Plan | 685,406,547 | 77,027,316 | (4,901,928) | 757,531,935 | 10.52% | 11.28% |
| **Total All Funds** | **22,175,511,075** | **2,831,556,896** | **61,855,186** | **25,068,923,157** | | |
| Total Non-Participant Directed | 18,075,627,711 | 2,377,586,177 | 13,222,587 | 20,466,436,475 | 13.23% | 13.15% |
| Total Participant Directed | 4,099,883,364 | 453,970,719 | 48,632,599 | 4,602,486,682 | 12.26% | 11.01% |
| **Total All Funds** | **$ 22,175,511,075** | **$ 2,831,556,896** | **$ 61,855,186** | **$ 25,068,923,157** | **13.05%** | **12.75%** |

Notes:

(1) Includes interest, dividends, securities lending, expenses, realized and unrealized gains/losses

(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates and can be found at: http://www.revenue.state.ak.us/treasury/programs/programs/other/armb/investmentresults.aspx

**ALASKA RETIREMENT MANAGEMENT BOARD**
**Schedule of Investment Income and Changes in Invested Assets by Fund**
**For the Month Ended February 28, 2014**

| | Beginning Invested Assets | Investment Income[1] | Net Contributions (Withdrawals) | Ending Invested Assets | % Change in Invested Assets | % Change due to Investment Income[2] |
|---|---|---|---|---|---|---|
| **Public Employees' Retirement System (PERS)** | | | | | | |
| Defined Benefit Plans: | | | | | | |
| Retirement Trust | $ 7,280,953,658 | $ 242,431,082 | $ (31,856,417) | $ 7,491,528,323 | 2.89% | 3.34% |
| Retirement Health Care Trust | 6,469,629,009 | 215,673,317 | (15,411,473) | 6,669,890,853 | 3.10% | 3.34% |
| Total Defined Benefit Plans | 13,750,582,667 | 458,104,399 | (47,267,890) | 14,161,419,176 | 2.99% | 3.34% |
| Defined Contribution Plans: | | | | | | |
| Participant Directed Retirement | 423,516,974 | 17,023,819 | 6,687,505 | 447,228,298 | 5.60% | 3.99% |
| Health Reimbursement Arrangement | 132,156,497 | 4,460,417 | 2,354,048 | 138,970,962 | 5.16% | 3.35% |
| Retiree Medical Plan | 24,569,600 | 826,721 | 319,441 | 25,715,762 | 4.66% | 3.34% |
| Defined Benefit Occupational Death and Disability: | | | | | | |
| Public Employees | 9,477,000 | 318,741 | 114,503 | 9,910,244 | 4.57% | 3.34% |
| Police and Firefighters | 4,373,196 | 147,769 | 87,332 | 4,608,297 | 5.38% | 3.35% |
| Total Defined Contribution Plans | 594,093,267 | 22,777,467 | 9,562,829 | 626,433,563 | 5.44% | 3.80% |
| **Total PERS** | **14,344,675,934** | **480,881,866** | **(37,705,061)** | **14,787,852,739** | 3.09% | 3.36% |
| **Teachers' Retirement System (TRS)** | | | | | | |
| Defined Benefit Plans: | | | | | | |
| Retirement Trust | 3,600,868,156 | 119,682,576 | (27,073,085) | 3,693,477,647 | 2.57% | 3.34% |
| Retirement Health Care Trust | 2,116,231,548 | 70,459,561 | (8,099,648) | 2,178,591,461 | 2.95% | 3.34% |
| Total Defined Benefit Plans | 5,717,099,704 | 190,142,137 | (35,172,733) | 5,872,069,108 | 2.71% | 3.34% |
| Defined Contribution Plans: | | | | | | |
| Participant Directed Retirement | 180,959,141 | 7,211,654 | 2,775,923 | 190,946,718 | 5.52% | 3.95% |
| Health Reimbursement Arrangement | 41,238,215 | 1,383,426 | 692,062 | 43,313,703 | 5.03% | 3.33% |
| Retiree Medical Plan | 10,049,394 | 336,474 | 106,652 | 10,492,520 | 4.41% | 3.33% |
| Defined Benefit Occupational Death and Disability | 2,836,185 | 94,633 | | 2,930,818 | 3.34% | 3.34% |
| Total Defined Contribution Plans | 235,082,932 | 9,026,187 | 3,574,637 | 247,683,759 | 5.36% | 3.81% |
| **Total TRS** | **5,952,182,636** | **199,168,324** | **(31,598,096)** | **6,119,752,867** | 2.82% | 3.36% |
| **Judicial Retirement System (JRS)** | | | | | | |
| Defined Benefit Plan Retirement Trust | 130,897,989 | 4,355,977 | (467,853) | 134,786,113 | 2.97% | 3.33% |
| Defined Benefit Retirement Health Care Trust | 24,409,220 | 813,997 | (46,415) | 25,176,802 | 3.14% | 3.34% |
| **Total JRS** | **155,307,209** | **5,169,974** | **(514,268)** | **159,962,915** | 3.00% | 3.33% |
| **National Guard/Naval Militia Retirement System (MRS)** | | | | | | |
| Defined Benefit Plan Retirement Trust | 36,203,184 | 979,050 | (139,264) | 37,042,970 | 2.32% | 2.71% |
| **Other Participant Directed Plans** | | | | | | |
| Supplemental Annuity Plan | 3,122,736,407 | 82,509,994 | 1,533,330 | 3,206,779,731 | 2.69% | 2.64% |
| Deferred Compensation Plan | 735,544,202 | 21,689,729 | 298,004 | 757,531,935 | 2.99% | 2.95% |
| **Total All Funds** | **24,346,649,572** | **790,398,937** | **(68,125,355)** | **25,068,923,157** | | |
| Total Non-Participant Directed | 19,883,892,851 | 661,963,741 | (79,420,117) | 20,466,436,475 | 2.93% | 3.34% |
| Total Participant Directed | 4,462,756,721 | 128,435,196 | 11,294,762 | 4,602,486,682 | 3.13% | 2.87% |
| **Total All Funds** | **$ 24,346,649,572** | **$ 790,398,937** | **$ (68,125,355)** | **$ 25,068,923,157** | **2.97%** | **3.25%** |

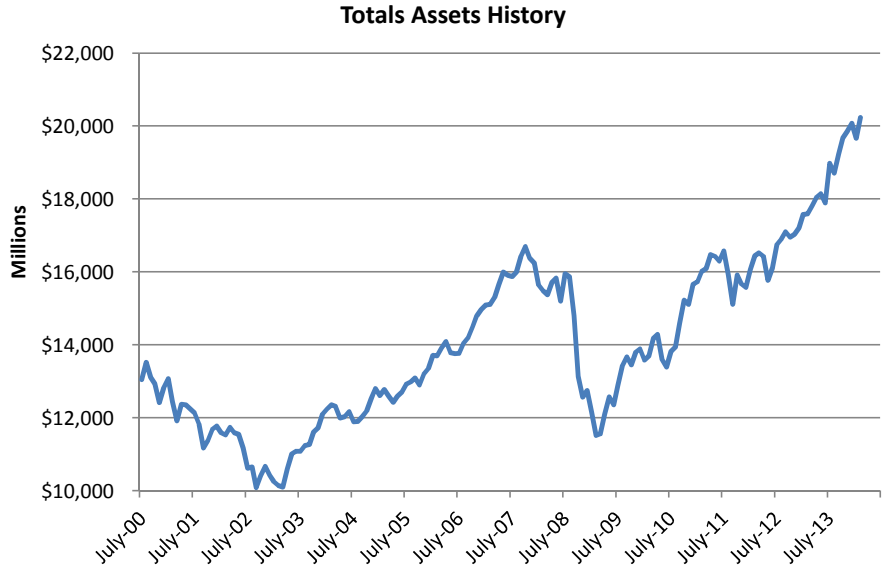
Notes:

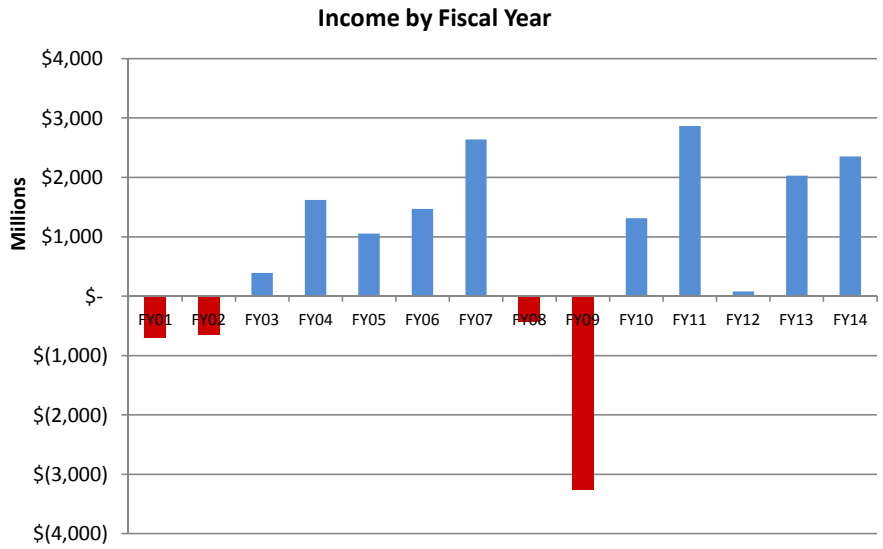
(1) Includes interest, dividends, securities lending, expenses, realized and unrealized gains/losses

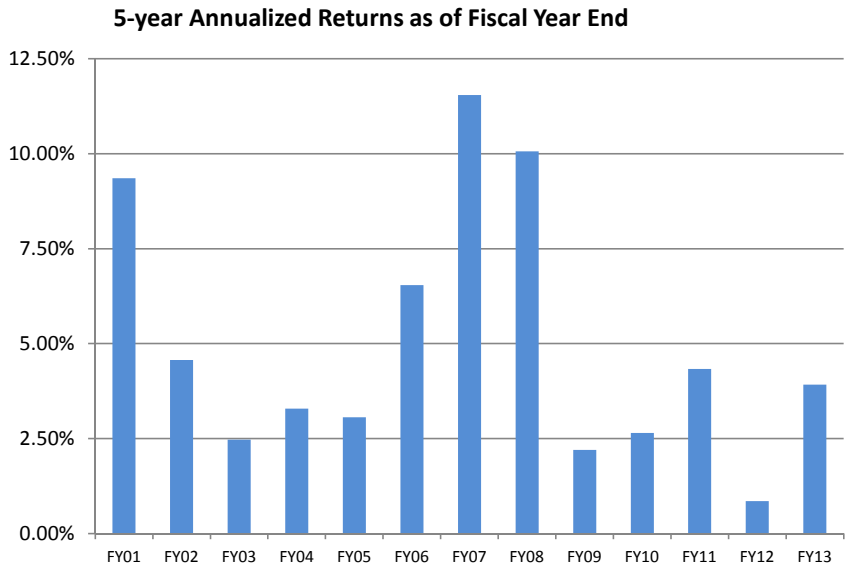
(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates and can be found at: http://www.revenue.state.ak.us/treasury/programs/programs/other/armb/investmentresults.aspx

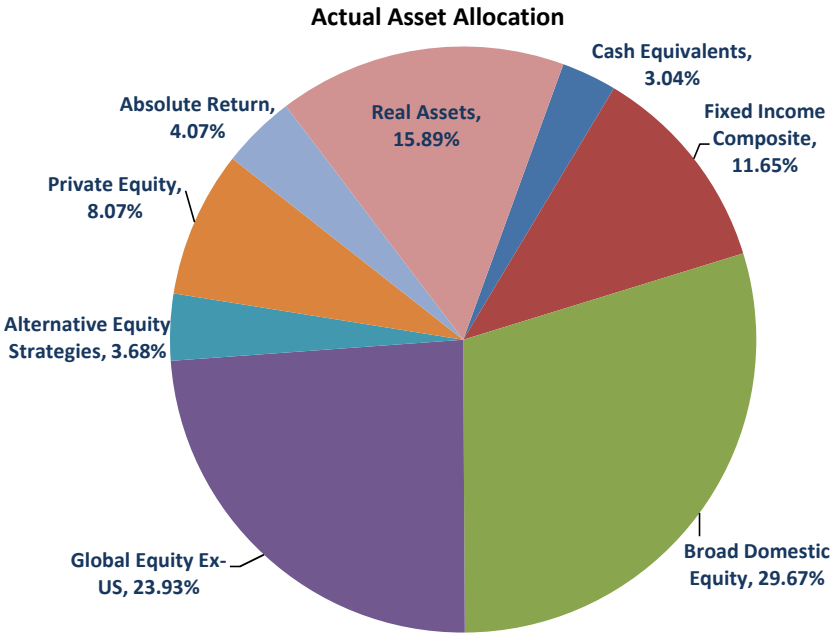
# Total Defined Benefit Assets

**As of February 28, 2014**



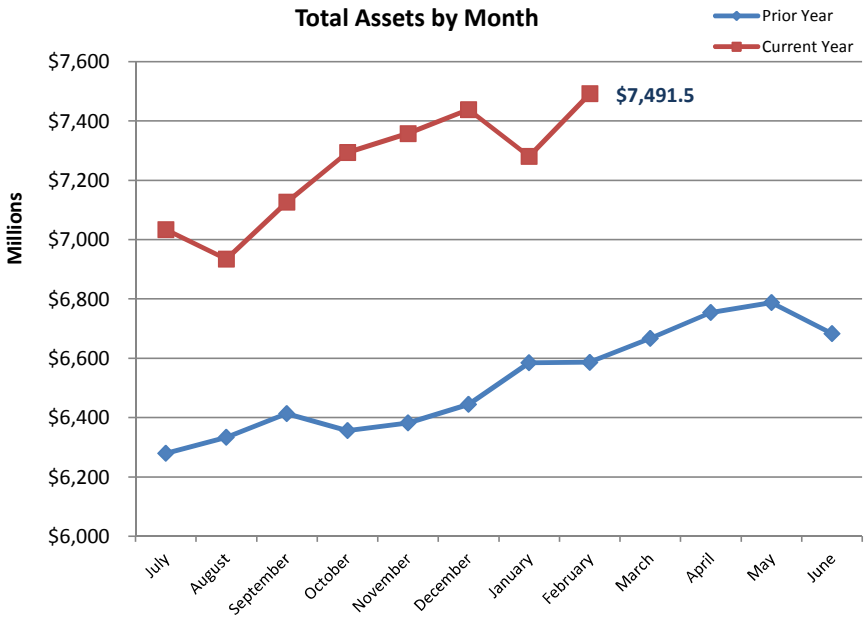



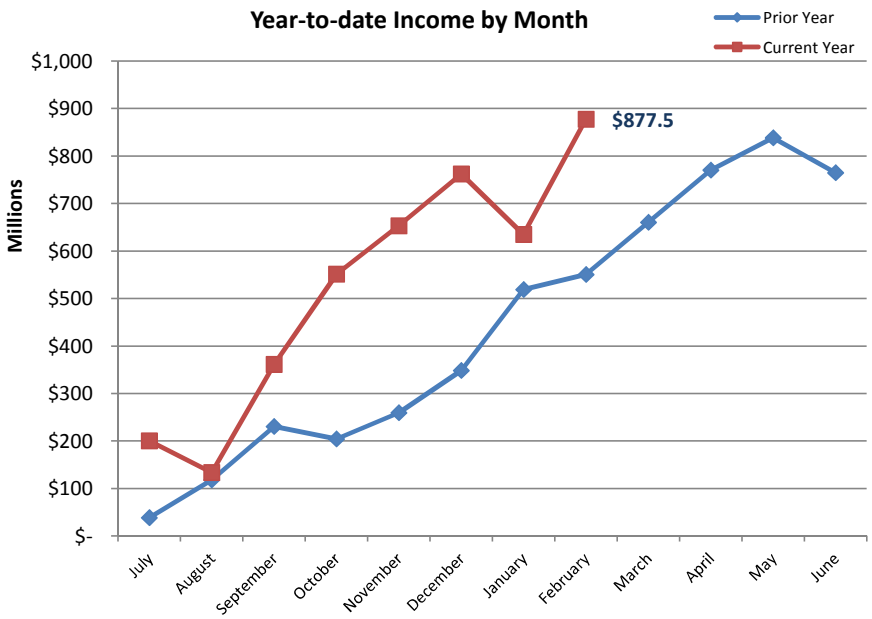



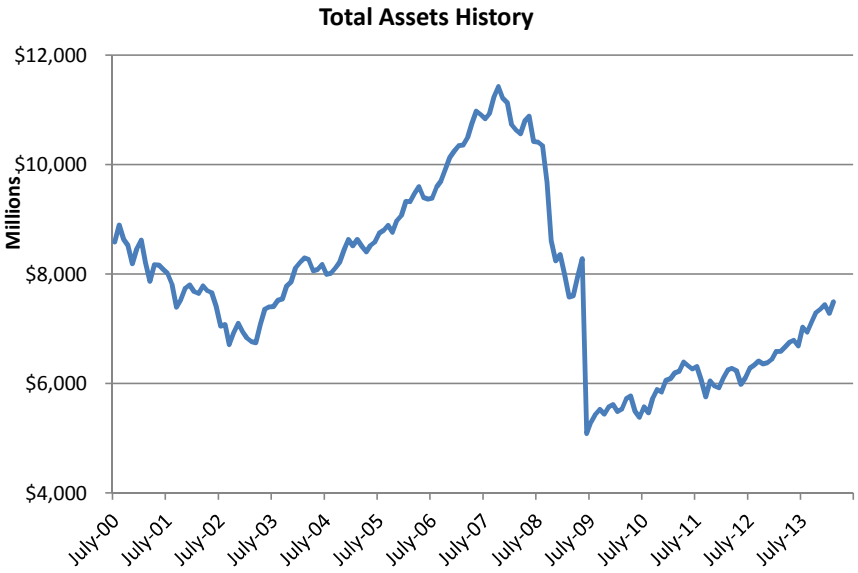



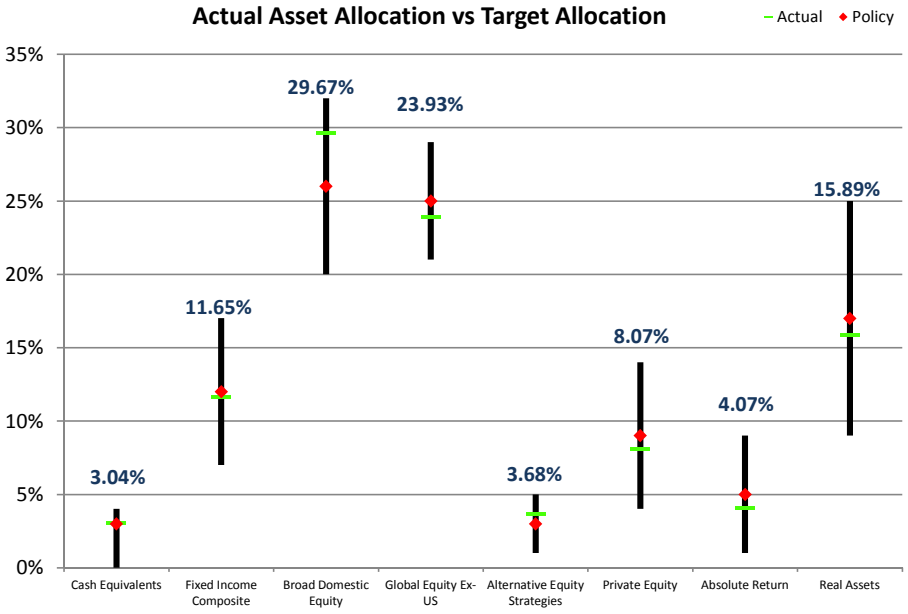
# Public Employees' Retirement Pension Trust Fund

**For the Eight Months Ending February 28, 2014**



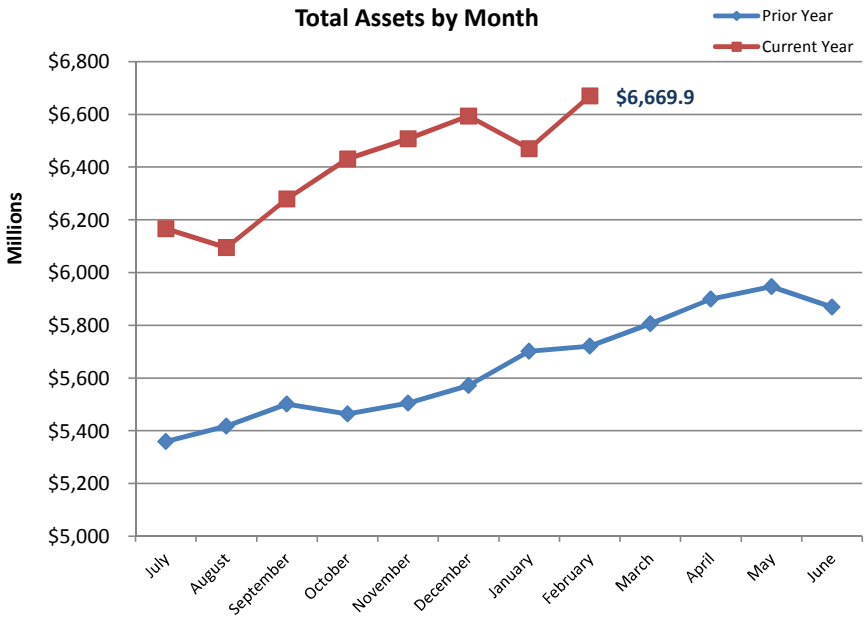



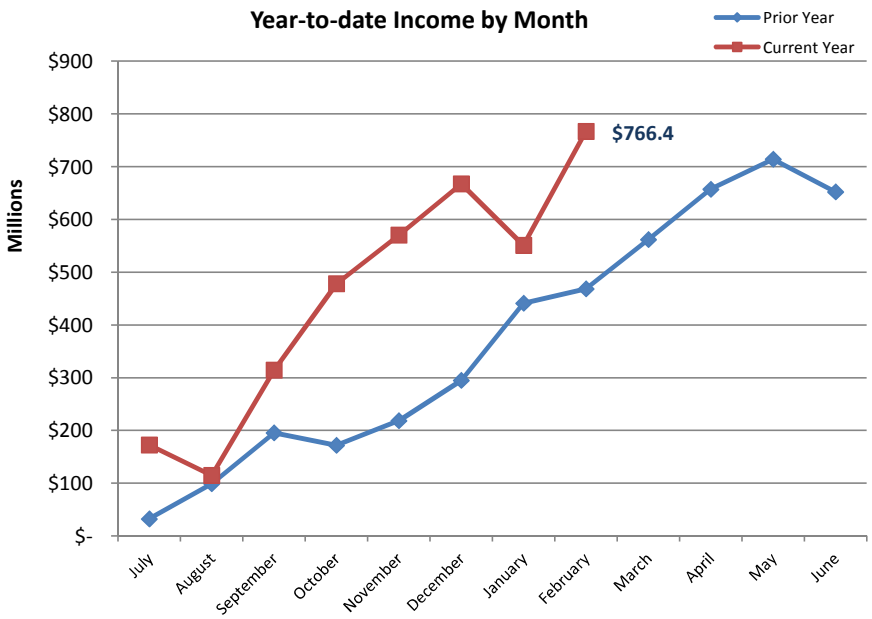



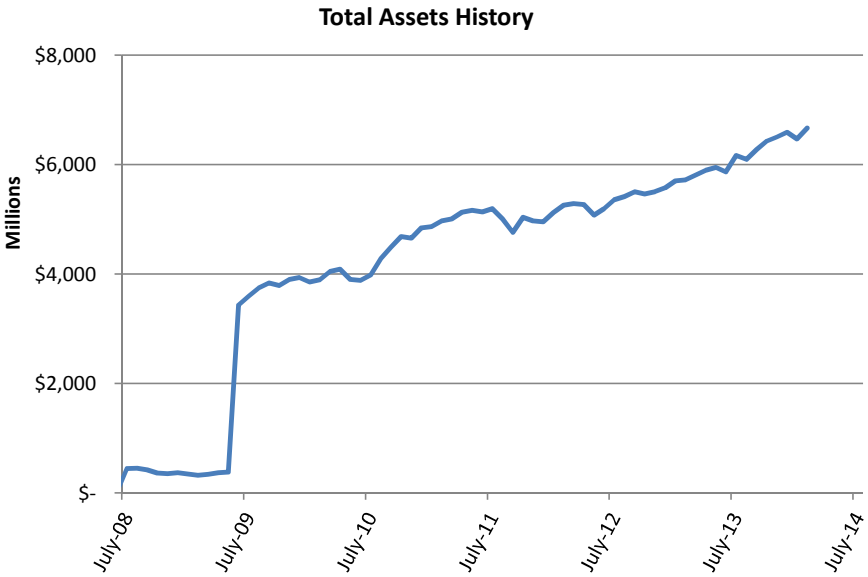



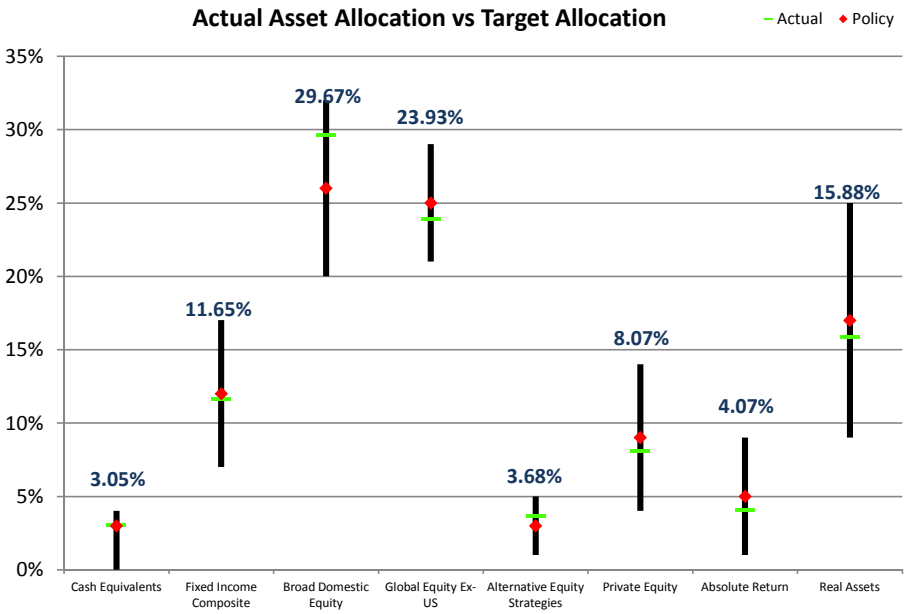
# Public Employees' Retirement Health Care Trust Fund

**For the Eight Months Ending February 28, 2014**



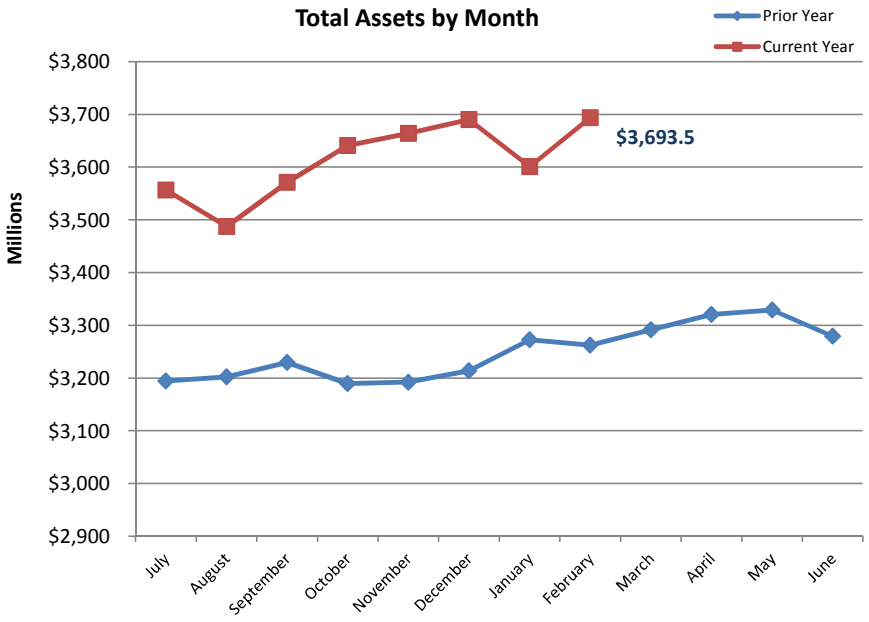



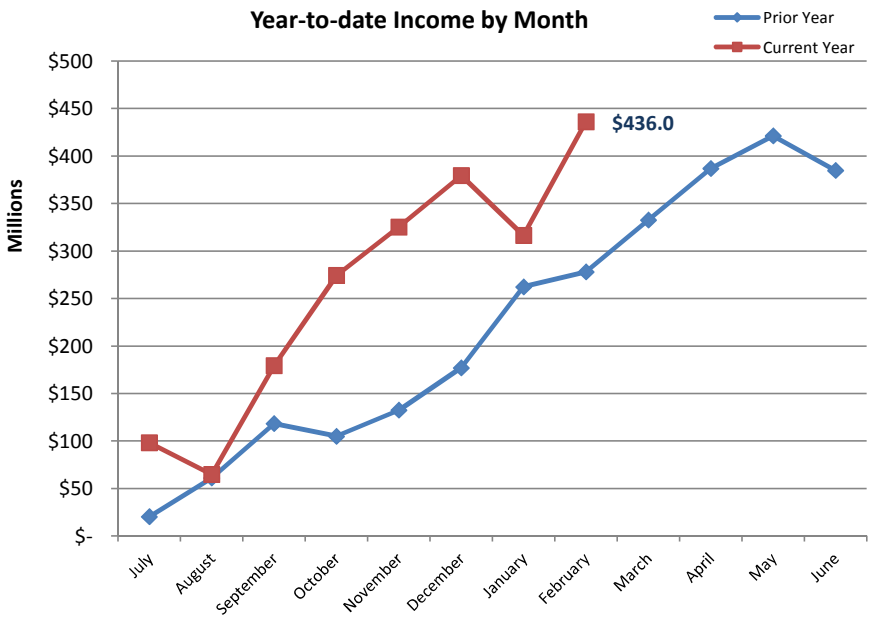



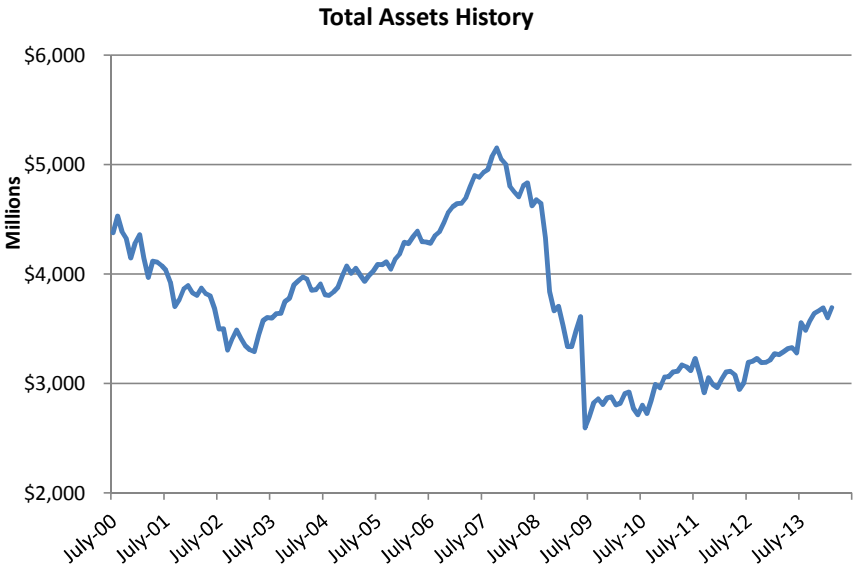



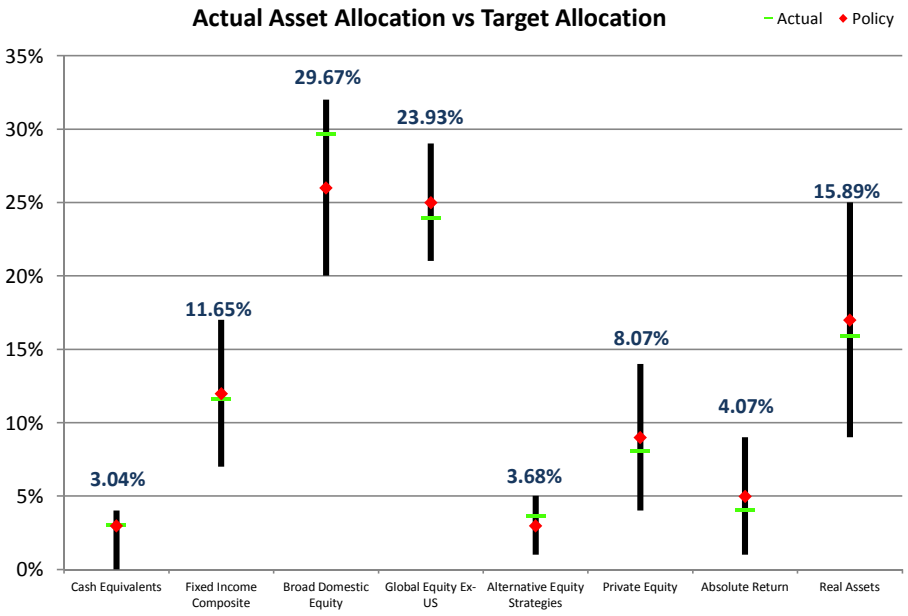
# Teachers' Retirement Pension Trust Fund

**For the Eight Months Ending February 28, 2014**



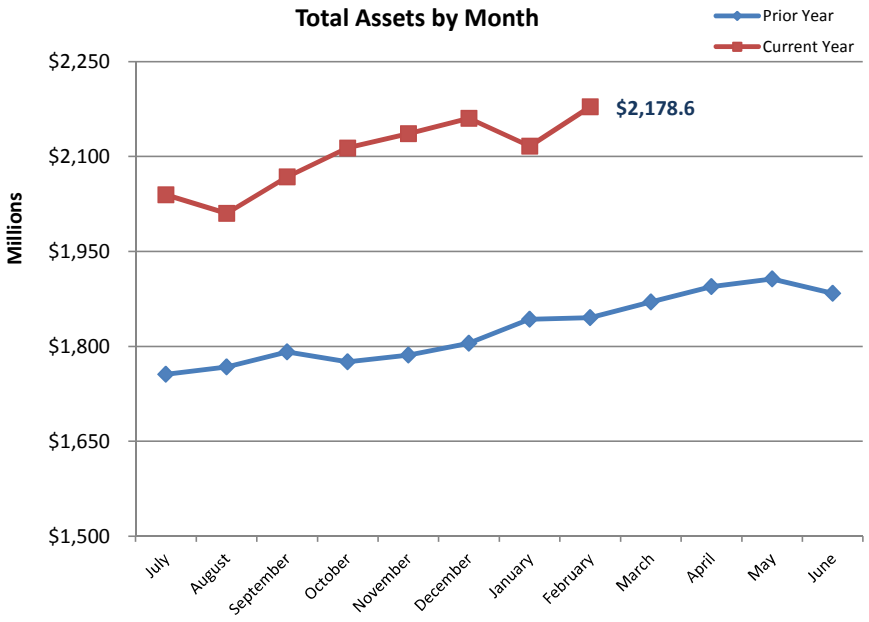



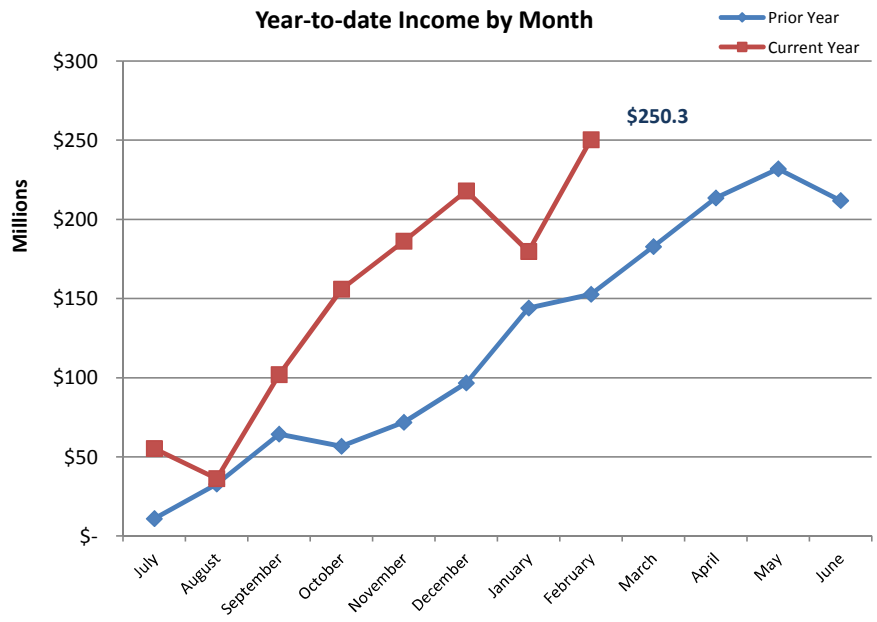



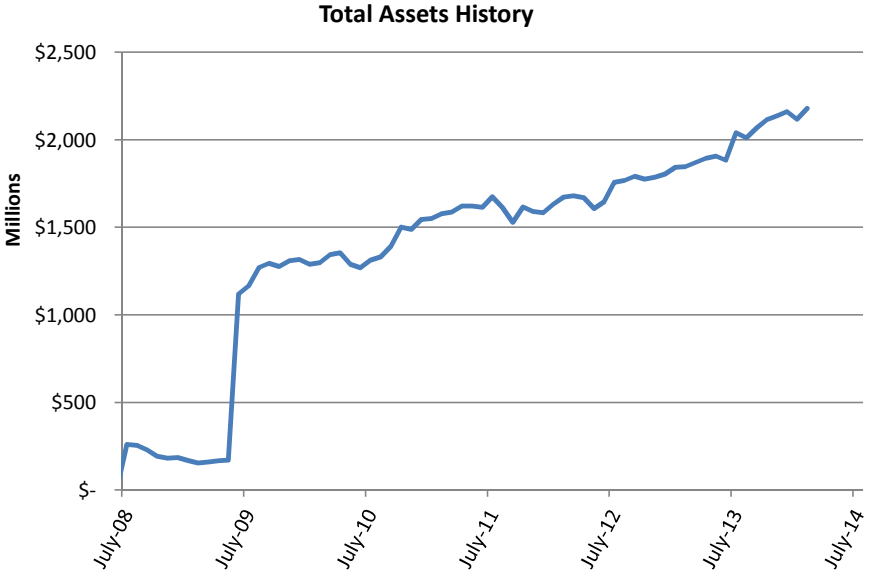



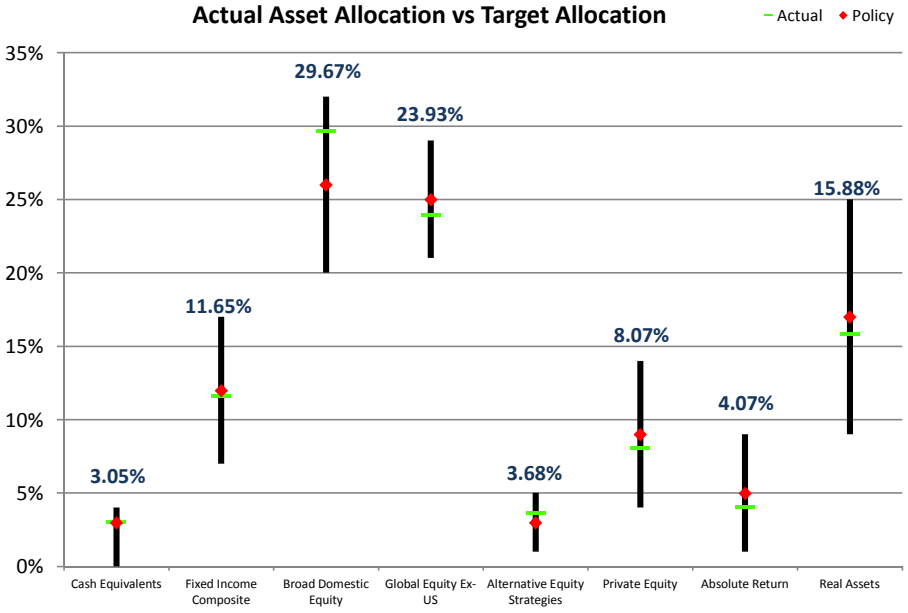
# Teachers' Retirement Health Care Trust Fund

**For the Eight Months Ending February 28, 2014**



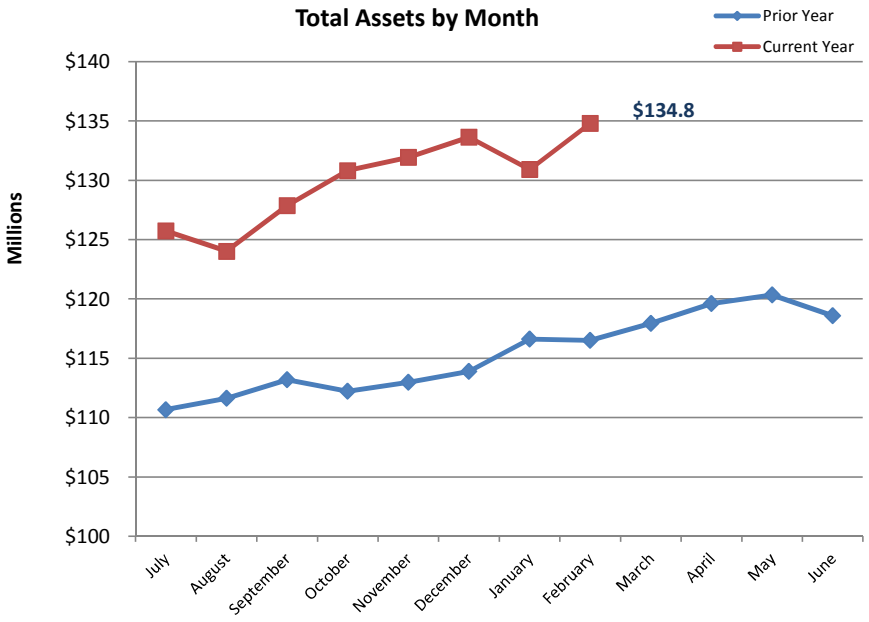



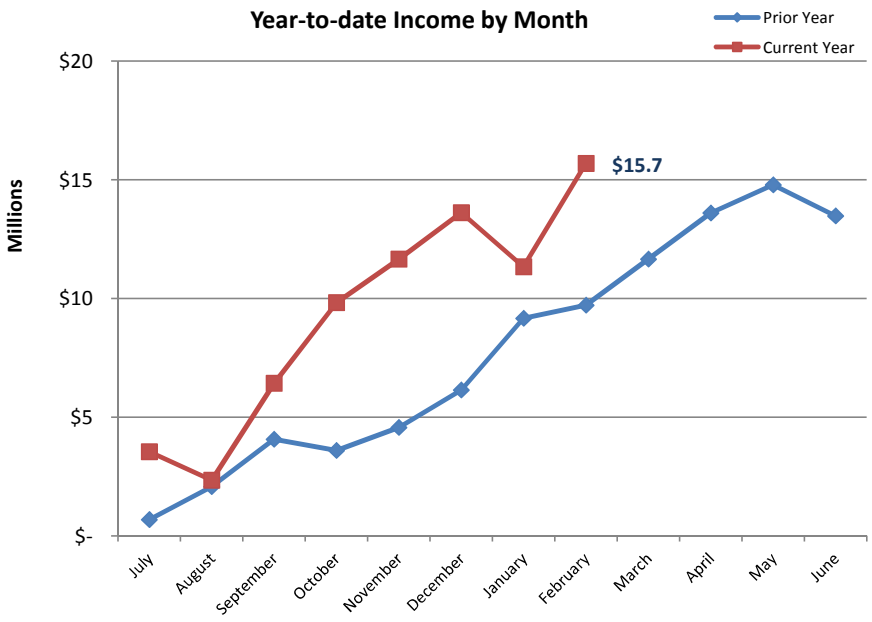



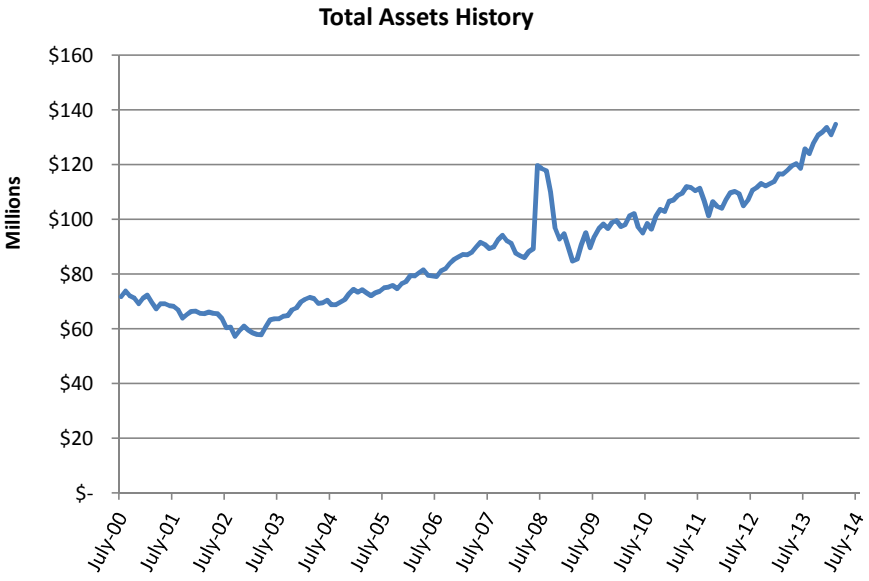



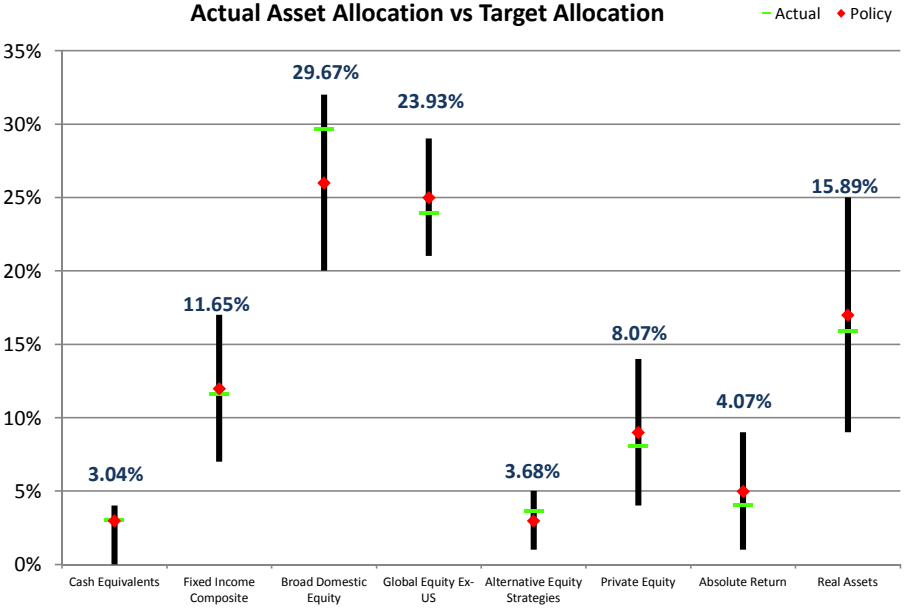
# Judicial Retirement Pension Trust Fund

**For the Eight Months Ending February 28, 2014**



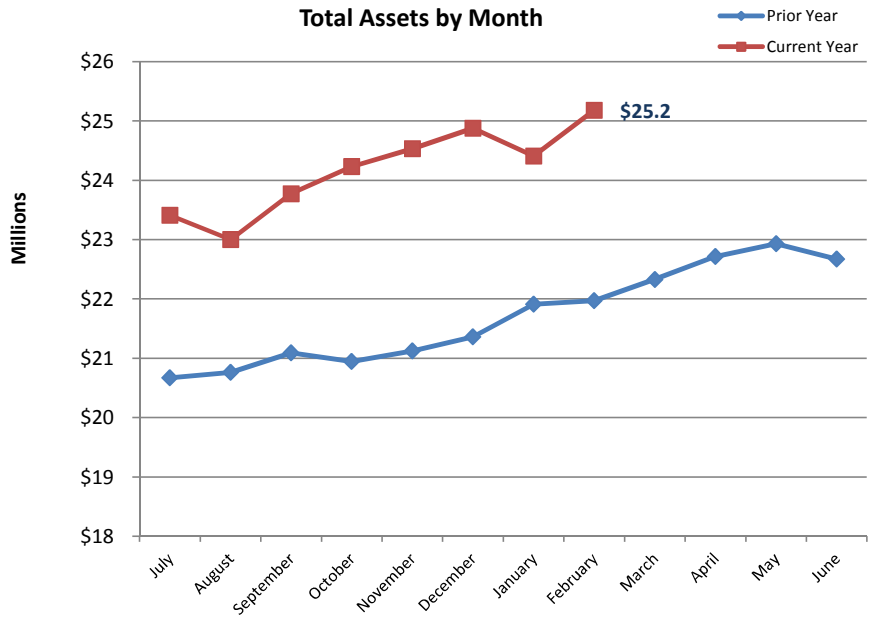



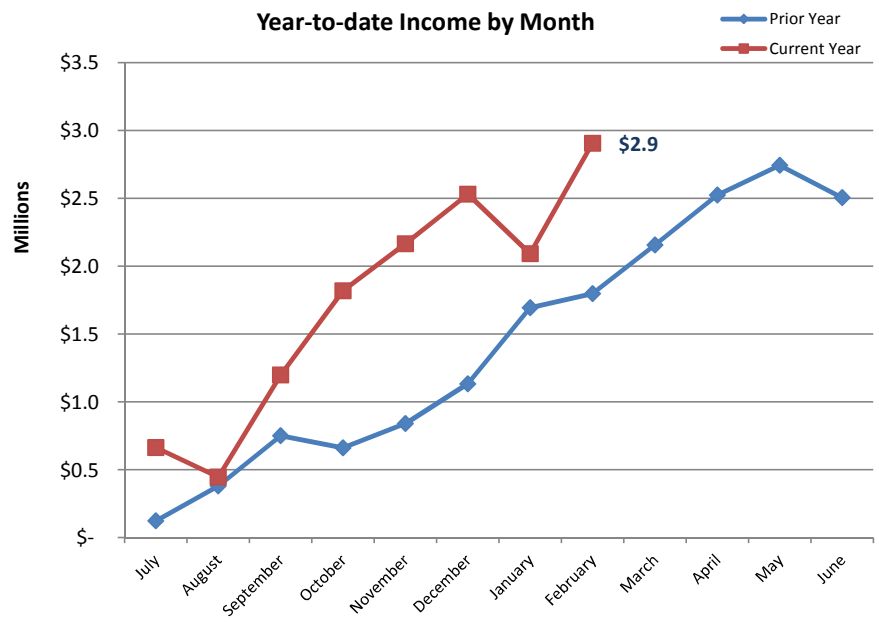



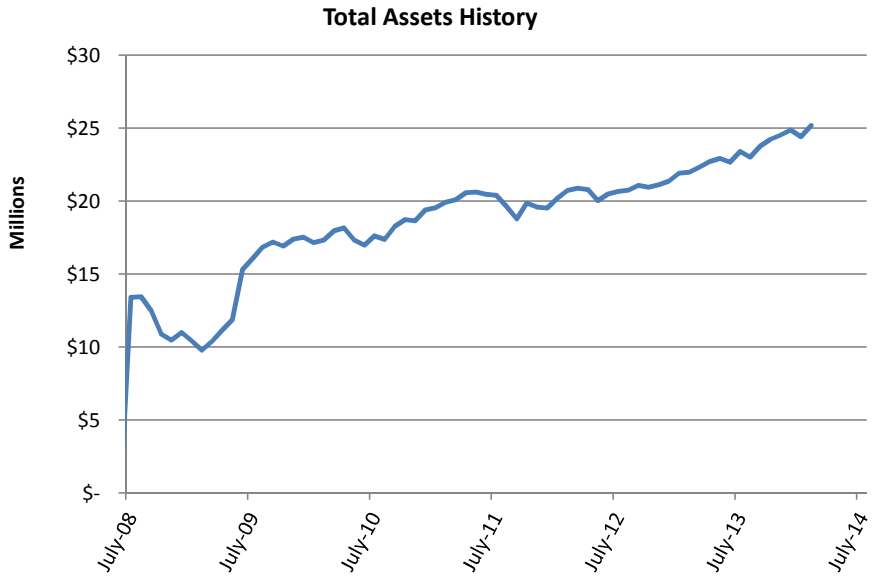



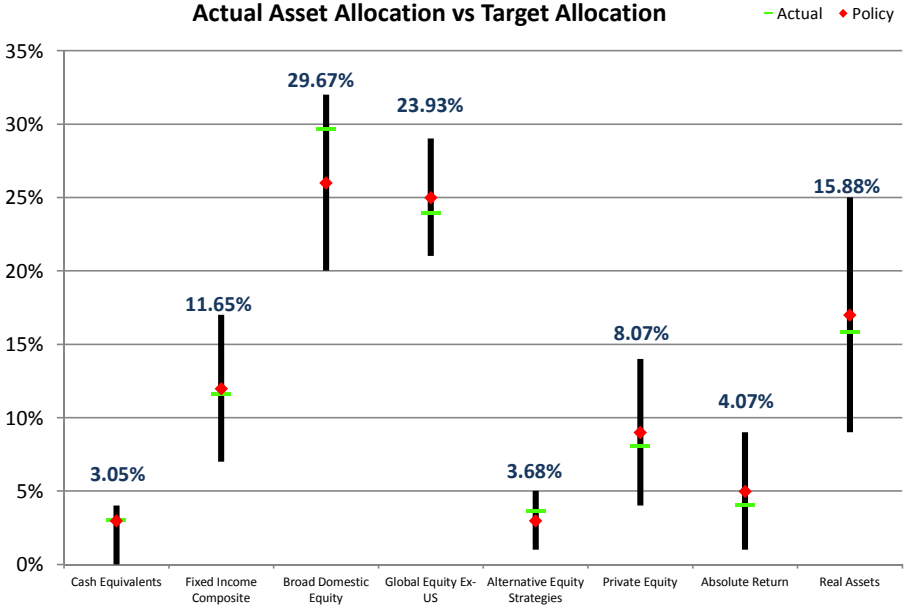
# Judicial Retirement Health Care Trust Fund

**For the Eight Months Ending February 28, 2014**



# ALASKA RETIREMENT MANAGEMENT BOARD

## Reporting of Funds by Manager

All Non-Participant Directed Plans

**Alaska Retirement Management Board**
**All Non-Participant Directed Plans by Manager**
**Schedule of Investment Income and Changes in Invested Assets**
**For The Month Ended January 31, 2014**

| | Beginning Invested Assets | Investment Income | Net Contributions and (Withdrawals) | Ending Invested Assets | % increase (decrease) |
|---|---|---|---|---|---|
| **Cash** | | | | | |
| Short-Term Fixed Income Pool | $ 540,528,921 | $ 112,641 | $ 82,354,391 | $ 622,995,953 | 15.26% |
| **Total Cash** | 540,528,921 | 112,641 | 82,354,391 | 622,995,953 | 15.26% |
| **Fixed Income** | | | | | |
| US Treasury Fixed Income | 1,165,387,401 | 2,361,157 | (5,000,000) | 1,162,748,558 | -0.23% |
| **Municipal Bond Pool** | | | | | |
| Western Asset Management | 104,154,850 | 1,614,636 | - | 105,769,486 | 1.55% |
| Guggenheim Partners | 57,498,448 | 862,378 | 5,000,000 | 63,360,826 | 10.20% |
| | 161,653,298 | 2,477,014 | 5,000,000 | 169,130,312 | 4.63% |
| **International Fixed Income Pool** | | | | | |
| Mondrian Investment Partners | 355,408,033 | 9,179,281 | - | 364,587,314 | 2.58% |
| **High Yield Pool** | | | | | |
| MacKay Shields, LLC | 541,551,786 | 9,126,467 | - | 550,678,253 | 1.69% |
| **Emerging Debt Pool** | | | | | |
| Lazard Emerging Income | 150,885,999 | (888,207) | - | 149,997,792 | -0.59% |
| **Total Fixed Income** | 2,374,886,517 | 22,255,712 | - | 2,397,142,229 | 0.94% |

**Alaska Retirement Management Board**
**All Non-Participant Directed Plans by Manager**
**Schedule of Investment Income and Changes in Invested Assets**
**For The Month Ended January 31, 2014**

| | | | | | |
|---|---|---|---|---|---|
| **Domestic Equities** | | | | | |
| **Small Cap Pool** | | | | | |
| Passively Managed | | | | | |
| SSgA Russell 2000 Growth | 17,031,789 | 819,540 | - | 17,851,329 | 4.81% |
| SSgA Russell 2000 Value | 59,827,900 | 2,724,319 | - | 62,552,219 | 4.55% |
| Total Passive | 76,859,689 | 3,543,859 | - | 80,403,548 | 4.61% |
| Actively Managed | | | | | |
| Barrow, Haney, Mewhinney & Strauss | 179,467,669 | 9,390,357 | - | 188,858,026 | 5.23% |
| DePrince, Race & Zollo Inc.- Micro Cap | 97,502,785 | 2,004,720 | - | 99,507,505 | 2.06% |
| Frontier Capital Mgmt. Co. | 174,858,801 | 9,399,458 | - | 184,258,259 | 5.38% |
| Jennison Associates, LLC | 187,967,477 | 6,801,249 | (55,000,000) | 139,768,726 | -25.64% |
| Lord Abbet Small Cap Growth Fund | 159,746,163 | 7,717,782 | (25,000,000) | 142,463,945 | -10.82% |
| Lord Abbett & Co. | - | - | - | - | - |
| Lord Abbett & Co.- Micro Cap | 134,926,622 | 5,597,628 | (25,000,000) | 115,524,250 | -14.38% |
| Luther King Capital Management | 176,672,737 | 5,807,222 | (45,000,000) | 137,479,959 | -22.18% |
| SSgA Futures Small Cap | 10,559,346 | 537,811 | - | 11,097,157 | 5.09% |
| Transition Account | - | - | - | - | - |
| Victory Capital Management | 101,076,651 | 4,779,536 | - | 105,856,187 | 4.73% |
| Total Active | 1,222,778,251 | 52,035,763 | (150,000,000) | 1,124,814,014 | -8.01% |
| **Total Small Cap** | 1,299,637,940 | 55,579,622 | (150,000,000) | 1,205,217,562 | -7.27% |
| **Large Cap Pool** | | | | | |
| Passively Managed | | | | | |
| SSgA Russell 1000 Growth | 1,222,920,106 | 62,792,237 | - | 1,285,712,343 | 5.13% |
| SSgA Russell 1000 Value | 1,224,140,532 | 52,971,833 | - | 1,277,112,365 | 4.33% |
| SSgA Russell 200 | 530,635,685 | 22,504,019 | - | 553,139,704 | 4.24% |
| Total Passive | 2,977,696,323 | 138,268,089 | - | 3,115,964,412 | 4.64% |
| Actively Managed | | | | | |
| Allianz Global Investors | 323,075,588 | 18,550,266 | - | 341,625,854 | 5.74% |
| Barrow, Haney, Mewhinney & Strauss | 304,353,314 | 13,770,646 | - | 318,123,960 | 4.52% |
| Lazard Freres | 413,326,552 | 20,403,594 | - | 433,730,146 | 4.94% |
| McKinley Capital Mgmt. | 315,845,303 | 19,843,119 | - | 335,688,422 | 6.28% |
| Quantitative Management Assoc. | 296,050,209 | 12,335,651 | - | 308,385,860 | 4.17% |
| SSgA Futures large cap | 12,196,073 | 500,256 | - | 12,696,329 | 4.10% |
| Transition Account | - | - | - | - | - |
| Total Active | 1,664,847,039 | 85,403,532 | - | 1,750,250,571 | 5.13% |
| **Total Large Cap** | 4,642,543,362 | 223,671,621 | - | 4,866,214,983 | 4.82% |
| **Total Domestic Equity** | 5,942,181,302 | 279,251,243 | (150,000,000) | 6,071,432,545 | 2.18% |

**Alaska Retirement Management Board**
**All Non-Participant Directed Plans by Manager**
**Schedule of Investment Income and Changes in Invested Assets**
**For The Month Ended January 31, 2014**

| | | | | | |
|---|---|---|---|---|---|
| **Alternative Equity Strategies** | | | | | |
| **Alternative Equity Strategy Pool** | | | | | |
| Relational Investors, LLC | 255,331,101 | 12,675,801 | - | 268,006,902 | 4.96% |
| Analytic Buy Write Account | 126,432,541 | 5,714,651 | - | 132,147,192 | 4.52% |
| Allianz Global Investors Buy-Write Account | 84,005,729 | 1,979,654 | - | 85,985,383 | 2.36% |
| ARMB Equity Yield Strategy | 119,896,481 | 4,887,468 | - | 124,783,949 | 4.08% |
| **Total Alternative Equity Strategy Pool** | 585,665,852 | 25,257,574 | - | 610,923,426 | 4.31% |
| **Convertible Bond Pool** | | | | | |
| Advent Capital | 137,415,036 | 4,116,872 | - | 141,531,908 | 3.00% |
| **Total Alternative Equity Strategies** | 723,080,888 | 29,374,446 | - | 752,455,334 | 4.06% |
| **Global Equities Ex US** | | | | | |
| **Small Cap Pool** | | | | | |
| Mondrian Investment Partners | 147,873,435 | 8,016,577 | - | 155,890,012 | 5.42% |
| Schroder Investment Management | 153,415,821 | 9,060,509 | - | 162,476,330 | 5.91% |
| **Total Small Cap** | 301,289,256 | 17,077,086 | - | 318,366,342 | 5.67% |
| **Large Cap Pool** | | | | | |
| Blackrock ACWI Ex-US IMI | 609,747,079 | 30,922,794 | - | 640,669,873 | 5.07% |
| Brandes Investment Partners | 1,003,969,294 | 52,700,206 | - | 1,056,669,500 | 5.25% |
| Cap Guardian Trust Co | 771,546,373 | 41,880,677 | - | 813,427,050 | 5.43% |
| Lazard Freres | 469,341,983 | 23,617,262 | - | 492,959,245 | 5.03% |
| McKinley Capital Management | 364,401,338 | 22,978,777 | - | 387,380,115 | 6.31% |
| SSgA Futures International | - | - | - | - | - |
| State Street Global Advisors | 609,198,842 | 31,049,212 | - | 640,248,054 | 5.10% |
| **Total Large Cap** | 3,828,204,909 | 203,148,928 | - | 4,031,353,837 | 5.31% |
| **Emerging Markets Equity Pool** | | | | | |
| Lazard Asset Management | 323,988,924 | 7,552,189 | - | 331,541,113 | 2.33% |
| Eaton Vance | 208,662,445 | 7,246,251 | - | 215,908,696 | 3.47% |
| **Total Emerging Markets Pool** | 532,651,369 | 14,798,440 | - | 547,449,809 | 2.78% |
| **Total Global Equities** | 4,662,145,534 | 235,024,454 | - | 4,897,169,988 | 5.04% |

**Alaska Retirement Management Board**
**All Non-Participant Directed Plans by Manager**
**Schedule of Investment Income and Changes in Invested Assets**
**For The Month Ended January 31, 2014**

| | | | | | |
|---|---|---|---|---|---|
| **Private Equity Pool** | | | | | |
| Abbott Capital | 715,424,063 | 11,966,267 | (2,595,497) | 724,794,833 | 1.31% |
| Angelo, Gordon & Co. | 10,579,306 | 395,168 | - | 10,974,474 | 3.74% |
| Blum Capital Partners-Strategic | 9,541,422 | 1,694,288 | - | 11,235,710 | 17.76% |
| Lexington Partners | 44,898,802 | (7) | 1,239,626 | 46,138,421 | 2.76% |
| Merit Capital Partners | 12,904,356 | - | - | 12,904,356 | - |
| NB SOF III | 2,791,802 | 1 | 1,861,776 | 4,653,579 | 66.69% |
| Onex Partnership III | 22,507,065 | - | - | 22,507,065 | - |
| Pathway Capital Management LLC | 762,062,309 | 26,134,229 | (8,323,280) | 779,873,258 | 2.34% |
| Warburg Pincus Prvt Eqty XI | 8,751,674 | 2 | (692,910) | 8,058,766 | -7.92% |
| Warburg Pincus X | 25,210,165 | 2,824,664 | (807,300) | 27,227,529 | 8.00% |
| **Total Private Equity** | 1,614,670,964 | 43,014,612 | (9,317,585) | 1,648,367,991 | 2.09% |
| | | | | | |
| **Absolute Return Pool** | | | | | |
| Global Asset Management (USA) Inc. | 310,724,504 | (2,546,014) | - | 308,178,490 | -0.82% |
| Prisma Capital Partners | 313,868,785 | 4,232,585 | - | 318,101,370 | 1.35% |
| Mariner Investment Group, Inc. | 383,100 | 21,767 | (46,395) | 358,472 | -6.43% |
| Crestline Investors, Inc. | 208,227,525 | 1,268,861 | (4,703,266) | 204,793,120 | -1.65% |
| **Total Absolute Return Investments** | 833,203,914 | 2,977,199 | (4,749,661) | 831,431,452 | -0.21% |

**Alaska Retirement Management Board**
**All Non-Participant Directed Plans by Manager**
**Schedule of Investment Income and Changes in Invested Assets**
**For The Month Ended January 31, 2014**

| | | | | | |
|---|---|---|---|---|---|
| **Real Assets** | | | | | |
| **Farmland Pool** | | | | | |
| UBS Agrivest, LLC | 468,122,390 | 15,167,552 | - | 483,289,942 | 3.24% |
| Hancock Agricultural Investment Group | 267,991,299 | 11,511,293 | (14,503,211) | 264,999,381 | -1.12% |
| **Total Farmland Pool** | 736,113,689 | 26,678,845 | (14,503,211) | 748,289,323 | 1.65% |
| **Timber Pool** | | | | | |
| Timberland Invt Resource LLC | 189,008,856 | (65) | (1,300,000) | 187,708,791 | -0.69% |
| Hancock Natural Resource Group | 85,859,744 | (711,237) | - | 85,148,507 | -0.83% |
| **Total Timber Pool** | 274,868,600 | (711,302) | (1,300,000) | 272,857,298 | -0.73% |
| **Energy Pool** | | | | | |
| EIG Energy Fund XV | 37,312,731 | 121,476 | 1,057,374 | 38,491,581 | 3.16% |
| EIG Energy Fund XD | 7,702,573 | (11,714) | - | 7,690,859 | -0.15% |
| EIG Energy Fund XIV-A | 50,811,998 | 98,289 | 1,139,751 | 52,050,038 | 2.44% |
| EIG Energy Fund XVI | 5,341,560 | (190,509) | 2,000,000 | 7,151,051 | 33.88% |
| **Total Energy Pool** | 101,168,862 | 17,542 | 4,197,125 | 105,383,529 | 4.17% |
| **REIT Pool** | | | | | |
| REIT Holdings | 322,576,381 | 15,010,925 | - | 337,587,306 | 4.65% |
| **Treasury Inflation Proof Securities** | | | | | |
| TIPS Internally Managed Account | 33,762,146 | 139,671 | - | 33,901,817 | 0.41% |
| **Master Limited Partnerships** | | | | | |
| Advisory Research MLP | 189,074,385 | 3,866,312 | - | 192,940,697 | 2.04% |
| Tortoise Capital Advisors | 206,447,989 | 6,081,306 | - | 212,529,295 | 2.95% |
| **Total Master Limited Partnerships** | 395,522,374 | 9,947,618 | - | 405,469,992 | 2.52% |

**Alaska Retirement Management Board**
**All Non-Participant Directed Plans by Manager**
**Schedule of Investment Income and Changes in Invested Assets**
**For The Month Ended January 31, 2014**

| | | | | | |
|---|---|---|---|---|---|
| **Real Estate** | | | | | |
| Core Commingled Accounts | | | | | |
| JP Morgan | 203,542,002 | (1,129,867) | - | 202,412,135 | -0.56% |
| UBS Trumbull Property Fund | 83,005,231 | - | - | 83,005,231 | - |
| Total Core Commingled | 286,547,233 | (1,129,867) | - | 285,417,366 | -0.39% |
| Core Separate Accounts | | | | | |
| Cornerstone Real Estate Advisers Inc. | 119,477,427 | (29) | (56,051) | 119,421,347 | -0.05% |
| LaSalle Investment Management | 178,928,048 | 8 | (729,096) | 178,198,960 | -0.41% |
| Sentinel Separate Account | 152,479,601 | - | (473,770) | 152,005,831 | -0.31% |
| UBS Realty | 281,272,191 | 37 | (937,464) | 280,334,764 | -0.33% |
| Total Core Separate | 732,157,267 | 16 | (2,196,381) | 729,960,902 | -0.30% |
| Non-Core Commingled Accounts | | | | | |
| Almanac Realty Securities IV | 15,491,924 | - | - | 15,491,924 | - |
| Almanac Realty Securities V | 19,302,401 | - | - | 19,302,401 | - |
| BlackRock Diamond Property Fund | 27,844,778 | - | - | 27,844,778 | - |
| Colony Investors VIII, L.P. | 24,040,340 | - | - | 24,040,340 | - |
| Cornerstone Apartment Venture III | 11,019,664 | - | - | 11,019,664 | - |
| Coventry | 13,447,397 | - | - | 13,447,397 | - |
| ING Clarion Development Ventures II | 4,247,835 | (3) | (2,647) | 4,245,185 | -0.06% |
| ING Clarion Development Ventures III | 26,464,245 | (13) | (13,785) | 26,450,447 | -0.05% |
| KKR Real Estate Partners Americas LP. | - | - | 17,692,776 | 17,692,776 | 100.00% |
| LaSalle Medical Office Fund II | 10,118,768 | 2 | (1,581,139) | 8,537,631 | -15.63% |
| Lowe Hospitality Partners | 1,842,443 | - | - | 1,842,443 | - |
| Silverpeak Legacy Pension Partners II, L.P. | 66,541,883 | - | - | 66,541,883 | - |
| Silverpeak Legacy Pension Partners III, L.P. | 8,814,991 | - | - | 8,814,991 | - |
| Tishman Speyer Real Estate Venture VI | 63,238,981 | - | - | 63,238,981 | - |
| Tishman Speyer Real Estate Venture VII | 18,062,609 | - | - | 18,062,609 | - |
| Total Non-Core Commingled | 310,478,259 | (14) | 16,095,205 | 326,573,450 | 5.18% |
| **Total Real Estate** | 1,329,182,759 | (1,129,865) | 13,898,824 | 1,341,951,718 | 0.96% |
| **Total Real Assets** | 3,193,194,811 | 49,953,434 | 2,292,738 | 3,245,440,983 | 1.64% |
| **Total Assets** | $ 19,883,892,851 | $ 661,963,741 | $ (79,420,117) | $ 20,466,436,475 | 2.93% |

# ALASKA RETIREMENT MANAGEMENT BOARD

## Reporting of Funds by Manager

Participant Directed Plans

**Supplemental Annuity Plan**
**Schedule of Investment Income and Changes in Invested Assets**
**for the Month Ended**
**February 28, 2014**

| Interim Transit Account | Beginning Invested Assets | Investment Income | Net Contributions (Withdrawals) | Transfers In (Out) | Ending Invested Assets | % Change in Invested Assets | % Change due to Investment Income (3) |
|---|---|---|---|---|---|---|---|
| Treasury Division [1] | | | | | | | |
| Cash and Cash Equivalents | $ 6,221,705 | $ 790 | $ 1,133,383 | $ - | $ 7,355,878 | 18.23% | 0.01% |
| **Participant Options** | | | | | | | |
| T. Rowe Price | | | | | | | |
| Stable Value Fund | 344,307,908 | 625,642 | (1,461,508) | 3,094,923 | 346,566,965 | 0.66% | 0.18% |
| Small Cap Stock Fund | 135,149,647 | 6,665,471 | 54,226 | (679,778) | 141,189,566 | 4.47% | 4.94% |
| Alaska Balanced Trust | 1,161,953,379 | 23,351,296 | (1,377,360) | (3,821,809) | 1,180,105,506 | 1.56% | 2.01% |
| Long Term Balanced Fund | 485,781,175 | 14,963,818 | 1,846,452 | 615,922 | 503,207,367 | 3.59% | 3.07% |
| AK Target Date 2010 Trust | 7,548,889 | 194,026 | 20,710 | 61,048 | 7,824,673 | 3.65% | 2.56% |
| AK Target Date 2015 Trust | 101,239,594 | 2,988,787 | (438,376) | 356,606 | 104,146,611 | 2.87% | 2.95% |
| AK Target Date 2020 Trust | 56,571,787 | 1,885,641 | 252,996 | 184,993 | 58,895,417 | 4.11% | 3.32% |
| AK Target Date 2025 Trust | 32,038,986 | 1,188,192 | 167,140 | 196,982 | 33,591,300 | 4.85% | 3.69% |
| AK Target Date 2030 Trust | 20,520,794 | 819,168 | 278,666 | 179,531 | 21,798,159 | 6.22% | 3.95% |
| AK Target Date 2035 Trust | 18,068,573 | 773,718 | 309,426 | 291,493 | 19,443,210 | 7.61% | 4.21% |
| AK Target Date 2040 Trust | 18,352,950 | 808,292 | 347,409 | 226,376 | 19,735,027 | 7.53% | 4.34% |
| AK Target Date 2045 Trust | 19,735,529 | 871,789 | 465,976 | 38,757 | 21,112,051 | 6.97% | 4.36% |
| AK Target Date 2050 Trust | 20,852,209 | 915,779 | 519,738 | 31,900 | 22,319,626 | 7.04% | 4.33% |
| AK Target Date 2055 Trust | 13,027,691 | 566,375 | 227,826 | 35,342 | 13,857,234 | 6.37% | 4.30% |
| Total Investments with T. Rowe Price | 2,435,149,111 | 56,617,994 | 1,213,321 | 812,286 | 2,493,792,712 | | |
| State Street Global Advisors | | | | | | | |
| State Street Treasury Money Market Fund - Inst. | 36,802,927 | 1 | (809,012) | 2,138,608 | 38,132,524 | 3.61% | 0.00% |
| S&P 500 Stock Index Fund Series A | 299,641,685 | 13,538,444 | 361,502 | (4,614,000) | 308,927,631 | 3.10% | 4.55% |
| Russell 3000 Index | 45,096,594 | 2,143,492 | 87,345 | 1,119,680 | 48,447,111 | 7.43% | 4.69% |
| US Real Estate Investment Trust Index | 22,479,503 | 1,181,684 | 65,487 | 1,134,317 | 24,860,991 | 10.59% | 5.12% |
| World Equity Ex-US Index | 26,437,138 | 1,314,330 | 39,550 | (800,966) | 26,990,052 | 2.09% | 5.04% |
| Long US Treasury Bond Index | 8,405,450 | 45,275 | (6,051) | (373,684) | 8,070,990 | -3.98% | 0.55% |
| US Treasury Inflation Protected Securities Index | 16,948,835 | 72,681 | (348,238) | (160,110) | 16,513,168 | -2.57% | 0.44% |
| World Government Bond Ex-US Index | 8,904,587 | 173,950 | 12,739 | 366,134 | 9,457,410 | 6.21% | 1.91% |
| Global Balanced Fund | 52,306,481 | 1,683,425 | (258,995) | 130,521 | 53,861,432 | 2.97% | 3.22% |
| Total Investments with SSGA | 517,023,200 | 20,153,282 | (855,673) | (1,059,500) | 535,261,309 | | |
| BlackRock | | | | | | | |
| Government/Credit Bond Fund | 43,921,685 | 286,060 | (163,807) | 25,364 | 44,069,302 | 0.34% | 0.65% |
| Intermediate Bond Fund | 13,518,644 | 24,689 | 43,907 | (520,169) | 13,067,071 | -3.34% | 0.19% |
| Total Investments with Barclays Global Investors | 57,440,329 | 310,749 | (119,900) | (494,805) | 57,136,373 | | |
| Brandes Institutional | | | | | | | |
| International Equity Fund Fee | 71,444,117 | 3,550,637 | 154,301 | 762,303 | 75,911,358 | 6.25% | 4.94% |
| RCM | | | | | | | |
| Sustainable Core Opportunities Fund | 35,457,945 | 1,876,542 | 7,898 | (20,284) | 37,322,101 | 5.26% | 5.29% |
| **Total All Funds** | $ 3,122,736,407 | $ 82,509,994 | $ 1,533,330 | $ - | $ 3,206,779,731 | 2.69% | 2.64% |

Notes: (1) Represents net contributions in transit to/from the record keeper. (2) Source data provided by the record keeper, Great West Life.
(3) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.

**Supplemental Annuity Plan**
**Schedule of Invested Assets with**
**Schedule of Investment Income and Changes in Invested Assets**
**By Month Through the Month Ended**
**February 28, 2014**
**$ (Thousands)**

| **Invested Assets (at fair value)** | **July** | **August** | **September** | **October** | **November** | **December** | **January** | **February** |
|---|---|---|---|---|---|---|---|---|
| Investments with Treasury Division | | | | | | | | |
| Cash and cash equivalents | $ 6,963 | $ 8,002 | $ 7,774 | $ 1,138 | $ 5,857 | $ 4,897 | $ 6,222 | $ 7,356 |
| Investments with T. Rowe Price | | | | | | | | |
| Stable Value Fund | 342,163 | 341,965 | 353,860 | 349,102 | 346,121 | 347,873 | 344,308 | 346,567 |
| Small Cap Stock Fund | 119,871 | 119,590 | 123,647 | 131,079 | 135,600 | 139,210 | 135,150 | 141,190 |
| Alaska Balanced Trust | 1,145,537 | 1,125,332 | 1,142,412 | 1,164,797 | 1,167,998 | 1,169,247 | 1,161,953 | 1,180,106 |
| Long Term Balanced Fund | 447,174 | 442,185 | 458,146 | 472,790 | 479,873 | 489,395 | 485,781 | 503,207 |
| AK Target Date 2010 Trust | 7,235 | 7,455 | 7,114 | 8,433 | 8,121 | 8,396 | 7,549 | 7,825 |
| AK Target Date 2015 Trust | 97,964 | 96,565 | 97,851 | 101,398 | 102,715 | 102,986 | 101,240 | 104,147 |
| AK Target Date 2020 Trust | 48,561 | 47,667 | 50,537 | 53,429 | 54,793 | 56,111 | 56,572 | 58,895 |
| AK Target Date 2025 Trust | 30,232 | 29,289 | 29,866 | 30,873 | 31,819 | 32,495 | 32,039 | 33,591 |
| AK Target Date 2030 Trust | 14,847 | 15,993 | 17,135 | 19,222 | 19,877 | 20,498 | 20,521 | 21,798 |
| AK Target Date 2035 Trust | 14,419 | 14,608 | 15,286 | 16,472 | 17,046 | 18,236 | 18,069 | 19,443 |
| AK Target Date 2040 Trust | 15,673 | 15,644 | 16,623 | 17,236 | 18,015 | 18,650 | 18,353 | 19,735 |
| AK Target Date 2045 Trust | 16,055 | 16,241 | 17,314 | 18,718 | 19,431 | 20,272 | 19,736 | 21,112 |
| AK Target Date 2050 Trust | 16,248 | 16,509 | 17,654 | 19,436 | 19,765 | 20,728 | 20,852 | 22,320 |
| AK Target Date 2055 Trust | 9,471 | 9,697 | 10,310 | 11,080 | 12,406 | 12,707 | 13,028 | 13,857 |
| State Street Global Advisors | | | | | | | | |
| State Street Treasury Money Market Fund - Inst. | 36,430 | 37,668 | 38,460 | 37,979 | 37,801 | 35,213 | 36,803 | 38,133 |
| S&P 500 Stock Index Fund Series A | 284,037 | 275,135 | 279,251 | 291,542 | 303,775 | 312,451 | 299,642 | 308,928 |
| Russell 3000 Index | 33,378 | 33,573 | 35,472 | 39,965 | 43,575 | 46,620 | 45,097 | 48,447 |
| US Real Estate Investment Trust Index | 34,248 | 29,016 | 27,300 | 27,111 | 22,694 | 21,746 | 22,480 | 24,861 |
| World Equity Ex-US Index | 23,860 | 23,712 | 25,952 | 27,497 | 28,164 | 28,169 | 26,437 | 26,990 |
| Long US Treasury Bond Index | 9,537 | 8,831 | 8,999 | 7,945 | 7,100 | 6,343 | 8,405 | 8,071 |
| US Treasury Inflation Protected Securities Index | 17,978 | 17,536 | 17,411 | 16,961 | 16,691 | 16,352 | 16,949 | 16,513 |
| World Government Bond Ex-US Index | 7,183 | 7,527 | 7,829 | 8,311 | 8,433 | 8,389 | 8,905 | 9,457 |
| Global Balanced Fund | 54,784 | 53,706 | 54,954 | 55,250 | 54,722 | 53,603 | 52,306 | 53,861 |
| Investments with BlackRock | | | | | | | | |
| Government/Credit Bond Fund | 45,356 | 44,798 | 44,995 | 44,053 | 43,873 | 43,423 | 43,922 | 44,069 |
| Intermediate Bond Fund | 15,160 | 14,182 | 13,996 | 13,946 | 13,789 | 13,399 | 13,519 | 13,067 |
| Investments with Brandes Institutional | | | | | | | | |
| International Equity Fund Fee | 64,109 | 64,506 | 70,086 | 74,779 | 74,388 | 74,470 | 71,444 | 75,911 |
| Investments with RCM | | | | | | | | |
| Sustainable Core Opportunities Fund | 33,172 | 32,118 | 33,617 | 35,404 | 36,136 | 36,988 | 35,458 | 37,322 |
| **Total Invested Assets** | **$ 2,991,647** | **$ 2,949,049** | **$ 3,023,850** | **$ 3,095,947** | **$ 3,130,577** | **$ 3,158,866** | **$ 3,122,736** | **$ 3,206,780** |
| **Change in Invested Assets** | | | | | | | | |
| Beginning Assets | $ 2,916,434 | $ 2,991,647 | $ 2,949,049 | $ 3,023,850 | $ 3,095,947 | $ 3,130,577 | $ 3,158,866 | $ 3,122,736 |
| Investment Earnings | 77,620 | (44,221) | 78,084 | 70,381 | 34,517 | 30,535 | (33,191) | 82,510 |
| Net Contributions (Withdrawals) | (2,408) | 1,623 | (3,283) | 1,716 | 113 | (2,246) | (2,939) | 1,533 |
| **Ending Invested Assets** | **$ 2,991,647** | **$ 2,949,049** | **$ 3,023,850** | **$ 3,095,947** | **$ 3,130,577** | **$ 3,158,866** | **$ 3,122,736** | **$ 3,206,780** |



Source data provided by the record keeper, Great West Life.

**Deferred Compensation Plan**
**Schedule of Invested Assets and Changes in Invested Assets**
**for the Month Ended**
**February 28, 2014**

| | Beginning Invested Assets | Investment Income | Net Contributions (Withdrawals) | Transfers In (Out) | Ending Invested Assets | % Change in Invested Assets | % Change due to Investment Income (3) |
|---|---|---|---|---|---|---|---|
| **Participant Options** | | | | | | | |
| T. Rowe Price | | | | | | | |
| Interest Income Fund | $ 180,816,175 | $ 371,894 | $ (1,030,643) | $ 27,513 | $ 180,184,939 | -0.35% | 0.21% |
| Small Cap Stock Fund | 96,836,064 | 4,769,135 | 197,752 | (249,997) | 101,552,954 | 4.87% | 4.93% |
| Alaska Balanced Trust | 12,522,796 | 252,041 | 73,063 | (194,335) | 12,653,565 | 1.04% | 2.02% |
| Long Term Balanced Fund | 46,987,756 | 1,446,695 | 91,002 | 368,968 | 48,894,421 | 4.06% | 3.06% |
| AK Target Date 2010 Trust | 2,822,480 | 71,821 | 19,862 | 16,330 | 2,930,493 | 3.83% | 2.53% |
| AK Target Date 2015 Trust | 8,220,378 | 247,976 | 94,012 | 3,907 | 8,566,273 | 4.21% | 3.00% |
| AK Target Date 2020 Trust | 11,133,485 | 370,885 | 135,260 | 100,448 | 11,740,078 | 5.45% | 3.30% |
| AK Target Date 2025 Trust | 5,543,087 | 206,829 | 92,990 | 77,713 | 5,920,619 | 6.81% | 3.67% |
| AK Target Date 2030 Trust | 3,582,305 | 144,056 | 49,458 | 79,513 | 3,855,332 | 7.62% | 3.95% |
| AK Target Date 2035 Trust | 2,448,678 | 103,732 | 46,814 | 17,454 | 2,616,678 | 6.86% | 4.18% |
| AK Target Date 2040 Trust | 2,203,530 | 96,708 | 57,694 | 34,380 | 2,392,312 | 8.57% | 4.30% |
| AK Target Date 2045 Trust | 1,263,005 | 56,668 | 43,279 | 8,163 | 1,371,115 | 8.56% | 4.40% |
| AK Target Date 2050 Trust | 1,034,445 | 45,305 | 24,834 | 9,106 | 1,113,690 | 7.66% | 4.31% |
| AK Target Date 2055 Trust | 1,442,841 | 64,148 | 15,891 | (25,108) | 1,497,772 | 3.81% | 4.46% |
| Total Investments with T. Rowe Price | 376,857,025 | 8,247,893 | (88,732) | 274,055 | 385,290,241 | | |
| State Street Global Advisors | | | | | | | |
| State Street Treasury Money Market Fund - Inst. | 11,647,319 | - | (24,032) | 584,981 | 12,208,268 | 4.82% | 0.00% |
| Russell 3000 Index | 16,192,751 | 773,743 | 149,569 | 293,023 | 17,409,086 | 7.51% | 4.71% |
| US Real Estate Investment Trust Index | 8,232,311 | 432,742 | 62,555 | 100,909 | 8,828,517 | 7.24% | 5.20% |
| World Equity Ex-US Index | 8,614,769 | 423,051 | 66,931 | (294,347) | 8,810,404 | 2.27% | 4.98% |
| Long US Treasury Bond Index | 2,770,779 | 21,138 | 2,965 | 310,624 | 3,105,506 | 12.08% | 0.72% |
| US Treasury Inflation Protected Securities Index | 7,427,628 | 32,809 | 48,040 | 53,648 | 7,562,125 | 1.81% | 0.44% |
| World Government Bond Ex-US Index | 3,069,050 | 58,472 | 17,209 | 125,208 | 3,269,939 | 6.55% | 1.86% |
| Global Balanced Fund | 38,660,917 | 1,248,205 | 76,631 | 32,583 | 40,018,336 | 3.51% | 3.22% |
| Total Investments with SSGA | 96,615,524 | 2,990,160 | 399,868 | 1,206,629 | 101,212,181 | | |
| BlackRock | | | | | | | |
| S&P 500 Index Fund | 160,466,399 | 7,277,327 | (100,568) | (978,136) | 166,665,022 | 3.86% | 4.55% |
| Government/Credit Bond Fund | 27,882,560 | 181,092 | 17,702 | (204,084) | 27,877,270 | -0.02% | 0.65% |
| Intermediate Bond Fund | 14,640,096 | 26,788 | 31,598 | (217,665) | 14,480,817 | -1.09% | 0.18% |
| Total Investments with Barclays Global Investors | 202,989,055 | 7,485,207 | (51,268) | (1,399,885) | 209,023,109 | | |
| Brandes Institutional | | | | | | | |
| International Equity Fund Fee | 44,628,223 | 2,208,709 | 59,983 | 32,075 | 46,928,990 | 5.16% | 4.94% |
| RCM | | | | | | | |
| Sustainable Core Opportunities Fund | 14,454,375 | 757,760 | (21,847) | (112,874) | 15,077,414 | 4.31% | 5.27% |
| **Total All Funds** | $ 735,544,202 | $ 21,689,729 | $ 298,004 | $ - | $ 757,531,935 | 2.99% | 2.95% |

Notes: (1) Represents net contributions in transit to/from the record keeper. (2) Source data provided by the record keeper, Great West Life.
(3) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.

**Deferred Compensation Plan**
**Schedule of Invested Assets with**
**Schedule of Investment Income and Changes in Invested Assets**
**By Month Through the Month Ended**
**February 28, 2014**
**$ (Thousands)**

| **Invested Assets (at fair value)** | **July** | **August** | **September** | **October** | **November** | **December** | **January** | **February** |
|---|---|---|---|---|---|---|---|---|
| Investments with T. Rowe Price | | | | | | | | |
| Interest Income Fund | | | | | | | | |
| Cash and cash equivalents | $ 11,345 | $ 11,415 | $ 12,731 | $ 10,816 | $ 10,657 | $ 11,113 | $ 11,113 | $ 7,754 |
| Synthetic Investment Contracts | 169,734 | 170,359 | 170,840 | 171,241 | 171,188 | 171,572 | 169,704 | 172,431 |
| Small Cap Stock Fund | 89,670 | 88,064 | 91,093 | 95,155 | 96,701 | 98,962 | 96,836 | 101,553 |
| Long Term Balanced Fund | 43,536 | 42,879 | 44,302 | 45,598 | 46,428 | 47,039 | 12,523 | 12,654 |
| Alaska Balanced Trust | 11,946 | 11,996 | 12,405 | 12,970 | 12,539 | 12,516 | 46,988 | 48,894 |
| AK Target Date 2010 Trust | 2,227 | 2,246 | 2,235 | 2,791 | 2,952 | 2,985 | 2,822 | 2,930 |
| AK Target Date 2015 Trust | 6,914 | 6,888 | 7,233 | 7,372 | 7,560 | 7,734 | 8,220 | 8,566 |
| AK Target Date 2020 Trust | 9,552 | 9,463 | 10,105 | 10,681 | 11,154 | 11,221 | 11,133 | 11,740 |
| AK Target Date 2025 Trust | 4,235 | 4,116 | 4,409 | 4,694 | 4,817 | 5,265 | 5,543 | 5,921 |
| AK Target Date 2030 Trust | 2,861 | 2,787 | 3,228 | 3,330 | 3,547 | 3,689 | 3,582 | 3,855 |
| AK Target Date 2035 Trust | 1,917 | 1,909 | 2,026 | 2,296 | 2,314 | 2,402 | 2,449 | 2,617 |
| AK Target Date 2040 Trust | 1,847 | 1,848 | 2,015 | 2,003 | 2,082 | 2,123 | 2,204 | 2,392 |
| AK Target Date 2045 Trust | 1,167 | 1,168 | 1,234 | 1,321 | 1,368 | 1,484 | 1,263 | 1,371 |
| AK Target Date 2050 Trust | 696 | 693 | 806 | 1,060 | 1,063 | 1,120 | 1,034 | 1,114 |
| AK Target Date 2055 Trust | 957 | 1,004 | 1,301 | 1,233 | 1,346 | 1,393 | 1,443 | 1,498 |
| State Street Global Advisors | | | | | | | | |
| State Street Treasury Money Market Fund - Inst. | 11,018 | 11,623 | 12,368 | 11,691 | 12,039 | 11,399 | 11,647 | 12,208 |
| Russell 3000 Index | 11,623 | 11,547 | 12,588 | 13,491 | 14,934 | 16,241 | 16,193 | 17,409 |
| US Real Estate Investment Trust Index | 11,916 | 9,673 | 9,445 | 9,396 | 8,193 | 8,172 | 8,232 | 8,829 |
| World Equity Ex-US Index | 7,974 | 8,051 | 8,810 | 9,316 | 9,675 | 9,512 | 8,615 | 8,810 |
| Long US Treasury Bond Index | 2,779 | 2,580 | 2,597 | 2,460 | 2,286 | 2,221 | 2,771 | 3,106 |
| US Treasury Inflation Protected Securities Index | 8,247 | 8,054 | 7,771 | 7,510 | 7,213 | 7,085 | 7,428 | 7,562 |
| World Government Bond Ex-US Index | 2,651 | 2,697 | 2,779 | 2,916 | 2,921 | 2,885 | 3,069 | 3,270 |
| Global Balanced Fund | 38,863 | 37,889 | 38,757 | 39,466 | 39,515 | 39,958 | 38,661 | 40,018 |
| Investments with BlackRock | | | | | | | | |
| S&P 500 Index Fund | 153,030 | 148,443 | 151,690 | 158,955 | 163,114 | 167,405 | 160,466 | 166,665 |
| Government/Credit Bond Fund | 29,734 | 28,505 | 28,733 | 28,216 | 28,043 | 27,699 | 27,883 | 27,877 |
| Intermediate Bond Fund | 15,521 | 14,923 | 14,961 | 14,916 | 14,978 | 14,586 | 14,640 | 14,481 |
| Investments with Brandes Institutional | | | | | | | | |
| International Equity Fund Fee | 40,205 | 40,140 | 43,336 | 45,514 | 45,956 | 47,020 | 44,628 | 46,929 |
| Investments with RCM | | | | | | | | |
| Sustainable Opportunities Fund | 13,672 | 13,217 | 13,955 | 14,609 | 14,841 | 15,244 | 14,454 | 15,077 |
| **Total Invested Assets** | **$ 705,837** | **$ 694,176** | **$ 713,752** | **$ 731,018** | **$ 739,423** | **$ 750,042** | **$ 735,544** | **$ 757,532** |
| **Change in Invested Assets** | | | | | | | | |
| Beginning Assets | $ 685,407 | $ 705,837 | $ 694,176 | $ 713,752 | $ 731,018 | $ 739,423 | $ 750,042 | $ 735,544 |
| Investment Earnings | 20,753 | (10,607) | 20,016 | 17,916 | 10,086 | 8,838 | (11,666) | 21,690 |
| Net Contributions (Withdrawals) | (323) | (1,055) | (440) | (649) | (1,681) | 1,780 | (2,832) | 298 |
| **Ending Invested Assets** | **$ 705,837** | **$ 694,176** | **$ 713,752** | **$ 731,018** | **$ 739,423** | **$ 750,042** | **$ 735,544** | **$ 757,532** |

Source data provided by the record keeper, Great West Life.

**Defined Contribution Retirement - Participant Directed PERS**
**Schedule of Investment Income and Changes in Invested Assets**
**for the Month Ended**
**February 28, 2014**

| Interim Transit Account | Beginning Invested Assets | Investment Income | Net Contributions (Withdrawals) | Transfers In (Out) | Ending Invested Assets | % Change in Invested Assets | % Change due to Investment Income (3) |
|---|---|---|---|---|---|---|---|
| Treasury Division [1] | | | | | | | |
| Cash and Cash Equivalents | $ 6,027,543 | $ 1,178 | $ 367,117 | $ - | $ 6,395,838 | 6.11% | 0.02% |
| **Participant Options** | | | | | | | |
| T. Rowe Price | | | | | | | |
| Alaska Money Market | 3,689,417 | 30 | (69,590) | 289,464 | 3,909,321 | 5.96% | 0.00% |
| Small Cap Stock Fund | 44,616,086 | 2,219,324 | 315,432 | (161,504) | 46,989,338 | 5.32% | 4.97% |
| Alaska Balanced Trust | 1,428,791 | 29,559 | 30,548 | (15,580) | 1,473,317 | 3.12% | 2.06% |
| Long Term Balanced Fund | 17,010,959 | 556,173 | 83,691 | 1,791,583 | 19,442,406 | 14.29% | 3.10% |
| AK Target Date 2010 Trust | 1,401,862 | 35,915 | 37,822 | 0 | 1,475,599 | 5.26% | 2.53% |
| AK Target Date 2015 Trust | 5,519,297 | 166,247 | 155,122 | 20,422 | 5,861,088 | 6.19% | 2.96% |
| AK Target Date 2020 Trust | 11,168,916 | 378,187 | 332,219 | (24,122) | 11,855,201 | 6.14% | 3.34% |
| AK Target Date 2025 Trust | 15,939,750 | 595,905 | 451,940 | (55,079) | 16,932,516 | 6.23% | 3.69% |
| AK Target Date 2030 Trust | 16,021,013 | 639,447 | 405,149 | (103,927) | 16,961,682 | 5.87% | 3.95% |
| AK Target Date 2035 Trust | 18,087,655 | 766,204 | 475,527 | (855) | 19,328,531 | 6.86% | 4.18% |
| AK Target Date 2040 Trust | 23,515,397 | 1,028,227 | 543,630 | 22,639 | 25,109,893 | 6.78% | 4.32% |
| AK Target Date 2045 Trust | 28,005,591 | 1,229,726 | 836,415 | (5,060) | 30,066,670 | 7.36% | 4.33% |
| AK Target Date 2050 Trust | 32,171,005 | 1,411,052 | 954,137 | (49,690) | 34,486,504 | 7.20% | 4.33% |
| AK Target Date 2055 Trust | 14,738,142 | 649,974 | 522,963 | (6,937) | 15,904,142 | 7.91% | 4.33% |
| Total Investments with T. Rowe Price | 233,313,881 | 9,705,970 | 5,075,005 | 1,701,353 | 249,796,208 | | |
| State Street Global Advisors | | | | | | | |
| Money Market | 1,191,879 | 0 | 20,056 | 106,156 | 1,318,090 | 10.59% | 0.00% |
| S&P 500 Stock Index Fund Series A | 41,526,143 | 1,853,074 | 327,496 | (2,252,441) | 41,454,272 | -0.17% | 4.57% |
| Russell 3000 Index | 24,086,472 | 1,187,507 | 137,782 | 1,549,314 | 26,961,074 | 11.93% | 4.76% |
| US Real Estate Investment Trust Index | 6,349,900 | 324,118 | 57,192 | 2,858 | 6,734,069 | 6.05% | 5.08% |
| World Equity Ex-US Index | 35,278,203 | 1,755,807 | 253,454 | (1,302,647) | 35,984,817 | 2.00% | 5.05% |
| Long US Treasury Bond Index | 450,645 | 3,773 | 6,935 | (12,470) | 448,882 | -0.39% | 0.84% |
| US Treasury Inflation Protected Securities Index | 2,646,421 | 12,003 | 14,704 | 106,499 | 2,779,627 | 5.03% | 0.44% |
| World Government Bond Ex-US Index | 4,880,104 | 93,156 | 18,312 | 119,235 | 5,110,806 | 4.73% | 1.88% |
| Global Balanced Fund | 11,300,696 | 375,739 | 74,016 | 610,092 | 12,360,542 | 9.38% | 3.23% |
| Total Investments with SSGA | 127,710,461 | 5,605,177 | 909,946 | (1,073,404) | 133,152,180 | | |
| BlackRock | | | | | | | |
| Government/Credit Bond Fund | 25,147,624 | 161,697 | 76,667 | (495,147) | 24,890,841 | -1.02% | 0.65% |
| Intermediate Bond Fund | 374,221 | 692 | 5,315 | (6,250) | 373,977 | -0.07% | 0.19% |
| Total Investments with Barclays Global Investors | 25,521,845 | 162,389 | 81,981 | (501,397) | 25,264,818 | | |
| Brandes Institutional | | | | | | | |
| International Equity Fund Fee | 24,955,548 | 1,259,497 | 200,327 | 851,531 | 27,266,903 | 9.26% | 4.94% |
| RCM | | | | | | | |
| Sustainable Core Opportunities Fund | 5,987,697 | 289,607 | 53,129 | (978,083) | 5,352,350 | -10.61% | 5.24% |
| **Total All Funds** | $ 423,516,974 | $ 17,023,819 | $ 6,687,505 | $ - | $ 447,228,298 | 5.60% | 3.99% |

Notes: (1) Represents net contributions in transit to/from the record keeper. (2) Source data provided by the record keeper, Great West Life.
(3) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.

**Defined Contribution Retirement - Participant Directed PERS**
**Schedule of Invested Assets with**
**Schedule of Investment Income and Changes in Invested Assets**
**By Month Through the Month Ended**
**February 28, 2014**
**$ (Thousands)**

| **Invested Assets (at fair value)** | **July** | **August** | **September** | **October** | **November** | **December** | **January** | **February** |
|---|---|---|---|---|---|---|---|---|
| Investments with Treasury Division | | | | | | | | |
| Cash and cash equivalents | $ 6,509 | $ 8,935 | $ 6,429 | $ 6,247 | $ 6,200 | $ 5,990 | $ 6,028 | $ 6,396 |
| Investments with T. Rowe Price | | | | | | | | |
| Alaska Money Market | 3,807 | 3,622 | 3,683 | 3,631 | 3,618 | 3,603 | 3,689 | 3,909 |
| Small Cap Stock Fund | 43,786 | 42,489 | 44,174 | 44,876 | 45,095 | 45,835 | 44,616 | 46,989 |
| Alaska Balanced Trust | 1,204 | 1,197 | 1,272 | 1,362 | 1,393 | 1,531 | 1,429 | 1,473 |
| Long Term Balanced Fund | 9,576 | 9,141 | 10,156 | 11,586 | 13,066 | 15,025 | 17,011 | 19,442 |
| AK Target Date 2010 Trust | 1,154 | 1,170 | 1,231 | 1,304 | 1,348 | 1,399 | 1,402 | 1,476 |
| AK Target Date 2015 Trust | 4,535 | 4,491 | 4,780 | 5,124 | 5,257 | 5,459 | 5,519 | 5,861 |
| AK Target Date 2020 Trust | 9,108 | 9,013 | 9,574 | 10,228 | 10,638 | 11,098 | 11,169 | 11,855 |
| AK Target Date 2025 Trust | 12,873 | 12,843 | 13,765 | 14,663 | 15,148 | 15,832 | 15,940 | 16,933 |
| AK Target Date 2030 Trust | 13,000 | 12,924 | 13,761 | 14,753 | 15,298 | 15,974 | 16,021 | 16,962 |
| AK Target Date 2035 Trust | 14,480 | 14,367 | 15,365 | 16,444 | 17,159 | 18,068 | 18,088 | 19,329 |
| AK Target Date 2040 Trust | 19,069 | 18,789 | 20,205 | 21,645 | 22,444 | 23,603 | 23,515 | 25,110 |
| AK Target Date 2045 Trust | 22,509 | 22,380 | 24,126 | 25,884 | 26,970 | 28,247 | 28,006 | 30,067 |
| AK Target Date 2050 Trust | 25,255 | 25,187 | 27,042 | 29,202 | 30,443 | 32,138 | 32,171 | 34,487 |
| AK Target Date 2055 Trust | 10,748 | 10,816 | 11,794 | 12,884 | 13,691 | 14,579 | 14,738 | 15,904 |
| State Street Global Advisors | | | | | | | | |
| Money Market | 1,123 | 1,216 | 1,186 | 1,194 | 1,346 | 1,374 | 1,192 | 1,318 |
| S&P 500 Stock Index Fund Series A | 40,640 | 40,683 | 42,527 | 45,109 | 45,976 | 45,593 | 41,526 | 41,454 |
| Russell 3000 Index | 16,521 | 15,746 | 16,960 | 18,932 | 20,721 | 22,943 | 24,086 | 26,961 |
| US Real Estate Investment Trust Index | 5,659 | 5,440 | 5,718 | 6,132 | 5,820 | 6,041 | 6,350 | 6,734 |
| World Equity Ex-US Index | 30,062 | 30,157 | 33,352 | 36,287 | 37,832 | 38,199 | 35,278 | 35,985 |
| Long US Treasury Bond Index | 489 | 526 | 397 | 415 | 385 | 379 | 451 | 449 |
| US Treasury Inflation Protected Securities Index | 2,051 | 2,062 | 2,205 | 2,309 | 2,363 | 2,397 | 2,646 | 2,780 |
| World Government Bond Ex-US Index | 3,826 | 3,837 | 4,166 | 4,320 | 4,461 | 4,582 | 4,880 | 5,111 |
| Global Balanced Fund | 10,105 | 9,716 | 10,043 | 10,214 | 10,116 | 10,597 | 11,301 | 12,361 |
| Investments with BlackRock | | | | | | | | |
| Government/Credit Bond Fund | 18,735 | 19,304 | 21,064 | 22,787 | 24,403 | 24,644 | 25,148 | 24,891 |
| Intermediate Bond Fund | 358 | 329 | 339 | 349 | 336 | 342 | 374 | 374 |
| Investments with Brandes Institutional | | | | | | | | |
| International Equity Fund Fee | 31,724 | 30,379 | 30,057 | 27,982 | 24,863 | 24,812 | 24,956 | 27,267 |
| Investments with RCM | | | | | | | | |
| Sustainable Opportunities Fund | 6,369 | 6,847 | 7,443 | 7,971 | 7,906 | 7,353 | 5,988 | 5,352 |
| **Total Invested Assets** | **$ 365,275** | **$ 363,606** | **$ 382,815** | **$ 403,834** | **$ 414,299** | **$ 427,637** | **$ 423,517** | **$ 447,228** |
| **Change in Invested Assets** | | | | | | | | |
| Beginning Assets | $ 344,683 | $ 365,275 | $ 363,606 | $ 382,815 | $ 403,834 | $ 414,299 | $ 427,637 | $ 423,517 |
| Investment Earnings | 14,896 | (7,398) | 15,627 | 13,072 | 6,644 | 6,606 | (9,962) | 17,024 |
| Net Contributions (Withdrawals) | 5,696 | 5,728 | 3,581 | 7,947 | 3,822 | 6,733 | 5,842 | 6,688 |
| **Ending Invested Assets** | **$ 365,275** | **$ 363,606** | **$ 382,815** | **$ 403,834** | **$ 414,299** | **$ 427,637** | **$ 423,517** | **$ 447,228** |



Source data provided by the record keeper, Great West Life.

**Defined Contribution Retirement - Participant Directed TRS**
**Schedule of Investment Income and Changes in Invested Assets**
**for the Month Ended**
**February 28, 2014**

| Interim Transit Account | Beginning Invested Assets | Investment Income | Net Contributions (Withdrawals) | Transfers In (Out) | Ending Invested Assets | % Change in Invested Assets | % Change due to Investment Income (3) |
|---|---|---|---|---|---|---|---|
| Treasury Division [1] | | | | | | | |
| Cash and Cash Equivalents | $ 2,094,146 | $ 458 | $ 401,656 | $ - | $ 2,496,260 | 19.20% | 0.02% |
| **Participant Options** | | | | | | | |
| T. Rowe Price | | | | | | | |
| Alaska Money Market | 1,583,482 | 12 | (15,176) | 1,811 | 1,570,129 | -0.84% | 0.00% |
| Small Cap Stock Fund | 17,209,148 | 855,997 | 102,784 | 64,871 | 18,232,800 | 5.95% | 4.95% |
| Alaska Balanced Trust | 220,432 | 4,483 | 6,314 | - | 231,229 | 4.90% | 2.01% |
| Long Term Balanced Fund | 8,904,254 | 285,149 | 38,525 | 682,818 | 9,910,746 | 11.30% | 3.08% |
| AK Target Date 2010 Trust | 376,199 | 9,540 | 5,553 | - | 391,292 | 4.01% | 2.52% |
| AK Target Date 2015 Trust | 1,700,476 | 50,669 | 45,583 | - | 1,796,728 | 5.66% | 2.94% |
| AK Target Date 2020 Trust | 3,824,684 | 128,143 | 68,456 | - | 4,021,283 | 5.14% | 3.32% |
| AK Target Date 2025 Trust | 4,975,415 | 185,055 | 141,645 | 25,335 | 5,327,450 | 7.08% | 3.66% |
| AK Target Date 2030 Trust | 5,419,916 | 216,497 | 146,429 | - | 5,782,842 | 6.70% | 3.94% |
| AK Target Date 2035 Trust | 8,456,007 | 354,200 | 174,195 | - | 8,984,402 | 6.25% | 4.15% |
| AK Target Date 2040 Trust | 8,979,962 | 389,710 | 217,532 | - | 9,587,204 | 6.76% | 4.29% |
| AK Target Date 2045 Trust | 16,070,736 | 696,348 | 328,186 | (2,183) | 17,093,087 | 6.36% | 4.29% |
| AK Target Date 2050 Trust | 21,333,591 | 923,562 | 474,440 | (4,590) | 22,727,003 | 6.53% | 4.28% |
| AK Target Date 2055 Trust | 3,470,598 | 153,776 | 173,403 | (8,840) | 3,788,937 | 9.17% | 4.33% |
| Total Investments with T. Rowe Price | 102,524,900 | 4,253,141 | 1,907,869 | 759,222 | 109,445,132 | | |
| State Street Global Advisors | | | | | | | |
| Money Market | 137,755 | - | 487 | 6,614 | 144,856 | 5.15% | 0.00% |
| S&P 500 Stock Index Fund Series A | 14,255,878 | 632,952 | 87,456 | (818,404) | 14,157,882 | -0.69% | 4.56% |
| Russell 3000 Index | 12,798,819 | 624,564 | 85,342 | 586,589 | 14,095,314 | 10.13% | 4.76% |
| US Real Estate Investment Trust Index | 2,316,344 | 117,318 | 15,737 | (33,553) | 2,415,846 | 4.30% | 5.08% |
| World Equity Ex-US Index | 14,906,572 | 743,200 | 95,265 | (352,718) | 15,392,319 | 3.26% | 5.03% |
| Long US Treasury Bond Index | 80,180 | 713 | 1,110 | - | 82,003 | 2.27% | 0.88% |
| US Treasury Inflation Protected Securities Index | 1,043,585 | 4,624 | 7,001 | 9,332 | 1,064,542 | 2.01% | 0.44% |
| World Government Bond Ex-US Index | 2,233,301 | 42,599 | 7,906 | 38,616 | 2,322,422 | 3.99% | 1.89% |
| Global Balanced Fund | 6,709,326 | 211,052 | 47,134 | (247,840) | 6,719,672 | 0.15% | 3.19% |
| Total Investments with SSGA | 54,481,760 | 2,377,022 | 347,438 | (811,364) | 56,394,856 | | |
| BlackRock | | | | | | | |
| Government/Credit Bond Fund | 11,957,198 | 75,876 | 48,022 | (494,781) | 11,586,315 | -3.10% | 0.65% |
| Intermediate Bond Fund | 81,666 | 151 | 1,077 | - | 82,894 | 1.50% | 0.18% |
| Total Investments with Barclays Global Investors | 12,038,864 | 76,027 | 49,099 | (494,781) | 11,669,209 | | |
| Brandes Institutional | | | | | | | |
| International Equity Fund Fee | 8,457,595 | 434,635 | 55,605 | 664,388 | 9,612,223 | 13.65% | 4.93% |
| RCM | | | | | | | |
| Sustainable Core Opportunities Fund | 1,361,876 | 70,371 | 14,256 | (117,465) | 1,329,038 | -2.41% | 5.37% |
| **Total All Funds** | $ 180,959,141 | $ 7,211,654 | $ 2,775,923 | $ - | $ 190,946,718 | 5.52% | 3.95% |

Notes: (1) Represents net contributions in transit to/from the record keeper. (2) Source data provided by the record keeper, Great West Life.
(3) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.

**Defined Contribution Retirement - Participant Directed TRS**
**Schedule of Invested Assets with**
**Schedule of Investment Income and Changes in Invested Assets**
**By Month Through the Month Ended**
**February 28, 2014**
**$ (Thousands)**

| **Invested Assets (at fair value)** | **July** | **August** | **September** | **October** | **November** | **December** | **January** | **February** |
|---|---|---|---|---|---|---|---|---|
| Investments with Treasury Division | | | | | | | | |
| Cash and cash equivalents | $ 2,282 | $ 2,189 | $ 2,194 | $ 2,374 | $ 2,346 | $ 2,168 | $ 2,094 | $ 2,496 |
| Investments with T. Rowe Price | | | | | | | | |
| Alaska Money Market | 1,707 | 1,500 | 1,471 | 1,521 | 1,542 | 1,580 | 1,583 | 1,570 |
| Small Cap Stock Fund | 17,849 | 17,254 | 17,499 | 17,475 | 17,447 | 17,635 | 17,209 | 18,233 |
| Alaska Balanced Trust | 206 | 197 | 203 | 207 | 214 | 221 | 220 | 231 |
| Long Term Balanced Fund | 5,396 | 5,033 | 5,661 | 6,482 | 7,233 | 8,109 | 8,904 | 9,911 |
| AK Target Date 2010 Trust | 5,396 | 337 | 336 | 356 | 365 | 372 | 376 | 391 |
| AK Target Date 2015 Trust | 1,492 | 1,471 | 1,541 | 1,566 | 1,628 | 1,703 | 1,700 | 1,797 |
| AK Target Date 2020 Trust | 3,088 | 3,091 | 3,246 | 3,459 | 3,622 | 3,784 | 3,825 | 4,021 |
| AK Target Date 2025 Trust | 4,133 | 3,975 | 4,195 | 4,497 | 4,709 | 4,912 | 4,975 | 5,327 |
| AK Target Date 2030 Trust | 4,416 | 4,308 | 4,523 | 4,821 | 5,074 | 5,348 | 5,420 | 5,783 |
| AK Target Date 2035 Trust | 7,017 | 6,854 | 7,111 | 7,654 | 8,018 | 8,419 | 8,456 | 8,984 |
| AK Target Date 2040 Trust | 7,583 | 7,367 | 7,730 | 8,244 | 8,550 | 8,973 | 8,980 | 9,587 |
| AK Target Date 2045 Trust | 13,699 | 13,325 | 14,006 | 14,911 | 15,544 | 16,241 | 16,071 | 17,093 |
| AK Target Date 2050 Trust | 18,269 | 17,567 | 18,272 | 19,491 | 20,415 | 21,391 | 21,334 | 22,727 |
| AK Target Date 2055 Trust | 2,383 | 2,321 | 2,480 | 2,783 | 3,020 | 3,305 | 3,471 | 3,789 |
| State Street Global Advisors | | | | | | | | |
| Money Market | 107 | 107 | 106 | 109 | 139 | 137 | 138 | 145 |
| S&P 500 Stock Index Fund Series A | 15,919 | 15,668 | 15,800 | 16,288 | 16,388 | 15,931 | 14,256 | 14,158 |
| Russell 3000 Index | 7,067 | 7,115 | 8,134 | 9,598 | 11,020 | 12,276 | 12,799 | 14,095 |
| US Real Estate Investment Trust Index | 2,063 | 1,978 | 2,059 | 2,207 | 2,129 | 2,177 | 2,316 | 2,416 |
| World Equity Ex-US Index | 13,165 | 13,039 | 14,160 | 15,175 | 15,736 | 15,866 | 14,907 | 15,392 |
| Long US Treasury Bond Index | 93 | 89 | 90 | 93 | 75 | 75 | 80 | 82 |
| US Treasury Inflation Protected Securities Index | 868 | 887 | 940 | 961 | 976 | 980 | 1,044 | 1,065 |
| World Government Bond Ex-US Index | 1,902 | 1,903 | 2,017 | 2,084 | 2,122 | 2,135 | 2,233 | 2,322 |
| Global Balanced Fund | 6,849 | 6,621 | 6,787 | 6,901 | 6,853 | 6,779 | 6,709 | 6,720 |
| Investments with BlackRock | | | | | | | | |
| Government/Credit Bond Fund | 9,117 | 9,415 | 10,309 | 11,311 | 12,180 | 12,093 | 11,957 | 11,586 |
| Intermediate Bond Fund | 105 | 99 | 98 | 101 | 80 | 80 | 82 | 83 |
| Investments with Brandes Institutional | | | | | | | | |
| International Equity Fund Fee | 11,308 | 10,681 | 10,098 | 9,082 | 7,932 | 8,107 | 8,458 | 9,612 |
| Investments with RCM | | | | | | | | |
| Sustainable Opportunities Fund | 2,034 | 2,069 | 2,064 | 2,024 | 1,892 | 1,716 | 1,362 | 1,329 |
| **Total Invested Assets** | **$ 160,486** | **$ 156,462** | **$ 163,132** | **$ 171,771** | **$ 177,249** | **$ 182,510** | **$ 180,959** | **$ 190,947** |
| **Change in Invested Assets** | | | | | | | | |
| Beginning Assets | $ 153,359 | $ 160,486 | $ 156,462 | $ 163,132 | $ 171,771 | $ 177,249 | $ 182,510 | $ 180,959 |
| Investment Earnings | 6,614 | (3,226) | 6,654 | 5,517 | 2,836 | 2,820 | (4,228) | 7,212 |
| Net Contributions (Withdrawals) | 513 | (799) | 16 | 3,122 | 2,642 | 2,441 | 2,677 | 2,776 |
| **Ending Invested Assets** | **$ 160,486** | **$ 156,462** | **$ 163,132** | **$ 171,771** | **$ 177,249** | **$ 182,510** | **$ 180,959** | **$ 190,947** |



Source data provided by the record keeper, Great West Life.

# ALASKA RETIREMENT MANAGEMENT BOARD

## FINANCIAL REPORT
## (Supplement to the Treasury Division Report)

## As of February 28, 2014

## Prepared by the Division of Retirement & Benefits

**ALASKA RETIREMENT MANAGEMENT BOARD**
**SCHEDULE OF NON-INVESTMENT CHANGES BY FUND**
**(Supplement to the Treasury Division Report)**
**For the Eight Months Ending February 28, 2014**

| | Contributions | | | | Expenditures | | | | Net |
|---|---|---|---|---|---|---|---|---|---|
| | Contributions EE and ER | State of Alaska | Other | Total Contributions | Benefits | Refunds | Administrative & Investment | Total Expenditures | Contributions/ (Withdrawals) |
| **Public Employees' Retirement System (PERS)** | | | | | | | | | |
| Defined Benefit Plans: | | | | | | | | | |
| Retirement Trust | $ 207,847,343 | $ 176,793,907 | $ 44,673 | $ 384,685,923 | $ (421,836,312) | $ (7,098,649) | $ (24,343,813) | $ (453,278,774) | $ (68,592,851) |
| Retirement Health Care Trust | 136,967,907 | 135,679,045 | 1,225,310 | 273,872,262 | (232,506,128) | - | (6,870,010) | (239,376,138) | 34,496,124 |
| Total Defined Benefit Plans | 344,815,250 | 312,472,952 | 1,269,983 | 658,558,185 | (654,342,440) | (7,098,649) | (31,213,823) | (692,654,912) | (34,096,727) |
| Defined Contribution Plans: | | | | | | | | | |
| Participant Directed Retirement | 63,855,694 | - | - | 63,855,694 | - | (17,080,051) | (739,421) | (17,819,472) | 46,036,222 |
| Health Reimbursement Arrangement [(a)] | 16,614,785 | - | - | 16,614,785 | - | - | (9,297) | (9,297) | 16,605,488 |
| Retiree Medical Plan [(a)] | 2,405,338 | - | - | 2,405,338 | - | - | (9,668) | (9,668) | 2,395,670 |
| Occupational Death and Disability: [(a)] | | | | | | | | | |
| Public Employees | 838,712 | - | - | 838,712 | (42,675) | - | - | (42,675) | 796,037 |
| Police and Firefighters | 656,299 | - | - | 656,299 | (31,577) | - | - | (31,577) | 624,722 |
| Total Defined Contribution Plans | 84,370,828 | - | - | 84,370,828 | (74,252) | (17,080,051) | (758,386) | (17,912,689) | 66,458,139 |
| **Total PERS** | **429,186,078** | **312,472,952** | **1,269,983** | **742,929,013** | **(654,416,692)** | **(24,178,700)** | **(31,972,209)** | **(710,567,601)** | **32,361,412** |
| **Teachers' Retirement System (TRS)** | | | | | | | | | |
| Defined Benefit Plans: | | | | | | | | | |
| Retirement Trust | 41,994,918 | 208,890,798 | 30,212 | 250,915,928 | (261,563,025) | (1,561,295) | (9,852,966) | (272,977,286) | (22,061,358) |
| Retirement Health Care Trust | 16,650,377 | 107,956,493 | 479,884 | 125,086,754 | (77,922,754) | - | (2,512,358) | (80,435,112) | 44,651,642 |
| Total Defined Benefit Plans | 58,645,295 | 316,847,291 | 510,096 | 376,002,682 | (339,485,779) | (1,561,295) | (12,365,324) | (353,412,398) | 22,590,284 |
| Defined Contribution Plans: | | | | | | | | | |
| Participant Directed Retirement | 19,774,605 | - | - | 19,774,605 | - | (6,262,142) | (125,156) | (6,387,298) | 13,387,307 |
| Health Reimbursement Arrangement [(a)] | 4,207,719 | - | - | 4,207,719 | - | - | (3,202) | (3,202) | 4,204,517 |
| Retiree Medical Plan [(a)] | 634,235 | - | - | 634,235 | - | - | (3,334) | (3,334) | 630,901 |
| Occupational Death and Disability [(a)] | 33 | - | - | 33 | - | - | - | - | 33 |
| Total Defined Contribution Plans | 24,616,592 | - | - | 24,616,592 | - | (6,262,142) | (131,692) | (6,393,834) | 18,222,758 |
| **Total TRS** | **83,261,887** | **316,847,291** | **510,096** | **400,619,274** | **(339,485,779)** | **(7,823,437)** | **(12,497,016)** | **(359,806,232)** | **40,813,042** |
| **Judicial Retirement System (JRS)** | | | | | | | | | |
| Defined Benefit Plan Retirement Trust | 3,521,346 | 4,282,876 | - | 7,804,222 | (7,045,568) | - | (253,870) | (7,299,438) | 504,784 |
| Defined Benefit Retirement Health Care Trust | 464,356 | 177,445 | 3,396 | 645,197 | (1,023,092) | - | (21,860) | (1,044,952) | (399,755) |
| **Total JRS** | **3,985,702** | **4,460,321** | **3,396** | **8,449,419** | **(8,068,660)** | **-** | **(275,730)** | **(8,344,390)** | **105,029** |
| **National Guard/Naval Militia Retirement System (NGNMRS)** | | | | | | | | | |
| Defined Benefit Plan Retirement Trust [(a)] | 740,100 | - | - | 740,100 | (1,186,675) | - | (186,792) | (1,373,467) | (633,367) |
| **Other Participant Directed Plans** | | | | | | | | | |
| Supplemental Annuity Plan | 112,539,002 | - | - | 112,539,002 | - | (113,533,800) | (4,894,204) | (118,428,004) | (5,889,002) |
| Deferred Compensation Plan | 28,406,381 | - | - | 28,406,381 | - | (32,501,987) | (806,322) | (33,308,309) | (4,901,928) |
| **Total All Funds** | **658,119,150** | **633,780,564** | **1,783,475** | **1,293,683,189** | **(1,003,157,806)** | **(178,037,924)** | **(50,632,273)** | **(1,231,828,003)** | **61,855,186** |
| Total Non-Participant Directed | 433,543,468 | 633,780,564 | 1,783,475 | 1,069,107,507 | (1,003,157,806) | (8,659,944) | (44,067,170) | (1,055,884,920) | 13,222,587 |
| Total Participant Directed | 224,575,682 | - | - | 224,575,682 | - | (169,377,980) | (6,565,103) | (175,943,083) | 48,632,599 |
| **Total All Funds** | **$ 658,119,150** | **$ 633,780,564** | **$ 1,783,475** | **$ 1,293,683,189** | **$ (1,003,157,806)** | **$ (178,037,924)** | **$ (50,632,273)** | **$ (1,231,828,003)** | **$ 61,855,186** |

(a) Employer only contributions.

**ALASKA RETIREMENT MANAGEMENT BOARD**
**SCHEDULE OF NON-INVESTMENT CHANGES BY FUND**
**(Supplement to the Treasury Division Report)**
**For the Month Ended February 28, 2014**

| | Contributions | | | | Expenditures | | | | Net |
|---|---|---|---|---|---|---|---|---|---|
| | Contributions EE and ER | State of Alaska | Other | Total Contributions | Benefits | Refunds | Administrative & Investment | Total Expenditures | **Contributions/ (Withdrawals)** |
| **Public Employees' Retirement System (PERS)** | | | | | | | | | |
| Defined Benefit Plans: | | | | | | | | | |
| Retirement Trust | $ 26,241,063 | $ - | $ 33,062 | $ 26,274,125 | $ (52,124,723) | $ (910,084) | $ (5,095,735) | $ (58,130,542) | $ (31,856,417) |
| Retirement Health Care Trust | 17,572,008 | - | 3,285 | 17,575,293 | (32,129,102) | - | (857,664) | (32,986,766) | (15,411,473) |
| Total Defined Benefit Plans | 43,813,071 | - | 36,347 | 43,849,418 | (84,253,825) | (910,084) | (5,953,399) | (91,117,308) | (47,267,890) |
| Defined Contribution Plans: | | | | | | | | | |
| Participant Directed Retirement | 8,599,853 | - | - | 8,599,853 | - | (1,835,016) | (77,332) | (1,912,348) | 6,687,505 |
| Health Reimbursement Arrangement [(a)] | 2,354,048 | - | - | 2,354,048 | - | - | - | - | 2,354,048 |
| Retiree Medical Plan [(a)] | 319,812 | - | - | 319,812 | - | - | (371) | (371) | 319,441 |
| Occupational Death and Disability: [(a)] | | | | | | | | | |
| Public Employees | 119,838 | - | - | 119,838 | (5,335) | - | - | (5,335) | 114,503 |
| Police and Firefighters | 91,280 | - | - | 91,280 | (3,948) | - | - | (3,948) | 87,332 |
| Total Defined Contribution Plans | 11,484,831 | - | - | 11,484,831 | (9,283) | (1,835,016) | (77,703) | (1,922,002) | 9,562,829 |
| **Total PERS** | **55,297,902** | **-** | **36,347** | **55,334,249** | **(84,263,108)** | **(2,745,100)** | **(6,031,102)** | **(93,039,310)** | **(37,705,061)** |
| **Teachers' Retirement System (TRS)** | | | | | | | | | |
| Defined Benefit Plans: | | | | | | | | | |
| Retirement Trust | 7,657,313 | - | 997 | 7,658,310 | (32,474,638) | (164,360) | (2,092,397) | (34,731,395) | (27,073,085) |
| Retirement Health Care Trust | 2,897,965 | - | 4,052 | 2,902,017 | (10,674,837) | - | (326,828) | (11,001,665) | (8,099,648) |
| Total Defined Benefit Plans | 10,555,278 | - | 5,049 | 10,560,327 | (43,149,475) | (164,360) | (2,419,225) | (45,733,060) | (35,172,733) |
| Defined Contribution Plans: | | | | | | | | | |
| Participant Directed Retirement | 3,407,801 | - | - | 3,407,801 | - | (619,096) | (12,782) | (631,878) | 2,775,923 |
| Health Reimbursement Arrangement [(a)] | 692,062 | - | - | 692,062 | - | - | - | - | 692,062 |
| Retiree Medical Plan [(a)] | 106,784 | - | - | 106,784 | - | - | (132) | (132) | 106,652 |
| Occupational Death and Disability [(a)] | - | - | - | - | | - | - | - | - |
| Total Defined Contribution Plans | 4,206,647 | - | - | 4,206,647 | - | (619,096) | (12,914) | (632,010) | 3,574,637 |
| **Total TRS** | **14,761,925** | **-** | **5,049** | **14,766,974** | **(43,149,475)** | **(783,456)** | **(2,432,139)** | **(46,365,070)** | **(31,598,096)** |
| **Judicial Retirement System (JRS)** | | | | | | | | | |
| Defined Benefit Plan Retirement Trust | 449,442 | - | - | 449,442 | (863,601) | - | (53,694) | (917,295) | (467,853) |
| Defined Benefit Retirement Health Care Trust | 57,899 | - | 9 | 57,908 | (101,199) | - | (3,124) | (104,323) | (46,415) |
| **Total JRS** | **507,341** | **-** | **9** | **507,350** | **(964,800)** | **-** | **(56,818)** | **(1,021,618)** | **(514,268)** |
| **National Guard/Naval Militia Retirement System (NGNMRS)** | | | | | | | | | |
| Defined Benefit Plan Retirement Trust [(a)] | - | - | - | - | (119,186) | - | (20,078) | (139,264) | (139,264) |
| **Other Participant Directed Plans** | | | | | | | | | |
| Supplemental Annuity Plan | 15,174,158 | - | - | 15,174,158 | - | (12,040,714) | (1,600,114) | (13,640,828) | 1,533,330 |
| Deferred Compensation Plan | 3,753,905 | - | - | 3,753,905 | - | (3,351,787) | (104,114) | (3,455,901) | 298,004 |
| **Total All Funds** | **89,495,231** | **-** | **41,405** | **89,536,636** | **(128,496,569)** | **(18,921,057)** | **(10,244,365)** | **(157,661,991)** | **(68,125,355)** |
| Total Non-Participant Directed | 58,559,514 | - | 41,405 | 58,600,919 | (128,496,569) | (1,074,444) | (8,450,023) | (138,021,036) | (79,420,117) |
| Total Participant Directed | 30,935,717 | - | - | 30,935,717 | - | (17,846,613) | (1,794,342) | (19,640,955) | 11,294,762 |
| **Total All Funds** | **$ 89,495,231** | **$ -** | **$ 41,405** | **$ 89,536,636** | **$ (128,496,569)** | **$ (18,921,057)** | **$ (10,244,365)** | **$ (157,661,991)** | **$ (68,125,355)** |

(a) Employer only contributions.

# ALASKA RETIREMENT MANAGEMENT BOARD

## Private Equity 2014 Tactical Plan

## Staff Summary and Overview

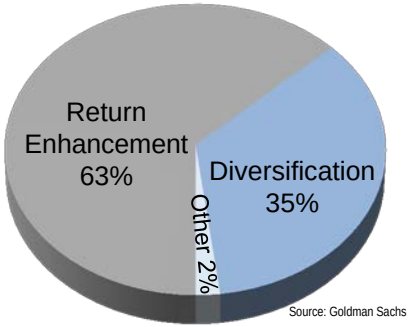
Zachary Hanna, CFA
State Investment Officer

# ARMB Private Equity Program

- Private Equity Overview
- Market Review
- ARMB Portfolio
- Diversification
- 2013 Commitments
- 2014 Outlook & Tactical Plan

# Overview – Private Equity Investment

- Private equity – unregistered investments in operating companies.
- Why do fund sponsors invest in private equity?




- Private equity is expected to deliver long-term returns in excess of the public markets.

**Private Equity Returns through September 30, 2013**

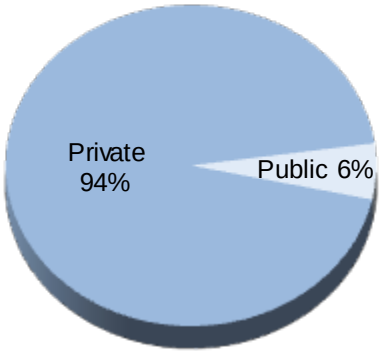
| Investment Type | 5 Year | 10 Year | 20 Year |
|---|---|---|---|
| Venture Capital | 2.3% | 5.0% | 14.8% |
| Buyouts | 7.3% | 10.9% | 10.6% |
| **All Private Equity** | **6.7%** | **9.6%** | **11.2%** |
| **Russell 3000** | **10.6%** | **8.1%** | **8.7%** |

Source: Thomson ONE. The private equity returns are pooled IRRs and do not represent top quartile returns. The time-weighted Russell 3000 returns are not directly comparable.

# Overview – Unique Characteristics

- Positive Characteristics:
  - Larger, more diverse investment universe
  - Less efficient companies – opportunity to create value
  - Less efficient markets – pricing opportunities
  - Control and alignment of interests
  - Managed for long-term value

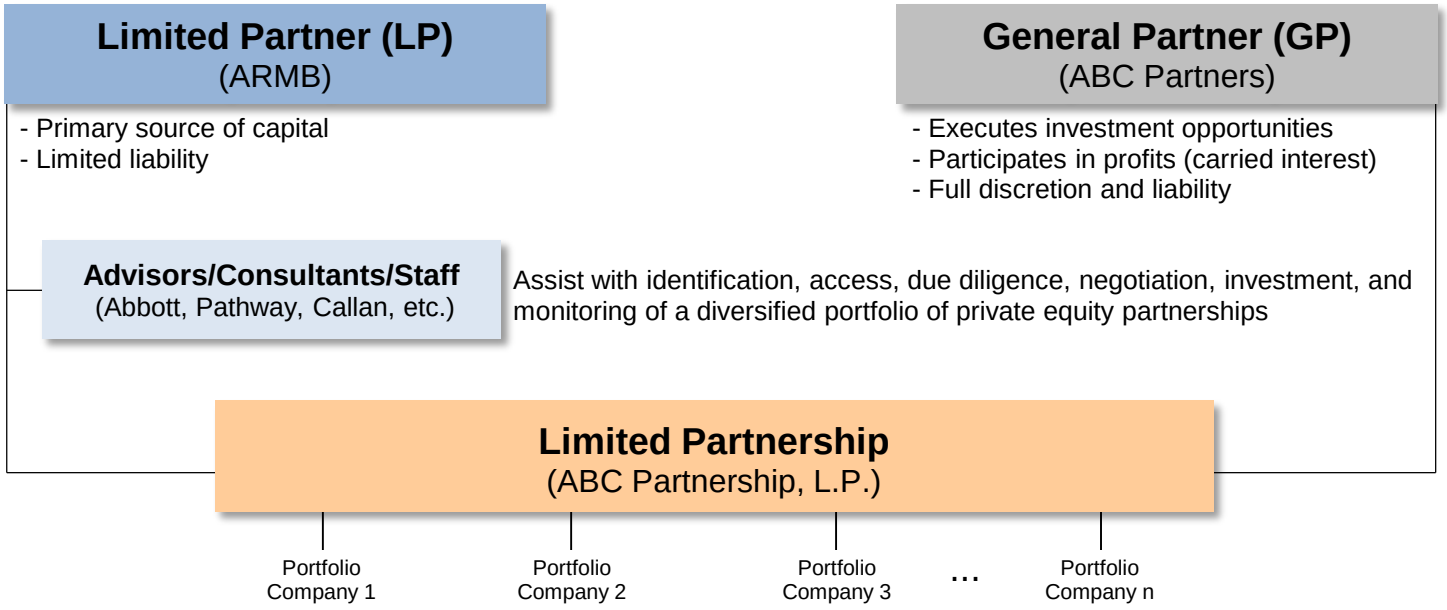
**Public and Private Companies: Hoovers 2012**
57,428 Companies $25+ million in Revenue



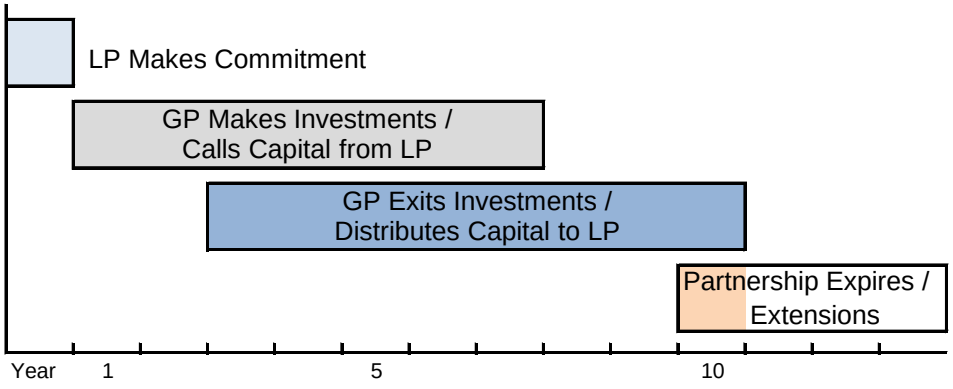

- Other Characteristics:
  - Illiquid, long-term investments
  - High fees and J-curve
  - Potential for high leverage
  - Portfolio transparency and valuation issues
  - Incomplete data and benchmarks

# Overview – Structure

- Private equity investments are typically made through limited partnerships:




- Private equity liquidity and cash flow characteristics:



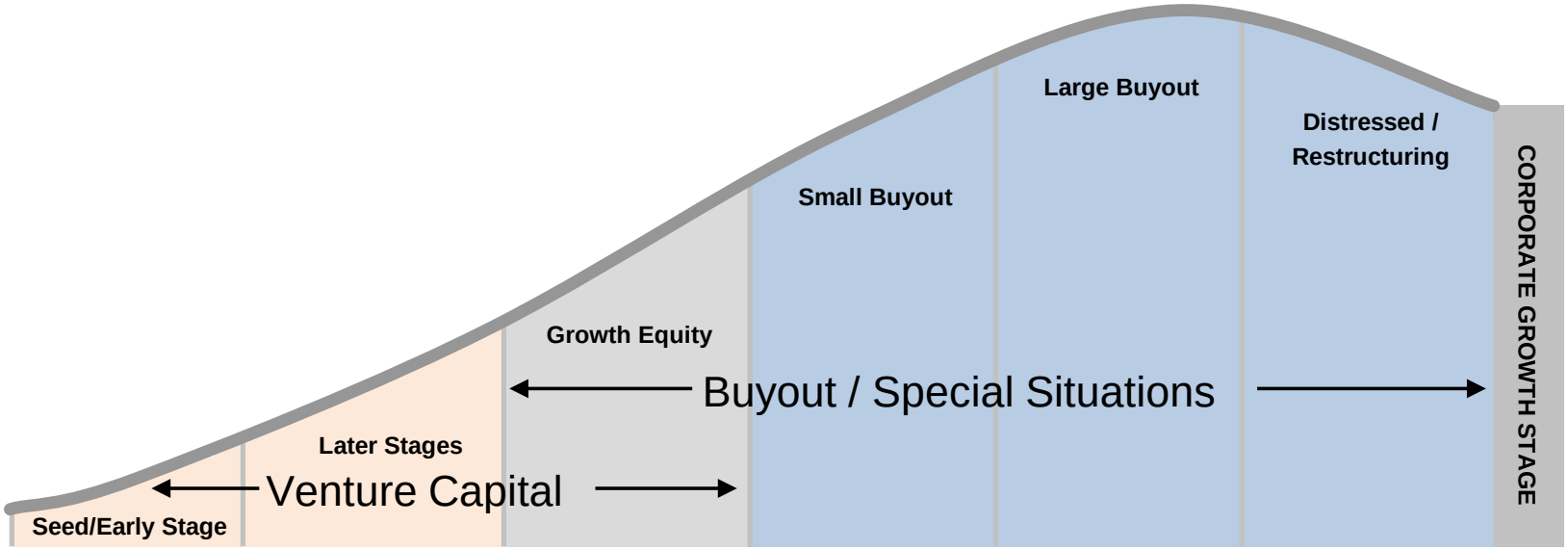
# Overview – Primary Strategies

Private equity partnerships are classified into three primary groups:

**Venture Capital** Investments in companies developing new products and services. Value creation focuses on managing entrepreneurial companies through high growth.

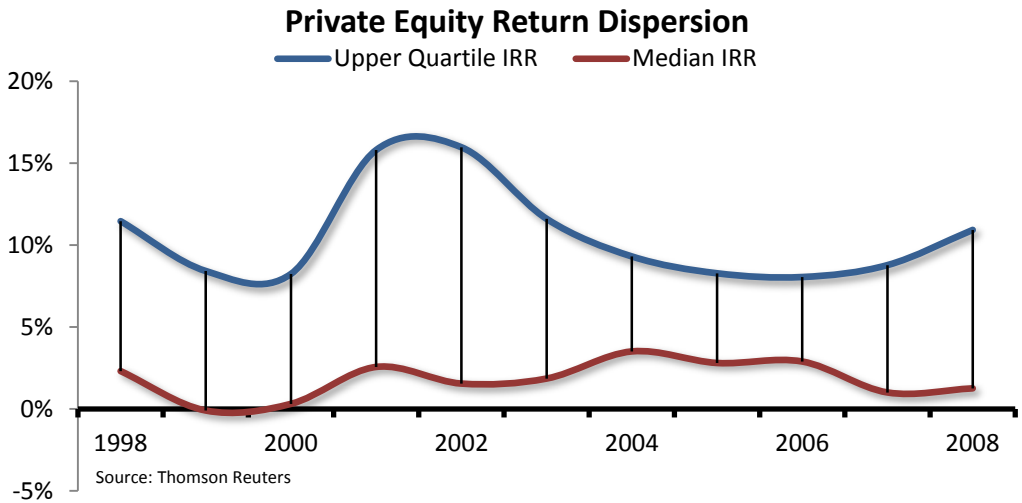
**Buyout** Control investments in more mature operating companies. Value creation generally focuses on driving operational and capital structure efficiency.

**Special Situations** Generally buyout style investments with a specialty focus; including groups that have a specific industry, investment style, or capital structure focus. Value creation focuses on specialized skills and efficiency.

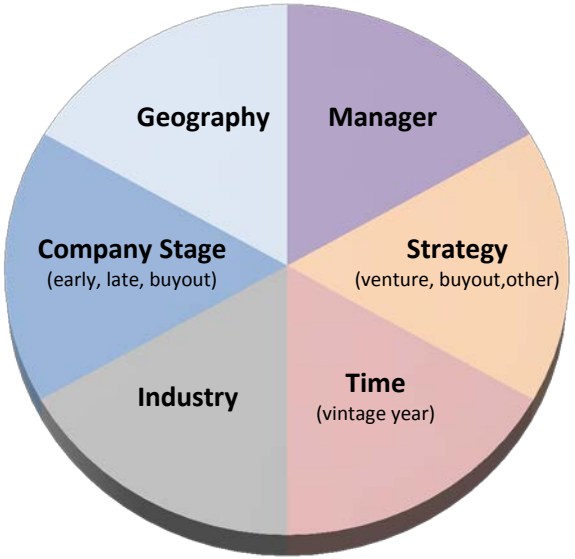


# Private Equity Program Implementation

- Manager access, selection, and diligence are important. Investing consistently with top quartile managers is critical.



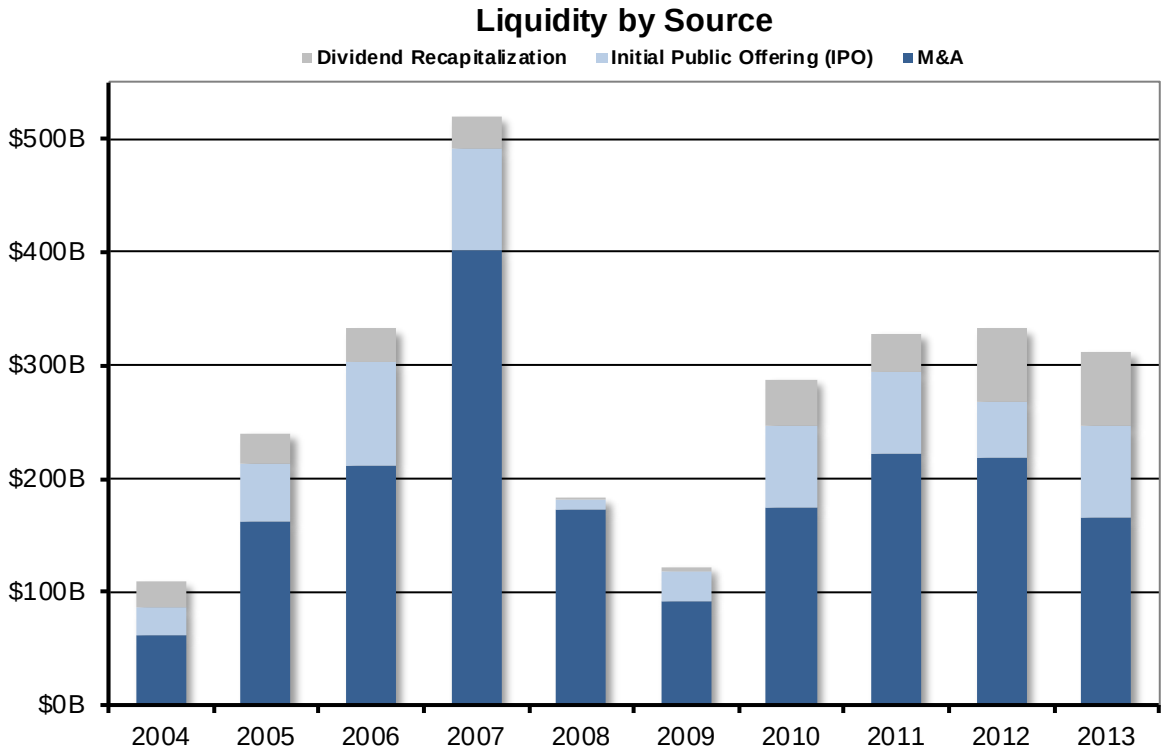

- Long-term diversification is important.
- The goal is to build a portfolio of quality partnerships diversified by strategy, industry, geography, investment stage, manager, and time.



# Market – Exit Opportunities

Private equity exit activity decreased in 2013, but has been strong and consistent for four years:

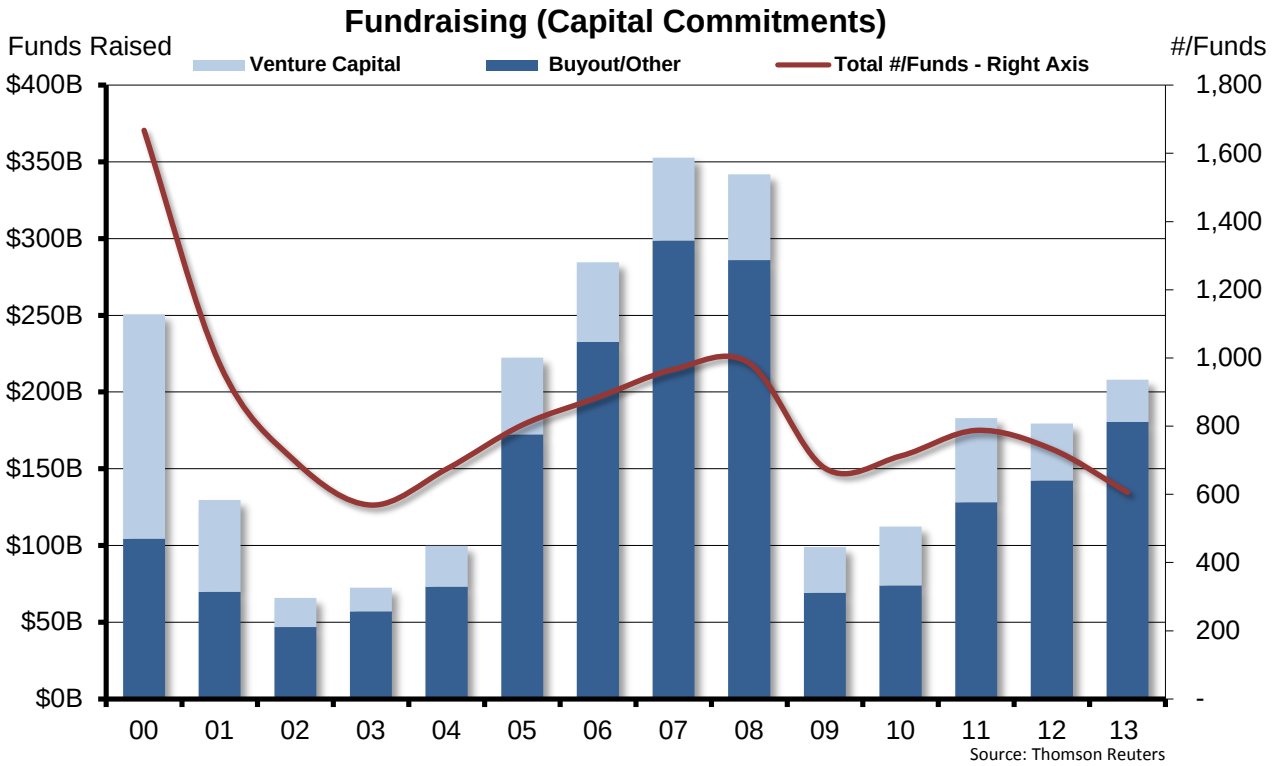
- Merger and acquisition activity slowed to $166 billion.
- Public market exits increased to $81 billion.
- The credit markets remained at record levels. Dividend recapitalizations reached an all-time high of $66 billion.




Source: Thomson Reuters & S&P. Global developed markets, except dividend recapitalization data which is U.S. only.

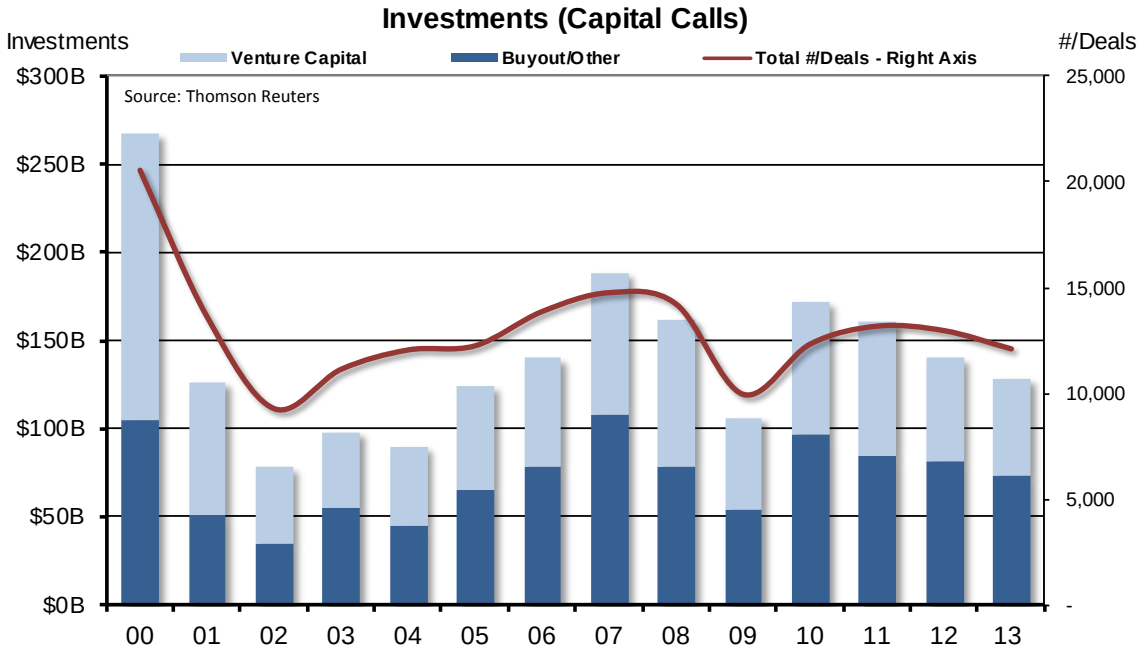
# Market – Fundraising

- Fundraising has stabilized, with a modest increase in 2013.
- Terms are still limited partner friendly and fund sizes are generally smaller, but the pace of fund raising has increased, especially for in-demand managers.
- There will be a continued reduction in poor performing general partnerships.

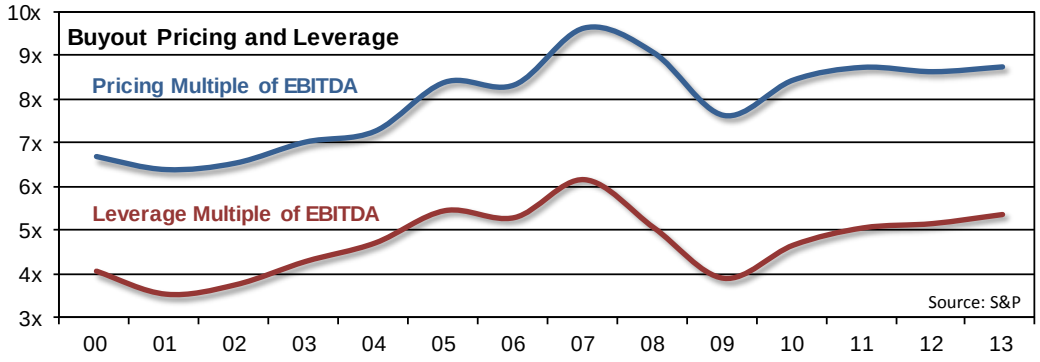


# Market – Investing

- Investment activity decreased for both buyout and venture funds due to competitive deal pricing.

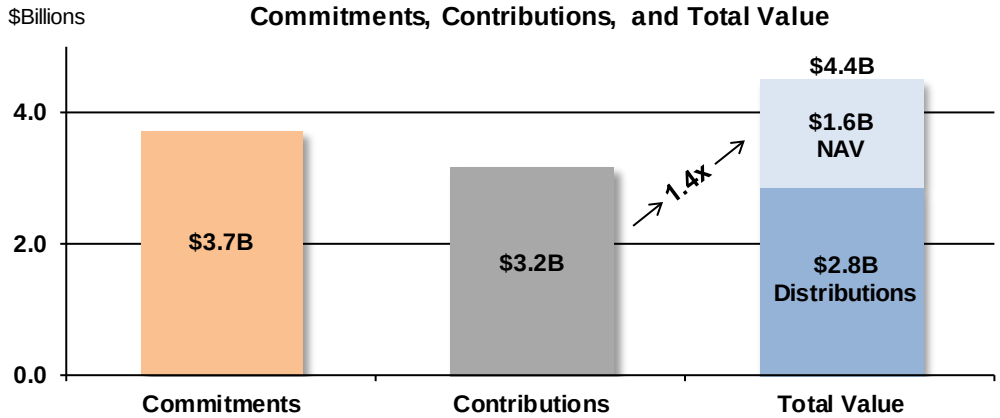



- Deal pricing and leverage modestly increased.



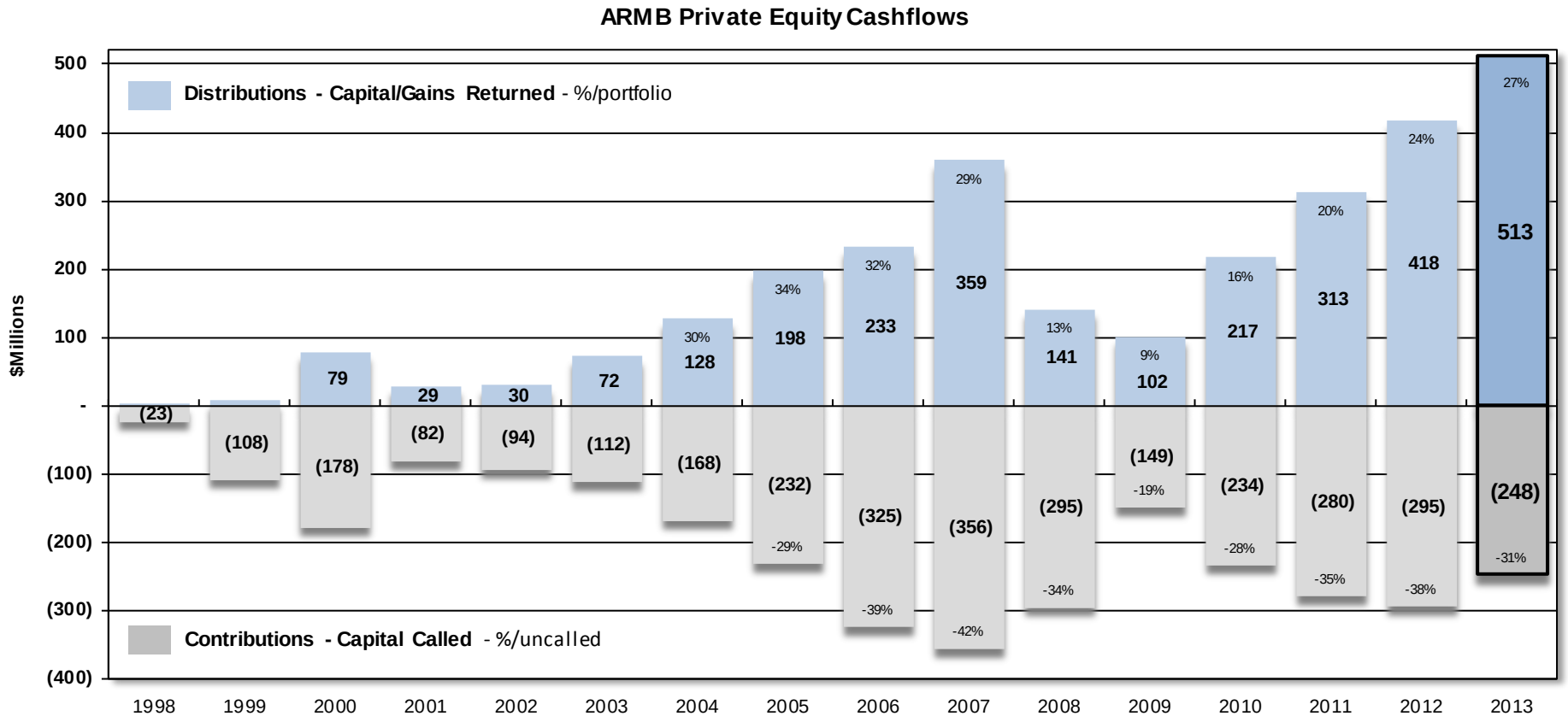
# ARMB Portfolio Performance

- The ARMB directly invests in private equity and uses gatekeepers, Abbott Capital Management (1998) and Pathway Capital Management (2001). The allocation has increased from 3% to 9% and is expected to rise to 10% over ten years.
- Private equity has been volatile since the ARMB first invested in 1998. Technology and venture capital excesses gave way to a buyout dominated market. The market peak in 2007 was characterized by strong returns, but also by high prices and leverage. Private equity didn't fall as far as the public market through the recent downturn and has had a more modest recovery.
- The ARMB and its advisors have built a diversified portfolio of quality partnerships. Manager selection has been strong. Callan recently reported on twelve vintage years through 2009 – seven were top quartile and five were second quartile. Overall the program is in the top quartile.
- Portfolio performance has been strong. The internal rate of return through 2013 is 10.2% versus a public market equivalent of 4.6% for the S&P 500 and 5.1% for the Russell 3000. The calendar year 2013 return for the portfolio was 20.8%.
- Since inception, the ARMB's private equity program has generated $800 million in additional fund value compared to investing in the public equity markets.



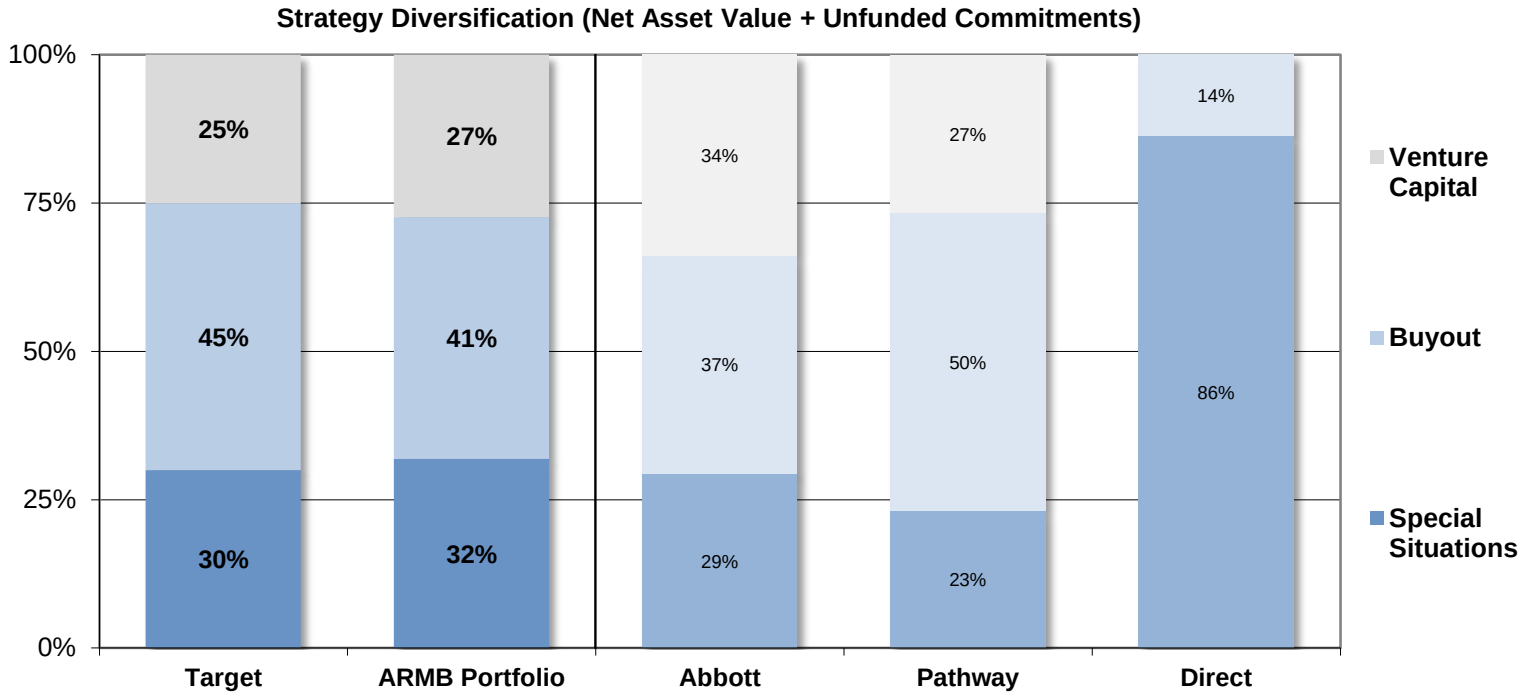
# Portfolio Cash Flows

- Distributions were very strong, increasing 23% to $513 million.
- Contributions declined 16% to $248 million.
- Net cash flows were $265 million, 16% of beginning assets.



# Diversification by Strategy

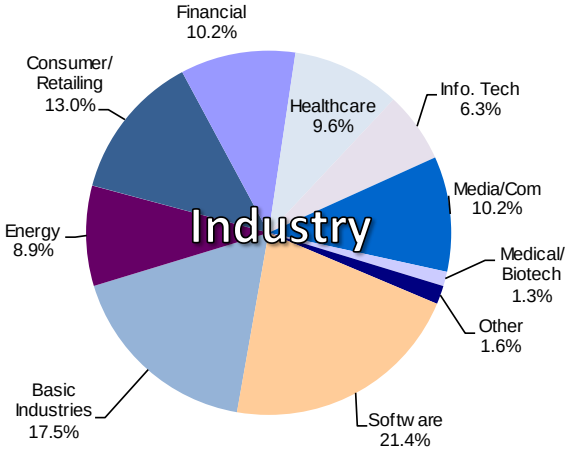
- The portfolio is well diversified by private equity strategy across buyout, special situations, and venture capital partnerships.
- Strategy exposure is well within policy bands.
- The direct partnership portfolio is weighted towards well diversified special situations investments.

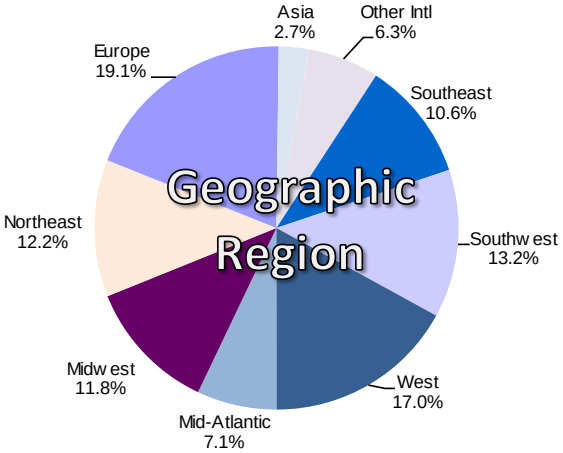


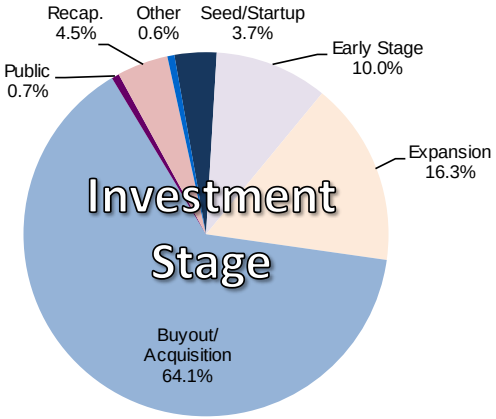
# Diversification by Portfolio Company

The portfolio is well diversified and composed of over 2,000 underlying companies:

- Industry – The portfolio is well diversified by industry, with no sector making up more than 21.4% of the portfolio.
- Geographic Region – The portfolio is well diversified geographically. International is 28.1% of the portfolio.
- Investment Stage – By investment stage, buyout/acquisition is the highest at 64.1% due to the relatively high levels of activity by buyout and special situations funds.



# 2013 Commitments

- The commitment target for 2013 was $355 million.
- $311.2 million was committed during the year.
- $128.9 million by Abbott, $132.3 million by Pathway, and $50.0 million directly.
- Commitments were well diversified by investment strategy.

Commitments for 2013 ($millions)

| Manager | Target | Actual | Number of Investments | Investment Strategy | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Venture | % | Buyout | % | Special Situations | % |
| Abbott | $145.0 | $128.9 | 11 | $25.6 | 20% | $63.3 | 49% | $40.0 | 31% |
| Pathway | $125.0 | $132.3 | 12 | $30.0 | 23% | $98.0 | 74% | $4.3 | 3% |
| Direct | $85.0 | $50.0 | 1 | $0.0 | 0% | $0.0 | 0% | $50.0 | 100% |
| **Total** | **$355.0** | **$311.2** | **24** | **$55.6** | **18%** | **$161.3** | **52%** | **$94.3** | **30%** |

# 2014 Outlook

- ***Strong exit environment.*** The exit environment for private equity is expected to show continued strength. Mergers and acquisitions should increase due to high levels of corporate cash, supportive stock market valuations, and largely modest internal growth prospects. The credit markets are accommodative due to yield-driven investors and the public equity market should also continue to be supportive.

- ***Continued fundraising recovery.*** Fundraising should continue to recover for tenured groups with strong track records since allocation issues for limited partners have lessened as private equity sponsors return capital.

- ***Measured investment pace.*** The investment pace should be measured due to relatively high pricing and increased competition from strategic acquirers, but credit markets are supportive of increased activity and higher deal pricing is increasingly a downside risk especially when coupled with an increase in fundraising.

# 2014 Tactical Plan

- For the 2014 tactical plan, staff is recommending increasing commitments to target a long term asset allocation of 10% for private equity.
- The recommended commitment target for 2014 is $450 million. $175 million for Abbott, $175 million for Pathway, and $100 million for direct partnership investments with a gradual annual increase.
- With the recommended commitment pacing, private equity should reach the recommended allocation of 10% over ten years, but will likely be below this target in the midterm.

| **Private Equity Funding Schedule** | **2013** | 2014 | 2015 | 2016 | 2017 | **2018** | 2019 | 2020 | 2021 | 2022 | **2023** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Beginning Fund Assets($MM) | **17,360,041** | 20,153,280 | 21,550,443 | 23,144,130 | 24,776,107 | **26,405,859** | 28,033,321 | 29,651,347 | 31,248,796 | 32,836,447 | **34,413,178** |
| Fund Net Growth Rate | **16.1%** | 6.9% | 7.4% | 7.1% | 6.6% | **6.2%** | 5.8% | 5.4% | 5.1% | 4.8% | **4.6%** |
| Additions from Net Fund Growth | **2,793,240** | 1,397,163 | 1,593,687 | 1,631,976 | 1,629,752 | **1,627,462** | 1,618,027 | 1,597,448 | 1,587,651 | 1,576,731 | **1,576,363** |
| Ending Fund Assets | **20,153,280** | 21,550,443 | 23,144,130 | 24,776,107 | 26,405,859 | **28,033,321** | 29,651,347 | 31,248,796 | 32,836,447 | 34,413,178 | **35,989,541** |
| Target Private Equity % | **9.0%** | 9.0% | 9.0% | 9.0% | 9.0% | **9.0%** | 10.0% | 10.0% | 10.0% | 10.0% | **10.0%** |
| Private Equity Asset Value Target | **1,813,795** | 1,939,540 | 2,082,972 | 2,229,850 | 2,376,527 | **2,522,999** | 2,965,135 | 3,124,880 | 3,283,645 | 3,441,318 | **3,598,954** |
| Asset Value by Manager ($MM) | | | | | | | | | | | |
| Abbott | **720,647** | 702,053 | 693,191 | 693,391 | 711,347 | **745,533** | 843,166 | 951,895 | 1,043,961 | 1,135,638 | **1,194,117** |
| Pathway | **770,227** | 782,252 | 804,319 | 845,505 | 906,857 | **990,474** | 1,094,959 | 1,214,780 | 1,319,857 | 1,428,095 | **1,486,200** |
| Direct Investments | **138,830** | 188,334 | 247,706 | 319,001 | 403,851 | **497,139** | 602,835 | 711,684 | 803,999 | 890,465 | **934,649** |
| Total Projected Asset Value | **1,629,703** | 1,672,639 | 1,745,216 | 1,857,897 | 2,022,055 | **2,233,146** | 2,540,960 | 2,878,360 | 3,167,817 | 3,454,199 | **3,614,967** |
| **Private Equity % of Fund** | **8.1%** | 7.8% | 7.5% | 7.5% | 7.7% | **8.0%** | 8.6% | 9.2% | 9.6% | 10.0% | **10.0%** |
| Annual Commitments ($MM) | | | | | | | | | | | |
| Abbott | **129,928** | 175,000 | 187,000 | 200,000 | 212,000 | **225,000** | 239,000 | 253,000 | 268,000 | 284,000 | **301,000** |
| Pathway | **132,300** | 175,000 | 187,000 | 200,000 | 212,000 | **225,000** | 239,000 | 253,000 | 268,000 | 284,000 | **301,000** |
| Direct Investments | **50,000** | 100,000 | 107,000 | 114,000 | 121,000 | **128,000** | 136,000 | 144,000 | 153,000 | 162,000 | **172,000** |
| **Total Commitments by Year** | **312,228** | 450,000 | 481,000 | 514,000 | 545,000 | **578,000** | 614,000 | 650,000 | 689,000 | 730,000 | **774,000** |

# ALASKA RETIREMENT MANAGEMENT BOARD

| | | | |
|---|---|---|---|
| SUBJECT: | Annual Tactical Plan for Private Equity | ACTION: | **X** |
| | Resolution 2014-06 | | |
| DATE: | April 24, 2014 | INFORMATION: | |

BACKGROUND:

The Alaska Retirement Management Board's (ARMB) "Private Equity Partnerships Portfolio Policies and Procedures" calls for the preparation and adoption of an "Annual Tactical Plan" (Plan). The Plan reviews the current status of the portfolio, historical and prospective market conditions, and the annual investment strategy designed to further the ARMB's goals and objectives for the private equity program.

STATUS:

The Plan consists of an overview and summary prepared by staff with integrated tactical plans prepared by the ARMB's private equity investment managers. Staff's overview and summary of the ARMB's consolidated private equity portfolio addresses the following:

I. 2013 Investment Activity
II. Funding Position
III. Diversification
IV. Market Conditions
V. 2014 Tactical Plan

RECOMMENDATION:

That the Alaska Retirement Management Board adopt Resolution 2014-06 approving the 2014 Annual Tactical Plan.

*Attachment: ARMB 2014 Annual Tactical Plan for Private Equity*

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD

Relating to Private Equity Annual Tactical Plan
Resolution 2014-06

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee to the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policy for each of the funds entrusted to it; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, the Board contracts an independent consultant to provide experience and expertise in asset allocation and other investment matters to come before the Board; and

WHEREAS, the Board has established an asset allocation for the funds that considers earnings and liabilities on a current as well as a future basis; and

WHEREAS, the Board has authorized investment in private equity assets for the State of Alaska Retirement and Benefits Plans; and

WHEREAS, the Board will establish, and on an annual basis review, an investment plan for private equity;

NOW THEREFORE, BE IT RESOLVED THAT THE ALASKA RETIREMENT MANAGEMENT BOARD adopts the 2014 Annual Tactical Plan for Private Equity which is attached hereto and made a part hereof.

DATED at Juneau, Alaska this _____ day of April, 2014.

_____
Chair

ATTEST:

_____
Secretary

# ALASKA RETIREMENT MANAGEMENT BOARD

## 2014 ANNUAL TACTICAL PLAN FOR PRIVATE EQUITY

The Alaska Retirement Management Board's (ARMB) "Private Equity Partnerships Portfolio Policies and Procedures" calls for the preparation and adoption of an "Annual Tactical Plan" (Plan). The Plan reviews the current status of the portfolio, historical and prospective market conditions, and the annual investment strategy designed to further the ARMB's goals and objectives for the private equity program.

The Plan consists of an overview and summary prepared by staff with integrated tactical plans prepared by the ARMB's private equity investment managers. Staff's overview and summary of the ARMB's consolidated private equity portfolio addresses the following:

I. 2013 Investment Activity
II. Funding Position
III. Diversification
IV. Market Conditions
V. 2014 Tactical Plan

## OVERVIEW AND SUMMARY

Quality private equity portfolios have historically provided high long-term returns with lower correlation to bonds and public equities. The Alaska retirement systems started investing in private equity in 1998 to enhance returns and further diversify the portfolio. The ARMB makes direct partnership investments and employs investment managers, or gatekeepers, who have discretion to make investments in private equity partnerships on the systems' behalf.

The initial gatekeeper, Abbott Capital Management, was hired in 1998 with an allocation of 3.0% of the Fund. In 2001, the allocation to private equity was increased to 6.0% and an additional gatekeeper, Pathway Capital Management, was hired. In 2005, the ARMB started making investments directly in private equity partnerships. The following year, the allocation to private equity was increased to 7.0%. In 2007, the ARMB delegated authority to the CIO to make additional direct investments in private equity partnerships. The asset allocation for private equity increased to 8.0% in 2011 and 9% in 2013.

The ARMB and its advisors have discretion to carefully select and invest in high quality partnerships while preserving diversification across strategy, industry, geography, and investment stage. Through 2013, the Alaska Retirement Systems have committed $3.7 billion to private equity partnerships. This capital is typically drawn down over 5-7 year periods and 81% has been drawn through 2013. The invested value at the end of calendar year 2013 was $1.6 billion, or 8.1% of the funds' asset allocation.

The private equity landscape has been dynamic since Alaska's initial investment in 1998. The collapse of the technology-related market of the late 1990's gave way to a period of slow rebuilding in the early 2000's. By 2005, private equity was again realizing high returns driven largely by buyout-oriented investments. The market peak in 2007 was characterized by strong returns, but also by high prices and leverage. In 2008, the severe dislocation in the capital markets slowed private equity activity and lowered returns. The market rebound in 2009 and 2010 benefited private equity portfolios, but has also reduced the buying opportunity that usually accompanies a recession.

Throughout this dynamic period, the ARMB has assembled a strong and diversified portfolio of high quality partnerships using a disciplined investment approach. The portfolio has performed well when compared with the Thomson Reuters private equity universe. For the twelve vintage years from 1998 through 2009, the ARMB portfolio was in the top quartile for seven years and the second quartile for five years. Overall, taking into account investment pacing and the performance of each vintage year, the compound performance of the portfolio is in the top quartile for this twelve year period.

The internal rate of return (IRR) for the portfolio was 10.2% from inception through 2013. The ARMB's private equity return compares favorably with public market equity investments. A public market equivalent return analysis treats the ARMB's private equity cash flows as if they had been used to buy or sell shares of a public market index. The 10.2% IRR for the ARMB private equity portfolio compares well with public market equivalent returns of 4.6% for the S&P 500 and 5.1% for the Russell 3000. The ARMB's long term benchmark for private equity is the Russell 3000 public market index plus 350 basis points and the actual outperformance has been 510 basis points. The time-weighted return for the ARMB's private equity portfolio for calendar year 2013 was 20.8%. Since inception, the ARMB's private equity program has generated $800 million in additional fund value compared to investing in the public equity markets.

Private equity has recovered meaningfully from the turmoil of 2008. Over the past several years, receptive capital markets have provided significant liquidity to private equity investors. The fundraising pace has also picked up as limited partners receive increased distributions and general partners finish investing capital from 2005-2007 funds and come back to the market.

For 2014, staff is recommending an allocation of $450 million in new commitments to be placed in quality, well diversified partnerships by Abbott, Pathway and the ARMB. This commitment pace should allow the ARMB private equity portfolio to achieve its recommended long term allocation of 10% over the ten year planning horizon.

---

# I. 2013 INVESTMENT ACTIVITY

## A. COMMITMENTS

The commitment target for 2013 was $355 million and the ARMB closed on a combined total of $311.2 million in new primary and secondary commitments.

Commitments for 2013 ($millions)

| Manager | Target | Actual | Number of Investments | Investment Strategy | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Venture | % | Buyout | % | Special Situations | % |
| Abbott | $145.0 | $128.9 | 11 | $25.6 | 20% | $63.3 | 49% | $40.0 | 31% |
| Pathway | $125.0 | $132.3 | 12 | $30.0 | 23% | $98.0 | 74% | $4.3 | 3% |
| Direct | $85.0 | $50.0 | 1 | $0.0 | 0% | $0.0 | 0% | $50.0 | 100% |
| **Total** | **$355.0** | **$311.2** | **24** | **$55.6** | **18%** | **$161.3** | **52%** | **$94.3** | **30%** |

The ARMB made 24 investments across 20 partnership groups. Abbott and Pathway both invested with CVC, GTCR and Sentinel. The following table summarizes all the commitments made during 2013.

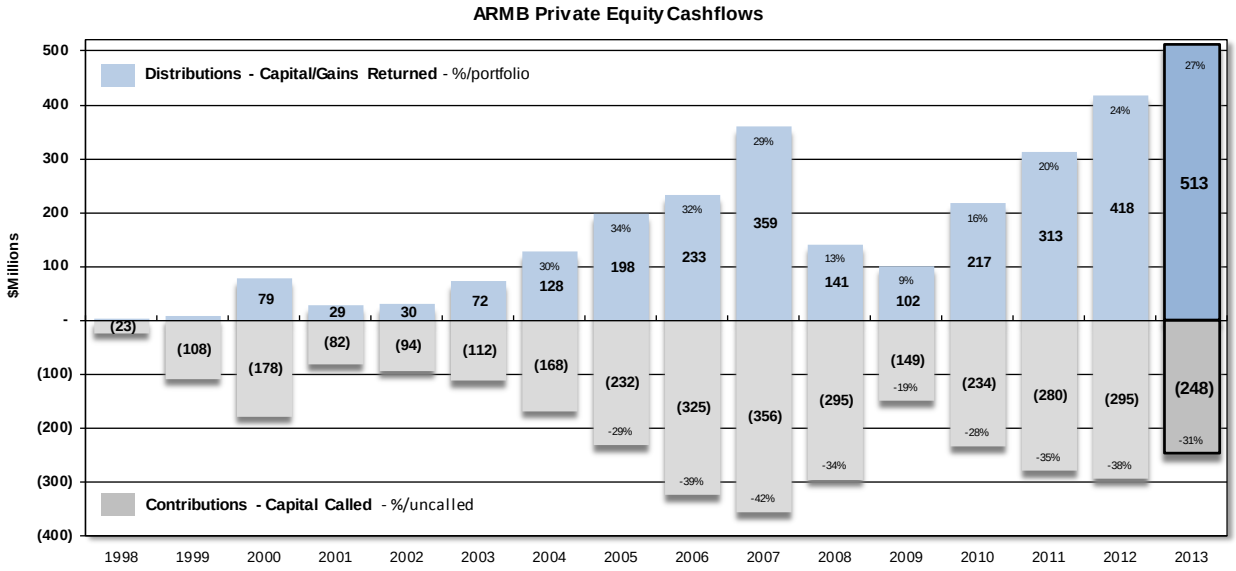
New Commitments for 2013 ($millions)

| Strategy | Partnership Fund | Description | Amount | % Total | Date | Advisor |
|---|---|---|---|---|---|---|
| Venture Capital | Battery Ventures X | Pursues growth and buyout investments in information technology companies at all stages of development. | $4.1 | 1.3% | 2/7/13 | Abbott |
| | Battery Ventures X Side Fund | Invests alongside Battery Ventures X in more mature information technology companies. | $1.6 | 0.5% | 2/7/13 | Abbott |
| | Insight Venture Management VIII | Pursues growth-stage investments in companies operating in software, software-enabled services, Internet and media services. | $15.0 | 4.8% | 4/10/13 | Pathway |
| | LLR Equity Partners IV | Pursues minority and control investments in business, financial, consumer, education, software and IT services industries. | $10.0 | 3.2% | 3/21/13 | Abbott |
| | M/C Venture Partners VII | Pursues a balanced investment strategy in media and communications companies. | $10.0 | 3.2% | 12/20/13 | Abbott |
| | Technology Crossover Ventures VIII | Pursues expansion and late-stage investments focused on the information technology industry. | $15.0 | 4.8% | 1/22/13 | Pathway |
| | ***Venture Capital Subtotals*** | | ***$55.7*** | ***17.9%*** | | |
| Buyouts | Bowmark V | Invests in growth buyout investments primarily in United Kingdom based small-cap companies. | $5.6 | 1.8% | 12/19/13 | Pathway |
| | CVC European Equity Partners VI | Invests in upper-middle market and large market buyouts primarily in Europe with investments across a broad range of industries. | $20.0 | 6.4% | 7/6/13 | Abbott |
| | CVC European Equity Partners VI | Invests in upper-middle market and large market buyouts primarily in Europe with investments across a broad range of industries. | $14.5 | 4.7% | 7/6/13 | Pathway |
| | Great Hill Equity Partners V | Invests in buyouts and growth equity investments in high-growth service businesses. | $10.0 | 3.2% | 12/6/13 | Abbott |
| | GTCR Fund XI | Pursues control investments in acquisitions focusing on consumer, business services, healthcare and technology. | $15.0 | 4.8% | 11/15/13 | Pathway |
| | Nordic VIII | Invests in upper-middle market and large market buyouts primarily in Europe with investments across a broad range of industries. | $14.7 | 4.7% | 2/20/13 | Pathway |
| | Odyssey V | Pursues control-oriented investments in companies, with a focus on industrial and business/financial services sectors. | $15.0 | 4.8% | 12/20/13 | Pathway |
| | Onex IV | Pursues control-oriented investments in a variety of buyout strategies in North America and Europe. | $15.0 | 4.8% | 11/22/13 | Pathway |
| | Sentinel Capital Partners V | Invests in lower middle market management buyouts and corporate divestures, primarily in the United States and Canada. | $8.0 | 2.6% | 7/15/13 | Pathway |
| | Sentinel Capital Partners V | Invests in lower middle market management buyouts and corporate divestures, primarily in the United States and Canada. | $3.3 | 1.1% | 7/18/13 | Abbott |
| | The Resolute Fund III | Invests in middle-market control investments in companies operating across a broad range of industries. | $20.0 | 6.4% | 10/11/13 | Abbott |
| | TowerBrook IV | Targets control-oriented investments in middle-market companies in North America and Western Europe. | $10.2 | 3.3% | 2/5/13 | Pathway |
| | Vitruvian Investment Partners II | Invests in lower middle-market minority growth opportunities and buyouts primarily in Northern Europe. | $10.0 | 3.2% | 11/15/13 | Abbott |
| | ***Buyout Subtotals*** | | ***$161.3*** | ***51.8%*** | | |
| Special Situations | Encap VIII Co-Investors | Investments in the independent sector of the oil and gas industry in the U.S. and Canada. | $0.8 | 0.3% | 6/7/13 | Pathway |
| | GTCR Fund XI | Pursues control investments in acquisitions focusing on consumer, business services, healthcare and technology. | $20.0 | 6.4% | 11/15/13 | Abbott |
| | Neuberger Berman Secondary Opportunities Fund III | Invests primarily in U.S. and Western Europe buyout funds in a variety of industries. | $50.0 | 16.1% | 7/31/13 | Direct |
| | Thoma Bravo Special Opportunities Fund I | Invests in software and software services investments to build companies through acquisitions and internal growth. | $3.5 | 1.1% | 7/10/13 | Pathway |
| | Trident VI (Stone Point) | Targets control-oriented investments in the financial services sector. | $20.0 | 6.4% | 12/20/13 | Abbott |
| | ***Special Situations Subtotals*** | | ***$94.3*** | ***30.3%*** | | |
| **Abbott Subtotal** | | | **$128.9** | **41.4%** | | |
| **Pathway Subtotal** | | | **$132.3** | **42.5%** | | |
| **Direct Subtotal** | | | **$50.0** | **16.1%** | | |
| **TOTAL ($MM)** | | | **$311.2** | **100.0%** | | |

## B. INVESTMENT ACTIVITY

The ARMB's capital commitments are called by private equity partnerships as they make investments in underlying portfolio companies. Capital calls made during 2013 by the ARMB's private equity groups totaled $248.3 million, a reduction from the level of 2012 investments. Capital calls were 31% of uncalled capital, close to the long term average. Capital calls by strategy were 40% buyout, 31% special situations, and 29% venture capital.

The ARMB received $512.6 million in distributions from private equity partnerships in 2013, a 23% increase from 2012 and the highest level of distributions since the program's inception for the second year in a row. Distributions have increased steadily since 2009 as the exit environment has improved. Adjusted for the size of the portfolio, distributions were 27% of the portfolio for 2013, higher than the past six years, but below peak market distributions. The distributions were split 49%, 44% and 7% between the Abbott, Pathway and Direct portfolios respectively.




## C. STOCK DISTRIBUTIONS

During 2013, Abbott and Pathway sold $52.7 million in stock distributed in-kind to the ARMB. The ARMB experienced a 1.7% loss on the $25.5 million sold by Abbott and a 0.4% loss on the $27.2 million sold by Pathway. Losses of 5% or more are not uncommon due to the potential for significant selling pressure when a general partner distributes large stock holdings to limited partners. The ARMB has processes in place to avoid some of the selling pressure, but the portfolio can experience volatility none-the-less. Staff reviewed the 2013 sales and is satisfied with the process that was used to liquidate the in-kind distributions.

# II. FUNDING POSITION

## A. FUNDING POSITION AS OF DECEMBER 31, 2013

The net asset value of the ARMB's private equity portfolio was $1.6 billion as of 12/31/13, an increase of $34.5 million from 2012. The private equity portfolio represented 8.1% of total assets, below the target of 9%.

| | |
|---|---|
| Total Fund Market Value 12/31/13 ($MM) | $20,153.2 |
| Target Percent for Private Equity | 9.0% |
| **Target Private Equity Allocation** | **$1,813.8** |
| Abbott Net Asset Value | $720.6 |
| Pathway Net Asset Value | 770.2 |
| Direct Net Asset Value | 138.8 |
| **Total Private Equity Portfolio Value** | **$1,629.7** |
| **Fund Percent 12/31/13** | **8.1%** |

Private equity is an illiquid, long-term asset class and the economic environment can significantly affect asset values and cash flows from year-to-year. As a result, private equity has a wide 5% band above and below the ARMB's allocation.

## B. PROJECTED FUNDING POSITION 2018 – BASED ON FUNDING MODEL IN APPENDIX I

| | |
|---|---|
| Projected Fund Market Value Year End 2018 ($MM): | $28,033.3 |
| Projected Private Equity Asset Value: | $2,233.1 |
| Percent of Total Fund: | 8.0% |

The current recommended long term allocation to private equity is 10% and with the suggested commitment pacing, the ARMB is expected to reach this target over ten years. The allocation is expected to dip below the long term target in the interim due to lower commitment pacing from 2009 through 2012.

## C. FUNDING BY STRATEGY

The private equity portfolio has long-term strategy diversification targets with a broad range between minimum and maximum exposure. The portfolio is close to the targets and well within acceptable strategy ranges for 2013.

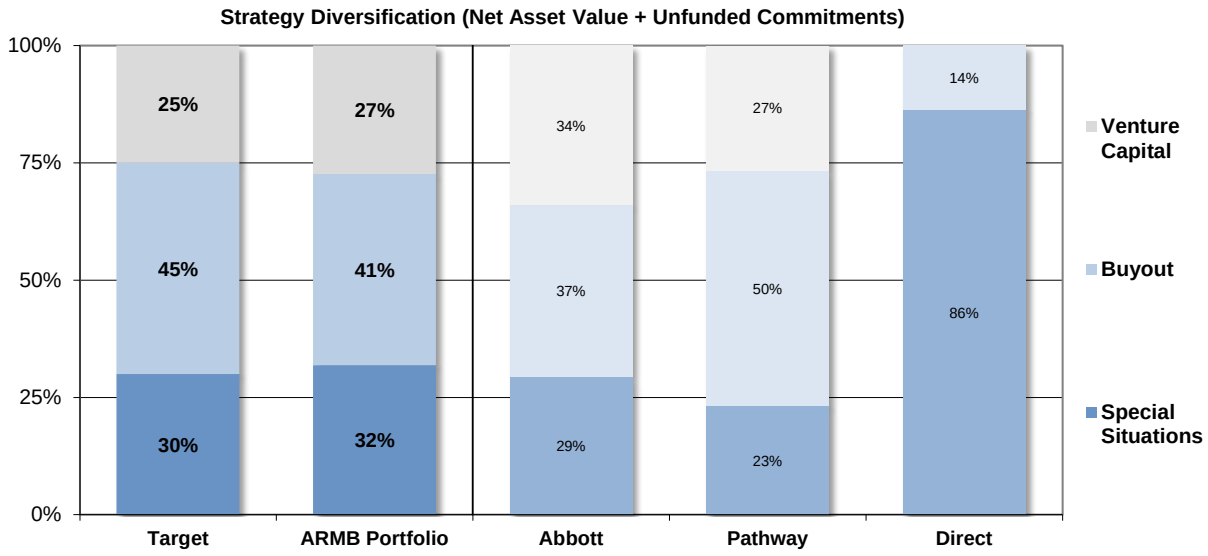
**2013**

| Strategy | Target | Min | Max | Commitments | Capital Called | Unfunded + Capital Called |
|---|---|---|---|---|---|---|
| Venture Capital | 25% | 15% | 40% | 26.0% | 26.9% | 25.3% |
| Buyouts | 45% | 30% | 60% | 41.0% | 40.4% | 41.5% |
| Special Situations/Other | 30% | 20% | 40% | 33.0% | 32.7% | 33.2% |
| **Total** | **100%** | | | **100.0%** | **100.0%** | **100.0%** |

# III. DIVERSIFICATION

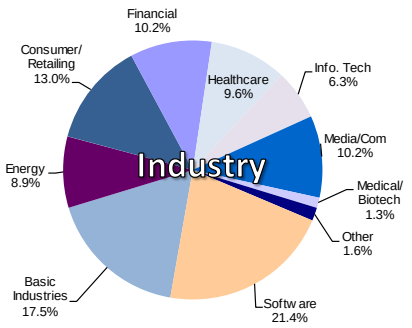
## A. INVESTMENT STRATEGY BY PARTNERSHIP AS OF 12/31/2013

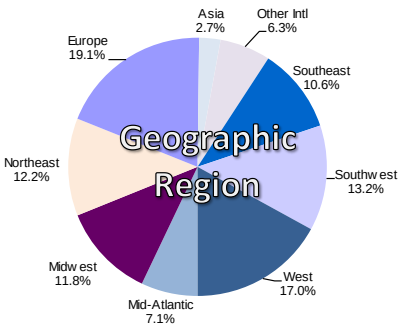
As of 12/31/13, the net asset value of the ARMB's private equity portfolio was $1.6 billion, with Abbott representing 44.2%, Pathway 47.3%, and direct investments 8.5%. The portfolio is well diversified by investment strategy. Both the Abbott and Pathway portfolios are well diversified and the direct partnership portfolio will become more diversified as it matures. Staff expects that long term diversification will be maintained since managers are focused on making new commitments to a diverse set of high quality funds.

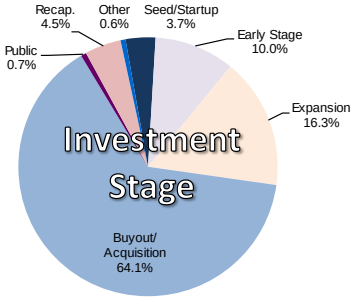



## B. INDUSTRY, GEOGRAPHIC REGION, AND INVESTMENT STAGE AS OF 9/30/2013

The portfolio is well diversified by industry, with no more than 21.4% of the portfolio concentrated in any one industry. By geography, the portfolio is well diversified within the United States and has strong international exposure at 28.1% of the portfolio. By investment stage, buyout/acquisition is the highest at 64.1% due to the high level of activity by buyout and special situations funds.



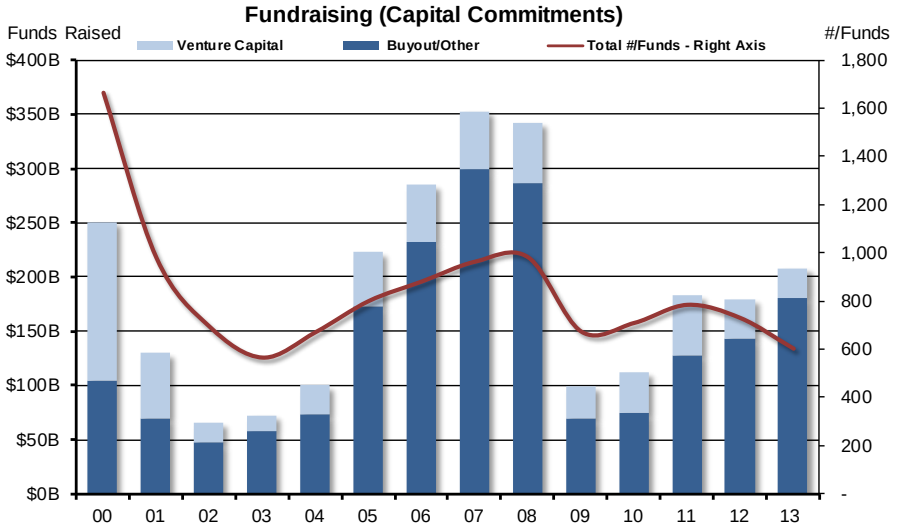



# IV. MARKET CONDITIONS

## A. 2013 SUMMARY

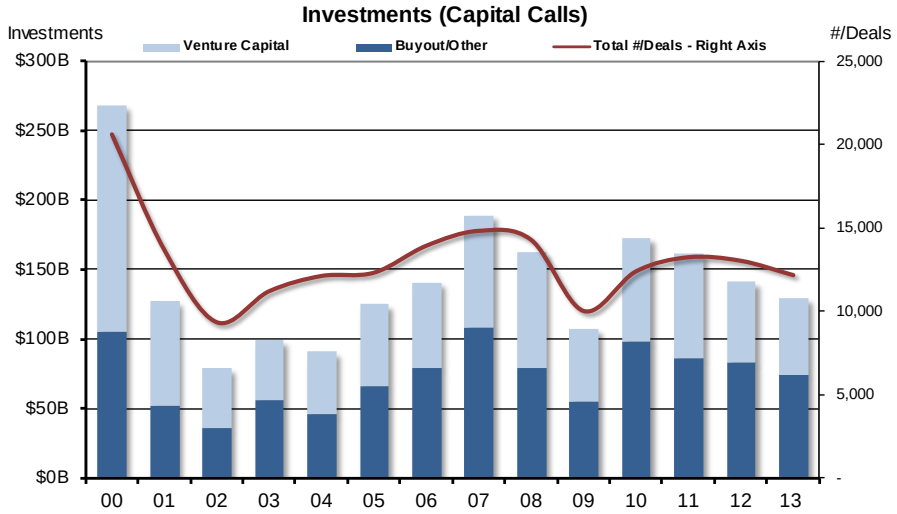
### FUNDRAISING

- Fundraising has stabilized, with a modest increase in 2013.
- Terms are still limited partner friendly and fund sizes are generally smaller, but the pace of fund raising has increased, especially for in-demand managers.
- There will be a continued reduction in poor performing general partnerships.



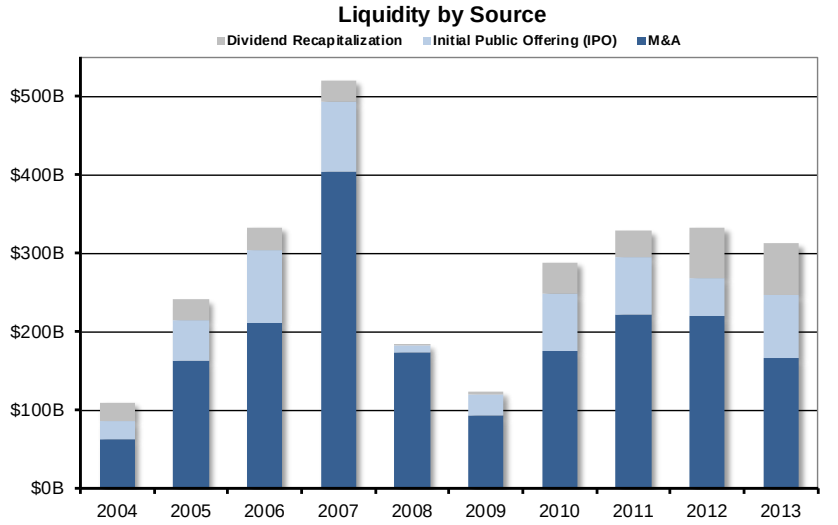

### INVESTMENT ACTIVITY

- Investment activity was reasonable, but decreased for both buyout and venture funds since deal pricing was competitive.
- Investment activity was below fundraising levels – dry powder is increasing, which could put pressure on pricing and leverage.
- Pricing and leverage levels increased modestly during the year, but remain below 2007 levels.




### EXIT OPPORTUNITIES

- Private equity exit activity decreased in 2013, but has been strong and consistent for four years.
- Merger and acquisition activity slowed to $166 billion.
- Public market exits increased to $81 billion.
- The credit markets remained at record levels. Dividend recapitalizations reached an all-time high of $66 billion.




Source: Thomson Reuters & S&P. Global developed markets, except dividend recapitalization data which is U.S. only.

## B. FORWARD OUTLOOK FOR 2014

- ***Strong exit environment.*** The exit environment for private equity is expected to show continued strength. Mergers and acquisitions should increase due to high levels of corporate cash, supportive stock market valuations, and largely modest internal growth prospects. The credit markets are accommodative due to yield-driven investors and the public equity market should also continue to be supportive.

- ***Continued fundraising recovery.*** Fundraising should continue to recover for tenured groups with strong track records since allocation issues for limited partners have lessened as private equity sponsors return capital.

- ***Measured investment pace.*** The investment pace should be measured due to relatively high pricing and increased competition from strategic acquirers, but credit markets are supportive of increased activity and higher deal pricing is increasingly a downside risk when coupled with an increase in fundraising.

# V. 2014 TACTICAL PLAN

Staff recommends a commitment target of $450 million for 2014 with an increase in commitment pacing over the next ten years as detailed in Appendix I.

## A. TARGET COMMITMENTS FOR 2014

**2014**

| Manager | Target Commitments | Number | Size per Fund | Strategies |
|---|---|---|---|---|
| Abbott | $175 million | 8-14 | $10-$30M | Venture capital, buyout, special situations, other |
| Pathway | $175 million | 8-14 | $10-$30M | |
| Direct Investments | $100 million | 2-4 | $10-$50M | |
| **Total** | **$450 million** | **18-32** | **$10-$50M** | |

Abbott and Pathway have the ability to commit up to 50% beyond their target allocation with CIO approval to access additional opportunities. The chief investment officer also has the delegated authority to commit up to $100 million in addition to the targeted amount for direct partnership investments.

## B. TARGET STRATEGIES FOR 2014

The investment opportunities are expected to be balanced by strategy and by the ARMB's other diversification guidelines. **The absolute quality of the underlying manager continues to be more important than strict adherence to diversification characteristics.** The manager specific tactical plans for Abbott and Pathway follow in Appendix II and III.

# APPENDIX I – PRIVATE EQUITY FUNDING PROJECTIONS

| Private Equity Funding Schedule | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Beginning Fund Assets($MM) | **17,360,041** | 20,153,280 | 21,550,443 | 23,144,130 | 24,776,107 | **26,405,859** | 28,033,321 | 29,651,347 | 31,248,796 | 32,836,447 | **34,413,178** |
| Fund Net Growth Rate | **16.1%** | 6.9% | 7.4% | 7.1% | 6.6% | **6.2%** | 5.8% | 5.4% | 5.1% | 4.8% | **4.6%** |
| Additions from Net Fund Growth | **2,793,240** | 1,397,163 | 1,593,687 | 1,631,976 | 1,629,752 | **1,627,462** | 1,618,027 | 1,597,448 | 1,587,651 | 1,576,731 | **1,576,363** |
| Ending Fund Assets | **20,153,280** | 21,550,443 | 23,144,130 | 24,776,107 | 26,405,859 | **28,033,321** | 29,651,347 | 31,248,796 | 32,836,447 | 34,413,178 | **35,989,541** |
| Target Private Equity % | **9.0%** | 9.0% | 9.0% | 9.0% | 9.0% | **9.0%** | 10.0% | 10.0% | 10.0% | 10.0% | **10.0%** |
| Private Equity Asset Value Target | **1,813,795** | 1,939,540 | 2,082,972 | 2,229,850 | 2,376,527 | **2,522,999** | 2,965,135 | 3,124,880 | 3,283,645 | 3,441,318 | **3,598,954** |
| Asset Value by Manager ($MM) | | | | | | | | | | | |
| Abbott | **720,647** | 702,053 | 693,191 | 693,391 | 711,347 | **745,533** | 843,166 | 951,895 | 1,043,961 | 1,135,638 | **1,194,117** |
| Pathway | **770,227** | 782,252 | 804,319 | 845,505 | 906,857 | **990,474** | 1,094,959 | 1,214,780 | 1,319,857 | 1,428,095 | **1,486,200** |
| Direct Investments | **138,830** | 188,334 | 247,706 | 319,001 | 403,851 | **497,139** | 602,835 | 711,684 | 803,999 | 890,465 | **934,649** |
| Total Projected Asset Value | **1,629,703** | 1,672,639 | 1,745,216 | 1,857,897 | 2,022,055 | **2,233,146** | 2,540,960 | 2,878,360 | 3,167,817 | 3,454,199 | **3,614,967** |
| **Private Equity % of Fund** | **8.1%** | 7.8% | 7.5% | 7.5% | 7.7% | **8.0%** | 8.6% | 9.2% | 9.6% | 10.0% | **10.0%** |
| Annual Commitments ($MM) | | | | | | | | | | | |
| Abbott | **129,928** | 175,000 | 187,000 | 200,000 | 212,000 | **225,000** | 239,000 | 253,000 | 268,000 | 284,000 | **301,000** |
| Pathway | **132,300** | 175,000 | 187,000 | 200,000 | 212,000 | **225,000** | 239,000 | 253,000 | 268,000 | 284,000 | **301,000** |
| Direct Investments | **50,000** | 100,000 | 107,000 | 114,000 | 121,000 | **128,000** | 136,000 | 144,000 | 153,000 | 162,000 | **172,000** |
| **Total Commitments by Year** | **312,228** | 450,000 | 481,000 | 514,000 | 545,000 | **578,000** | 614,000 | 650,000 | 689,000 | 730,000 | **774,000** |

## NOTES ON FUNDING PROJECTION MODEL

- The Fund projected net growth rates are based on actuarial projections adjusted for actual 12/31/13 Fund values.
- Investment commitment drawdowns are modeled over a nine-year period with the majority of the drawdowns occurring over the first four years.
- Returns of capital and gains are modeled over a twelve-year period, with less than 10% of the distributions occurring during the first three years of a partnership.
- Unrealized gains are based on the ARMB's private equity benchmark (Russell 3000 + 350 basis points). Gains are harvested after four years and are adjusted to actual portfolio values.
- Commitments are scheduled at a pace to achieve the ARMB's long term private equity allocation and preserve vintage year time diversification.

## Abbott Capital Management Annual Tactical Plan

### I. 2013 INVESTMENT ACTIVITY

A. 2013 Fund Commitments

On behalf of ARMB, Abbott committed $128.9 million to 11 primary commitments in 2013 versus a target of $145 million. ARMB did not close on any secondary transactions during the past year.

1. Primary Activity

In 2013, Abbott closed on 11 primary commitments totaling $128.9 million on ARMB's behalf as listed below:

**Primary Fund Commitments: 2013**

| Fund | Strategy | Commitment |
|---|---|---|
| Battery Ventures X | VC – Balanced | $4.1 million |
| Battery Ventures X Side Fund | VC – Balanced | 1.6 million |
| LLR Equity Partners IV | Growth Equity | 10.0 million |
| M/C Venture Partners VII | VC – Balanced | 10.0 million |
| Vitruvian Fund II* | Growth Equity – Europe | 10.0 million |
| CVC European Partners VI* | Buyout – Global | 20.0 million |
| The Resolute Fund III | Buyout – Medium | 20.0 million |
| Sentinel Capital Partners V | Buyout – Medium | 3.3 million |
| Great Hill Partners V | Special Situations – Hybrid | 10.0 million |
| GTCR XI | Special Situations – Consolidation | 20.0 million |
| Trident VI (Stone Point) | Special Situations – Industry Focus | 20.0 million |
| | | **$128.9 million** |

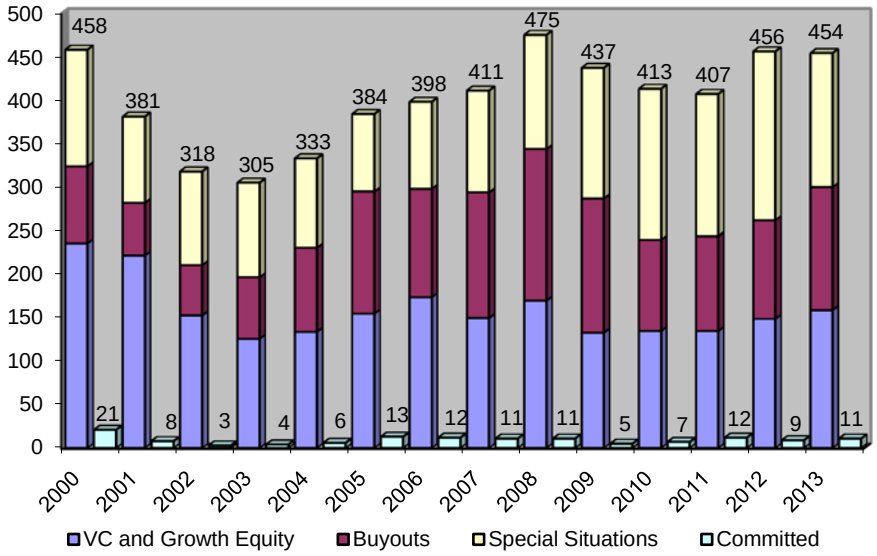
*Commitments to Vitruvian Fund II and CVC European Partners VI were £6,250,000 and €15,500,000 respectively. Commitments with respect to Partnerships denominated in non–U.S. currency reflect the USD commitment amounts at the time of closing. Slight differences may exist due to rounding.

2. Secondary Activity

In 2013, Abbott did not acquire any secondary interests on behalf of ARMB. The secondary market is discussed in more detail in Section III.

B. Deal Flow

Abbott reviewed 454 primary fund opportunities across all categories of private equity in 2013, which is basically flat relative to the number of primary fund opportunities reviewed in 2012. Abbott committed to 11 of these funds on behalf of ARMB.




## II. ARMB PORTFOLIO REVIEW

A. Review and Analysis of ARMB's Program Activity

From the inception of ARMB's private equity program in 1998 through December 31, 2013, Abbott has committed $1.89 billion to 161 private equity funds through primary commitments across the three broad categories of diversification (venture capital and growth equity, buyouts and special situations). ARMB's average commitment amount to these partnerships is approximately $11.7 million. To date, Abbott has been notified that five of these partnerships, Mayfield X, Mayfield X Annex, Madison Dearborn Capital Partners III, TA Subordinated Debt Fund and Three Cities Fund III, were fully liquidated during 2013. ARMB has also purchased 18 secondary interests in 16 funds totaling $21.0 million in maximum cash outlay. As of December 31, 2013, ARMB has cumulatively made 179 partnership investments representing $1.91 billion in primary commitments and secondary maximum cash outlay.

Abbott believes that ARMB's portfolio should be able to achieve the year-end 2018 Net Asset Value Target of $745.5 million through continued deployment of capital over the next four tactical plan periods. At December 31, 2013, the active portfolio was valued at $714.8 million, including a pooled partnership net asset value of $714.2 million and $0.6 million of publicly-traded stock held by ARMB as of December 31, 2013.[1] Note that ARMB's partnership holdings were valued at the September 30, 2013 fair value adjusted solely for partnership cash flows through year-end. Actual values as of December 31, 2013 will differ from those reported above. The year-end 2013 Net Asset Value (including distributed stock pending sale or settlement) of $714.8 million is approximately $31 million below ARMB's stated 2018 target. As evidenced in prior years, investment activity combined with valuation changes may cause the portfolio to be somewhat over or under its target allocation depending on the economic cycle. However, provided that the portfolio experiences a consistent level of commitments and

[1] The pooled portfolio value for the ARMB account included herein is based on the aggregate portfolio fund values as of September 30, 2013, adjusted by all cash flows through December 31, 2013, plus the value of distributed stock sold but not yet settled as of December 31, 2013. Pursuant to the request of ARMB, ARMB receives an expedited statement on the last business day of each month, and therefore a difference may exist between the pooled portfolio value reported in this tactical plan and the pooled portfolio value reported in the December 31, 2013 monthly report.

distributions, ARMB's private equity funding projections suggests that the Net Asset Value will remain near its targeted level as the portfolio matures.

B. Portfolio Performance

The ARMB cumulative Net IRR since inception, net of investment management fees paid by ARMB to Abbott, was 9.2% as of September 30, 2013, a 50 basis point improvement over last year.[2] Although private equity is an asset class that should be measured over the long term, ARMB's one-year return on the portfolio, gross of investment management fees paid by ARMB to Abbott, was 20.5% as of September 30, 2013.

ARMB's long-term performance as of September 30, 2013 is also favorable when compared to various public indices in a public market equivalent ("PME") calculation. Through September 30, 2013, the long-term performance of the ARMB program outperformed the S&P 500 and Russell 3000 by 480 and 410 basis points, respectively, according to Abbott's public market equivalent analysis.

| As of September 30, 2013 | **Performance** | **Outperformance** |
|---|---|---|
| **ARMB Net IRR** (net of Abbott fees) | 9.2% | **N/A** |
| **PME Benchmark (S&P 500)** | 4.4% | **4.8%** |
| **PME Benchmark (Russell 3000)** | 5.1% | **4.1%** |

## III. GENERAL MARKET OVERVIEW

A. Venture Capital and Growth Equity

Venture capital and growth equity investors benefited from last year's wide-open IPO window, robust market multiples and strong post-IPO stock performance. Much of the activity was focused around software, notably enterprise and cybersecurity companies, but also included a $2.1 billion offering by social media platform Twitter. One of the biggest surprises was the resurgence of biotech IPOs as a number of companies showed positive clinical results. While it took some biotech companies many years to mature, the recent data combined with a more accommodative FDA revived an industry that had fallen out of favor. More generally, broad gains from public offerings bolstered investor confidence, which translated into an increase in total venture investments. The momentum drove overall venture industry returns to increasingly attractive levels with the one-, three-, five-, and ten-year pooled net IRRs all climbing several hundred basis points compared to a few years ago. On the other hand, corporate interest apparently did not follow suit as M&A activity for venture-backed companies declined in 2013.

U.S. venture capital and growth equity fundraising activity declined in 2013, thus further reducing the capital overhang in the segment. According to Thomson Reuters and the NVCA, U.S. venture capitalists raised $16.7 billion, a 15% year-over-year decline and the fifth consecutive year that less than $20 billion was raised. In addition, similar to past years the venture industry has continued to consolidate as fewer firms raise an increasing amount of capital. This dynamic could lead to less capital chasing deals, and thus a more attractive investment environment for market participants.

At the same time, investments by U.S. venture capitalists totaled $29.4 billion in 2013, which was a 7% increase from 2012. This activity was largely driven by increases in software, biotech and Internet investments, with the former representing a whopping $11 billion of the aggregate amount invested. The apparent "shift to the cloud" was a major factor that resulted in increased software investment, as enterprise sub-sectors such as applications, infrastructure and security attracted venture capital interest. In terms of stage, recent momentum in the technology sector, as evidenced by the active IPO market discussed below, also likely spurred increased investment in early stage technology companies. These investments increased 15% and 17% in terms of dollars invested and deal volume, respectively, representing ten-year highs.

U.S. venture-backed exits, which includes both IPOs and M&A events, totaled approximately $26 billion in 2013, or approximately 40% less than in 2012. However, excluding the monumental $16 billion Facebook IPO in 2012,

[2] This return is calculated net of Abbott's investment management fees, and was calculated using the fair value of ARMB's portfolio as of September 30, 2013 and monthly partnership cash flows since inception through September 30, 2013.

2013 venture-backed exit volume was only 8% below 2012 levels. This dynamic was largely due to a decline in venture-backed M&A activity, as $14.5 billion in 2013 venture-backed M&A volume represented the slowest year since 2009. This relatively modest level of activity is somewhat surprising given the reportedly large cash positions on many corporate balance sheets. At the same time, however, public market demand for venture-backed assets was robust. In total, 82 venture-backed companies publicly-listed in 2013, the most new listings since 2007. Biotech companies comprised over half of these IPOs, which is more than the five prior years combined. Subsequent trading values of many venture-backed businesses have also been strong as investors continue to pay full prices for higher-growth assets in what remains a relatively low growth macro environment.

B. Buyouts and Special Situations

The past 12 months was a seller's market within the buyout and special situations segments, particularly within the U.S., as readily available, attractively-priced credit and seemingly high valuations led many firms to focus on generating liquidity from existing investments rather than executing new transactions. The strong credit markets, driven largely by the demand for higher-yielding investments in a record-low interest rate environment, helped facilitate across-the-board asset price appreciation. As a result of higher valuations of both public and private assets, buyout and special situations firms put an increased emphasis on exiting investments, leading to a record-breaking year for net private equity liquidity. Private equity fundraising, which can be correlated with distribution activity, also exhibited a meaningful year-over-year increase as many limited partners sought to re-deploy capital into the asset class. Conversely, full valuations in the U.S., in addition to lingering macro-economic concerns abroad, may have led to increased caution with regard to executing new investments.

Buyout and special situations funds had a strong year in terms of fundraising in 2013. According to Thomson Reuters, buyout and special situations firms globally raised $258 billion in 2013, a 33% increase from the $194 billion raised in 2012. U.S.-based firms continued to constitute the majority of capital raised, accounting for $157 billion, or over 60% of fundraising dollars. In addition, European firms raised approximately $62 billion, or 102% more capital raised than 2012, as economic improvements across the Euro Zone gave investors increased confidence. In contrast, Asian-domiciled funds raised 20% less capital in 2013 than in the prior year, a development that was likely a result of slowing economies and private equity-backed distributions in many of these countries.

As alluded to above, global buyout investment activity in 2013 decreased year-over-year, both with regard to number of deals and equity invested, as market dynamics were geared more towards selling than buying. According to Thomson Reuters, buyout and special situation firms globally invested $73.2 billion in 3,528 companies, year-over-year declines of 9% and 13%, respectively. The most meaningful decline across geographies was exhibited in Europe, where capital invested decreased 80%, to only $8 billion. Similarly, Asian investment declined 50% from 2012.

At the same time, private equity firms distributed robust amounts of capital to limited partners in 2013. Follow-on stock offerings of companies backed by private equity firms increased meaningfully year-over-year, as many sponsors sought to sell shares given the strong equity markets. These same dynamics likely led to a marked increase in buyout and special situations-backed IPO activity in 2013, as 138 buyout and special situations-backed companies raised $42.3 billion in 2013 compared with 62 companies that raised $16.8 billion in 2012. It should be noted seven of these IPOs raised in excess of $1 billion, compared to only one in 2012. In addition, the robust credit markets helped facilitate continued dividend recapitalization activity, which hit a record high for the second consecutive year in 2013. On the other hand, M&A exits declined 30% year-over-year. However, this decline is skewed somewhat due to the "pull forward" of transactions into the second half of 2012 spurred by looming tax rate changes, as M&A exit activity during the second half of 2013 showed considerable improvements over the prior six-month period.

C. Secondary Activity

According to Cogent Partners January 2014 Secondary Pricing, Trends & Analysis report, secondary transaction volume hit a record high at $27.5 billion in 2013, which marked the fourth consecutive year where secondary transaction volume exceeded $20 billion. Strong capital markets and increased buy-side demand due to large, dedicated funds raised led to a robust pricing environment across all strategies of private equity. Discounts for buyout funds during the second half of 2013, at an average of 8%, remained far less than their venture counterparts, which averaged 20% during the same time period.

Going forward into 2014, secondary market pricing has remained robust, even potentially frothy, due the significant amount of capital dedicated for secondary strategies and continued capital market health. Per the aforementioned report, Cogent estimates secondary volume will experience double-digit growth in 2014 given over $50 billion of dedicated dry powder available for secondary investments. It should be noted this number excludes investors like Abbott that opportunistically seek to make secondary purchases, and thus this number may be understated. Given this capital and its ultimate effect on pricing/underwriting, Cogent anticipates nearly a third of secondary volume in 2014 to be in the form of "non-traditional" transactions, which includes GP-led restructurings, spin-outs and direct investments. Pricing for more traditional secondary transactions will likely remain at high levels absent a market correction.

## IV. DIVERSIFICATION

| Strategy | Estimated 12/31/13 NAV | Year-End 2018 Target | Difference |
|---|---|---|---|
| **Venture Capital and Growth Equity** | $268,569,184 | $186,383,250 | (82,185,934) |
| Early | 60,138,868 | 37,276,650 | (22,862,218) |
| Multi | 151,005,451 | 74,553,300 | (76,452,151) |
| Late | 57,424,866 | 74,553,300 | 17,128,434 |
| **Buyouts** | 238,946,466 | 298,213,200 | 59,266,734 |
| **Restructuring** | 0 | 18,638,325 | 0 |
| **Special Situations** | 180,081,349 | 223,659,900 | 43,578,551 |
| **Subordinated Debt** | 13,967,938 | 18,638,325 | 4,670,387 |
| **Secondary Interests** | 12,628,415 | NA | NA |
| **Distributed Stock Currently Held** | 638,321 | NA | NA |
| Total | $714,831,673 | $745,533,000 | N/A |

A. Venture Capital and Growth Equity

ARMB has accumulated a well-diversified portfolio of 63 active venture and growth equity funds (not including 14 secondary interests in existing funds). Abbott will continue to identify opportunities to build on ARMB's existing relationships with top-performing groups while selectively pursuing relationships with high-quality groups not currently in the ARMB portfolio.

B. Buyout and Special Situations

ARMB has a well-diversified portfolio of 84 active buyout and special situation partnerships (not including two secondary interests). Similar to venture managers, Abbott will continue to develop relationships with strong performing groups and selectively seek high-quality firms that can augment the ARMB portfolio and add incremental diversification. We anticipate a strong year in terms of buyout and special situations commitments given funds currently in the market raising capital as well as Abbott's projected pipeline of opportunities, which includes a number of existing ARMB managers as well as potential new relationships.

As mentioned in prior correspondence, Abbott now combines the buyout and special situations partnerships into one reporting category. Note, however, that we will continue to identify each partnership as either a buyout or special situation fund within our internal systems to ensure that we effectively monitor portfolio diversification.

C. International

ARMB's Private Equity Partnerships Portfolio Policies and Procedures provide target ranges for the eligible investment strategies. Global/International is currently allocated a range of up to 35%. In 2013, ARMB made commitments to two international partnerships: **CVC European Equity Partners VI**, a global medium-to-large buyout fund, and **Vitruvian Fund II**, a growth-oriented, middle-market pan-European buyout fund.

## V. MONITORING

A. Specific situations being monitored

Abbott has made 179 commitments (primary and secondary) to 161 partnerships on behalf of ARMB, 148 of which were active as of December 31, 2013. Abbott actively monitors these funds on an ongoing basis.

Among the partnership groups in ARMB's portfolio, many have advisory or valuation committees. Abbott serves on a majority of these committees, which generally meet formally two to four times per year. Abbott also seeks to attend each annual meeting held for partnerships in the ARMB portfolio. Abbott regularly visits general partners in their offices as part of our ongoing due diligence, and general partners frequently visit Abbott to provide us with updates. Outside of formal meetings, Abbott speaks to general partners on a regular basis to deepen our understanding of the portfolio investments as well as the dynamics of the general partner groups. This process enables Abbott to make informed decisions regarding whether groups in the portfolio should be supported in the future. Abbott has periodic conference calls with ARMB staff to review and discuss current issues affecting the portfolio.

## VI. EXITING

A. Pending Distributions or Liquidations

As detailed below, ARMB's portfolio experienced a material increase in distributions in 2013 when compared to distribution activity in 2012, as well as to 2013 capital call activity. In fact, total distributions outpaced capital calls by a 2.7:1 ratio in 2013, compared with 1.6:1, also a strong liquidity ratio, in 2012. In the near-term, liquidity is expected to be strong given increased economic stability within many developed markets and the continued strength of the credit and equity markets. Over time, however, market dynamics will shift and the pace of capital calls relative to distributions will likely revert back to more normalized levels.

B. Any Other Relevant Considerations Relating to Exiting ARMB's Investments

In 2013, ARMB received cash distributions of $190.7 million compared to $160.4 million received in 2012. During 2013, ARMB also received securities valued at $25.3 million with a cost basis of $4.1 million. Distributed stock liquidated in 2013 (including distributed stock held as of December 31, 2012 pending settlement) was converted into net cash proceeds of $25.0 million during 2013. In aggregate, ARMB ultimately received $215.7 million in net cash proceeds[3] resulting from 2013 transaction activity, representing an approximate $39 million increase over the net proceeds received in 2012.

## VII. 2014 GOALS AND STRATEGY

Candidates Abbott is Aware of and/or Planning to Pursue

Abbott will continue to review partnerships that meet the guidelines of ARMB's strategic portfolio structure across all three broad categories of diversification. We anticipate several top-tier venture capital and growth equity, buyout and special situations groups currently in ARMB's portfolio will return to the market to raise fresh capital in 2014. Abbott expects new quality partnership opportunities will also arise, which will selectively be added to ARMB's portfolio mix. Whether a new or existing relationship, we will continue to apply our rigorous due diligence process to each opportunity.

Abbott will continue to focus on larger dollar commitments to top-tier private equity partnerships. It should be noted, however, that access to high-quality funds is frequently a significant barrier for limited partners, particularly those new to the asset class. As such, Abbott recommends that ARMB remain flexible with respect to commitment sizes, which will provide the portfolio the widest possible access to high-quality private equity partnerships. Subject to an acceptable pipeline of opportunities, Abbott will seek to prudently commit capital on ARMB's behalf at an average annual level of $200 million over the next five years. We note, however, that the fundraising market is cyclical and no assurances can be made that the stated commitment goals will be attained in any given year.

Year-to-date, ARMB has committed and closed on a total of $6.6 million evenly split to **Lightspeed Venture Partners X** and **Lightspeed Venture Partners Select** which reflect ARMB's first commitments to this firm.

[3] Net of related brokerage commissions, fees and expenses and any gain or loss realized upon the sale of distributed stock.

Lightspeed Venture Partners is predominantly an early-stage IT investor, with a particular focus on enterprise IT and consumer Internet. Lightspeed's Select Fund will invest approximately two-thirds in later rounds of existing Lightspeed investments, with the balance earmarked for later stage investments in companies Lightspeed has not backed.

## VIII. SUMMARY

Overall, like 2012, market conditions in 2013 helped facilitate a strong year for private equity-backed liquidity. As a result, ARMB received total net cash proceeds of $215.7 million during the past year, which represented a 22% increase in distributions from 2012, which itself was 20% higher than the level of distributions in 2011. The past year's increase in distribution activity helped generate a 57 basis point increase in ARMB's total estimated year-end 2013 pooled portfolio IRR, to 9.34%, from year-end 2012. Abbott ultimately closed on 11 primary fund commitments on ARMB's behalf during the year that totaled $128.9 million in commitments.

In 2014, Abbott will continue developing ARMB's strategic portfolio with a focus on committing larger dollar amounts to top-tier private equity partnerships, while retaining the flexibility to commit lesser amounts to certain opportunities should the situation warrant. In addition, Abbott will continue to remain active in the secondary market with the goal of boosting returns and increasing vintage year diversification. As always, Abbott will maintain its rigorous selection criteria with the goal of building a high-performing, diversified portfolio across venture capital and private equity.

# APPENDIX III PATHWAY TACTICAL PLAN

**Pathway Capital Management Annual Tactical Plan**

**Pathway Portfolio Overview**

From the inception of the Pathway/ARMB private equity program in 2002 through December 31, 2013, Pathway committed $1.5 billion to 115 private equity partnerships across 53 managers on behalf of the Alaska Retirement Management Board (ARMB). Of the $1.5 billion committed, $1.2 billion, or 79% of total commitments, had been contributed as of year-end 2013; additionally, $968 million in distributions had been received. The portfolio has produced a total value of $1.7 billion—which represents 148% of cumulative contributions—and has generated a since-inception net IRR of 13.0%.[1]

The portfolio performed exceptionally well in 2013, generating a record gain of $125.1 million and a return of 17.6% for the year. Notably, all four of the portfolio's core strategies and 11 of its 13 active vintage years posted double-digit 1-year returns. Additionally, the portfolio generated positive returns in all four quarters of the year. The portfolio has now generated positive returns in 18 of the past 19 quarters, which has resulted in $468.9 million in gains and a 450-basis-point improvement in the portfolio's since-inception net IRR since March 31, 2009.

The portfolio's strong performance in 2013 was supported by significant portfolio company realizations: distribution activity totaled a record $225.0 million, surpassing the previous record total of $185.4 million in 2012 by 21%. Distribution activity was strong throughout the year: all four quarters ranked among the top six quarters for distributions since the program's inception, and the fourth quarter represented the largest quarterly distribution total since inception ($76.1 million). Contribution activity totaled $102.5 million for the year, a 15% decrease from 2012. In 2013, distributions outpaced contributions by a ratio of greater than 2:1, which resulted in a record net cash flow of $122.6 million. Notably, 2013 marked the third-consecutive year that the program has generated positive net cash flow.

**2013 Review**

**Commitments**

Table 1 provides a summary of 2013 commitment activity by investment strategy compared with the 2013 Tactical Plan allocation targets. Pathway continued to maintain its rigorous due diligence process and strict partnership selection criteria during 2013, reviewing 412 partnership opportunities before ultimately selecting 12 for inclusion in the ARMB portfolio. As shown in the table, Pathway committed $132.3 million on behalf of ARMB in 2013 and was within the target ranges for the venture capital, special situations, and restructuring investment strategies but slightly outside the target range for the buyouts strategy and the overall target range for the year. Pathway, in consultation with ARMB investment staff, elected to exceed both the buyout and overall target ranges in 2013 in order to support five existing buyout managers that returned to market and to establish three new buyout relationships that were viewed as highly complementary to the portfolio.

1. Performance is based on September 30, 2013, market values adjusted for cash flows through December 31, 2013. Returns do not include any appreciation or depreciation in market value that occurred during the fourth quarter of 2013. As of September 30, 2013, the program had a since-inception net IRR of 13.4%.

**Table 1. ARMB's 2013 Private Equity Activity vs. 2013 Annual Tactical Plan**

| | 2013 Plan | | 2013 Actual | |
|---|---|---|---|---|
| Investment Strategies | No. of Partnerships | Total Commitments | No. of Partnerships | Total Commitments |
| Buyouts | Up to 6 | Up to $85 million | 8 | $98.0 million |
| Venture Capital | Up to 6 | Up to $70 million | 2 | $30.0 million |
| Special Situations | Up to 3 | Up to $30 million | 2 | $4.3 million[a] |
| Restructuring | Up to 3 | Up to $30 million | 0 | — |
| Subordinated Debt | None | None | 0 | — |
| **Total** | **Up to 14** | **Up to $125 million** | **12** | **$132.3 million** |

NOTE: Amounts may not foot due to rounding.
[a]Includes a $0.8 million follow-on investment in Encap VIII Co-Invest. The initial commitment to this partnership was made in 2011.

During 2013, ARMB committed the largest portion of its capital to buyout-focused partnerships: $98.0 million to eight managers, of which three (TowerBrook IV, Nordic VIII, and Bowmark V) represent new relationships for ARMB. In terms of geographic segmentation, four of these buyout funds will focus on U.S. opportunities and four will focus on opportunities in Europe.

Commitments to venture capital partnerships accounted for the second-largest portion of 2013 commitment activity at $30.0 million, which was committed to two existing managers in the portfolio (Insight VIII and TCV VIII). Also during the year, ARMB committed $4.3 million to two special situation funds: $3.5 million to Thoma Bravo Special Opportunities Fund I, an existing manager that focuses on the software sector, and $0.8 million to EnCap VIII Co-Invest, a follow-on commitment to an investment originally made in 2011. ARMB did not make any new investments in restructuring/distressed partnerships in 2013, which was reflective of the dearth of high-quality opportunities in this strategy during the year.

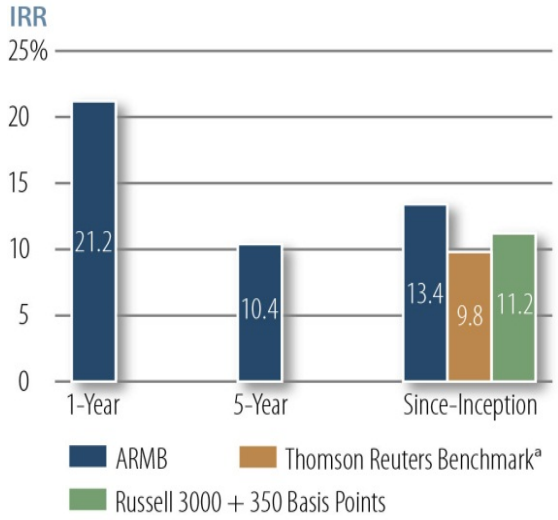
## Performance

The ARMB portfolio exhibited strong performance during the 1-year period ended December 31, 2013, posting gains in all four quarters and establishing a new record annual gain of $125.1 million. The portfolio generated a 1-year return of 17.6% over this period, which compares favorably with the 1-year return of 10.1% generated over the same period in 2012. The portfolio's strong performance in 2013 was broadly based: 12 of the portfolio's 13 active vintage years posted gains during the year (the immature 2013 vintage year being the only vintage to post a loss). In total, 90 of the portfolio's 108 active partnerships as of December 31, 2013, generated net gains during the 1-year period, including 45 partnerships that generated gains in excess of $1.0 million.

The portfolio's 2013 performance was led by its venture capital funds, which collectively generated a 1-year return of 23.2% and which achieved both record gains and record distributions for the year. The portfolio's buyout partnerships also performed particularly well, accounting for the largest portion of gains by strategy ($59.5 million) and collectively generating a 1-year return of 17.4%. In addition, the portfolio's two other core strategies, restructuring and special situations, posted favorable double-digit 1-year returns of 13.8% and 10.2%, respectively. Notably, 2013 marked the fourth-consecutive year in which all four of the portfolio's core strategies contributed to its positive return.

ARMB's private equity portfolio continues to post strong long-term performance relative to public and private equity benchmarks. As shown in figure 1, the ARMB portfolio's since-inception performance exceeds the portfolio's public benchmark (Russell 3000 plus 350 basis points) on a dollar-weighted basis by more than 220 basis points. In addition, the portfolio outperforms the Thomson Reuters pooled horizon returns for 2001- through 2013-vintage private equity funds by more than 360 basis points. At the partnership level, the portfolio's mature vintages (2001–2008) continue to perform well: six of the eight generations exceeded their upper quartile vintage year benchmarks, and all eight generations exceeded their median benchmarks, as of September 30, 2013.

**Figure 1. ARMB Performance vs. Private and Public Market Benchmarks**
**As of September 30, 2013**

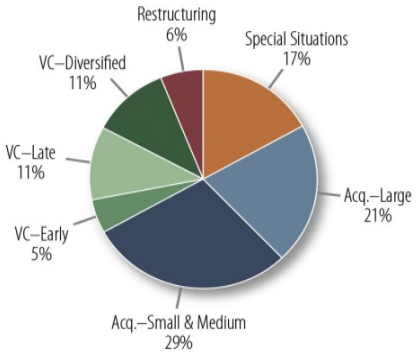



[a]Thomson Reuters All Regions All Private Equity pooled horizon returns for 2001- through 2013-vintage funds, as of September 30, 2013 (the most-recent data available).

**Diversification**

One of Pathway's objectives in constructing the ARMB private equity portfolio is to reduce risk by ensuring that the portfolio is well diversified by various metrics, including time, investment strategy, industry, geographic region, and investment manager. Pathway believes that ARMB's portfolio is currently well diversified: the portfolio consists of 115 partnerships across 14 vintage years and 53 managers and contains more than 1,800 underlying portfolio companies, as of December 31, 2013. Figure 2 illustrates the current diversification of ARMB's private equity portfolio by investment strategy at the partnership level, based on partnership market value plus unfunded commitments through December 31, 2013.

**Figure 2. Investment Strategy Diversification**




NOTE: Based on partnership market values and unfunded partnership commitments through December 31, 2013.

**Buyouts & Special Situations**

By design, acquisition partnerships constitute the largest portion of the ARMB portfolio, representing 50% of total exposure (partnership market value plus unfunded commitments). This exposure falls comfortably within the recommended target range of 30%–60%. The acquisitions strategy is diversified by industry and regional focus, as well as by transaction type and size. The portfolio currently consists of 51 acquisition partnerships: 30 partnerships that target small- and mid-cap companies and 21 partnerships that target large-cap companies (i.e., companies with enterprise values of more than $1.0 billion). Eighteen of the portfolio's acquisition partnerships focus primarily on investments in Western European countries. Pathway committed $98.0 million to eight acquisition funds in 2013: five funds from existing

managers (CVC VI, GTCR XI, Odyssey V, Onex IV, and Sentinel V) and three funds from new manager relationships (Bowmark V, Nordic VIII, and TowerBrook IV).

ARMB's special situation investments are also within Pathway's recommended target range, representing 17% of total exposure. The special situations strategy consists of 22 partnerships of various sizes and areas of focus: 13 industry-focused partnerships, seven partnerships that implement multiple investment strategies, and two partnerships that specialize in turnaround opportunities. Pathway added one special situation partnership to the ARMB portfolio in 2013—Thoma Bravo Special Opportunities Fund I, an existing manager relationship—to which Pathway committed $3.5 million. Additionally, Pathway made a small follow-on commitment of $0.8 million to an existing special situation fund, EnCap VIII Co-Invest, bringing the portfolio's total commitment to the fund to $4.7 million.

In 2013, the portfolio's buyout and special situation partnerships collectively generated $73.1 million in gains— which accounted for 58% of the portfolio's total gains for the year—and posted a combined 1-year return of 15.4%. Distribution activity was strong for both strategies. During 2013, the portfolio's acquisition partnerships distributed $106.1 million, a marginal (2%) decline from 2012's record distribution total of $108.5 million but still the second-highest annual total for the strategy in the history of the program. The portfolio's special situation partnerships distributed a record $36.9 million over this period, a 39% increase over the 2012 distribution total. Over longer time horizons, ARMB's buyout and special situation partnerships continue to perform well: as of December 31, 2013, the portfolio's buyout and special situation partnerships generated 5-year and since-inception returns of 12.7% and 12.4%, respectively.

**Venture Capital**

The ARMB portfolio currently includes 29 venture capital partnerships, which utilize a variety of early-, late-, and multistage investment strategies. As of December 31, 2013, these partnerships represented 27% of the portfolio's total exposure, which was near the midpoint of Pathway's recommended target range of 15%–40%. Pathway committed $30.0 million to two venture capital funds from existing manager relationships during the year: $15.0 million to TCV VIII and $15.0 million to Insight VIII.

The portfolio's venture capital partnerships posted the strongest 1-year performance (based on returns) of any of the investment strategies in the portfolio during 2013, generating a return of 23.2% and gains of $46.0 million. While performance across the strategy was broadly based—16 of the portfolio's 29 venture capital partnerships generated annual gains in excess of $1.0 million—particularly strong performance was generated by TCV VII, which posted $7.8 million in gains during the year. Distribution activity increased significantly in 2013: at $61.4 million, the total was more than double the previous record total of $28.8 million in 2012. The venture capital strategy continues to demonstrate solid long-term performance: the strategy's 5-year and since-inception returns were 16.2% and 12.9%, respectively.

**Restructuring**

The ARMB portfolio currently comprises 13 distressed debt partnerships, which employ trading and control-oriented strategies. These partnerships, which account for 6% of the portfolio's total exposure, target debt or other securities of distressed or troubled companies and are generally less correlated to traditional buyout and venture capital investments. During 2013, Pathway did not identify any restructuring/distressed partnerships that met its investment criteria, and thus did not add any restructuring partnerships to the ARMB portfolio during the year.

During 2013, ARMB's distressed debt partnerships generated a 13.8% return. Distributions from these partnerships also remained strong at $20.7 million—a modest (4%) decline from the prior year but still the second-highest annual distribution total since the inception of the program. The restructuring strategy

continues to deliver exceptional long-term performance: as of December 31, 2013, the strategy generated a 5-year return of 18.8% and a since-inception return of 21.3%.

**International**

Pathway has diversified ARMB's portfolio by geographic region by committing to partnerships that target a variety of regions outside the United States. As of December 31, 2013, the ARMB international portfolio comprised 20 partnerships: 18 acquisition partnerships, one special situation partnership, and one venture capital partnership. The portfolio's international exposure accounted for 15% of total exposure (at December 31, 2013) and was within its long-term target range of 0%–35%. Pathway made commitments to four international partnerships during 2013: $10.2 million to TowerBrook IV, €11.0 million ($14.7 million) to Nordic VIII, and £3.5 million ($5.6 million) to Bowmark V, which represent new manager relationships, and €11.3 million ($14.5 million) to CVC VI, an existing manager relationship.

The portfolio's international partnerships performed well in 2013, collectively generating a 14.0% return (including currency exchange-rate fluctuations). Notably, four partnerships generated gains in excess of $1.0 million during 2013: Exponent II ($3.1 million), Permira IV ($2.5 million), CVC European IV ($1.7 million), and BC Capital IX ($1.1 million). This strong 1-year performance drove a 70-basis-point improvement in the international portfolio's since-inception return, which improved from 9.1% at December 31, 2012, to 9.8% at December 31, 2013.

## 2014 Investment Plan

In 2014, Pathway will continue to expand and diversify ARMB's portfolio, adding commitments to both existing managers and new managers that meet Pathway's strict selection criteria and that complement the existing portfolio. Pathway's objective is to target commitments of $175 million in up to 20 partnerships, subject to the availability of high-quality investment opportunities. Pathway expects to commit between $10 million and $25 million per partnership. Consistent with its approach to date, Pathway will focus primarily on newly formed limited partnerships but will also selectively consider secondary partnership interests. ARMB's 2014 Tactical Plan is summarized in table 2.

**Table 2. ARMB's 2014 Annual Tactical Plan**

By Strategy

| Investment Strategies | No. of Partnerships | Total Commitments |
|---|---|---|
| Buyouts | Up to 10 | Up to $125 million |
| Venture Capital | Up to 10 | Up to $100 million |
| Special Situations | Up to 5 | Up to $45 million |
| Restructuring | Up to 5 | Up to $45 million |
| Subordinated Debt | None | None |
| **Total** | **Up to 20** | **Up to $175 million** |

When selecting partnerships for the ARMB portfolio, Pathway will continue to follow an opportunistic investment philosophy while maintaining its disciplined investment process and rigorous selection criteria to ensure that each partnership is of the highest quality. Because Pathway seeks only the highest-quality investment opportunities in the market, the amount committed to any one strategy may vary from year to year depending on what opportunities are perceived to be the most attractive at the time. Under no circumstance will Pathway commit ARMB's capital to a partnership that does not meet its high-quality standards.

**2014 Plan to Date**

Through March 31, 2014, Pathway has committed $33.0 million on behalf of ARMB, or 19% of the 2014 Tactical Plan allocation target, to five partnerships. In February, ARMB committed $3.2 million to Trident VI, a special situation fund focused on the global insurance and financial services industries. In March, ARMB committed €11.6 million ($16.1 million) to Permira V, a buyout fund that targets leveraged buyout investments in upper-middle-market and large-market companies, primarily in Europe; £5.2 million ($8.6 million) to Alchemy Special Opportunities I, a distressed debt fund that targets non-control investments in the debt securities of European companies in financial distress; $4.8 million to EnCap Flatrock Midstream III, a special situation fund focused on midstream oil and gas assets; and $0.3 million to EnCap VIII Co-Invest, a second follow-on commitment to an investment originally made in 2011. Trident VI, Alchemy Special Opportunities I, and EnCap Flatrock Midstream III represent new manager relationships for ARMB. Pathway anticipates that the flow of new opportunities will be robust for the remainder of 2014 and has identified a number of potential partnerships for the ARMB portfolio, including eight partnerships being raised by existing manager relationships and several partnerships being raised by managers not yet in the portfolio. It is too early, however, to determine whether these partnerships will be included in ARMB's portfolio in 2014; some may not meet Pathway's rigorous investment criteria and others may postpone fundraising until the following year, depending on market conditions and investment pace.

**Monitoring**

Pathway's goals in monitoring ARMB's private equity portfolio are (1) to protect the portfolio's investments by reducing the occurrence of negative events within the portfolio; (2) to take full advantage of the rights offered to ARMB through its limited partnership agreements; and (3) to enhance the portfolio's returns. In 2014, Pathway will continue to fulfill its role as an active investor by maintaining active dialogue with general partners, attending regular meetings, and representing ARMB on advisory boards. During 2013, Pathway participated in 168 advisory board/monitoring meetings, attended 45 annual meetings, and reviewed 56 amendments related to the ARMB portfolio. Pathway will continue to monitor the investment pace of the portfolio and the partnerships' adherence to their stated investment strategies to ensure that the investments stay within the guidelines set forth by ARMB. Pathway will also continue to closely monitor the compliance of ARMB's partnerships with regard to ASC 820 (formerly SFAS 157) accounting standards.

Pathway will keep ARMB informed of developments in the portfolio by maintaining regular contact with ARMB staff and by providing quarterly reports on the performance and status of ARMB's private equity investments, as well as through Pathway's Online Management System (POMS), which provides a database of ARMB investments that is regularly updated with cash flows, market values, portfolio company valuations, and performance measurements.

**Exiting**

Distribution activity increased significantly in 2013, reaching a new record level. This occurred as a result of the continuing accommodative state of the credit markets and the further strengthening of the exit environment, which allowed the portfolio's general partners to return capital through dividend recapitalizations and the liquidation of mature holdings. In total, the portfolio's partnerships distributed $225.0 million in 2013, which represents a 21% increase from the prior record total of $185.5 million in 2012. Notably, distribution activity was strong across all four of the portfolio's core strategies: the portfolio's venture capital and special situations strategies each established new record distribution totals in 2013, and its buyouts and restructuring strategies each posted their second-highest annual distribution totals. Activity was also strong throughout the year: all four quarters ranked among the portfolio's top six quarters for distributions since the program's inception. In total, 53 of the portfolio's 108 active partnerships as of December 31, 2013, made distributions in excess of $1.0 million in 2013.

**Summary**

Over the past 12 years, Pathway has developed a strong foundation for its portion of ARMB's private equity portfolio. In order to continue the development of the portfolio, Pathway recommends that ARMB adopt the following 2014 Tactical Plan:

- Target commitments of $175 million during the 2014 calendar year, subject to the availability of high-quality investment opportunities.

- Invest up to $25 million per partnership in up to 20 partnerships during 2014, in opportunities from both existing manager relationships and new manager relationships. Investments will typically range from between $10 million and $25 million; however, Pathway may invest smaller amounts in highly sought-after, oversubscribed partnerships if there is a strong likelihood that ARMB will be able to commit a larger amount to these general partners' next funds.

- Continue to adhere to the long-term target allocation ranges by strategy (buyouts, 30%–60%; venture capital, 15%–40%; and special situations, 20%–40%[2]) and by geographic region (up to 35% in international partnerships), while maintaining a flexible posture in order to invest in only the highest-quality partnerships.

Pathway will continue to maintain a highly selective approach, with an emphasis on identifying cohesive management teams that possess significant investment experience and that have demonstrated strong performance across multiple business and economic cycles.

2. Includes restructuring and distressed debt partnerships.

Callan

# ARMB Board Meeting

Investment Performance
Periods Ended 12/31/13

Updated April 10, 2014

**Michael J. O'Leary, CFA**
Executive Vice President

**Paul Erlendson**
Senior Vice President

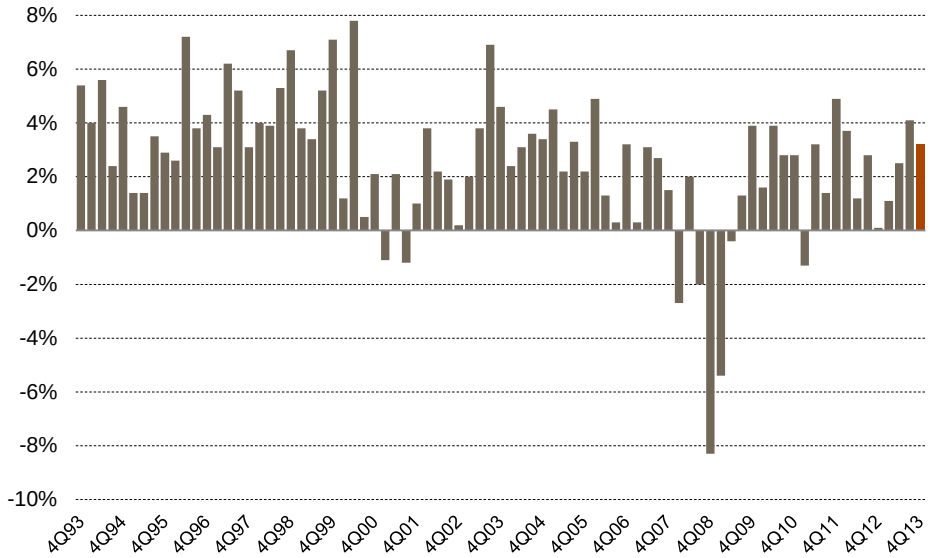
# Agenda

- Market and Economic Environment
- Total Fund Performance
  - Major Asset Classes
  - Alternative Equity Strategies
- Review of Major Activities

# U.S. Economy

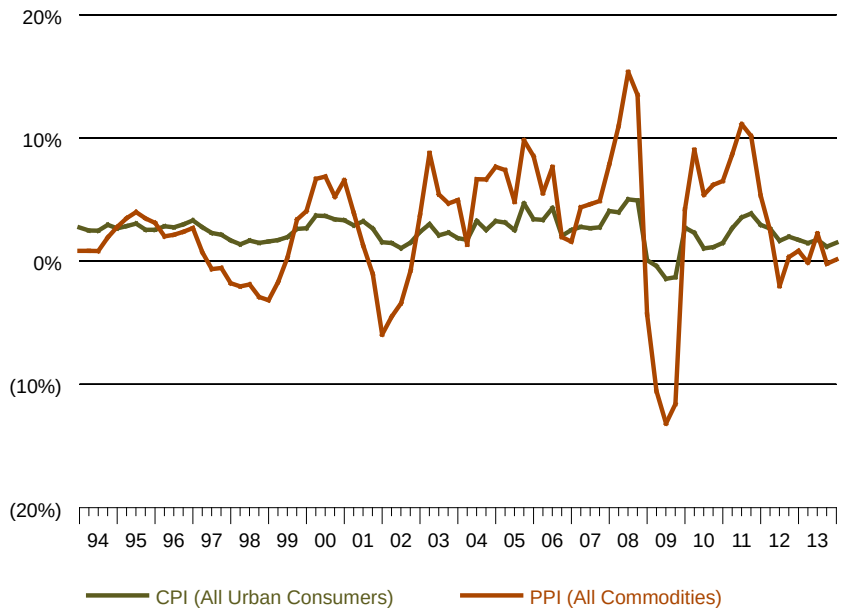
## Periods Ending December 31, 2013

**Quarterly Real GDP Growth (20 Years)**




Source: Bureau of Economic Analysis

**Inflation Year-Over-Year**

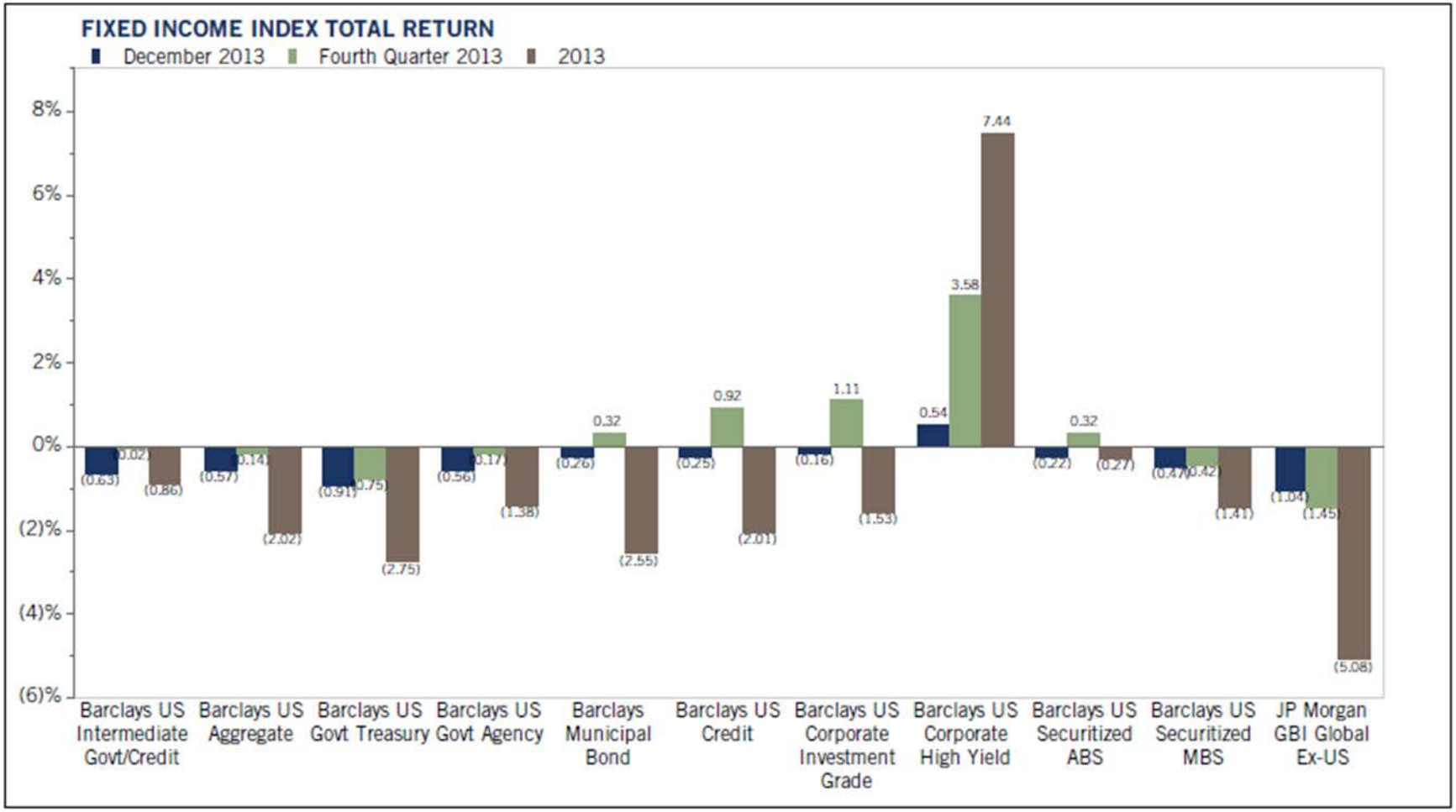



Source: Bureau of Labor Statistics

- Fed announced that QE will be scaled back to $65B/month (from initial $85B) starting in February
- Fourth quarter GDP was reported at 3.2%, strong but down from 4.1% in the third quarter. Then, revised down to 2.4%
- December headline & core CPI increased 1.5% and 1.7%, respectively, over the last year
- Unemployment is at 6.7% through the end of December

# Not a good year for bonds except high yield

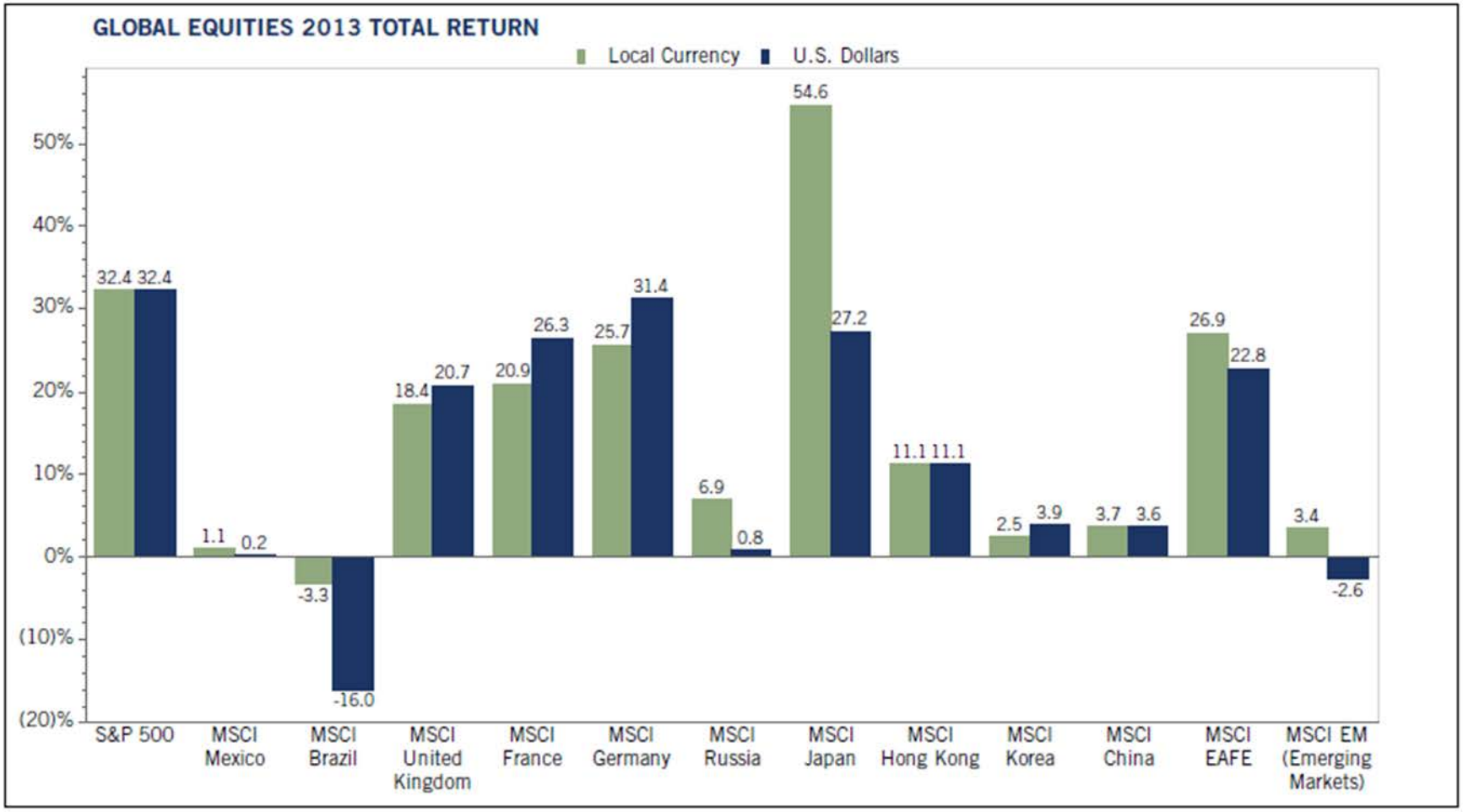
Fixed income assets posted negative returns during 2013 with the exception of high yield corporates, which experienced a strong rally during the fourth quarter.




Source: FactSet, Barclays Capital, JP Morgan and Babson Capital as of December 31, 2013. **PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.** It is not possible to invest directly in an Index.

# Domestic & International Equity

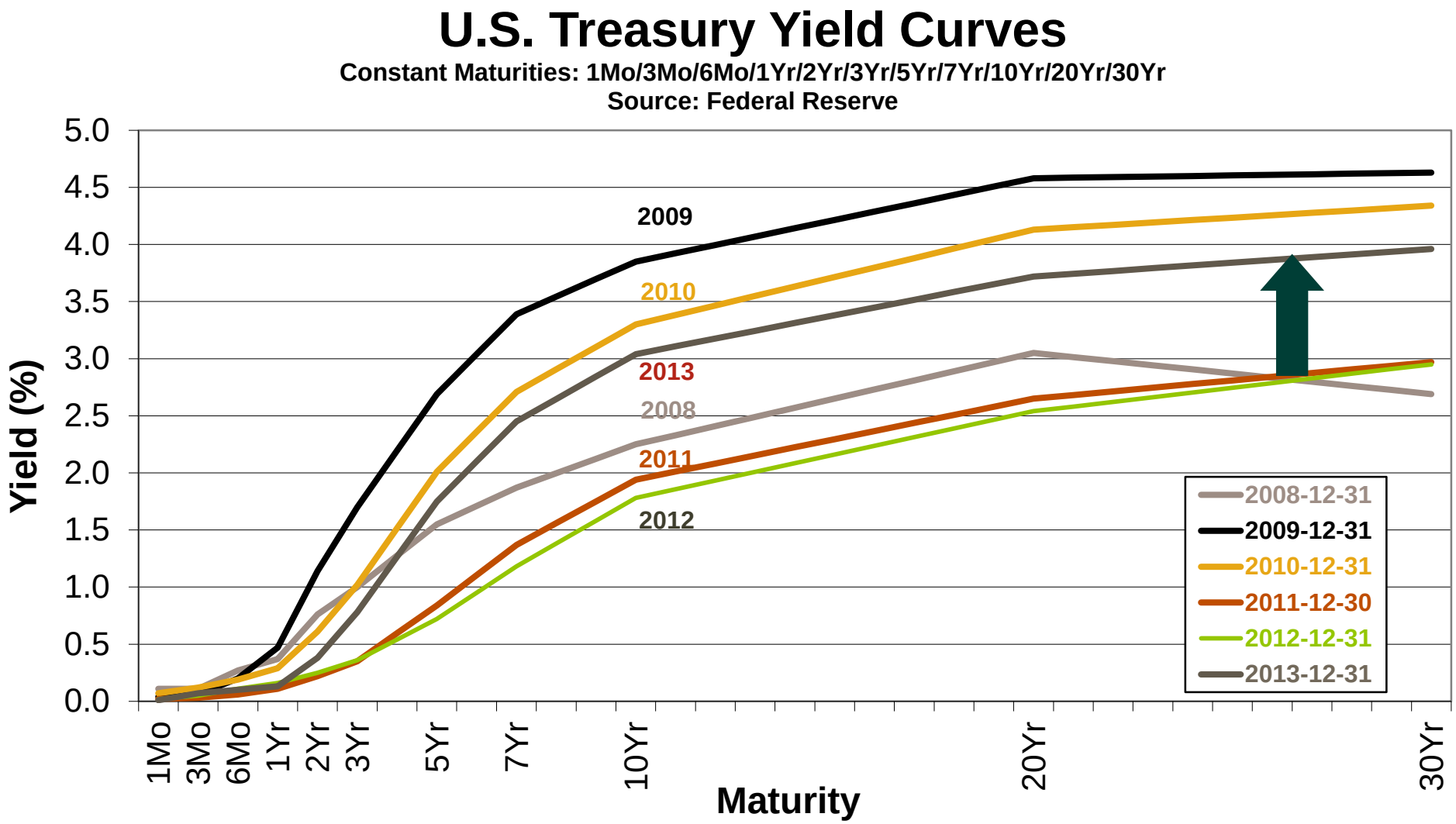
Developed country equity markets outperformed in 2013, led by the U.S., Germany and Japan, while emerging markets including Russia, Mexico and Brazil underperformed.




Source: FactSet and Babson Capital as of December 31, 2013. PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. It is not possible to invest directly in an Index.

# Treasury Rates Rose in Q4 and the full year

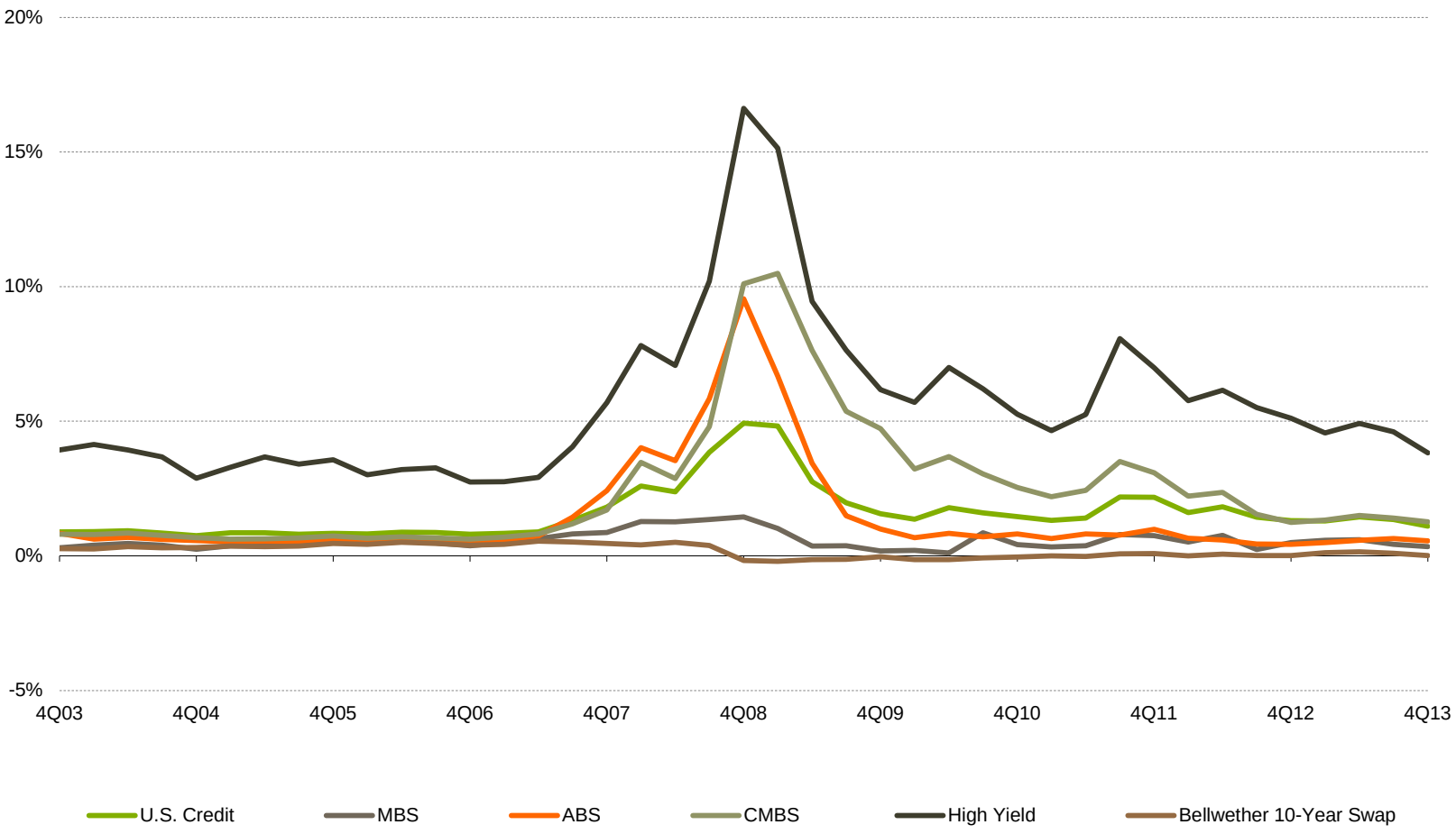
## But short rates still extraordinarily low




Source: Federal Reserve and Callan

# U.S. Fixed Income – Duration adjust spread

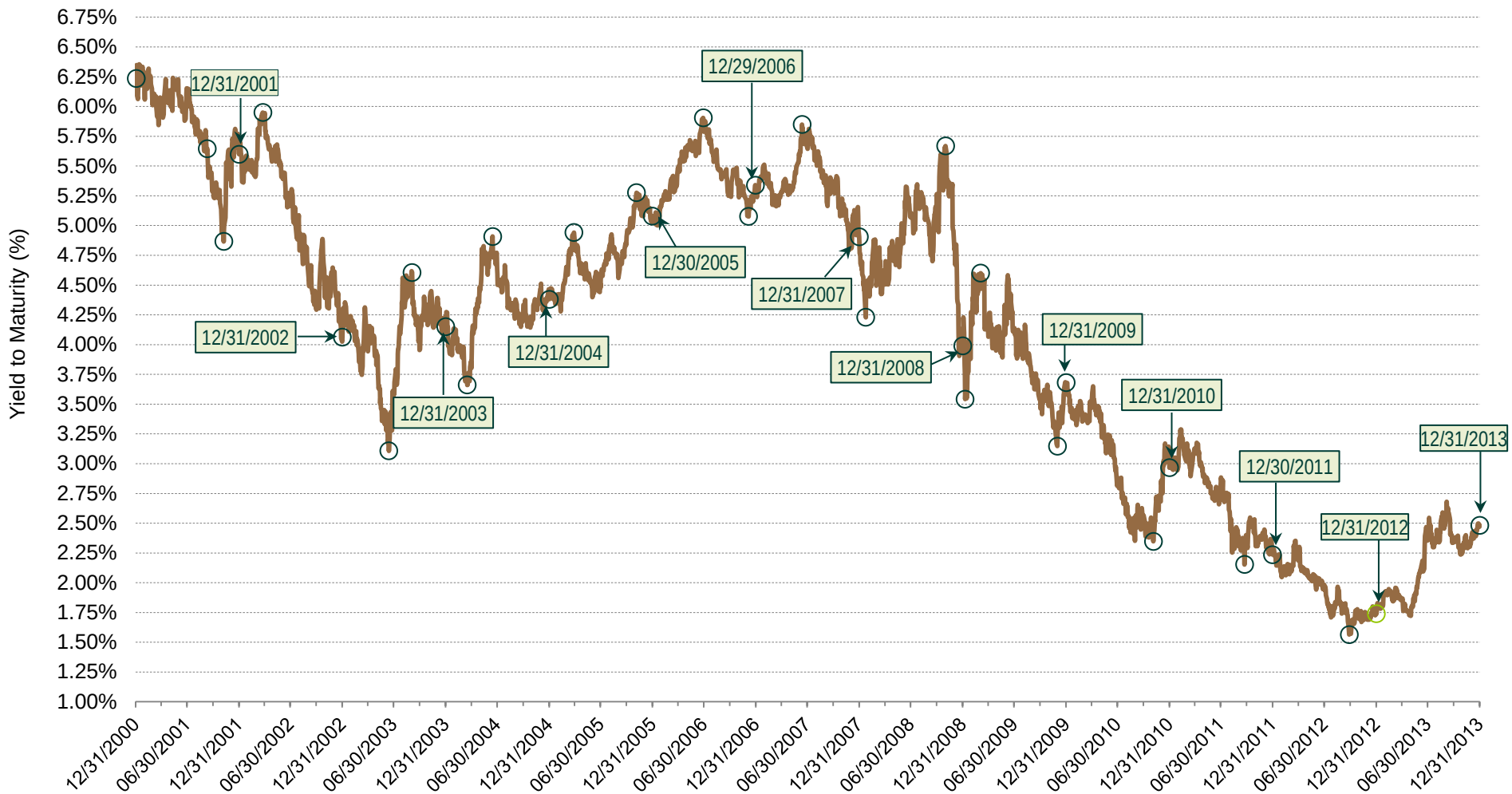
**Effective Yield Over Treasuries**




Source: Barclays

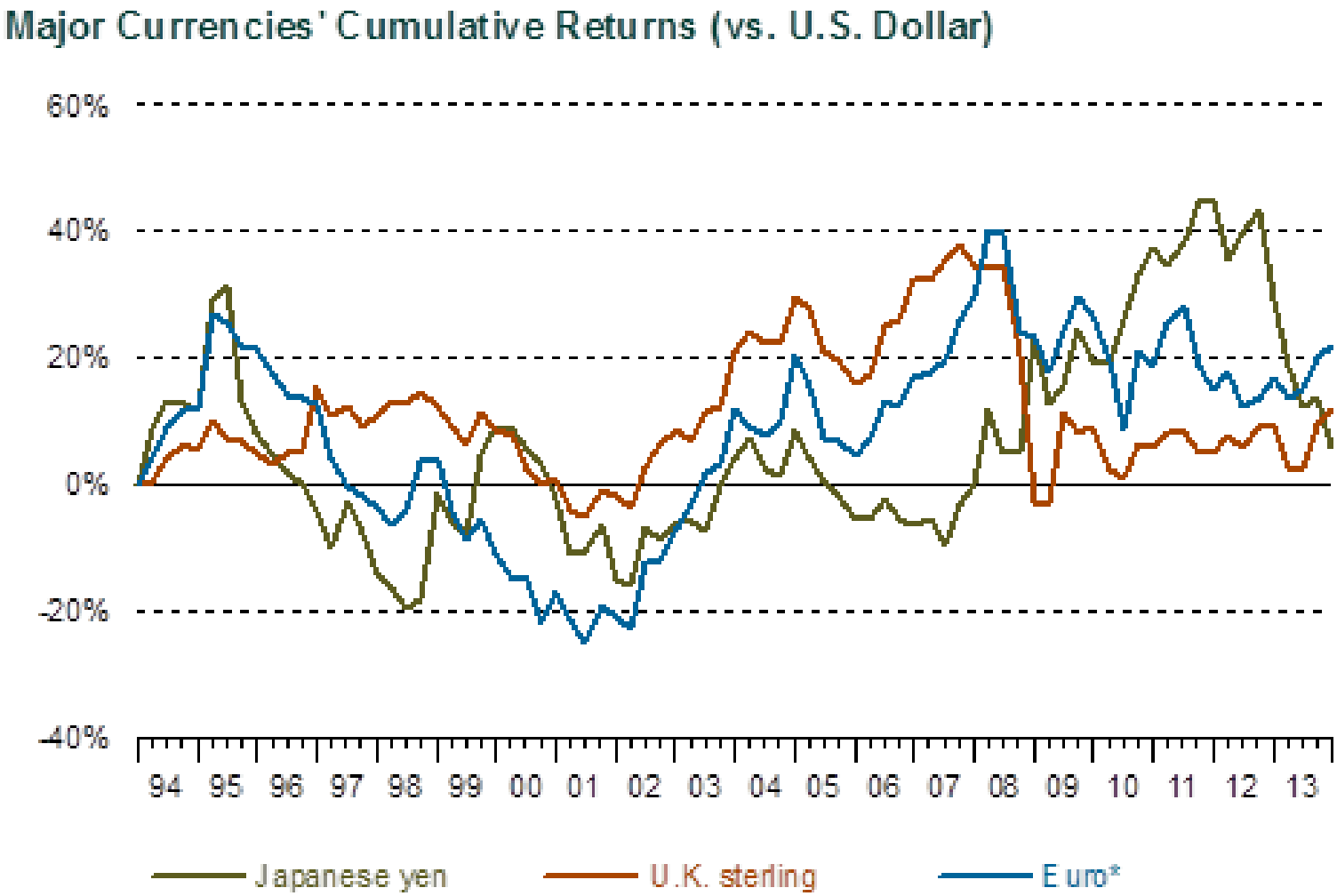
# Current Yield is Exceptionally Low, Expected to Rise

## Barclays Aggregate Index – Daily Yield to Worst from 01/02/2001 to 12/31/2013




Source: Barclays and Callan

# Dollar Strength




- Yen reacting to changed policy toward greater monetary ease this year

*Euro returns from 1Q99. German mark prior to 1Q99.
Source: MSCI

# Hedge Fund Perspective

## Style Median and Index Returns* for Periods ended December 31, 2013

| Diversified Hedge Fund Strategy | Last Quarter | Year to Date | Last Year | Last 3 Years | Last 5 Years | Last 10 Years | Last 15 Years |
|---|---|---|---|---|---|---|---|
| Hedge Fund-of-Funds Database | 3.91 | 11.17 | 11.17 | 4.76 | 7.64 | 5.07 | 7.28 |
| CS Hedge Fund | 4.15 | 9.73 | 9.73 | 4.82 | 8.66 | 6.37 | 7.55 |
| Credit Suisse Subindices | | | | | | | |
| Equity Market Neutral | 5.13 | 9.27 | 9.27 | 4.81 | 3.50 | -0.27 | 3.28 |
| Convertible Arb | 1.26 | 6.03 | 6.03 | 4.95 | 13.58 | 4.44 | 7.67 |
| Fixed Income Arb | 1.29 | 3.80 | 3.80 | 6.46 | 11.58 | 4.09 | 5.38 |
| Multi-Strategy | 4.33 | 11.23 | 11.23 | 7.99 | 11.40 | 6.69 | 7.59 |
| Distressed | 5.10 | 16.00 | 16.00 | 7.48 | 10.61 | 7.86 | 9.60 |
| Risk Arb | 1.06 | 4.92 | 4.92 | 2.84 | 4.67 | 4.51 | 5.54 |
| Event-Driven Multi | 4.69 | 15.28 | 15.28 | 3.78 | 8.92 | 7.88 | 9.15 |
| Long/Short Equity | 6.32 | 17.73 | 17.73 | 5.70 | 9.04 | 7.00 | 8.26 |
| Short Bias | -3.87 | -24.94 | -24.94 | -14.71 | -18.56 | -7.88 | -7.02 |
| Global Macro | 2.78 | 4.32 | 4.32 | 5.11 | 8.01 | 8.27 | 10.02 |
| Managed Futures | 5.22 | -2.56 | -2.56 | -3.23 | -1.02 | 3.15 | 4.24 |

*Returns less than one year are not annualized.
Sources: Callan, Credit Suisse Hedge Index LLC

# Real Estate Returns

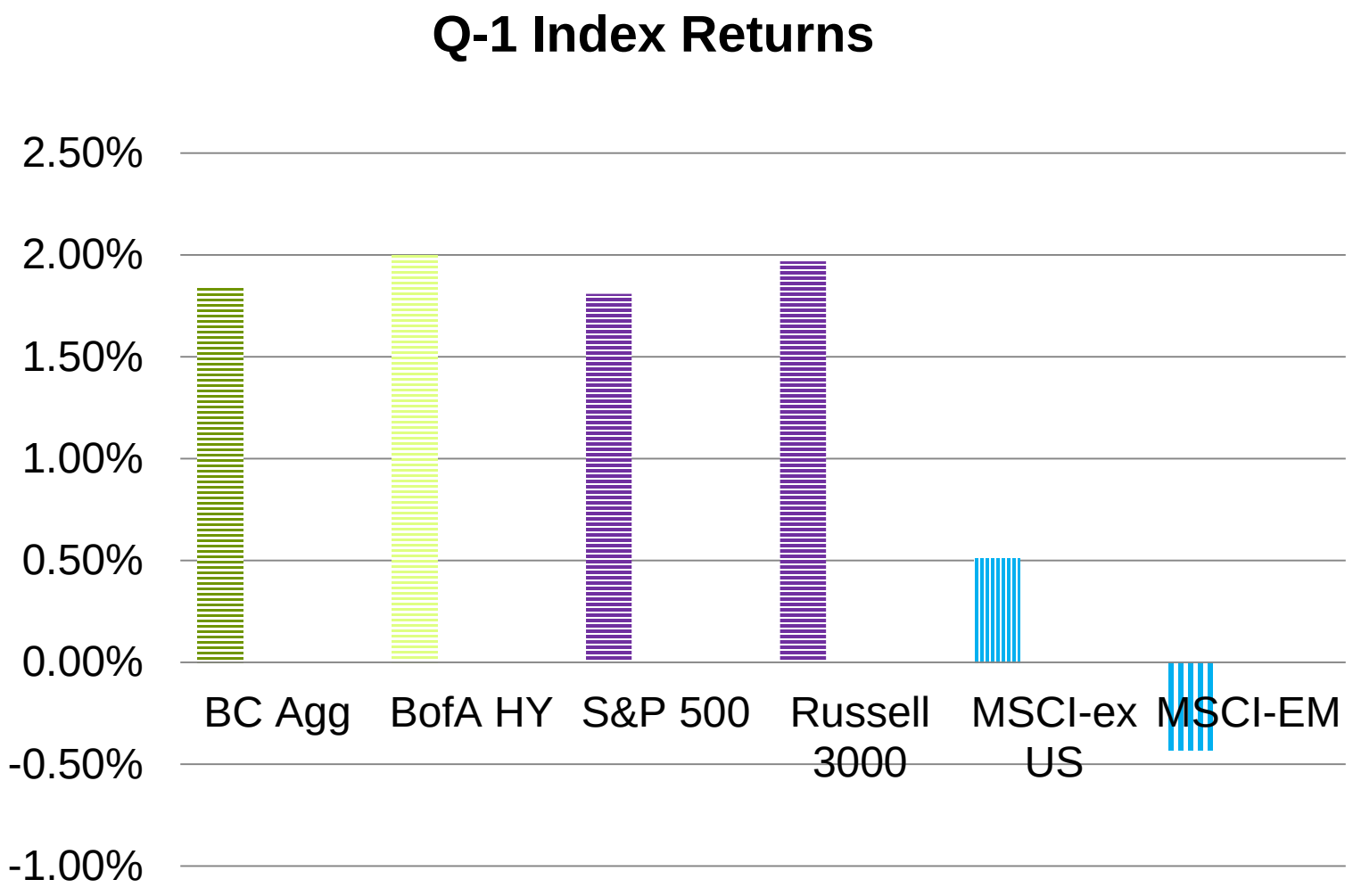
## Periodic Table of Investment Returns

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|
| EPRA/NAREIT Dev ex-US 42.42% | NCREIF ODCE Value Wtd (Net) 20.15% | EPRA/NAREIT Dev ex-US 46.67% | NCREIF Property Index 15.85% | NCREIF Property Index -6.46% | EPRA/NAREIT Dev ex-US 44.56% | NAREIT Equity Index 27.96% | NCREIF ODCE Equal Wtd (Net) 14.99% | EPRA/NAREIT Dev ex-US 38.57% | NCREIF ODCE Value Wtd (Net) 12.92% |
| EPRA/NAREIT Global Developed 37.96% | NCREIF Property Index 20.06% | UBS Real Estate Investor 42.71% | NCREIF ODCE Equal Wtd (Net) 14.99% | NCREIF ODCE Value Wtd (Net) -10.70% | EPRA/NAREIT Global Developed 38.26% | UBS Real Estate Investor 23.51% | NCREIF ODCE Value Wtd (Net) 14.96% | EPRA/NAREIT Global Developed 28.65% | NCREIF ODCE Equal Wtd (Net) 12.38% |
| UBS Real Estate Investor 37.78% | NCREIF ODCE Equal Wtd (Net) 19.04% | EPRA/NAREIT Global Developed 42.35% | NCREIF ODCE Value Wtd (Net) 14.84% | NCREIF ODCE Equal Wtd (Net) -11.09% | UBS Real Estate Investor 35.70% | EPRA/NAREIT Global Developed 20.40% | NCREIF Property Index 14.26% | UBS Real Estate Investor 24.93% | NCREIF Property Index 10.98% |
| NAREIT Equity Index 31.58% | EPRA/NAREIT Dev ex-US 18.25% | NAREIT Equity Index 35.06% | EPRA/NAREIT Dev ex-US -0.88% | NAREIT Equity Index -37.72% | NAREIT Equity Index 27.99% | EPRA/NAREIT Dev ex-US 16.01% | NAREIT Equity Index 8.29% | NAREIT Equity Index 18.06% | EPRA/NAREIT Dev ex-US 6.14% |
| NCREIF Property Index 14.48% | EPRA/NAREIT Global Developed 15.35% | NCREIF Property Index 16.59% | EPRA/NAREIT Global Developed -6.96% | UBS Real Estate Investor -45.87% | NCREIF Property Index -16.86% | NCREIF ODCE Value Wtd (Net) 15.26% | UBS Real Estate Investor -0.03% | NCREIF Property Index 10.54% | EPRA/NAREIT Global Developed 4.43% |
| NCREIF ODCE Value Wtd (Net) 12.00% | NAREIT Equity Index 12.15% | NCREIF ODCE Value Wtd (Net) 15.27% | UBS Real Estate Investor -13.53% | EPRA/NAREIT Global Developed -47.72% | NCREIF ODCE Value Wtd (Net) -30.40% | NCREIF ODCE Equal Wtd (Net) 15.12% | EPRA/NAREIT Global Developed -5.82% | NCREIF ODCE Equal Wtd (Net) 9.93% | UBS Real Estate Investor 2.74% |
| NCREIF ODCE Equal Wtd (Net) 11.51% | UBS Real Estate Investor 11.81% | NCREIF ODCE Equal Wtd (Net) 15.10% | NAREIT Equity Index -15.69% | EPRA/NAREIT Dev ex-US -52.00% | NCREIF ODCE Equal Wtd (Net) -31.30% | NCREIF Property Index 13.11% | EPRA/NAREIT Dev ex-US -15.35% | NCREIF ODCE Value Wtd (Net) 9.79% | NAREIT Equity Index 2.47% |

Focus on 2009 returns for NCREIF ODCE & NCREIF vs REIT Returns

# Market Update for March Quarter

Volatile but little change from 12/31/13

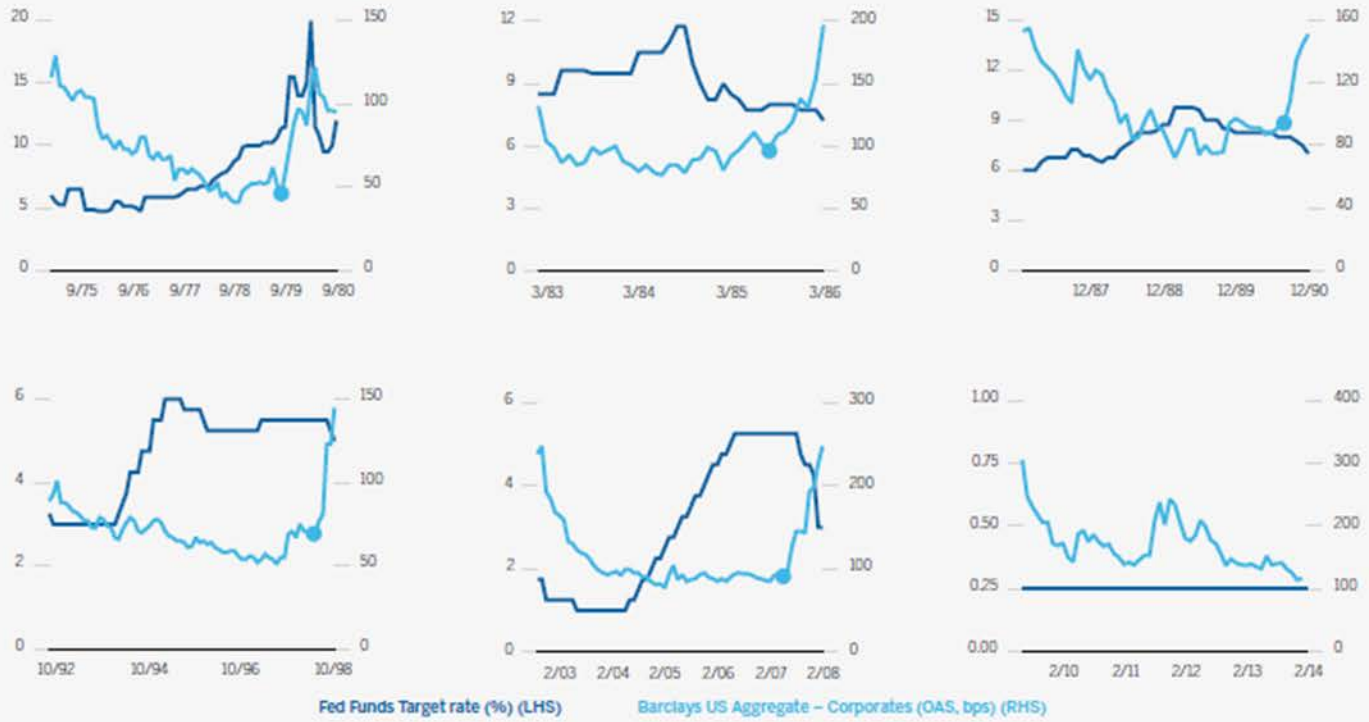


# Investors very sensitive to the implications of Fed potential tightening

Wellington Management research notes that "spread" widening has tended to lag Fed tightening

WELLINGTON MANAGEMENT®

## Historically, spreads generally haven't widened until after the Fed is done tightening




Investment Grade OAS is Barclays US Aggregate – Corporate Index spread from 30 June 1989 to the present. Prior to 1989, OAS data is not published for this index. OAS estimates shown are Wellington Management estimates based on available index data.

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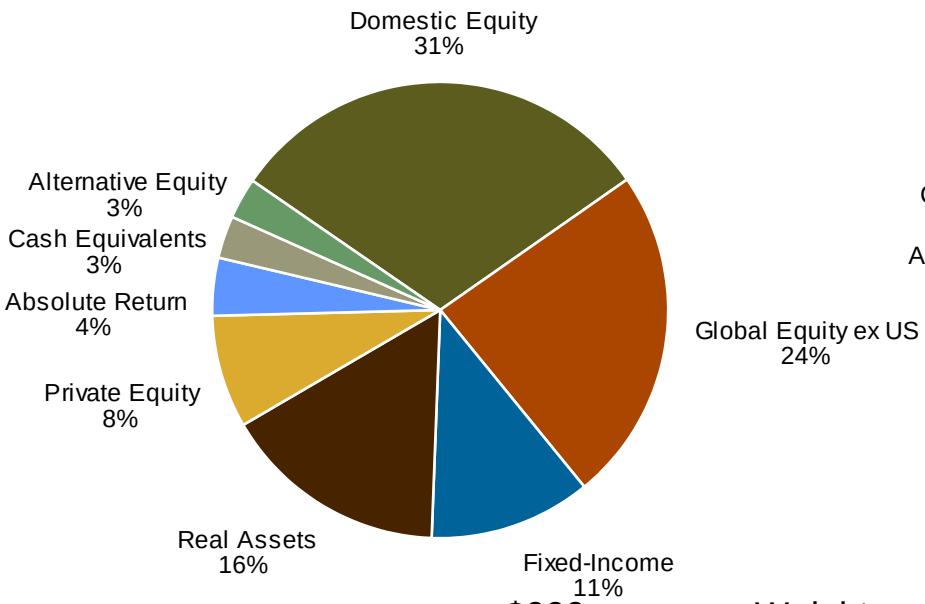
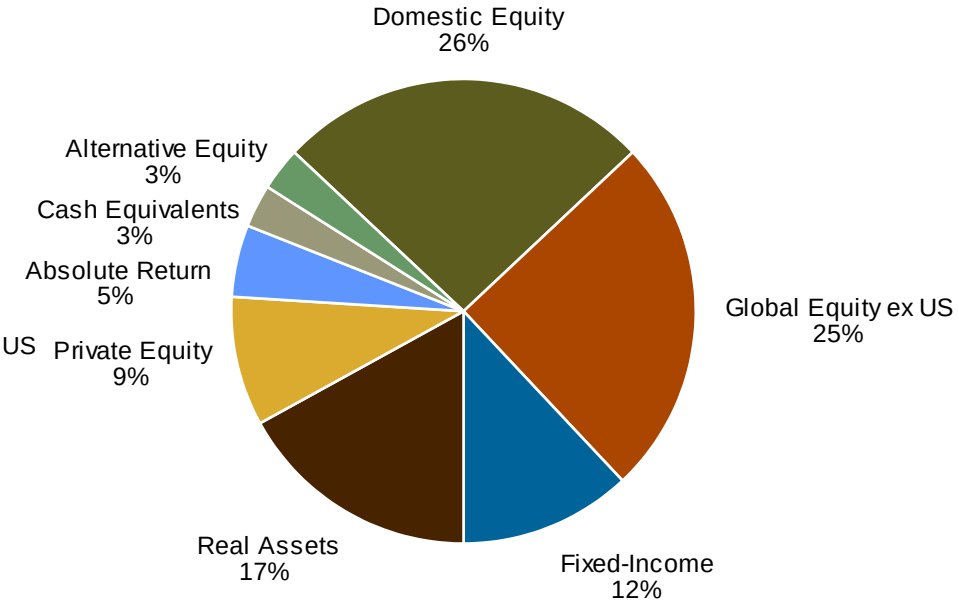
# Asset Allocation – Employees' Retirement Plan

**Actual Asset Allocation**




**Target Asset Allocation**



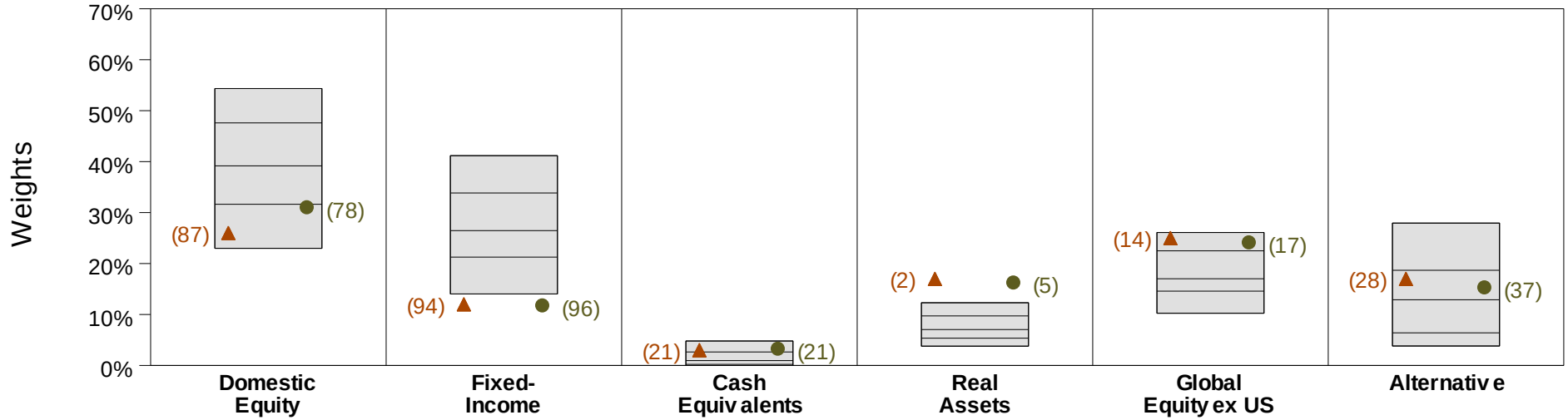

| Asset Class | $000s Actual | Weight Actual | Target | Percent Difference | $000s Difference |
|---|---|---|---|---|---|
| Domestic Equity | 2,293,257 | 30.7% | 26.0% | 4.7% | 353,561 |
| Global Equity ex US | 1,779,214 | 23.8% | 25.0% | (1.2%) | (85,879) |
| Fixed-Income | 857,064 | 11.5% | 12.0% | (0.5%) | (38,181) |
| Real Assets | 1,192,081 | 16.0% | 17.0% | (1.0%) | (76,182) |
| Private Equity | 598,060 | 8.0% | 9.0% | (1.0%) | (73,374) |
| Absolute Return | 304,634 | 4.1% | 5.0% | (0.9%) | (68,384) |
| Cash Equivalents | 220,599 | 3.0% | 3.0% | 0.0% | (3,212) |
| Alternative Equity | 215,461 | 2.9% | 3.0% | (0.1%) | (8,350) |
| Total | 7,460,372 | 100.0% | 100.0% | | |

ERP is used as illustrative throughout the presentation. The other plans exhibit similar modest and understandable variations from strategic target allocations.

# Asset Allocation vs. Public Funds (ERP)

## Callan Public Fund Database

### Asset Class Weights vs Public Fund Sponsor Database




| | Domestic Equity | Fixed-Income | Cash Equivalents | Real Assets | Global Equity ex US | Alternative |
|---|---|---|---|---|---|---|
| 10th Percentile | 54.33 | 41.18 | 4.79 | 12.30 | 26.08 | 27.94 |
| 25th Percentile | 47.61 | 33.86 | 2.66 | 9.72 | 22.51 | 18.70 |
| Median | 39.17 | 26.48 | 0.95 | 7.04 | 17.01 | 12.90 |
| 75th Percentile | 31.64 | 21.27 | 0.23 | 5.35 | 14.58 | 6.42 |
| 90th Percentile | 23.00 | 14.04 | 0.02 | 3.79 | 10.26 | 3.82 |
| **Fund** ● | 30.74 | 11.49 | 2.96 | 15.98 | 23.85 | 14.99 |
| Target ▲ | 26.00 | 12.00 | 3.00 | 17.00 | 25.00 | 17.00 |
| % Group Invested | 98.86% | 98.30% | 61.36% | 58.52% | 96.59% | 48.30% |

Total domestic equity is above target while international equity is slightly below target. Real assets and alternatives are high when compared to other public funds. Policy is “growth” oriented as opposed to “income” oriented.

*Note that “Alternative” includes private equity and absolute return

# PERS Performance – 4th Quarter 2013 & Trailing 12 Months

### Relative Attribution Effects for Quarter ended December 31, 2013

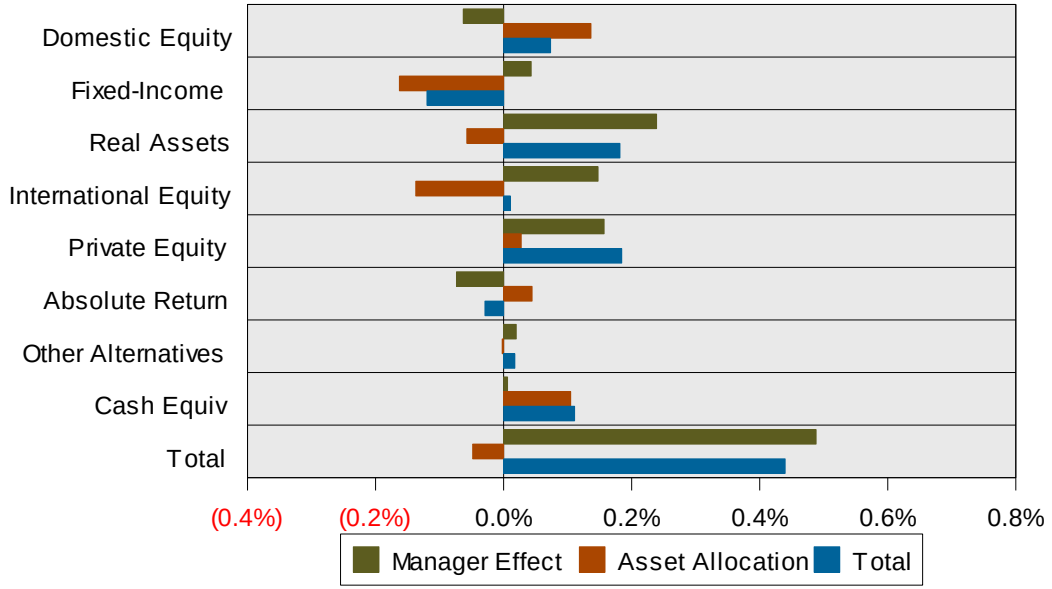
| Asset Class | Effective Actual Weight | Effective Target Weight | Actual Return | Target Return | Manager Effect | Asset Allocation | Total Relative Return |
|---|---|---|---|---|---|---|---|
| Domestic Equity | 29% | 26% | 9.99% | 10.10% | (0.03%) | 0.16% | 0.13% |
| Fixed-Income | 12% | 12% | 0.26% | (0.06%) | 0.04% | (0.02%) | 0.01% |
| Real Assets | 16% | 17% | 2.96% | 2.50% | 0.08% | 0.02% | 0.09% |
| Global Equity ex US | 24% | 25% | 5.49% | 4.81% | 0.16% | 0.01% | 0.17% |
| Private Equity | 8% | 9% | 6.87% | 8.32% | (0.12%) | (0.03%) | (0.15%) |
| Absolute Return | 4% | 5% | 3.54% | 1.24% | 0.09% | 0.04% | 0.13% |
| Alternative Equity | 3% | 3% | 9.77% | 7.87% | 0.05% | (0.00%) | 0.05% |
| Cash Equivalents | 3% | 3% | 0.07% | 0.01% | 0.00% | (0.01%) | (0.00%) |
| **Total** | | | **5.73% =** | **5.29% +** | **0.27% +** | **0.17%** | **0.44%** |

### One Year Relative Attribution Effects

| Asset Class | Effective Actual Weight | Effective Target Weight | Actual Return | Target Return | Manager Effect | Asset Allocation | Total Relative Return |
|---|---|---|---|---|---|---|---|
| Domestic Equity | 30% | 26% | 34.80% | 33.55% | 0.33% | 0.52% | 0.85% |
| Fixed-Income | 14% | 13% | (0.52%) | (0.82%) | 0.04% | (0.21%) | (0.17%) |
| Real Assets | 17% | 17% | 12.45% | 7.30% | 0.95% | (0.03%) | 0.92% |
| Global Equity ex US | 23% | 24% | 18.94% | 15.78% | 0.71% | (0.10%) | 0.62% |
| Private Equity | 9% | 8% | 20.76% | 31.30% | (0.87%) | 0.01% | (0.85%) |
| Absolute Return | 4% | 5% | 8.71% | 5.07% | 0.13% | 0.15% | 0.28% |
| Other Alternatives | 1% | 1% | - | - | 0.06% | (0.01%) | 0.06% |
| Cash Equiv | 2% | 4% | 0.22% | 0.07% | 0.00% | 0.24% | 0.24% |
| **Total** | | | **18.74% =** | **16.79% +** | **1.36% +** | **0.59%** | **1.95%** |

# PERS Intermediate-Term Performance

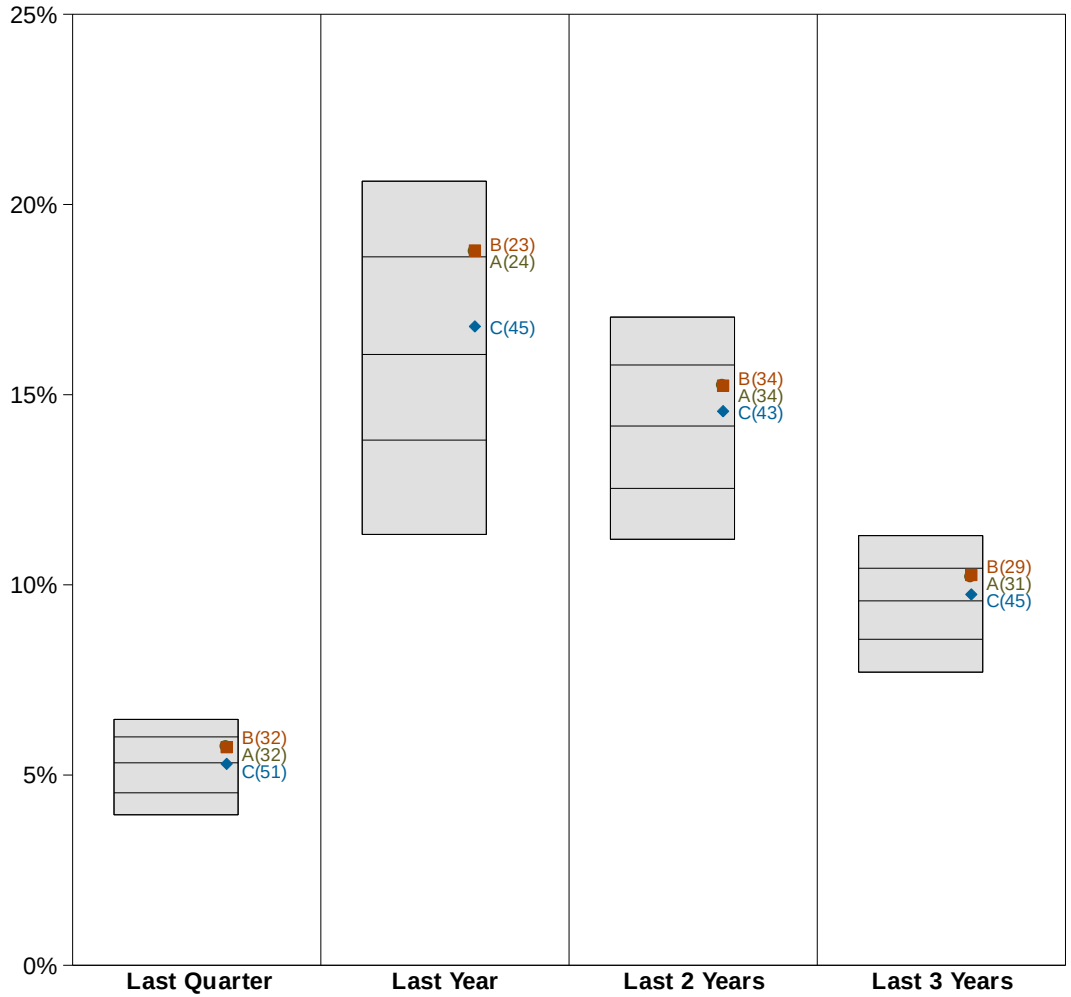
### Three Year Annualized Relative Attribution Effects




### Three Year Annualized Relative Attribution Effects

| Asset Class | Effective Actual Weight | Effective Target Weight | Actual Return | Target Return | Manager Effect | Asset Allocation | Total Relative Return |
|---|---|---|---|---|---|---|---|
| Domestic Equity | 30% | 27% | 15.99% | 16.24% | (0.06%) | 0.14% | 0.07% |
| Fixed-Income | 16% | 16% | 3.18% | 2.84% | 0.04% | (0.16%) | (0.12%) |
| Real Assets | 16% | 16% | 11.77% | 10.18% | 0.24% | (0.06%) | 0.18% |
| International Equity | 22% | 23% | 6.22% | 5.61% | 0.15% | (0.14%) | 0.01% |
| Private Equity | 9% | 8% | 15.85% | 13.42% | 0.16% | 0.03% | 0.18% |
| Absolute Return | 4% | 6% | 3.97% | 5.10% | (0.07%) | 0.04% | (0.03%) |
| Other Alternatives | 0% | 0% | - | - | 0.02% | (0.00%) | 0.02% |
| Cash Equiv | 2% | 3% | 0.37% | 0.10% | 0.01% | 0.10% | 0.11% |
| **Total** | | | **10.19%** | **= 9.75%** | **+ 0.49%** | **+ (0.05%)** | **0.44%** |

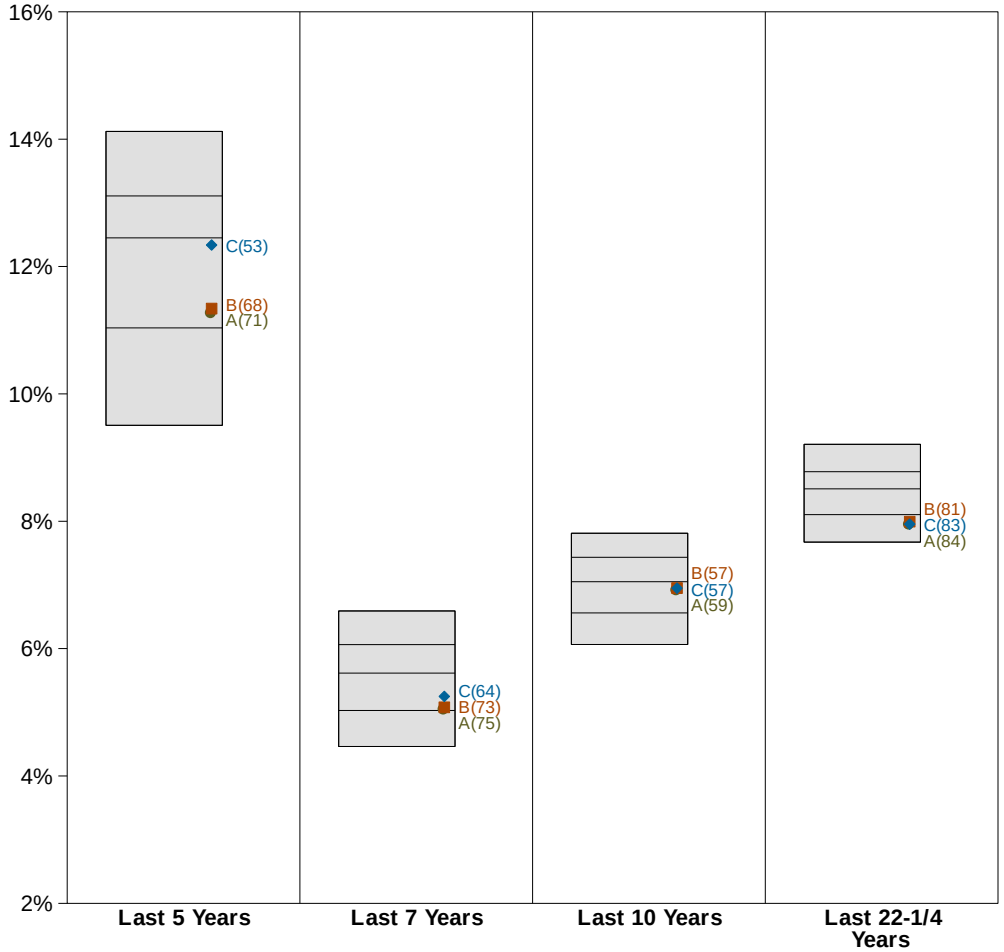
# Cumulative Total Fund Returns




| | Last Quarter | Last Year | Last 2 Years | Last 3 Years |
|---|---|---|---|---|
| 10th Percentile | 6.46 | 20.61 | 17.04 | 11.29 |
| 25th Percentile | 6.00 | 18.62 | 15.78 | 10.44 |
| Median | 5.32 | 16.06 | 14.17 | 9.58 |
| 75th Percentile | 4.53 | 13.80 | 12.53 | 8.57 |
| 90th Percentile | 3.95 | 11.32 | 11.20 | 7.71 |
| PERS Total Plan ● A | 5.73 | 18.74 | 15.23 | 10.19 |
| TRS Total Plan ■ B | 5.73 | 18.79 | 15.24 | 10.26 |
| Target Index ◆ C | 5.29 | 16.79 | 14.56 | 9.75 |

Last quarter above target
Great year
Very strong returns for all periods out to 3 years

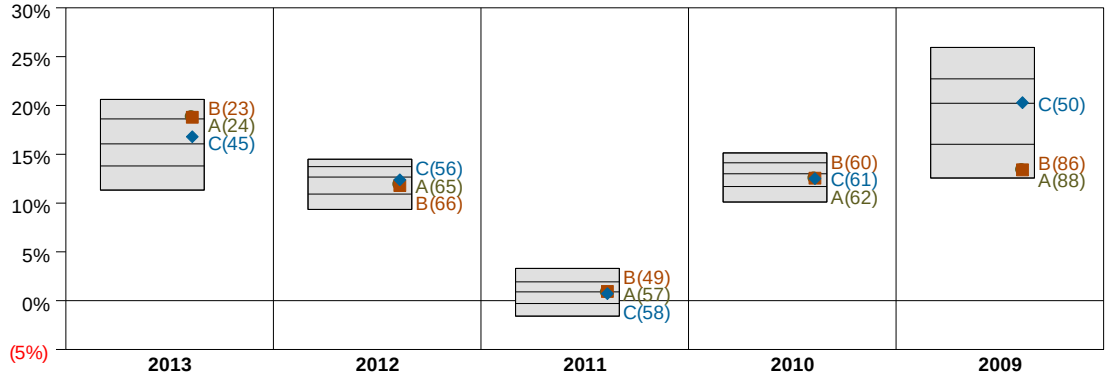
# Longer-Term Returns



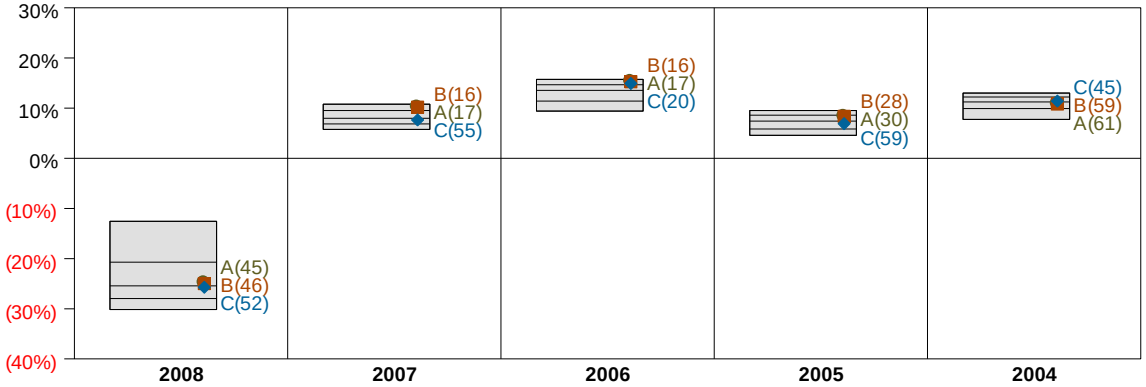

| | Last 5 Years | Last 7 Years | Last 10 Years | Last 22-1/4 Years |
|---|---|---|---|---|
| 10th Percentile | 14.12 | 6.59 | 7.81 | 9.21 |
| 25th Percentile | 13.11 | 6.06 | 7.43 | 8.78 |
| Median | 12.45 | 5.61 | 7.05 | 8.51 |
| 75th Percentile | 11.04 | 5.03 | 6.56 | 8.10 |
| 90th Percentile | 9.51 | 4.46 | 6.06 | 7.67 |
| PERS Total Plan ● A | 11.26 | 5.03 | 6.91 | 7.94 |
| TRS Total Plan ■ B | 11.34 | 5.08 | 6.95 | 7.99 |
| Target Index ◆ C | 12.34 | 5.25 | 6.95 | 7.95 |

- 5-year performance still affected by 2009 timing related issues
- 10 year results essentially at Target close to median (see preceding page for recent periods)

# Calendar Period Performance



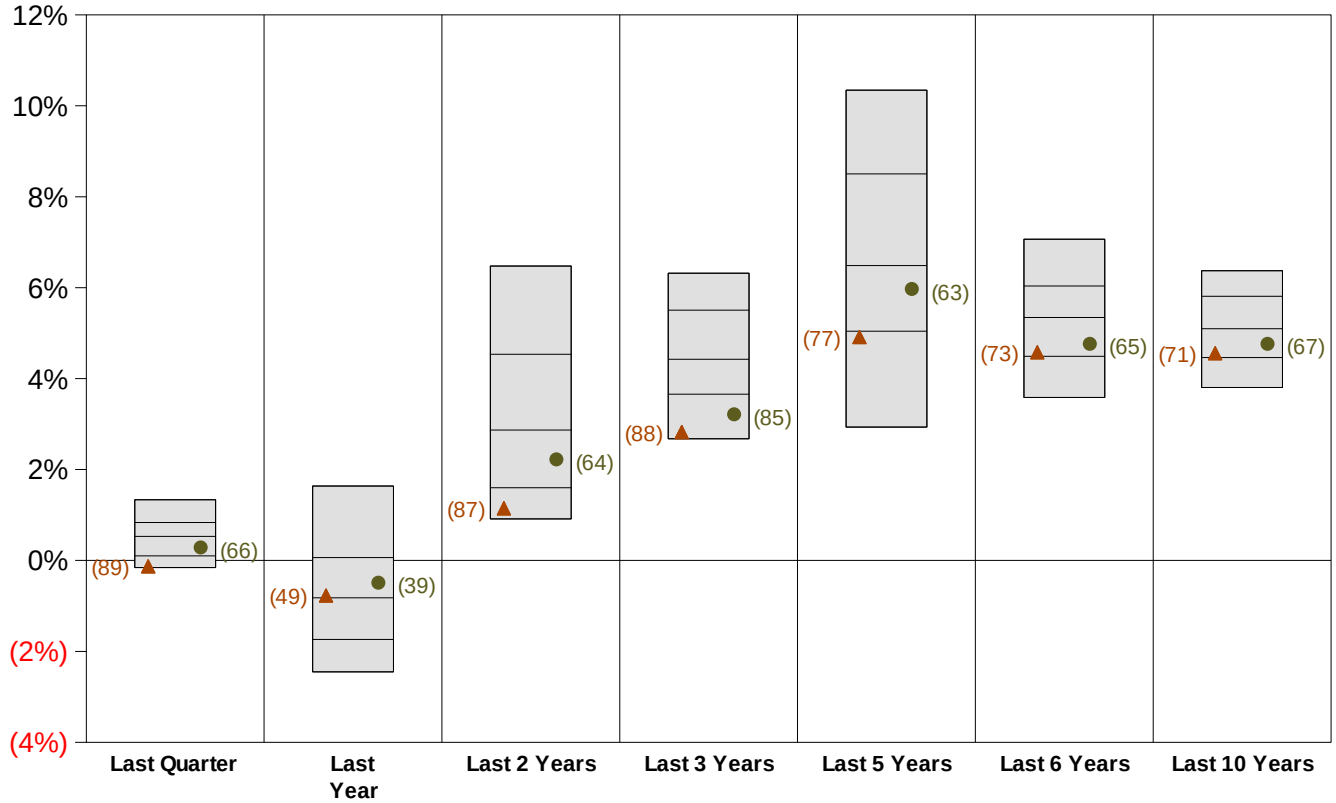

| | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|
| 10th Percentile | 20.61 | 14.49 | 3.31 | 15.14 | 25.93 |
| 25th Percentile | 18.62 | 13.73 | 1.92 | 14.12 | 22.73 |
| Median | 16.06 | 12.67 | 0.91 | 13.00 | 20.23 |
| 75th Percentile | 13.80 | 10.92 | (0.29) | 11.70 | 16.02 |
| 90th Percentile | 11.32 | 9.34 | (1.58) | 10.11 | 12.57 |
| PERS Total Plan ● A | 18.74 | 11.81 | 0.77 | 12.45 | 13.31 |
| TRS Total Plan ■ B | 18.79 | 11.79 | 0.95 | 12.55 | 13.40 |
| Target Index ◆ C | 16.79 | 12.38 | 0.72 | 12.51 | 20.28 |




| | 2008 | 2007 | 2006 | 2005 | 2004 |
|---|---|---|---|---|---|
| 10th Percentile | (12.58) | 10.77 | 15.73 | 9.53 | 13.01 |
| 25th Percentile | (20.71) | 9.53 | 14.67 | 8.58 | 12.22 |
| Median | (25.43) | 7.97 | 13.54 | 7.40 | 11.22 |
| 75th Percentile | (27.97) | 6.84 | 11.42 | 5.85 | 9.92 |
| 90th Percentile | (30.14) | 5.75 | 9.41 | 4.59 | 7.76 |
| PERS Total Plan ● A | (24.91) | 10.17 | 15.24 | 8.31 | 10.79 |
| TRS Total Plan ■ B | (24.98) | 10.20 | 15.26 | 8.38 | 10.83 |
| Target Index ◆ C | (25.71) | 7.64 | 14.91 | 6.89 | 11.40 |

# Total Bond

**Performance vs Pub Pln- Domestic Fixed (Gross)**

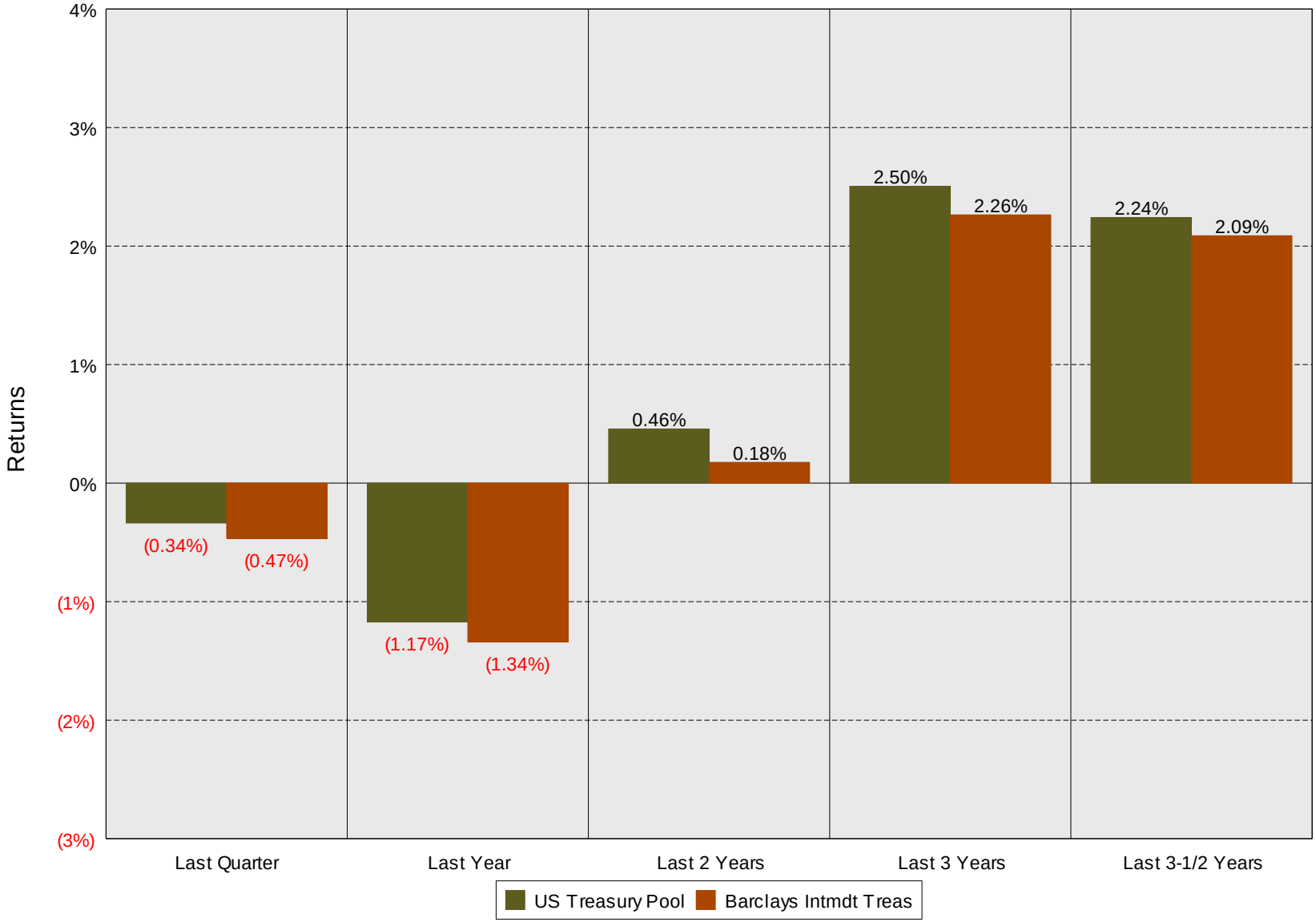



| | Last Quarter | Last Year | Last 2 Years | Last 3 Years | Last 5 Years | Last 6 Years | Last 10 Years |
|---|---|---|---|---|---|---|---|
| 10th Percentile | 1.33 | 1.64 | 6.48 | 6.32 | 10.34 | 7.06 | 6.37 |
| 25th Percentile | 0.84 | 0.06 | 4.54 | 5.51 | 8.50 | 6.04 | 5.81 |
| Median | 0.53 | (0.82) | 2.87 | 4.43 | 6.49 | 5.34 | 5.10 |
| 75th Percentile | 0.10 | (1.74) | 1.60 | 3.66 | 5.04 | 4.49 | 4.46 |
| 90th Percentile | (0.16) | (2.45) | 0.91 | 2.67 | 2.94 | 3.59 | 3.80 |
| **Total Fixed-Income Pool** ● | 0.25 | (0.52) | 2.19 | 3.18 | 5.93 | 4.73 | 4.73 |
| Fixed-Income Target ▲ | (0.13) | (0.77) | 1.15 | 2.83 | 4.92 | 4.58 | 4.56 |

- Includes In-House and External Portfolios

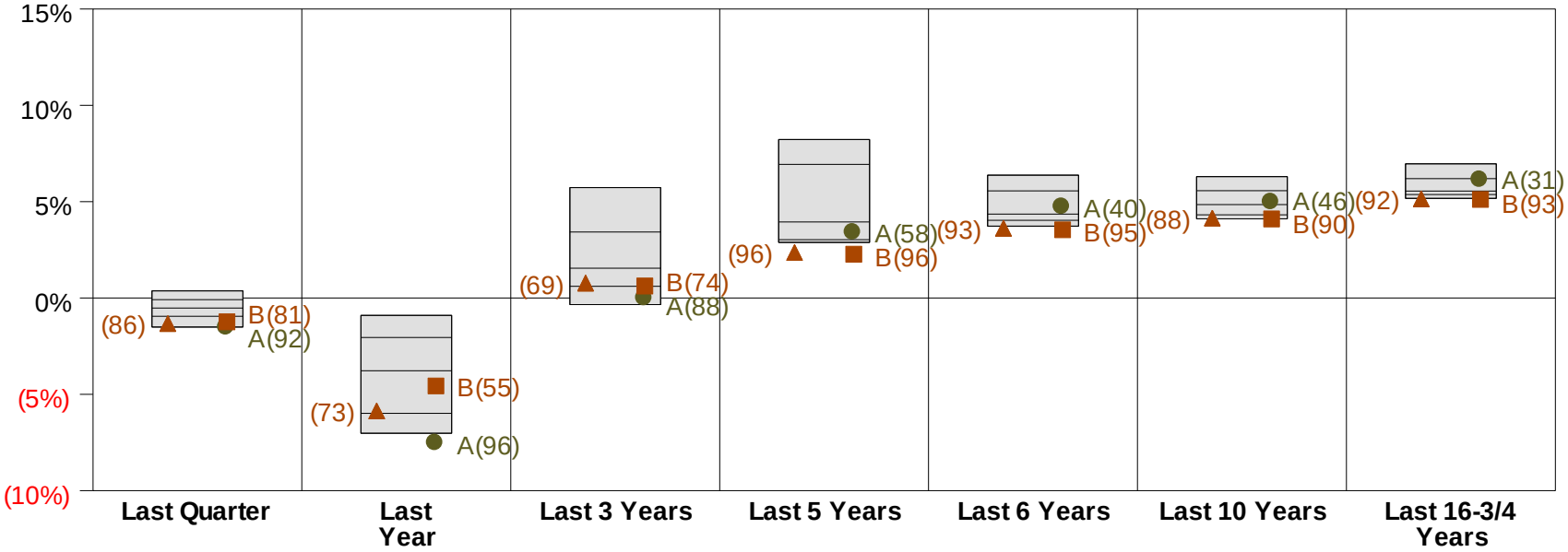
# In-House Portfolio

## Compared to BC Intermediate Treasury Index



# Non-U.S. Fixed Income - Mondrian

## Performance vs CAI Non-U.S. Fixed-Inc Style (Gross)

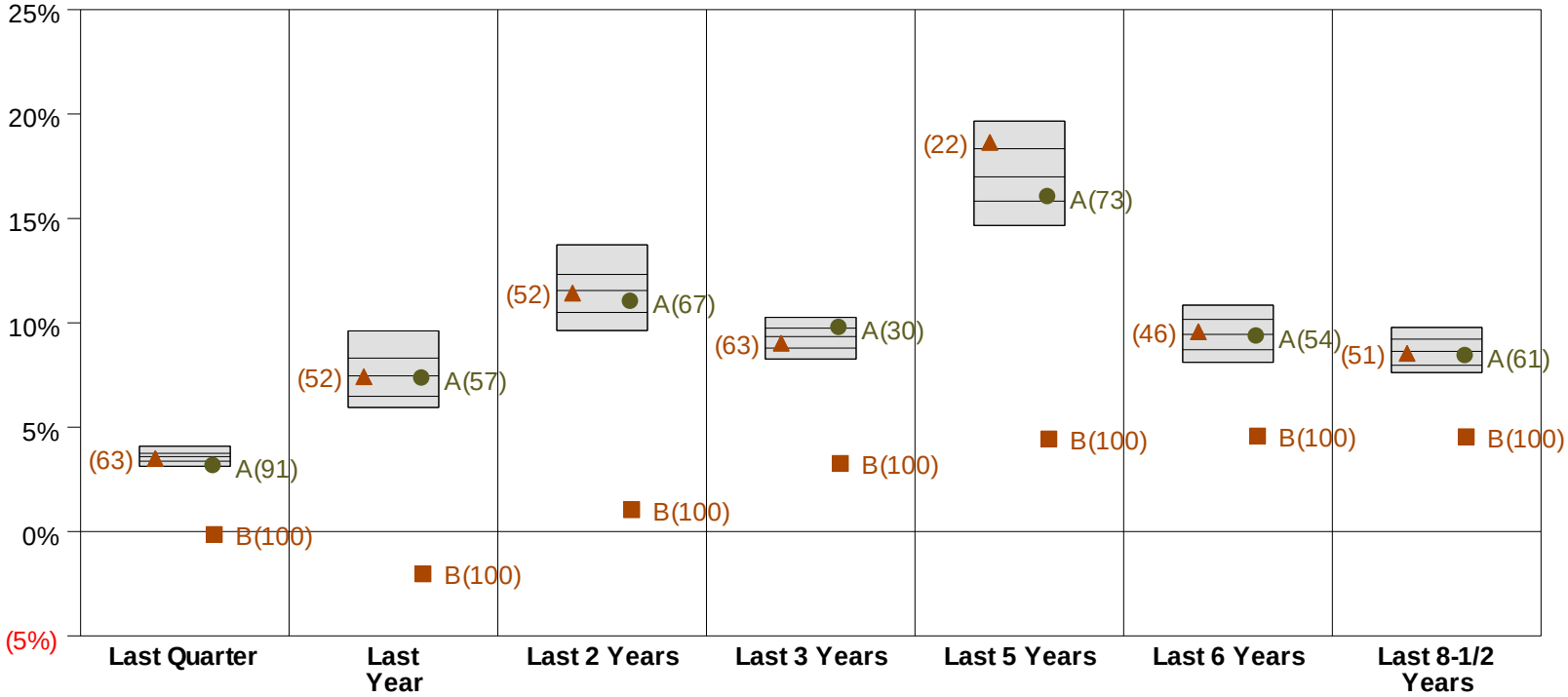



| | | Last Quarter | Last Year | Last 3 Years | Last 5 Years | Last 6 Years | Last 10 Years | Last 16-3/4 Years |
|---|---|---|---|---|---|---|---|---|
| 10th Percentile | | 0.37 | (0.90) | 5.73 | 8.23 | 6.38 | 6.30 | 6.97 |
| 25th Percentile | | (0.08) | (2.04) | 3.43 | 6.93 | 5.56 | 5.57 | 6.19 |
| Median | | (0.52) | (3.78) | 1.55 | 3.95 | 4.36 | 4.85 | 5.55 |
| 75th Percentile | | (0.94) | (5.98) | 0.61 | 3.03 | 4.04 | 4.32 | 5.38 |
| 90th Percentile | | (1.51) | (7.02) | (0.34) | 2.89 | 3.73 | 4.11 | 5.18 |
| Mondrian Investment Partners | ● A | (1.55) | (7.56) | (0.05) | 3.38 | 4.70 | 4.95 | 6.11 |
| Citi WGBI Non-US Idx | ■ B | (1.24) | (4.56) | 0.62 | 2.27 | 3.54 | 4.10 | 5.12 |
| Mondrian Benchmark | ▲ | (1.33) | (5.86) | 0.78 | 2.37 | 3.62 | 4.15 | 5.15 |

- Despite weak recent returns, stronger than benchmark for longer term periods

# High Yield Bonds – MacKay Shields

## Performance vs CAI High Yield Fixed-Inc Style (Gross)

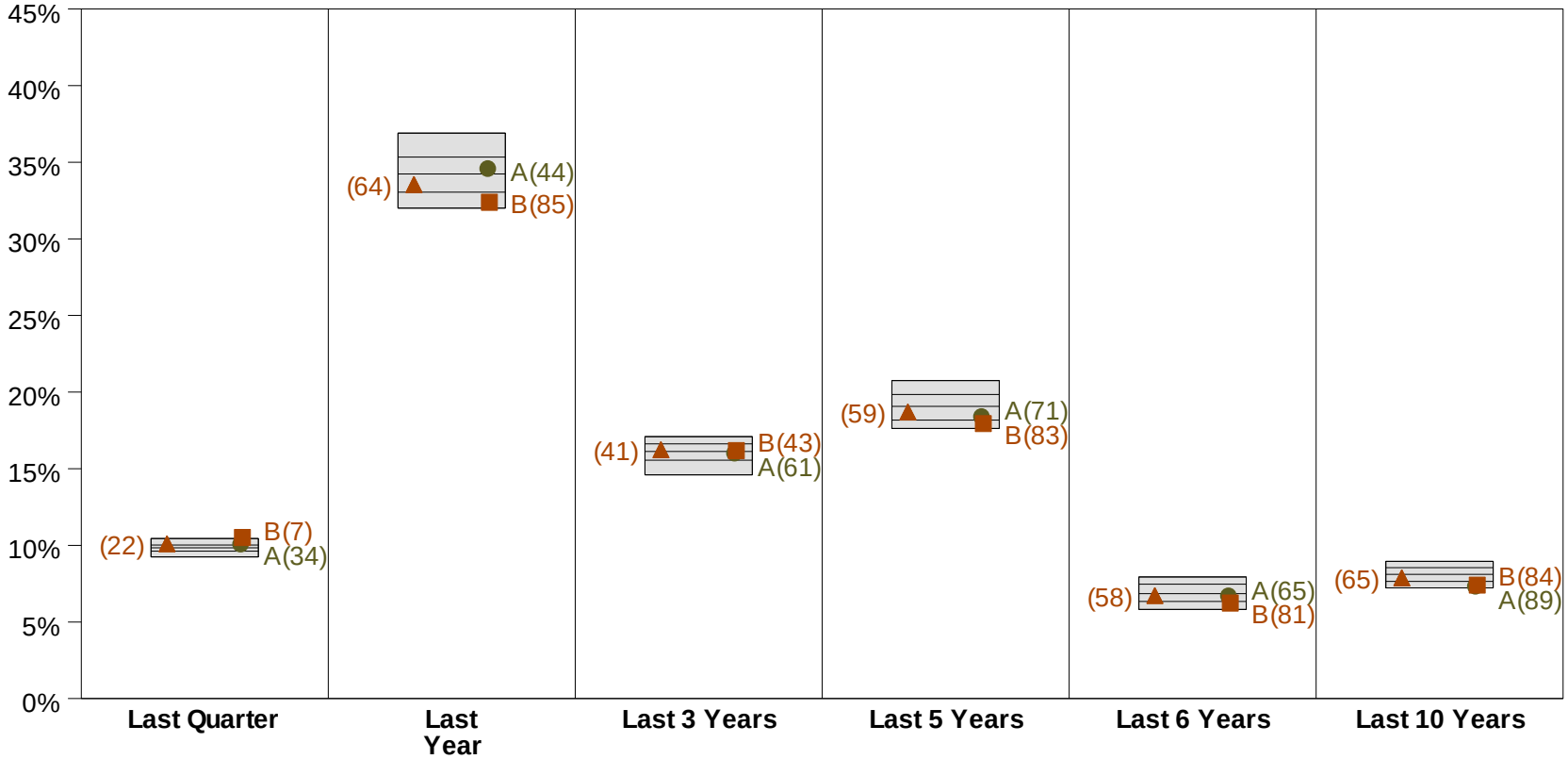



| | Last Quarter | Last Year | Last 2 Years | Last 3 Years | Last 5 Years | Last 6 Years | Last 8-1/2 Years |
|---|---|---|---|---|---|---|---|
| 10th Percentile | 4.09 | 9.61 | 13.74 | 10.26 | 19.66 | 10.85 | 9.78 |
| 25th Percentile | 3.75 | 8.31 | 12.32 | 9.74 | 18.34 | 10.17 | 9.22 |
| Median | 3.59 | 7.46 | 11.55 | 9.34 | 16.99 | 9.45 | 8.63 |
| 75th Percentile | 3.37 | 6.48 | 10.50 | 8.79 | 15.82 | 8.71 | 7.97 |
| 90th Percentile | 3.13 | 5.95 | 9.63 | 8.27 | 14.66 | 8.11 | 7.62 |
| MacKay Shields ● A | 3.10 | 7.29 | 10.97 | 9.72 | 15.98 | 9.30 | 8.37 |
| BC Aggregate Index ■ B | (0.14) | (2.02) | 1.05 | 3.26 | 4.44 | 4.57 | 4.54 |
| High Yield Target ▲ | 3.50 | 7.42 | 11.43 | 9.03 | 18.65 | 9.57 | 8.54 |

- Strong absolute returns
- Market-like long run returns

# Total Domestic Equity

## Performance vs Pub Pln- Domestic Equity (Gross)




| | Last Quarter | Last Year | Last 3 Years | Last 5 Years | Last 6 Years | Last 10 Years |
|---|---|---|---|---|---|---|
| 10th Percentile | 10.44 | 36.90 | 17.10 | 20.75 | 7.93 | 8.96 |
| 25th Percentile | 10.03 | 35.33 | 16.63 | 19.84 | 7.47 | 8.54 |
| Median | 9.84 | 34.24 | 16.12 | 19.07 | 6.85 | 8.11 |
| 75th Percentile | 9.62 | 33.04 | 15.56 | 18.18 | 6.34 | 7.65 |
| 90th Percentile | 9.24 | 32.01 | 14.60 | 17.63 | 5.81 | 7.22 |
| Domestic Equity Pool ● A | 9.97 | 34.47 | 15.90 | 18.29 | 6.58 | 7.23 |
| Standard & Poor's 500 ■ B | 10.51 | 32.39 | 16.18 | 17.94 | 6.24 | 7.41 |
| Russell 3000 Index ▲ | 10.10 | 33.55 | 16.24 | 18.71 | 6.73 | 7.88 |

# Domestic Equity Component Returns

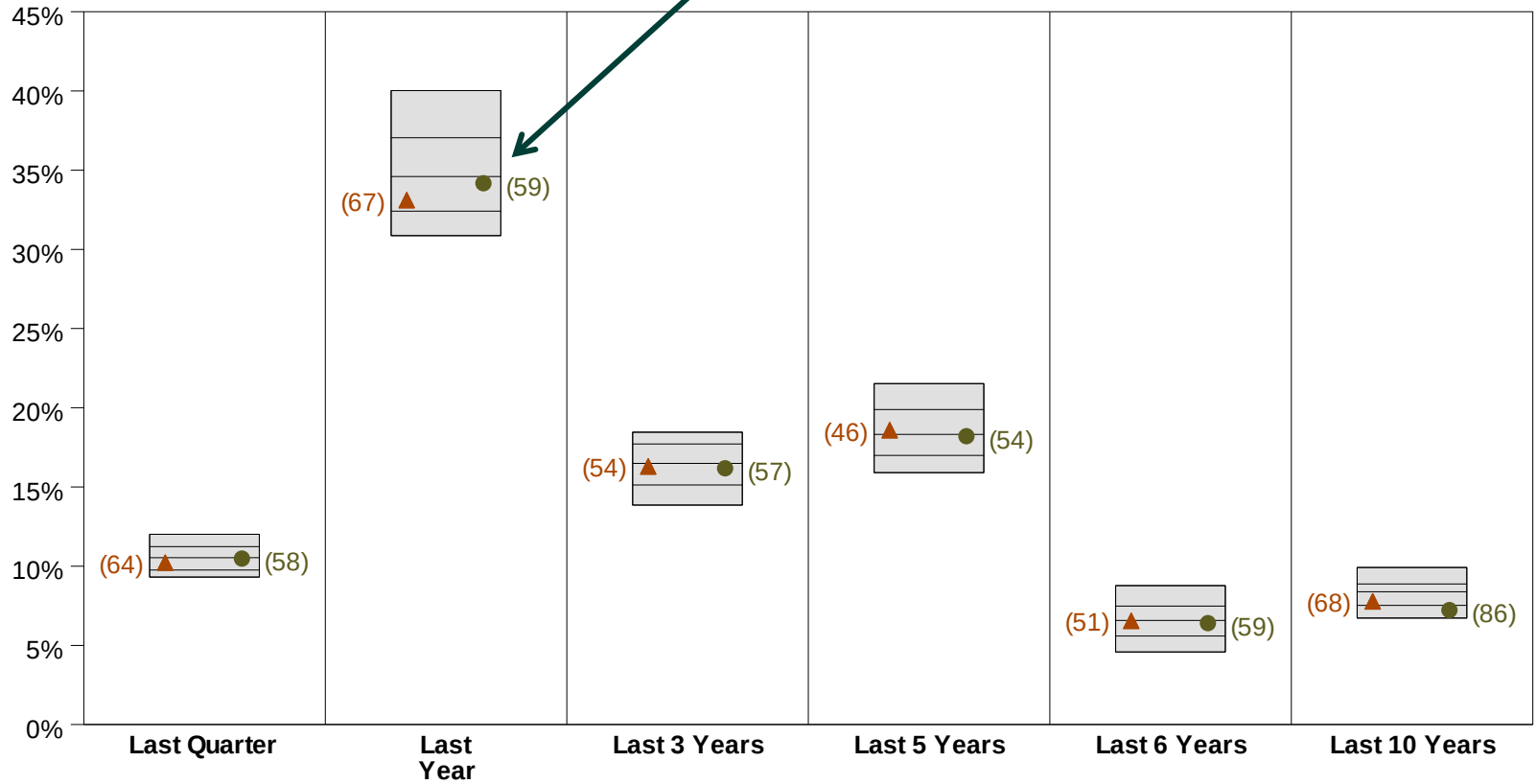
| | Last Quarter | Last Year | Last 3 Years | Last 5 Years | Last 6 Years |
|---|---|---|---|---|---|
| Total Dom Equity Pool | 9.97% | 34.47% | 15.90% | 18.29% | 6.58% |
| Russell 3000 Index | 10.10% | 33.55% | 16.24% | 18.71% | 6.73% |
| Large Cap Managers | 10.36% | 34.06% | 16.05% | 18.09% | 6.29% |
| Large Cap Active | 10.35% | 35.93% | 15.77% | 18.43% | 6.53% |
| Large Cap Passive | 10.37% | 33.02% | 16.29% | 17.84% | 6.11% |
| Russell 1000 Index | 10.23% | 33.11% | 16.30% | 18.59% | 6.55% |
| Small Cap Managers | 9.41% | 42.87% | 17.21% | 20.22% | 8.52% |
| Small Cap Active | 9.43% | 43.29% | 18.34% | 21.52% | 9.05% |
| Small Cap Passive | 9.11% | 36.62% | 14.19% | 17.60% | 7.60% |
| Russell 2000 Index | 8.72% | 38.82% | 15.67% | 20.08% | 8.74% |
| Alternative Equity | 8.42% | 19.05% | 10.24% | - | - |

- Newly adopted policy (effective 7-1-13) alters cosmetics of “true” traditional active & passive returns
  - “Alternative Equity” category includes defensive equity oriented portfolios
  - Now includes the Relational portfolio & in-house equity yield portfolio
- Calendar year results very strong
- 2013 active portfolios outpaced market benchmarks.
  - Small cap very strong

# Large Cap Domestic Equity Pool

Early, but nice to see recent better than benchmark despite large passive allocation

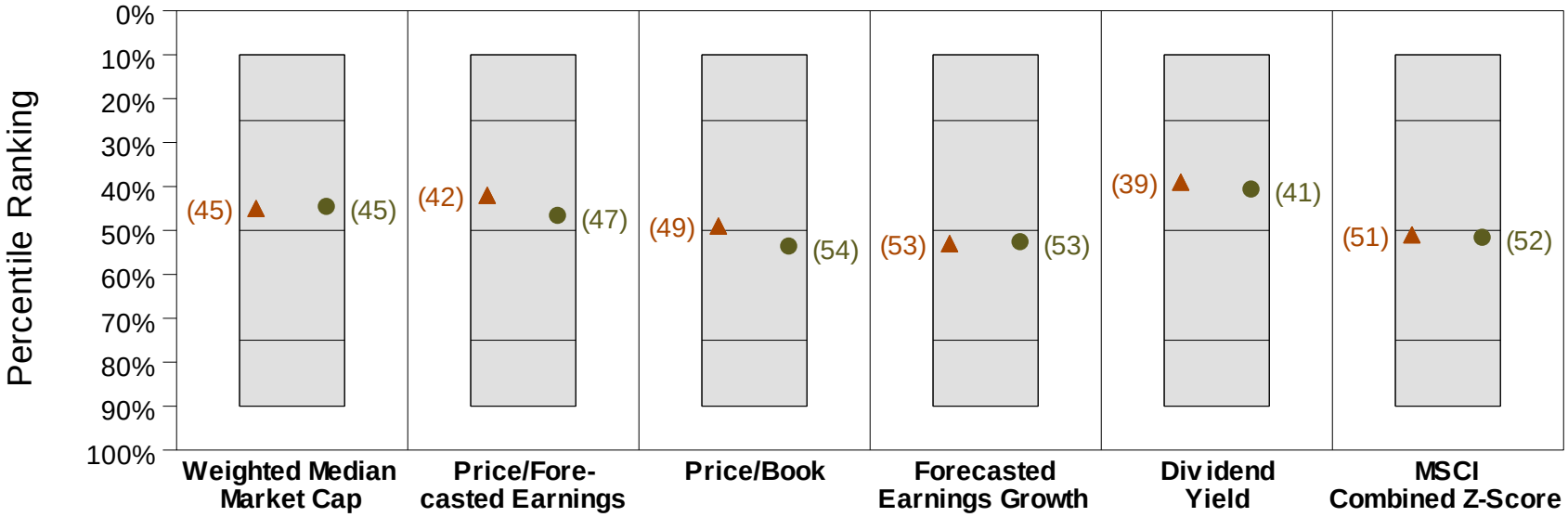
**Performance vs CAI Large Capitalization Style (Gross)**




| | Last Quarter | Last Year | Last 3 Years | Last 5 Years | Last 6 Years | Last 10 Years |
|---|---|---|---|---|---|---|
| 10th Percentile | 12.01 | 40.02 | 18.46 | 21.52 | 8.77 | 9.92 |
| 25th Percentile | 11.23 | 37.04 | 17.72 | 19.88 | 7.47 | 8.88 |
| Median | 10.54 | 34.60 | 16.49 | 18.32 | 6.58 | 8.38 |
| 75th Percentile | 9.76 | 32.41 | 15.12 | 16.99 | 5.59 | 7.53 |
| 90th Percentile | 9.31 | 30.86 | 13.86 | 15.90 | 4.58 | 6.73 |
| **Large Cap Pool** ● | 10.36 | 34.06 | 16.05 | 18.09 | 6.29 | 7.11 |
| Russell 1000 Index ▲ | 10.23 | 33.11 | 16.30 | 18.59 | 6.55 | 7.78 |

# Large Cap Total Equity Characteristics

**Portfolio Characteristics Percentile Rankings**
**Rankings Against CAI Large Capitalization Style**
**as of December 31, 2013**

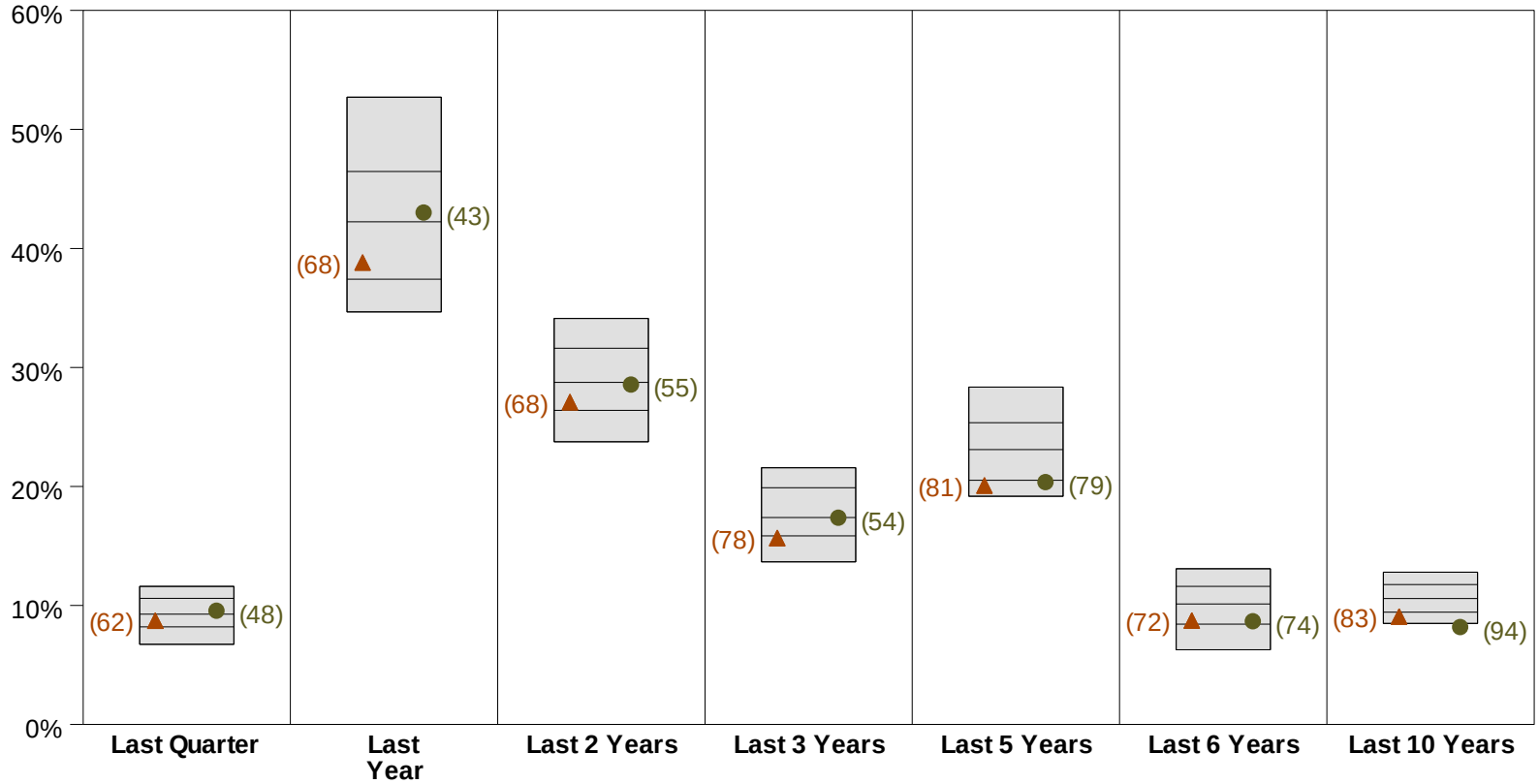



| | Weighted Median Market Cap | Price/Forecasted Earnings | Price/Book | Forecasted Earnings Growth | Dividend Yield | MSCI Combined Z-Score |
|---|---|---|---|---|---|---|
| 10th Percentile | 74.67 | 21.19 | 4.97 | 18.49 | 2.36 | 1.45 |
| 25th Percentile | 62.02 | 18.24 | 4.03 | 15.76 | 2.04 | 0.92 |
| Median | 52.72 | 15.09 | 2.60 | 12.19 | 1.70 | 0.02 |
| 75th Percentile | 39.85 | 13.60 | 1.97 | 9.65 | 1.17 | (0.54) |
| 90th Percentile | 29.07 | 12.96 | 1.81 | 8.08 | 0.71 | (0.74) |
| **Large Cap Pool** ● | 54.25 | 15.42 | 2.51 | 11.64 | 1.83 | (0.02) |
| Russell 1000 Index ▲ | 54.11 | 15.88 | 2.61 | 11.62 | 1.88 | 0.00 |

Very similar to Russell 1000 No apparent style bias

# Small Cap Pool

## Performance vs CAI Small Capitalization Style (Gross)

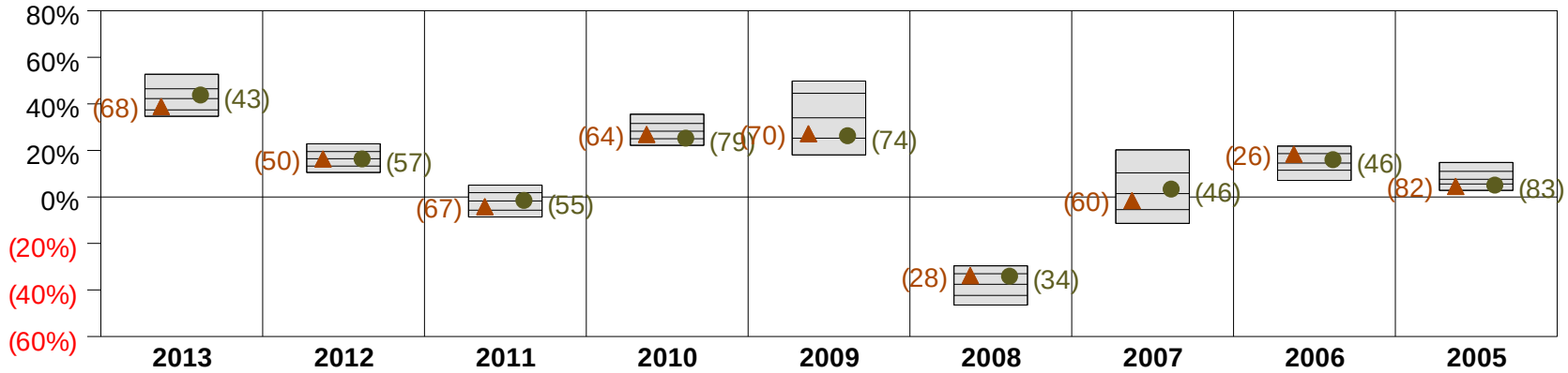



| | Last Quarter | Last Year | Last 2 Years | Last 3 Years | Last 5 Years | Last 6 Years | Last 10 Years |
|---|---|---|---|---|---|---|---|
| 10th Percentile | 11.61 | 52.70 | 34.11 | 21.57 | 28.35 | 13.08 | 12.80 |
| 25th Percentile | 10.60 | 46.46 | 31.61 | 19.89 | 25.36 | 11.61 | 11.76 |
| Median | 9.27 | 42.24 | 28.74 | 17.40 | 23.10 | 10.12 | 10.59 |
| 75th Percentile | 8.20 | 37.42 | 26.39 | 15.85 | 20.52 | 8.44 | 9.44 |
| 90th Percentile | 6.73 | 34.66 | 23.76 | 13.67 | 19.18 | 6.28 | 8.50 |
| **Small Cap Pool** ● | 9.41 | 42.87 | 28.41 | 17.21 | 20.22 | 8.52 | 8.04 |
| Russell 2000 Index ▲ | 8.72 | 38.82 | 27.09 | 15.67 | 20.08 | 8.74 | 9.07 |

Quarter, 1,2, 3 and 5-year results now better than benchmark

# Small Cap Pool – Calendar Periods

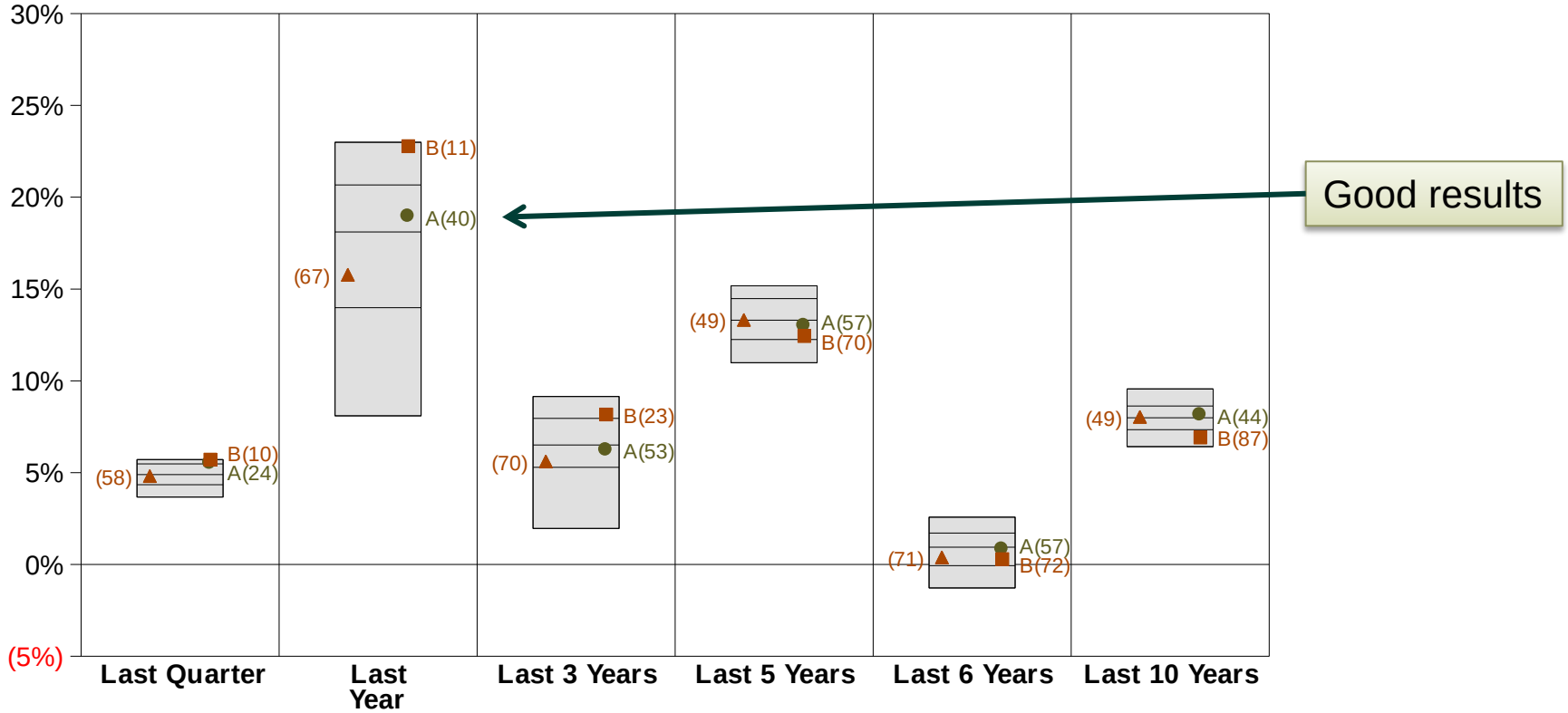
## Performance vs CAI Small Capitalization Style (Gross)




| | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 |
|---|---|---|---|---|---|---|---|---|---|
| 10th Percentile | 52.70 | 22.78 | 5.11 | 35.54 | 49.83 | (29.58) | 20.21 | 21.82 | 14.79 |
| 25th Percentile | 46.46 | 19.50 | 1.84 | 31.53 | 44.57 | (33.03) | 10.32 | 18.62 | 10.97 |
| Median | 42.24 | 16.38 | (1.76) | 28.25 | 33.98 | (37.57) | 1.39 | 14.59 | 7.55 |
| 75th Percentile | 37.42 | 13.24 | (5.72) | 24.99 | 25.24 | (42.30) | (5.47) | 11.44 | 5.55 |
| 90th Percentile | 34.66 | 10.51 | (8.64) | 22.16 | 18.02 | (46.48) | (11.41) | 7.07 | 2.77 |
| **Small Cap Pool** ● | 42.87 | 15.41 | (2.33) | 24.35 | 25.40 | (34.97) | 2.53 | 15.24 | 4.28 |
| Russell 2000 Index ▲ | 38.82 | 16.35 | (4.18) | 26.85 | 27.17 | (33.79) | (1.57) | 18.37 | 4.55 |

# International Equity

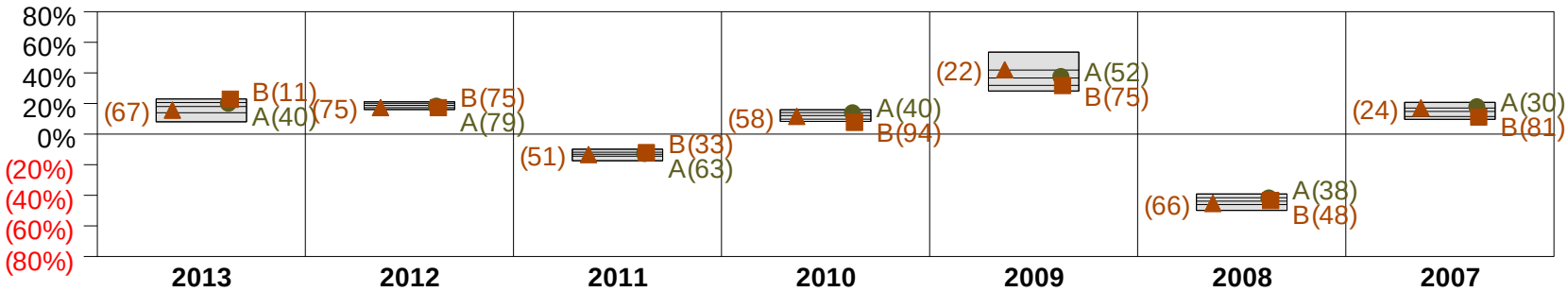
## Performance vs Pub Pln- International Equity (Gross)




| | Last Quarter | Last Year | Last 3 Years | Last 5 Years | Last 6 Years | Last 10 Years |
|---|---|---|---|---|---|---|
| 10th Percentile | 5.71 | 23.00 | 9.15 | 15.17 | 2.58 | 9.56 |
| 25th Percentile | 5.48 | 20.67 | 7.96 | 14.48 | 1.71 | 8.63 |
| Median | 4.89 | 18.11 | 6.51 | 13.31 | 0.94 | 7.99 |
| 75th Percentile | 4.34 | 13.98 | 5.29 | 12.25 | (0.07) | 7.34 |
| 90th Percentile | 3.67 | 8.10 | 1.96 | 10.99 | (1.28) | 6.42 |
| Employees' Total Int'l Equity ● A | 5.49 | 18.94 | 6.22 | 12.99 | 0.80 | 8.12 |
| MSCI EAFE Index ■ B | 5.71 | 22.78 | 8.17 | 12.44 | 0.29 | 6.91 |
| MSCI ACWI ex US Index ▲ | 4.81 | 15.78 | 5.61 | 13.32 | 0.39 | 8.04 |

# International Equity – Calendar Periods

## Performance vs Pub Pln- International Equity (Gross)




| | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 |
|---|---|---|---|---|---|---|---|
| 10th Percentile | 23.00 | 21.19 | (9.81) | 15.97 | 53.61 | (39.13) | 20.77 |
| 25th Percentile | 20.67 | 20.11 | (11.81) | 14.09 | 41.89 | (41.56) | 17.05 |
| Median | 18.11 | 18.78 | (13.18) | 12.18 | 36.72 | (43.77) | 14.82 |
| 75th Percentile | 13.98 | 17.31 | (14.44) | 9.79 | 31.84 | (46.03) | 11.57 |
| 90th Percentile | 8.10 | 16.12 | (17.35) | 8.28 | 28.17 | (49.82) | 9.68 |
| Total International Equity ● A | 18.94 | 17.09 | (13.95) | 12.70 | 36.35 | (43.03) | 16.61 |
| MSCI EAFE Index ■ B | 22.78 | 17.32 | (12.14) | 7.75 | 31.78 | (43.38) | 11.17 |
| MSCI ACWI ex US Index ▲ | 15.78 | 17.39 | (13.33) | 11.60 | 42.14 | (45.24) | 17.12 |

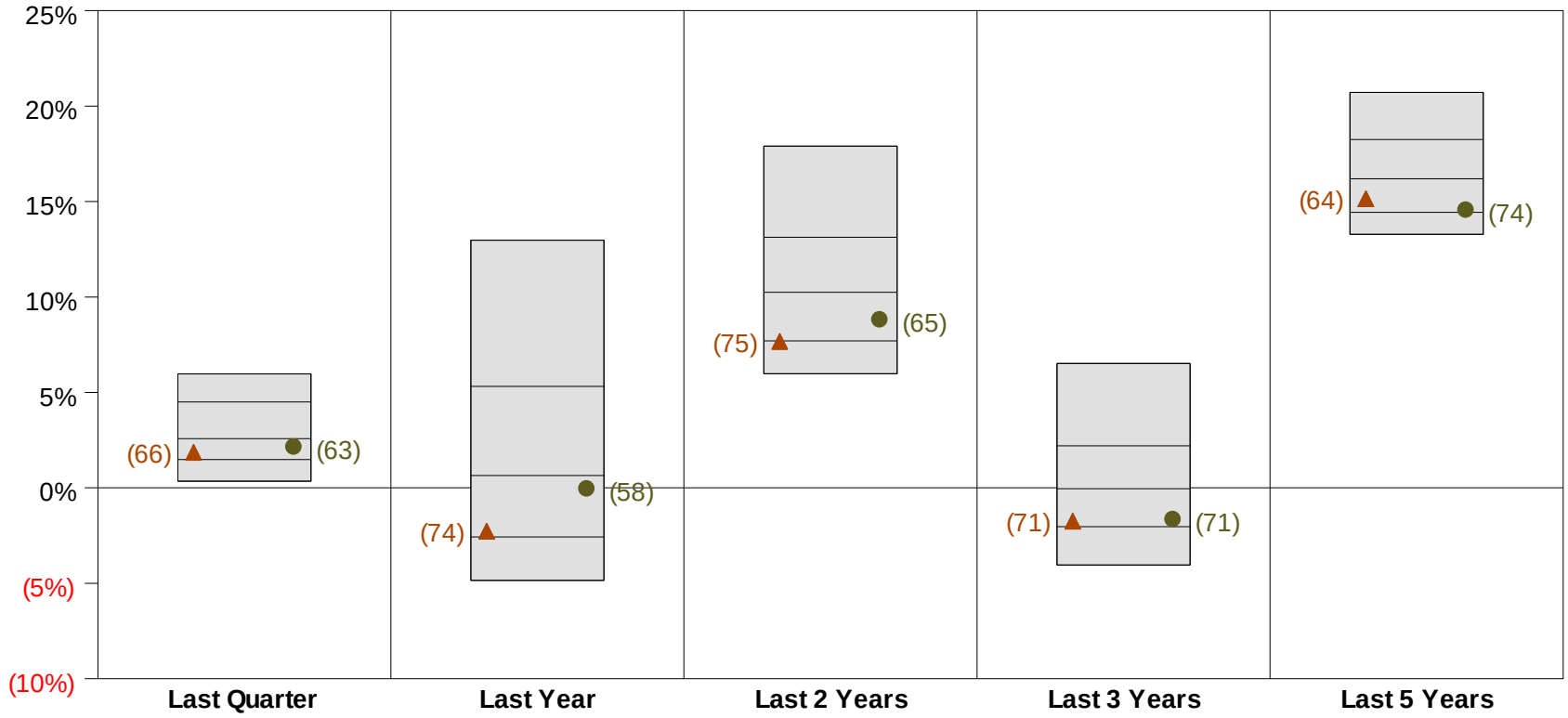
# International Equity ex Emerging Markets

## Performance vs CAI Non-U.S. Equity Style (Gross)

| | Last Quarter | Last Year | Last 2 Years | Last 3 Years | Last 5 Years | Last 6 Years | Last 10 Years |
|---|---|---|---|---|---|---|---|
| 10th Percentile | 8.32 | 28.81 | 24.69 | 12.00 | 16.79 | 4.41 | 10.35 |
| 25th Percentile | 7.38 | 26.08 | 22.54 | 9.95 | 15.23 | 3.05 | 9.24 |
| Median | 6.37 | 23.29 | 20.85 | 8.94 | 13.85 | 1.68 | 8.22 |
| 75th Percentile | 5.28 | 19.57 | 18.36 | 7.52 | 12.32 | 0.42 | 7.49 |
| 90th Percentile | 4.08 | 15.34 | 16.69 | 5.79 | 11.24 | (0.68) | 6.73 |
| **Int'l Equity Pool (ex Emerging. Mkt)** ● | 5.92 | 21.92 | 19.20 | 7.77 | 12.15 | 0.58 | 7.41 |
| MSCI EAFE Index ▲ | 5.71 | 22.78 | 20.02 | 8.17 | 12.44 | 0.29 | 6.91 |

# Emerging Markets Pool

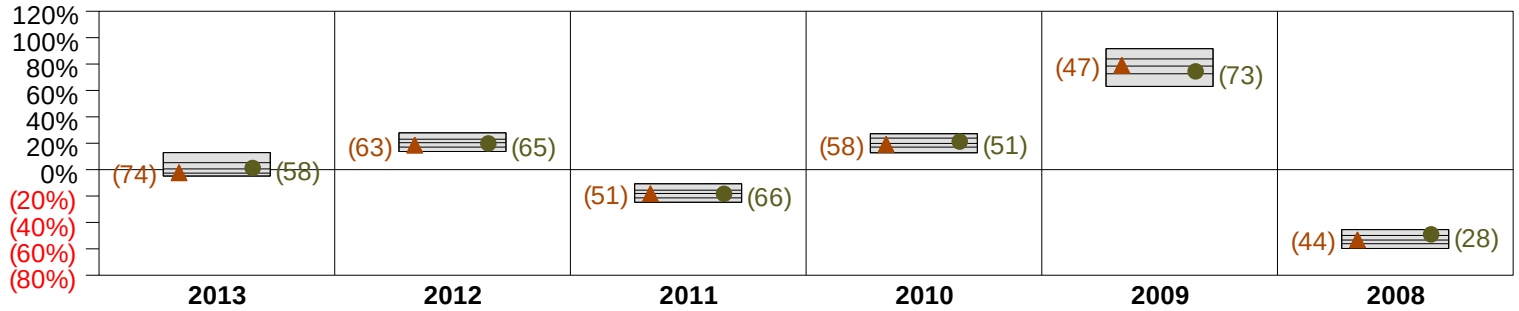
## Performance vs CAI Emerging Markets Equity DB (Gross)




| | Last Quarter | Last Year | Last 2 Years | Last 3 Years | Last 5 Years |
|---|---|---|---|---|---|
| 10th Percentile | 5.97 | 12.98 | 17.90 | 6.52 | 20.72 |
| 25th Percentile | 4.50 | 5.32 | 13.13 | 2.20 | 18.25 |
| Median | 2.58 | 0.65 | 10.25 | (0.05) | 16.19 |
| 75th Percentile | 1.48 | (2.57) | 7.70 | (2.03) | 14.44 |
| 90th Percentile | 0.36 | (4.85) | 5.98 | (4.04) | 13.29 |
| **Emerging Markets Pool** ● | 2.07 | (0.12) | 8.74 | (1.73) | 14.49 |
| MSCI Emerging Mkts Idx ▲ | 1.86 | (2.27) | 7.67 | (1.74) | 15.15 |

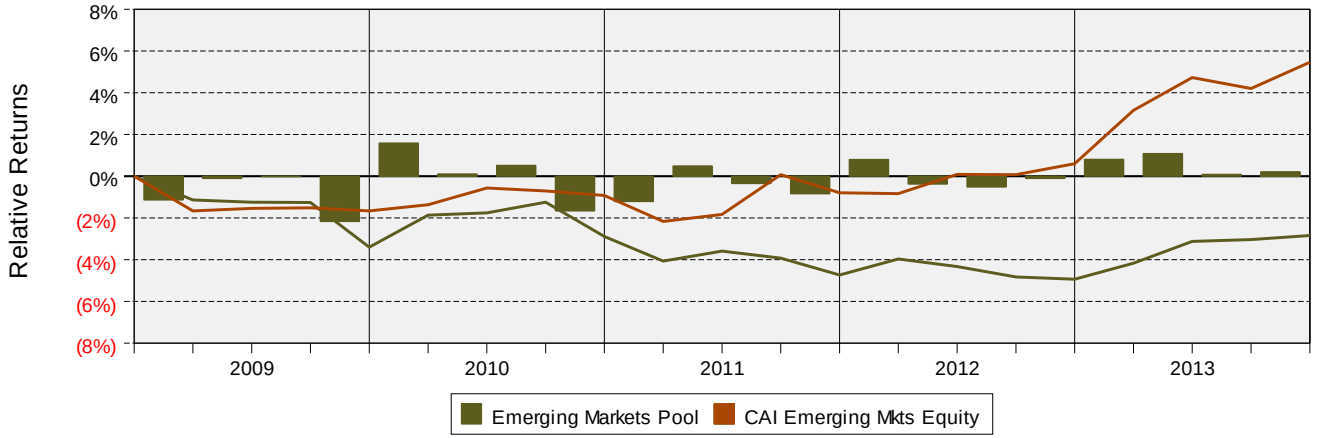
# Emerging Markets Pool – Calendar Periods

## Performance vs CAI Emerging Markets Equity DB (Gross)



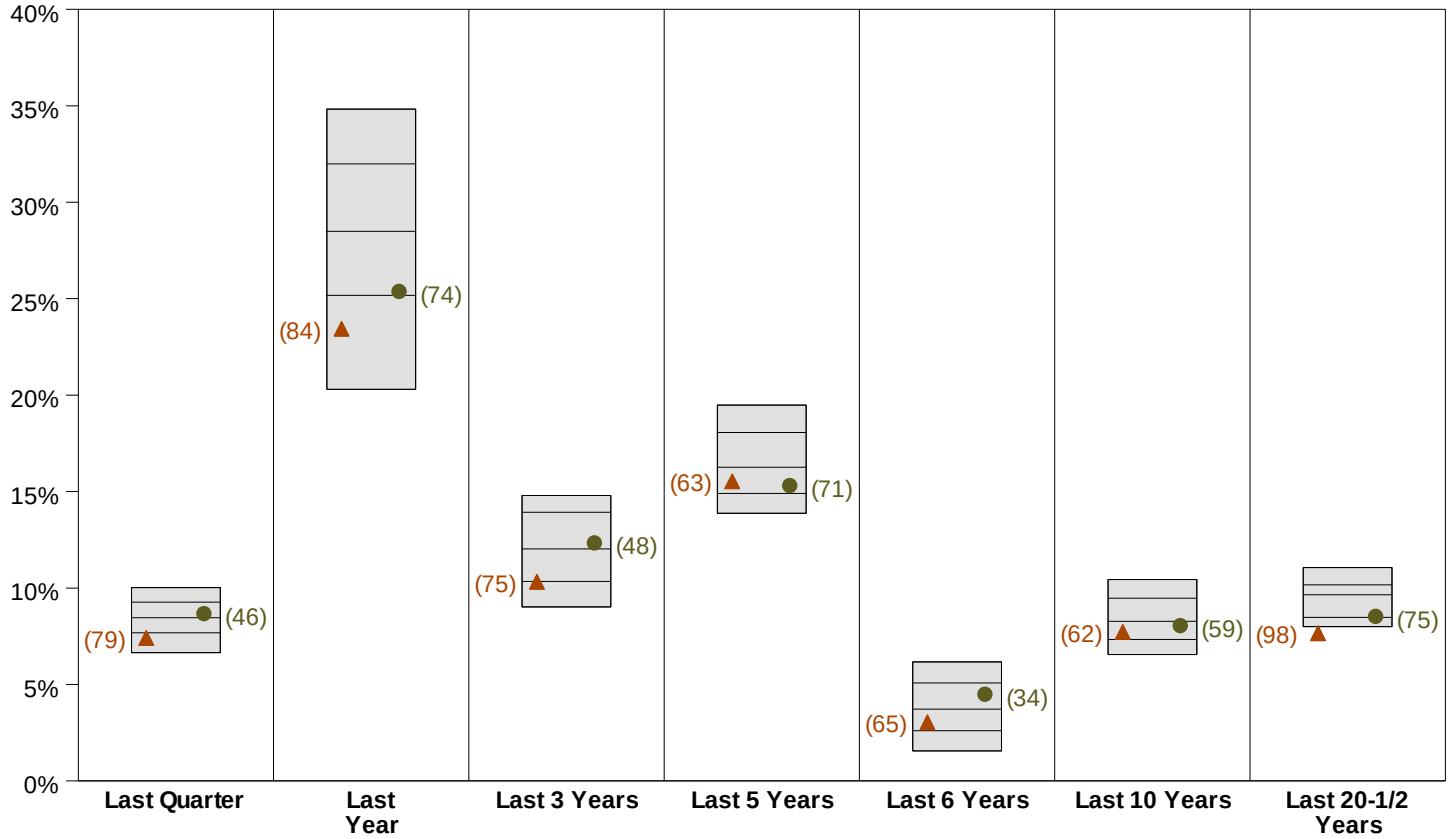

| | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 |
|---|---|---|---|---|---|---|
| 10th Percentile | 12.98 | 27.95 | (10.72) | 27.19 | 91.66 | (45.44) |
| 25th Percentile | 5.32 | 23.07 | (15.55) | 23.87 | 83.93 | (49.86) |
| Median | 0.65 | 20.48 | (18.01) | 19.85 | 78.52 | (53.33) |
| 75th Percentile | (2.57) | 17.05 | (21.38) | 17.13 | 72.63 | (56.14) |
| 90th Percentile | (4.85) | 13.84 | (24.70) | 12.74 | 63.04 | (59.71) |
| **Emerging Markets Pool** ● | (0.12) | 18.38 | (19.73) | 19.83 | 72.93 | (50.49) |
| MSCI Emerging Mkts Idx ▲ | (2.27) | 18.63 | (18.17) | 19.20 | 79.02 | (53.18) |

### Cumulative and Quarterly Relative Return vs MSCI Emerging Mkts Idx



# Global Equity - Lazard

## Performance vs CAI Global Equity Broad Style (Gross)




| | Last Quarter | Last Year | Last 3 Years | Last 5 Years | Last 6 Years | Last 10 Years | Last 20-1/2 Years |
|---|---|---|---|---|---|---|---|
| 10th Percentile | 10.03 | 34.83 | 14.80 | 19.48 | 6.17 | 10.44 | 11.06 |
| 25th Percentile | 9.27 | 31.99 | 13.93 | 18.07 | 5.08 | 9.47 | 10.17 |
| Median | 8.46 | 28.49 | 12.03 | 16.26 | 3.72 | 8.28 | 9.65 |
| 75th Percentile | 7.68 | 25.18 | 10.34 | 14.91 | 2.60 | 7.34 | 8.48 |
| 90th Percentile | 6.65 | 20.30 | 9.02 | 13.87 | 1.55 | 6.56 | 8.00 |
| **Lazard Global** ● | 8.59 | 25.29 | 12.25 | 15.22 | 4.41 | 7.96 | 8.44 |
| MSCI ACWI Idx ▲ | 7.42 | 23.44 | 10.33 | 15.53 | 3.04 | 7.72 | 7.66 |

Strong relative performance for all periods

# Real Assets – Total Real Assets better than target

| | Last Quarter | Fiscal YTD | Last Year | Last 3 Years | Last 5 Years |
|---|---|---|---|---|---|
| **Real Assets** | **2.96%** | **4.47%** | **12.26%** | **11.66%** | **5.69%** |
| Real Assets Target (1) | 2.63% | 4.78% | 7.69% | 10.30% | 6.26% |
| Real Estate Pool | 2.31% | 4.55% | 9.72% | 11.47% | 2.79% |
| Real Estate Target (2) | 2.26% | 4.38% | 10.18% | 11.84% | 7.14% |
| Private Real Estate | 2.94% | 6.14% | 11.35% | 11.82% | 2.43% |
| NCREIF Total Index | 2.53% | 5.18% | 10.98% | 11.92% | 5.68% |
| REIT Internal Portfolio | (0.50%) | (2.93%) | 2.27% | 9.85% | 15.91% |
| NAREIT Equity Index | (0.17%) | (2.78%) | 2.86% | 10.06% | 16.90% |
| Total Farmland | 3.64% | 5.19% | 19.47% | 14.66% | 11.04% |
| UBS Agrivest | 3.25% | 5.28% | 23.05% | 16.49% | 11.61% |
| Hancock Agricultural | 4.31% | 5.02% | 13.71% | 11.71% | 10.26% |
| ARMB Farmland Target (3) | 4.88% | 6.91% | 15.82% | 16.02% | 12.53% |
| Total Timber | 2.04% | 2.58% | 8.58% | 5.88% | 5.36% |
| Timberland Investment Resources | 3.39% | 4.39% | 8.23% | 4.73% | 4.66% |
| Hancock Timber | (0.82%) | (1.18%) | 9.21% | 7.72% | - |
| NCREIF Timberland Index | 5.92% | 7.03% | 9.68% | 6.28% | 2.68% |
| TIPS Internal Portfolio | (1.94%) | (1.36%) | (8.49%) | 3.90% | 5.81% |
| BC US TIPS Index | (2.00%) | (1.31%) | (8.61%) | 3.55% | 5.63% |
| Total Energy Funds * | 0.29% | (1.24%) | 2.96% | 3.92% | 4.64% |
| CPI + 5% | 0.66% | 2.12% | 6.46% | 7.11% | 7.28% |
| MLP Composite | 7.17% | 7.27% | 32.12% | - | - |
| Alerian MLP Index | 5.28% | 4.52% | 27.58% | 15.04% | 29.55% |

RE trailed target

Strong Farmland

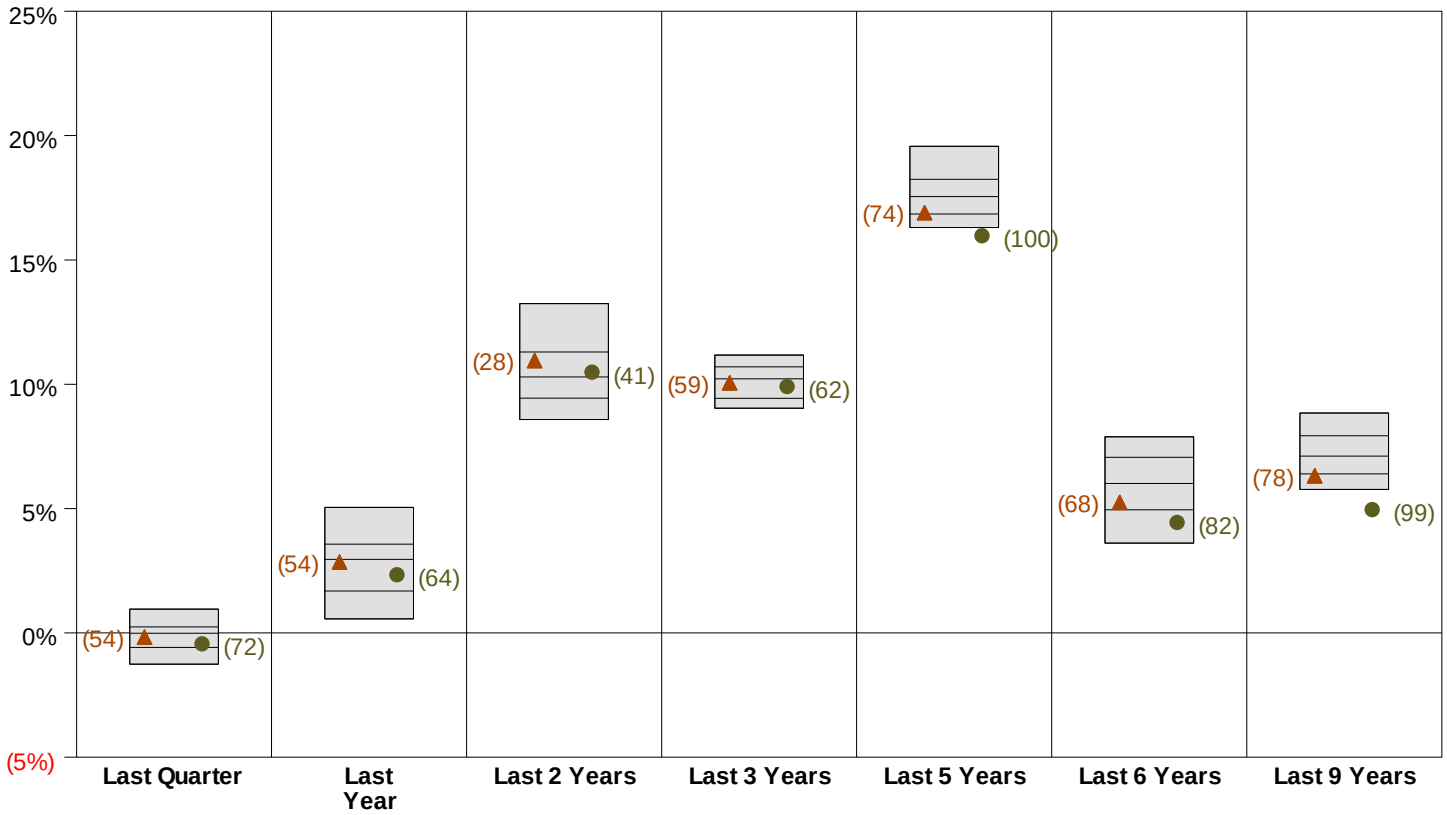
Timber behind target

TIPS better than target

* Please note that real estate returns are provided by ARMB's real estate consultant

# REIT Portfolio

## Performance vs CAI Real Estate-REIT DB (Gross)



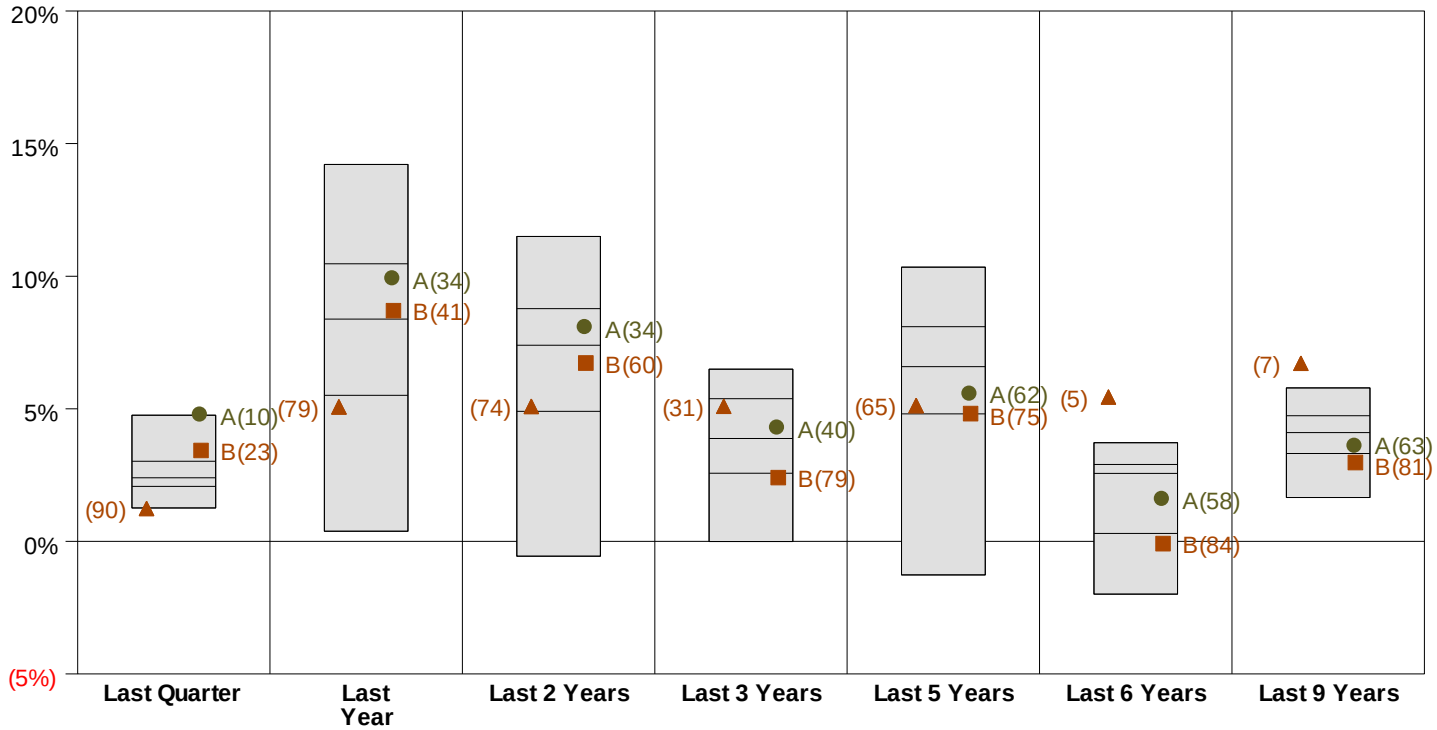

| | Last Quarter | Last Year | Last 2 Years | Last 3 Years | Last 5 Years | Last 6 Years | Last 9 Years |
|---|---|---|---|---|---|---|---|
| 10th Percentile | 0.96 | 5.05 | 13.25 | 11.17 | 19.57 | 7.88 | 8.84 |
| 25th Percentile | 0.24 | 3.57 | 11.30 | 10.70 | 18.25 | 7.07 | 7.93 |
| Median | (0.01) | 2.96 | 10.30 | 10.22 | 17.55 | 6.01 | 7.11 |
| 75th Percentile | (0.58) | 1.69 | 9.44 | 9.43 | 16.85 | 4.95 | 6.39 |
| 90th Percentile | (1.26) | 0.57 | 8.59 | 9.04 | 16.30 | 3.61 | 5.77 |
| **REIT Holdings** ● | (0.50) | 2.27 | 10.42 | 9.85 | 15.91 | 4.38 | 4.89 |
| NAREIT All Equity Index ▲ | (0.17) | 2.86 | 10.96 | 10.06 | 16.90 | 5.25 | 6.32 |

# Internally Managed TIPS Portfolio

Index+ performance over longer-term periods at minimal cost

# Absolute Return Composite

## Performance vs Absolute Return Hedge FoFs Style (Net)

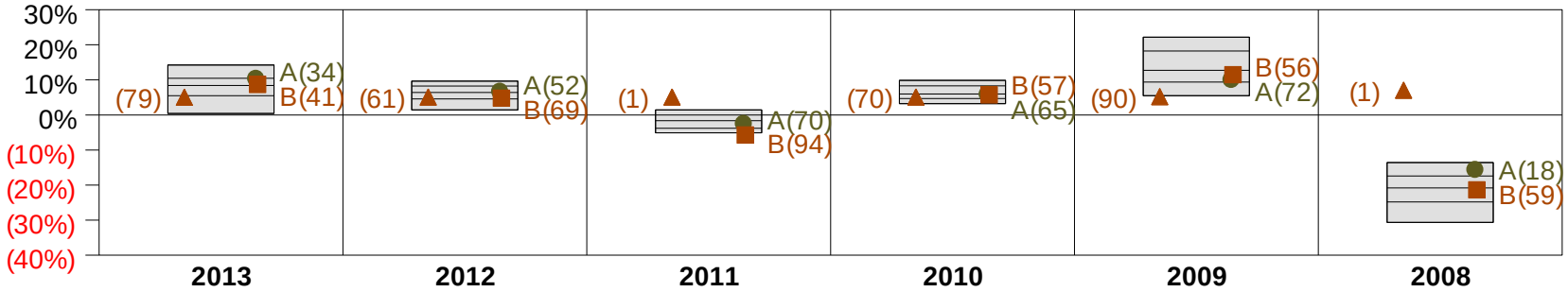



| | Last Quarter | Last Year | Last 2 Years | Last 3 Years | Last 5 Years | Last 6 Years | Last 9 Years |
|---|---|---|---|---|---|---|---|
| 10th Percentile | 4.76 | 14.21 | 11.50 | 6.49 | 10.34 | 3.72 | 5.79 |
| 25th Percentile | 3.02 | 10.47 | 8.77 | 5.38 | 8.09 | 2.90 | 4.74 |
| Median | 2.40 | 8.38 | 7.40 | 3.88 | 6.59 | 2.56 | 4.10 |
| 75th Percentile | 2.07 | 5.51 | 4.91 | 2.57 | 4.81 | 0.30 | 3.32 |
| 90th Percentile | 1.26 | 0.39 | (0.56) | (0.00) | (1.27) | (1.99) | 1.66 |
| Absolute Return Composite ● A | 4.74 | 9.88 | 8.04 | 4.25 | 5.52 | 1.57 | 3.57 |
| HFRI Fund of Funds Compos ■ B | 3.43 | 8.70 | 6.73 | 2.41 | 4.82 | (0.08) | 2.97 |
| T-Bills + 5% ▲ | 1.24 | 5.07 | 5.09 | 5.10 | 5.12 | 5.44 | 6.72 |

Reflects 12/31/13 values, while SS data used to calculate total fund is lagged 1-month. Plan returns & accounting use SS numbers.

# Absolute Return Composite – Calendar Periods

## Performance vs Absolute Return Hedge FoFs Style (Net)




| | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 |
|---|---|---|---|---|---|---|
| 10th Percentile | 14.21 | 9.63 | 1.44 | 9.85 | 22.16 | (13.57) |
| 25th Percentile | 10.47 | 8.23 | (0.04) | 8.30 | 18.25 | (17.42) |
| Median | 8.38 | 6.42 | (1.66) | 5.98 | 12.75 | (20.84) |
| 75th Percentile | 5.51 | 4.59 | (3.81) | 4.70 | 9.36 | (24.82) |
| 90th Percentile | 0.39 | 1.46 | (5.09) | 3.24 | 5.48 | (30.63) |
| Absolute Return Composite ● A | 9.88 | 6.23 | (2.93) | 5.43 | 9.55 | (16.10) |
| HFRI Fund of Funds Compos ■ B | 8.70 | 4.79 | (5.72) | 5.70 | 11.47 | (21.37) |
| T-Bills + 5% ▲ | 5.07 | 5.11 | 5.10 | 5.13 | 5.21 | 7.06 |

# Individual Account Option Performance

## Balanced & Target Date Funds

| Investment Manager | Market Value ($mm) | Last Quarter Return | Last Year Return | 3 Year Return | 5 Year Return | 7 Year Return | 5 Year Risk | 5 Year Risk Quadrant | 5 Year Excess Rtn Ratio | 3 Year Tracking Error | 5 Year Sharpe Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Balanced & Target Date Funds** | | | | | | | | | | | |
| **Alaska Balanced Fund** | $1,184 | 3.2 94 | 9.3 93 | 7.6 88 | 9.5 96 | 5.7 28 | 6.7 100 | | 0.8 15 | 0.5 100 | 1.4 1 |
| CAI Mt Fd: Dom Bal Style | | | | | | | | | | | |
| Passive Target | | 3.1 94 | 8.8 93 | 7.3 90 | 9.1 96 | 5.6 29 | 6.3 100 | | | | 1.4 1 |
| **Long Term Balanced Fund** | $560 | 5.4 79 | 17.6 64 | 10.4 54 | 12.8 60 | 5.9 27 | 11.1 83 | | 0.7 8 | 0.4 99 | 1.1 28 |
| CAI Mt Fd: Dom Bal Style | | | | | | | | | | | |
| Passive Target | | 5.4 80 | 17.1 73 | 10.2 57 | 12.5 67 | 5.8 27 | 10.9 84 | | | | 1.1 30 |
| **Target 2010 Trust** | $13 | 4.4 13 | 13.9 9 | 8.8 11 | | | | | | 0.2 99 | |
| CAI Tgt Date 2010 | | | | | | | | | | | |
| Custom Index | | 4.4 13 | 13.9 9 | 8.7 12 | | | | | | | |
| **Target 2015 Trust** | $118 | 5.3 8 | 17.1 7 | 10.0 6 | 11.9 35 | 6.9 1 | 10.0 59 | | 0.4 9 | 0.2 99 | 1.2 27 |
| CAI Tgt Date 2015 | | | | | | | | | | | |
| Custom Index | | 5.3 8 | 17.2 7 | 10.0 6 | 11.7 40 | 6.7 1 | 10.2 57 | | | | 1.1 37 |
| **Target 2020 Trust** | $82 | 6.1 6 | 19.8 6 | 11.1 5 | 13.6 19 | 5.4 6 | 12.7 27 | | 0.2 17 | 0.2 99 | 1.1 43 |
| CAI Tgt Date 2020 | | | | | | | | | | | |
| Custom Index | | 6.1 5 | 20.0 5 | 11.0 5 | 13.5 22 | 5.4 7 | 12.9 25 | | | | 1.0 54 |
| **Target 2025 Trust** | $59 | 6.8 10 | 22.5 10 | 12.0 8 | 14.9 26 | 4.9 39 | 14.8 27 | | 0.1 27 | 0.3 99 | 1.0 46 |
| CAI Tgt Date 2025 | | | | | | | | | | | |
| Custom Index | | 6.8 9 | 22.6 10 | 12.0 8 | 14.9 28 | 4.9 40 | 15.0 26 | | | | 1.0 64 |
| **Target 2030 Trust** | $46 | 7.4 11 | 24.8 8 | 12.8 6 | | | | | | 0.3 100 | |
| CAI Tgt Date 2030 | | | | | | | | | | | |
| Custom Index | | 7.5 10 | 24.9 7 | 12.8 6 | | | | | | | |
| **Target 2035 Trust** | $47 | 7.9 10 | 26.6 7 | 13.3 1 | | | | | | 0.3 100 | |
| CAI Tgt Date 2035 | | | | | | | | | | | |
| Custom Index | | 8.0 8 | 26.7 7 | 13.3 1 | | | | | | | |
| **Target 2040 Trust** | $53 | 8.2 6 | 27.6 6 | 13.6 2 | | | | | | 0.3 100 | |
| CAI Tgt Date 2040 | | | | | | | | | | | |
| Custom Index | | 8.3 6 | 27.8 3 | 13.6 2 | | | | | | | |
| **Target 2045 Trust** | $66 | 8.2 7 | 27.6 6 | 13.6 2 | | | | | | 0.3 100 | |
| CAI Tgt Date 2040 | | | | | | | | | | | |
| Custom Index | | 8.3 6 | 27.8 3 | 13.6 2 | | | | | | | |

| Investment Manager | Market Value ($mm) | Last Quarter Return | Last Year Return | 3 Year Return | 5 Year Return | 7 Year Return | 5 Year Risk | 5 Year Risk Quadrant | 5 Year Excess Rtn Ratio | 3 Year Tracking Error | 5 Year Sharpe Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Target 2050 Trust** | $75 | 8.2 9 | 27.6 1 | 13.7 1 | | | | | | 0.3 99 | |
| CAI Tgt Date 2050 | | | | | | | | | | | |
| Custom Index | | 8.3 9 | 27.8 1 | 13.6 1 | | | | | | | |
| **Target 2055 Trust** | $32 | 8.2 23 | 27.6 2 | 13.7 4 | | | | | | 0.3 100 | |
| CAI Tgt Date 2055 | | | | | | | | | | | |
| Custom Index | | 8.3 22 | 27.8 2 | 13.6 4 | | | | | | | |

Returns:
- above median
- third quartile
- fourth quartile

Risk:
- below median
- second quartile
- first quartile

Risk Quadrant:

Excess Return Ratio:
- above median
- third quartile
- fourth quartile

Tracking Error:
- below median
- second quartile
- first quartile

Sharpe Ratio:
- above median
- third quartile
- fourth quartile

**The AK Balanced Fund and Long-Term <u>Balanced Fund</u>:**

- These two Funds have higher allocations to bonds than most members of the peer group.
- The funds' asset allocations reflect an emphasis on capital preservation.

# Other Options

## Active Equity, Stable Value, and Interest Income

| Investment Manager | Market Value ($mm) | Last Quarter Return | Last Year Return | 3 Year Return | 5 Year Return | 7 Year Return | 5 Year Risk | 5 Year Risk Quadrant | 5 Year Excess Rtn Ratio | 3 Year Tracking Error | 5 Year Sharpe Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Active and Other Funds** | | | | | | | | | | | |
| **Brandes Int'l Fund** | $74 | **5.5** 71 | **26.8** 12 | **8.1** 41 | | | | | | **3.0** 79 | |
| **CAI Non-U.S. Equity MF** | | | | | | | | | | | |
| MSCI EAFE Index | | 5.7 67 | 22.8 38 | 8.2 40 | 12.4 63 | 1.8 62 | 22.1 60 | | | | 0.6 53 |
| **RCM Soc Resp** | $37 | **8.7** 83 | **30.0** 72 | **12.6** 76 | **16.3** 51 | | **18.6** 40 | | **-0.4** 58 | **3.8** 53 | **0.9** 59 |
| **CAI Core Equity Mut Fds** | | | | | | | | | | | |
| KLD 400 Social Idx | | 10.2 48 | 36.2 7 | 16.1 25 | 18.2 17 | 6.5 24 | 17.4 69 | | | | 1.0 12 |
| **T. Rowe Price Small Cap** | $139 | **8.9** 46 | **39.6** 48 | **18.3** 14 | **25.1** 15 | **10.5** 8 | **21.8** 56 | | **1.7** 1 | **1.3** 99 | **1.1** 16 |
| **CAI Sm Cap Broad Mut Fds** | | | | | | | | | | | |
| Russell 2000 Index | | 8.7 52 | 38.8 50 | 15.7 45 | 20.1 68 | 7.2 61 | 22.3 46 | | | | 0.9 67 |
| **T. Rowe Price Stable Value Fd** | $348 | **0.6** 3 | **2.5** 8 | **2.9** 8 | **3.3** 13 | **3.7** 16 | **0.3** 63 | | **4.0** 13 | **0.1** 80 | **11.1** 10 |
| **CAI Stable Value DB** | | | | | | | | | | | |
| 5 Yr US Treas Rolling | | 0.4 39 | 1.6 53 | 2.2 43 | 2.7 41 | 3.1 55 | 0.4 30 | | | | 6.5 62 |
| **Def Comp Interest Income Fund** | $183 | **-0.5** 100 | **2.8** 1 | **3.4** 1 | | | | | | **2.1** 1 | |
| **CAI Stable Value DB** | | | | | | | | | | | |
| 5 Yr US Treas Rolling | | 0.4 39 | 1.6 53 | 2.2 43 | 2.7 41 | 3.1 55 | 0.4 30 | | | | 6.5 62 |

Returns:
- above median
- third quartile
- fourth quartile

Risk:
- below median
- second quartile
- first quartile

Risk Quadrant:

Excess Return Ratio:
- above median
- third quartile
- fourth quartile

Tracking Error:
- below median
- second quartile
- first quartile

Sharpe Ratio:
- above median
- third quartile
- fourth quartile

# Passive Options

| Investment Manager | Market Value ($mm) | Last Quarter Return | Last Year Return | 3 Year Return | 5 Year Return | 7 Year Return | 5 Year Risk | 5 Year Risk Quadrant | 5 Year Excess Rtn Ratio | 3 Year Tracking Error | 5 Year Sharpe Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Index Funds** | | | | | | | | | | | |
| **State Street S&P Index Fund (i)** | $312 | **10.5** 43 | **32.4** 76 | **16.2** 61 | **18.0** 56 | **6.2** 76 | **17.5** 60 | | **0.4** 23 | **0.0** 99 | **1.0** 51 |
| CAI Large Cap Core Style | | | | | | | | | | | |
| S&P 500 Index | | 10.5 43 | 32.4 76 | 16.2 61 | 17.9 58 | 6.1 77 | 17.6 54 | | | | 1.0 54 |
| **BlackRock S&P 500 Index Fund (i)** | $167 | **10.5** 43 | **32.4** 76 | **16.2** 61 | **18.0** 55 | **6.2** 75 | **17.6** 58 | | **1.0** 1 | **0.0** 99 | **1.0** 51 |
| CAI Large Cap Core Style | | | | | | | | | | | |
| S&P 500 Index | | 10.5 43 | 32.4 76 | 16.2 61 | 17.9 58 | 6.1 77 | 17.6 54 | | | | 1.0 54 |
| **Russell 3000 Index (i)** | $47 | **10.1** 68 | **33.5** 63 | **16.3** 54 | **18.8** 42 | | **18.2** 53 | | **0.6** 5 | **0.1** 100 | **1.0** 43 |
| CAI Large Cap Style | | | | | | | | | | | |
| Russell 3000 Index | | 10.1 68 | 33.6 63 | 16.2 55 | 18.7 43 | 6.5 57 | 18.3 53 | | | | 1.0 44 |
| **World Eq Ex-US Index (i)** | $28 | **4.8** 83 | **14.6** 93 | **5.2** 91 | **13.1** 66 | | **21.8** 43 | | **0.2** 50 | **1.2** 100 | **0.6** 66 |
| CAI Non-U.S. Equity Style | | | | | | | | | | | |
| MSCI ACWI x US (Net) | | 4.8 84 | 15.3 90 | 5.1 91 | 12.8 70 | 2.2 75 | 22.2 33 | | | | 0.6 73 |
| **SSgA Global Balanced (i)** | $54 | **4.3** 60 | **12.1** 46 | **7.5** 35 | | | | | | **0.4** 100 | |
| CAI Mt Fd: Gl Bal Style | | | | | | | | | | | |
| Global Balanced Custom Benchmark | | 4.2 63 | 12.1 46 | 7.2 36 | | | | | | | |
| **Long US Treasury Bond Index (i)** | $6 | **-3.1** 96 | **-12.8** 97 | **5.5** 93 | **2.4** 98 | | **15.7** 2 | | **0.4** 91 | **0.1** 99 | **0.1** 97 |
| CAI Extended Mat FI Style | | | | | | | | | | | |
| BC Long Treas | | -3.1 96 | -12.7 97 | 5.5 93 | 2.3 98 | 6.2 93 | 15.7 2 | | | | 0.1 97 |
| **US Treasry Infl Prtcd SEC (i)** | $16 | **-2.0** 78 | **-8.7** 83 | **3.4** 70 | **5.5** 67 | | **5.4** 37 | | **-3.4** 100 | **0.0** 96 | **1.0** 78 |
| CAI Real Return | | | | | | | | | | | |
| BC US TIPS Index | | -2.0 75 | -8.6 73 | 3.5 67 | 5.6 47 | 5.3 56 | 5.4 37 | | | | 1.0 66 |
| **World Gov't Bond Ex-US Indx (i)** | $8 | **-1.3** 85 | **-4.6** 56 | **0.6** 73 | **2.2** 97 | | **7.8** 89 | | **-0.1** 97 | **0.1** 98 | **0.3** 96 |
| CAI Non-U.S. F-I Style | | | | | | | | | | | |
| Citi WGBI Non-US Idx | | -1.2 81 | -4.6 55 | 0.6 74 | 2.3 96 | 4.6 88 | 8.1 80 | | | | 0.3 96 |
| **US Real Estate Invmnt Trust (i)** | $22 | **-1.2** 89 | **0.9** 88 | **8.8** 91 | **16.3** 90 | | **28.6** 18 | | **-0.0** 93 | **0.1** 100 | **0.6** 95 |
| CAI Real Estate-REIT DB | | | | | | | | | | | |
| US Select REIT Index | | -1.1 89 | 1.2 86 | 9.0 90 | 16.4 88 | 1.0 85 | 29.2 16 | | | | 0.6 96 |

| Investment Manager | Market Value ($mm) | Last Quarter Return | Last Year Return | 3 Year Return | 5 Year Return | 7 Year Return | 5 Year Risk | 5 Year Risk Quadrant | 5 Year Excess Rtn Ratio | 3 Year Tracking Error | 5 Year Sharpe Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **BlackRock Govt/Credit Bond Fund (i)** | $43 | **-0.1** 72 | **-2.5** 80 | **3.5** 62 | **4.1** 93 | **4.8** 58 | **4.0** 44 | | **-1.9** 97 | **0.0** 99 | **1.0** 89 |
| CAI Core Bond Mut Fds | | | | | | | | | | | |
| Barclays Govt/Credit Bd | | -0.0 70 | -2.4 70 | 3.6 57 | 4.4 92 | 5.0 51 | 4.0 44 | | | | 1.1 87 |
| **Intermediate Bond Fund (i)** | $13 | **-0.5** 97 | **-1.4** 61 | **2.0** 53 | **2.0** 87 | **4.1** 55 | **2.8** 45 | | **-4.6** 100 | **0.0** 99 | **0.7** 92 |
| CAI Intermediate F-I Mut | | | | | | | | | | | |
| Barclays Gov Inter | | -0.4 89 | -1.2 58 | 2.1 52 | 2.2 86 | 4.2 53 | 2.8 45 | | | | 0.7 90 |
| **State Street Inst Trsry MM (i)** | $35 | **0.0** 99 | **0.0** 99 | **0.0** 100 | **0.0** 100 | | **0.0** 99 | | **-3.8** 100 | **0.0** 93 | **-12.8** 100 |
| Money Market Funds | | | | | | | | | | | |
| 3-Month T-Bills | | 0.0 99 | 0.0 99 | 0.1 100 | 0.1 100 | 1.0 100 | 0.0 87 | | | | -0.9 100 |

Returns:
- above median
- third quartile
- fourth quartile

Risk:
- below median
- second quartile
- first quartile

Risk Quadrant:

Excess Return Ratio:
- above median
- third quartile
- fourth quartile

Tracking Error:
- below median
- second quartile
- first quartile

Sharpe Ratio:
- above median
- third quartile
- fourth quartile

(i) – Indexed scoring method used. Green: manager & index differ by less than +/- 10 percentiles; Yellow: manager and index differ by +/- 20 percentiles; Red: manager & index differ by more than 20 percentiles.

# Major Activities 2014 YTD

- Asset Allocation Update
  - Developed ARMB specific expected returns & risk projections
  - Worked with staff & advisors to develop and evaluate alternative potential policy mixes
  - Participated with staff & IAC to discuss recommended policies for Board consideration

- Manager Reviews
  - Assisted staff by independently reviewing Frontier Markets and potential managers
  - Completed detailed analysis of Everest Capital
  - Met with following existing managers:
    - *Western Asset*
    - *Capital Guardian*
    - *Brandes*

GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

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# ALASKA RETIREMENT MANAGEMENT BOARD

## ACTUARIAL REVIEW OF PENSION AND POSTEMPLOYMENT HEALTHCARE PLANS FOR PERS AND TRS

APRIL 09, 2014

GRS
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April 09, 2014

Mr. Gary Bader
Chief Investment Officer
Department of Revenue, Treasury Division
Alaska Retirement Management Board
P.O. Box 110405
Juneau, AK 99811-0405

**Subject: Actuarial Review of June 30, 2013 valuations for the State of Alaska Public Employees' Retirement System (PERS) and Teachers' Retirement System (TRS).**

Dear Gary:

We have performed an actuarial review of the June 30, 2013 Actuarial Valuations for PERS and TRS.

This report includes a review of:

- Pension Assumptions and Benefits
- Health Care Cost Assumptions
- Actuarial Valuation Methods and Procedures
- Contribution Rate Determination
- Actuarial Valuation Report
- Potential Areas for Future Review

Draft

A major part of the review is a thorough analysis of the test lives provided by Buck Consultants. The report includes exhibits which summarize the detailed analysis of these sample test cases for PERS and TRS, as well as a comparison of the results between Buck Consultants and GRS. We wish to thank the staff of the State of Alaska Treasury Division and Buck Consultants without whose willing cooperation this review could not have been completed.

Sincerely,

Gabriel, Roeder, Smith & Company

Leslie L. Thompson, FSA, FCA, EA, MAAA
Senior Consultant

Dana L. Woolfrey, FSA, FCA, EA, MAAA
Consultant

Todd D. Kanaster, ASA, MAAA
Senior Analyst

cc: Ms. Judy Hall

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Draft

# SECTION 1

## EXECUTIVE SUMMARY

Draft

# EXECUTIVE SUMMARY

Gabriel, Roeder, Smith & Co. was engaged by the Alaska Retirement Management Board (ARMB) to review the June 30, 2013 Actuarial Valuation of the State of Alaska Public Employees' Retirement System (PERS) and Teachers' Retirement System (TRS).

This report presents our findings in the following areas:

- General Approach
- Pension Assumptions and Benefits
- Health Care Cost Assumptions
- Actuarial Valuation Methods and Procedures
- Contribution Rate Determination
- Actuarial Valuation Report
- Potential Areas for Future Review
- Summary and Conclusions

In general, we found that the Buck's actuarial results and reports were reasonable. We found no areas of concern in the actuarial valuation results, and find the assumptions consistent with generally accepted actuarial practice.

Draft

## KEY FINDINGS FROM THE AUDIT OF THE JUNE 30, 2013 VALUATIONS

After completing the June 30, 2013 test life review, we have two remaining outstanding items to be resolved. Our test life work, in general, matches that of Buck Consultants. Using Buck's methods and assumptions, we are able to match liabilities within an acceptable degree of tolerance. However, we continue to recommend a couple particular changes in methodology for the subsequent valuations.

As a part of the annual audit, we take a historical look at the gains and losses on the accrued liability. Gains and losses may measure "how closely" experience matches the actuarial assumption. Recurring gains or losses may indicate an assumption that is not meeting the actual experience for this population.

PERS Historical Pension Gains and (Losses) by Source

| Source | 2013 Valuation | 2012 Valuation | 2011 Valuation | 2010 Valuation | 2009 Valuation | 2008 Valuation |
|---|---|---|---|---|---|---|
| Retirement | **(14,528)** | **$(2,103)** | **$(8,116)** | **$3,730** | **$(6,440)** | **$(2,325)** |
| Termination | **(23,716)** | **(19,932)** | **(39,980)** | **(33,532)** | **(20,118)** | **(7,241)** |
| Mortality | **(7,403)** | **8,809** | **(2,020)** | **(17,350)** | **(23,756)** | **(6,842)** |
| Disability | **15** | **224** | **177** | **(1,837)** | **(60)** | **(1,217)** |
| Rehires | **(23,427)** | **(24,172)** | **(25,953)** | | | |
| Other | **(19,679)** | **10,356** | **(42,015)** | **(28,765)** | **(22,113)** | **(30,528)** |
| Salary | **(10,070)** | **(25,024)** | **(13,845)** | **4,617** | **(20,132)** | **(60,440)** |
| COLA and PRPA | **42,579** | **8,995** | **39,219** | **86,479** | **(19,481)** | **41,400** |
| **Total** | **$(56,229)** | **$(42,847)** | **$(92,533)** | **$13,342** | **$(112,100)** | **$(67,193)** |

TRS Historical Pension Gains and (Losses) by Source

| Source | 2013 Valuation | 2012 Valuation | 2011 Valuation | 2010 Valuation | 2009 Valuation | 2008 Valuation |
|---|---|---|---|---|---|---|
| Retirement | **$3,268** | **$6,990** | **$3,809** | **$7,922** | **$8,298** | **$3,618** |
| Termination | **(11,010)** | **(11,029)** | **(14,197)** | **(9,763)** | **(10,182)** | **(2,108)** |
| Mortality | **(3,833)** | **4,375** | **(5,625)** | **(17,413)** | **(17,693)** | **(15,681)** |
| Disability | **(696)** | **(850)** | **(974)** | **(556)** | **(428)** | **(320)** |
| Rehires | **(11,100)** | **(8,174)** | **(14,236)** | | | |
| Other | **(29,965)** | **(12,877)** | **8,225** | **(20,959)** | **(16,262)** | **(16,536)** |
| Salary | **23,829** | **9,947** | **8,514** | **(35,479)** | **(12,153)** | **(11,870)** |
| COLA and PRPA | **28,399** | **632** | **26,347** | **58,823** | **(16,355)** | **20,193** |
| **Total** | **$(1,108)** | **($10,986)** | **$11,863** | **($17,425)** | **($64,775)** | **($22,704)** |

Draft

There continue to be termination losses. This experience should be examined thoroughly as part of the experience study. As part of this examination, it may be prudent to consider the methodology used to determine eligibility service. For example, are TRS members with 19.8 years of service at time of valuation still only considered eligible for termination? Do these members retire a few months later with full retirement benefits and then show up as a termination loss? In addition to the raw experience data (exposures, actual terminations, etc.), the rates should be developed in a way that takes into account the inner workings of the valuation model.

The magnitude of the TRS rehire loss seems big in proportion to the number of rehires shown on page 57 of the TRS report. Page 57 shows 126 rehires and the loss is $11.1 million, or $88,000 per rehire. Given that there should have been some liability held for these members already, $88,000

per person seems high. Given that there is a recurring non-trivial loss due to rehires, Buck may wish to consider making a rehire assumption as part of the experience study.

Lastly, there seems to be a general pattern of losses, especially if the COLA and PRPA gains are excluded. A valuation is only as good as its assumptions and an excellent match on test lives does not mean the valuation is producing contribution rates that support the liabilities.

PERS Historical Healthcare Gains and (Losses) by Source

| Source | 2013 Valuation | 2012 Valuation | 2011 Valuation |
|---|---|---|---|
| Retirement | **$(34,739)** | **$15,150** | **$38,051** |
| Termination | **775** | **(8,950)** | **(801)** |
| Mortality | **(145)** | **16,677** | **7,197** |
| Disability | **(2,460)** | **(1,431)** | **(951)** |
| Rehires | **(11,840)** | **(21,194)** | **(24,647)** |
| Other | **(3,656)** | **74,109** | **(28,778)** |
| Medical Claims | **215,974** | **508,005** | **107,501** |
| Methodology | | | **291,475** |
| **Total** | **$163,909** | **$582,366** | **$389,047** |

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TRS Historical Healthcare Gains and (Losses) by Source

| Source | 2013 Valuation | 2012 Valuation | 2011 Valuation |
|---|---|---|---|
| Retirement | **$6,694** | **$10,429** | **$13,839** |
| Termination | **(5,549)** | **(6,345)** | **(5,629)** |
| Mortality | **(1,738)** | **1,815** | **531** |
| Disability | **(207)** | **(492)** | **(567)** |
| Rehires | **(4,161)** | **(3,151)** | **(5,570)** |
| Other | **(2,518)** | **20,386** | **(14,040)** |
| Medical Claims | **(90,606)** | **180,457** | **47,990** |
| Methodology | | | **24,904** |
| **Total** | **$83,127** | **$203,099** | **$61,458** |

Medical claims have created the greatest volatility in the healthcare valuation results. This tends to be very typical in healthcare valuations. While past experience tends to be a fairly good predictor of demographic experience like retirement and termination, future increases in medical costs are difficult to project with any degree of accuracy.

## TEST LIFE OBSERVATIONS

We have noted the most significant areas of concern below, and a more detailed interpretation of the correspondence of resolution and/or explanation between Buck and GRS is noted in Section 4. In addition, we continue to monitor the findings and recommendations from the June 30, 2012 audit performed against the test lives and reports submitted by Buck for the June 30, 2013 audit. One of the June 30, 2012 issues has been resolved with the June 30, 2013 valuation. There were two issues raised in the audit of the June 30, 2012 valuations that are not yet resolved. At the end of this Section we have included a checklist of our review of outstanding items and Buck's status and/or explanation for each item.

- ***Retirement benefits – due to averaging benefits determined at beginning and end of year, rather than determining the benefits at middle of year, early retirement factors are being applied in some instances where the member is eligible for an unreduced benefit. This has the impact of valuing too low of a benefit for some members.***
- ***Healthcare participation and eligibility for employer paid coverage prior to age 60 – in cases where a member becomes eligible for employer-paid premiums prior to age 60 by meeting the service requirement, participation is not calculated correctly in the first year of eligibility for the employer-paid premiums.***

## SUMMARY OF TEST LIFE REVIEW

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We have included as a part of this report a detailed test life results summary.

- We matched the present value of benefits closely in total on all testlives submitted. We have included exhibits in Section 4 of the report which summarize the differences in calculations by decrement for the test lives analyzed. Differences between actuarial firms will always occur due to system differences and other nuances in the calculations.
- The actuarial basis (the assumptions and methods) used for the funding of the plan lies within the range of reasonableness, with the exception that we recommend changes as noted above.

| Outstanding issues which are considered to have potential non-trivial impact: | | | | |
|---|---|---|---|---|
| **Issue** | **GRS Recommendations** | **Plan** | **Buck Updated?** | **Buck Comments** |
| 1. Early retirement reduction | Due to averaging of beginning of year and end of year statistics, applying early retirement reduction where none is needed in first year of eligibility based on 20 years of service. This understates liabilities. | TRS, PERS | × | The Buck valuation system does not allow for this. Does not believe their methodology introduces any bias. |
| 2. Post-retirement Health Election Percentage | Averaging beginning of year and end of year participation assumption. Should use participation assumption based on middle of year eligibility. Biggest issue for retiree contributions. This understates liabilities. | TRS, PERS | × | The Buck valuation system does not allow for this. Believe de minimus. |
| **Outstanding issues which are considered to have de minimus impact.** | | | | |
| **Issue** | **GRS Recommendations** | **Plan** | **Buck Updated?** | **Buck Comments** |
| 3. Postretirement benefit adjustments for survivors | Eligibility for post-retirement benefit adjustments is based on the retiree age rather than the surviving spouse age. | TRS, PERS | × | System limitations prevent this change. |
| 4. Occupational disability rates during retirement eligibility | Assumption ceases at early retirement although disability benefit may be more valuable. | PERS | × | Buck indicates this assumption is included in the experience study report. |

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# SECTION 2

## GENERAL APPROACH

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# GENERAL APPROACH

Gabriel, Roeder, Smith & Co. was charged with reviewing the actuarial assumptions of the pension and health care provisions of the actuarial valuations of TRS and PERS.

We requested a number of items from Buck Consultants in order to perform the actuarial review and health cost assumption review:

1. We received the draft reports on February 13, 2014. In December of 2013, we received valuation data for pension and healthcare for both plans, and we received the pension and healthcare test lives for PERS and TRS.

In performing our review, we:

1. Reviewed actuarial assumptions – we checked to see if they were consistent, comprehensive, and appeared reasonable.
2. Reviewed the actuarial valuation reports as of June 30, 2013 for completeness, GASB compliance and a review of financial determinations.
3. Reviewed, in detail, the sample members provided us – This provided us with a perspective on the actuarial process utilized by Buck with respect to the plan and allowed us to review the valuation methods and procedures.
4. Reviewed the health cost assumptions and trend.
5. Identified areas for future more detailed review.

Draft

## KEY ACTUARIAL CONCEPTS

An actuarial valuation is a detailed statistical simulation of the future operation of a retirement system using the set of actuarial assumptions adopted by the Board. It is designed to simulate all of the dynamics of such a system for each current system member including:

1. Earning future service and making contributions,
2. Receiving changes in compensation,
3. Leaving the system through job change, disablement, death, or retirement, and
4. Determination of and payment of benefits from the System.

This simulated dynamic is applied to each active member of the System. It results in a set of expected future benefit payments to that member. Bringing those expected payments to present value, at the assumed rate of investment return, produces the Actuarial Present Value ("APV") of future benefits for that member. In like manner, an APV of future salaries is determined.

The APV of future benefits and the APV of future salaries for the entire System are the total of these values across all members. The remainder of the actuarial valuation process depends upon these building blocks.

Once the basic results are derived, an actuarial method is applied in order to develop information on contribution levels and funding status. An actuarial method splits the APV of future benefits into two components:

1. APV of Future Normal Costs, and
2. Actuarial Accrued Liability ("AAL").

The actuarial method in use by the State of Alaska is known as the Entry Age Normal (EAN) method. Under EAN, the Normal Cost for a member is that portion of the Actuarial Present Value of the increase in the value of that member's benefit for service during the upcoming year. The AAL is the difference between the total APV and the present value of all future normal costs.

For TRS and PERS, the APV of future benefits applies to the following benefits:

- Retirement benefits
- Withdrawal benefits
- Disability benefits
- Death benefits
- Return of contributions
- Medical benefits
- Indebtedness (from contributions which might be redeposited)

Draft

The medical benefits are based on potential future health care benefits, while the others are a type of post-employment income replacement benefit, based on salary. For the medical benefits, estimates must be made of the future health care costs. This is done by determining current per capita health care claim costs by age of retiree, and projecting them into the future based on anticipated future health care inflation.

# SECTION 3

## REVIEW OF ASSUMPTIONS

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# REVIEW OF PENSION ASSUMPTIONS

Buck will soon be performing an experience study of PERS and TRS experience for July 1, 2009 to June 30, 2013. We anticipate a new assumption set will be recommended and potentially adopted for use in the actuarial valuation as of June 30, 2014.

## ECONOMIC ASSUMPTIONS

### General

These assumptions simulate the impact of economic forces on the amounts and values of future benefits. Key economic assumptions are the assumed rate of investment return and assumed rates of future salary increase.

Economic assumptions are normally defined by an underlying inflation assumption. Buck has cited 3.12% as its inflation assumption. In recent years, long-term inflation forecasts have been declining. With the decline, the 3.12% inflation assumption is now at the higher end of the generally accepted range.

### Investment Return Assumption

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The nominal investment return assumption is 8.00%. The assumption is net of all investment and administrative expenses. A net investment return rate of 8.00% per annum is a commonly used assumption by many large public employee retirement systems. Combined with the 3.12% inflation assumption, this yields a 4.88% real net rate of return.

Because PERS and TRS are closed to new members, eventually the asset allocation will need to be adjusted to reflect cash flow needs. In addition to considering the current asset allocation targets in proposing a real rate of return assumption, potential future migration to more liquid assets should be considered in the upcoming experience study.

### Member Pay Increase Assumption

In sophisticated actuarial models, assumed rates of pay increase are often constructed as the total of several components:

> Base salary increases -- base pay increases that include price inflation and general "standard of living" or productivity increases.
>
> An allowance for Merit, Promotion, and Longevity – This portion of the assumption is not related to inflation.

In the context of a typical pay grid, pay levels are set out for various employment grades with step increases for longevity:

The base salary increase assumption reflects overall growth in the entire grid, and the Merit, Promotion, and Longevity pay increase assumption reflects movement of members through the grid, both step increases and promotional increases.

**Base Salary Increase Assumption**

The Base Salary Increase Assumption (also known as the wage inflation assumption) is 3.62%. The 3.62% is comprised of 3.12% for general inflation and 0.5% for productivity increases.

**Merit, Promotion, and Longevity Pay Increase Assumption**

As described above, the Merit, Promotion, and Longevity pay increase assumption represents pay increases due to movement through the pay grid. This is based on longevity and job performance. In most models, it is recognized that step increases and promotions are very rare late in careers. Thus, this allowance should trail away from relatively high levels for young or short service members to virtually nothing late in careers. We would expect that, as members approach retirement, this component would fade away.

The assumptions used by Buck are reasonable.

We would also offer that the manner in which pays change over time for teachers in comparison to public employees tends to differ. Since most teachers have a specific skill set, the approach to their compensation tends to follow a more consistent trend. Public Employees however (except for Peace officers and Firefighters) tend to represent a multitude of different skills – from a more generalized, labor intensive capacity (e.g., custodial) to more specialized training (ex. Accounting).

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## DEMOGRAPHIC ASSUMPTIONS

There have been no changes to the demographic assumptions since the prior valuation. These are generally changed in conjunction with an experience study every three to five years. The magnitude of the demographic gains and losses do not indicate that any acceleration of this process is warranted. The pattern of consistent termination losses does suggest that this experience warrants particular attention.

## SUMMARY

The set of actuarial assumptions appear to be reasonable.

# REVIEW OF HEALTH CARE COST ASSUMPTIONS

## GENERAL

Buck was able to complete their analysis of medical costs based on claims information provided by HealthSmart and Premera. For the 2013 valuation, the claim costs and Medicare offset analyses were updated using claims and enrollment data. Individual claim level detail was obtained from HealthSmart and Premera for fiscal years 2010 through 2013.

**Claims Cost and Medicare Offset**

We analyzed the trend in the per capita claim costs over the last six years:

| | Age 65 Per Capitas for Fiscal Year Ending | | | | | | |
|---|---|---|---|---|---|---|---|
| | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** |
| Medical: Pre-Medicare | 7,196 | 7,670 | 7,503 | 8,606 | 9,497 | 9,856 | 11,125 |
| Medical: Medicare A&B only | 1,151 | 1,296 | 1,336 | 1,563 | 1,551 | 1,628 | 1,726 |
| Medical: Medicare B only | 2,805 | 3,384 | 4,754 | 6,654 | 6,936 | 6,219 | 6,676 |
| Rx | 2,173 | 2,379 | 2,419 | 2,600 | 2,799 | 2,736 | 2,621 |

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| | Trend | | | | | | |
|---|---|---|---|---|---|---|---|
| | **08-09** | **09-10** | **10-11** | **11-12** | **12-13** | **13-14** | **Avg.** |
| Medical: Pre-Medicare | 6.6% | -2.2% | 14.7% | 10.4% | 3.8% | 12.9% | 7.5% |
| Medical: Medicare A&B only | 12.6% | 3.1% | 17.0% | -0.8% | 5.0% | 6.0% | 7.0% |
| Medical: Medicare B only | 20.6% | 40.5% | 40.0% | 4.2% | -10.3% | 7.3% | 15.5% |
| Rx | 9.5% | 1.7% | 7.5% | 7.7% | -2.3% | -4.2% | 3.2% |

| | Trend | | |
|---|---|---|---|
| | **13-14 Actual** | **13-14 Assumed** | **Gain/ Loss** |
| Medical: Pre-Medicare | 12.9% | 9.0% | Loss |
| Medical: Medicare A&B only | 6.0% | 6.5% | Gain |
| Medical: Medicare B only | 7.3% | 6.5% | Loss |
| Rx | -4.2% | 7.1% | Gain |

Rather than increasing by 7.1%, rates to model prescription claims decreased by 4.2%. Although Pre-Medicare medical claims increased more than expected, the overall effect was a large gain on Postemployment Healthcare Liabilities.

**Method and Contributions**

- Nothing to recommend

**Assumptions**

- No change was made to the trend assumptions used for Medical and Prescription Drugs. These continue to appear reasonable.
- We anticipate that the participation assumption will be studied as part of the experience study.

**Cadillac Tax**

- For medical plans deemed "rich" under PPACA, an additional tax is to be levied on those benefits. This tax is commonly referred to as the "Cadillac tax". Buck indicates that the Cadillac Tax will affect the plan sufficiently far in the future to produce a minimal impact to valuation results. The following table shows the PPACA limits for 2018. Based on the Weighted Average 7/1/2013-6/30/2014 Incurred Claims Cost Rates of $8,362 (shown on page 97 of PERS report and 79 of TRS report) and the trend assumptions for 2014 – 2018, it is likely that the Alaska retiree plan will have an average value of around $10,900 per year per member in 2018. With trend rates affecting the Alaska retiree plan which are higher than those used to index the 2018 PPACA Limits (shown below), it seems likely that the plan will start to hit the threshold within the next ten years, and a Cadillac tax may be assessed.

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| 2018 PPACA Limit | Single | Two Person | Family |
|---|---|---|---|
| Retirees 55 to 64 | **$11,850** | **$30,950** | **$30,950** |
| Retiree 65+ | **$10,200** | **$27,500** | **$27,500** |

We conclude that it may be necessary to provide further documentation on the projections of the potential for a Cadillac tax. For most plans, the issue is not whether there is a Cadillac tax, but rather when there will be a Cadillac tax.

# SECTION 4

## REVIEW OF ACTUARIAL VALUATION METHODS AND PROCEDURES

## INCLUDES SAMPLE LIFE REVIEW

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# REVIEW OF ACTUARIAL VALUATION METHODS AND PROCEDURES

## *I. Background*

An actuarial valuation is a detailed statistical simulation of the future operation of a retirement system using the set of actuarial assumptions adopted by the Board.

The actuarial values generated from this process are based not only on these assumptions, but also on the additional assumptions built into each actuarial firm's pension valuation software.

Our scope for performing the review did not include a complete replication of the valuation results as determined by Buck Consultants at June 30, 2013. Rather, we reviewed a number of sample test lives from Buck in great detail, and made our determinations as to whether the methods and assumptions being employed were being done so properly. We also reviewed the report in order to examine the aggregate results and conclusions of this actuarial valuation.

Though this approach is not intended to meet the rigors of a full scale replication of results – it still serves as a strong indicator of the appropriateness of the assumptions and methods being used to value the liabilities and determine the costs for these plans.

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## *II. Process:*

Our review process can be summarized as follows:

**Computation: Valuation Liabilities**

We analyzed test cases to compare the Actuarial Liability under the EAN funding method for the test cases of the PERS and TRS Systems. As a starting point, we wanted to first replicate Buck's test case liabilities by using their assumptions and methods to ensure that the computations were in sync with the descriptions listed in the valuation report.

When conducting an actuarial audit, and reviewing the testlives, we look at the projected benefits at each age for each decrement type. We also look at the component of the benefit (final average earnings and years of service). This is critical to understanding what the valuation system is actually valuing and making sure that the valuation is not "right for the wrong reasons", (meaning, errors could occur in two different directions making total liabilities approximate a correct value.)

We also review the construction of the commutation functions- the varying probabilities for each decrement and the discounting to the valuation date.

## *III. Actuarial Method:*

**Findings:**

The actuarial method used for producing Alaska PERS and TRS June 30, 2013 Actuarial Valuations is known as the Entry Age Normal (EAN) Method. Under this method, benefits are projected to the assumed occurrence of future events based on future salary levels and service to date. The Normal Cost is the present value of benefits to be earned for the current year while the Actuarial Accrued Liability (AAL) is the present value of benefit earned for all prior years

**Conclusion:**

The level percent of pay method for both amortization of the unfunded accrued liability and the normal cost are both appropriate as a funding policy, considering that the payroll is not closed (as promulgated under SB 123.) For GASB reporting purposes (as opposed to funding purposes), a different set of numbers may need to be disclosed to account for the closed nature of the group.

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Additionally, to account for the Part D subsidy in the retiree medical plan, a different set of numbers may need to be disclosed for GASB reporting purposes (again, as opposed to funding purposes). The report also recognizes that a different discount rate will need to be utilized for the GASB numbers for the retiree medical liabilities, in order to recognize the partially funded nature of that plan.

The EAN method is the most commonly used method in the public sector. The EAN method tends to produce the most stable costs- a tool widely appreciated for its budgeting purposes.

## *IV. Actuarial Calculations:*

### BACKGROUND

We reviewed sample test cases used for the June 30, 2013 valuation draft reports. In order to accomplish this, we requested a number of sample cases from Buck with intermediate statistics to assist us in analyzing the results. We combined this with our understanding of the plan provisions in an attempt to analyze the liability values produced by Buck for these sample cases only.

We received sample test cases this year for the following sample members:

- PERS (Pension and Post-retirement Health): Three actives, three retirees, one vested termination and one beneficiary
- TRS (Pension and Post-retirement Health): Three actives, two retirees, one vested termination and one beneficiary

Note that the active test lives analyzed are not necessarily exposed to all of the possible benefits under the plans (i.e. already beyond the eligibility period for certain benefits, or not eligible for particular benefits). Therefore, findings may occur for these other benefits in future audits depending on the set of test lives chosen for review at that time. However, the vast majority of the liability for each plan is due to the retirement benefits (included for all active test lives), and retirement-related withdrawal benefits (one active testlife included per plan), so any future findings are also expected to be de minimus. Also, the impact for any one test life may not be representative of the impact on the total plan.

When employing Buck's methods and assumptions, we matched the liabilities in total closely for the test cases submitted under the Pension plans for PERS and TRS, and present value of retirement benefits under the PERS Retiree Health plan. In addition we have analyzed the calculations of the ancillary benefits and have provided a summary of this detailed analysis at the end of this section. These exhibits provide a comparison of the calculations by decrement provided to us from Buck against our replication of those benefits as we interpret them from the plan provisions and assumptions.

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In matching the present value of benefits, it is being determined that all benefits are being valued, and that the valuation of the liability for those benefits is consistent with the stated assumptions and methods. However, we still have some outstanding issues identified in the prior audit which would alter these test life results.

## Findings - Assumptions

In the review of the testlives as well as the report we confirmed that the assumptions shown in the report were the assumptions used in the PERS and TRS valuations.

## Findings from June 30, 2013 Test Life Audit – Outstanding Issues Identified Which are Classified as Potentially Non-Trivial

In the test life review, GRS has identified two main issues which we believe should be resolved in the actuarial valuation as of June 30, 2014. Three issues were identified in our prior review, one of which was resolved for the actuarial valuation as of June 30, 2013. No new issues were identified this year. The two outstanding issues involve the early retirement factors, and the retiree medical liabilities.

### 1. ***Early Retirement Reduction in Normal Retirement Pattern:***

*GRS Finding:* This has been the primary issue identified in the last three audit reports. The valuation uses middle of year decrement timing (assumes members retire January 1st). Buck uses rounded middle of year age and service for eligibility and application of decrements. Buck uses an average of benefits calculated at beginning of year and end of year (rather than calculating the benefit based on the age and service at middle of year). In the majority of cases, this results in a benefit similar to the mid-year benefit calculation. However, in some test cases where members become eligible for an unreduced benefit based on service, it can cause a mismatch between the benefit amount and the benefit eligibility in the year of transition to normal retirement eligibility. This was the case in two active test cases this year.

In the PERS Active Police/Fire Tier 3 Test Case, the member reaches first eligibility for retirement at age 47 with 20.06 years of service. A normal retirement (or unreduced retirement) decrement is applied, which is the probability of that member retiring in that year. Buck uses an effective early retirement factor of 85% (averaging 70% for beginning of the year and 100% for the end of the year). This means Buck is valuing 85% of a benefit, when the member is eligible for an unreduced benefit. We would not apply any early retirement reduction in this case.

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In the TRS Large Service Active Test Case, the member reaches first eligibility for retirement at age 47 with 20.44 years of service. A normal retirement (or unreduced retirement) decrement is applied, which is the probability of that member retiring in that year. Buck uses an effective early retirement factor of 79% (averaging 58.5% for beginning of the year and 100% for the end of the year). This means Buck is valuing 79% of a benefit, when the member is eligible for an unreduced benefit. We would not apply any early retirement reduction in this case.

*Buck Response:* Buck indicates that the member is not eligible for normal retirement at beginning of year and should have the early retirement reduction factor applied. They indicate that there will be members that will retire on either side of the eligibility cutoff and that their methodology approximates the benefits on average.

*GRS Comment:* The retirement rates applied are for members "eligible for unreduced benefits" and should be applied as such. Assuming that members will take the reduced benefit when they are close to full eligibility undervalues the benefit. There is some offsetting through the early retirement benefits including unreduced benefits, but it is unlikely the magnitude is enough to fully offset the impact. The normal retirement issue will often occur at early ages when the unreduced retirement rates are

30%. Early retirement rates do not exceed 13% and often, members become eligible for retirement without ever being eligible for reduced retirement. We feel a bias remains and this issue should be corrected.

***2. Service-based Post-retirement Health:***

*GRS Finding:* Similar to the retirement benefit above, this finding relates to interpolating between beginning of year and end of year benefits in order to value a mid-year benefit. Contributions for healthcare are required for TRS Tier 2 members who retire before age 60 if they don't have 25 years of service. Contributions for healthcare are required for PERS Other Tier 2 and Tier 3 members who retire before age 60 if they don't have 30 years of service. Contributions for healthcare are required for PERS Peace Officers Tier 2 and Tier 3 members who retire before age 60 if they don't have 25 years of service.

The valuation methodology assumes that 100% of members eligible for system paid coverage elect post-retirement healthcare benefits and 10% of members who must self-pay elect post-retirement healthcare benefits.

In the first year of service-based eligibility, there is interpolation between beginning of year benefits with the 10% participation rate applied and end of year benefits with the 100% participation applied. We would value both participation and eligibility for plan paid benefits at middle of year using rounded service at middle of year, consistent with the way decrement eligibility is applied.

Draft

Another issue presents in the retiree and spouse contribution benefit stream (still in the first year of service-based eligibility). Once the member is eligible for system paid coverage and the 100% participation rate is applied, the retiree contribution benefit should be $0. Thus, if the Buck middle of year averaging is applied, it should be an average of:

- 10% - applied to the retiree contribution rate beginning of year and
- 100% - applied to $0 because the retiree no longer contributes.

Instead, the averaged benefit appears to be the average of

- 10% - applied to the retiree contribution rate beginning of year and
- 100% - applied to the retiree contribution rate end of year.

Thus, in this first year of service-based eligibility, the retiree contributions are overstated. The retiree contributions act to reduce the liability, so the liability is understated. This problem occurs in test lives where the retiree reaches service-based retirement first. The following are types of full-time participants for whom this could be an issue:

- PERS Tier 2 and 3 Others hired younger than age 30 who currently have less than 30 years of service
- PERS Tier 2 and 3 Peace Officers hired younger than age 35 who currently have less than 25 years of service
- TRS Tier 2 members hired younger than age 35 who currently have less than 25 years of service

The blended participation issue (using 55% participation in a case where 100% should be used) applied to two test cases this year. The first member is a PERS Police/Fire Tier 3 participant. In the first year of eligibility for plan paid benefits, the member is age 52 and has 25.06 years of service at middle of year. The second member is a TRS Tier 2 participant. In the first year of eligibility for plan paid benefits, the member is age 52 and has 25.40 years of service at middle of year.

Draft

We would value both these cases using 100% participation and assuming no member contributions. Buck is averaging 10% participation and 100% participation until age 60, for an effective participation rate of 55%. Using the 100% participation assumption increases the normal retirement present value of benefits by two percent.

*Buck Response:* Buck agrees that the participation percentages and retiree premiums should be applied as we suggest; however, the impact to the valuation is de minimus.

*GRS Comment:* We need to have additional documentation to be confident that the impact is de minimus. The issues identified create a bias and understate liabilities.

## Findings from June 30, 2013 Test Life Audit – Outstanding Issues Identified Which are Classified as Having DeMinimis Impact

***Post Retirement Pension Adjustment for Survivors:***

*GRS Finding:* The valuation uses the retiree age for determining eligibility rather than the spouse age. Because spouses are likely to be both older and younger than members, the impact is assumed to be negligible.

***Occupational disability rates during retirement eligibility:***

*GRS Finding:* As part of the experience study, Buck chose to stop disability rates at the member's earliest retirement date. We do not concur with this change in methodology. The member may be eligible for a more valuable disability benefit during the early retirement period. The member would benefit doubly from taking the disability benefit due to tax advantages available to them. We recommended continuing to include probability for disability retirement until the member is eligible for normal retirement.

Draft

## Findings from June 30, 2012 Test Life Audit – Issues which were resolved in the June 30, 2013 Valuation

***Timing of PRPA Adjustment:***

*GRS Finding:* The Buck valuation assumed that members are not eligible for the age-60 PRPA until age 61 and age-65 PRPA until age 66. The provision requires a member to be age 60 or 65 on July 1 (all or nothing increase).

*Resolution:* PRPA timing was corrected with the June 30, 2013 valuation.

## QUANTITATIVE RESULTS

When performing the replication, we were able to match the total present value of future benefits all test cases (active and inactive, PERS and TRS, pension and healthcare) to within 1.9%. This would be considered as an overall match for purposes of the valuation.

We also included active pension test case results, assuming the change was made to the early retirement factors and PRPA timing, and active healthcare test case results, assuming the change was made to healthcare participation. After making these changes, the maximum total discrepancy on an individual test case increased to 2.5%

**Actuarial Review - June 30, 2013**
**Comparison of Present Value of Benefits**

| ***Active Pension*** | **GRS** | **Buck** | **% Diff** | **GRS*** | **% Diff** |
|---|---|---|---|---|---|
| TRS Tier 2 | 440,897 | 440,311 | 0.1% | 449,422 | 2.1% |
| TRS Tier 2 | 342,891 | 340,919 | 0.6% | 342,891 | 0.6% |
| TRS Tier 2 | 108,641 | 108,708 | -0.1% | 108,641 | -0.1% |
| PERS Other Tier 3 | 165,369 | 165,551 | -0.1% | 165,369 | -0.1% |
| PERS Other Tier 1 | 384,387 | 384,489 | 0.0% | 384,387 | 0.0% |
| PERS P/F Tier 3 | 616,394 | 615,781 | 0.1% | 625,592 | 1.6% |
| ***Inactive Pension*** | **GRS** | **Buck** | **% Diff** | | |
| TRS - Retiree 1 | 754,056 | 756,370 | -0.3% | | |
| TRS - Retiree 2 | 196,013 | 196,013 | 0.0% | | |
| TRS - Deferred | 89,682 | 89,841 | -0.2% | | |
| TRS - Beneficiary | 151,993 | 151,993 | 0.0% | | |
| PERS Peace Officer/Firefighter - Retiree | 339,461 | 339,393 | 0.0% | | |
| PERS Others - Retiree | 334,932 | 334,932 | 0.0% | | |
| PERS Others - Retiree | 114,808 | 114,808 | 0.0% | | |
| PERS Other - Deferred | 22,292 | 22,718 | -1.9% | | |
| PERS Peace Officer/Firefighter - Beneficiary | 93,102 | 93,102 | 0.0% | | |
| ***Active Healthcare*** | **GRS** | **Buck** | **% Diff** | **GRS**** | **% Diff** |
| TRS Tier 2 | 173,503 | 173,252 | 0.1% | 177,608 | 2.5% |
| TRS Tier 2 | 162,936 | 162,962 | 0.0% | 162,936 | 0.0% |
| TRS Tier 2 | 51,636 | 51,570 | 0.1% | 51,636 | 0.1% |
| PERS Other Tier 3 | 66,235 | 65,775 | 0.7% | 66,235 | 0.7% |
| PERS Other Tier 1 | 181,806 | 182,509 | -0.4% | 181,806 | -0.4% |
| PERS P/F Tier 3 | 158,045 | 158,985 | -0.6% | 161,693 | 1.7% |
| ***Inactive Healthcare*** | **GRS** | **Buck** | **% Diff** | | |
| TRS - Retiree | 257,986 | 258,012 | 0.0% | | |
| TRS - Retiree | 126,000 | 126,537 | -0.4% | | |
| TRS - Retiree | 141,794 | 141,828 | 0.0% | | |
| TRS - Deferred | 336,909 | 337,689 | -0.2% | | |
| PERS Others - Retiree | 104,599 | 104,726 | -0.1% | | |
| PERS Others - Retiree | 61,429 | 61,673 | -0.4% | | |
| PERS P/F - Retiree | 333,954 | 333,532 | 0.1% | | |
| PERS P/F - Deferred | 1,506 | 1,505 | 0.1% | | |

Draft

*After making changes to early retirement factor.
**After making change to healthcare participation.

These results are further broken down by benefit and decrement type on the following pages.

## NOTE

Ancillary or non-retirement benefits such as death and disability tend to be low probability events (and hence low liability) and they also tend to have many "bells and whistles" which can be valued in different ways by different actuaries. When looking at the test life results, it may be most informative to review the decrement (retirement, termination, disability, death) totals rather than each particular segment of the decrement (married non-occupational death, etc.).

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**ALASKA RETIREMENT MANAGEMENT BOARD**
Actuarial Review of Pension and Health Plans - June 30, 2013

Comparison of Present Value of Benefits - **TRS Pension**
Active Test Case 1 - Tier 2

| *Basic Data:* | Current Age 46.4317 | | Credited Service 18.90 | | Gender Female | |
|---|---|---|---|---|---|---|
| **Present Value of Benefits (PVB)** | **GRS Replicate*** | **Buck** | **% Diff** | **GRS Best Estimate*** | **Buck** | **% Diff** |
| *Retirement:* | | | | | | |
| Main Retirement Benefit | 423,618.09 | 423,038.87 | 0.1% | 431,951.45 | 423,038.87 | 2.1% |
| AK COLA | 8,743.60 | 8,717.13 | 0.3% | 8,839.41 | 8,717.13 | 1.4% |
| ***Total Retirement PVB*** | **432,361.69** | **431,756.00** | **0.1%** | **440,790.86** | **431,756.00** | **2.1%** |
| *Withdrawal:* | | | | | | |
| Non Vested Term | - | - | 0.0% | | | |
| Vested Term | 5,697.48 | 5,731.66 | -0.6% | | | |
| Vested Term AK COLA | 176.24 | 176.23 | 0.0% | | | |
| Vested Term (take LS) | 646.76 | 653.05 | -1.0% | | | |
| Vested Term (death during deferral) | 32.69 | 31.73 | 3.0% | | | |
| Vested Term (death during deferral AK COLA) | 1.77 | 2.00 | -11.5% | | | |
| Vested Term (death, single) | 9.59 | 13.87 | -30.9% | | | |
| ***Total Withdrawal PVB*** | **6,564.53** | **6,608.54** | **-0.7%** | | | |
| *Death:* | | | | | | |
| Non Vested NonOcc 1<svc<5 LS Dth | - | - | 0.0% | | | |
| NonOcc Dth Marr | 888.54 | 865.90 | 2.6% | | | |
| NonOcc Dth Marr AK COLA | 20.61 | 20.25 | 1.8% | | | |
| NonOcc Married LS Dth | 79.14 | 78.93 | 0.3% | | | |
| NonOcc Single LS Dth | 263.80 | 263.16 | 0.2% | | | |
| Occ Dth Marr (Pre-NR Conversion Benefit) | 4.30 | 4.29 | 0.2% | | | |
| Occ Dth Marr (Post-NR Conversion Benefit) | 476.09 | 475.13 | 0.2% | | | |
| Occ Dth Marr AK COLA (Pre-NR) | - | - | 0.0% | | | |
| Occ Dth Marr AK COLA (Post-NR) | 11.26 | 11.24 | 0.2% | | | |
| Occ Single LS Dth | - | - | 0.0% | | | |
| ***Total Death PVB*** | **1,743.74** | **1,718.90** | **1.4%** | | | |
| *Disability:* | | | | | | |
| Non-vested LS Ben | - | - | 0.0% | | | |
| Dis (Pre-NR Conversion Benefit) | 30.78 | 30.75 | 0.1% | | | |
| Dis (Post-NR Conversion Benefit) | 183.89 | 183.90 | 0.0% | | | |
| Dis AK COLA (Pre-NR) | 1.83 | 1.83 | 0.0% | | | |
| Dis AK COLA (Post-NR) | 8.87 | 8.87 | 0.0% | | | |
| Dis Death Ben | 1.90 | 1.90 | 0.0% | | | |
| Dis Death Ben AK COLA | 0.10 | 0.10 | 0.0% | | | |
| Dis Child Ben | - | - | 0.0% | | | |
| Dis Child Ben AK COLA | - | - | 0.0% | | | |
| ***Total Disability PVB*** | **227.37** | **227.35** | **0.0%** | | | |
| **GRAND TOTAL PVB** | **440,897.33** | **440,310.79** | **0.1%** | **449,422.31** | **440,310.79** | **2.1%** |

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**Early retirement factor application*

**ALASKA RETIREMENT MANAGEMENT BOARD**
Actuarial Review of Pension and Health Plans - June 30, 2013

Comparison of Present Value of Benefits - **TRS Pension**
Active Test Case 2 - Tier 2

| *Basic Data:* | Current Age 55.8224 | Credited Service 16.00 | Gender Female |
|---|---|---|---|
| **Present Value of Benefits (PVB)** | **GRS Replicate** | **Buck** | **% Diff** |
| *Retirement:* | | | |
| Main Retirement Benefit | 327,835.80 | 325,878.57 | 0.6% |
| AK COLA | 12,126.63 | 12,107.94 | 0.2% |
| ***Total Retirement PVB*** | **339,962.43** | **337,986.51** | **0.6%** |
| *Withdrawal:* | | | |
| Non Vested Term | - | - | 0.0% |
| Vested Term | - | - | 0.0% |
| Vested Term AK COLA | - | - | 0.0% |
| Vested Term (take LS) | - | - | 0.0% |
| Vested Term (death during deferral) | - | - | 0.0% |
| Vested Term (death during deferral AK COLA) | - | - | 0.0% |
| Vested Term (death, single) | - | - | 0.0% |
| ***Total Withdrawal PVB*** | **-** | **-** | **0.0%** |
| *Death:* | | | |
| Non Vested NonOcc 1<svc<5 LS Dth | - | - | 0.0% |
| NonOcc Dth Marr | 1,438.46 | 1,435.59 | 0.2% |
| NonOcc Dth Marr AK COLA | 54.45 | 53.44 | 1.9% |
| NonOcc Married LS Dth | 134.58 | 134.45 | 0.1% |
| NonOcc Single LS Dth | 448.60 | 448.17 | 0.1% |
| Occ Dth Marr (Pre-NR Conversion Benefit) | 47.40 | 47.41 | 0.0% |
| Occ Dth Marr (Post-NR Conversion Benefit) | 775.03 | 782.67 | -1.0% |
| Occ Dth Marr AK COLA (Pre-NR) | - | - | 0.0% |
| Occ Dth Marr AK COLA (Post-NR) | 29.91 | 30.48 | -1.9% |
| Occ Single LS Dth | - | - | 0.0% |
| ***Total Death PVB*** | **2,928.43** | **2,932.21** | **-0.1%** |
| *Disability:* | | | |
| Non-vested LS Ben | - | - | 0.0% |
| Dis (Pre-NR Conversion Benefit) | - | - | 0.0% |
| Dis (Post-NR Conversion Benefit) | - | - | 0.0% |
| Dis AK COLA (Pre-NR) | - | - | 0.0% |
| Dis AK COLA (Post-NR) | - | - | 0.0% |
| Dis Death Ben | - | - | 0.0% |
| Dis Death Ben AK COLA | - | - | 0.0% |
| Dis Child Ben | - | - | 0.0% |
| Dis Child Ben AK COLA | - | - | 0.0% |
| ***Total Disability PVB*** | **-** | **-** | **0.0%** |
| **GRAND TOTAL PVB** | **342,890.86** | **340,918.72** | **0.6%** |

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**ALASKA RETIREMENT MANAGEMENT BOARD**
Actuarial Review of Pension and Health Plans - June 30, 2013

Comparison of Present Value of Benefits - **TRS Pension**
Active Test Case 3 - Tier 2

| *Basic Data:* | Current Age 34.5601 | Credited Service 4.00 | Gender Female |
|---|---|---|---|
| **Present Value of Benefits (PVB)** | **GRS Replicate** | **Buck** | **% Diff** |
| *Retirement:* | | | |
| Main Retirement Benefit | 82,524.12 | 82,606.85 | -0.1% |
| AK COLA | 2,083.78 | 2,083.36 | 0.0% |
| ***Total Retirement PVB*** | **84,607.90** | **84,690.21** | **-0.1%** |
| *Withdrawal:* | | | |
| Non Vested Term | 7,587.60 | 7,587.59 | 0.0% |
| Vested Term | 12,733.10 | 12,727.74 | 0.0% |
| Vested Term AK COLA | 393.41 | 393.39 | 0.0% |
| Vested Term (take LS) | 1,412.75 | 1,412.73 | 0.0% |
| Vested Term (death during deferral) | 79.05 | 71.32 | 10.8% |
| Vested Term (death during deferral AK COLA) | 4.74 | 4.48 | 5.8% |
| Vested Term (death, single) | 21.09 | 29.09 | -27.5% |
| ***Total Withdrawal PVB*** | **22,231.74** | **22,226.34** | **0.0%** |
| *Death:* | | | |
| Non Vested NonOcc 1<svc<5 LS Dth | 21.23 | 21.23 | 0.0% |
| NonOcc Dth Marr | 314.78 | 306.12 | 2.8% |
| NonOcc Dth Marr AK COLA | 6.66 | 6.46 | 3.1% |
| NonOcc Married LS Dth | 25.42 | 25.40 | 0.1% |
| NonOcc Single LS Dth | 84.64 | 84.59 | 0.1% |
| Occ Dth Marr (Pre-NR Conversion Benefit) | 60.92 | 60.88 | 0.1% |
| Occ Dth Marr (Post-NR Conversion Benefit) | - | - | 0.0% |
| Occ Dth Marr AK COLA (Pre-NR) | 172.41 | 171.72 | 0.4% |
| Occ Dth Marr AK COLA (Post-NR) | 3.97 | 3.98 | -0.3% |
| Occ Single LS Dth | - | - | 0.0% |
| ***Total Death PVB*** | **690.03** | **680.38** | **1.4%** |
| *Disability:* | | | |
| Non-vested LS Ben | 5.95 | 5.95 | 0.0% |
| Dis (Pre-NR Conversion Benefit) | 517.48 | 517.48 | 0.0% |
| Dis (Post-NR Conversion Benefit) | 447.04 | 447.02 | 0.0% |
| Dis AK COLA (Pre-NR) | 28.46 | 28.47 | 0.0% |
| Dis AK COLA (Post-NR) | 21.78 | 21.78 | 0.0% |
| Dis Death Ben | 8.32 | 8.30 | 0.2% |
| Dis Death Ben AK COLA | 0.45 | 0.45 | 0.0% |
| Dis Child Ben | 77.89 | 77.45 | 0.6% |
| Dis Child Ben AK COLA | 4.41 | 4.37 | |
| ***Total Disability PVB*** | **1,111.78** | **1,111.27** | **0.0%** |
| **GRAND TOTAL PVB** | **108,641.45** | **108,708.20** | **-0.1%** |

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**ALASKA RETIREMENT MANAGEMENT BOARD**
Actuarial Review of Pension and Health Plans - June 30, 2013

Comparison of Present Value of Benefits - **PERS Active Pension**
Active Test Case 1 - Other Tier 3

| *Basic Data:* | Current Age 46.1 | Credited Service 13.5 | Gender Female |
|---|---|---|---|
| **Present Value of Benefits (PVB)** | **GRS** | **Buck** | **% Diff** |
| *Retirement:* | | | |
| Main Retirement Benefit | 118,693 | 118,970 | -0.2% |
| AK COLA | 4,915 | 4,915 | 0.0% |
| ***Total Retirement PVB*** | **123,608** | **123,884** | **-0.2%** |
| *Withdrawal:* | | | |
| Non Vested Term | **-** | **-** | 0.0% |
| Vested Term | 33,436 | 33,586 | -0.4% |
| Vested Term AK COLA | 1,190 | 1,190 | 0.0% |
| Vested Term (take LS) | 3,357 | 3,374 | -0.5% |
| Vested Term (death during deferral) | 224 | 230 | -2.4% |
| Vested Term (death during deferral AK COLA) | 19 | 19 | 0.5% |
| ***Total Withdrawal PVB*** | **38,226** | **38,399** | **-0.4%** |
| *Death:* | | | |
| Non Vested NonOcc <1 svc LS Dth | - | - | 0.0% |
| Non Vested NonOcc 1<svc<5 LS Dth | - | - | 0.0% |
| NonOcc Dth Marr | 391 | 357 | 9.5% |
| NonOcc Dth Marr AK COLA | 12 | 11 | 4.8% |
| NonOcc Married LS Dth | 40 | 40 | -1.0% |
| NonOcc Single LS Dth | 114 | 114 | 0.0% |
| Occ Dth Marr (Pre-NR Conversion Benefit) | 261 | 265 | -1.5% |
| Occ Dth Marr (Post-NR Conversion Benefit) | 1,193 | 923 | 29.2% |
| Occ Dth Marr AK COLA (Post-NR) | 34 | 38 | -9.9% |
| Occ Single LS Dth | 138 | 140 | -1.1% |
| ***Total Death PVB*** | **2,184** | **1,889** | **15.6%** |
| *Disability:* | | | |
| Non-vested LS Ben | - | - | 0.0% |
| NonOcc Dis | 512.23 | 512.25 | 0.0% |
| NonOcc Dis AK COLA | 29.10 | 29.09 | 0.0% |
| Occ Dis (Pre-NR Conversion Benefit) | 417.91 | 417.92 | 0.0% |
| Occ Dis (Post-NR Conversion Benefit) | 339.09 | 366.22 | -7.4% |
| Occ Dis AK COLA (Pre-NR) | 26.77 | 26.77 | 0.0% |
| Occ Dis AK COLA (Post-NR) | 19.88 | 21.48 | -7.5% |
| Dis Death Ben | 5.76 | 4.12 | 39.9% |
| Dis Death Ben AK COLA | 0.37 | 0.23 | 59.6% |
| ***Total Disability PVB*** | **1,351.11** | **1,378.08** | **-2.0%** |
| **GRAND TOTAL PVB** | **165,369** | **165,551** | **-0.1%** |

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**ALASKA RETIREMENT MANAGEMENT BOARD**
Actuarial Review of Pension and Health Plans - June 30, 2013

Comparison of Present Value of Benefits - **PERS Active Pension**
Active Test Case 2 - Other Tier 1

| *Basic Data:* | Current Age 58.6 | Credited Service 25.2 | Gender Male |
|---|---|---|---|
| **Present Value of Benefits (PVB)** | **GRS** | **Buck** | **% Diff** |
| *Retirement:* | | | |
| Main Retirement Benefit | 355,081 | 355,682 | -0.2% |
| AK COLA | 21,018 | 21,014 | 0.0% |
| ***Total Retirement PVB*** | **376,099** | **376,696** | **-0.2%** |
| *Withdrawal:* | | | |
| Non Vested Term | - | - | 0.0% |
| Vested Term | - | - | 0.0% |
| Vested Term AK COLA | - | - | 0.0% |
| Vested Term (take LS) | - | - | 0.0% |
| Vested Term (death during deferral) | - | - | 0.0% |
| Vested Term (death during deferral AK COLA) | - | - | 0.0% |
| ***Total Withdrawal PVB*** | - | - | **0.0%** |
| *Death:* | | | |
| Non Vested NonOcc <1 svc LS Dth | - | - | 0.0% |
| Non Vested NonOcc 1<svc<5 LS Dth | - | - | 0.0% |
| NonOcc Dth Marr | 1,780 | 1,592 | 11.9% |
| NonOcc Dth Marr AK COLA | 111 | 92 | 20.3% |
| NonOcc Married LS Dth | 115 | 116 | -0.5% |
| NonOcc Single LS Dth | 192 | 193 | -0.5% |
| Occ Dth Marr (Pre-NR Conversion Benefit) | - | - | 0.0% |
| Occ Dth Marr (Post-NR Conversion Benefit) | 5,549 | 5,258 | 5.5% |
| Occ Dth Marr AK COLA (Post-NR) | 305 | 305 | 0.0% |
| Occ Single LS Dth | 235 | 236 | -0.5% |
| ***Total Death PVB*** | **8,288** | **7,793** | **6.4%** |
| *Disability:* | | | |
| Non-vested LS Ben | - | - | 0.0% |
| NonOcc Dis | - | - | 0.0% |
| NonOcc Dis AK COLA | - | - | 0.0% |
| Occ Dis (Pre-NR Conversion Benefit) | - | - | 0.0% |
| Occ Dis (Post-NR Conversion Benefit) | - | - | 0.0% |
| Occ Dis AK COLA (Pre-NR) | - | - | 0.0% |
| Occ Dis AK COLA (Post-NR) | - | - | 0.0% |
| Dis Death Ben | - | - | 0.0% |
| Dis Death Ben AK COLA | - | - | 0.0% |
| ***Total Disability PVB*** | - | - | **0.0%** |
| **GRAND TOTAL PVB** | **384,387** | **384,489** | **0.0%** |

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**ALASKA RETIREMENT MANAGEMENT BOARD**

Actuarial Review of Pension and Health Plans - June 30, 2013

Comparison of Present Value of Benefits - **PERS Active Pension**

Active Test Case 3 - P/F Tier 3

| *Basic Data:* | Current Age 43.3 | Credited Service 15.6 | Gender Male | | | |
|---|---|---|---|---|---|---|
| **Present Value of Benefits (PVB)** | **GRS Replicate*** | **Buck** | **% Diff** | **GRS Best Estimate*** | **Buck** | **% Diff** |
| *Retirement:* | | | | | | |
| Main Retirement Benefit | 563,763 | 565,083 | -0.2% | 572,854 | 565,083 | 1.4% |
| AK COLA | 11,056 | 11,053 | 0.0% | 11,163 | 11,053 | 1.0% |
| ***Total Retirement PVB*** | **574,819** | **576,137** | **-0.2%** | **584,017** | **576,137** | **1.4%** |
| *Withdrawal:* | | | | | | |
| Non Vested Term | - | - | 0.0% | | | |
| Vested Term | 24,504 | 23,013 | 6.5% | | | |
| Vested Term AK COLA | 707 | 621 | 13.8% | | | |
| Vested Term (take LS) | 3,950 | 3,473 | 13.7% | | | |
| Vested Term (death during deferral) | 236 | 240 | -1.8% | | | |
| Vested Term (death during deferral AK COLA) | 17 | 19 | -11.6% | | | |
| ***Total Withdrawal PVB*** | **29,414** | **27,366** | **7.5%** | | | |
| *Death:* | | | | | | |
| Non Vested NonOcc <1 svc LS Dth | - | - | 0.0% | | | |
| Non Vested NonOcc 1<svc<5 LS Dth | - | - | 0.0% | | | |
| NonOcc Dth Marr | 824 | 794 | 3.8% | | | |
| NonOcc Dth Marr AK COLA | 18 | 15 | 19.9% | | | |
| NonOcc Married LS Dth | 69 | 74 | -6.5% | | | |
| NonOcc Single LS Dth | 115 | 123 | -6.5% | | | |
| Occ Dth Marr (Pre-NR Conversion Benefit) | 471 | 438 | 7.6% | | | |
| Occ Dth Marr (Post-NR Conversion Benefit) | 5,718 | 5,757 | -0.7% | | | |
| Occ Dth Marr AK COLA (Post-NR) | 136 | 115 | 17.7% | | | |
| Occ Single LS Dth | 367 | 369 | -0.3% | | | |
| ***Total Death PVB*** | **7,718** | **7,685** | **0.4%** | | | |
| *Disability:* | | | | | | |
| Non-vested LS Ben | **-** | - | 0.0% | | | |
| NonOcc Dis | 973 | 973 | 0.0% | | | |
| NonOcc Dis AK COLA | 56 | 56 | 0.0% | | | |
| Occ Dis (Pre-NR Conversion Benefit) | 762 | 773 | -1.4% | | | |
| Occ Dis (Post-NR Conversion Benefit) | 2,285 | 2,407 | -5.1% | | | |
| Occ Dis AK COLA (Pre-NR) | 47 | 53 | -10.4% | | | |
| Occ Dis AK COLA (Post-NR) | 132 | 140 | -5.8% | | | |
| Dis Death Ben | 176.54 | 180.88 | -2.4% | | | |
| Dis Death Ben AK COLA | 11 | 10 | 14.6% | | | |
| ***Total Disability PVB*** | **4,442** | **4,593** | **-3.3%** | | | |
| **GRAND TOTAL PVB** | **616,394** | **615,781** | **0.1%** | **625,592** | **615,781** | **1.6%** |

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**Early retirement factor application*

| Actuarial Review of Pension and Health Plans - June 30, 2013<br>Active Pension Test Case Legend | |
|---|---|
| **Benefit** | **Extended Description** |
| **Retirement:** | |
| Main Retirement Benefit | Early/Normal Retirement (base) Benefit |
| AK COLA | Alaska Cost of Living Allowance (10% of Ret base benefit) |
| **Withdrawal:** | |
| Non Vested Term | Refund of employee contributions upon termination of non-vested member |
| Vested Term | Deferred retirement (base) Benefit (deferred to early retirement eligibility) |
| Vested Term AK COLA | Alaska Cost of Living Allowance (10% of Term base benefit) |
| Vested Term (take LS) | Refund of employee contributions upon termination of (vested) member |
| Vested Term (death during deferral) | Death (base) Benefit payable upon death after withdrawal but before benefit commencement |
| Vested Term (death during deferral AK COLA) | Alaska Cost of Living Allowance (10% of DV Dth base benefit) |
| Vested Term (death, single) | Return of employee contributions upon death during deferral period for single members |
| **Death:** | |
| Non Vested NonOcc 1<svc<5 LS Dth | Refund of employee contributions upon death of non-vested member |
| NonOcc Dth Marr | Non-Occupational Death (base) benefit |
| NonOcc Dth Marr AK COLA | Alaska Cost of Living Allowance (10% of Non-Occupational Dth base benefit) |
| NonOcc Married LS Dth | Refund of employee contributions upon non-occupational death of married (vested) member |
| NonOcc Single LS Dth | Refund of employee contributions upon non-occupational death of single (vested) member |
| Occ Dth Marr (Pre-NR Conversion Benefit) | Occupational Death (base) benefit until normal retirement conversion |
| Occ Dth Marr (Post-NR Conversion Benefit) | Occupational Death (base) benefit after normal retirement conversion |
| Occ Dth Marr AK COLA (Pre-NR) | Alaska Cost of Living Allowance (10% of Occupational Dth base benefit pre-conversion) |
| Occ Dth Marr AK COLA (Post-NR) | Alaska Cost of Living Allowance (10% of Occupational Dth base benefit post-conversion) |
| Occ Single LS Dth | Refund of employee contributions upon occupational death of single (vested) member |
| **Disability:** | |
| Non-vested LS Ben | Refund of employee contributions payable upon disability before vested |
| Dis (Pre-NR Conversion Benefit) | Disability benefit prior to normal retirement conversion |
| Dis (Post-NR Conversion Benefit) | Disability benefit after normal retirement conversion |
| Dis AK COLA (Pre-NR) | Alaska Cost of Living Allowance (10% of pre-conversion disability benefit) |
| Dis AK COLA (Post-NR) | Alaska Cost of Living Allowance (10% of post-conversion disability benefit) |
| Dis Death Ben | Death (base) Benefit payable upon death after disability |
| Dis Death Ben AK COLA | Alaska Cost of Living Allowance (10% of Dis Dth base benefit) |
| Dis Child Ben | Disability (base) Child Benefit payable until eligible for normal retirement |
| Dis Child Ben AK COLA | Alaska Cost of Living Allowance (10% of Temp Dis Child base benefit) |

Draft

Actuarial Review of Pension and Health Plans - 2013
Comparison of Present Value of Benefits - **PERS Retiree Health**

| ***Actives*** | **Test Case 1 - Other Tier 3** | | | **Test Case 2 - Other Tier 1** | | | **Test Case 3 - PF Tier 3** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Basic Data:* | | | | | | | | | | | |
| Sex | Female | | | Male | | | Male | | | | |
| Current Age | 46.15 | | | 58.59 | | | 43.34 | | | | |
| Current Credited Service | 13.52 | | | 25.18 | | | 15.56 | | | | |
| **Present Value of Benefits (PVB)** | **GRS*** | **Buck** | **% Diff** | **GRS*** | **Buck** | **% Diff** | **GRS*** | **Buck** | **% Diff** | **GRS Best Estimate**** | **% Diff** |
| *Retirement:* | | | | | | | | | | | |
| Tier x <Member> | 47,305.67 | 47,086.18 | 0.5% | 96,356.20 | 95,898.84 | 0.5% | 88,764.85 | 88,512.36 | 0.3% | 90,861.26 | 2.7% |
| Tier x <Spouse> | 24,802.71 | 24,557.43 | 1.0% | 97,649.29 | 98,799.94 | -1.2% | 83,222.53 | 84,407.19 | -1.4% | 84,774.31 | 0.4% |
| Contrib Tier 3 <Member> | 427.76 | 427.65 | 0.0% | 6,698.81 | 6,693.48 | 0.1% | 3,861.59 | 3,860.61 | 0.0% | 3,861.59 | 0.0% |
| Contrib Tier 3 <Spouse> | 297.86 | 297.77 | 0.0% | 5,501.04 | 5,495.96 | 0.1% | 3,110.70 | 3,109.95 | 0.0% | 3,110.70 | 0.0% |
| Post 65 Part D Tier 3 <Member> | 3,073.15 | 3,070.35 | 0.1% | - | - | 0.0% | 3,859.06 | 3,856.14 | 0.1% | 3,859.06 | 0.1% |
| Post 65 Part D Tier 3 <Spouse> | 2,074.67 | 2,073.00 | 0.1% | - | - | 0.0% | 3,110.99 | 3,108.23 | 0.1% | 3,110.99 | 0.1% |
| ***Total Retirement PVB*** | 66,234.94 | 65,774.84 | **0.7%** | 181,805.64 | 182,509.34 | **-0.4%** | 158,045.05 | 158,984.62 | **-0.6%** | 161,693.23 | **1.7%** |

| ***Inactives - PVB*** | **GRS*** | **Buck** | **% Diff** |
|---|---|---|---|
| Vested Termination - Other Tier 3 - Male | 1,506 | 1,505 | 0.1% |
| Retiree - Other Tier 1 - Female | 104,599 | 104,726 | -0.1% |
| Retiree - Other Tier 1 - Female | 61,429 | 61,673 | -0.4% |
| Retiree - P/F Tier 1 - Male | 333,954 | 333,532 | 0.1% |

** GRS' audit of Buck's calculation includes review of the benefit amounts, annuity values, assumptions and other factors related to the PVB calculation at each projected age. Differences may exist due to different interpretations of the statutes, as well as additional items as discussed throughout this audit report.*

Draft

| **Benefits - Buck Valuation Terminology** | **Description*** |
|---|---|
| *Retirement:* | |
| Tier x <Member> | Base Benefit Paid to Employee |
| Tier x <Spouse> | Base Benefit Paid to Spouse |
| Contrib <Member> | Employee Pre-Retirement Contributions |
| Contrib <Spouse> | Spouse Pre-Retirement Contributions |
| Post 65 Part D <Member> | Employee Post-age 65 Medicare Part D Reimbursement |
| Post 65 Part D <Spouse> | Spouse Post-age 65 Medicare Part D Reimbursement |

***Assumes 100% participation when member has 25.06 years of service. Buck averages benefits based on 10% and 100% participation which creates a 55% participation rate.*

Actuarial Review of Pension and Health Plans - 2013

Comparison of Present Value of Benefits - **TRS Retiree Health**

| ***Actives*** | **Test Case 1 - Tier 2, high svc** | | | | | **Test Case 2 - Tier 2** | | | **Test Case 3 - Tier 2, low svc** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Basic Data:* | | | | | | | | | | | |
| Sex | Female | | | | | Female | | | Female | | |
| Current Age | 46.43 | | | | | 55.82 | | | 34.56 | | |
| Current Credited Service | 18.90 | | | | | 16.00 | | | 4.00 | | |
| **Present Value of Benefits (PVB)** | **GRS*** | **Buck** | **% Diff** | **GRS Best Estimate**** | **% Diff** | **GRS*** | **Buck** | **% Diff** | **GRS*** | **Buck** | **% Diff** |
| *Retirement:* | | | | | | | | | | | |
| Tier x <Member> | 118,678.33 | 118,612.46 | 0.1% | 120,638.73 | 1.7% | 112,576.72 | 112,614.47 | 0.0% | 35,583.92 | 35,598.60 | 0.0% |
| Tier x <Spouse> | 72,105.82 | 71,912.12 | 0.3% | 74,250.54 | 3.3% | 64,886.67 | 64,888.64 | 0.0% | 21,086.05 | 21,004.79 | 0.4% |
| Post 65 Part D Tier 2 <Member> | (5,972.17) | (5,963.51) | 0.1% | (5,972.17) | 0.1% | (7,845.55) | (7,846.29) | 0.0% | (1,931.69) | (1,931.46) | 0.0% |
| Post 65 Part D Tier 2 <Spouse> | (4,464.79) | (4,465.97) | 0.0% | (4,464.79) | 0.0% | (5,677.27) | (5,690.47) | -0.2% | (1,455.71) | (1,456.47) | -0.1% |
| Contrib <Member> | (3,921.67) | (3,920.65) | 0.0% | (3,921.67) | 0.0% | (574.51) | (574.36) | 0.0% | (942.74) | (942.49) | 0.0% |
| Contrib <Spouse> | (2,922.80) | (2,922.01) | 0.0% | (2,922.80) | 0.0% | (429.66) | (429.54) | 0.0% | (703.40) | (703.21) | 0.0% |
| ***Total Retirement PVB*** | **173,502.72** | **173,252.44** | **0.1%** | **177,607.83** | **2.5%** | **162,936.40** | **162,962.45** | **0.0%** | **51,636.44** | **51,569.76** | **0.1%** |

| ***Inactives - PVB*** | **GRS*** | **Buck** | **% Diff** |
|---|---|---|---|
| Vested Termination - Male | 336,909 | 337,689 | -0.2% |
| Retiree - Male, Tier 2, J&S | 257,986 | 258,012 | 0.0% |
| Retiree - Female, Tier 1, SLA | 126,000 | 126,537 | -0.4% |
| Retiree - Male, Tier 1, SLA | 141,794 | 141,828 | 0.0% |

Draft

** GRS' audit of Buck's calculation includes review of the benefit amounts, annuity values, assumptions and other factors related to the PVB calculation at each projected age. Differences may exist due to different interpretations of the statutes, as well as additional items as discussed throughout this audit report.*

| **Benefits - Buck Valuation Terminology** | **Description*** |
|---|---|
| *Retirement:* | |
| Tier x <Member> | Base Benefit Paid to Employee |
| Tier x <Spouse> | Base Benefit Paid to Spouse |
| Contrib <Member> | Employee Pre-Retirement Contributions |
| Contrib <Spouse> | Spouse Pre-Retirement Contributions |
| Post 65 Part D <Member> | Employee Post-Age 65 Medicare Part D Reimbursement |
| Post 65 Part D <Spouse> | Spouse Post-Age 65 Medicare Part D Reimbursement |

# SECTION 5

## REVIEW OF CONTRIBUTION RATE DETERMINATION

Draft

# REVIEW OF CONTRIBUTION RATE DETERMINATION

GRS analyzed the funding method and verified the contribution rate computation (as shown in pages 19, 22, and 25 of the PERS valuation report and page 15 of the TRS valuation report). The goal is to start with the Actuarial Accrued Liabilities and the Normal Costs that are developed from the data and valuation software and compare this to the Assets in the system. The difference between the two, the Unfunded Actuarial Accrued Liability (UAAL) in conjunction with the Normal Cost forms the basis of the contributions that the Actuary recommends the system make in order to ensure that benefits can be provided for current and future retirees. As noted in the Buck report, the compensation used to develop the rates is a combination of both this plan's compensation, as well as the DCR compensation.

## FINDINGS:

The calculations were reasonable and consistent with actuarial practice. It is outside of the norm to use compensation other than the compensation that relates directly to the plan; however, the Buck report provides an adequate disclosure of this method in the determination of the rates.

We verified the amortization amounts using the amortization bases as of June 30, 2013 and the new level dollar amortization and were able to reproduce the amortization amounts to within two dollars.

Draft

We noted that there was more volatility in the TRS Pension normal cost rate than we would have expected for a large stable plan with no major assumption changes. Changes in the Healthcare normal cost rates seem like they may be in line with the favorable experience on prescription claims.

| Total Normal Cost Rate | | | |
|---|---|---|---|
| | **Pension** | **HC** | **Total** |
| **TRS 2013** | 12.20% | 4.47% | 16.67% |
| **TRS 2012** | 12.47% | 4.82% | 16.73% |
| **TRS 2011** | 12.18% | 4.96% | 17.14% |
| **TRS 2010** | 12.51% | 5.25% | 17.76% |
| **PERS 2013** | 10.62% | 5.70% | 16.32% |
| **PERS 2012** | 10.65% | 6.08% | 17.94% |
| **PERS 2011** | 10.75% | 7.19% | 17.94% |
| **PERS 2010** | 10.22% | 7.79% | 18.01% |

# SECTION 6

## REVIEW OF ACTUARIAL VALUATION REPORT

Draft

# REVIEW OF ACTUARIAL VALUATION REPORT

## GASB NO. 25 DISCLOSURE:

GASB (Governmental Accounting Standards Board) sets out guidelines for financial accounting and reporting for state and local government entities. Under GASB No. 25, the actuarial valuation reports for PERS and TRS must disclose a set of financial statistics. These include:

- Schedule of Funding Progress
- Schedule of Employer Contributions
- Notes to Required Supplementary Information

**Findings:**

No issues to report.

**Conclusion:**

Buck has indicated that they do calculate the actuarial present value of assumed Part D Retiree Drug Subsidy (RDS) payments separately. For funding purposes, the total healthcare liability is offset by the RDS amounts to conform to the ARMB's current policy of funding discounted net cash flow. Figures used for GASB 43 purposes have been illustrated without the RDS offset.

Draft

## GASB NO. 67 DISCLOSURE:

For purposes of Plan Reporting for the fiscal year ending June 30, 2014, Alaska PERS and TRS will need to follow the reporting guidelines set out in GASB No. 67, which is in effect for Plan Years beginning after June 15, 2013.

Under the new guidelines, unfunded liabilities will be measured using the market value of assets and liabilities will be measured using a potentially with a lower discount rate, and in turn create higher liabilities. To meet timing requirements, the Plans may need to have a rollforward of June 30, 2013 results to June 30, 2014.

## VALUATION REPORT:

GRS reviewed the June 30, 2013 valuation report for scope as well as content to determine if actuarial statistics were being reflected fairly and if the details of the plan were being correctly communicated.

**Findings:**

The June 30, 2013 draft valuation report submitted by Buck to the board had the following layout:

1. Actuarial Certification – This introduces the report, lists the valuation date in question, and provides a disclaimer that the results are predicated on the census data received from the Systems and the financial information received from KPMG. It also discusses the basic actuarial concepts and provides the funded ratios.

2. Report Highlights – Shows funding status, including a graph of the funding ratio history, and the employer recommended contribution rate.

3. Analysis of the Valuation – Explains the change in the funded status and calculated contribution rate. Includes retiree medical costs, investment return, and other factors. Within this section there are three sections that show the development of valuation results, basis of the valuation, and other historical information. These include projections which are beyond those commonly produced in actuarial valuation reports.

Draft

**Conclusion:**

We consider the scope and content of Buck's report to be effective in communicating the financial position and contribution requirements of PERS and TRS. Buck should discuss with the Board and Staff the format of the report going forward in light of GASB 67 and 68.

We also recommend that Buck include an explanation for the gains and losses by source in the valuation report.

A three-year certain normal form of payment is included in the valuation methods to approximate the modified cash refund. This should be included in the valuation methods and assumptions.

Some plans are beginning to incorporate increased investment risk metrics in their reports. For example, what would the change be to the contribution requirement if the plan experienced a -10% investment return on assets? Some plans also include projection scenarios demonstrating adverse experience outcomes of the plan. This could provide added value to the Alaska Retirement Management Board.

GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

# ALASKA RETIREMENT MANAGEMENT BOARD

*SUPPLEMENTAL REPORT*

## A REVIEW OF CLAIM COST DEVELOPMENT FOR THE RETIREE MEDICAL PLAN VALUATIONS FOR PERS, TRS AND THE DCR PLANS

APRIL 10, 2014

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April 10, 2014

Mr. Gary Bader
Chief Investment Officer
Department of Revenue, Treasury Division
**Alaska Retirement Management Board**
P.O. Box 110405
Juneau, AK 99811-0405

**Subject: Actuarial Review of June 30, 2013 Development of Claim Costs used to value the Retiree Medical portion of all plans**

Dear Gary:

In the course of this year's audit we have added a supplemental audit to review the development of the claim costs that are used in the valuation of the retiree medical liabilities for PERS, TRS and DCR. While we have reviewed the claim costs for reasonableness in all prior years; for this year we wanted to look at external documents and to determine the reasonableness of the claim costs on the basis of data submitted by the carriers.

We were unable to see enough carrier data to replicate the claim cost development from external data. We were, however, able to closely replicate the claim costs by using the Buck assumptions regarding the data:

| *Claim Costs in dollars, Per Member Per Month* | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Pre-Medicare | Medicare A&B | Medicare B Only | Pre-Medicare | Medicare A&B | Medicare B Only | Total |
| **Buck** | 9,367 | 2,362 | 9,136 | 2,036 | 3,161 | 3,166 | 8,362 |
| **GRS** | 9,301 | 2,220 | 8,975 | 2,003 | 2,967 | 2,967 | 7,874 |
| **Diff.** | 99.3% | 94.0% | 98.2% | 98.4% | 93.9% | 93.7% | 94.1% |

While this comparison does give assurance regarding the claim costs (*which drive the liabilities and the costs for the retiree medical plan*), we did note the following in the course of this review:

a) ***Lack of external data for confirmation:*** GRS was unable to locate the management report that identified the split between the Medicare and non-Medicare claims. To perform this replication, GRS used the splits assumed by Buck.

b) ***Margin is built into the claim costs:*** The assumed trend rates that Buck used to bring fiscal years 2010 through fiscal year 2013 are higher than the actual trend. While actual trends may not be fully credible, the trends used appear to be overly conservative. The cumulative assumed trend rate for 2011 through 2013 is 25%; the actual trend rate for that same three year period is 2.8%. This has the impact of building margin into the anticipated claim costs for 2014.

c) ***Credibility does not give highest weight to recent year:*** Buck's weights by year places more focus on the fiscal year 2012, while general practice is to place as much weight as possible on the most recent year of experience. Buck may be doing this because they believe the experience that is emerging in 2013 is not as credible as 2012. We recommend that Buck's reasoning as to the low weighting of 2013 be explained and disclosed in the valuation report.

d) ***Board and Buck to discuss level of margin desired:*** Based on the trend and the weights used, Buck appears to be creating margins in the starting claim costs (*starting claim costs are higher, by GRS estimate it is approximately 5%*). In addition, the process for the OPEB valuation also has margin, in the sense that the valuation cannot take into account future plan changes which serve to decrease costs. We recommend the Board discuss with Buck whether the margin developed in the claim cost approach is appropriate given the margin that is inherent in the OPEB valuation.

A major part of the review is a thorough analysis of the spreadsheets provided by Buck Consultants. The report includes exhibits which summarize the detailed analysis of the replication for claim costs for PERS, TRS and DCR as well as a comparison of the results between Buck Consultants and GRS. We wish to thank the staff of the State of Alaska Treasury Division and Buck Consultants without whose willing cooperation this review could not have been completed.

Respectfully submitted,
**Gabriel, Roeder, Smith & Company**

Leslie Thompson, FSA, FCA, EA, MAAA
Senior Consultant

Virgil Meier, FSA, MAAA
Senior Health Care Consultant

# OVERVIEW OF BUCK'S METHOD FOR DEVELOPING CLAIM COSTS

## PROCESS STEP

***Development of claim data:***

The process of developing the "per member per month" (pmpm) claims data starts with four years of claim data (2010-2013) and trends those claims to 2014. For years prior to 2013, the claims are complete (*meaning, they have been submitted and paid*) but for 2013 the claims need to be adjusted for claims incurred but not reported. Buck used prior year claim lag patterns in order to determine the adjustments for 2013 to achieve incurred claims. Buck used this method for all months in 2013 with the exception of the months April through June in which they average the months July 2013 through February 2013 and then trend these to the appropriate month. It appears that the trend rate used was 5.8%.

## GRS FINDINGS

We would recommend completing the year 2013 by using the last rolling 12 months of claim data, rather than 8 months of claim data. This will help eliminate seasonality in the claims (*early in the year member claims are subject to deductibles and claims are lower*).

In order to audit the claim costs, GRS determined the medical claim costs of 2013 in two different ways. These two methods produce results that are fairly comparable, producing a range of $4,976 to $5,046 for 2013. Buck's method produced an incurred claim costs of $4,959 which is at the lower end outside of the range.

Buck trended the last three months at 5.8%, yet when trending the previous years to 2014 Buck used much larger trend rates. We recommend Buck disclose why 2013 is being trended at a much lower rate than other years, over the same time period.

## DESCRIPTION OF THE TWO METHODS TO AUDIT CLAIM COST DEVELOPMENT

(a) The first method used incurred data from April 2012 – March 2013 and then trend 3 months to get to a fiscal 2013 claim cost number. This value was $5,046. The trend rate used was 7%, (*this assumption still has some margin since actual trend rates have been lower*). We used a full 12 months of experience in order to ensure any impacts of seasonality are mitigated.

(b) The second method determines the incurred claim costs "pmpm" for the months of April 2013- Jun 3013 by determining an historical average amount and trend to these months (this is similar to Buck's method). We used a full 12 months of experience in order to ensure any impacts of seasonality are mitigated and a trend of 7%. Using this method to complete these last three months and the incurred claims based on the completion factor method for the other nine months produces a claim cost of $4,976.

(c) No adjustments to large claims were made; this is dealt with by the use of the blending of multiple years of experience so that large claims are spread over a longer period.

(d) GRS developed the prescription drug claim costs in a similar method, and found the GRS value for prescription drug cost is $2,354 with little difference between the two methods. Buck's method produced a claim cost of $2,353, almost identical.

## PROCESS STEP

***Split claims between Medicare and non- Medicare***

The incurred claims for Fiscal years 2010 – 2013 split claim costs between pre-Medicare, Medicare A&B and Medicare B only for medical and prescription drugs. The claim data provided is in aggregate, Buck used data received in a management report that shows overall statistics as to the percentage of claims for Medicare and non-Medicare groups to split the claims. According to the Buck report, Part B only portion was determined from data from HealthSmart where 0.6% of the population was identified as having Part B only.

## GRS FINDING

***Data still needed from carriers in order to split the entire Medicare and non-Medicare population***

Costs vary greatly depending on a member's Medicare status. In addition, the proportions between Medicare and non-Medicare may be changing rapidly. (*i.e. with so many baby-boomers entering their retirement years*) We recommend Buck discuss with the Board a change in method whereby the claim cost is developed on a pmpm basis and then applied to the anticipated population, split between the Medicare and non-Medicare groups.

The membership for Medicare A & B has grown as follows:

| *Year* | *Membership (from Buck reports)* | *Percent increase over prior year* |
|---|---|---|
| **2009** | 24,624 | |
| **2010** | 27,915 | 13.4% |
| **2011** | 29,997 | 7.5% |
| **2012** | 33,631 | 12.1% |
| **2013** | 37,912 | 12.7% |

We recommend receiving detailed reports from carriers for the Medicare and non-Medicare populations. If there is an assumption (for example, if Buck is using proportionate splits from a management report) then we would recommend disclosing the source and method for those splits in the valuation.

## PROCESS STEP

***Develop the PMPM claim cost***

Total incurred claim costs were then divided by the exposure months to determine the "per member per month" (PMPM) claim cost for each of the 4 years by the type of service and plan.

These claims were trended to fiscal year 2014 with the trend rates by fiscal year shown below:

| *Experience Period* | *Medical-Buck Assumptions* | | *Rx-Buck Assumptions* | |
|---|---|---|---|---|
| | Annual | Cumulative | Annual | Cumulative |
| **2010-2011** | 13.0% | 1.441 | 9.6% | 1.289 |
| **2011-2012** | 8.1% | 1.275 | 4.5% | 1.176 |
| **2012-2013** | 8.3% | 1.180 | 5.1% | 1.126 |
| **2013-2014** | 8.9% | 1.089 | 7.1% | 1.071 |

Each of these fiscal years was then assigned a weight in order to blend each fiscal years PMPM claim cost to get a fiscal year 2014 number.

| *Fiscal Year* | *Weight-Buck Assumptions* |
|---|---|
| **2010** | 10% |
| **2011** | 20% |
| **2012** | 40% |
| **2013** | 30% |

An adjustment was made to reflect anticipated network changes of 3% for medical network improvement and .7% for prescription drug network improvement.

## GRS FINDINGS

While we generally concur with this approach, we noted that 2012 has the highest credibility weighting. Typically, the recent year has the highest weighting and we recommend Buck comment on why the highest credibility weighting is for 2012.

## PROCESS STEP

***Trend these claims to fiscal year 2014***

Using the trend number in the table we arrive at trended medical costs ranging from $6,539 to $5,238. We expect the claim values, once trended to the same point in time, to be equal. This pattern here means one of two things, 1) the plan has had unusually favorable experience in 2012 ad 2013 or 2) the assumed trend is overly conservative.

| *Year* | *Un-trended* | *Actual trend* | *Trend* | *Trended to 2014* |
|---|---|---|---|---|
| **2010** | $4,910 | | 10% | $6,539 |
| **2011** | $4,703 | -4.2% | 9% | $5,693 |
| **2012** | $4,889 | 4.0% | 7% | $5,429 |
| **2013** | $5,046 | 3.2% | 7% | $5,238 |

GRS assumed credibility weights for the years are 10% for fiscal 2011, 20% from fiscal year 2012 and 70% for fiscal year 2013.

Splits between pre-Medicare Medicare A&B and Medicare B only were determined by using Buck's split. We requested all management reports but were unable to locate this data in the reports submitted.

## GRS FINDINGS

It appears (based on the three years shown) that actual trend is quite a bit lower than the trend used to project claims *(that is why the "Trended to 2014" amounts are coming down in value from 2010 to 2013*). This can have the effect of overstating the claim costs and the cost of the retiree medical plans. However, it may be that Buck is aware of potential trend reversal in the future and is setting these rates with that in mind. We recommend discussing this with Buck to see if this level of conservatism is in line with the Board's funding policy.

GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

Draft

ALASKA RETIREMENT MANAGEMENT BOARD

# ACTUARIAL REVIEW OF THE PUBLIC EMPLOYEES' TIER IV AND TEACHERS' TIER III DEFINED CONTRIBUTION RETIREMENT PLAN

FOR OCCUPATIONAL DEATH AND DISABILITY AND RETIREE MEDICAL BENEFITS

APRIL 9, 2014

GRS
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April 9, 2014

Mr. Gary Bader
Chief Investment Officer
Department of Revenue, Treasury Division
Alaska Retirement Management Board
P.O. Box 110405
Juneau, AK 99811-0405

**Subject: Actuarial Review of June 30, 2013 Defined Contribution Retirement (DCR) Plan Valuations for the State of Alaska Public Employees' Tier IV (PERS) and Teachers' Tier III (TRS)**

Dear Gary:

We have performed an actuarial review of the June 30, 2013 DCR Actuarial Valuations for PERS and TRS.

This report includes a review of:

- Occupational Death and Disability Assumptions and Benefits
- Retiree Health Care Cost Assumptions
- Actuarial Valuation Methods and Procedures
- Contribution Rate Determination
- Actuarial Valuation Report

Draft

A major part of our review is the analysis of the test lives provided by Buck Consultants. We have included exhibits in our report which summarize the detailed analysis of these sample test cases for the PERS and TRS DCR Plans, as well as a comparison of the results between Buck Consultants and GRS. We wish to thank the staff of the State of Alaska Treasury Division and Buck Consultants without whose willing cooperation this review could not have been completed.

Last year, changes in underlying plan design and assumptions took the PERS and TRS plans from a surplus position to having an unfunded accrued liability, due primarily to the cost sharing allocation of the OPEB plan. Absent additional documentation regarding the OPEB plan, we have concluded that there is not enough documentation that would permit us, as the auditing actuaries, to state that the contribution rates shown for the DCR retiree medical portion of the plan are an adequate and appropriate recognition of the costs of this plan. We can state that the contribution rate adequately represents the costs for the plan as described in Section 5 of the June 30, 2013 actuarial valuation reports and in the Buck email dated March 27, 2013 (see Appendix A).

Sincerely,
**Gabriel, Roeder, Smith & Company**

Leslie L. Thompson, FSA, FCA, EA, MAAA
Senior Consultant

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# SECTION 1

## EXECUTIVE SUMMARY

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# EXECUTIVE SUMMARY

Gabriel, Roeder, Smith & Co. was engaged by the Alaska Retirement Management Board (ARMB) to review the Actuarial Valuations as of June 30, 2013 for the Public Employee's Retirement System Defined Contribution Retirement (DCR) Plan and the Teachers' Retirement System (TRS) Defined Contribution Plan.

This report presents our findings in the following areas:

- General Approach
- Pension Assumptions and Benefits
- Health Care Cost Assumptions
- Actuarial Valuation Methods and Procedures
- Contribution Rate Determination
- Actuarial Valuation Report
- Summary and Conclusions

## KEY FINDINGS FROM THE AUDIT OF THE JUNE 30, 2013 VALUATIONS

**Purpose of the audit**

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One of the primary purposes of the audit is to partner with the Alaska Retirement Management Board (ARMB) in their task of recommending the contribution rates for the various plans. Below is a brief summary of our audit findings.

**What plan is to be valued?**

Plan design work is still underway for the DCR retiree medical plan. There are some overarching concepts that Buck has received through discussions with DRB, and which Buck has valued starting with the June 30, 2012 valuation. Without a fully defined plan, it is difficult to determine whether the contribution rate recommended supports the plan that will be in place when all plan details are finalized. Thus, the contribution rates, as well as the increase in the unfunded liability, represent Buck's best interpretation of the ultimate plan design, based on discussions with DRB, as documented in an email dated March 27, 2013 (see Appendix A). These DCR retiree medical overall plan design features are:

1. The State and the participants will share equally in health care cost trends over time;
2. Medical plan provisions will change annually to accommodate the cost sharing (i.e. the deductible, copays etc. will change to make the trend sharing work);
3. This "sliding scale" of the out of pocket features is an inherent design feature for this retiree medical plan;
4. By design, the medical costs in this plan will be approximately 12% lower and the prescription drug costs will be approximately 7% lower than those in the Defined Benefit plan.

We recommend that these design features be put into writing, so that the new methods and assumptions employed by Buck have written support and thereby provide support for the recommended contribution rate. The email with the retiree medical plan design features is included in Appendix A of this report.

**Assumption Change for the Retiree Drug Subsidy (RDS) and Employee Paid Premiums**

There was yet another example this year of how the understanding of the plan is still evolving and needs to be documented. The valuation programming of the employee paid contributions was changed for both PERS DCR and TRS DCR plans. At age 65, the percentage of premium paid by the retiree is between 10% and 30% depending on years of service. Previously Buck had been estimating the total premium using the sum of medical, prescription and administrative costs. Then the applicable retiree premium percentage was applied. This year, the total premium amount was calculated using the sum of medical, prescription and administrative costs, but ***net of the Retiree Drug Subsidy***. Buck indicated that the latest understanding was that the Plan would share the Retiree Drug Subsidy reimbursement and use it to reduce the total premium amount, thereby reducing the member paid portion and increasing employer contribution rates.

We would recommend that Buck add comments to the valuation report to specify the assumption change, the impact and the reason for the change. The impact of this change was not isolated however both reports show a liability loss on page 6 of the reports in the "other demographic experience" category (PERS 1.3% liability loss, TRS 4.89% liability loss) which is denoted as "data and programming changes". The change to the employee paid premiums likely is a large component of these losses.

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**Methodology**

Through the test life review completed with this audit, we generally matched the results of Buck Consultants. The liabilities shown in the Buck test lives match the reproduced liabilities within an acceptable range of tolerance. As shown later in this report, we could reproduce Buck Consultant's test lives within less than 1% variation on the benefits reviewed, using the specified assumptions in the report.

**Decrement Gain/(Loss)**

As a part of the annual audit, we take a historical look at the gains and losses on the accrued liability. Gains and losses may measure "how closely" experience matches the actuarial assumption. Recurring gains or losses may indicate an assumption that is not meeting the actual experience for this population.

The gain/(loss) analysis in the valuation reports shows the following trend for the PERS and TRS plans, showing the total for pension and healthcare benefits:

| TOTAL HEALTHCARE AND PENSION---PERS DCR Gain/(Loss) In thousands | | | |
|---|---|---|---|
| | **2013** | **2012** | **2011** |
| Mortality | **$981** | **$672** | **$212** |
| Termination | **(1,149)** | **(828)** | **(645)** |
| Disability | **788** | **1,036** | **614** |
| New Entrants | **(2,466)** | **(848)** | **(711)** |
| Rehires | **(738)** | **(154)** | **(92)** |
| Other | **(788)** | **(117)** | **(429)** |
| Salary Increases | **(7)** | **32** | **(67)** |
| Medical Claims Costs | **2,887** | **959** | **321** |
| **Total Gains/(Losses)** | **$(492)** | **$752** | **$(797)** |

:

| TOTAL HEALTHCARE AND PENSION---TRS DCR Gain/(Loss) In thousands | | | |
|---|---|---|---|
| | **2013** | **2012** | **2011** |
| Mortality | **$24** | **$26** | **$17** |
| Termination | **1,410** | **238** | **62** |
| Disability | **40** | **40** | **23** |
| New Entrants | **(936)** | **(286)** | **(264)** |
| Rehires | **(804)** | **(269)** | **(163)** |
| Other | **(1,067)** | **(227)** | **(161)** |
| Salary Increases | **0** | **0** | **0** |
| Medical Claims Costs | **1,038** | **311** | **107** |
| **Total Gains/(Losses)** | **$(295)** | **$(167)** | **$(379)** |

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There is a pattern of gains on mortality and disability for both plans. This means that the participants are not living as long as anticipated and fewer participants are getting disabled than expected. TRS has very high termination gains this year and also shows termination gains for the prior two years, indicating higher turnover than assumed. In contrast, PERS has termination losses for the past three years, indicating lower turnover than anticipated. The TRS DCR plan has a large unexplained loss in the "other" category. As mentioned previously, some of that may be due to programming changes of the employee paid premiums made with this valuation. Reviewing and modifying these assumptions on a regular basis through an experience study is recommended. In particular, termination, disability and mortality appear to have a consistent gain or loss trend implying some adjustment to the assumptions may be appropriate.

Additional analysis on gain/(loss) shows the following breakdown for the Healthcare Plans only, as shown below.

| HEALTHCARE ONLY---PERS DCR Gain/(Loss) In thousands | | | |
|---|---|---|---|
| | **2013** | **2012** | **2011** |
| Mortality | **$3** | **$5** | **$8** |
| Termination | **(1,176)** | **(784)** | **(626)** |
| Disability | **84** | **47** | **39** |
| New Entrants | **(2,326)** | **(729)** | **(625)** |
| Rehires | **(720)** | **(140)** | **(86)** |
| Other data and programming | **(834)** | **(389)** | **(114)** |
| Medical claims cost | **2,887** | **959** | **321** |
| Total gain/(loss) | **$(2,082)** | **($1,031)** | **($1,083)** |

| HEALTHCARE ONLY---TRS DCR Gain/(Loss) In thousands | | | |
|---|---|---|---|
| | **2013** | **2012** | **2011** |
| Mortality | **$(17)** | **$(5)** | **$(3)** |
| Termination | **1,407** | **238** | **62** |
| Disability | **(11)** | **(4)** | **(2)** |
| New Entrants | **(932)** | **(281)** | **(262)** |
| Rehires | **(802)** | **(267)** | **(162)** |
| Other data and programming | **(1,069)** | **(244)** | **(131)** |
| Medical claims cost | **1,038** | **311** | **107** |
| Total gain/(loss) | **$(386)** | **$(252)** | **$(391)** |

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As shown above, the healthcare portion of the PERS and TRS plans (separated from the pension benefits) had net losses for the past three years. New Entrants and Rehires will always be a source of loss on the accrued liability, but they will have offsetting contributions entering the plan. Termination (PERS) and the "other" category appear to be the sources to watch. In exploring these losses we recommend a discussion with Buck to determine what is creating those losses, whether the source of those losses is expected to occur every year and finally, whether an explicit assumption ought to be set (or altered) for those sources of loss so that they are prefunded. We expect some volatility in the gains and losses of a new plan, and we recommend further analysis on the losses so they do not compound over time and create unexpected rate increases.

Claim costs were estimated based on the claim costs in the defined benefit plan. Buck made adjustments to these claim costs to reflect the different population and differing plan provisions. We concur with this approach, but have not been provided support for the modification of this adjustment value.

The occupational death and disability valuation has perpetual gains and we recommend Buck review this in the upcoming experience study. In addition, there is a perpetual new entrant loss, and with this plan growing so rapidly, we recommend a discussion with Buck in the course of the experience study for a method to prefund new hire liabilities, so that large losses are mitigated.

**DCR Retiree Medical Documentation**

In our review last year, we endeavored to ascertain, for the DCR retiree medical portion of the plan, the basis for the plan as well as the changes to the assumptions that impacted the rates for this plan. As of the date of the issuance of this report, we have not received any additional documentation. Therefore, we have concluded that there is not enough documentation that would permit us, as the auditing actuaries, to state that the contribution rates shown are an adequate and appropriate recognition of the costs for this plan. We can state that the contribution rate adequately represents the costs for the plan as described in the Buck email dated March 27, 2013 (see Appendix A). For a more complete discussion of the issues, please see our audit report and presentation to the Board in 2013.

## SUMMARY OF TEST LIFE REVIEW

We have included as a part of this report a detailed test life results summary.

- We matched the present value of benefits closely in total on test lives submitted for PERS Other, PERS P/F and TRS DCR plans. We have included exhibits in Section 4 of the report which summarize the differences in calculations by decrement for the test lives analyzed. Differences between actuarial firms will always occur due to system differences and other nuances in the calculations.

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- A modification to the Retiree Drug Subsidy calculation was made after consultation with Buck on their change in assumptions regarding this benefit. The GRS results are shown after this modification is made.

- For the death and disability benefits, the actuarial basis used for the funding of the plan lies within the range of reasonableness.

- For the retiree healthcare benefits, the math and actuarial calculations are consistent with the plan as described in Appendix A. We cannot state whether these contribution rates support the plan as understood by DRB.

- As the DCR plan grows, the gain/loss by source will be an important tool in assessing the reliability of the actuarial assumptions. Monitoring these changes year by year can aid in ensuring the assumptions are kept "up to date" with the experience of the plan. Regular experience studies provide valuable information for changes that might be needed.

The table on the next page shows the changes recommended by GRS both in the past years, newly identified issues and the resolution of the issue. Newly identified issues are bolded.

| Issue | GRS Recommendations | Plan | | Buck Comments |
|---|---|---|---|---|
| | | | | |
| 1. PERS Peace Officer/Firefighter | | | | |
| a. Final Average Earnings for disability monthly benefits | Should use three year average instead of five year average. | DCR PERS-PF | ✓ | Buck agreed to change and was correctly revised in 2010 |
| 2. DCR Reports | | | | |
| a. Participation reconciliation grid | Was not included in 2009 | DCR Reports | ✓ | Included in 2010 report |
| b. Gain/loss by source | Was not included in 2009 | DCR Reports | ✓ | Included in 2010 report |
| c. Amortization method description | Enhance clarification | DCR Reports | ✓ | Included in 2010 report |
| d. Definition of normal retirement eligibility | Include in report for different employee groups | DCR Reports | ✓ | Report includes definition |
| e. Description of payment of occupational death benefit | Clarify that normal retirement is determined assuming the member had lived | DCR Reports | ✓ | Buck confirmed that they are now valuing this way in 2012 |
| f. Mortality disclosure | Add comment on margin for future mortality improvements | DCR Reports | ✓ | Added in 2012 |
| 3. Retiree Medical Plans | | | | |
| a. Participation assumed to be 100% | Study and adopt participation rates | DCR Retiree Health | ✓ | Adopted assumptions and included in valuation in 2010 |
| b. Claims cost | Provide additional information on adjustments to costs | DCR Retiree Health | ✓ | Added in 2010 |
| 4. Occupational Death Benefit | Stop payment at earliest normal retirement eligibility instead of age 65. | DCR PERS, TRS | ✓ | Buck agreed to change and was correctly revised in 2012 |
| 5. Retiree medical plan--new policy on plan funding and change in plan value | Written documentation on adopted funding policy, cost-sharing and relative value of plan provisions. | DCR PERS, TRS | ☒ | Buck provided summary of discussions with DRB |
| **6. Change to Retiree Drug Subsidy (RDS)** | **Questioned why the Medicare Part D subsidy calculation changed from prior years. Recommend including specifics on assumption change and reason in valuation.** | **DCR PERS, TRS** | ☒ | **Buck provided explanation that intent was to share subsidy with the plan. No additional documentation provided.** |

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# SECTION 2

## GENERAL APPROACH

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# GENERAL APPROACH

Gabriel, Roeder, Smith & Co. was charged with reviewing the actuarial valuations of TRS and PERS DCR plans.

We requested a number of items from Buck Consultants in order to perform the actuarial review:

1. In December, 2013, we received valuation data for both plans and pension and healthcare test lives for the PERS and TRS DCR plans.
2. We received updated per capita claims costs in January, 2014.
3. We received the DCR draft reports in February, 2014**.**

In performing our review, we:

1. Reviewed actuarial assumptions – we checked to see if they were consistent, comprehensive, and appeared reasonable.
2. Reviewed the actuarial valuation reports as of June 30, 2013 for completeness, GASB compliance and a review of financial determinations.
3. Reviewed, in detail, the sample members provided us – This provided us with a perspective on the actuarial process utilized by Buck with respect to the plan and allowed us to review the valuation methods and procedures.
4. Reviewed the health cost assumptions and trend.
5. Identified areas for future more detailed review.

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## KEY ACTUARIAL CONCEPTS

An actuarial valuation is a detailed statistical simulation of the future operation of a retirement system using the set of actuarial assumptions adopted by the Board. It is designed to simulate all of the dynamics of such a system for each current system member including:

1. Earning future service and making contributions,
2. Receiving changes in compensation,
3. Leaving the system through job change, disablement, death, or retirement, and
4. Determination of and payment of benefits from the System.

This simulated dynamic is applied to each active member of the System. It results in a set of expected future benefit payments to that member. Bringing those expected payments to present value, at the assumed rate of investment return, produces the Actuarial Present Value ("APV") of future benefits for that member. In like manner, an APV of future salaries is determined.

The actuarial present value of future benefits and the actuarial present value of future salaries for the entire System are the total of these values across all members. The remainder of the actuarial valuation process depends upon these building blocks.

Once the basic results are derived, an actuarial method is applied in order to develop information on contribution levels and funding status. An actuarial method splits the actuarial present value of future benefits into two components:

1. Present Value of Future Normal Costs, and
2. Actuarial Accrued Liability ("AAL").

The actuarial method in use by the State of Alaska is known as the Entry Age Normal (EAN) method. Under entry age normal funding method, the Normal Cost for a member is that portion of the Actuarial Present Value of the increase in the value of that member's benefit for service during the upcoming year. The actuarial accrued liability is the difference between the total actuarial present value and the present value of all future normal costs.

For TRS and PERS DCR plans, a present value of future benefits applies to the following benefits:

- Occupational Disability benefits
- Occupational Death benefits
- Retiree Medical benefits

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The retiree medical benefits are based on potential future retiree health care benefits, while the others are a type of post-employment income replacement benefit, based on salary. For the medical benefits, estimates must be made of the future health care costs. This is done by determining current per capita health care claim costs by age of retiree, and projecting them into the future based on anticipated future health care inflation.

Since the DCR plan is relatively new and based on members hired after 2006 with different health plan rules, Buck has used the claim costs from the defined benefit plan with adjustments for this particular population. Buck has indicated that it is the intent to have the DCR medical plan designed at 88.1% of the value of the Defined Benefit retiree medical plan. We concur with this approach generally, but have not been provided support for this adjustment value. We recommend more documentation on the tactics (deeper network discounts and utilization changes) which will create this plan.

# SECTION 3

## REVIEW OF ASSUMPTIONS

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# REVIEW OF ASSUMPTIONS

## GENERAL

In our review of the testlives as well as the report we confirmed that the assumptions shown in the report were the assumptions used in the PERS and TRS DCR valuations.

## BACKGROUND

The findings below are based on the detailed review of the following test lives summarized in exhibits at the end of Section 4:

Pension Plans

- PERS Peace Officer/Firefighter (POLICE/FIRE) : One active and one beneficiary
- PERS – Other: One active
- TRS: One active

Medical Plans

- PERS Peace Officer/Firefighter (POLICE/FIRE) : One active
- PERS – Other: One active
- TRS: One active

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Note that the active test lives analyzed are not necessarily exposed to all of the possible benefits under the plans (i.e. already beyond the eligibility period for certain benefits, or not eligible for particular benefits). Therefore, findings may occur for these other benefits in future audits depending on the set of test lives chosen for review at that time. Also, the impact for any one test life may not be representative of the impact on the total plan.

## ECONOMIC ASSUMPTIONS

### General

These assumptions simulate the impact of economic forces on the amounts and values of future benefits. Key economic assumptions are the assumed rate of investment return and assumed rates of future salary increase.

Economic assumptions are normally defined by an underlying inflation assumption. Buck has cited 3.12% as its inflation assumption. In recent years, long-term inflation forecasts have been declining. With the decline, the 3.12% inflation assumption is now at the higher end of the generally accepted range.

**Investment Return Assumption**

The nominal investment return assumption, net of all investment and administrative expenses, was changed to 8.00% from 8.25% in 2010. GRS agrees with this change. Combined with the 3.12% inflation assumption, this yields a 4.88% real net rate of return. This 4.88% real return should be continuously tested with the PERS and the TRS DCR asset allocation.

**Retiree Medical Plan Assumptions**

The following assumptions were used in the June 30, 2013 valuations for the DCR plans. Relative value refers to the value of the DCR benefits compared to those provided by the Defined Benefit retiree plan.

- Relative value of medical benefits is 88.1%;
- Relative value of pharmacy benefits is 92.9%;
- Member cost-sharing offset is 0.2%, reflecting cost equality in sharing future trend between retirees and the plan

The basis for this discount of 12% rests with higher initial copays, deductibles, out of pocket limits and member cost sharing compared to the DB medical plan. As experience emerges we recommend the discount be tested to ensure this assumption is supporting the liabilities of the plan.

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As of the June 30, 2012 valuation, the assumption change on cost-sharing results was the single most important factor in the increase in the contribution requirements. As noted in the Executive Summary, we have not been provided enough documentation on this or the relative value adjustment to conclude that the revised June 30, 2012 assumptions are appropriate for developing the costs of the retiree medical plan.

**Other Assumptions**

Since this is a relatively new plan, the expectation is that payroll growth will be high initially and then level out. The assumption used in the valuation is that payroll will grow at a rate of 3.63% per year. In 2013, the covered payroll growth only showed a growth of 5% compared to 20% in the prior year. This may be due to salaries not increasing significantly or due to turnover and hiring new entrants at a lower pay level.

| Valuation year ending June 30 | PERS and TRS Covered Payroll Growth |
|---|---|
| 2013 | 5% |
| 2012 | 20% |
| 2011 | 17% |
| 2010 | 34% |
| 2009 | 55% |
| 2008 | 94% |

# SECTION 4

## REVIEW OF ACTUARIAL VALUATION METHODS AND PROCEDURES

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# REVIEW OF ACTUARIAL VALUATION METHODS AND PROCEDURES

## *I. Background*

An actuarial valuation is a detailed statistical simulation of the future operation of a retirement system using the set of actuarial assumptions adopted by the Board.

The actuarial values generated from this process are based not only on these assumptions, but also on the additional assumptions built into each actuarial firm's pension valuation software.

Our scope for performing the review did not include a complete replication of the valuation results as determined by Buck Consultants at June 30, 2013. Rather, we reviewed a number of sample test lives from Buck in great detail, and made our determinations as to whether the methods and assumptions being employed were being done so properly.

Though this approach is not intended to meet the rigors of a full scale replication of results – it still serves as a strong indicator of the appropriateness of the assumptions and methods being used to value the liabilities and determine the costs for these plans.

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## *II. Process:*

Our review process can be summarized as follows:

**Computation: Valuation Liabilities**

We analyzed test cases to compare the Actuarial Liability under the EAN funding method for the test cases of the PERS and TRS DCR Plans. As a starting point, we wanted to first replicate Buck's test case liabilities by using their assumptions and methods to ensure that the computations were in sync with the descriptions listed in the valuation report.

When conducting an actuarial audit, and reviewing the testlives, we look at the projected benefits at each age for each decrement type. We also look at the component of the benefit (final average earnings and years of service). This is critical to understanding what the valuation system is actually valuing and making sure that the valuation is not "right for the wrong reasons", (meaning, errors could occur in two different directions making total liabilities approximate a correct value.)

We also review the construction of the commutation functions- the varying probabilities for each decrement and the discounting to the valuation date.

## *III. Actuarial Method:*

**Findings:**

The actuarial method used for producing Alaska PERS and TRS DCR June 30, 2013 Actuarial Valuations is known as the Entry Age Normal (EAN) Method. Under this method, benefits are projected to the assumed occurrence of future events based on future salary levels and service to date. The Normal Cost is the present value of benefits to be earned for the current year while the Actuarial Accrued Liability (AAL) is the present value of benefit earned for all prior years

**Conclusion:**

To account for the Part D subsidy in the retiree medical plan, a different set of numbers has been disclosed for GASB reporting purposes (again, as opposed to funding purposes). We concur with this approach.

## *IV. Actuarial Calculations:*

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We reviewed sample test cases used for the DCR June 30, 2013 valuation draft reports. In order to accomplish this, we requested a number of sample cases from Buck with intermediate statistics to assist us in analyzing the results. We combined this with our understanding of the plan provisions in an attempt to analyze the liability values produced by Buck for these sample cases only.

**Conclusion and Results:**

Overall, we matched the liabilities in total quite closely for the test cases submitted under the DCR retiree and pension plans for PERS Other and TRS. These exhibits provide a comparison of the calculations by decrement provided to us from Buck against our replication of those benefits as we interpret them from the plan provisions and assumptions. We completed this detail for all active test lives under the PERS and TRS DCR and for one beneficiary test life.

### DEATH AND DISABILITY PLANS

For PERS Other pension, the test life actuarial present value match was within 0.3% on the test case shown. This would be considered as an overall match for purposes of the valuation.

For PERS Peace Officer/Firefighter pension, the active and beneficiary test lives actuarial present value match was within less than 0.1% in total on the test case shown. This would be considered as an overall match for purposes of the valuation.

For TRS pension, the test life actuarial present value match was within 0.2% on the test case shown. This would be considered as an overall match for purposes of the valuation.

### RETIREE HEALTH PLANS

For PERS Other retiree health, the test life actuarial present value match on the retirement benefits decrement for active members was less than 0.1%. This is considered a reasonable match, as the retirement benefit decrement consists of approximately 90% of the total actuarial present value.

For PERS Peace Officer/Firefighter retiree health, the test life actuarial present value match on the retirement benefits decrement for active members was within less than 0.1%. This is considered a reasonable match, as the retirement benefit decrement consists of approximately 90% of the total actuarial present value.

For TRS retiree health, the test life actuarial present value match on the retirement benefits decrement for active members was within less than 0.1%. This is considered a reasonable match, as the retirement benefit decrement consists of approximately 90% of the total actuarial present value.

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We conclude that the test lives are calculated correctly using the underlying assumptions. Our issues regarding the plan provisions and cost-sharing assumptions for the retiree health benefits are discussed in the Executive Summary.

**ALASKA RETIREMENT MANAGEMENT BOARD**

Actuarial Review of DCR Pension and Health Plans - June 30, 2013

Comparison of Present Value of Benefits - **DCR PERS and TRS Pension**

| ***Actives*** | **Test Case 1 - PERS Other** | | |
|---|---|---|---|
| *Basic Data:* | | *Basic Data:* | |
| Sex | Female | Tier | 4 |
| Current Age | 56.53 | Full time % | 100% |
| Current Credited Service | 1.34 | | |
| **Present Value of Benefits (PVB)** | **GRS*** | **Buck** | **% Diff** |
| *Disability:* | | | |
| | | | |
| DCR | 703.59 | 703.58 | 0.0% |
| ***Total Disability PVB*** | **703.59** | **703.58** | **0.0%** |
| *Death:* | | | |
| DCR - married only | 444.32 | 441.32 | 0.7% |
| ***Total Death PVB*** | **444.32** | **441.32** | **0.7%** |
| | | | |
| **GRAND TOTAL PVB** | **1,147.91** | **1,144.90** | **0.3%** |

| ***Actives*** | **Test Case 2 - PERS PF** | | |
|---|---|---|---|
| *Basic Data:* | | *Basic Data:* | |
| Sex | Male | Tier | 4 |
| Current Age | 43.31 | Full time % | 100% |
| Current Credited Service | 6.90 | | |
| **Present Value of Benefits (PVB)** | **GRS*** | **Buck** | **% Diff** |
| *Disability:* | | | |
| DCR Deferred & Immed Ben | 12,625.10 | 12,625.09 | 0.0% |
| DCR | 9,125.58 | 9,125.72 | 0.0% |
| ***Total Disability PVB*** | **21,750.68** | **21,750.81** | **0.0%** |
| *Death:* | | | |
| DCR - married only | 5,706.39 | 5,691.45 | 0.3% |
| ***Total Death PVB*** | **5,706.39** | **5,691.45** | **0.3%** |
| | | | |
| **GRAND TOTAL PVB** | **27,457.06** | **27,442.26** | **0.1%** |

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| ***Actives*** | **Test Case 3 - TRS** | | |
|---|---|---|---|
| *Basic Data:* | | *Basic Data:* | |
| Sex | Female | Tier | 3 |
| Current Age | 35.91 | Full time % | 100% |
| Part-Time Credited Service | 4.00 | | |
| ***Present Value of Benefits (PVB)*** | **GRS*** | **Buck** | **% Diff** |
| *Disability:* | | | |
| | | | |
| | | | |
| DCR | 276.19 | 275.76 | 0.2% |
| ***Total Disability PVB*** | **276.19** | **275.76** | **0.2%** |
| *Death:* | | | |
| DCR - married only | 196.40 | 196.01 | 0.2% |
| ***Total Death PVB*** | **196.40** | **196.01** | **0.2%** |
| | | | |
| **GRAND TOTAL PVB** | **472.59** | **471.77** | **0.2%** |

| **Benefits - Buck Valuation Terminology** | |
|---|---|
| *Disability:* | |
| DCR Deferred Ben | Disability benefit payable upon eligibility for retirement (based on ret plan formula) |
| DCR Immed Ben | Disability benefit payable until eligible for normal retirement (based on ret plan formula) |
| DCR | Occupational base disability benefit base on percent of pay (40% of salary) |
| Death: | |
| DCR - married only | Occupational death benefit payable as annuity to spouse |

** GRS' audit of Buck's calculation includes review of the benefit amounts, annuity values, assumptions and other factors related to the PVB calculation at each projected age. Differences may exist due to different interpretations of the statutes, as well as additional items as discussed throughout this audit report.*

**ALASKA RETIREMENT MANAGEMENT BOARD**

Actuarial Review of DCR Pension and Health Plans - June 30, 2013

Comparison of Present Value of Benefits - **DCR PERS and TRS Retiree Health**

| ***Actives*** | **Test Case 1 - PERS Other** | | |
|---|---|---|---|
| *Basic Data:* | | *Basic Data:* | |
| Sex | Female | Tier | 4 |
| Current Age | 56.53 | Full time % | 100% |
| Current Credited Service | 1.34 | | |
| **Present Value of Benefits (PVB)** | **GRS*** | **Buck** | **% Diff** |
| *Retirement:* | | | |
| Post 65 DCR <Member> | 11,346.56 | 11,345.42 | 0.0% |
| Post 65 DCR <Spouse> | 6,689.53 | 6,689.27 | 0.0% |
| Contrib DCR <Member> | (3,053.81) | (3,053.53) | 0.0% |
| Contrib DCR <Spouse> | (1,802.54) | (1,802.48) | 0.0% |
| Post 65 Part D DCR <Member> | 1,167.18 | 1,167.01 | 0.0% |
| Post 65 Part D DCR <Spouse> | 681.05 | 680.99 | 0.0% |
| ***Total Retirement PVB*** | **15,027.96** | **15,026.68** | **0.0%** |

| ***Actives*** | **Test Case 2 - PERS PF** | | |
|---|---|---|---|
| *Basic Data:* | | *Basic Data:* | |
| Sex | Male | Tier | 4 |
| Current Age | 43.31 | Full time % | 100% |
| Current Credited Service | 6.90 | | |
| **Present Value of Benefits (PVB)** | **GRS*** | **Buck** | **% Diff** |
| *Retirement:* | | | |
| Post 65 DCR <Member> | 13,147.27 | 13,144.85 | 0.0% |
| Post 65 DCR <Spouse> | 11,114.92 | 11,112.73 | 0.0% |
| Contrib DCR <Member> | (1,520.67) | (1,520.39) | 0.0% |
| Contrib DCR <Spouse> | (1,267.42) | (1,267.18) | 0.0% |
| Post 65 Part D DCR <Member> | 1,373.40 | 1,373.10 | 0.0% |
| Post 65 Part D DCR <Spouse> | 1,165.10 | 1,164.82 | 0.0% |
| ***Total Retirement PVB*** | **24,012.59** | **24,007.93** | **0.0%** |

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| ***Actives*** | **Test Case 3 - TRS** | | |
|---|---|---|---|
| *Basic Data:* | | *Basic Data:* | |
| Sex | Female | Tier | 3 |
| Current Age | 35.91 | Full time % | 100% |
| Part-Time Credited Service | 4.00 | | |
| **Present Value of Benefits (PVB)** | **GRS*** | **Buck** | **% Diff** |
| *Retirement:* | | | |
| Post 65 DCR <Member> | 8,836.22 | 8,835.23 | 0.0% |
| Post 65 DCR <Spouse> | 5,796.52 | 5,795.95 | 0.0% |
| Contrib DCR <Member> | (792.04) | (791.96) | 0.0% |
| Contrib DCR <Spouse> | (520.14) | (520.09) | 0.0% |
| Post 65 Part D DCR <Member> | 915.83 | 915.65 | 0.0% |
| Post 65 Part D DCR <Spouse> | 595.11 | 595.00 | 0.0% |
| ***Total Retirement PVB*** | **14,831.50** | **14,829.78** | **0.0%** |

| **Benefits - Buck Valuation Terminology** | |
|---|---|
| *Retirement:* | |
| Post 65 DCR <Member> | Base benefit paid to employee while employee is at least 65 |
| Post 65 DCR <Spouse> | Base benefit paid to spouse while employee is at least 65 |
| Contrib DCR <Member> | Employee pre-retirement contributions |
| Contrib DCR <Spouse> | Spouse pre-retirement contributions |
| Post 65 Part D DCR <Member> | Employee post-age 65 Medicare Part D reimbursement |
| Post 65 Part D DCR <Spouse> | Spouse post-age 65 Medicare Part D reimbursement |

** GRS' audit of Buck's calculation includes review of the benefit amounts, annuity values, assumptions and other factors related to the PVB calculation at each projected age. Differences may exist due to different interpretations of the statutes, as well as additional items as discussed throughout this audit report.*

**ALASKA RETIREMENT MANAGEMENT BOARD**

Actuarial Review of DCR Pension and Health Plans - June 30, 2013

Comparison of Present Value of Benefits - **DCR PERS P/F Beneficiary**

| ***Retirees*** | **Test Case 4 - PERS PF** | | |
|---|---|---|---|
| *Basic Data:* | | *Basic Data:* | |
| Sex | Female | Tier | 4 |
| Current Age | 18.18 | Type | Beneficiary |
| Annual Benefit | 47,365.08 | Stop date | 4/30/2017 |
| | **GRS*** | **Buck** | **% Diff** |
| PVB | 163,606.25 | 163,609.00 | 0.0% |
| **GRAND TOTAL PVB** | **163,606.25** | **163,609.00** | **0.0%** |

** GRS' audit of Buck's calculation includes review of the benefit amounts, annuity values, assumptions and other factors related to the PVB calculation at each projected age. Differences may exist due to different interpretations of the statutes, as well as additional items as discussed throughout this audit report.*

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# SECTION 5

## REVIEW OF CONTRIBUTION RATE DETERMINATION

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# REVIEW OF CONTRIBUTION RATE DETERMINATION

GRS was to analyze the funding method being used and verify its computation. The goal here is to start with the Actuarial Accrued Liabilities and the Normal Costs that are developed from the data and valuation software and compare this to the Assets in the system. The difference between the two, the Unfunded Actuarial Accrued Liability (UAAL) in conjunction with the Normal Cost forms the basis of the contributions that the Actuary recommends the system make in order to ensure that benefits can be provided for current and future retirees.

## FINDINGS:

The calculations were reasonable and consistent with actuarial practice. Our issues regarding the plan provisions and cost-sharing assumptions for the retiree health benefits are discussed in the Executive Summary.

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# SECTION 6

## REVIEW OF ACTUARIAL VALUATION REPORT

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# REVIEW OF ACTUARIAL VALUATION REPORT

## GASB DISCLOSURE:

GASB (Governmental Accounting Standards Board) sets out guidelines for financial accounting and reporting for state and local government entities. Under GASB No. 25, the actuarial valuation reports for DCR PERS and TRS must disclose a set of financial statistics. These include:

- Schedule of Funding Progress
- Schedule of Employer Contributions
- Notes to Required Supplementary Information

**Findings:**

No issues to report.

**Conclusion:**

Buck has indicated that they do calculate the actuarial present value of assumed Part D Retiree Drug Subsidy (RDS) payments separately. For funding purposes, the total healthcare liability is offset by the applicable RDS amounts to conform to the ARMB's current policy of funding discounted net cash flow. Figures used for GASB 43 purposes have been appropriately illustrated without the RDS offset.

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## VALUATION REPORT:

GRS reviewed the June 30, 2013 DCR valuation reports for scope as well as content to determine if actuarial statistics were being reflected fairly and if the details of the plan were being correctly communicated.

**Findings:**

The June 30, 2013 DCR draft valuation reports submitted by Buck had the following layout:

1. Actuarial Certification – This introduces the report, lists the valuation date in question, and provides a disclaimer that the results are predicated on the census data received from the Systems and the financial information received from KPMG. It also discusses the basic actuarial concepts and provides the funded ratios.

2. Report Highlights – Shows funding status and the employer recommended contribution rate.

3. Analysis of the Valuation – Explains the change in the funded status and calculated contribution rate. Includes retiree medical costs, investment return, and other factors. Within this section there are three sections that show the development of valuation results, basis of the valuation, and other historical information.

4. Disclosure – Actuarial Standards of Practice No. 35, "Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations" requires additional disclosures in valuation reports effective July 1, 2011. The standard requires that the "disclosure of the mortality assumption should contain sufficient detail to permit another qualified actuary to understand the provision made for future mortality improvement." The valuation report includes this information on future mortality improvement.

**Conclusion:**

- We consider the scope and content of Buck's report to be effective in communicating the financial position and contribution requirements of the PERS and TRS DCR plans. We believe it is in accordance with standard actuarial reporting methodologies for public sector systems.
- We recommend that when plan provisions valued are not yet finalized that Buck indicate this in their valuation report.
- We recommend that any change in valuation assumptions or interpretation of plan provisions be specified with the reason given for the change and the impact of the change.
- We recommend the gains and losses receive further explanation in the valuation report.

Draft

APPENDIX

Draft

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**From:** Hulla, Christopher [mailto:Christopher.Hulla@buckconsultants.com]
**Sent:** Wednesday, March 27, 2013 2:23 PM
**To:** Puckett, Jim P (DOA); (mike.barnhill@alaska.gov)
**Cc:** Thompson, Leslie (DAP1); Bissett, Melissa; Slishinsky, David; Ringel, Tammy; Kaltenbach, Kyla
**Subject:** DCR Tier medical valuation
**Importance:** High

Mike, Jim:

This email serves to document mutual understanding among the Department, Buck and GRS as regards the evolving features of the DCR medical plan and assumptions recommended to value those features as of July 1, 2012.

As regards plan design, the middle column in the table below and attached contains key out-of-pocket features included in Buck DCR medical valuations through July 1, 2011. The rightmost column contains key out-of-pocket features included in Buck DCR medical valuations as of July 1, 2012. The relative value of DCR medical plan features as of July 1, 2012 to DB medical plan features is 0.881, as described in Buck's January 4 and February 7, 2013 letters (this ratio was 0.941 as of July 1, 2011 and earlier). The relative value of DCR Rx plan features as of July 1, 2012 to DB medical plan features is 0.929 (this ratio was 0.993 as of July 1, 2011 and earlier). It is understood that DCR medical plan out-of-pocket amounts will increase each year with an appropriate trend factor such that the plan and participants share equally in health care cost trend over time. Put another way, substantive provisions have been communicated, but no official DCR medical plan yet exists. Therefore, the table below and attached constitutes the most appropriate bases for valuation of the DCR medical plan through July 1, 2011 and as of July 1, 2012, respectively. By reply confirmation we ask that you affirm your understanding of the DCR medical plan design evolution is the same as stated here.

Draft

| Feature | DCR 7/1/2011 and Prior | DCR 7/1/2012 |
|---|---|---|
| **Annual Deductible** | $250<br>Individual<br>$500 Family ($750 but valuation assumes max 2-party contract) | $250<br>Individual<br>$500 Family |
| **Annual out of Pocket Maximum** | Single: $2,500<br>Family: $5,000 ($2,500 / person but valuation assumes max 2-party contract) | In-Network Single:<br>$2,500 In-Network Family:<br>$5,000 Out-of-Network Single: $5,000<br>Out-of Network Family: $10,000 |
| **Lifetime Maximum** | $2,000,000 with $5,000 restore | $3,000,000 with $5,000 restore |
| **Preventive Care** **Well Baby and annual Physicals** | N/A | Max benefit $2,000/member/year |
| **Physician Visits** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Specialist Visits** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **MRI/CAT/Pet Scan** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Lab and X-ray** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Maternity Care** **Office Visits, Labs, X-rays** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Physical, Speech and Occupational Therapy, Chiropractor Visits, Acupuncture Treatment** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Inpatient Hospital** **Including for child birth** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Outpatient Surgery** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Emergency Room Visits** | 80% after deductible | $100 Co-pay |
| **Home Health Care** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Skilled Nursing Facility** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Mental Health** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Procedures requiring Certification** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Chemical Dependency** | 80% after deductible | 80% after deductible In-Network; 60% Out-of-Network |
| **Prescription Drug Program** | 80% after deductible (with minimum and maximum copays and flat mail-order copays but valuation uses 80% coinsurance) | 80% after deductible In-Network; 60% Out-of-Network |

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As regards the benefit value adjustment for increasing member cost sharing features, Buck recommends moving from a 4.8% trend offset to trend each year to a 0.2% offset. The 4.8% factor was used for prior years when our understanding was that the intent of the DCR medical plan was for retires to bare the majority of trend increases. The 0.2% factor better reflects our current understanding that the plan and participants share equally in health care cost trend over time. This change in assumptions drives an approximately threefold increase in the retiree healthcare normal

cost rate, as described in Buck's work during 2012 that showed how sensitive DCR medical valuation results are to a range of assumptions used to project future plan costs. Note that we propose additional assumption changes for the DCR healthcare valuation as of 7/1/2012 (modified HCCTR and contributory participation) that modify the impact of the revised benefit value adjustment for increasing member cost sharing features. Finally, overall favorable claims experience at 7/1/2012 also modifies the impact of the revised benefit value adjustment for increasing member cost sharing features. By reply confirmation we ask that you affirm your understanding of the DCR medical plan benefit value adjustment for increasing member cost sharing features is the same as stated here.

Leslie – please do let us know if you think this email suffices for the OPEB follow up suggested on our call and in your email to Buck dated 3/19/2013.

thx

**Chris Hulla**
**Principal, Health and Productivity**
Buck Consultants, A Xerox Company
1200 17th Street, Suite 1200
Denver, CO 80202

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GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

# ALASKA RETIREMENT MANAGEMENT BOARD

## ACTUARIAL REVIEW OF THE:

## NATIONAL GUARD AND NAVAL MILITIA RETIREMENT SYSTEM PENSION PLAN; AND

## JUDICIAL RETIREMENT SYSTEM PENSION AND HEALTH PLANS

## ROLL-FORWARD ACTUARIAL VALUATIONS

APRIL 9, 2014

GRS
Gabriel Roeder Smith & Company
Consultants & Actuaries
7900 East Union Avenue
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Denver, CO 80237-2746
720.274.7270 phone
303.694.0633 fax
www.gabrielroeder.com

April 9, 2014

Mr. Gary Bader
Chief Investment Officer
Department of Revenue, Treasury Division
Alaska Retirement Management Board
P.O. Box 110405
Juneau, AK 99811-0405

**Subject: Actuarial Review of the Roll-Forward June 30, 2013 valuations for the State of Alaska National Guard and Naval Militia Retirement System (NGNMRS) and Judicial Retirement System (JRS)**

Dear Gary:

We have performed an actuarial review of the June 30, 2013 Roll-Forward Actuarial Valuation for NGNMRS and JRS.

This audit includes a review of the results of the roll forward calculations using actuarial methods, assumptions and procedures from the most recent actuarial valuation reports and Buck Consultants (Buck) letter dated February 18, 2014 (re: Judicial Retirement System and National Guard and Naval Militia Retirement System Roll-Forward Actuarial Valuations as of June 30, 2013). The steps of the process of our audit, including potential areas for future review, are as follows:

1. The first step in reviewing the calculations shown in the Roll-Forward letter was to confirm that the results shown as of June 30, 2012 in the Roll-Forward letter match Buck's June 30, 2012 actuarial valuation reports.

    a. GRS has confirmed that all results match.

2. The second step involved verification of Buck's June 30, 2013 Roll-Forward calculations using information from the most recent June 30, 2012 Buck actuarial valuations and Roll Forward letter and financial statements for the fiscal year ending June 30, 2013. GRS completed this review by estimating these results using the appropriate methods, assumptions and procedures. Overall, the audit results were very close.

3. We calculated the actuarial value of assets as of June 30, 2013 using the financial statements provided and the historical gains and losses shown in the June 30, 2012 report. The results were very close.

4. Finally we audited the contribution rate calculations using the past service base and payment information, and estimated FY13 Gain/Loss noted in Buck's Roll Forward letter.

We wish to thank the staff of the State of Alaska Treasury Division and Buck Consultants without whose willing cooperation this review could not have been completed.

Sincerely,

Gabriel, Roeder, Smith & Company

Leslie L. Thompson, FSA, FCA, EA, MAAA
Senior Consultant

Dana Woolfrey, FSA, FCA, EA, MAAA
Consultant

cc: Ms. Judy Hall

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# State of Alaska Retirement Systems

Actuarial Presentation to the Alaska Retirement Management Board

April 24, 2014

A Xerox Company

buckconsultants

# Agenda

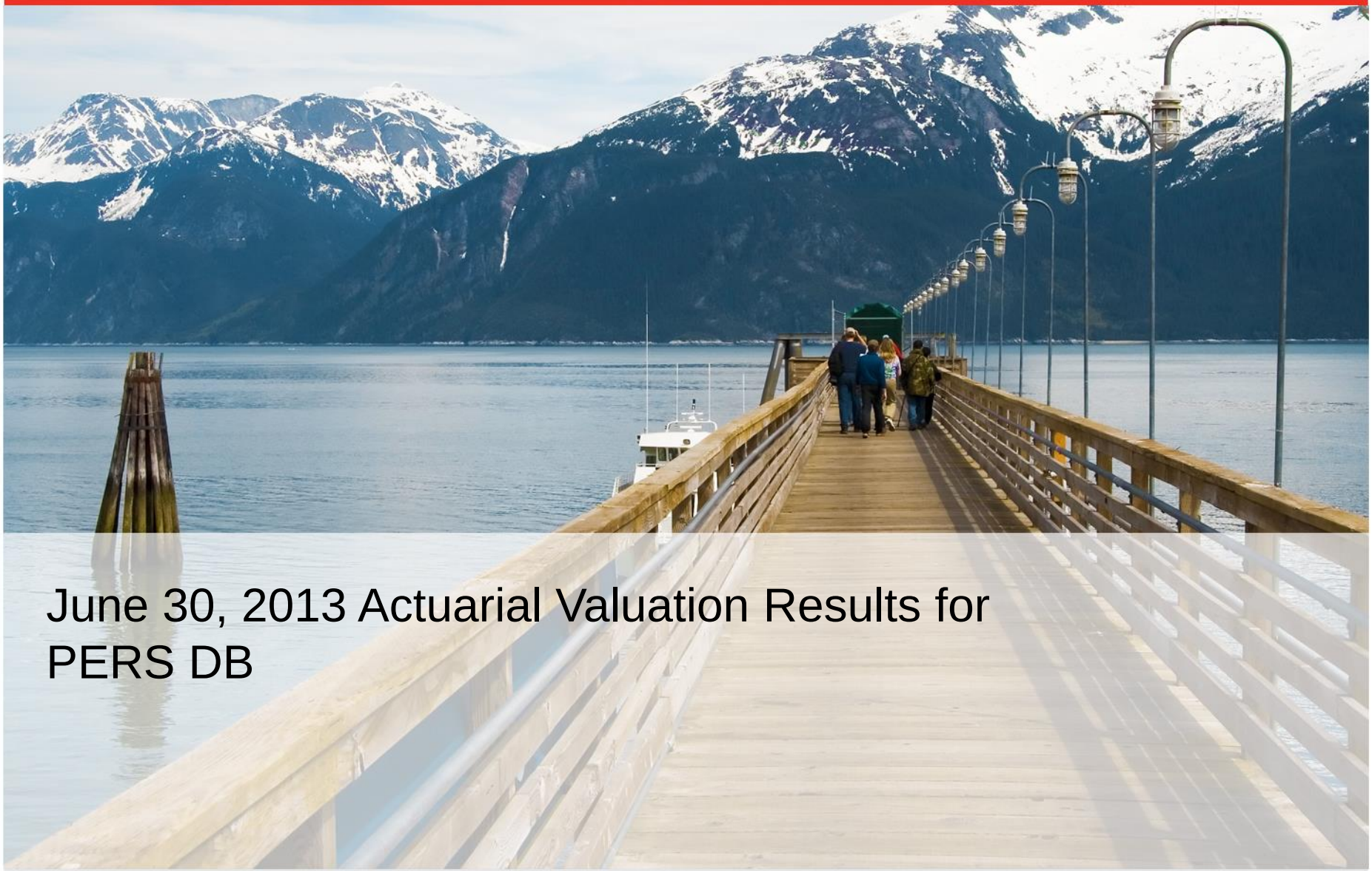
- Changes Since Last Year
- June 30, 2013 Actuarial Valuation Results
  - PERS DB
  - TRS DB
  - DCR PERS
  - DCR TRS
- State Assistance under SB125
- June 30, 2013 Roll-forward Valuation Results
  - JRS
  - NGNMRS
- 30-Year Projections for PERS and TRS
- Questions

# Changes Since Last Year

- No change in Benefit Provisions.
- No change in Actuarial Assumptions.
- No change in Actuarial Methodology.

# Impact of Experience During FY13 on Actuarial Results

- Investment return for FY13 was 12.1%, or 4.1% more than the assumed rate of 8.0%. When smoothed with prior net losses, the return on actuarial asset value was about 4%, creating an asset loss for the year that increased contribution rates for PERS and TRS DB.
  - PERS rate increased 1.76% of pay due to investment experience
  - TRS rate increased 2.44% of pay due to investment experience
- Healthcare claims and Medicare Part B only participation for FY13 were lower than expected, creating moderate gains that reduced contribution rates for healthcare.
  - PERS rate decreased 1.51% of pay
  - TRS rate decreased 1.21% of pay
- The two-year delay in applying actuarial contribution rates to budgeted contributions created losses during FY13.
  - PERS rate increased 0.79% of pay
  - TRS rate increased 1.62% of pay



# June 30, 2013 Actuarial Valuation Results for PERS DB

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# Development of Actuarial Value of Assets
## PERS DB ($ in millions)

| Fiscal Year | Rate of Return | Asset Gain/ (Loss) | Recognition of Gain/(Loss) FY13 | FY14 | FY15 | FY16 | FY17 |
|---|---|---|---|---|---|---|---|
| FY09 | (20.5)% | $ (3,081.8) | $ (616.4) | $ 0 | $ 0 | $ 0 | $ 0 |
| FY10 | 10.2% | $ 167.6 | $ 33.5 | $ 33.5 | $ 0 | $ 0 | $ 0 |
| FY11 | 20.4% | $ 1,196.3 | $ 239.3 | $ 239.3 | $ 239.3 | $ 0 | $ 0 |
| FY12 | 0.2% | $ (888.0) | $ (177.6) | $ (177.6) | $ (177.6) | $ (177.6) | $ 0 |
| FY13 | 12.1% | $ 477.7 | $ 95.5 | $ 95.5 | $ 95.5 | $ 95.6 | $ 95.6 |
| Total | 3.4% | $ (2,128.2) | $ (425.7) | $ 190.7 | $ 157.2 | $ (82.0) | $ 95.6 |

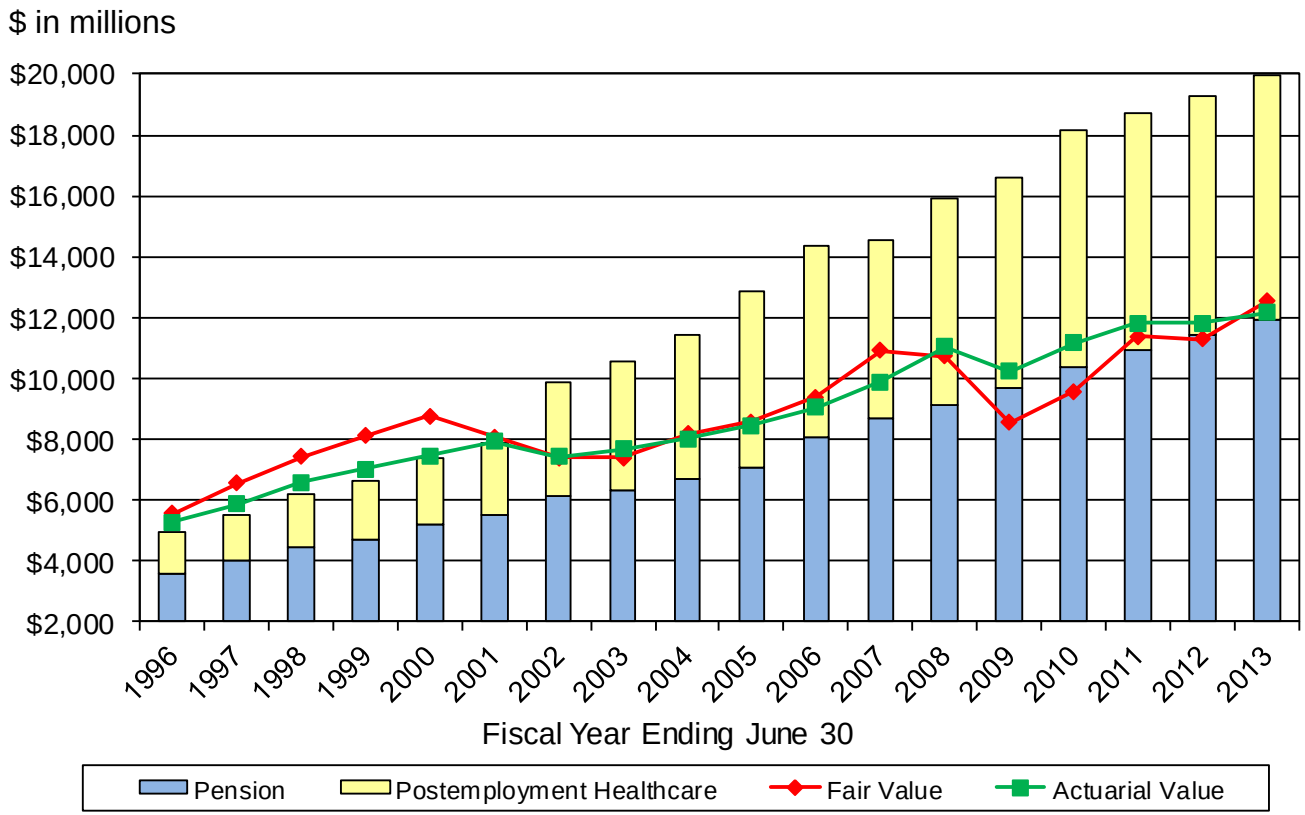
$ 361.5

As of June 30, 2013

| | | |
|---|---|---|
| a. | Fair Value of Assets | $12,524.1 |
| b. | Future Deferred Gain/(Loss) | 361.5 |
| c. | Actuarial Value of Assets (a.-b.) | $12,162.6 |
| d. | Ratio AVA/FVA | 97.1% |

# Asset Smoothing and Accrued Liability for Public Employees' Retirement System

## Pension and Postemployment Healthcare
## 1996 – 2013



# Public Employees' Retirement System

## Peace Officer/Firefighter and Others Combined
## Pension and Postemployment Healthcare

**Actuarial Contribution Under Entry Age Actuarial Cost Method**
($ in millions)

| | June 30, 2013 | | | June 30, 2012 |
|---|---|---|---|---|
| **Funding** | Pension | Postemployment Healthcare | Total | Total |
| 1. Actuarial Accrued Liability | $ 11,946 | $ 8,047 | $ 19,993 | $ 19,292 |
| 2. Actuarial Value of Assets | 6,511 | 5,652 | 12,163 | 11,832 |
| 3. Unfunded Actuarial Accrued Liability | $ 5,435 | $ 2,395 | $ 7,830 | $ 7,460 |
| 4. Funded Ratio | 54.5% | 70.2% | 60.8% | 61.3% |
| 5. Normal Cost Contribution | | | | |
| • Total Normal Cost | $ 161 | $ 86 | $ 247 | $ 262 |
| • Member Contribution | (106) | 0 | (106) | (110) |
| • Employer Normal Cost | $ 55 | $ 86 | $ 141 | $ 152 |
| • % of Total Pay | 2.38% | 3.73% | 6.11% | 6.82% |
| 6. Past Service Cost | | | | |
| • Amortization of Unfunded 25 Years | $ 520 | $ 272 | $ 792 | $ 742 |
| • % of Total pay | 22.46% | 11.71% | 34.17% | 33.03% |
| 7. Employer/State Contribution for FY16 | | | | |
| • Amount | $ 575 | $ 358 | $ 933 | $ 894 |
| • % of Total Pay | 24.84% | 15.44% | 40.28% | 39.85% |

Total Pay is expected to be $2,317 million for FY14, was $2,246 for FY13.

# Public Employees' Retirement System

## Gain/(Loss) on Total Accrued Liability
## ($ in thousands)

*Programming and data changes.

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# Public Employees' Retirement System

## Changes in Unfunded Liability Since Last Year
## ($ in millions)

| Development of Change in Unfunded Liability during FY13 | Pension | Healthcare | Total |
|---|---|---|---|
| 1. 2012 Unfunded Liability | $4,898 | $2,562 | $7,460 |
| a. Interest on unfunded liability | $392 | $205 | $597 |
| b. Normal cost | 167 | 96 | 263 |
| c. Employee contributions | (111) | (1) | (112) |
| d. Employer contributions | (180) | (230) | (410) |
| e. State relief under SB 125 | (164) | (143) | (307) |
| f. Medicare Part D subsidy | 0 | (10) | (10) |
| g. Interest on b., c., d., e., and f. | (4) | (8) | (12) |
| h. Expected change in unfunded liability during FY13 | $100 | $(91) | $9 |
| 2. Expected 2013 Unfunded Liability | $4,998 | $2,471 | $7,469 |
| a. Liability (gains) / losses | $56 | $(164) | $(108) |
| b. Assets (gains) / losses | 381 | 88 | 469 |
| c. Other changes in unfunded liability during FY13 (a. + b.) | $437 | $(76) | $361 |
| 3. Actual 2013 Unfunded Liability | $5,435 | $2,395 | $7,830 |

# Public Employees' Retirement System

## Peace Officer/Firefighter and Others Combined
## Change in Total Employer/State Contribution Rate

| | Pension | Healthcare | Total |
|---|---|---|---|
| 1. Last year's total Employer/State contribution rate | 23.24% | 16.61% | 39.85% |
| 2. Change due to: | | | |
| • Effect of two-year delay in the contribution rate | 0.78% | 0.01% | 0.79% |
| • Asset experience | 1.43% | 0.33% | 1.76% |
| • Salary increases | 0.23% | N/A | 0.23% |
| • Demographic and medical experience* | (0.84%) | (1.51%) | (2.35%) |
| • Total change | 1.60% | (1.17%) | 0.43% |
| 3. Total Employer/State contribution rate this year | 24.84% | 15.44% | 40.28% |

*Includes changes in future healthcare claims costs.

# June 30, 2013 Actuarial Valuation Results for TRS DB

A Xerox Company

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# Development of Actuarial Value of Assets
## TRS DB ($ in millions)

| Fiscal Year | Rate of Return | Asset Gain/ (Loss) | Recognition of Gain/(Loss) FY13 | FY14 | FY15 | FY16 | FY17 |
|---|---|---|---|---|---|---|---|
| FY09 | (21.0)% | $ (1,392.0) | $ (278.4) | $ 0.0 | $ 0.0 | $ 0.0 | $ 0.0 |
| FY10 | 10.6% | $ 86.1 | $ 17.2 | $ 17.2 | $ 0.0 | $ 0.0 | $ 0.0 |
| FY11 | 20.5% | $ 513.6 | $ 102.7 | $ 102.7 | $ 102.7 | $ 0.0 | $ 0.0 |
| FY12 | 0.2% | $ (367.1) | $ (73.4) | $ (73.4) | $ (73.4) | $ (73.4) | $ 0.0 |
| FY13 | 12.2% | $ 211.3 | $ 42.3 | $ 42.3 | $ 42.3 | $ 42.3 | $ 42.2 |
| Total | 3.4% | $ (948.1) | $ (189.6) | $ (88.8) | $ 71.6 | $ (31.1) | $ 42.2 |

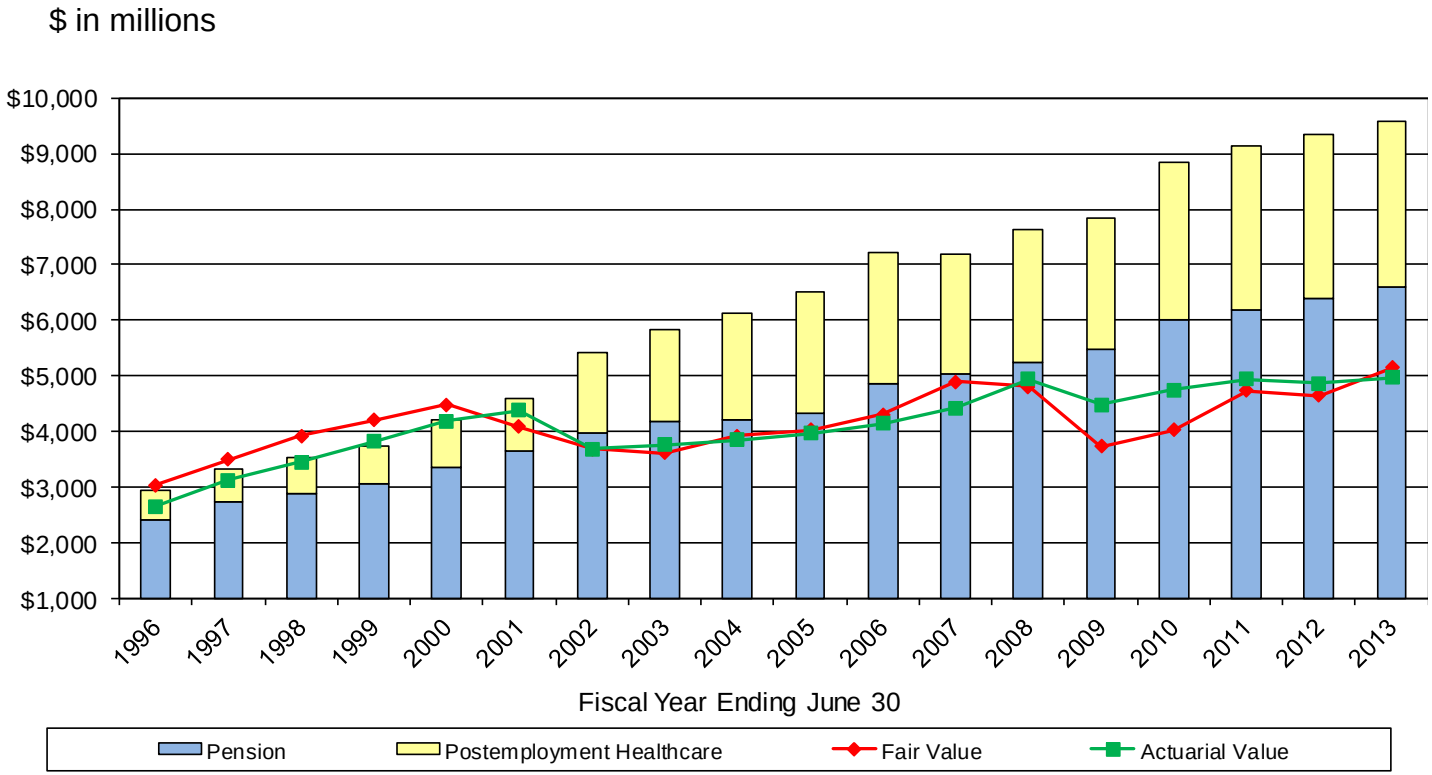
$ 171.5

As of June 30, 2013

| | |
|---|---|
| a. Fair Value of Assets | $ 5,145.6 |
| b. Future Deferred Gain/(Loss) | 171.5 |
| c. Actuarial Value of Assets (a.-b.) | $ 4,974.1 |
| d. Ratio AVA/FVA | 96.7% |

# Asset Smoothing and Accrued Liability for Teachers' Retirement System

## Pension and Postemployment Healthcare
## 1996 – 2013



# Teachers' Retirement System

## Pension and Postemployment Healthcare

**Actuarial Contribution Under Entry Age Actuarial Cost Method**
($ in millions)

| Funding | June 30, 2013 | | | June 30, 2012 |
|---|---|---|---|---|
| | Pension | Postemployment Healthcare | Total | Total |
| 1. Actuarial Accrued Liability | $ 6,589 | $ 3,003 | $ 9,592 | $ 9,346 |
| 2. Actuarial Value of Assets | 3,170 | 1,804 | 4,974 | 4,869 |
| 3. Unfunded Actuarial Accrued Liability | $ 3,419 | $ 1,199 | $ 4,618 | $ 4,477 |
| 4. Funded Ratio | 48.1% | 60.1% | 51.9% | 52.1% |
| 5. Normal Cost Contribution | | | | |
| • Total Normal Cost | $ 64 | $ 24 | $ 88 | $ 96 |
| • Member Contribution | (46) | 0 | (46) | (48) |
| • Employer Normal Cost | $ 18 | $ 24 | $ 42 | $ 48 |
| • % of Total Pay | 2.50% | 3.20% | 5.70% | 6.40% |
| 6. Past Service Cost | | | | |
| • Amortization of Unfunded 25 Years | $ 336 | $ 133 | $ 469 | $ 446 |
| • % of Total pay | 45.56% | 17.98% | 63.54% | 59.91% |
| 7. Employer/State Contribution for FY16 | | | | |
| • Amount | $ 354 | $ 157 | $ 511 | $ 494 |
| • % of Total Pay | 48.06% | 21.18% | 69.24% | 66.31% |

Total Pay is expected to be $737 million for FY14, was $744 for FY13.

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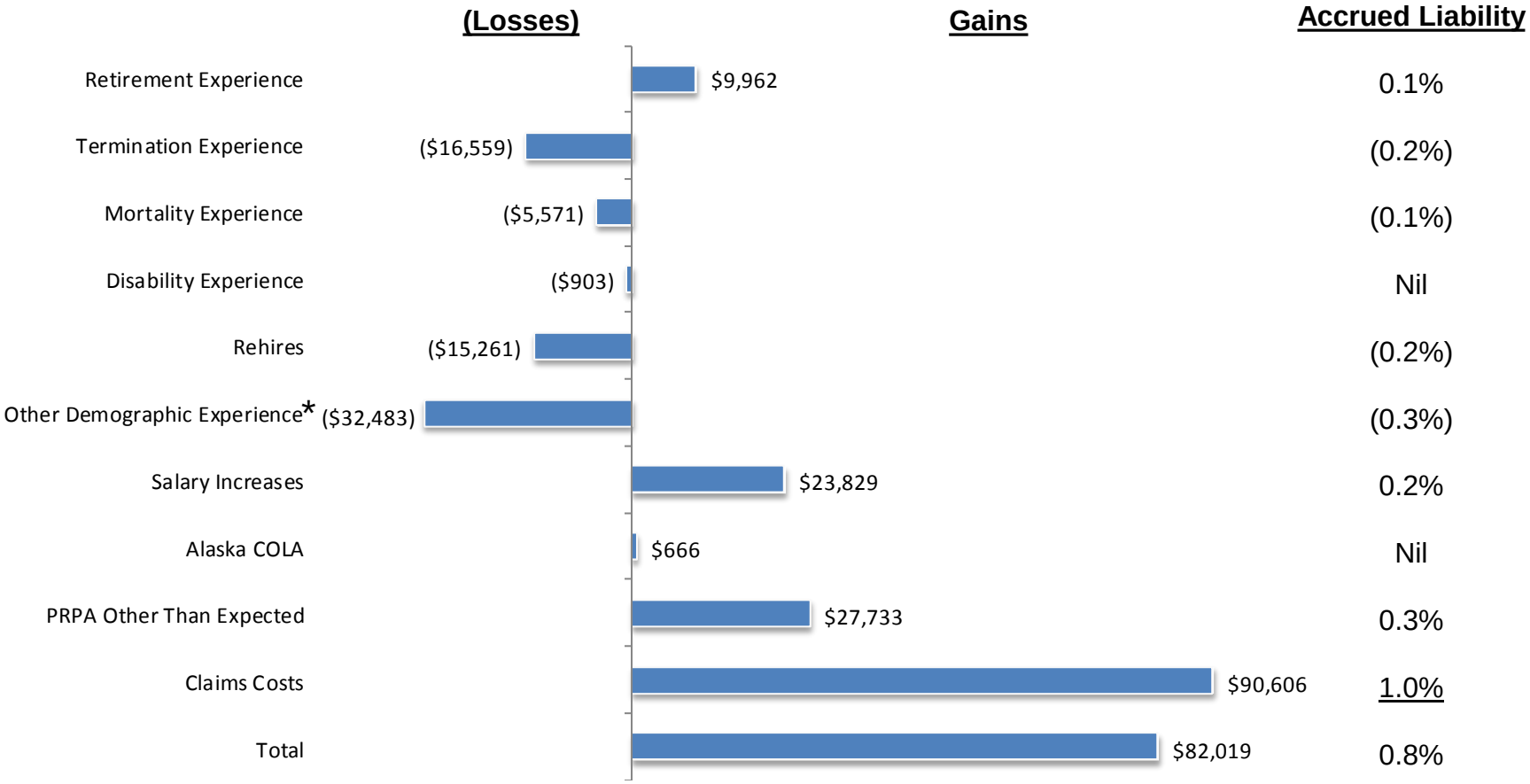
# Teachers' Retirement System

## Gain/(Loss) on Total Accrued Liability
## ($ in thousands)




**From Expected Accrued Liability of $9,674 million**

*Programming and data changes.

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# Teachers' Retirement System

## Changes in Unfunded Liability Since Last Year
## ($ in millions)

| Development of Change in Unfunded Liability during FY13 | Pension | Healthcare | Total |
|---|---|---|---|
| 1. 2012 Unfunded Liability | $3,205 | $1,272 | $4,477 |
| a. Interest on unfunded liability | $256 | $102 | $358 |
| b. Normal cost | 69 | 27 | 96 |
| c. Employee contributions | (50) | nil | (50) |
| d. Employer contributions | (37) | (35) | (73) |
| e. Employer legislature relief | (197) | (106) | (303) |
| f. Medicare Part D subsidy | 0 | (4) | (4) |
| g. Interest on b., c., d., e., and f. | (6) | (4) | (9) |
| h. Expected change in unfunded liability during FY13 | $35 | $(20) | $15 |
| 2. Expected 2013 Unfunded Liability | $3,240 | $1,252 | $4,492 |
| a. Liability (gains) / losses | $1 | $(83) | $(82) |
| b. Assets (gains) / losses | 178 | 30 | 208 |
| c. Other changes in unfunded liability during FY13 | $179 | $(53) | $126 |
| 3. Actual 2013 Unfunded Liability | $3,419 | $1,199 | $4,618 |

# Teachers' Retirement System

## Change in Total Employer/State Contribution Rate

| | Pension | Healthcare | Total |
|---|---|---|---|
| 1. Last year's total Employer/State contribution rate | 44.55% | 21.76% | 66.31% |
| 2. Change due to: | | | |
| • Effect of two-year delay in the contribution rate | 1.34% | 0.28% | 1.62% |
| • Asset experience | 2.09% | 0.35% | 2.44% |
| • Salary increases | (0.30%) | N/A | (0.30%) |
| • Demographic and medical experience* | 0.38% | (1.21%) | (0.83%) |
| • Total change | 3.51% | (0.58%) | 2.93% |
| 3. Total Employer/State contribution rate this year | 48.06% | 21.18% | 69.24% |

*Includes changes in future healthcare claims costs.

June 30, 2013 Actuarial Valuation Results for

# PERS & TRS DCR

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# Public Employees' Retirement System
# Defined Contribution Retirement Plan
## Peace Officer/Firefighter and Others Combined
## Occupational Death and Disability and Retiree Medical

**Actuarial Contribution Under Entry Age Actuarial Cost Method**
($ in thousands)

| Funding | June 30, 2013 | | | June 30, 2012 |
|---|---|---|---|---|
| | Occupational Death and Disability | Retiree Medical | Total | Total |
| 1. Actuarial Accrued Liability | $ 3,603 | $ 60,282 | $ 63,885 | $ 46,921 |
| 2. Actuarial Value of Assets | 11,373 | 20,336 | 31,709 | 24,915 |
| 3. Unfunded Actuarial Accrued Liability | $ (7,770) | $ 39,946 | $ 32,176 | $ 22,006 |
| 4. Funded Ratio | 315.7% | 33.7% | 49.6% | 53.1% |
| 5. Annual Actuarial Contribution | | | | |
| • Normal Cost | $ 2,963 | $ 10,944 | $ 13,907 | $ 11,870 |
| • Amortization of Unfunded Over 25 Years | (522) | 2,546 | 2,024 | 1,352 |
| • Total Contribution | $ 2,441 | $ 13,490 | $ 15,931 | $ 13,222 |
| • % of DCR Pay | 0.30% | 1.68% | 1.98% | 1.96% |

Total DCR pay is expected to be $802,645 for FY14, was $675,976 for FY13.

# Public Employees' Retirement System - DCR

## Peace Officer/Firefighter and Others Combined
## Change in Total Employer Contribution Rate

| | Occupational Death & Disability | Retiree Medical | Total |
|---|---|---|---|
| 1. Last year's total Employer contribution rate | 0.30% | 1.66% | 1.96% |
| 2. Change due to: | | | |
| • Effect of two-year delay in the contribution rate | nil | nil | nil |
| • Asset experience | nil | nil | nil |
| • Demographic and medical experience* | nil | 0.02% | 0.02% |
| • Total change | 0.00% | 0.02% | 0.02% |
| 3. Total Employer contribution rate this year | 0.30% | 1.68% | 1.98% |

*Includes changes in future healthcare claims costs.

# Teachers' Retirement System
# Defined Contribution Retirement Plan
## Occupational Death and Disability and Retiree Medical

**Actuarial Contribution Under Entry Age Actuarial Cost Method**
($ in thousands)

| | June 30, 2013 | | | June 30, 2012 |
|---|---|---|---|---|
| **Funding** | Occupational Death and Disability | Retiree Medical | Total | Total |
| 1. Actuarial Accrued Liability | $ 80 | $ 22,058 | $ 22,138 | $ 16,874 |
| 2. Actuarial Value of Assets | 2,532 | 8,614 | 11,146 | 9,285 |
| 3. Unfunded Actuarial Accrued Liability | $ (2,452) | $ 13,444 | $ 10,992 | $ 7,589 |
| 4. Funded Ratio | 3,165.0% | 39.1% | 50.3% | 55.0% |
| 5. Annual Actuarial Contribution | | | | |
| • Normal Cost | $ 104 | $ 3,423 | $ 3,527 | $ 3,351 |
| • Amortization of Unfunded Over 25 Years | (104) | 851 | 747 | 516 |
| • Total Contribution | $ 0 | $ 4,274 | $ 4,274 | $ 3,867 |
| • % of DCR Pay | 0.00% | 2.04% | 2.04% | 2.04% |

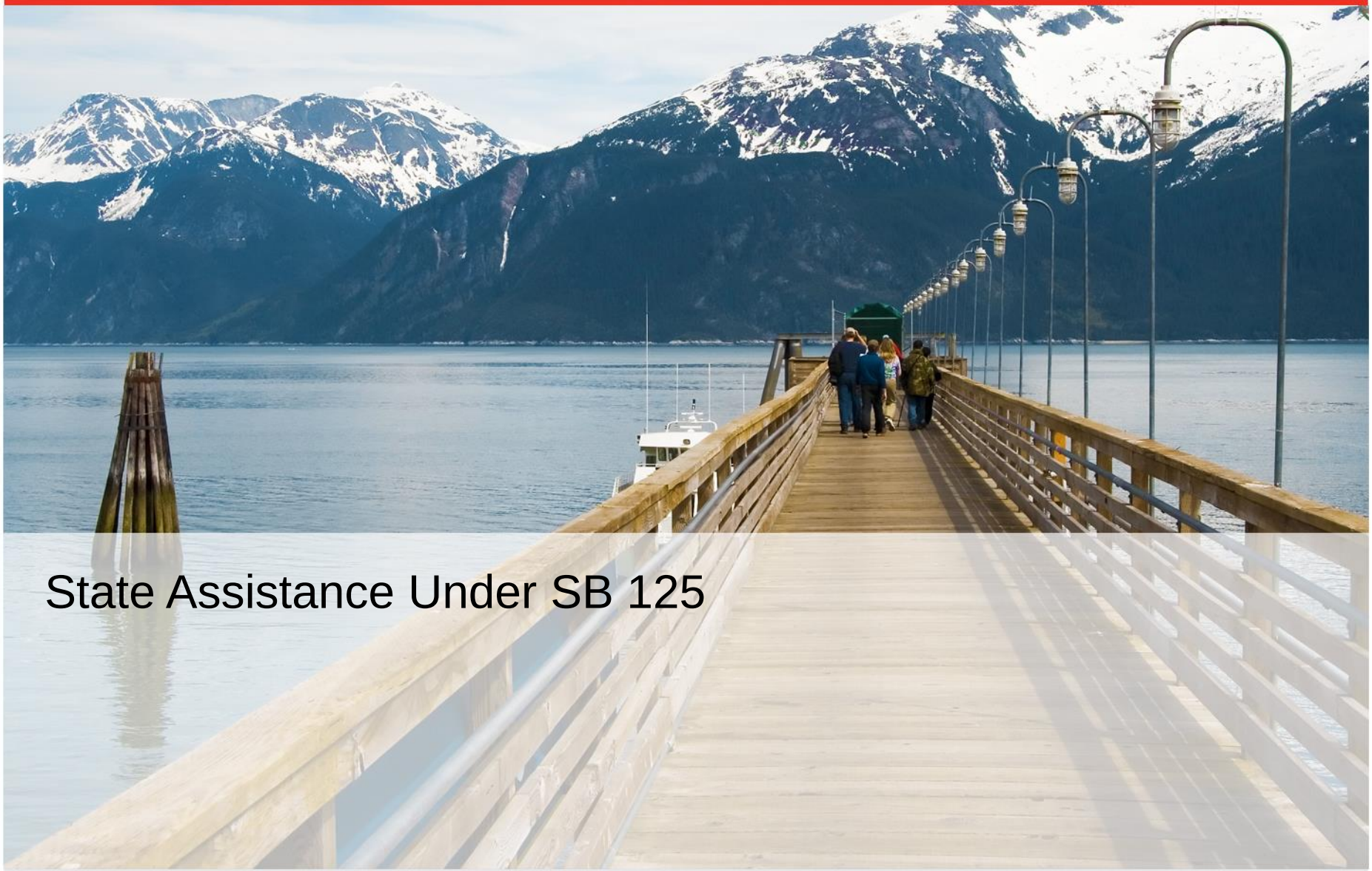
Total DCR pay is expected to be $210,004 for FY14, was $189,680 for FY13.

# Teachers' Retirement System - DCR

## Change in Total Employer Contribution Rate

| | Occupational Death & Disability | Retiree Medical | Total |
|---|---|---|---|
| 1. Last year's total Employer contribution rate | 0.00% | 2.04% | 2.04% |
| 2. Change due to: | | | |
| • Effect of two-year delay in the contribution rate | nil | nil | nil |
| • Asset experience | nil | nil | nil |
| • Demographic and medical experience* | nil | nil | nil |
| • Total change | 0.00% | 0.00% | 0.00% |
| 3. Total Employer contribution rate this year | 0.00% | 2.04% | 2.04% |

*Includes changes in future healthcare claims costs.



# State Assistance Under SB 125

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# Contribution Background

- SB 125 capped the employer contribution rate based on Total Salary (DB plus DCR)
  - PERS rate = 22%
  - TRS rate = 12.56%
- SB 125 also provided for State assistance if the actuarial rate is above the capped rate for both the DB and DCR plan combined

# Summary of Results
# Employer Rates for DCR

| PERS | Rate based on DCR Pay | Rate based on Total DB & DCR FY16 Pay |
|---|---|---|
| Retiree Medical | 1.68% | 0.77% |
| Occ D&D | 0.30% | 0.14% |
| HRA | 3.00% | 1.39% |
| DC Account | 5.00% | 2.31% |
| Total Employer Rate | 9.98% | 4.61% |

| TRS | Rate based on DCR Pay | Rate based on Total DB & DCR FY16 Pay |
|---|---|---|
| Retiree Medical | 2.04% | 0.81% |
| Occ D&D | 0.00% | 0.00% |
| HRA | 3.00% | 1.19% |
| DC Account | 7.00% | 2.79% |
| Total Employer Rate | 12.04% | 4.79% |

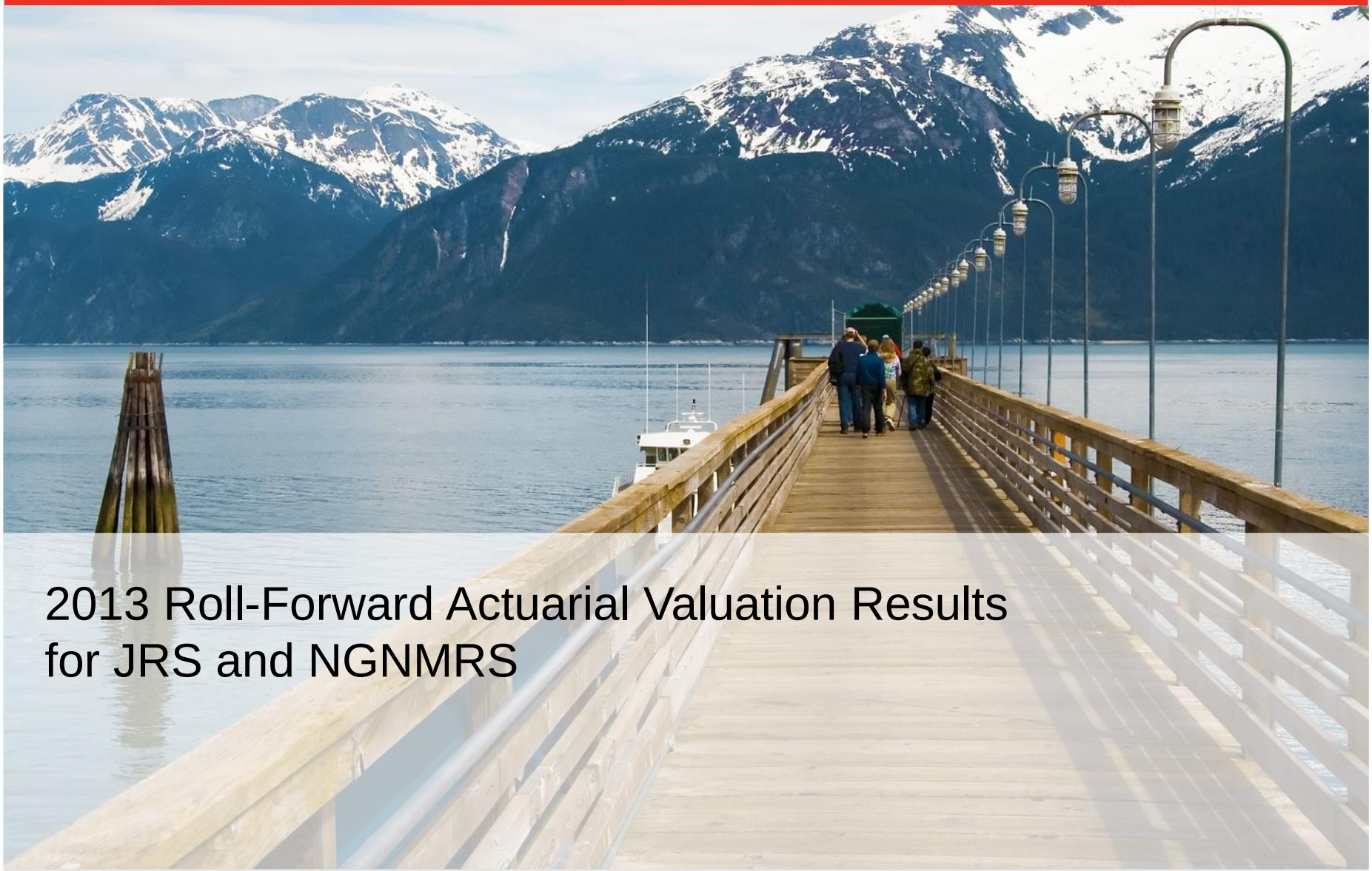
# Development of Additional State Contribution for FY16

| | PERS | | TRS | |
|---|---|---|---|---|
| | Rate | Amount (in millions) | Rate | Amount (in millions) |
| **Expected Payroll for FY16** | | | | |
| • DB | | $ 1,310.9 | | $ 468.5 |
| • DCR | | 1,125.5 | | 310.1 |
| • Total | | $ 2,436.4 | | $ 778.6 |
| **Employer State Actuarial Contributions** | | | | |
| • Actuarial Contribution for DB Plan | 40.28% | $ 981.4 | 69.24% | $ 559.1 |
| • DCR Contribution | 4.61% | 112.3 | 4.79% | 37.3 |
| • Total Required Contribution | 44.89% | $ 1,093.7 | 74.03% | $ 576.4 |
| • Total Limited Employer Contribution | (22.00%) | (536.0) | (12.56%) | (97.8) |
| • Additional State Contribution for FY16 | 22.89% | $ 557.7 | 61.47% | $ 478.6 |

Total State Assistance for FY16 = $ 1,036.3 million
Total State Assistance for FY15 = $ 975.3 million
Increase = $ 61.0 million

# PERS DB and DCR Contribution Amount Breakdown for FY16 (in millions)

| | | | |
|---|---|---|---|
| **Employer Contributions** | | | **As a % of Total** |
| • State | $ | 315.4 | 59% |
| • School Districts Funded by State | | 15.4 | 3% |
| • Other School Districts | | 65.8 | 12% |
| • Cities, Boroughs and Municipal | | 120.8 | 23% |
| • All Other Employers (Hospitals, Authorities, etc.) | | 18.6 | 3% |
| **Total Limited Employer Contributions** | $ | 536.0 | 100% |
| | | | |
| **Total PERS Amount Funded by State** | | | |
| • State as an Employer | $ | 315.4 | |
| • PERS State Assistance | | 557.7 | |
| • Total PERS State Contribution | $ | 873.1 | |
| | | | |
| **Total PERS Required Contribution** | $ | 1,093.7 | |
| **% Funded by State** | | 80% | |



# 2013 Roll-Forward Actuarial Valuation Results for JRS and NGNMRS

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# Judicial Retirement System – Roll-Forward Valuation

## Pension and Healthcare

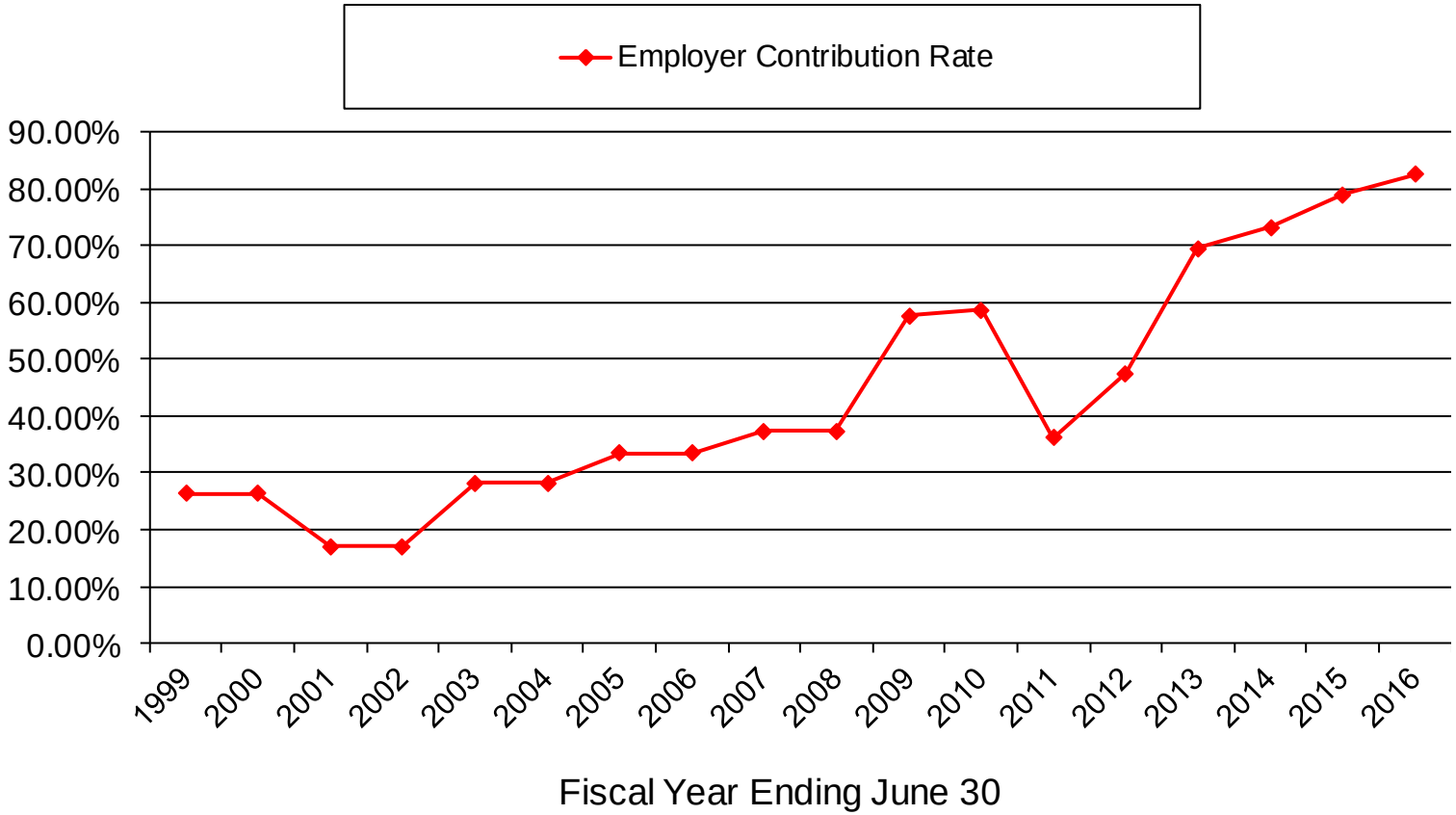
**Actuarial Contribution Under Entry Age Actuarial Cost Method**
($ in thousands)

| Funding | June 30, 2013 | | | June 30, 2012 |
|---|---|---|---|---|
| | Pension | Postemployment Healthcare | Total | Total |
| 1. Actuarial Accrued Liability | $ 191,505 | $ 17,583 | $ 209,088 | $ 198,922 |
| 2. Actuarial Value of Assets | 115,033 | 21,706 | 136,739 | 133,706 |
| 3. Unfunded Actuarial Accrued Liability | $ 76,472 | $ (4,123) | $ 72,349 | $ 65,216 |
| 4. Funded Ratio | 60.1% | 123.4% | 65.4% | 67.2% |
| 5. Normal Cost Contribution | | | | |
| • Total Normal Cost | $ 5,186 | $ 466 | $ 5,652 | $ 5,471 |
| • Member Contribution | (705) | 0 | (705) | (680) |
| • Employer Normal Cost | $ 4,481 | $ 466 | $ 4,947 | $ 4,791 |
| • % of Total Pay | 35.92% | 3.74% | 39.66% | 39.79% |
| 6. Past Service Cost | | | | |
| • Amortization of Unfunded 25 Years | $ 5,486 | $ (145) | $ 5,341 | $ 4,728 |
| • % of Total pay | 43.98% | (1.16%) | 42.82% | 39.27% |
| 7. Employer/State Contribution for FY16 | | | | |
| • Amount | $ 9,967 | $ 321 | $ 10,288 | $ 9,519 |
| • % of Total Pay | 79.90% | 2.58% | 82.48% | 79.06% |

Total Pay is expected to be $12,475K for FY14, was $12,039K for FY13.

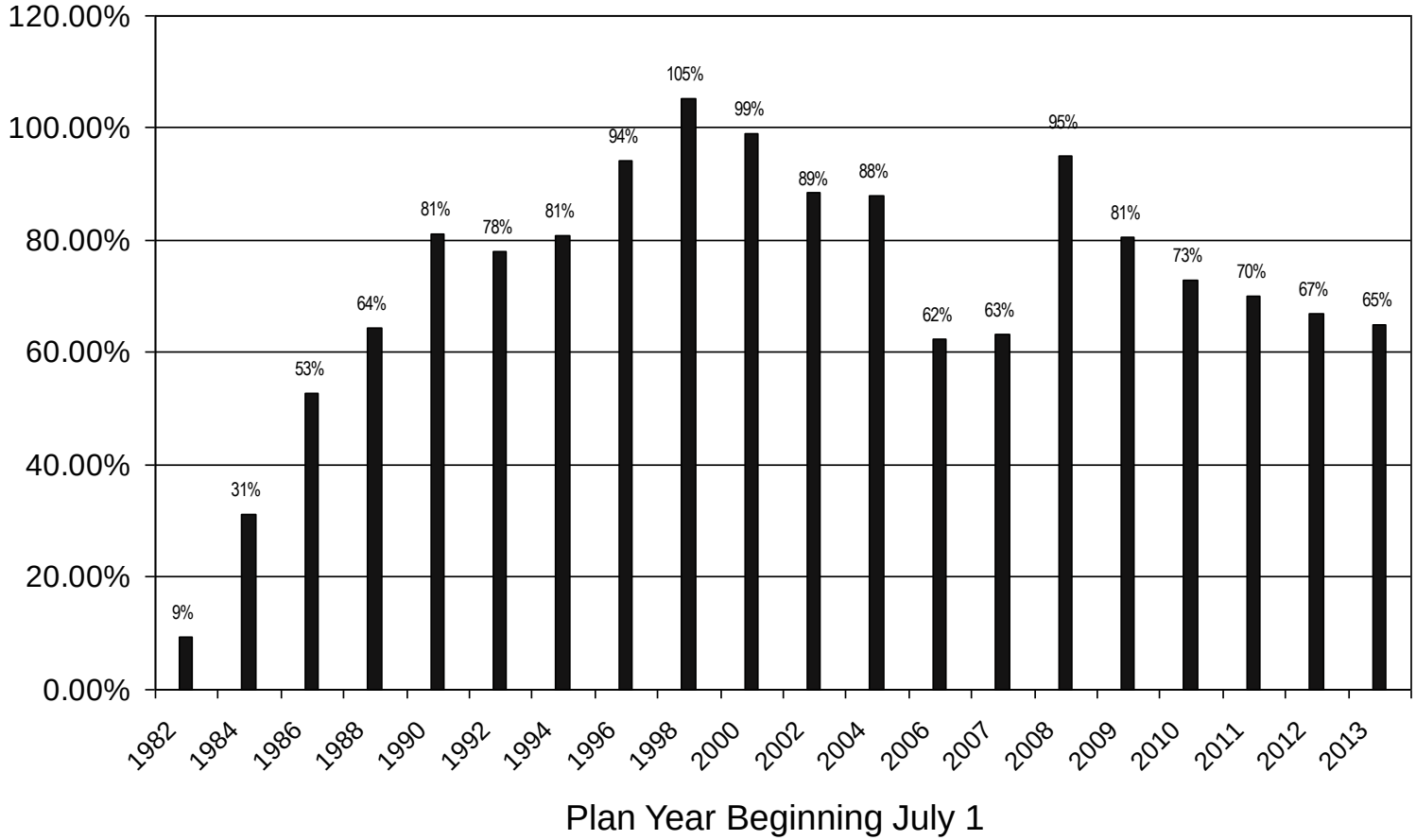
# Judicial Retirement System

## Total Employer Contribution Rate History
## 1999 - 2016



# JRS Funding Ratio History

## Pension and Healthcare
## Based on Valuation Assets



# National Guard and Naval Militia Retirement System – Roll-Forward Valuation

**Actuarial Contribution Under Entry Age Actuarial Cost Method**
($ in thousands)

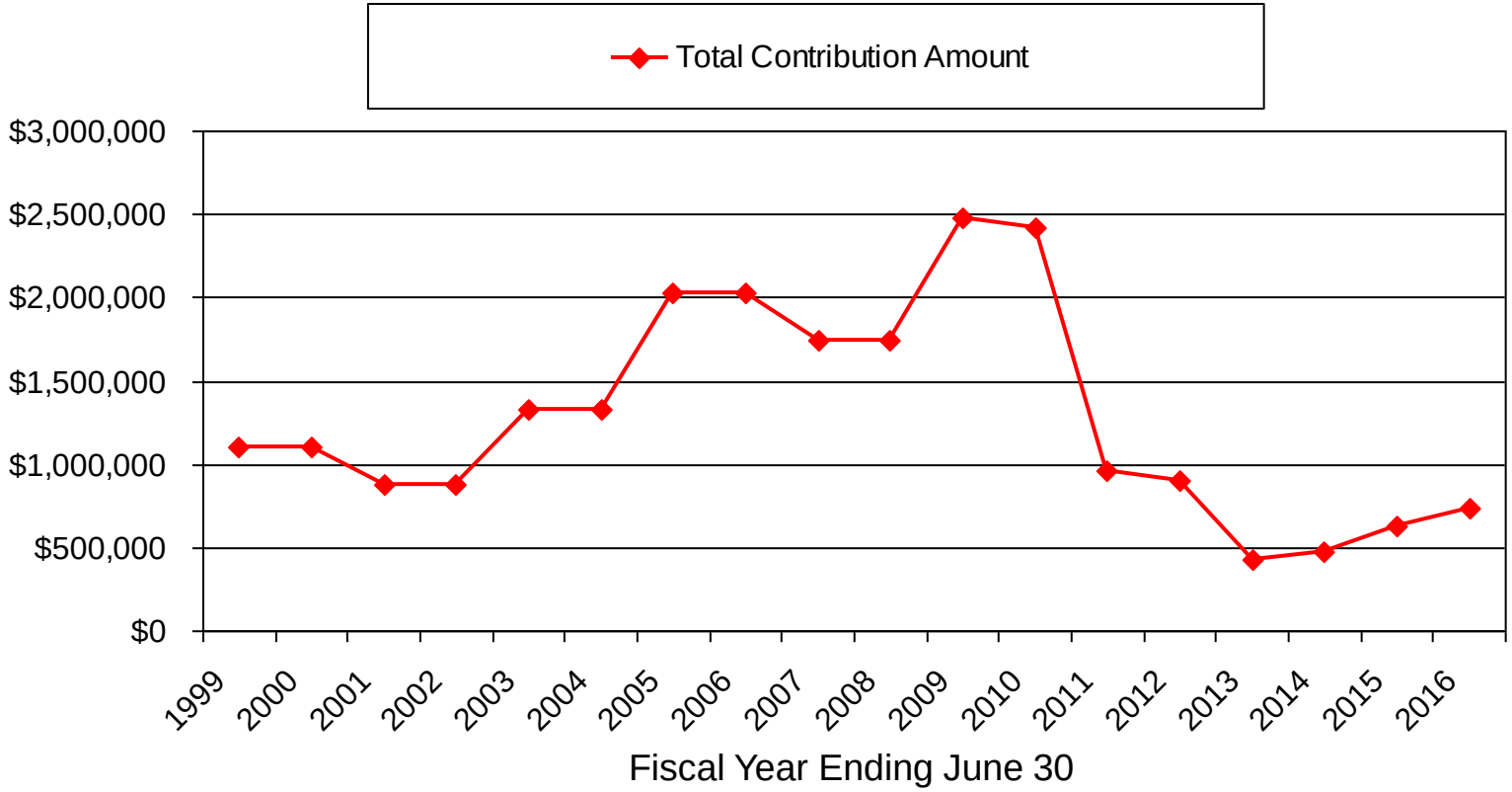
| Funding | June 30, 2013* (Roll-Forward) | June 30, 2012* |
|---|---|---|
| 1. Actuarial Accrued Liability | $ 33,908 | $ 32,771 |
| 2. Actuarial Value of Assets | 34,179 | 33,682 |
| 3. Unfunded Actuarial Accrued Liability | $ (271) | $ (911) |
| 4. Funded Ratio | 100.8% | 102.8% |
| 5. Annual Actuarial Contribution | | |
| • Normal Cost | $ 632 | $ 632 |
| • Amortization of Unfunded | (42) | (143) |
| • Expense Load | 145 | 138 |
| • Total Contribution | $ 735 | $ 627 |

*Contribution calculated by amortizing the unfunded accrued liability over 8 years.

# National Guard and Naval Militia Retirement System

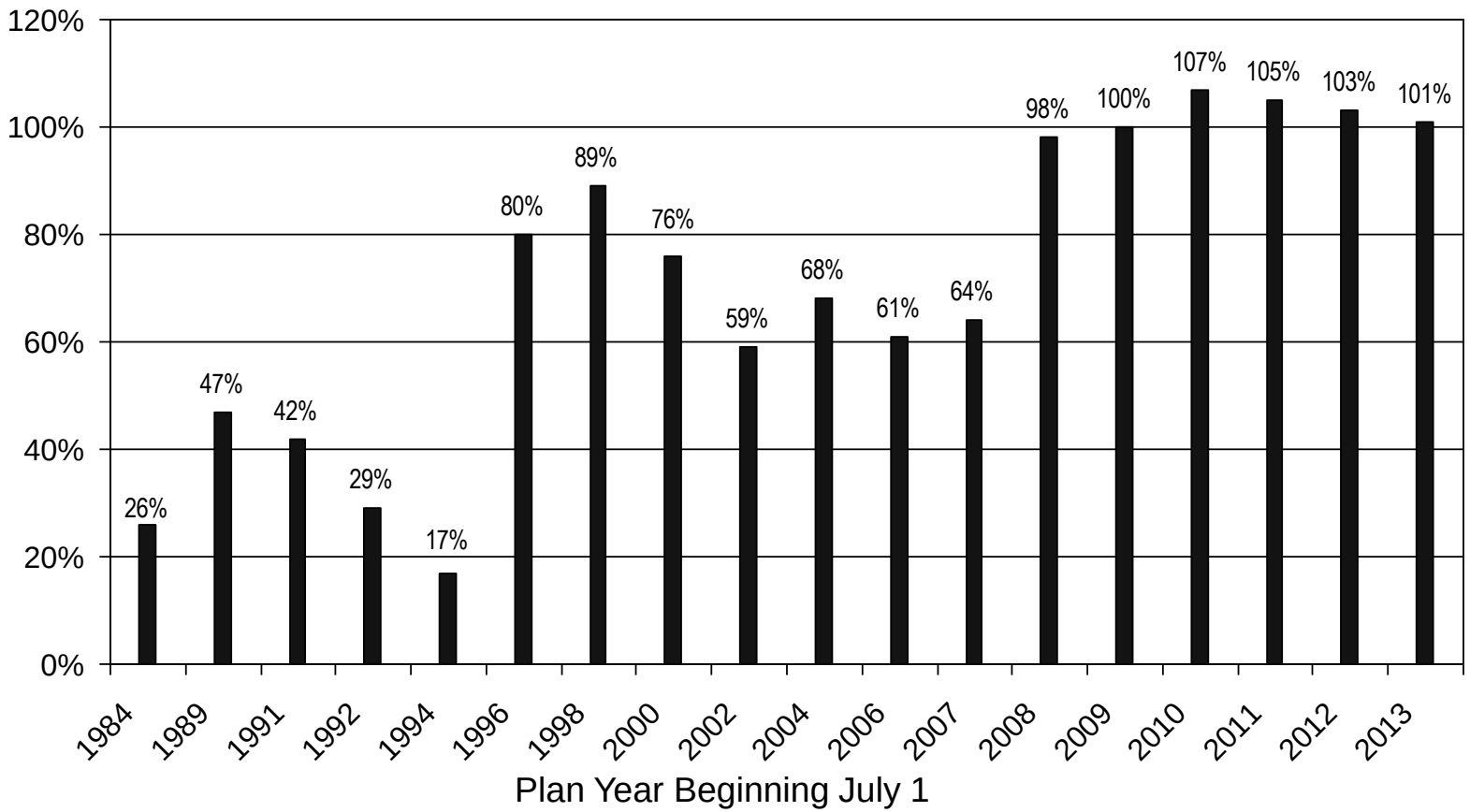
## Total Contribution Amount History

## 1999 - 2016



# National Guard and Naval Militia Retirement System Funding Ratio History

## Based on Valuation Assets



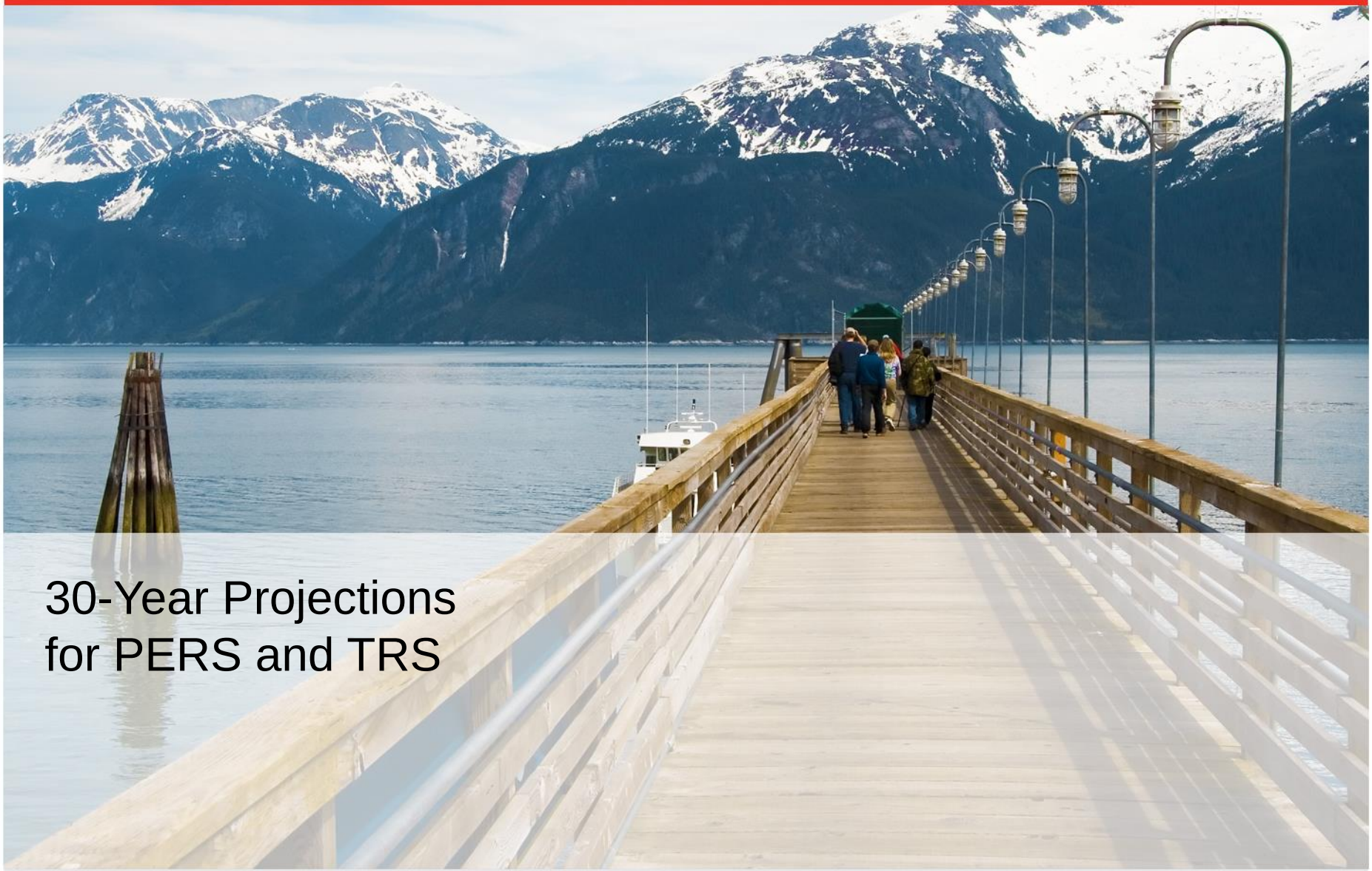
# Conclusions and Comments

JRS

- Plan experienced investment gains over the past year. Rate of return on fair value was 12.3%, or 4.3% more than the 8.0% assumed rate of return
- Asset loss experienced on actuarial value due to recognition of prior losses in smoothing method. Rate of return on actuarial value was 3.6%, or 4.4% less than the 8.0% assumed rate of return
- Asset loss increased JRS contribution rate from 79.06% to 82.48%

NGNMRS

- Plan experienced investment gains over the past year. Rate of return on fair value was 7.6%, or 0.6% more than the 7.0% assumed rate of return
- Asset loss experienced on actuarial value due to recognition of prior losses in smoothing method. Rate of return on actuarial value was 4.6%, or 2.4% less than 7.0% assumed rate of return
- Asset loss increased NGNMRS contribution amount from $627K to $735K



# 30-Year Projections for PERS and TRS

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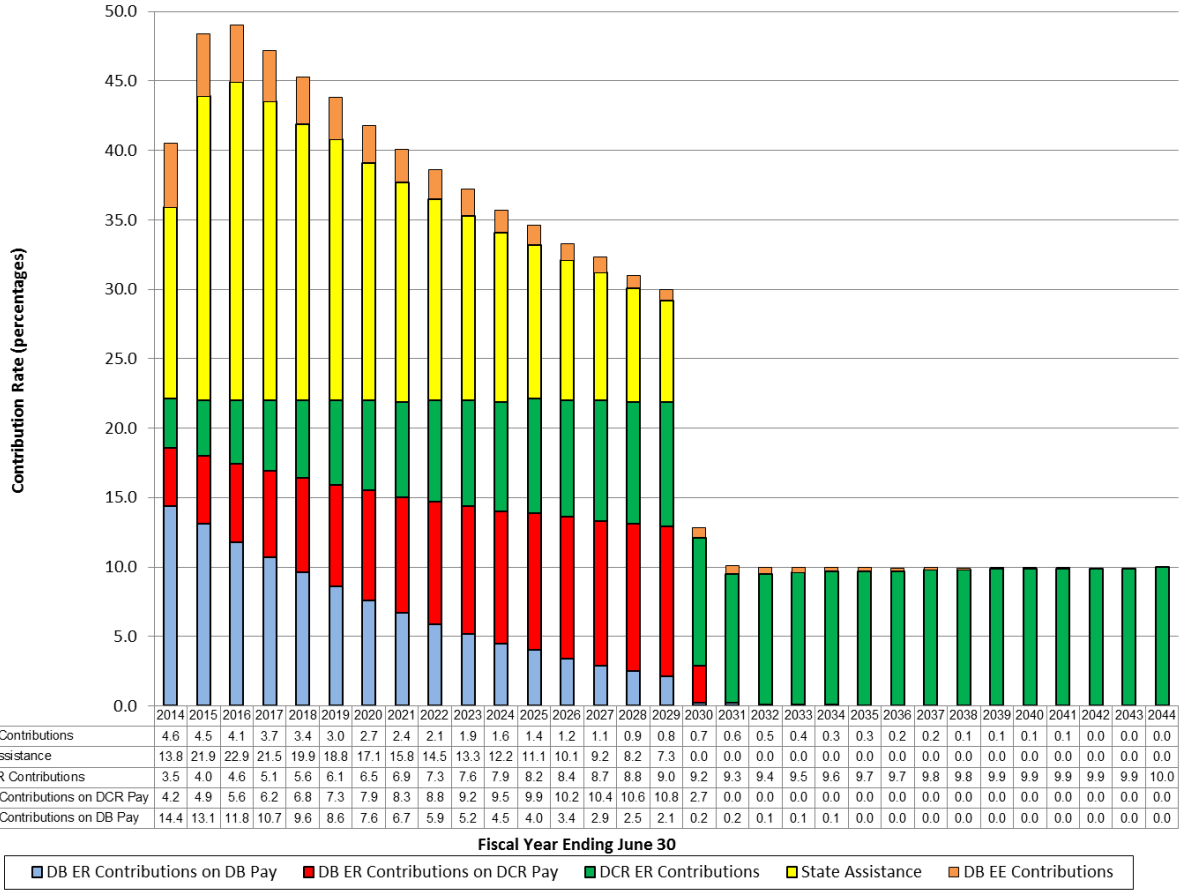
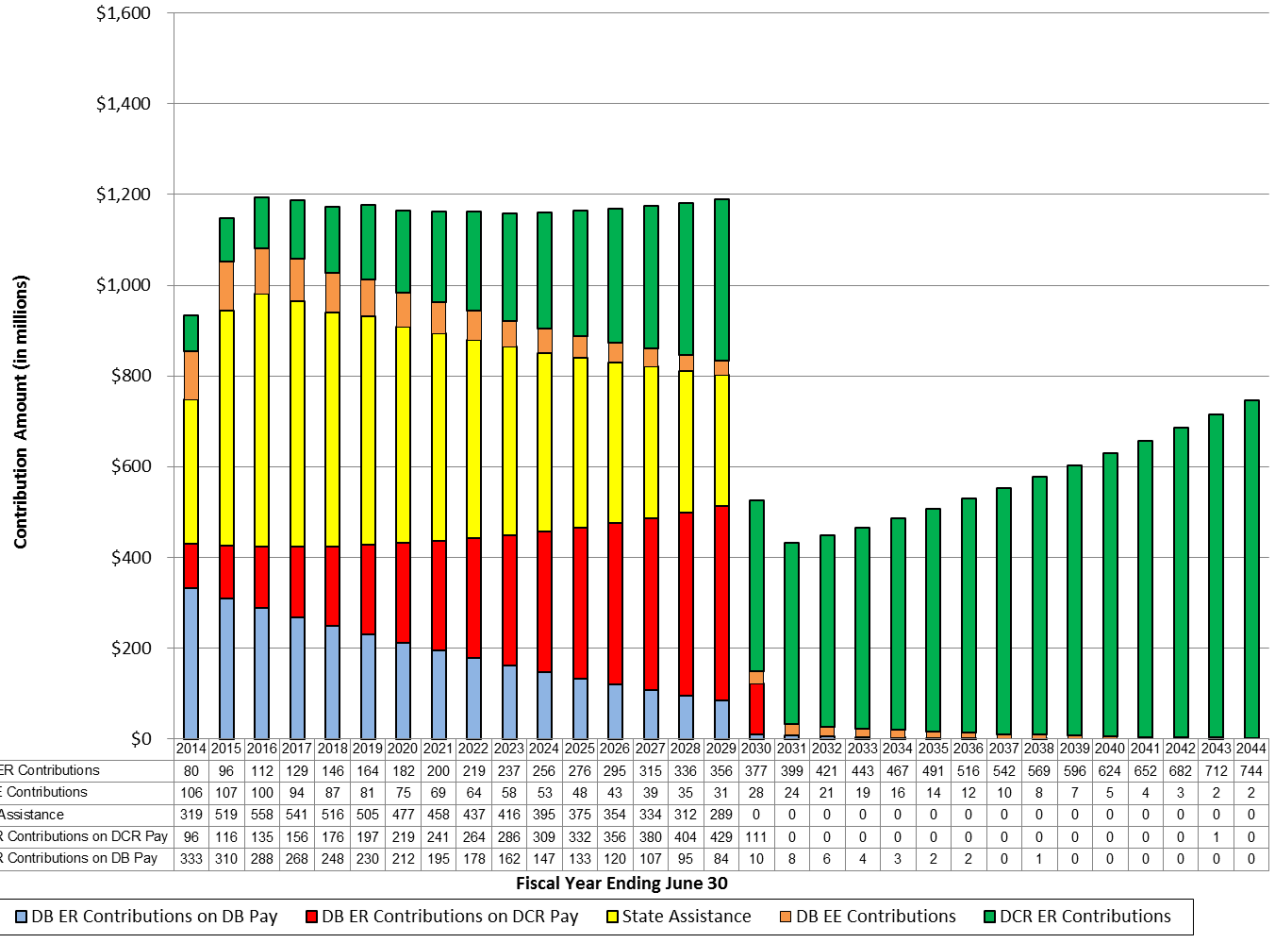
# PERS Projected Contribution Rates – Based on Total DB and DCR Payroll



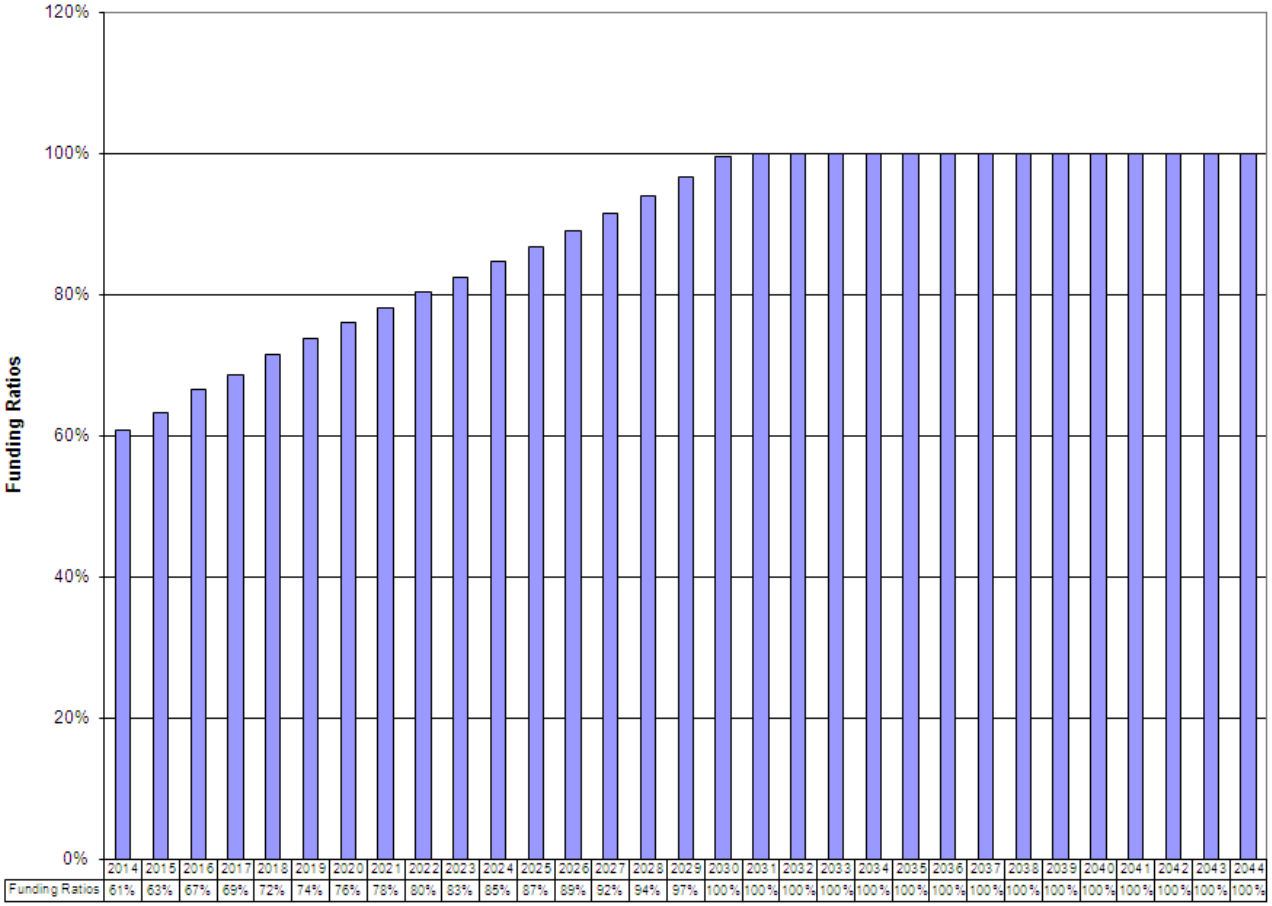

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DB EE Contributions | 4.6 | 4.5 | 4.1 | 3.7 | 3.4 | 3.0 | 2.7 | 2.4 | 2.1 | 1.9 | 1.6 | 1.4 | 1.2 | 1.1 | 0.9 | 0.8 | 0.7 | 0.6 | 0.5 | 0.4 | 0.3 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| State Assistance | 13.8 | 21.9 | 22.9 | 21.5 | 19.9 | 18.8 | 17.1 | 15.8 | 14.5 | 13.3 | 12.2 | 11.1 | 10.1 | 9.2 | 8.2 | 7.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DCR ER Contributions | 3.5 | 4.0 | 4.6 | 5.1 | 5.6 | 6.1 | 6.5 | 6.9 | 7.3 | 7.6 | 7.9 | 8.2 | 8.4 | 8.7 | 8.8 | 9.0 | 9.2 | 9.3 | 9.4 | 9.5 | 9.6 | 9.7 | 9.7 | 9.8 | 9.8 | 9.9 | 9.9 | 9.9 | 9.9 | 9.9 | 10.0 |
| DB ER Contributions on DCR Pay | 4.2 | 4.9 | 5.6 | 6.2 | 6.8 | 7.3 | 7.9 | 8.3 | 8.8 | 9.2 | 9.5 | 9.9 | 10.2 | 10.4 | 10.6 | 10.8 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DB ER Contributions on DB Pay | 14.4 | 13.1 | 11.8 | 10.7 | 9.6 | 8.6 | 7.6 | 6.7 | 5.9 | 5.2 | 4.5 | 4.0 | 3.4 | 2.9 | 2.5 | 2.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

# PERS Projected Contribution Amounts




| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DCR ER Contributions | 80 | 96 | 112 | 129 | 146 | 164 | 182 | 200 | 219 | 237 | 256 | 276 | 295 | 315 | 336 | 356 | 377 | 399 | 421 | 443 | 467 | 491 | 516 | 542 | 569 | 596 | 624 | 652 | 682 | 712 | 744 |
| DB EE Contributions | 106 | 107 | 100 | 94 | 87 | 81 | 75 | 69 | 64 | 58 | 53 | 48 | 43 | 39 | 35 | 31 | 28 | 24 | 21 | 19 | 16 | 14 | 12 | 10 | 8 | 7 | 5 | 4 | 3 | 2 | 2 |
| State Assistance | 319 | 519 | 558 | 541 | 516 | 505 | 477 | 458 | 437 | 416 | 395 | 375 | 354 | 334 | 312 | 289 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DB ER Contributions on DCR Pay | 96 | 116 | 135 | 156 | 176 | 197 | 219 | 241 | 264 | 286 | 309 | 332 | 356 | 380 | 404 | 429 | 111 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| DB ER Contributions on DB Pay | 333 | 310 | 288 | 268 | 248 | 230 | 212 | 195 | 178 | 162 | 147 | 133 | 120 | 107 | 95 | 84 | 10 | 8 | 6 | 4 | 3 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

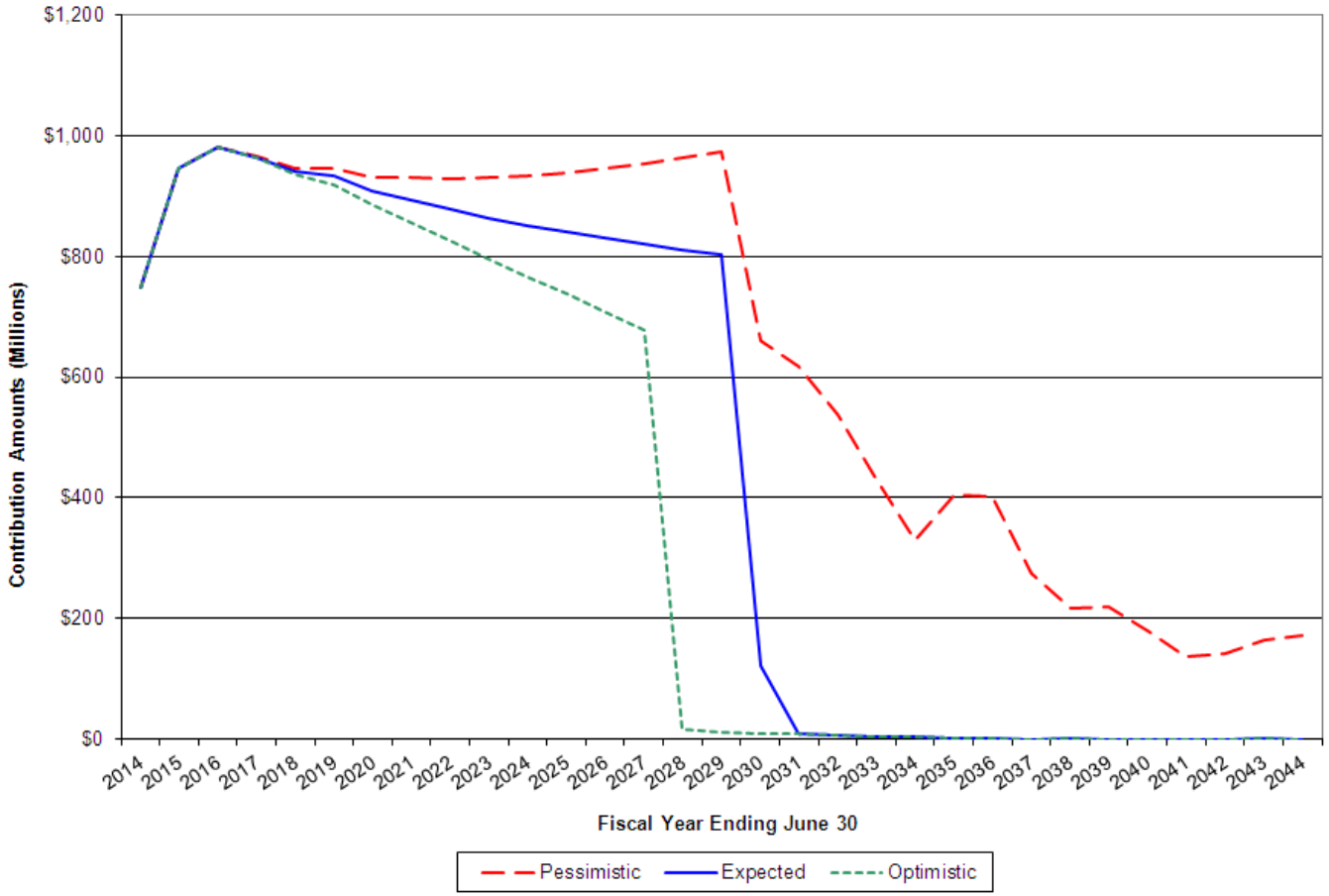
# PERS Funding Ratio




| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Funding Ratios | 61% | 63% | 67% | 69% | 72% | 74% | 76% | 78% | 80% | 83% | 85% | 87% | 89% | 92% | 94% | 97% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

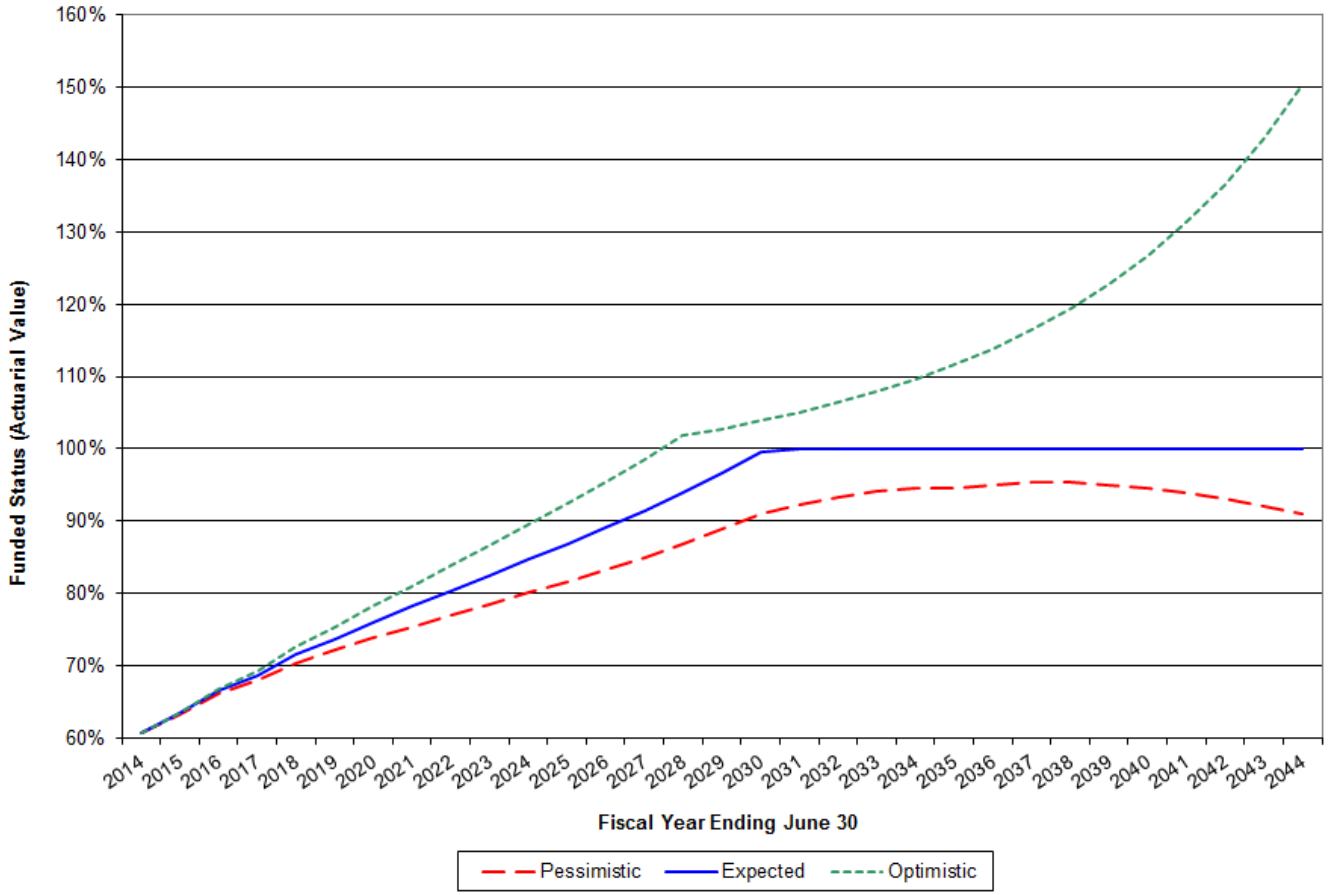
Fiscal Year Ending June 30

# PERS Sensitivity Analysis – Employer/State Contribution Amount



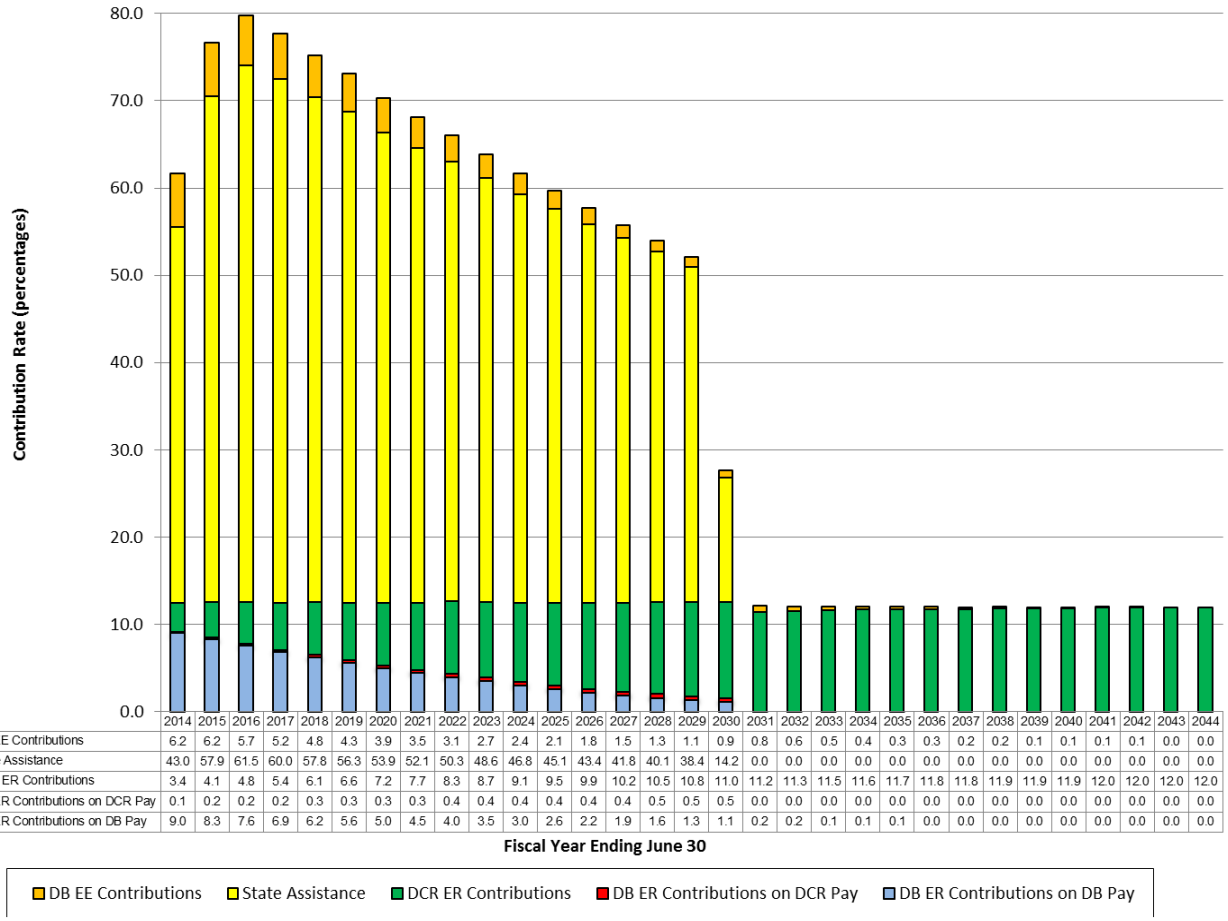

| Rate of Return | |
|---|---|
| Pessimistic | 7.25% |
| Expected | 8.00% |
| Optimistic | 8.75% |

# PERS Sensitivity Analysis – Funded Ratio



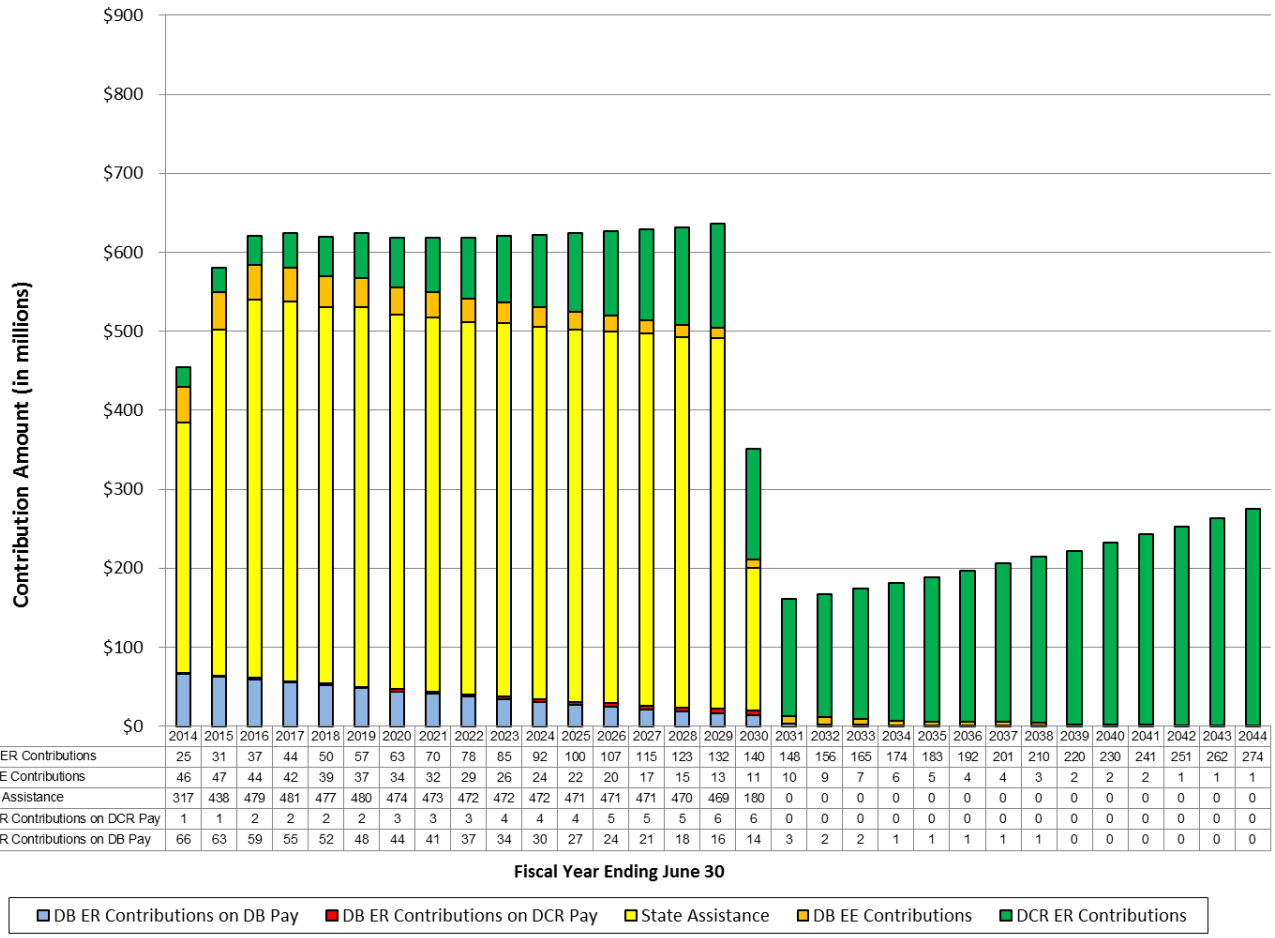

| Rate of Return | |
|---|---|
| Pessimistic | 7.25% |
| Expected | 8.00% |
| Optimistic | 8.75% |

# TRS Projected Contribution Rates – Based on Total DB and DCR Payroll



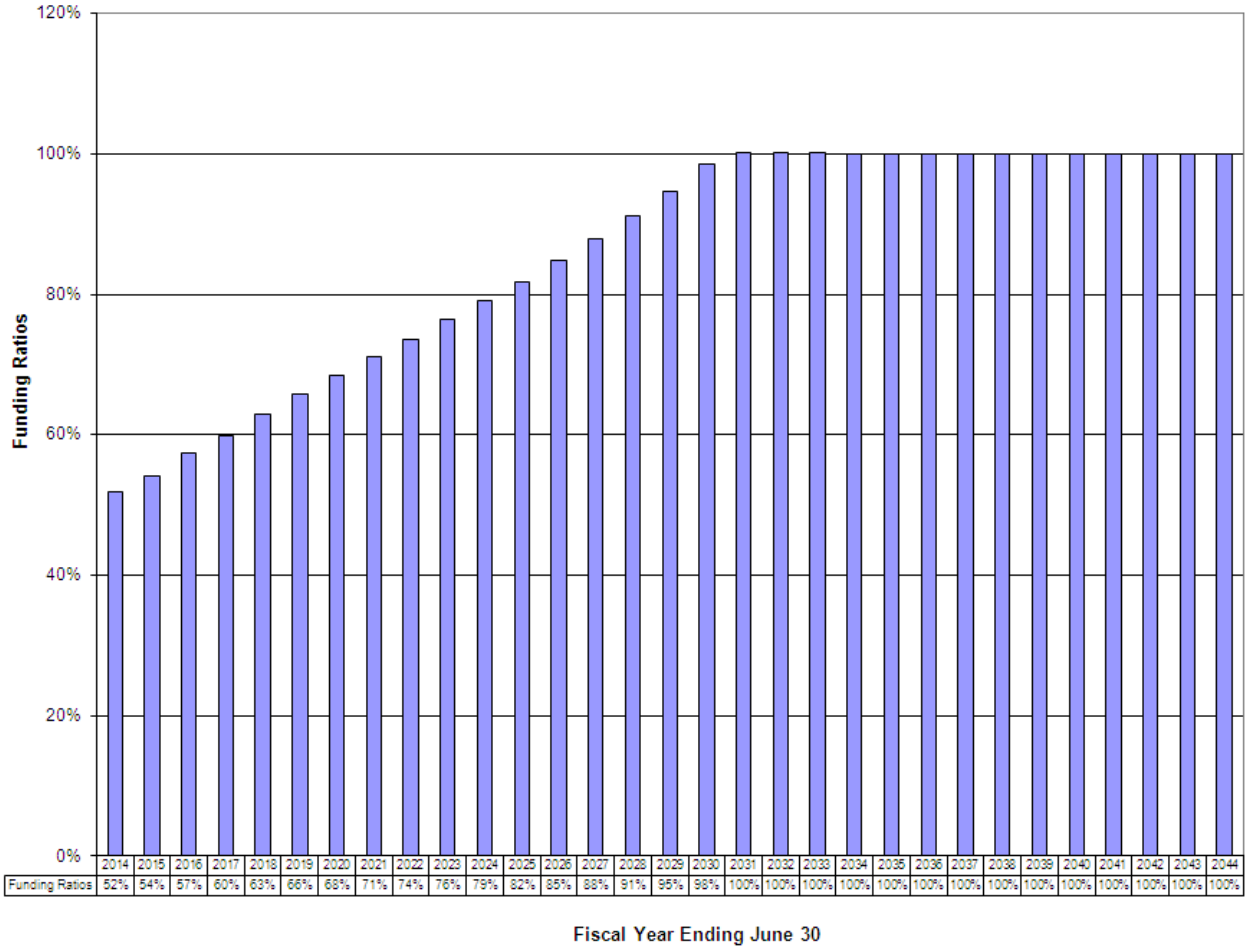

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DB EE Contributions | 6.2 | 6.2 | 5.7 | 5.2 | 4.8 | 4.3 | 3.9 | 3.5 | 3.1 | 2.7 | 2.4 | 2.1 | 1.8 | 1.5 | 1.3 | 1.1 | 0.9 | 0.8 | 0.6 | 0.5 | 0.4 | 0.3 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 |
| State Assistance | 43.0 | 57.9 | 61.5 | 60.0 | 57.8 | 56.3 | 53.9 | 52.1 | 50.3 | 48.6 | 46.8 | 45.1 | 43.4 | 41.8 | 40.1 | 38.4 | 14.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DCR ER Contributions | 3.4 | 4.1 | 4.8 | 5.4 | 6.1 | 6.6 | 7.2 | 7.7 | 8.3 | 8.7 | 9.1 | 9.5 | 9.9 | 10.2 | 10.5 | 10.8 | 11.0 | 11.2 | 11.3 | 11.5 | 11.6 | 11.7 | 11.8 | 11.8 | 11.9 | 11.9 | 11.9 | 12.0 | 12.0 | 12.0 | 12.0 |
| DB ER Contributions on DCR Pay | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| DB ER Contributions on DB Pay | 9.0 | 8.3 | 7.6 | 6.9 | 6.2 | 5.6 | 5.0 | 4.5 | 4.0 | 3.5 | 3.0 | 2.6 | 2.2 | 1.9 | 1.6 | 1.3 | 1.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

# TRS Projected Contribution Amounts



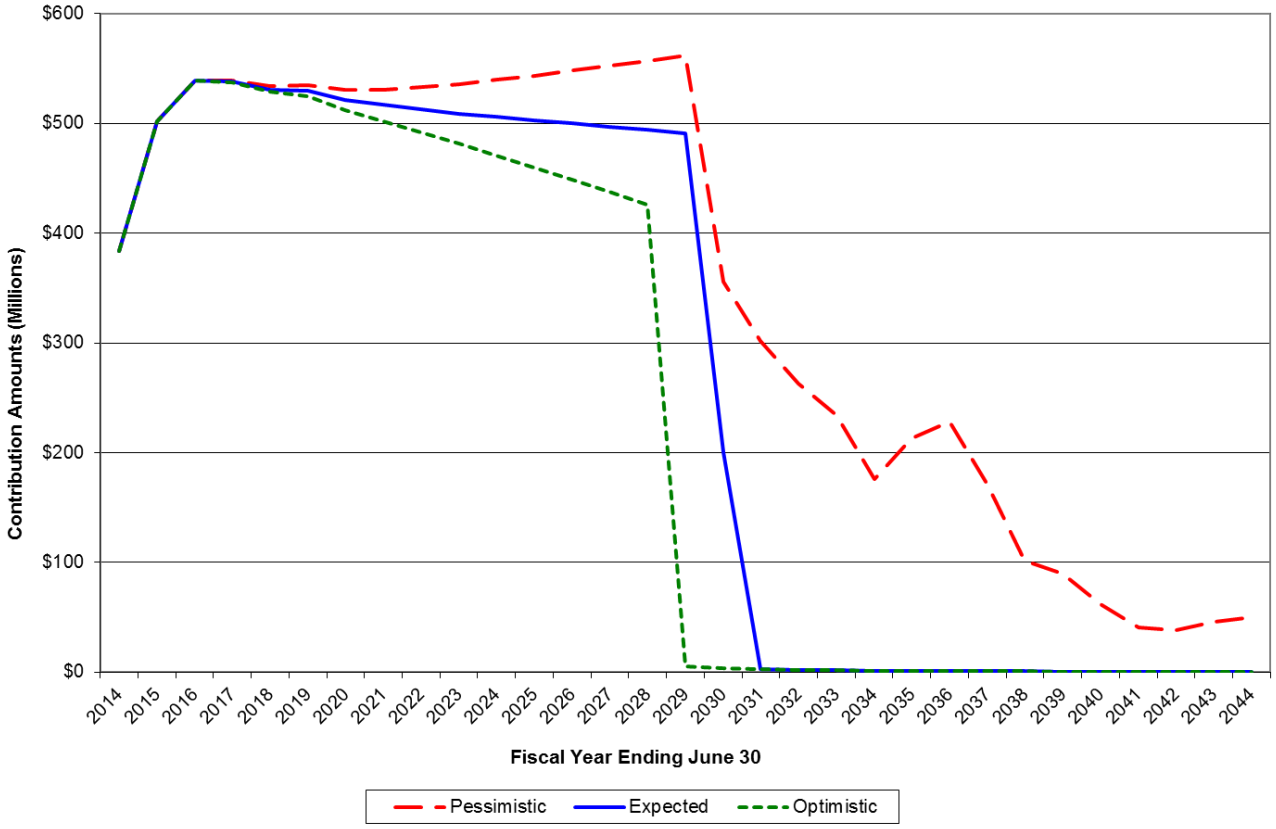

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DCR ER Contributions | 25 | 31 | 37 | 44 | 50 | 57 | 63 | 70 | 78 | 85 | 92 | 100 | 107 | 115 | 123 | 132 | 140 | 148 | 156 | 165 | 174 | 183 | 192 | 201 | 210 | 220 | 230 | 241 | 251 | 262 | 274 |
| DB EE Contributions | 46 | 47 | 44 | 42 | 39 | 37 | 34 | 32 | 29 | 26 | 24 | 22 | 20 | 17 | 15 | 13 | 11 | 10 | 9 | 7 | 6 | 5 | 4 | 4 | 3 | 2 | 2 | 2 | 1 | 1 | 1 |
| State Assistance | 317 | 438 | 479 | 481 | 477 | 480 | 474 | 473 | 472 | 472 | 472 | 471 | 471 | 471 | 470 | 469 | 180 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DB ER Contributions on DCR Pay | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DB ER Contributions on DB Pay | 66 | 63 | 59 | 55 | 52 | 48 | 44 | 41 | 37 | 34 | 30 | 27 | 24 | 21 | 18 | 16 | 14 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

# TRS Funding Ratio



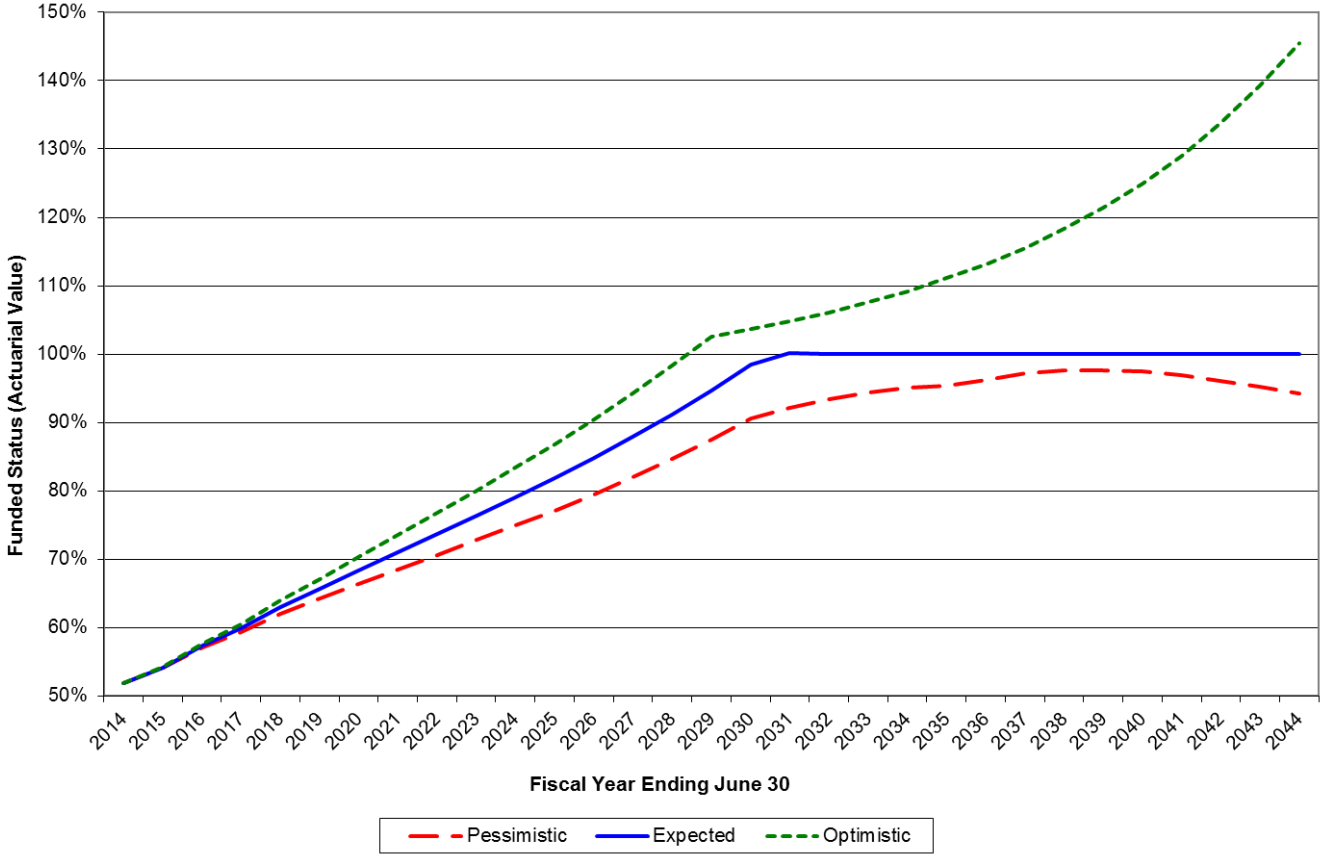

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Funding Ratios | 52% | 54% | 57% | 60% | 63% | 66% | 68% | 71% | 74% | 76% | 79% | 82% | 85% | 88% | 91% | 95% | 98% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

# TRS Sensitivity Analysis – Employer/State Contribution Amount

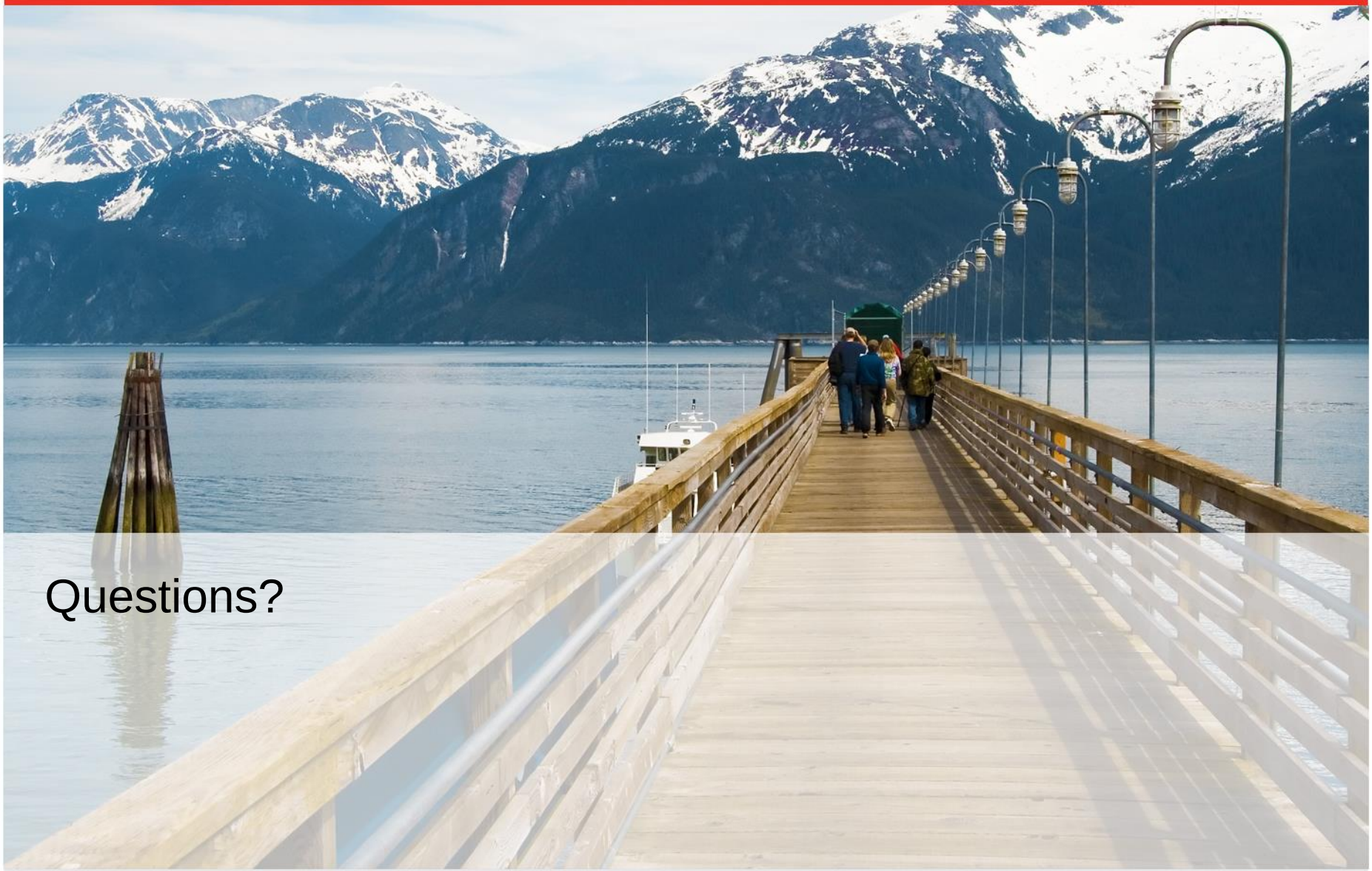



| Rate of Return | |
|---|---|
| Pessimistic | 7.25% |
| Expected | 8.00% |
| Optimistic | 8.75% |

# TRS Sensitivity Amount – Funded Ratio




| Rate of Return | |
|---|---|
| Pessimistic | 7.25% |
| Expected | 8.00% |
| Optimistic | 8.75% |



# Questions?

# Disclosures

- The projections in this presentation were developed for the Alaska Retirement Management Board and State of Alaska Staff by Buck Consultants, LLC using generally accepted actuarial principles and techniques in accordance with all applicable Actuarial Standards of Practice (ASOPs)
- The calculations and projections are based on member and financial data, current Board policies, actuarial assumptions and methods, and plan provisions summarized in the 2013 actuarial valuation reports of the Alaska Retirement Systems. Projections assume a 1% growth in total employees per year and actuarial assumptions are exactly realized by future experience, except for a difference in investment return for the sensitivity analysis.
- No third party recipient of Buck's work product should rely upon Buck's work product absent involvement of Buck or without our approval
- Future actuarial measurements may differ significantly from the current and projected measurements presented in this report due to such factors as: plan experience different from that anticipated by the economic and demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law. Due to the limited scope of this report, an analysis of the potential range of such future measurements has not been performed
- David Slishinsky is a Member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. He is an Associate of the Society of Actuaries, an Enrolled Actuary, and a Fellow of the Conference of Consulting Actuaries. We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate

# ALASKA RETIREMENT MANAGEMENT BOARD

| | | | |
|---|---|---|---|
| SUBJECT: | Asset Allocations – Resolutions 2014-07, 2014-08, 2014-09 | ACTION: | X |
| DATE: | April 24, 2014 | INFORMATION: | |

BACKGROUND:

The Alaska Retirement Management Board (Board) sets and reviews the asset allocations on behalf of all plans over which it has fiduciary responsibility. This process incorporates five-year capital market assumptions, board goals, actuarial assumptions, and other factors.

STATUS:

At the February 2014 meeting of the Board, Callan Associates, Inc. (Callan) presented the 2014 capital market projections that are the basis for the asset allocation and optimization process. On March 7, 2014, Chief Investment Officer Gary Bader conferred by phone with Michael O'Leary and Paul Erlendson of Callan and Investment Advisory Council (IAC) members Dr. William Jennings, Mr. Robert Shaw, and Dr. Jerrold Mitchell regarding asset allocation for the next fiscal year.

As a result of that phone meeting, staff, the IAC, and Callan recommend the following strategic asset allocations after considering current asset allocations and a range of optimal portfolios produced by Callan:

Resolution 2014-07 – Public Employees', Teachers' and Judicial Retirement Systems
Public Employees', Teachers', and Judicial Retirement Health Trust Funds
Retiree Major Health Insurance Fund
Health Reimbursement Arrangement Fund
PERS Peace Officers/Firefighters Occupational Death & Disability Fund
PERS, TRS, All Other Death & Disability Fund

Resolution 2014-08 – Alaska National Guard and Naval Militia Retirement Systems

Resolution 2014-09 – Public Employees' and Teachers' Retirement Systems Defined Contribution Holding Accounts

RECOMMENDATION:

That the Alaska Retirement Management Board adopt Resolutions 2014-07, 2014-08, and 2014-09, approving the asset allocations for fiscal year 2015.

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
Relating to Asset Allocation
For the Public Employees', Teachers' and Judicial Retirement Systems
Public Employees', Teachers', and Judicial Retirement Health Trust Funds
Retiree Major Health Insurance Fund
Health Reimbursement Arrangement Fund
PERS Peace Officers/Firefighters Occupational Death & Disability Fund
PERS, TRS, All Other Death & Disability Fund

Resolution 2014-07

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee of the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policies for each of the funds entrusted to it; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, the Board contracts an independent consultant to provide experience and expertise in asset allocation and other investment matters to come before the Board; and

WHEREAS, the Board has reviewed the actuarial assumptions; and

WHEREAS, the Board has reviewed the asset allocation set forth in the study prepared by the external investment consulting firm of Callan Associates, Inc.; and

WHEREAS, a prudent, diversified portfolio reduces risk and volatility and considers short term and long term earnings requirements for the Funds; and

WHEREAS, the Board shall continue to review, evaluate and make appropriate adjustments to asset allocation for the retirement plans on a periodic basis;

NOW THEREFORE, BE IT RESOLVED BY THE ALASKA RETIREMENT MANAGEMENT BOARD that the following asset allocation be established for the Public Employees', Teachers' and Judicial Retirement Systems; Public Employees', Teachers', and Judicial Retirement Health Trust Funds; Retiree Major Health Insurance Fund; Health Reimbursement Arrangement Fund; PERS Peace Officers/Firefighters Occupational Death & Disability Fund; and the PERS, TRS, All Other Death & Disability Fund, effective July 1, 2014:

Target Asset Allocation

| Asset class | Allocation | Range |
|---|---|---|
| Broad Domestic Equity | 26% | ± 6% |
| Global Equity Ex-US | 25% | ± 4% |
| Private Equity | 9% | ± 5% |
| Real Assets | 17% | ± 8% |
| Absolute Return | 5% | ± 4% |
| Fixed Composite | 12% | ± 5% |
| Alternative Equity Strategies | 3% | ± 2% |
| Cash Equivalents | 3% | – 3%/+1% |
| Total | 100% | |

| | |
|---|---|
| Projected Arithmetic Return | 8.09% |
| Expected Return – 5-Year Geometric Mean | 7.22% |
| Projected Standard Deviation | 15.01% |

This resolution repeals and replaces Resolution 2013-04.

DATED at Anchorage, Alaska this ____ day of April, 2014.

_____
Chair

ATTEST:

_____
Secretary

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
Relating to Asset Allocation
For the Alaska National Guard and Naval Militia Retirement Systems

Resolution 2014-08

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee of the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policy for each of the funds entrusted to it; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, the Board contracts an independent consultant to provide experience and expertise in asset allocation and other investment matters to come before the Board; and

WHEREAS, the Board has reviewed the actuarial assumptions for the Alaska National Guard and Naval Militia Retirement Systems; and

WHEREAS, the Board has reviewed the asset allocation set forth in the study prepared by the external investment consulting firm of Callan Associates, Inc.; and

WHEREAS, a prudent, diversified portfolio reduces risk and volatility and considers short term and long term earnings requirements for the Funds; and

WHEREAS, the Board shall continue to review, evaluate and make appropriate adjustments to asset allocation for the retirement plans on a periodic basis;

NOW THEREFORE, BE IT RESOLVED BY THE ALASKA RETIREMENT MANAGEMENT BOARD that the following asset allocation be established for the Alaska National Guard & Naval Militia Retirement System, effective July 1, 2014:

Target Asset Allocation

| Asset class | Allocation | Range |
|---|---|---|
| Broad Domestic Equity | 29% | ± 6% |
| Global Equity Ex-US | 20% | ± 4% |
| Fixed Composite | 48% | ± 10% |
| Cash Equivalents | 3% | – 3%/+1% |
| Total | 100% | |

| | |
|---|---|
| Projected Arithmetic Return | 6.19% |
| Expected Return – 5-Year Geometric Mean | 5.87% |
| Projected Standard Deviation | 9.72% |

This resolution repeals and replaces Resolution 2013-05.

DATED at Anchorage, Alaska this ____ day of April, 2014.

_____
Chair

ATTEST:

_____
Secretary

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
Relating to Asset Allocation
For the Public Employees' and Teachers' Retirement Systems Defined Contribution Holding Accounts

Resolution 2014-09

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee of the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policy for each of the funds entrusted to it; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, the Board contracts an independent consultant to provide experience and expertise in asset allocation and other investment matters to come before the Board; and

WHEREAS, the Board has reviewed the actuarial assumptions for the Public Employees' Retirement System and the Teachers' Retirement System; and

WHEREAS, the Board has reviewed the asset allocation set forth in the study prepared by the external investment consulting firm of Callan Associates, Inc.; and

WHEREAS, a prudent, diversified portfolio reduces risk and volatility and considers short term and long term earnings requirements for the Funds; and

WHEREAS, the Board shall continue to review, evaluate and make appropriate adjustments to asset allocation for the retirement plans on a periodic basis.

NOW THEREFORE, BE IT RESOLVED BY THE ALASKA RETIREMENT MANAGEMENT BOARD, that the following asset allocation be established for the Public Employees' and Teachers' Retirement Systems Defined Contribution Holding Accounts, effective July 1, 2014:

Target Asset Allocation

| Asset class | Allocation | Range |
|---|---|---|
| Cash Equivalents | 100% | ± 0% |

| | |
|---|---|
| Projected Arithmetic Return | 2.00% |
| Expected Return – 5-Year Geometric Mean | 2.01% |
| Projected Standard Deviation | 0.90% |

This Resolution repeals and replaces Resolution 2013-06.

DATED at Anchorage, Alaska this ____ day of April, 2014.

_____
Chair

ATTEST:

_____
Secretary

# ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Approval to Engage Pyramis Global Advisors

ACTION: X

DATE: April 25, 2014

INFORMATION: ____

---

## BACKGROUND:

Pyramis Global Advisors (Pyramis), a subsidiary of Fidelity Investments Company, is an investment advisor focusing on providing multi-asset-class investment solutions for institutional investors.

Pyramis is well-resourced in fixed income, with 223 investment professionals, including 113 in research, 40 in trading and 39 in portfolio management. The firm began managing fixed income portfolios in 1971, and currently manages over $358 billion. The Tactical Bond management team is comprised of two portfolio managers, each with over 20 years of industry experience, a dedicated quantitative analyst and two client-facing portfolio managers. The portfolio managers work closely with sector specialists throughout the firm to evaluate relative value opportunities.

Tactical Bond, incepted in 2006, had $251 million in assets under management in January 2014. The objective of the Tactical Bond strategy is to achieve high risk-adjusted returns with bond-like volatility. Pyramis attempts to achieve this by including the entire global bond market as its potential investment universe, utilizing valuation and risk models combined with qualitative judgment to seek high risk-adjusted returns, and maintaining portfolio liquidity in order to take advantage of new opportunities and to mitigate downside risk.

## STATUS:

Pyramis has provided strong fixed income returns since inception, relative to the Barclays Aggregate Index. It is expected to be a good complement to the other ARMB fixed income investments, providing additional diversification and the prospect of competitive returns.

RECOMMENDATION:

Authorize staff to engage Callan Associates to evaluate the Pyramis Tactical Bond strategy and team. Subject to a favorable evaluation from Callan Associates, authorize staff to engage Pyramis Global Advisors to invest $100 million in a tactical bond strategy in a separate account, subject to successful contract and fee negotiations.

# ALASKA RETIREMENT MANAGEMENT BOARD

| | | | |
|---|---|---|---|
| SUBJECT: | Allianz Buy Write Termination | ACTION: | X |
| DATE: | April 24, 2014 | INFORMATION: | |

BACKGROUND:

On September 24, 2010, the Alaska Retirement Management Board (ARMB) hired Allianz Global Investors U.S. LLC (Allianz), then RCM Capital Management LLC, to manage a portfolio of Buy Writes, which are the combination of a long U.S. equity position and the sale of a call option against that equity position. The portfolio's objective was to achieve returns, over time, in excess of the Chicago Board of Options Exchange S&P Buy Write Index, net of fees.

STATUS:

On March 12, 2014, ARMB staff received notification that key personnel directly involved in the management of the portfolio would be departing Allianz.

On March 13, 2014, staff, through ARMB Resolution 2012-18, which delegates certain authority to the Chief Investment Officer, instructed Allianz to liquidate assets in a manner consistent with best practices as such to minimize any negative impact to the portfolio.

RECOMMENDATION:

The Alaska Retirement Management Board direct staff to terminate Allianz Global Investors U.S. LLC as a Buy Write manager.

# ALASKA RETIREMENT MANAGEMENT BOARD

| | | | |
|---|---|---|---|
| SUBJECT: | Absolute Return Policy Revision | ACTION: | X |
| DATE: | April 24, 2014 | INFORMATION: | |

BACKGROUND:

The Alaska Retirement Management Board started investing in Absolute Return investment strategies in November of 2004 through a custom fund-of-funds program. The overall goal of the ARMB's absolute return allocation is to produce strong real returns with lower volatility and correlation to other asset classes. In 2013, the ARMB adopted a more opportunistic and less constrained approach to absolute return. The revised program focuses on producing higher returns, with the ability to take on additional risk and market correlation.

STATUS:

The ARMB's absolute return managers are now using a larger risk budget to opportunistically select a more concentrated portfolio of investment styles and underlying investments. The early results are good, with 2013 returns of 10.2%.

A tool that isn't currently available to the ARMB's absolute return investment managers is the ability to make co-investments. Co-investments are investment opportunities that are offered to the ARMB's investment managers on a fee-advantaged basis by underlying hedge fund managers or other managers. The ARMB's investment managers could evaluate their flow of co-investments to select the best opportunities for the ARMB's portfolio. Some of the ARMB's investment managers have demonstrated the ability to source and execute co-investment opportunities and expect that adding this capability to the ARMB's portfolio would increase risk adjusted returns. ARMB staff recommends that the ARMB revise the Absolute Return Policies and Procedures to allow the CIO to approve co-investments by the ARMB's Absolute Return investment managers.

RECOMMENDATION:

That the Alaska Retirement Management Board adopt Resolution 2014-10 revising the Absolute Return Policies and Procedures to allow the CIO to approve co-investments by the ARMB's Absolute Return investment managers.

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD

Relating to Absolute Return Investment Guidelines

Resolution 2014-10

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee to the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policy for each of the funds entrusted to it; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, the Board contracts an independent consultant to provide experience and expertise in asset allocation and other investment matters to come before the Board; and

WHEREAS, the Board has established an asset allocation for the funds that considers earnings and liabilities on a current as well as a future basis; and

WHEREAS the Board has authorized investment in absolute return strategies; and

WHEREAS the Board will establish and from time to time as necessary modify guidelines for absolute return strategies.

NOW THEREFORE BE IT RESOLVED THAT THE ALASKA RETIREMENT MANAGEMENT BOARD adopts the attached Absolute Return Investment Guidelines, regarding investment in absolute return strategies.

This resolution repeals and replaces Resolution 2013-01

DATED at Anchorage, Alaska this _____ day of April, 2014.

_____
Chair

ATTEST:

_____
Secretary

| | |
|---|---|
| Long/Short Equity (including Market Neutral and Short Biased) | 65% |
| Event Driven (including Distressed and Risk Arbitrage) | 65% |
| Multi-Strategy/Other | 40% |
| Fixed Income Arbitrage | 30% |
| Global Macro | 25% |
| Convertible Arbitrage | 15% |
| Managed Futures | 15% |

The above targeted exposures will be based on the combined allocations to fund-of-fund portfolios and individual separate portfolios, if any. Investment Manager's need to be aware of these program level strategy guidelines, but individual portfolios are not required to meet them. Investment Manager specific strategy guidelines may be implemented in individual contracts or through written direction by the Chief Investment Officer to tailor investment manager specific guidelines to particular mandates or styles.

### 5. Manager

To be broadly diversified by hedge fund manager, each of ARMB's absolute return portfolios shall contain exposure to a minimum of 10 individual funds, with the maximum exposure to any one underlying fund, or group of affiliated funds, limited to 10% of ARMB's aggregate fund program, unless otherwise specifically exempted by ARMB staff.

### 6. Risk Management at the Portfolio Level

The ARMB's absolute return program shall permit the Investment Manager to hedge risk at the portfolio level (via index options, futures, CDS's, of through other means) with prior approval from the Chief Investment Officer.

### 7. Co-Investments

The ARMB's absolute return program shall permit the Investment Manager to co-invest in direct investments alongside existing hedge fund managers or other investment managers with approval from the Chief Investment Officer. Co-Investments are not subject to the specific strategy or liquidity contraints of the absolute return program.

## E. REPORTING

### 1. Monthly Reporting

The Investment Manager is required to provide, or cause to be provided, at least the following information on a monthly basis.

a. Within 30 calendar days, the Investment Manager shall provide to ARMB and the Custodian a report of ARMB's account cash flows and valuations, and any other information reasonably requested. If an external administrator is used, this information should come directly from the administrator to ARMB and the Custodian.

# Why Branded Funds?

Gary Bader, CIO
April 2014

# Current Participant Options

| | DC | Deferred Comp | SBS | Active/Passive | Manager |
|---|---|---|---|---|---|
| **Cash** | | | | | |
| Alaska Money Market Master Trust | X | | | Active | T. Rowe |
| Interest Income Fund | | X | | Active | T. Rowe |
| Stable Value Fund | | | X | Active | T. Rowe |
| State Street Institutional Treasury Money Market Fund | X | X | X | Active | SSgA |
| **Domestic Equity** | | | | | |
| T. Rowe Price Small-Cap Stock Trust | X | X | X | Active | T. Rowe |
| S&P 500 Stock Index Fund | X | X | X | Passive | SSgA/BlackRock |
| Russell 3000 Index | X | X | X | Passive | SSgA |
| Allianz Socially Responsible Investment Fund | X | X | X | Active | Allianz |
| U.S. Real Estate Investment Trust Index | X | X | X | Passive | SSgA |
| **International Equity** | | | | | |
| Brandes International Equity Fund Fee CL-1 | X | X | X | Active | Brandes |
| World Equity Ex-U.S. Index | X | X | X | Passive | SSgA |
| **Domestic Bonds** | | | | | |
| Government/Credit Bond Index Fund | X | X | X | Passive | BlackRock |
| Intermediate Bond Fund | X | X | X | Passive | BlackRock |
| Long U.S. Treasury Bond Index | X | X | X | Passive | SSgA |
| U.S. Treasury Inflation Protected Securities Index | X | X | X | Passive | SSgA |
| **International Bonds** | | | | | |
| World Government Bond Ex-U.S. Index | X | X | X | Passive | SSgA |
| **Balanced/Target Date** | | | | | |
| SSgA Global Balanced Fund | X | X | X | Active | SSgA |
| Alaska Long-Term Balanced Trust | X | X | X | Active | T. Rowe |
| Alaska Balanced Trust | X | X | X | Active | T. Rowe |
| Alaska Target Date Retirement 2010 Trust | X | X | X | Active | T. Rowe |
| Alaska Target Date Retirement 2015 Trust | X | X | X | Active | T. Rowe |
| Alaska Target Date Retirement 2020 Trust | X | X | X | Active | T. Rowe |
| Alaska Target Date Retirement 2025 Trust | X | X | X | Active | T. Rowe |
| Alaska Target Date Retirement 2030 Trust | X | X | X | Active | T. Rowe |
| Alaska Target Date Retirement 2035 Trust | X | X | X | Active | T. Rowe |
| Alaska Target Date Retirement 2040 Trust | X | X | X | Active | T. Rowe |
| Alaska Target Date Retirement 2045 Trust | X | X | X | Active | T. Rowe |
| Alaska Target Date Retirement 2050 Trust | X | X | X | Active | T. Rowe |
| Alaska Target Date Retirement 2055 Trust | X | X | X | Active | T. Rowe |

# Branded Fund Benefits

- Structure allows for a more diversified suite of managers in each asset class.
- Maintains a manageable investment lineup while increasing manager diversity.
- Minimizes the impact on participants for manager termination/hire decisions.
- Manager style diversification should smooth performance swings over time.
- Offers participants the ability to create portfolios which more closely resemble ARMB's defined benefit portfolio.
- Creates customized options to better cater to the investment needs of Alaska's defined contribution plan participants.

# White Label or Private Label Funds

# Composition of Funds

Investment options that are composed of underlying:

- Mutual funds - Can not include any funds that have loads or trading restrictions
- Collective Trusts
- Separate accounts or specialized managers
- Stable value type funds.

# Who Uses Private Label Funds?

Several large plan sponsors

- City of New York
- State of Massachusetts
- County of Los Angeles
- State of Louisiana
- City and County of San Francisco
- Custom profiles – risk or target date – about 190 funds

# Combination of Funds

- Can Be One Fund or Blend of two or more mutual funds
- Plan determines the composition of each private label fund
- Blended Daily unit values calculated by the custodian or record keeper
- Funds rebalanced on a quarterly basis

# Combination of Funds

- Contributions allocated based upon the target basis %
  - 40% to Fund A
  - 60% to Fund B
- Distributions done at MV of each fund, not Target %

# Collective Trust Funds

- More complex as Custodian must be involved.
- Valuation of funds done by custodian
- Blended Daily unit values calculated by the custodian or record keeper
- Late day trading required (trade or operating agreement)
- Typically more involvement on part of the Board or consultant

# Collective Trust Funds

- Alaska uses 7 State Street Global Advisor funds
- Unit values are sent to GWL daily
- GWL creates a new unit value to account for the management fees
- SSG&A bills GWL once per quarter

# Stable Value Funds

- Blend of one or more managers
- Provides diversity in terms or management styles and expertise
- Provides wrap diversity
- Allows changes at the underlying fund level with no impact to the participant
- Fund can be Unitized or Set an Interest Rate

# Advantages

- Funds Branded by the Plan Sponsor
- Diversification of Managers
- Low cost options
- Performance of the underlying funds are monitored and may be changed if they don’t perform in accordance with their benchmarks.
- Easy to eliminate poor performers – no blackout, transparent to participant

# Disadvantages

- Funds not listed in newspaper
- Returns not available public information, just our web site
- No historical returns or hypothetical
- Hypothetical returns possible - must reengineer the unit values
- Customize the marketing materials
- Generates a little more client service activity

# Participant Viewpoint

- Participants will treat these funds like any core fund offering.
  - Listed as one fund option on statement and website, not underlying composition
  - Fund fact sheets show underlying funds
  - Contributions can be done at any time.
  - Transfers can be done daily.

# Participant Viewpoint

- Distributions can be set up based upon the participants desired schedule.
- Enrollment materials provided at group meetings and on the web site will show the underlying fund composition.
- Performance information can be posted on the website and included on the statements.

# GWL Keeps the Funds Running

- Composition of the Underlying Funds
  - Underlying funds do not have to be part of the core fund lineup
  - GWL will allow changes once per year at the standard cost.

# Cost Includes

- Rebalancing
- Annual changing of underlying funds
- Reconciliations
- Changes to the underlying fund allocations – can be done as often as monthly.
- Web site and voice response implementation

# Cost Includes

- Valuation of the Daily Unit Value
- Assumption of gain / losses for GWL errors
- Trading with underlying funds
- Cost of $5000 per fund

Questions???

# Time to Consider a Collective Trust?

**March 7, 2014 (PLANSPONSOR.com) – One retirement plan service provider says collective investment trusts (CITs) can be a powerful answer to demand for customized target-date vehicles and less expensive investment strategies.**

For those who need a crash course in CITs, Kent Buckles, executive vice president of retirement strategies for Reliance Trust, says the products often serve as an alternative to mutual funds. CITs are investment vehicles in which assets from multiple plans can be commingled into one trust.Each CIT is managed professionally on behalf of those plans and not open to the public. For that reason, they're only available as an investment option within employer-sponsored plans that have negotiated an agreement with the CIT provider.

Another defining characteristic of CITs is that they are regulated more as a banking product than an investment fund, Buckles says. Therefore the products fall under the oversight of state banking regulators and the federal Office of the Comptroller of the Currency (OCC), rather than the Securities and Exchange Commission (SEC). The OCC regulators are rigorous in their examinations of trust companies and CITs, he says, but providers in the space are advantaged in that the OCC requires less documentation and pre-approval compared with the SEC.

Buckles says the appeal of CITs for plan sponsors and fiduciaries is generally a lower expense profile and an improved ability, especially for larger plans, to create unique investment funds that address the needs of real plan participants in a more refined way then retail target-date funds. This can be accomplished because the sponsors can work directly with fund managers to discuss and meet the investing needs of their participants, factoring real-world demographic data into portfolio design decisions. Mutual funds, on the other hand, tend to make portfolio decisions based on much wider demographic considerations.

CITs have historically been used in defined benefit (DB) plans and in the larger defined contribution (DC) and profit sharing plans. DC plan sponsors moved away from CITs as retirement plan administration moved to daily valuation. CITs weren't priced daily or traded daily, but that issue has disappeared. Today CITs trade on the same platform as mutual funds. Internet connectivity allows plan participants to track performance of their CITs on a daily basis.

"The growth really isn't all that different from what you see happening in other parts of the industry, which is to say it's strong," Buckles tells PLANSPONSOR. "You never know exactly what the numbers are in total, but based on the research that we see, the growth seems to be pretty dramatic for collectives overall. Especially within the defined contribution space and among more of the smaller plan segments."

A 2013 survey by financial research and consulting firm Celent found, from 2006 to 2010, the share of collective trusts as a percentage of the defined contribution market doubled—from 10% to 20%. In actual dollars, the jump was from $400 billion to $900 billion, the survey report, "The Defined Contribution Market," noted.

At Reliance Trust, assets in CITs have grown from a small portion of the firm's $100 billion in total assets under management to about $6 billion since the firm first introduced a CIT product more than a decade ago—with most of the growth coming from a significant acceleration in the last three years. Buckles says Reliance's developments in the field have largely paralleled the wider industry movements, both in terms of annual growth and the type of products that sponsors are interested in.

"The first collective fund we offered was a stable value fund—and we have stable value funds that we still sponsor," Buckles says. "Beyond that, we have moved into offering funds in the fixed-income

space, real estate, and stand-alone large cap equity funds, and of course the target-date offerings are becoming increasingly popular."

In general, Buckles says the streamlined reporting requirements and the elimination of excess administration possible through a collective trust arrangement allows participants to access diversified investment funds at a 10 or 15 point discount compared with mutual funds that take similar strategies. He has seen examples where plans have been able to replace actively managed mutual fund options with more passive-based CITs, cutting as much as 50 basis points from investment costs.

Another point Buckles is quick to make about CIT growth is that it's not just coming from the large DC plans and big pension funds that have traditionally had the asset-muscle to benefit from economies of scale via access to preferred share classes.

"In the smaller plans, what's attractive about the collectives is that because they are comingled, you don't have the limitations that you'll have with an institutional fund on the mutual fund side," Buckles explains. "So if you want to offer a low-cost institutional mutual fund, usually you're going to have some type of a minimum amount before you'll be able to invest in the best share classes. You don't have that issue with the collective arrangement."

That's because the trust company providing the CIT serves as both the fund trustee and administrator—delivering many of the pieces that are required to bring the products to participants and the marketplace, such as daily valuations, fund fact sheets, Morningstar updates, and all the related legal documentation. When all of those functions are brought under one roof, they can be done more efficiently.

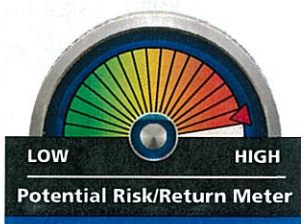
"So we are the manufacturer, not so much the distributor," Buckles explains. "Though we do have some wholesalers that talk to advisers about our offerings, generally speaking the distributors are really the recordkeeping platforms, the independent advisers, etc."

Buckles says plan sponsors also tend to be attracted to the fact that, in its role as a trustee of assets earmarked for a CIT arrangement, the provider becomes a plan fiduciary.

"For that reason, we're directly liable if there's anything that's found that's not in compliance with the OCC regulations," Buckles says. "That' means we're aggressively self-policing, and each of our funds has to be audited by a third party at least once a year."

# Examples from LA County

# Horizons Mid Cap Equity Fund[1]




**ADVANCED INVESTMENT**

**INFORMATION AS OF: 12/31/2012**

**INCEPTION DATE: 11/3/2008**

**PORTFOLIO OPERATING EXPENSES: 0.47%**

## Investment Objective

The Horizons Mid Cap Equity Fund seeks to maximize long-term capital growth by investing in common stocks of mid-sized companies—those with market capitalizations generally between $500 million and $5 billion. Its earnings and losses are primarily derived from principal growth and secondarily from reinvested dividends.

## Who Is Most Likely to Choose This Type of Investment?

This fund is best suited for someone who wishes to invest for long-term growth rather than income. This person is willing to take more risk to achieve higher potential gains and is comfortable riding out dips in the stock market.

## About the SSgA Index/Buffer

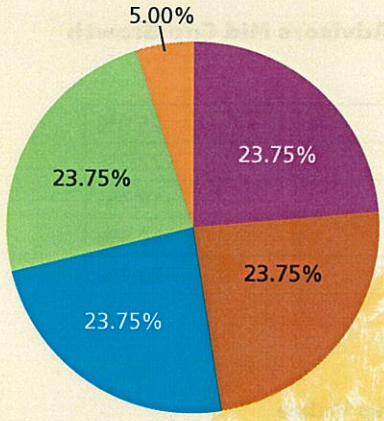
This component of the fund provides the cash liquidity for daily transactions by participants. As a result, the other fund managers can significantly minimize their cash position and fully invest the assets they hold.

## Transfer Information

Transfers of $10,000 or more into an investment option on a single day must remain invested in that option for a minimum of 10 business days. The last assets transferred into an investment option will be the first assets transferred out of the investment option. After any transfer of assets out of an investment option, no assets may be transferred into that investment option for 30 calendar days. Non-compliant transactions may result in the restriction of a participant's ability to make transfers. Additional information is available on the website at **www.countyla.com**.[2]

## Underlying Funds

| | |
|---|---|
| SSgA S&P Mid Cap Index Fund | 5.0% |
| Artisan Mid Cap Growth | 23.75% |
| Denver Investment Advisors Mid Cap Growth | 23.75% |
| Sasco Capital Mid Cap Value | 23.75% |
| WEDGE Capital Management Mid Cap Value | 23.75% |




- Artisan Mid Cap Growth
- Denver Investment Advisors Mid Cap Growth
- Sasco Capital Mid Cap Value
- WEDGE Capital Management Mid Cap Value
- SSgA S&P Mid Cap Index Fund

## SSgA S&P Mid Cap Index Fund

### SECTOR DIVERSIFICATION

| | |
|---|---|
| Financials | 22.1% |
| Industrials | 17.3% |
| Information Technology | 15.5% |
| Consumer Discretionary | 13.3% |
| Other | 31.8% |

### TOP FIVE HOLDINGS

| | |
|---|---|
| Regeneron Pharmaceuticals | 1.1% |
| Equinix Inc | 0.8% |
| HollyFrontier Corp | 0.8% |
| Kansas City Southern | 0.8% |
| Ametek Inc | 0.8% |

Sector diversification and top holdings of these underlying funds are displayed on the next page.

HOLDINGS AND COMPOSITION OF HOLDINGS ARE SUBJECT TO CHANGE.

# Horizons Mid Cap Equity Fund[1] (continued)

*Underlying Funds Diversification and Holdings*

### Artisan Mid Cap Growth

**SECTOR DIVERSIFICATION**

| | |
|---|---|
| Information Technology | 26.4% |
| Health Care | 23.6% |
| Consumer Discretionary | 20.7% |
| Industrials | 15.9% |
| Other | 13.4% |

**TOP FIVE HOLDINGS**

| | |
|---|---|
| Regeneron Pharmaceuticals Inc | 4.0% |
| IHS Inc | 3.4% |
| Discover Financial Services | 3.1% |
| ARM Holdings PLC | 2.7% |
| Cerner Corp | 2.6% |

### Denver Investment Advisors Mid Cap Growth

**SECTOR DIVERSIFICATION**

| | |
|---|---|
| Consumer Discretionary | 25.9% |
| Information Technology | 22.2% |
| Industrials | 18.3% |
| Healthcare | 10.9% |
| Other | 22.7% |

**TOP FIVE HOLDINGS**

| | |
|---|---|
| Onyx Pharmaceuticals Inc | 2.9% |
| Discover Communications | 2.7% |
| Sirona Dental Systems | 2.4% |
| Ingersoll-Rand USA | 2.3% |
| Sirus XM Radio | 2.3% |

### Sasco Capital Mid Cap Value

**SECTOR DIVERSIFICATION**

| | |
|---|---|
| Materials | 24.4% |
| Industrials | 22.5% |
| Energy | 17.4% |
| Consumer Staples | 10.7% |
| Other | 25.0% |

**TOP FIVE HOLDINGS**

| | |
|---|---|
| Dominion Resources Inc | 4.5% |
| Safeway Inc | 4.4% |
| Republic Services Inc | 4.3% |
| Crown Holdings Inc | 3.9% |
| Beam Inc | 3.9% |

### WEDGE Capital Management Mid Cap Value

**SECTOR DIVERSIFICATION**

| | |
|---|---|
| Financials | 30.0% |
| Capital Goods | 16.0% |
| Utilities | 9.0% |
| Energy | 8.0% |
| Other | 37.0% |

**TOP FIVE HOLDINGS**

| | |
|---|---|
| Brunswick Corporation | 4.9% |
| Computer Sciences Corporation | 4.6% |
| Lincoln National Corporation | 4.0% |
| Duke Realty Corporation | 4.0% |
| Allstate Corporation | 3.9% |

# Horizons Large Cap Equity Fund

INFORMATION AS OF: 12/31/2012

INCEPTION DATE: 11/3/2001

PORTFOLIO OPERATING EXPENSES: 0.03%

## Investment Objective

The Horizons Large Cap Equity Fund seeks to provide long-term growth potential and current income by investing in the stocks of large companies—those with market capitalizations generally above $5 billion. Its earnings and losses are derived from principal growth and reinvested dividends.

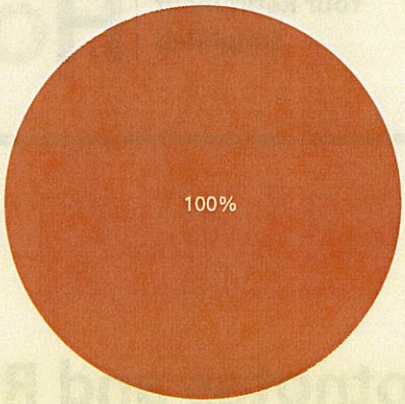
## Who Is Most Likely to Choose This Type of Investment?

This fund best suits someone who takes a fairly conservative approach to all funds that invest in stocks, but who can accept the risk of loss inherent in common stock investing.

## Transfer Information

Transfers of $10,000 or more into an investment option on a single day must remain invested in that option for a minimum of 10 business days. The last assets transferred into an investment option will be the first assets transferred out of the investment option. After any transfer of assets out of an investment option, no assets may be transferred into that investment option for 30 calendar days. Non-compliant transactions may result in the restriction of a participant's ability to make transfers. Additional information is available on the website at **www.countyla.com**.[1]

## Underlying Funds




SSgA S&P 500 Index

## Sector Diversification

| | |
|---|---|
| Information Technology | 19.03% |
| Financials | 15.62% |
| Health Care | 12.03% |
| Consumer Discretionary | 11.53% |
| Energy | 10.96% |
| Consumer Staples | 10.60% |
| Industrials | 10.14% |
| Materials | 3.62% |
| Utilities | 3.42% |
| Telecommunication Services | 3.05% |

## Top 10 Holdings

| | |
|---|---|
| Apple Inc | 3.9% |
| Exxon Mobil Corp | 3.1% |
| General Electric Co | 1.7% |
| Chevron Corp | 1.7% |
| International Business Machines Corp | 1.6% |
| Microsoft Corp | 1.6% |
| Johnson & Johnson | 1.5% |
| AT&T Inc | 1.5% |
| Google Inc - CL A | 1.5% |
| Proctor & Gamble Co | 1.5% |

HOLDINGS AND COMPOSITION OF HOLDINGS ARE SUBJECT TO CHANGE.

Your Retirement Simplified | Horizons

# Footnotes and Risk Information

1 Access to the County of Los Angeles Service Center and website may be limited or unavailable during periods of peak demand, market volatility, systems upgrades/maintenance or other reasons. Transfer requests made via the website or Service Center received on business days prior to close of the New York Stock Exchange (1:00 p.m. Pacific Time or earlier on some holidays or other special circumstances) will be initiated at the close of business the same day the request was received. The actual effective date of your transaction may vary depending on the investment option selected.

**Investment options and their underlying funds have been selected by the Plan Administrative Committee. Core securities (except the Self-Directed Brokerage Account) are offered through GWFS Equities, Inc., a Great-West Financial Company and Member FINRA/SIPC.**

Great-West Financial® refers to products and services provided by Great-West Life & Annuity Insurance Company (GWL&A), Corporate Headquarters: Greenwood Village, CO, its subsidiaries and affiliates. Not intended for plans whose situs is in New York. Other than those owned by the County of Los Angeles and Charles Schwab & Co., Inc., the trademarks, logos, service marks, and design elements used are owned by GWL&A.

Securities available through Schwab Personal Choice Retirement Account® (PCRA) are offered through Charles Schwab & Co., Inc. (Member SIPC), a registered broker-dealer. Additional information can be obtained by calling (888) 393-7272. Charles Schwab & Co., Inc. and GWFS Equities, Inc. are separate and unaffiliated. GWFS Equities, Inc., or one or more of its affiliates, may receive a fee from the investment option provider for providing certain recordkeeping, distribution, and administrative services. Core investment options offered through separately managed accounts and a bank depository fund. ©2014 Great-West Life & Annuity Insurance Company. Form# CB1004FDB-01 (01/14) PT188530

# Examples from New York City

Wednesday, April 2, 2014



## Core Investment Funds

Participants who prefer to create their own portfolio can select from the core investment funds below. Participants can choose to invest in any combination of the investment funds offered. To help you create a diversified portfolio and determine the mix that's right for you, take the Risk Tolerance Quiz.

Participants may obtain fund daily unit values by accessing their account online or calling 212-306-7760.

| | |
|---|---|
| Read more about the Stable Income Fund | View the Fund Profile (PDF) |
| Read more about the Bond Fund | View the Fund Profile (PDF) |
| Read more about the Equity Index Fund | View the Fund Profile (PDF) |
| Read more about the Socially Responsible Fund | View the Fund Profile (PDF) |
| Read more about the Mid-Cap Equity Index Fund | View the Fund Profile (PDF) |
| Read more about the International Equity Fund | View the Fund Profile (PDF) |
| Read more about the Small-Cap Equity Fund | View the Fund Profile (PDF) |

### Stable Income Fund

The investment objective of the Stable Income Fund is to conserve principal and to provide a steady rate of return. The Fund invests in a combination of insurance company general account investment contracts, a "wrapped" portfolio of high quality bonds, and other fixed income investments as well as cash equivalents. A portfolio is "wrapped" when an insurance company or bank issues a form of investment contract [or wrapper agreement] providing a guarantee that member withdrawals from the portfolio will not be adjusted for changes in market conditions. A wrapper agreement provides price stability by helping to protect the Fund from severe changes in market value and, subject to certain conditions, provide repayment of principal and interest to Plan participants.

# Equity Index Fund Profile

Information current as of 09/30/13

**Risk/Reward Indicator**

### *Investment Objective*

The investment objective of the Equity Index Fund is to replicate the return of the Standard & Poor's (S&P) 500 Index. The Equity Index Fund offers participants exposure to the stocks of large corporations through a passive investment vehicle. Returns on large cap equities have historically exceeded inflation, but with substantial volatility over short and even intermediate holding periods (risk as measured by standard deviation).

### *Investment Guidelines*

The Equity Index Fund will invest in a portfolio of equity securities of companies listed on the U. S. securities exchanges that replicates the composition and characteristics of the S&P 500 Index.

### *Fees: NYCDCP Fee versus Institutional Fund Fee*

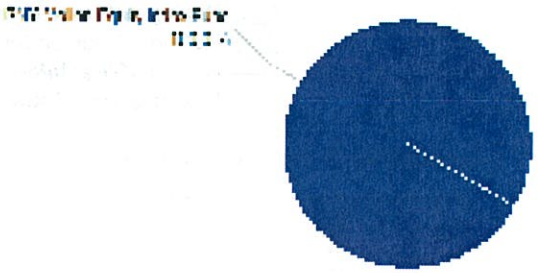
| | |
|---|---|
| **NYCDCP Equity Index Fund** | **0.05%** |
| *Institutional Median Equity Index Fund* | *0.09%* |

### *Investment Managers*

The Equity Index Fund is comprised of the following manager:

BNY Mellon.

**Current Allocation**



## *Performance History*

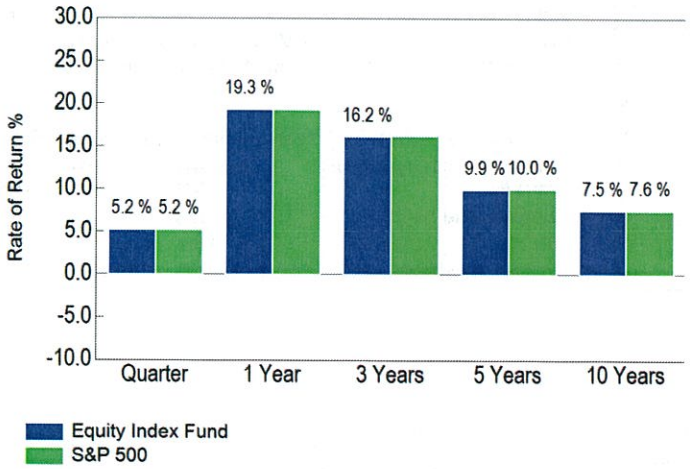
**After Fee Cumulative Returns Ending September 30, 2013**

| | 3 Mo | Rank | 1 Yr | Rank | 2 Yrs | Rank | 3 Yrs | Rank | 4 Yrs | Rank | 5 Yrs | Rank | 7 Yrs | Rank | 10 Yrs | Rank | Inception Return | Inception Since |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Equity Index Fund** | **5.2%** | **69** | **19.3%** | **64** | **24.7%** | **47** | **16.2%** | **40** | **14.6%** | **40** | **9.9%** | **54** | **5.5%** | **65** | **7.5%** | **71** | **7.8%** | **Jan-96** |
| *S&P 500* | *5.2%* | *69* | *19.3%* | *64* | *24.7%* | *47* | *16.3%* | *38* | *14.7%* | *39* | *10.0%* | *52* | *5.6%* | *64* | *7.6%* | *69* | *7.8%* | *Jan-96* |

**After Fee Year-to-Date and Annual Returns Ending September 30, 2013**

| | YTD | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Equity Index Fund** | **19.8%** | **16.0%** | **2.0%** | **14.8%** | **26.4%** | **-37.1%** | **5.5%** | **15.8%** | **4.9%** | **10.9%** | **29.2%** | **-22.0%** |
| *S&P 500* | *19.8%* | *16.0%* | *2.1%* | *15.1%* | *26.5%* | *-37.0%* | *5.5%* | *15.8%* | *4.9%* | *10.9%* | *28.7%* | *-22.1%* |

**Cumulative Returns vs. Benchmark**




**Top Holdings**

| | |
|---|---|
| APPLE | 2.89% |
| EXXON MOBIL | 2.53% |
| MICROSOFT | 1.69% |
| GENERAL ELECTRIC | 1.64% |
| GOOGLE 'A' | 1.63% |
| JOHNSON & JOHNSON | 1.63% |
| CHEVRON | 1.57% |
| PROCTER & GAMBLE | 1.38% |
| BERKSHIRE HATHAWAY 'B' | 1.36% |
| WELLS FARGO & CO | 1.33% |

## *Disclaimer*

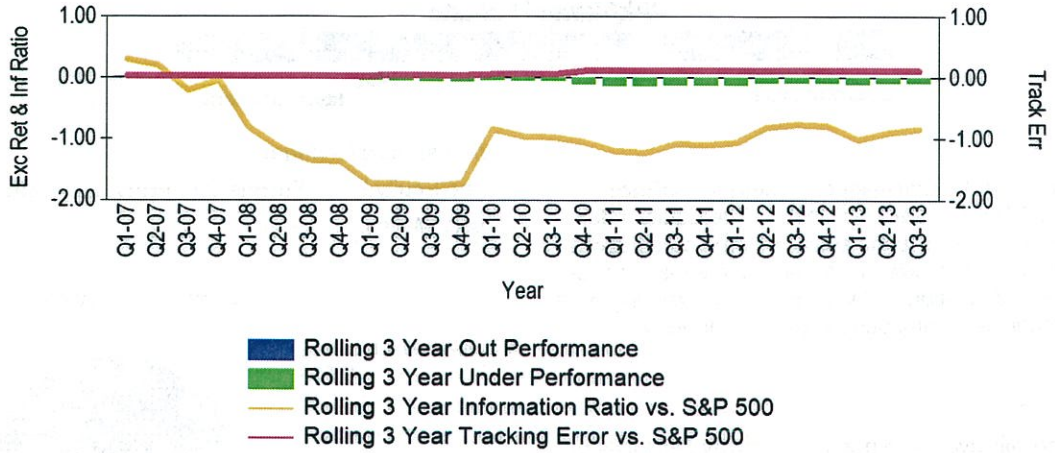
Note: The past performance of this Fund does not guarantee future results. Historical returns may reflect the performance of previous managers and allocations of the fund.

The Fund described in this Investment Profile is not FDIC insured; is not a deposit or obligation of, nor guaranteed by, any financial institution; and is not guaranteed by the New York City Deferred Compensation Plan ("Plan") or any federal, state or local government agency.

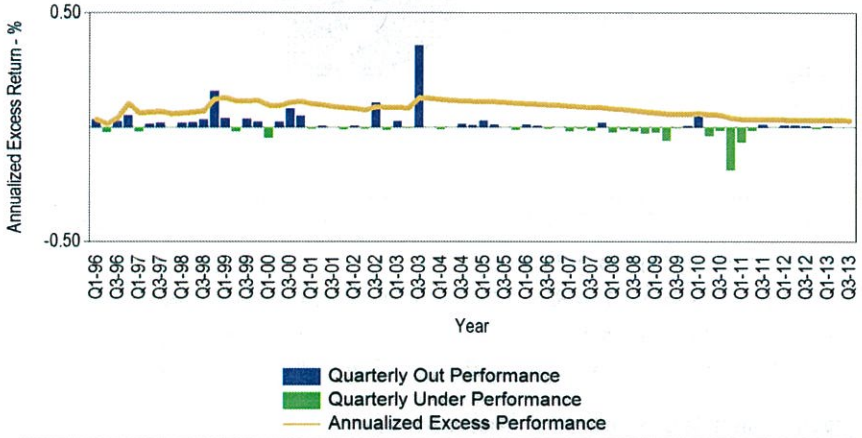
The Plan cannot offer investment, financial, tax or legal advice or make investment recommendations. The Plan regularly evaluates the performance of its investment managers and may change managers at any time. Please consider the investment objectives, risks, fees and expenses carefully before investing. The Plan's investments are in separate account vehicles, not in mutual funds. The Plan's funds are not listed in the newspaper; rather the daily net asset values are available on the Plan's website.

## Additional Performance Analysis

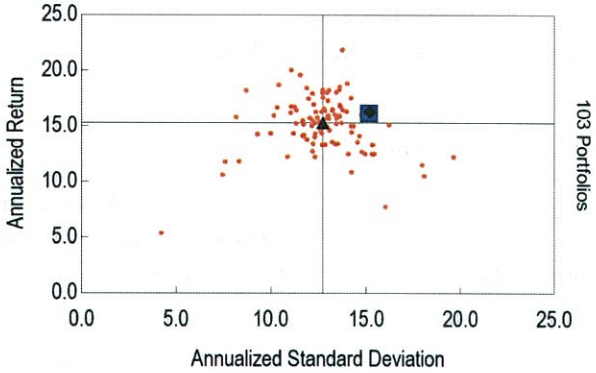
### Three Year Rolling Performance, Information Ratio and Tracking Error




### Annualized Excess Performance




### Annualized Return vs. Annualized Standard Deviation
### 3 Years Ending September 30, 2013




- Equity Index Fund
- S&P 500
- Universe Median
- eA US Large Cap Core Equity Net

The above analysis shows the portfolio risk (measured by standard deviation) vs. the portfolio return. The equity index fund has a higher standard deviation and return than the universe median, but matches the S&P 500 Index. On a risk adjusted basis, the equity index fund has matched the benchmark over the past three years.

## Portfolio Characteristics

| | Portfolio | S&P 500 |
|---|---|---|
| Number of Holdings | 505 | 500 |
| Weighted Avg. Market Cap. ($B) | 103.11 | 103.01 |
| Median Market Cap. ($B) | 15.03 | 15.04 |
| Price To Earnings | 20.57 | 19.13 |
| Price To Book | 3.75 | 3.55 |
| Price To Sales | 2.38 | 2.14 |
| Return on Equity (%) | 19.02 | 18.32 |
| Yield (%) | 2.13 | 2.13 |
| Beta | 1.00 | 1.00 |
| R-Squared | 1.00 | 1.00 |

| INDUSTRY SECTOR DISTRIBUTION (% Equity) | Portfolio | S&P 500 |
|---|---|---|
| Energy | 10.31 | 10.47 |
| Materials | 3.45 | 3.52 |
| Industrials | 10.60 | 10.73 |
| Consumer Discretionary | 12.31 | 12.48 |
| Consumer Staples | 9.91 | 10.05 |
| Health Care | 12.87 | 13.01 |
| Financials | 16.01 | 16.26 |
| Information Technology | 17.64 | 17.90 |
| Telecommunications | 2.38 | 2.42 |
| Utilities | 3.08 | 3.16 |

| | Sharpe Ratio | Information Ratio |
|---|---|---|
| Equity Index Fund | 1.18 | -0.25 |
| S&P 500 | 1.17 | -- |

### Risk vs. Return for 3 Years Ending September 30, 2013

| Rank within eA US Large Cap Core Equity Net | Annualized Return | Percentile Rank | Standard Deviation |
|---|---|---|---|
| Equity Index Fund | 16.2% | 34 | 15.2% |
| S&P 500 | 16.3% | 33 | 15.2% |
| Median for this Universe | 15.3% | | 12.7% |

## Additional Information (Links)

Note: The benchmark for the Equity Index Fund is the S&P 500. All performance figures provided are net of fees. Institutional Median Fees are derived from Morningstar universes.

Learn more about the Equity Index Fund

Link to Manager Fact Sheet

- BNY Mellon

Glossary of Terms

# Mid-Cap Equity Fund Profile

nycdcp

**Information current as of 09/30/13**

Risk/Reward Indicator

### *Investment Objective*

The investment objective of the Mid-Cap Equity Fund is to provide exposure to stocks of medium-sized companies and to allow participants to diversify their stock holdings by market capitalization. The Fund will be diversified by sector, industry and issuer. Over longer investment periods, returns on mid-cap equities have historically exceeded inflation, but with substantial volatility over short and even intermediate holding periods (risk as measured by standard deviation).

### *Investment Guidelines*

The Mid-Cap Equity Fund will invest primarily in medium-sized domestic companies listed on U.S. stock exchanges. Due to the allowance of some latitude in stock valuations, up to 25% of the Mid-Cap Equity Fund may be invested in small capitalization or large capitalization securities.

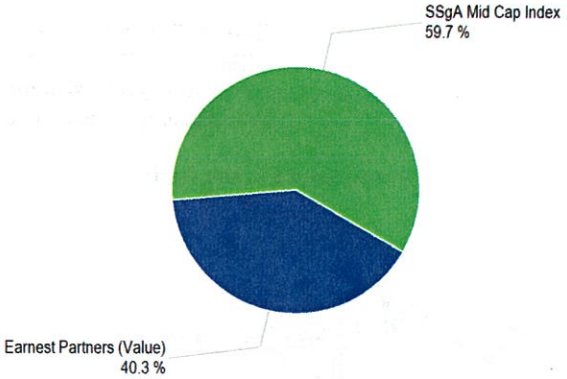
### *Fees: NYCDCP Fee versus Institutional Fund Fee*

| | |
|---|---|
| **NYCDCP Mid-Cap Equity Fund** | **0.44%** |
| *Institutional Median Mid-Cap Fund* | *0.70%* |

### *Investment Managers*

The Mid-Cap Equity Fund is comprised of the following managers: Wellington Management Company, LLP (Growth), Earnest Partners (Value) and State Street Global Advisors [SSgA] (Index).

**Current Allocation**




## *Performance History*

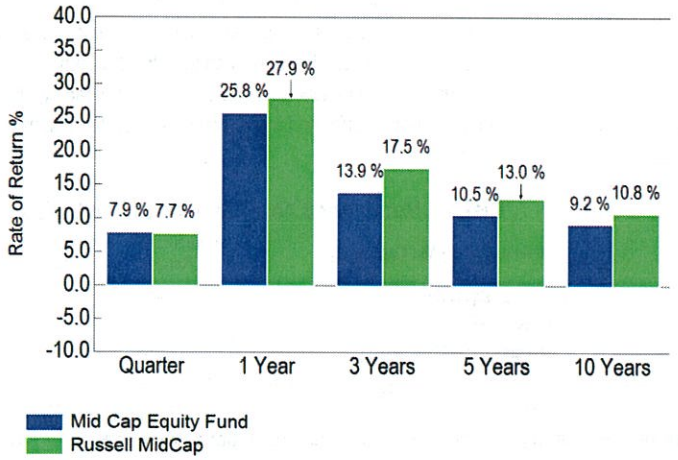
**After Fee Cumulative Returns Ending September 30, 2013**

| | 3 Mo | Rank | 1 Yr | Rank | 2 Yrs | Rank | 3 Yrs | Rank | 5 Yrs | Rank | 7 Yrs | Rank | 10 Yrs | Rank | Inception Return | Inception Since |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mid Cap Equity Fund** | **7.9%** | **56** | **25.8%** | **60** | **25.0%** | **67** | **13.9%** | **88** | **10.5%** | **80** | **6.7%** | **80** | **9.2%** | **82** | **7.3%** | **Jan-96** |
| *Russell MidCap* | *7.7%* | *61* | *27.9%* | *37* | *28.0%* | *36* | *17.5%* | *40* | *13.0%* | *41* | *7.7%* | *61* | *10.8%* | *53* | *10.5%* | *Jan-96* |

**After Fee Year-to-Date and Annual Returns Ending September 30, 2013**

| | YTD | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mid Cap Equity Fund** | **21.5%** | **12.6%** | **-5.5%** | **24.8%** | **45.2%** | **-42.6%** | **8.1%** | **14.5%** | **7.7%** | **19.4%** | **26.5%** |
| *Russell MidCap* | *24.3%* | *17.3%* | *-1.5%* | *25.5%* | *40.5%* | *-41.5%* | *5.6%* | *15.3%* | *12.6%* | *20.2%* | *40.1%* |

**Cumulative Returns vs. Benchmark**




**Top Holdings**

| | |
|---|---|
| EB TEMPORARY INVESTMENT FUND VAR RT 12/31/2049 DD 03/25/97 | 1.31% |
| VALSPAR | 1.31% |
| PEGATRON GDR (REGS) | 1.27% |
| S+P MID 400 EMINI DEC13 XCME 20131220 | 1.16% |
| COVANCE | 1.13% |
| ANSYS | 1.04% |
| PROTECTIVE LIFE | 1.03% |
| RAYMOND JAMES FINL. | 1.02% |
| MEDNAX | 1.02% |
| SYNOPSYS | 1.02% |

## *Disclaimer*

Note: The past performance of this Fund does not guarantee future results. Historical returns may reflect the performance of previous managers and allocations of the fund.

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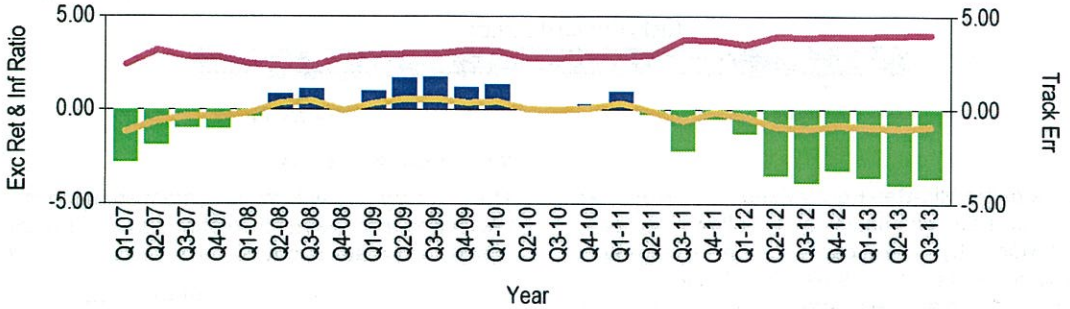
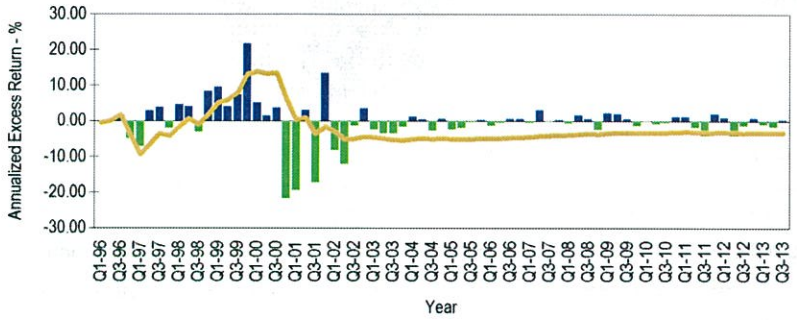
## Additional Performance Analysis

### Three Year Rolling Performance, Information Ratio and Tracking Error



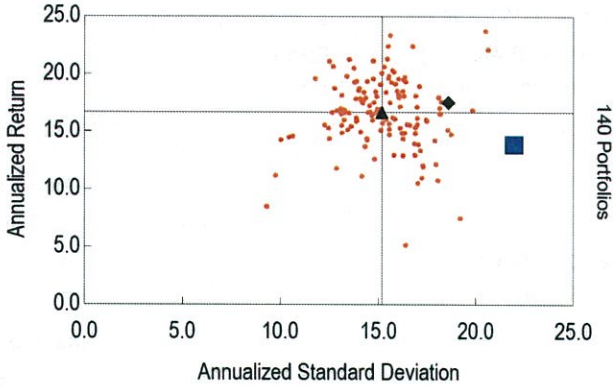

Rolling 3 Year Out Performance
Rolling 3 Year Under Performance
Rolling 3 Year Information Ratio vs. Russell MidCap
Rolling 3 Year Tracking Error vs. Russell MidCap

### Annualized Excess Performance




Quarterly Out Performance
Quarterly Under Performance
Annualized Excess Performance

### Annualized Return vs. Annualized Standard Deviation
### 3 Years Ending September 30, 2013




- Mid Cap Equity Fund
- Russell MidCap
- Universe Median
- eA US Mid Cap Equity Net

The above analysis shows the portfolio risk (measured by standard deviation) vs. the portfolio return. The mid cap equity fund has a higer standard deviation than the benchmark, and a lower return. On a risk adjusted basis, the mid cap equity fund has underperformed the benchmark over the past three years.

## Portfolio Characteristics

| | Portfolio | Russell MidCap |
|---|---|---|
| Number of Holdings | 445 | 808 |
| Weighted Avg. Market Cap. ($B) | 6.43 | 10.44 |
| Median Market Cap. ($B) | 3.58 | 5.44 |
| Price To Earnings | 24.59 | 23.48 |
| Price To Book | 3.37 | 3.47 |
| Price To Sales | 2.23 | 2.41 |
| Return on Equity (%) | 15.66 | 15.30 |
| Yield (%) | 1.39 | 1.53 |
| Beta | 1.20 | 1.00 |
| R-Squared | 0.98 | 1.00 |

| INDUSTRY SECTOR DISTRIBUTION (% Equity) | Portfolio | Russell MidCap |
|---|---|---|
| Energy | 5.96 | 6.78 |
| Materials | 8.85 | 5.52 |
| Industrials | 15.56 | 13.10 |
| Consumer Discretionary | 13.13 | 17.45 |
| Consumer Staples | 2.17 | 5.58 |
| Health Care | 7.96 | 10.98 |
| Financials | 21.51 | 19.58 |
| Information Technology | 18.26 | 13.74 |
| Telecommunications | 0.30 | 1.07 |
| Utilities | 3.81 | 6.19 |

| | Sharpe Ratio | Information Ratio |
|---|---|---|
| Mid Cap Equity Fund | 0.63 | -0.91 |
| Russell MidCap | 0.94 | – |

### Risk vs. Return for 3 Years Ending September 30, 2013

| Rank within US Mid Cap Equity | Annualized Return | Percentile Rank | Standard Deviation |
|---|---|---|---|
| Mid Cap Equity Fund | 13.9% | 89 | 22.0% |
| Russell MidCap | 17.5% | 48 | 18.6% |
| Median for this Universe | 17.5% | | 18.9% |

## Additional Information (Links)

Note: The benchmark for the Mid-Cap Equity Fund is the Russell Midcap. All performance figures provided are net of fees. Institutional Median Fees are derived from Morningstar universes.

Learn more about the Mid-Cap Equity Fund

Link to Manager Fact Sheets

- State Street Global Advisors
- Earnest Partners

Glossary of Terms

# Stable Income Fund Profile

nycdcp

**Information current as of 09/30/13**

Risk/Reward Indicator

Lower Risk/Reward — Higher Risk/Reward

### *Investment Objective*

The investment objective of the Stable Income Fund is to provide an opportunity to invest in high quality fixed income securities with an emphasis on safety of principal and consistency of returns. The Stable Income Fund invests in a diversified pool of investment contracts issued by high quality financial institutions. The value of the contracts depends on the credit of the issuing financial institution and the value of the assets held under each contract. The value of these contracts is not assured.

### *Investment Guidelines*

The Stable Income Fund will maintain an allocation to liquid bond investments, guaranteed investment contracts, other investment grade fixed income portfolios and wrap contracts issued by banks and insurance companies.

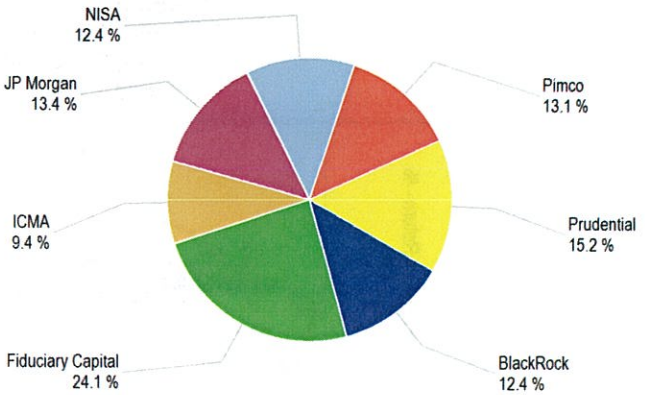
### *Fees: NYCDCP Fee versus Institutional Fund Fee*

| | |
|---|---|
| **NYCDCP Stable Income Fund** | **0.30%** |
| *Institutional Median Stable Income Fund* | *0.40%* |

### *Investment Managers*

The fixed income portfolios within the Stable Income Fund are managed by BlackRock, Fiduciary Capital Management, ICMA-RC, NISA Investment Advisors, L.L.C, PIMCO, JPMorgan and Prudential Fixed Income.

**Current Allocation**




## *Performance History*

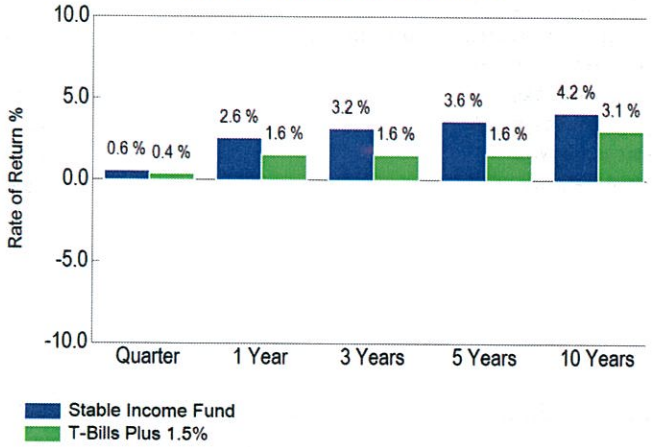
**After Fee Cumulative Returns Ending September 30, 2013**

| | 3 Mo | 1 Yr | 2 Yrs | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | Inception Return | Inception Since |
|---|---|---|---|---|---|---|---|---|---|
| **Stable Income Fund** | **0.6%** | **2.6%** | **2.9%** | **3.2%** | **3.6%** | **4.0%** | **4.2%** | **5.6%** | **Jan-90** |
| *T-Bills Plus 1.5%* | *0.4%* | *1.6%* | *1.6%* | *1.6%* | *1.6%* | *2.6%* | *3.1%* | *5.0%* | *Jan-90* |

**After Fee Year-to-Date and Annual Returns Ending September 30, 2013**

| | YTD | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Stable Income Fund** | **1.9%** | **3.0%** | **3.6%** | **4.3%** | **4.2%** | **4.9%** | **4.7%** | **4.5%** | **4.4%** | **4.7%** | **5.2%** | **5.7%** |
| *T-Bills Plus 1.5%* | *1.2%* | *1.6%* | *1.5%* | *1.6%* | *1.6%* | *2.9%* | *6.0%* | *6.4%* | *4.6%* | *2.8%* | *2.7%* | *3.3%* |

**Cumulative Returns vs. Benchmark**




**Top 5 Contract Issuers**

1) MetLife Insurance Company Separate Account (Aa3/AA-/AA-)
2) United of Omaha (A1/A+/NR)
3) Monamental Life (Transamerica) (A1/AA-/AA-)
4) Prudential (A2-/AA-/A+)
5) New York Life (AAA/AA+/Aaa)

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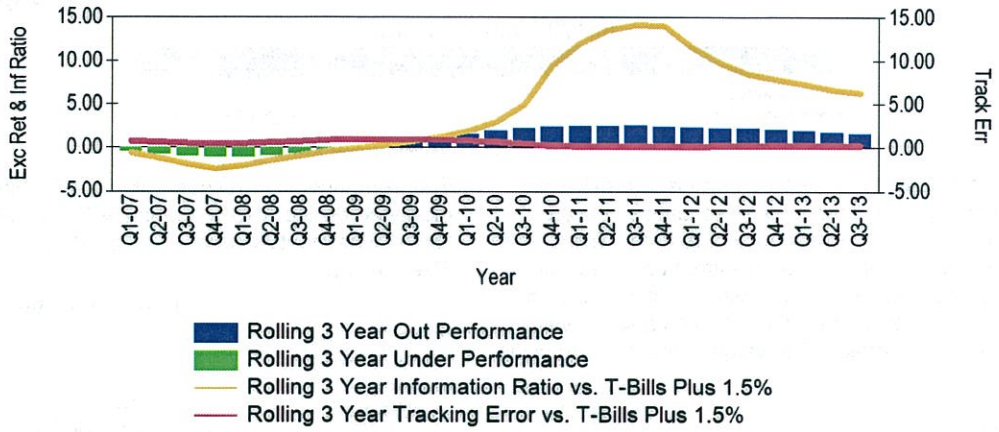
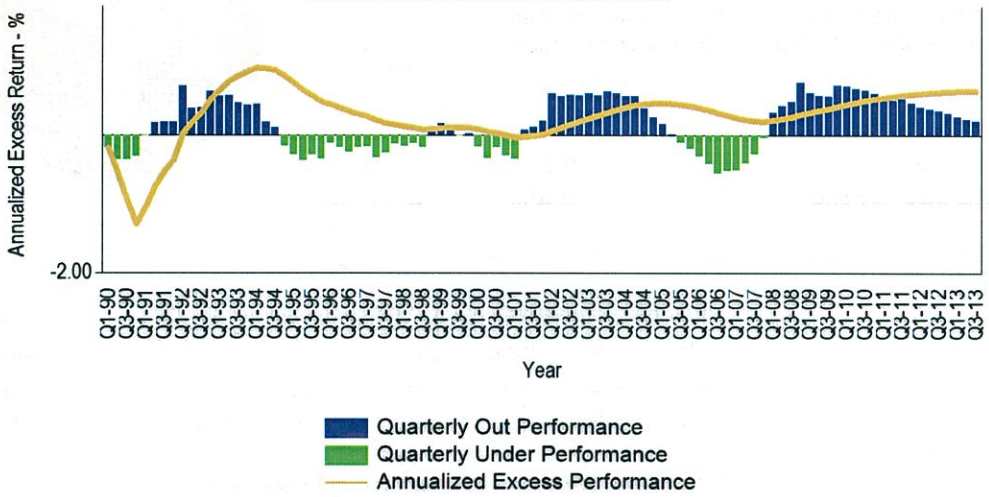
## Additional Performance Analysis

### Three Year Rolling Performance, Information Ratio and Tracking Error




### Annualized Excess Performance




## Portfolio Characteristics

| Portfolio Characteristics | SIF | Barclays 1-3 Yr. Treasury |
|---|---|---|
| Book Value ($mil) | $ 5,054 | n/a |
| Modified Duration (Yrs.) | 3.4 | 1.9 |
| Crediting Rate (%) | 2.4 | n/a |
| Maturity (Yrs.) | 3.7 | 2.0 |
| Quality | Aa3 | AAA |

| Stable Income Fund | BV ($mm) | % of Total BV |
|---|---|---|
| ICMA | $ 504 | 10% |
| Traditional GICs | $ 1,210 | 24% |
| Synthetic Composite | $ 3,339 | 66% |

## Top Holdings

| | |
|---|---|
| JP MORGAN GAC 32297 ACCT# 643 0.000% 12/31/2049 DD 09/14/10 | 13.37% |
| PIMCO GAC 32300 ACCT# 644 0.000% 12/31/2049 DD 09/14/10 | 13.13% |
| ICMA STABLE RETURN FUND | 9.43% |
| UNITED STATES TREASURY | 2.74% |
| EB TEMPORARY INVESTMENT FUND VAR RT 12/31/2049 DD 03/25/97 | 2.64% |
| UNITED STATES TREASURY | 1.22% |
| UNITED STATES TREASURY | 1.14% |
| UNITED STATES TREASURY | 0.97% |
| FNMA CONV 30 YR SF | 0.89% |
| UNITED STATES TREASURY | 0.83% |

## Additional Information (Links)

Note: The benchmark for the Stable Income Fund is the T-Bill Plus 1.5%. All performance figures provided are net of fees. Institutional Median Fees are derived from Morningstar universes.

Learn more about the Stable Income Fund

Link to Manager Fact Sheet

- NISA

Glossary of Terms

Third Quarter 2013

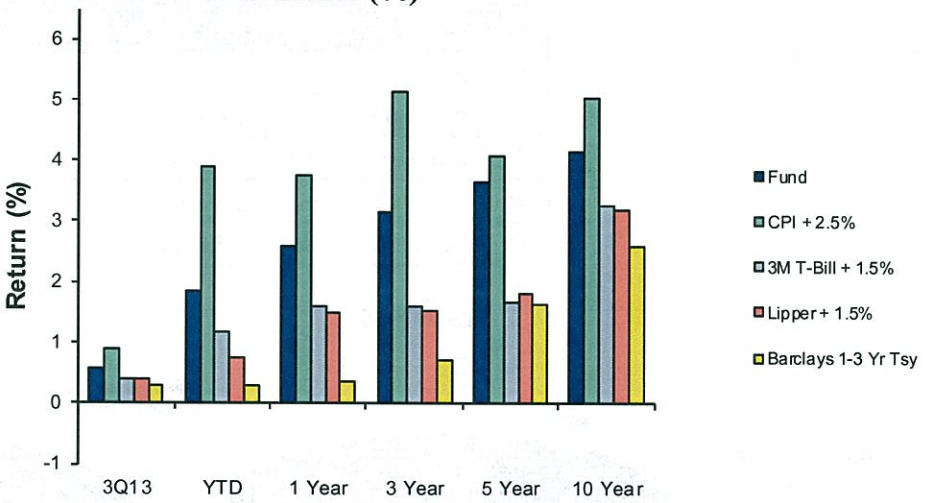
# City of New York – Stable Income Fund

The Stable Income Fund is managed to protect principal while providing the potential for higher rates of return than other conservative investments, such as money market funds. To achieve this, the Fund invests in instruments which are not expected to experience price fluctuation in most economic or interest rate environments. Examples of these assets include guaranteed investment contracts (GICs), bank investment contracts (BICs), and security backed contracts.

## Investment Objectives

- Safety of principal
- Consistency of returns with minimal volatility

### Annualized Performance (%)*




| *As of 09/30/13* | 3Q13 | YTD | 1 Year | 3 Year | 5 Year | 10 Year |
|---|---|---|---|---|---|---|
| Fund | 0.58 | 1.86 | 2.57 | 3.17 | 3.64 | 4.15 |
| CPI + 2.5% | 0.91 | 3.90 | 3.74 | 5.15 | 4.06 | 5.02 |
| 3M T-Bill + 1.5% | 0.39 | 1.19 | 1.60 | 1.61 | 1.68 | 3.25 |
| Lipper + 1.5% | 0.40 | 1.10 | 1.50 | 1.50 | 1.70 | 3.20 |
| Barclays 1-3 Yr Tsy | 0.29 | 0.30 | 0.37 | 0.71 | 1.65 | 2.58 |

* Fund benchmarks are the Consumer Price Index (CPI) + 2.5%, 3 Month T-Bill + 1.5%, Lipper Institutional Money Market Average + 1.5% and Barclays 1-3 Year Treasury Index. The fund returns reflected above are net of all fees. The Stable Income Fund is not FDIC insured. Past performance is no guarantee of future returns.

## Investment Strategy

The Fund invests in a diversified pool of investment contracts issued by high quality financial institutions. The fixed income portfolios within the security backed contracts are managed by several nationally known fixed income managers in order to provide diversification by investment style. This Fund is appropriate for investors seeking more income than a money market fund without the price fluctuation experienced in many other funds.

## Fund Management

As of 09/30/13, the fixed income portfolios within the Fund were managed by BlackRock, ICMA-RC, NISA Investment Advisors, L.L.C, PIMCO, JPMorgan and Prudential Fixed Income.

## Glossary

**Blended Yield**

- The weighted average yield of the portfolio's holdings, net of all fees.

**Book Value Contracts**

- Bank Investment Contract (BIC):

  A contract in which a bank guarantees to return the principal amount deposited by the contract holder on a specified date and at a specified rate of interest.

- Guaranteed Investment Contract (GIC):

  A contract in which an insurance company guarantees to return the principal amount to the contract holder on a specified date and at a specified rate of interest.

- Security Backed Contracts:

  A contract issued by a bank or insurance company in which an underlying portfolio of fixed income securities back the contract. Security backed contracts guarantee a minimum rate of return.


For more information, contact:
City of New York Deferred Compensation Plan
Phone: (212) 306-7760
Website: www.nyc.gov/deferredcomp

# City of New York – Stable Income Fund

## Fund Facts

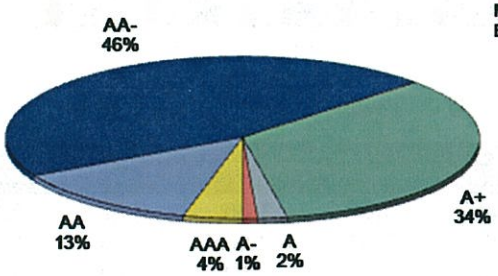
Inception Date.....1/1/1990
Trustee.....City of New York Deferred Compensation Plan Board
Valuation Frequency.....Daily

## Fund Characteristics

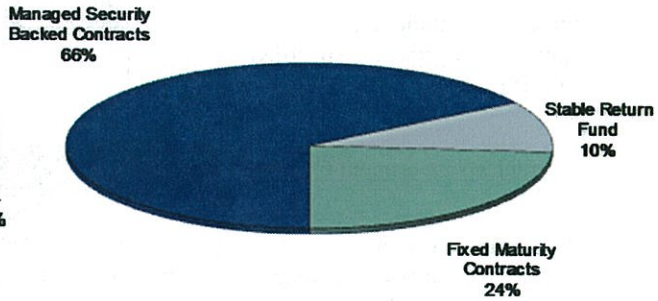
| Stable Income Fund Characteristics As of September 30, 2013 | |
|---|---|
| Total Assets | $5,074,641,753 |
| Overall Weighted Average Quality | AA- |
| Weighted Average Maturity (Duration) | 3.35 Years |
| 3rd Quarter 2013 Yield (net of fees) | 2.35% |
| 4th Quarter 2013 Yield (net of fees) | 2.20% |

## Fund Diversification

Credit Quality




Sector Diversification




## Top Five Contract Issuers

1. Metropolitan Life (Aa3/AA-/AA-)
2. Prudential (A1/AA-/A+)
3. United of Omaha (A1/A+/NR)
4. Transamerica (A1/AA-/AA-)
5. New York Life (Aaa/AA+/AAA)

## Fund Guidelines

### Investment Guidelines

- 100% of fund invested in book value investment instruments: GIC's, security backed contracts and stable value funds
- Weighted Average Quality: AA- or better
- Weighted Average Maturity (Duration): maximum 4.0 years
- Liquidity: 5% minimum invested in cash equivalents

Disclosure:

The estimated yield is provided to help participants make choices concerning their investment options. The yield for the Stable Income Fund for the period October 1, 2013 to December 31, 2013 will be 2.20%. The yield is an annual rate that changes each calendar quarter. Participants earn approximately 1/4th of the yield each quarter. Total assets equals the sum of all participant balances.

# ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Branded Funds

ACTION: X

DATE: April 25, 2014

INFORMATION: _____

BACKGROUND:

During the April 2014 Alaska Retirement Management Board (ARMB) meeting, Great West presented the advantages, disadvantages, and logistics of Branded Funds, also called White Label or Private Label Funds.

STATUS:

Branded funds are customized investment options that may comprise one or multiple investment managers to accomplish a common theme, including but not limited to region, market cap, or investment style. Branded funds are currently used by a number of large plan sponsors. The plan benefits include the following:

- Structure allows for a more diversified suite of managers in each asset class.
- Maintains a manageable investment lineup while increasing manager diversity.
- Minimizes the impact on participants for manager termination/hire decisions.
- Manager style diversification should smooth performance swings over time.
- Offers participants the ability to create portfolios which more closely resemble ARMB's defined benefit portfolio.
- Creates customized options to better cater to the investment needs of Alaska's defined contribution plan participants.

RECOMMENDATION:

The Alaska Retirement Management Board authorize staff to further research and work with Great West in the development of optimal branded fund options with the goal of returning to the Board with an implementation recommendation.

# NFJ International Value

April 25, 2014

## Presented to:

Alaska Retirement Management Board

Gail (Anagick) Schubert, Chair
Sam Trivette, Vice-Chair
Gayle W. Harbo, Secretary
Tom Brice
Kristin Erchinger
Martin Pihl
Angela Rodell, Commissioner of Revenue
Sandra Ryan
Curtis Thayer, Commissioner of the Department of Administration

ARMB Investment Advisory Council

Dr. William W. Jennings
Dr. Jerrold Mitchell
Robert Shaw

Gary Bader, Chief Investment Officer, ARMB

Michael O'Leary, CFA, Executive Director, Callan Associates

## Presented by:

Allianz Global Investors

Ben J. Fischer, CFA
Managing Director, Portfolio Manager, CIO, NFJ

R. Burns McKinney, CFA
Managing Director, Portfolio Manager/Analyst

Melody McDonald, CIMA
Managing Director, Relationship Manager

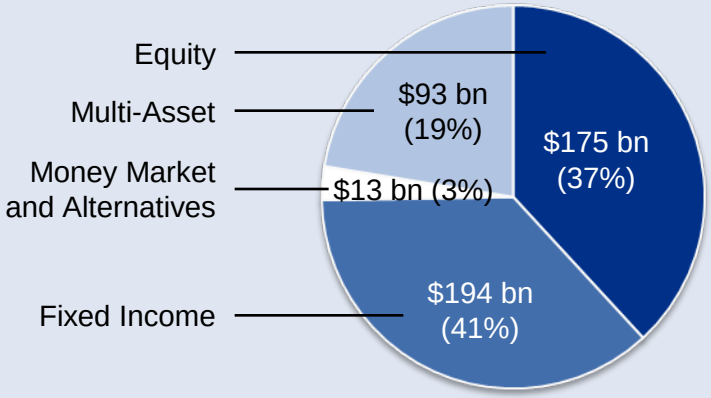
James Robertson
Director, Institutional Business Development

Allianz Global Investors

# Diversified active investment manager with a strong parent

## Active investment strategies: $475 billion total AUM[1]

### AUM by asset class




### AUM by region

- Europe: $346 bn (73%)
- US: $89 bn (19%)
- Asia-Pacific: $40 bn (8%)

### AUM by clients

- Institutional[2]: $334 bn (70%)
- Retail: $141 bn (30%)

- The world's largest insurer[3]
- Financially stable[4]
- Over 120 years experience in managing risk
- Over 83 million clients in 70 countries[5]

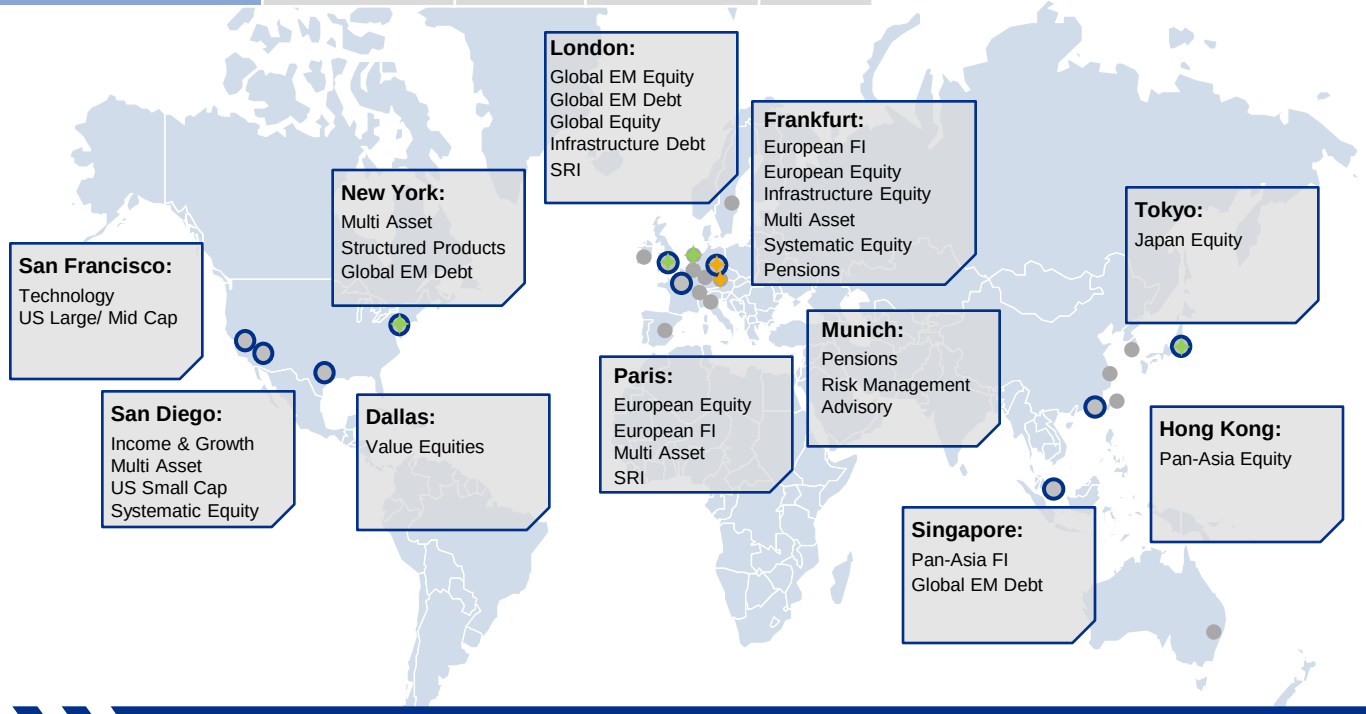
**Our commitment is to be a reliable partner for our clients in an uncertain world**

[1] Assets under Advice and Assets under Management as of December 31, 2013, based on EUR to USD currency conversion rate as of December 31, 2013 (1.3783). [2] Includes Institutional share classes of mutual funds.
[3] "Forbes Global 2000: The World's Biggest Public Companies", Forbes, April 2012, based on sales and market value. [4] €110.8 bn in revenue and solvency ratio of 182% in 2013. [5] As of December 31, 2013.

Allianz Global Investors

# Consultative local delivery

| | North America | Europe | Asia Pacific | Total |
|---|---|---|---|---|
| Locations | 4 | 12 | 6 | 22 |
| Relationship Managers | 116 | 175 | 110 | 401 |
| Investment Professionals | 111 | 292 | 107 | 510 |




- Global centers of investment expertise
- Centers of Solutions expertise
- Investment / client service offices
- Solutions services offices

**Average portfolio manager tenure of 10+ years**

**We are committed to understanding and acting to deliver on clients' unique needs**

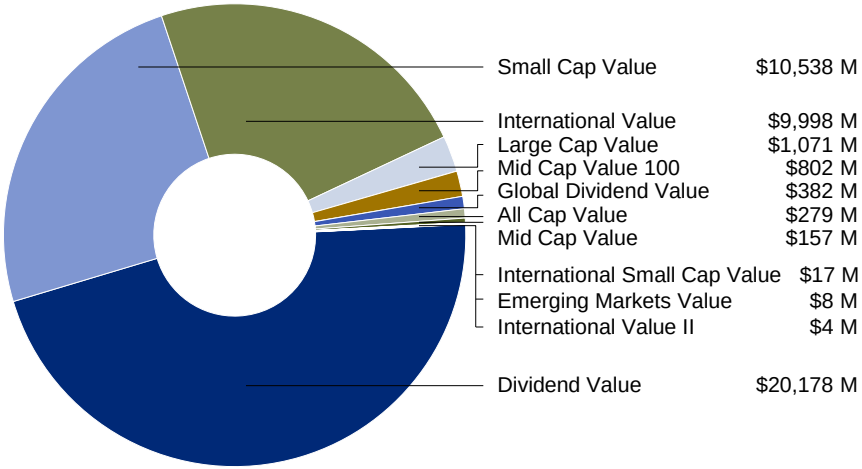
Note: All numbers as of December 31, 2013. Abbreviations: fixed income (FI), sustainable and responsible investing (SRI), emerging markets (EM).

# NFJ Investment Group

As of December 31, 2013

- Value platform for Allianz Global Investors
- Established manager with a proven investment strategy
- Disciplined value investment process
  - Dividend paying companies
  - Attractive valuations
  - Risk management
- Team of ten investment professionals with an average of 20 years industry experience

NFJ Investment Strategies: $43.4 B*




*NFJ Firmwide assets reflect $10.6 B managed on a non-discretionary basis.

# NFJ International Value Team: Experienced Value Specialists

## NFJ International Value

**Ben J. Fischer, CFA (48/25)**
*Managing Director, CIO NFJ, Portfolio Manager*
M.B.A., New York University
B.A., J.D., University of Oklahoma

## Portfolio Construction Team

**Paul A. Magnuson (28/21)**
*Managing Director, Portfolio Manager/Analyst*
B.B.A., University of Nebraska

**Thomas W. Oliver, CFA, CPA (18/8)**
*Managing Director, Portfolio Manager/Analyst*
M.B.A., B.B.A., University of Texas

**R. Burns McKinney, CFA (17/8)**
*Managing Director, Portfolio Manager/Analyst*
M.B.A., The Wharton School, University of Pennsylvania
B.A., Dartmouth College

**L. Baxter Hines, CFA (8/5)**
*Director, Portfolio Manager/Analyst*
M.B.A., University of Texas
B.A., University of Virginia

**John R. Mowrey, CFA (7/7)**
*Vice President, Portfolio Manager/Analyst*
M.B.A., Southern Methodist University
B.A., Rhodes College

As of March 31, 2014. Numbers in parentheses reflect years of industry experience/years of tenure and are updated twice a year, first quarter and third quarter.

# Investment Approach

# Contrarian Investment Philosophy

- Diversified portfolio of dividend paying companies with low relative and absolute valuations
- Analysis of facts is the best way to outperform in an efficient market
- Focus not only on earnings and valuations, but also on financial quality and risk

The statements above reflect the typical investment philosophy applied to NFJ strategies. At any given time other factors may affect the investment process.
There is no guarantee that this philosophy will generate outperformance.

# NFJ International Value Investment Overview

## Discipline results in consistency and repeatability

| Dividends | Valuations | Price Momentum |
|---|---|---|
| ▪ Invest exclusively in dividend paying companies<br>– Disciplined capital allocation<br>– Balance sheet quality<br>– Quality of earnings and cash flow | ▪ Attractive valuation on relative and absolute measures<br>– Price / earnings<br>– Price / book<br>– Price / cash flow<br>– Additional relative metrics | ▪ Stocks exhibiting poor price behavior at time of purchase are excluded from consideration<br>▪ Most attractive stocks have potential for greater weight in portfolio |

The diagrams and statements above reflect the typical investment philosophy applied to this strategy. There is no guarantee that a stock will continue to pay a dividend. At any given time other factors may affect the investment process.

# NFJ International Value: Investment Process

| Initial Screening | Fundamental Research | Portfolio Construction |
|---|---|---|
| **Primary Screen: ADR Universe (1,200 companies)**<br>▪ Dividend yield<br>▪ Valuation ranking<br>500 stocks | **Financial Analysis**<br>▪ Balance sheet<br>▪ Cash flow<br>▪ Earnings<br>▪ Dividends<br>▪ Additional fundamental metrics<br>**Risk Assessment of Portfolio Candidates** | **1% through 4% Positions** (at purchase)<br>**Buy Discipline**<br>▪ Low valuations<br>▪ High dividend yield<br>▪ Positive price momentum<br>▪ Diversification across industries<br>▪ Additional metrics<br>**Sell Discipline**<br>▪ Absolute valuation<br>▪ Relative valuation<br>▪ Takeout<br>▪ Quality deterioration<br>▪ Extremely poor price momentum |
| **Negative Screens**<br>▪ Price momentum<br>▪ Earnings revision<br>▪ Insider trading<br>300 stocks | | |
| **Diversification**<br>▪ Categorize stocks by industry and rank by valuation<br>75-100 stocks | 40-60 stocks | |
| **Ongoing Universe Screening** | | |

**Alpha Potential**

The number of securities referenced above represent the typical number of stocks researched at each stage of the investment process. During any given stage of the investment process the number of securities may vary from that shown above. The diagrams and statements above reflect the typical investment process applied to this strategy. At any given time other criteria may affect the investment process. See additional disclosure at the end of this presentation.

# Portfolio at a Glance

# NFJ International Value: Characteristics

## NFJ International Value Representative Portfolio vs. MSCI ACWI ex-U.S. Index

As of February 28, 2014

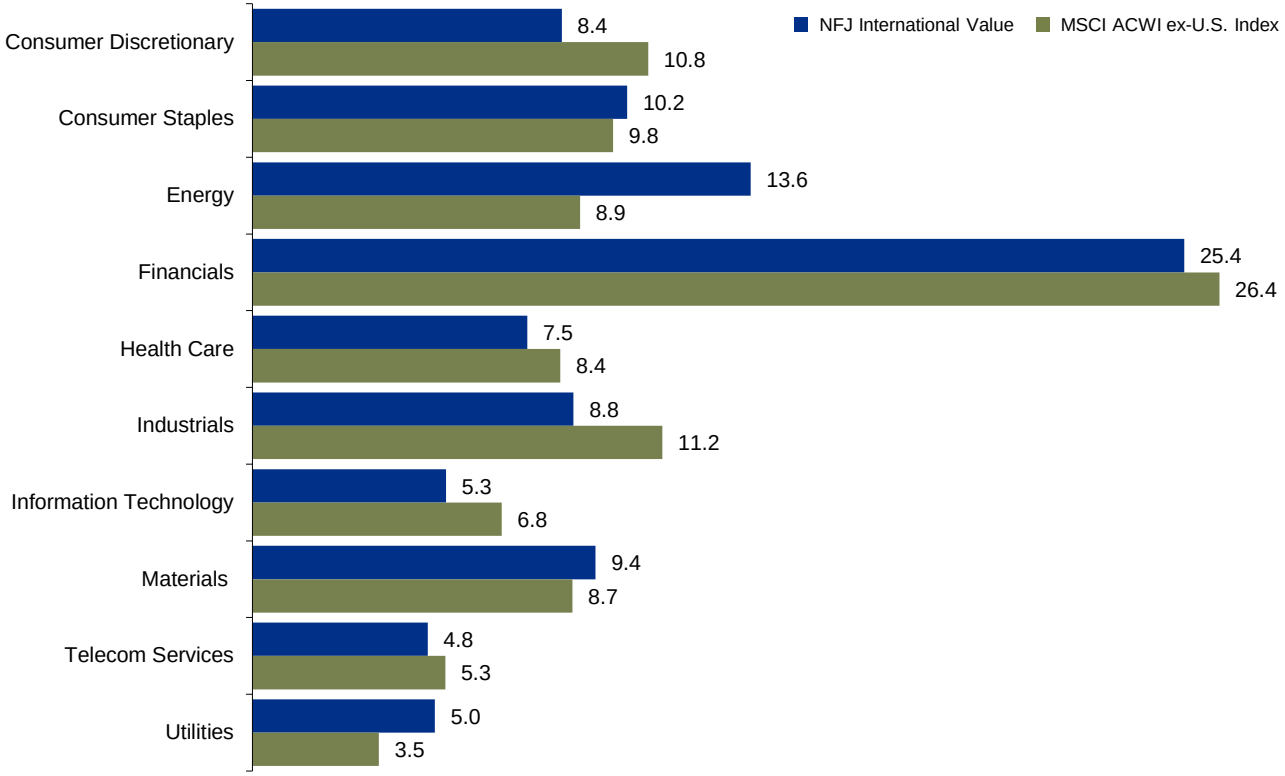
| Characteristics | NFJ International Value | MSCI ACWI ex-U.S. Index |
|---|---|---|
| Dividend Yield (%) | 3.0 | 2.9 |
| Price-to-Earnings (fwd 1-year estimate) | 10.9 | 13.7 |
| Price-to-Book | 1.5 | 1.8 |
| Return on Equity (%, 5-year average) | 14.3 | 12.5 |
| Market Cap (weighted average, $ bn) | 53.9 | 56.5 |
| Number of Holdings | 58 | 1,822 |

Portfolio characteristics are supplemental information, and supplement the performance presented herein. See additional disclosure at the end of this presentation.
The Price-to-Book calculation is adjusted to remove extreme price-to-book values of greater than 100 or less than 0.01. Source: FactSet

# Bottom-Up Stock Selection Drives Sector Weights

## NFJ International Value Representative Portfolio vs. MSCI ACWI ex-U.S. Index

As of February 28, 2014

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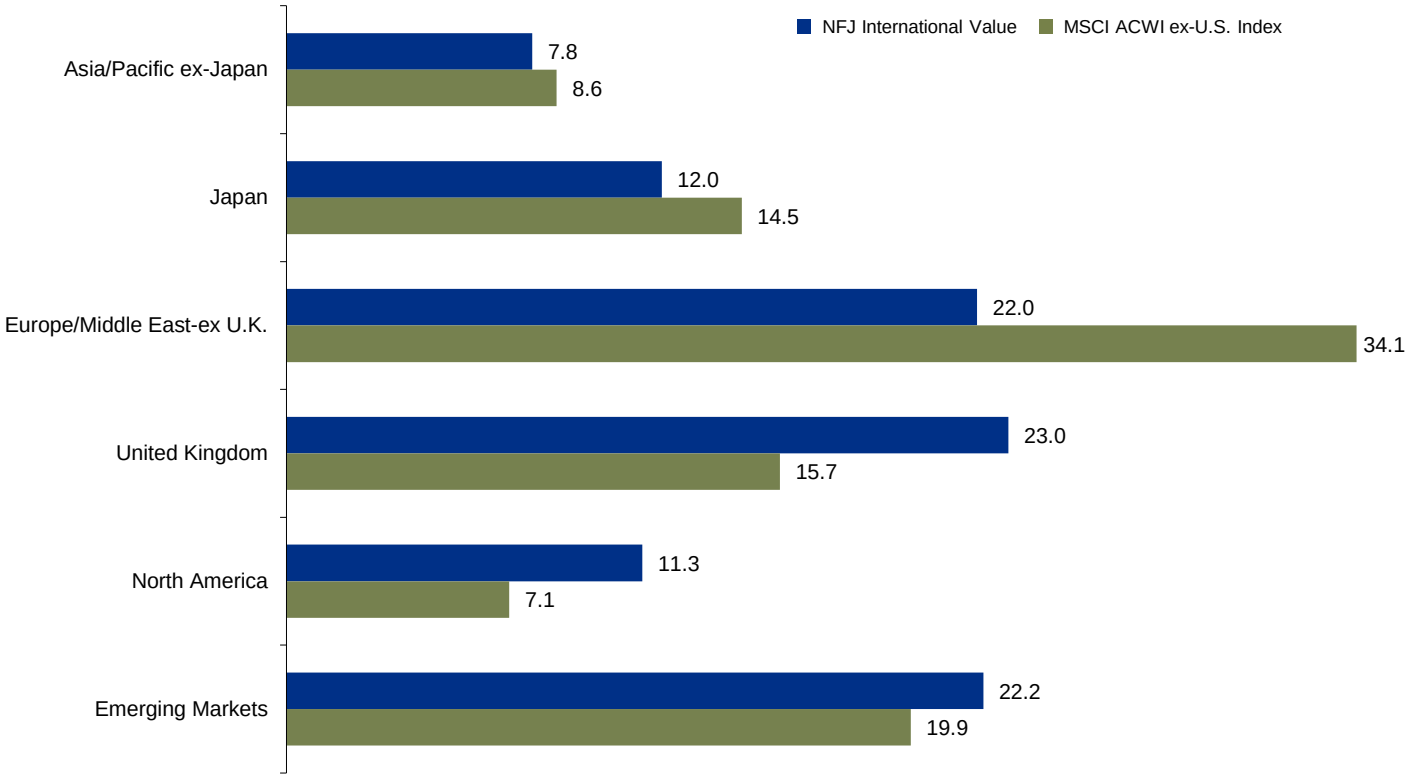
# Opportunistic Investing Across Regions

## NFJ International Value Representative Portfolio vs. MSCI ACWI ex-U.S. Index

As of February 28, 2014




The chart above does not include cash held in the representative portfolio. Region and country classifications for developed markets are determined using definitions from Morgan Stanley Capital International (MSCI). All holdings from outside the identified developed markets are included under "Emerging Markets." Portfolio characteristics are supplemental information, and supplement the performance presented herein. See additional disclosure at the end of this presentation.

# NFJ International Value: Top Ten Holdings

## NFJ International Value Representative Portfolio vs. MSCI ACWI ex-U.S. Index

As of February 28, 2014

| Name | Portfolio Weights (%) | Benchmark (%) |
|---|---|---|
| AstraZeneca PLC | 3.1 | 0.5 |
| Royal Dutch Shell PLC | 3.0 | 1.3 |
| Sasol Ltd. | 3.0 | 0.2 |
| Zurich Insurance Group AG | 2.9 | 0.2 |
| Yamana Gold Inc. | 2.5 | 0.0 |
| Sinopec Ltd. | 2.4 | 0.1 |
| Statoil ASA | 2.4 | 0.2 |
| Rio Tinto PLC | 2.3 | 0.4 |
| Golden Agri-Resources Ltd. | 2.3 | 0.0 |
| Teva Pharmaceutical Industries Ltd. | 2.3 | 0.2 |
| **TOTAL** | **26.3** | **3.1** |

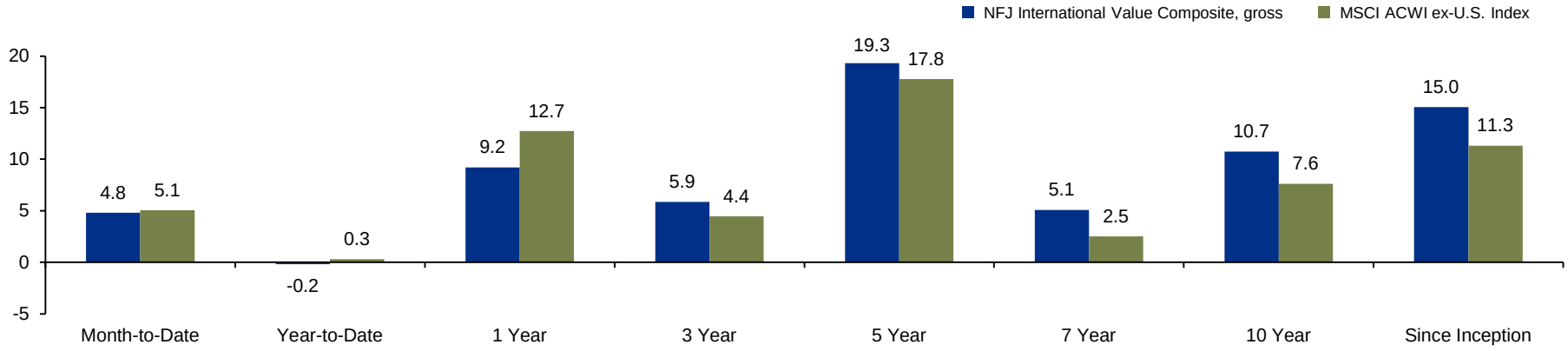
The top ten holdings are subject to change and the portfolio holdings will vary over time. References to specific securities and their issues are examples of securities held in the portfolio and are not intended to be, and should not be interpreted as an offer, solicitation or recommendation to purchase or sell any financial instrument. A list of all recommendations made by the adviser for the strategy for the preceding 12 months is available upon request. Top ten holdings are selected based on size of positions, from a representative account. Portfolio holdings are supplemental Information, and supplement the performance presented herein. See additional disclosure at the end of this presentation.

# Performance Highlights

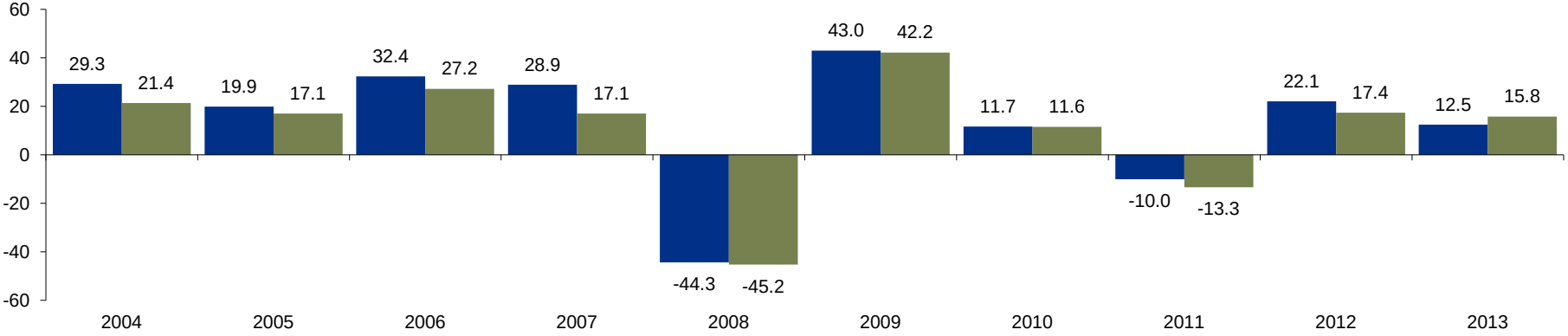
# NFJ International Value: Composite Performance

As of February 28, 2014

## Annualized (%)




## Calendar (%)

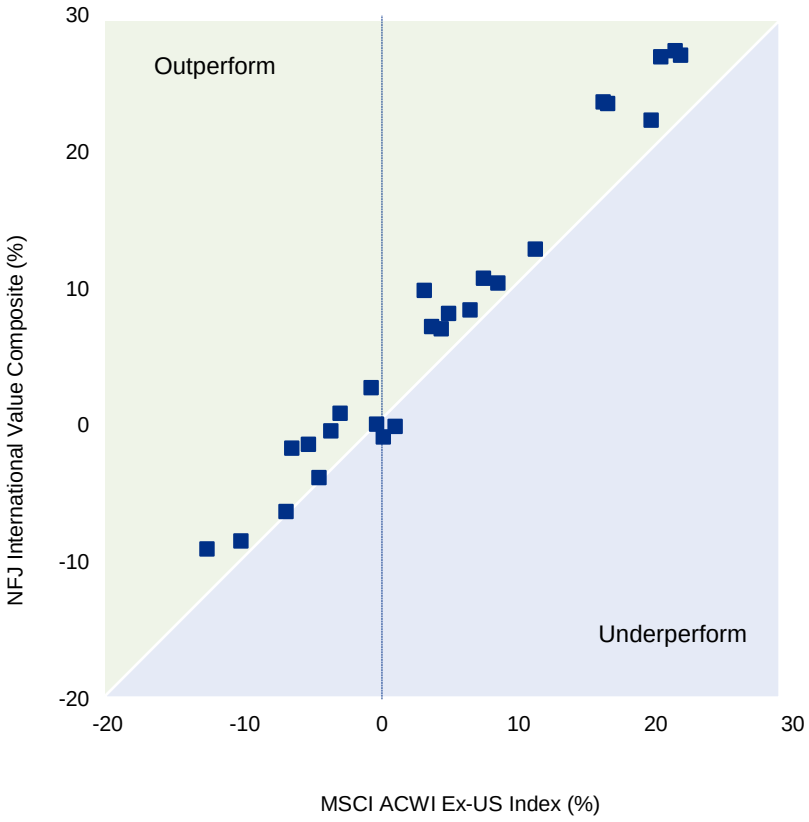



Composite performance inception date: March 1, 2003. Performance of less than one year has not been annualized. Composite performance is supplemental information and supplements the performance presented herein. The performance shown above is gross and does not reflect the deduction of investment advisory fees. Past performance is not indicative of future results. See additional disclosure at the end of this presentation.

# Historical Outperformance In Up and Down Markets

## NFJ International Value Composite vs. MSCI ACWI ex-U.S. Index, since inception*

Gross of Fees, as of **December 31, 2013**




- Measured **quarterly** since composite inception*, NFJ International Value has outperformed the MSCI ACWI ex-U.S. Index in 94% of all rolling 3-year periods with an average outperformance of +392 bps
- During the same time period, NFJ International Value has outperformed the MSCI ACWI ex-U.S. Index in 100% of negative rolling 3-year periods with an average outperformance of +271 bps

* Composite performance inception date: March 1, 2003. The chart above compare each of the rolling 3 year annualized returns, for the period of the composite (gross of fees) and the indicated index, since the first full calendar quarter of composite performance. Data is calculated using quarterly returns. Past performance is not indicative of future results. Rolling period performance is supplemental information, and supplements the performance presented herein. See additional disclosure at the end of this presentation for important information.

# Summary

# NFJ Summary

- Value platform for Allianz Global Investors
- Established manager with a proven investment strategy
- Disciplined value investment process
  - Dividend paying companies
  - Attractive valuations
  - Risk management
- Consistently strive to outperform benchmark and peers

Past performance is no guarantee of future results.

# Appendix

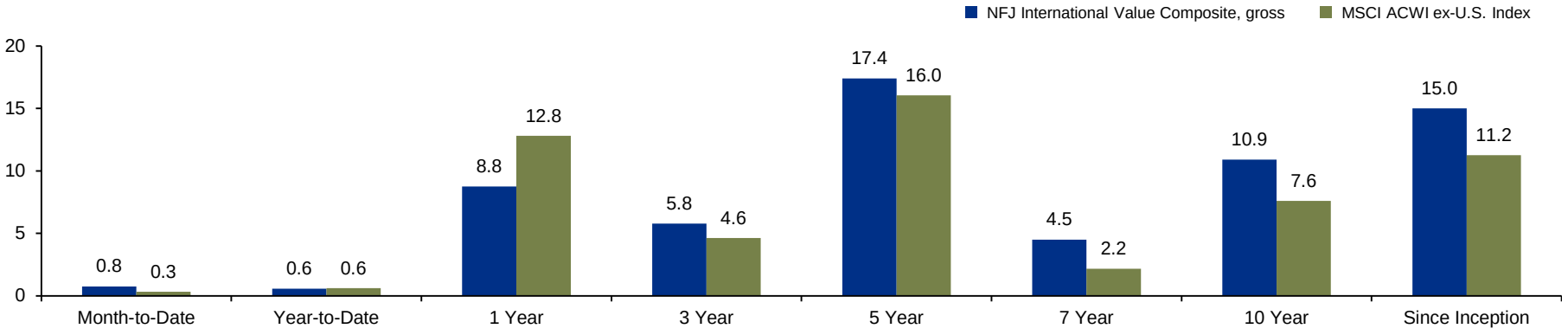
Allianz Global Investors

# Performance and Characteristics as of March 31, 2014

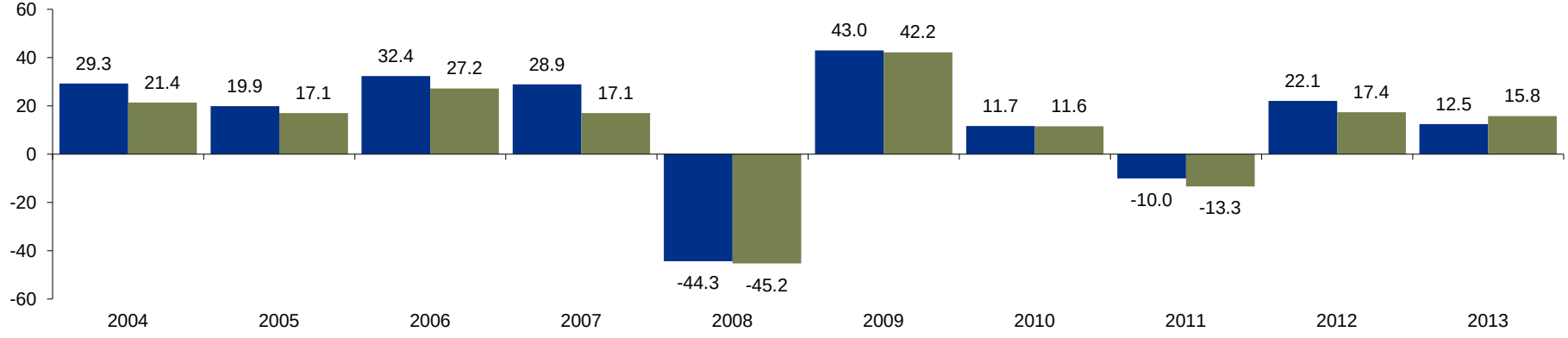
# NFJ International Value: Composite Performance

As of March 31, 2014

## Annualized (%)




## Calendar (%)

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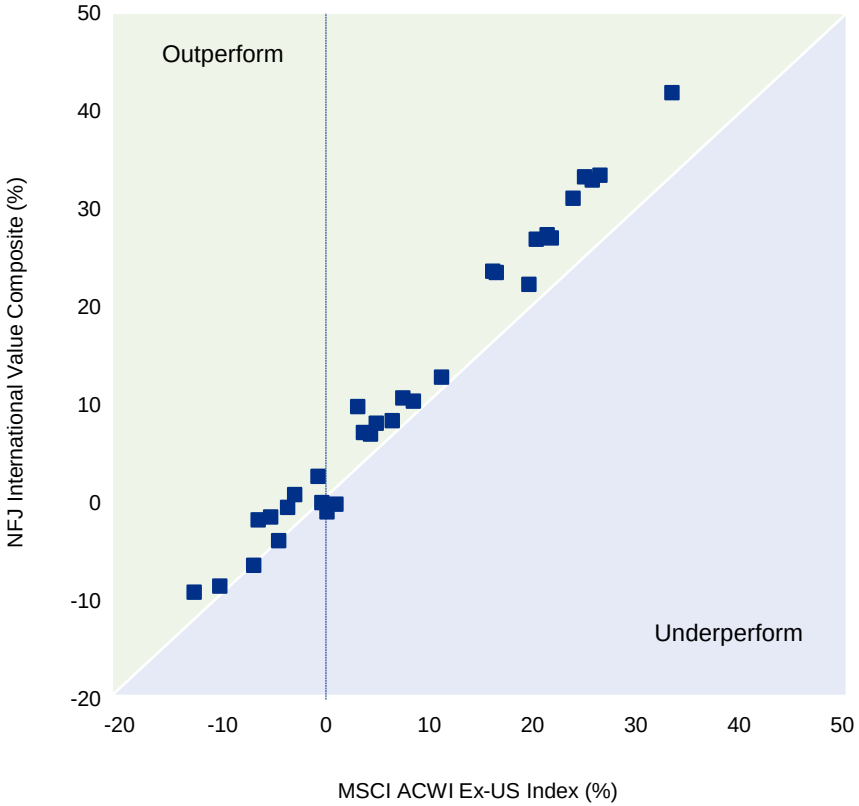
# Historical Outperformance In Up and Down Markets

## NFJ International Value Composite vs. MSCI ACWI ex-U.S. Index, since inception*

Gross of Fees, as of **March 31, 2014**




- Measured **quarterly** since composite performance inception*, NFJ International Value has outperformed the MSCI ACWI ex-U.S. Index in 94% of all rolling 3-year periods with an average outperformance of +384 bps
- During the same time period, NFJ International Value has outperformed the MSCI ACWI ex-U.S. Index in 100% of negative rolling 3-year periods with an average outperformance of +260 bps

* Composite performance inception date: March 1, 2003. The chart above compare each of the rolling 3 year annualized returns, for the period of the composite (gross of fees) and the indicated index, since the first full calendar quarter of composite performance. Data is calculated using quarterly returns. Past performance is not indicative of future results. Rolling period performance is supplemental information, and supplements the performance presented herein. See additional disclosure at the end of this presentation for important information.

# NFJ International Value: Rolling 3-Year Performance

## NFJ International Value Composite vs. MSCI ACWI ex-U.S. Index, since inception*

Gross of Fees, as of March 31, 2014

| Period Ending | NFJ International Value Composite (gross) | MSCI ACWI ex-U.S. Index |
|---|---|---|
| Apr-03 To Mar-06 | 41.90 | 33.51 |
| Jul-03 To Jun-06 | 32.99 | 25.78 |
| Oct-03 To Sep-06 | 31.14 | 23.92 |
| Jan-04 To Dec-06 | 27.09 | 21.81 |
| Apr-04 To Mar-07 | 27.40 | 21.42 |
| Jul-04 To Jun-07 | 33.30 | 25.03 |
| Oct-04 To Sep-07 | 33.46 | 26.53 |
| Jan-05 To Dec-07 | 26.96 | 20.37 |
| Apr-05 To Mar-08 | 23.55 | 16.49 |
| Jul-05 To Jun-08 | 23.67 | 16.16 |
| Oct-05 To Sep-08 | 9.88 | 3.09 |
| Jan-06 To Dec-08 | -1.66 | -6.57 |
| Apr-06 To Mar-09 | -9.03 | -12.75 |
| Jul-06 To Jun-09 | -1.38 | -5.35 |
| Oct-06 To Sep-09 | 2.76 | -0.78 |
| Jan-07 To Dec-09 | 0.90 | -3.04 |
| Apr-07 To Mar-10 | -0.39 | -3.72 |

| Period Ending | NFJ International Value Composite (gross) | MSCI ACWI ex-U.S. Index |
|---|---|---|
| Jul-07 To Jun-10 | -8.43 | -10.27 |
| Oct-07 To Sep-10 | -6.29 | -6.98 |
| Jan-08 To Dec-10 | -3.80 | -4.58 |
| Apr-08 To Mar-11 | 0.11 | -0.38 |
| Jul-08 To Jun-11 | -0.84 | 0.11 |
| Oct-08 To Sep-11 | -0.06 | 0.98 |
| Jan-09 To Dec-11 | 12.89 | 11.20 |
| Apr-09 To Mar-12 | 22.34 | 19.65 |
| Jul-09 To Jun-12 | 10.77 | 7.43 |
| Oct-09 To Sep-12 | 7.25 | 3.63 |
| Jan-10 To Dec-12 | 7.08 | 4.33 |
| Apr-10 To Mar-13 | 8.19 | 4.87 |
| Jul-10 To Jun-13 | 10.43 | 8.48 |
| Oct-10 To Sep-13 | 8.45 | 6.43 |
| Jan-11 To Dec-13 | 7.31 | 5.61 |
| Apr-11 To Mar-14 | 5.79 | 4.63 |

* Composite performance inception date: March 1, 2003. This chart identifies the composite performance numbers for each of the consecutive quarterly returns of the composite (gross of fees) and the indicated index since the first full calendar quarter of composite performance. Past performance is not indicative of future results. See additional disclosure at the end of this presentation.

# NFJ International Value: Characteristics

## NFJ International Value Representative Portfolio vs. MSCI ACWI ex-U.S. Index

As of March 31, 2014

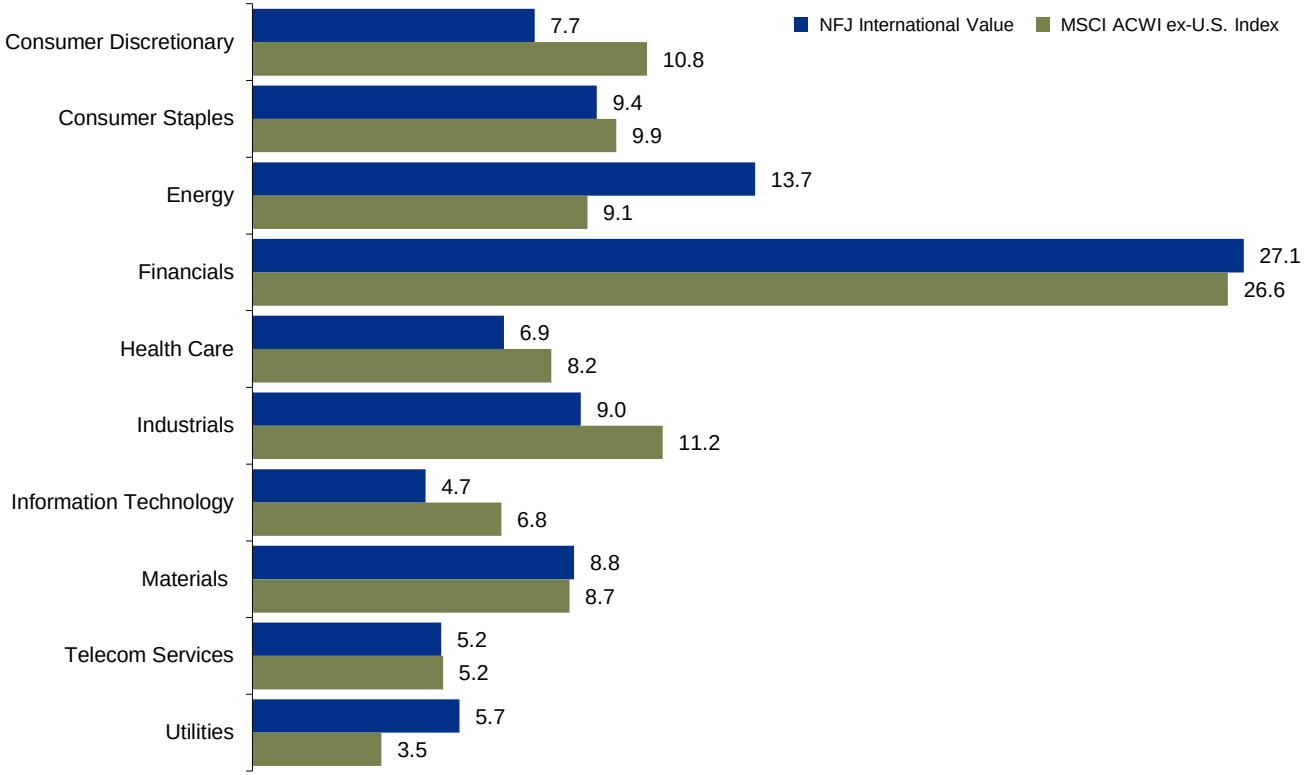
| Characteristics | NFJ International Value | MSCI ACWI ex-U.S. Index |
|---|---|---|
| Dividend Yield (%) | 3.1 | 2.9 |
| Price-to-Earnings (fwd 1-year estimate) | 10.8 | 13.6 |
| Price-to-Book | 1.5 | 1.8 |
| Return on Equity (%, 5-year average) | 14.2 | 12.5 |
| Market Cap (weighted average, $ bn) | 54.6 | 55.6 |
| Number of Holdings | 59 | 1,824 |

Portfolio characteristics are supplemental information, and supplement the performance presented herein. See additional disclosure at the end of this presentation.
The Price-to-Book calculation is adjusted to remove extreme price-to-book values of greater than 100 or less than 0.01. Source: FactSet

# Bottom-Up Stock Selection Drives Sector Weights

## NFJ International Value Representative Portfolio vs. MSCI ACWI ex-U.S. Index

As of March 31, 2014

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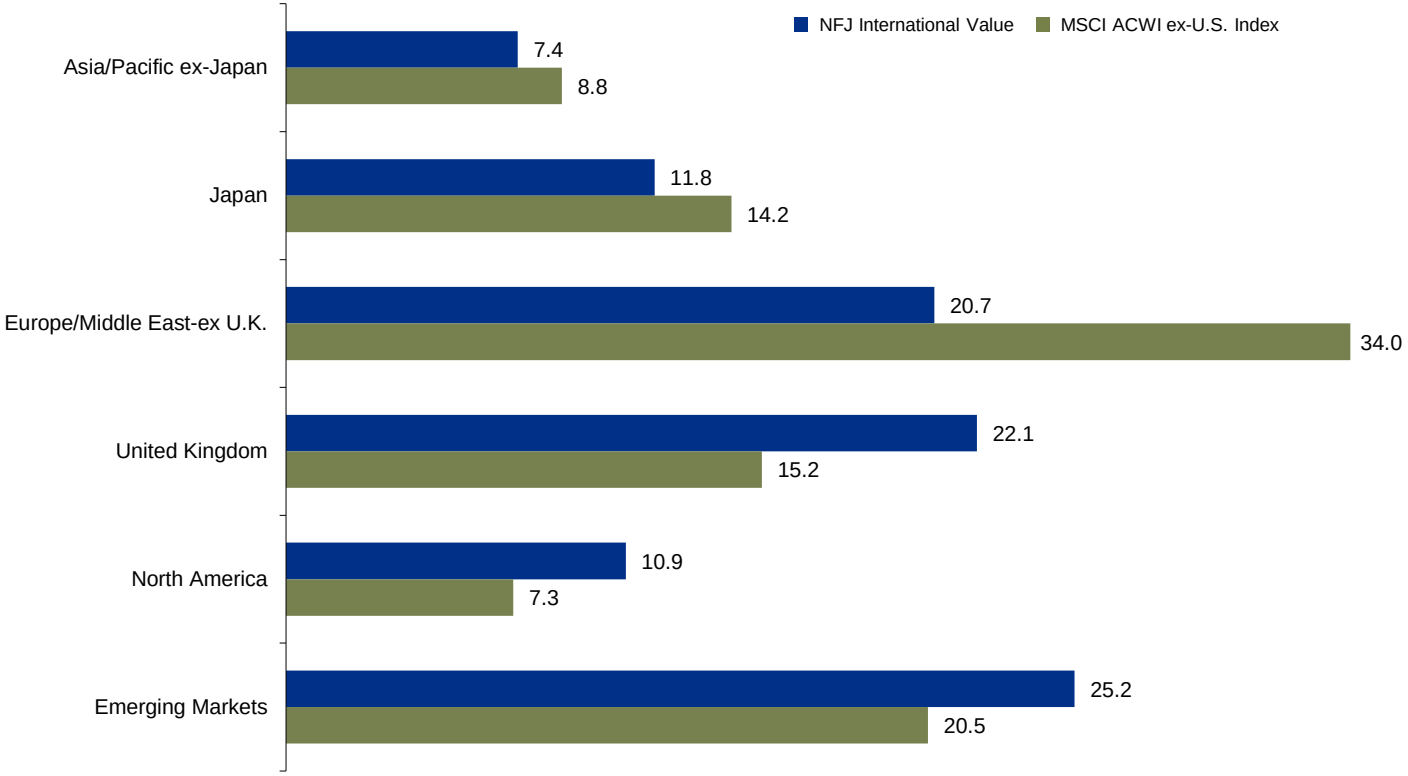
# Opportunistic Investing Across Regions

## NFJ International Value Representative Portfolio vs. MSCI ACWI ex-U.S. Index

As of March 31, 2014

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# NFJ International Value: Top Ten Holdings

## NFJ International Value Representative Portfolio vs. MSCI ACWI ex-U.S. Index

As of March 31, 2014

| Name | Portfolio Weights (%) | Benchmark (%) |
|---|---|---|
| Sasol Ltd. | 3.1 | 0.2 |
| Royal Dutch Shell PLC | 3.0 | 1.3 |
| AstraZeneca PLC | 2.9 | 0.4 |
| Zurich Insurance Group AG | 2.8 | 0.2 |
| China Construction Bank Corp. | 2.4 | 0.3 |
| LUKoil | 2.3 | 0.2 |
| Banco Bradesco SA | 2.2 | 0.2 |
| Statoil ASA | 2.2 | 0.2 |
| Sinopec Ltd. | 2.1 | 0.1 |
| Centrica PLC | 2.1 | 0.2 |
| **TOTAL** | **25.0** | **3.2** |

The top ten holdings are subject to change and the portfolio holdings will vary over time. References to specific securities and their issues are examples of securities held in the portfolio and are not intended to be, and should not be interpreted as an offer, solicitation or recommendation to purchase or sell any financial instrument. A list of all recommendations made by the adviser for the strategy for the preceding 12 months is available upon request. Top ten holdings are selected based on size of positions, from a representative account. Portfolio holdings are supplemental Information, and supplement the performance presented herein. See additional disclosure at the end of this presentation.

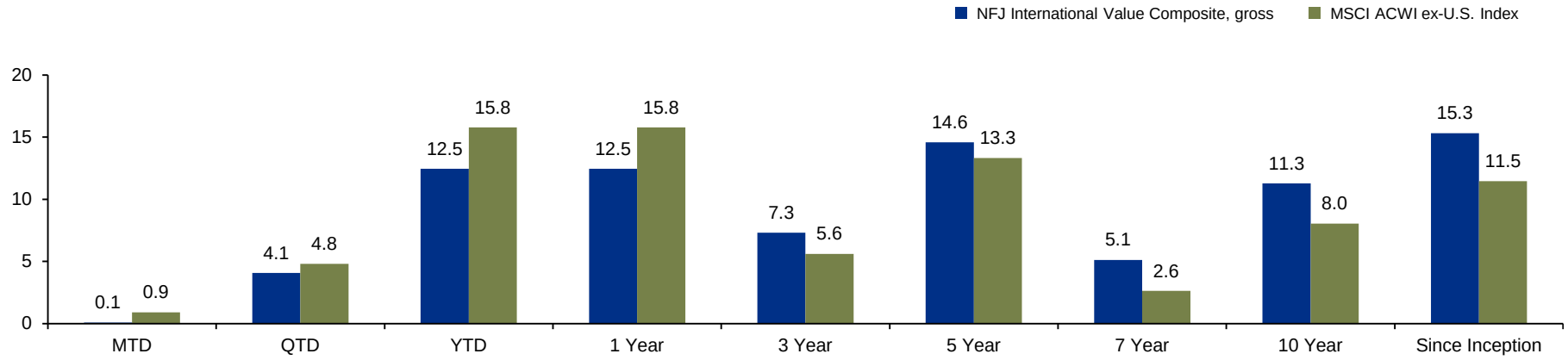
Allianz Global Investors

# Performance and Characteristics as of December 31, 2013

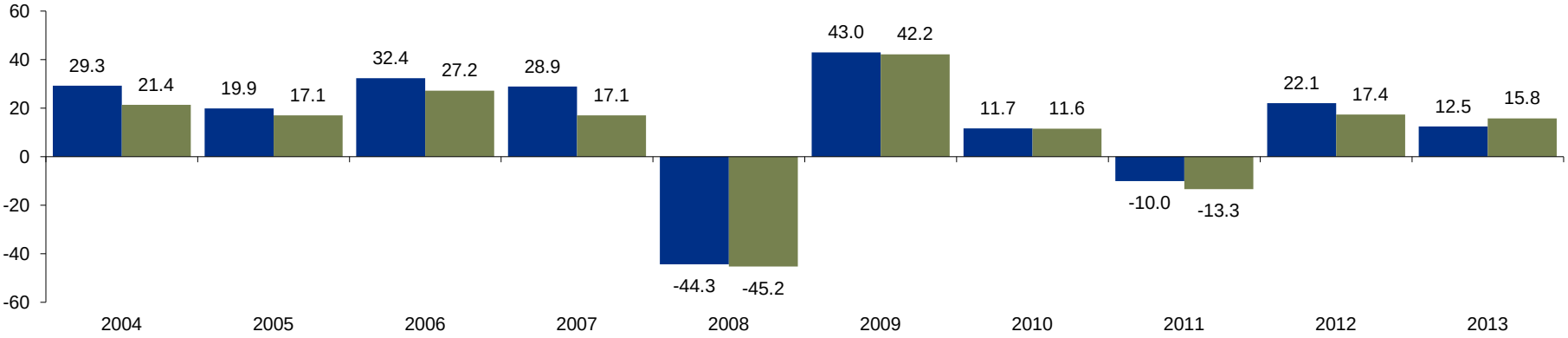
# NFJ International Value: Composite Performance

As of December 31, 2013

## Annualized (%)




## Calendar (%)

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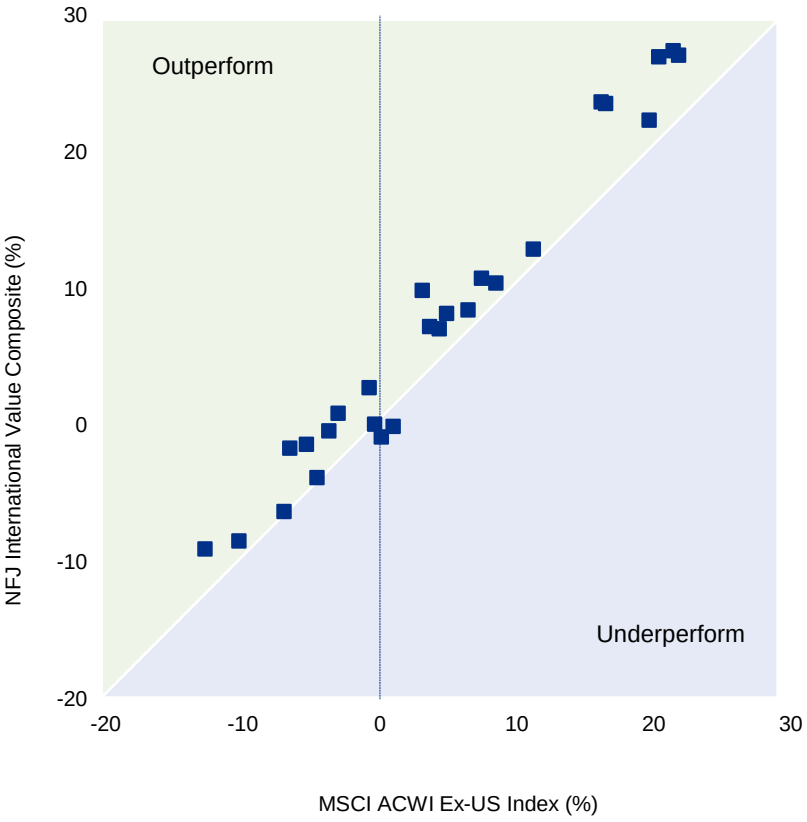


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| Jan-06 To Dec-08 | -1.66 | -6.57 |
| Apr-06 To Mar-09 | -9.03 | -12.75 |
| Jul-06 To Jun-09 | -1.38 | -5.35 |
| Oct-06 To Sep-09 | 2.76 | -0.78 |
| Jan-07 To Dec-09 | 0.90 | -3.04 |

| Period Ending | NFJ International Value Composite (gross) | MSCI ACWI ex-U.S. Index |
|---|---|---|
| Apr-07 To Mar-10 | -0.39 | -3.72 |
| Jul-07 To Jun-10 | -8.43 | -10.27 |
| Oct-07 To Sep-10 | -6.29 | -6.98 |
| Jan-08 To Dec-10 | -3.80 | -4.58 |
| Apr-08 To Mar-11 | 0.11 | -0.38 |
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# NFJ International Value: Characteristics

## NFJ International Value Representative Portfolio vs. MSCI ACWI ex-U.S. Index

As of December 31, 2013

| Characteristics | NFJ International Value | MSCI ACWI ex-U.S. Index |
|---|---|---|
| Dividend Yield (%) | 3.0 | 2.8 |
| Price-to-Earnings (fwd 1-year estimate) | 10.8 | 13.5 |
| Price-to-Book | 1.5 | 1.9 |
| Return on Equity (%, 3-year average) | 15.0 | 13.1 |
| Market Cap (weighted average, $ bn) | 54.9 | 58.7 |
| Number of Holdings | 60 | 1,823 |

Portfolio characteristics are supplemental information, and supplement the performance presented herein. See additional disclosure at the end of this presentation.
The Price-to-Book calculation is adjusted to remove extreme price-to-book values of greater than 100 or less than 0.01. Source: FactSet

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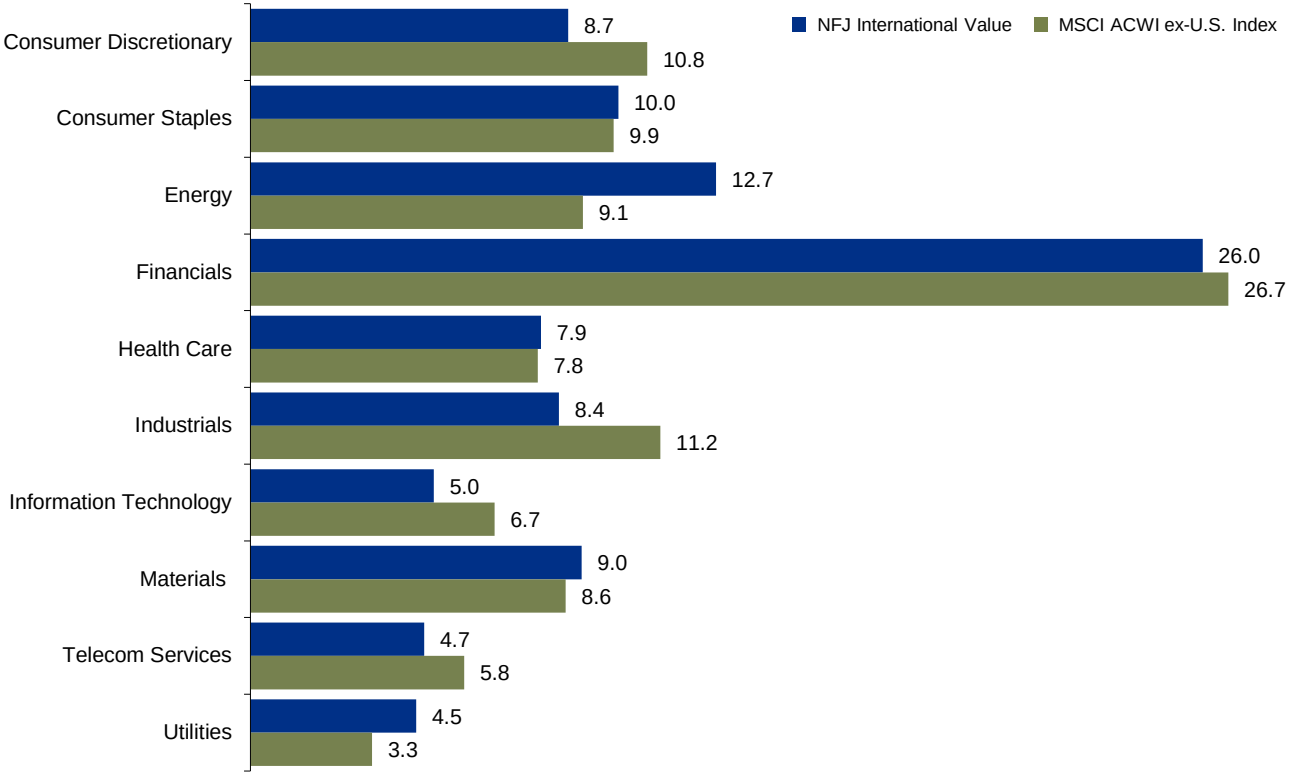
## NFJ International Value Representative Portfolio vs. MSCI ACWI ex-U.S. Index

As of December 31, 2013

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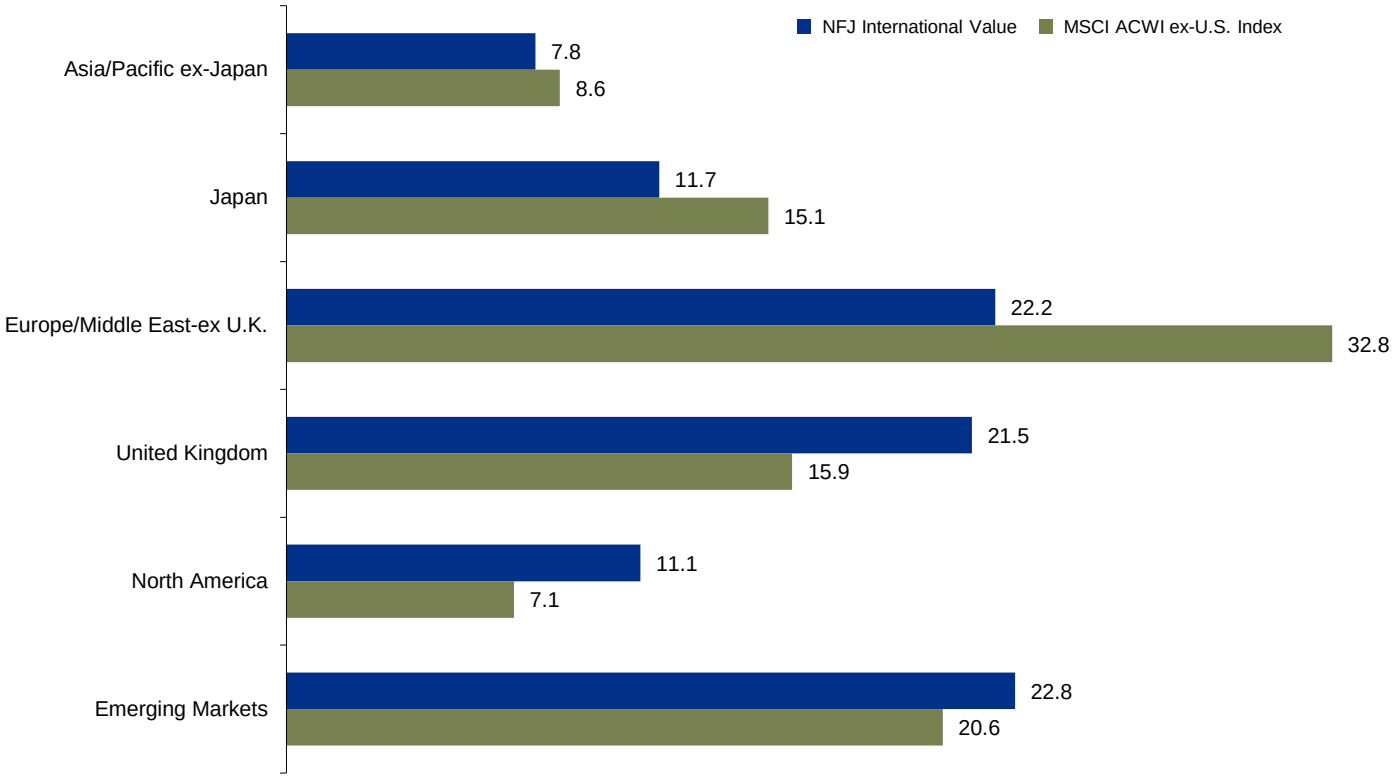
As of December 31, 2013

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# NFJ International Value: Top Ten Holdings

## NFJ International Value Representative Portfolio vs. MSCI ACWI ex-U.S. Index

As of December 31, 2013

| Name | Portfolio Weights (%) | Benchmark (%) |
|---|---|---|
| AstraZeneca PLC | 3.4 | 0.4 |
| Royal Dutch Shell PLC | 2.9 | 1.3 |
| Sasol Ltd. | 2.8 | 0.1 |
| Zurich Insurance Group AG | 2.7 | 0.2 |
| Teva Pharmaceutical Industries Ltd. | 2.5 | 0.2 |
| Rio Tinto PLC | 2.3 | 0.4 |
| SABESP | 2.2 | 0.0 |
| Golden Agri-Resources Ltd. | 2.2 | 0.0 |
| Volkswagen AG | 2.2 | 0.2 |
| Sinopec Ltd. | 2.2 | 0.1 |
| **TOTAL** | **25.4** | **3.0** |

The top ten holdings are subject to change and the portfolio holdings will vary over time. References to specific securities and their issues are examples of securities held in the portfolio and are not intended to be, and should not be interpreted as an offer, solicitation or recommendation to purchase or sell any financial instrument. A list of all recommendations made by the adviser for the strategy for the preceding 12 months is available upon request. Top ten holdings are selected based on size of positions, from a representative account. Portfolio holdings are supplemental Information, and supplement the performance presented herein. See additional disclosure at the end of this presentation.

# NFJ Investment Professionals

**Ben J. Fischer, CFA**
*Managing Director, CIO NFJ, Portfolio Manager*
Mr. Fischer is a portfolio manager, an analyst, a managing director and CIO of NFJ, an Allianz Global Investors company. He has 48 years of experience in portfolio management, investment analysis and research. Mr. Fischer is the product team lead for the NFJ Dividend Value and NFJ International Value investment strategies, and product team co-lead for the NFJ All Cap Value investment strategy. He is also a member of the firm's US Executive Committee. Before founding NFJ in 1989, he was chief investment officer for institutional and fixed income strategies, a senior vice president and a senior portfolio manager at NationsBank, which he joined in 1971. Before that, Mr. Fischer was a securities analyst at Chase Manhattan Bank and Clark, Dodge. He has a B.A. in economics and a J.D. from the University of Oklahoma, and an M.B.A. from New York University. Mr. Fischer is a CFA charterholder.

**John L. Johnson, CFA**
*Managing Director, Analyst*
Mr. Johnson is an analyst and managing director with NFJ, an Allianz Global Investors company. He has 50 years of investment-industry experience. Before founding NFJ in 1989, he was the co-chief investment officer, the director of research and a senior vice president at NationsBank, which he joined in 1964. Mr. Johnson has a B.A. in finance from Texas Tech University and an M.L.A. from Southern Methodist University. He is a CFA charterholder. Mr. Johnson transitioned into a part-time role in January 2008.

**Paul A. Magnuson**
*Managing Director, Portfolio Manager/Analyst*
Mr. Magnuson is a portfolio manager, analyst and managing director with NFJ, an Allianz Global Investors company. He is the product team lead for the NFJ Small Cap Value and NFJ Mid Cap Value 100 investment strategies. Mr. Magnuson has more than 28 years of investment-industry experience. Before joining the firm in 1992, he was an assistant vice president at NationsBank, which he joined in 1985. Mr. Magnuson has a B.B.A. in finance from the University of Nebraska.

**Thomas W. Oliver, CFA, CPA**
*Managing Director, Portfolio Manager/Analyst*
Mr. Oliver, CFA, CPA, is a portfolio manager, analyst and managing director with NFJ, an Allianz Global Investors company. He is the product team lead for the NFJ Large Cap Value and NFJ Mid Cap Value investment strategies, and a product team co-lead for the NFJ All Cap Value investment strategy. Mr. Oliver has 18 years of investment-industry experience in accounting, reporting, and financial analysis. Before joining the firm in 2005, he was a manager of corporate reporting at Perot Systems Corporation and an auditor at Deloitte & Touche. Mr. Oliver has a B.B.A. and an M.B.A. from the University of Texas. He is a CFA charterholder.

**R. Burns McKinney, CFA**
*Managing Director, Portfolio Manager/Analyst*
Mr. McKinney is a portfolio manager, analyst and managing director with NFJ, an Allianz Global Investors company. He is the product team lead for the NFJ Global Dividend Value investment strategy. Mr. McKinney has 17 years of investment-industry experience in equity research, financial analysis and investment banking. Before joining the firm in 2006, he was an equity analyst covering the energy sector for Evergreen Investments in Boston, an investment-banking analyst at Alex. Brown & Sons, a vice president in equity research at Merrill Lynch and an equity analyst at Morgan Stanley. Mr. McKinney has a B.A. in economics from Dartmouth College and an M.B.A. from the Wharton School of the University of Pennsylvania. He is a CFA charterholder.

**Morley D. Campbell, CFA**
*Managing Director, Portfolio Manager/Analyst*
Mr. Campbell is a portfolio manager, analyst and managing director with NFJ, an Allianz Global Investors company. He is the product team lead for the NFJ Emerging Markets Value investment strategy and has nine years of investment-industry experience. Before joining the firm in 2007, Mr. Campbell was an investment-banking analyst for Lazard Frères and Merrill Lynch. He has a B.B.A. from the University of Texas and an M.B.A. from Harvard Business School. He is a CFA charterholder.

# NFJ Investment Professionals

**L. Baxter Hines, CFA**
*Director, Portfolio Manager/Analyst*
Mr. Hines is a portfolio manager, analyst and director with NFJ, an Allianz Global Investors company. He is the product team lead for the NFJ International Value II and NFJ International Small Cap Value investment strategies. Mr. Hines has eight years of investment-industry experience. Before joining the firm in 2008, he was with the Teacher Retirement System of Texas and worked as a market-data specialist for Reuters. Mr. Hines has a B.A. in economics from the University of Virginia and an M.B.A. from the University of Texas, McCombs School of Business. He is a CFA charterholder.

**Jeff N. Reed, CFA**
*Director, Portfolio Manager/Analyst*
Mr. Reed is a portfolio manager, analyst and director with NFJ, an Allianz Global Investors company. He has portfolio management and research responsibilities for the NFJ Dividend Value, NFJ Mid Cap Value, NFJ Mid Cap Value 100, NFJ Large Cap Value, and NFJ All Cap Value investment strategies. Mr. Reed has nine years of experience in investment and financial analysis. Before joining the firm in 2007, he was a credit analyst at Frost Bank. Mr. Reed has a B.B.A. in finance from Texas Christian University and an M.B.A. from the University of Texas, McCombs School of Business. He is a CFA charterholder.

**John R. Mowrey, CFA**
*Vice President, Portfolio Manager/Analyst*
Mr. Mowrey is a portfolio manager, analyst and vice president with NFJ, an Allianz Global Investors company. He has portfolio management and research responsibilities for the NFJ International Value, NFJ Small Cap Value, NFJ Dividend Value, NFJ Global Dividend Value, NFJ International Value II, NFJ International Small Cap Value and NFJ Emerging Markets Value investment strategies. He joined the firm in 2007 as a quantitative-research assistant and product specialist, and has seven years of investment-industry experience. Mr. Mowrey has a B.A. in political science from Rhodes College and an M.B.A. from Southern Methodist University. He is a CFA charterholder.

**J. Garth Reilly**
*Analyst*
Mr. Reilly is an analyst with NFJ, an Allianz Global Investors company. He joined the firm in 2005 and has eight years of investment-industry experience. Prior to joining NFJ's investment team, Mr. Reilly was a performance analyst whose responsibilities included performance measurement and portfolio analytics. He began his career with internships at Luther King Capital Management and Citigroup Alternative Investments. He has a B.A. in political economy from Princeton University.

# NFJ Business Professionals

**Barbara R. Claussen**
*Managing Director, CAO US*
Ms. Claussen is a managing director and Chief Administrative Officer US with Allianz Global Investors, which she joined in 1989. She is a member of the firm's US Executive Committee, US Operating Committee and US Risk Committee. Ms. Claussen was previously NFJ's chief operating officer and was the head of trading at NFJ for 16 years. She has more than 33 years of investment-industry experience and has a B.S. from the University of Wisconsin-Stout.

**Melody L. McDonald, CIMA**
*Managing Director, Relationship Manager*
Ms. McDonald is a relationship manager and managing director with Allianz Global Investors, which she joined in 1986. She is responsible for a number of the firm's corporate, public, endowment and foundation clients. Ms. McDonald has 27 years of investment-industry experience. She previously worked with Wells Fargo Bank as a credit analyst and corporate lending officer. In 2002, Ms. McDonald was appointed by the president of the United States to serve on the Pension Benefit Guaranty Corporation Advisory Committee; in 2005, she served as chairman of the committee. Ms. McDonald currently serves on the investment committee for the IEEE, an international engineering organization that sets standards for engineering worldwide; and on The Juilliard National Council. Ms. McDonald has an M.A. from the New England Conservatory of Music and a doctorate in music from Stanford University; she also graduated as class marshal from Harvard Business School. She holds the CIMA designation.

**James S. Robertson**
*Director, Institutional Business Development*
Mr. Robertson is a director with Allianz Global Investors, which he joined in 2009. He is a senior relationship manager for the firm's US institutional clients and was previously head of the firm's corporate and endowment and foundation sales efforts in the US. Mr. Robertson has 28 years of investment-industry experience and previously covered the Western region for sales at Wells Capital Management. Before that, he was head of the Western institutional sales team for SEI Investments. Mr. Robertson also worked in product development at Charles Schwab; in client service at Wells Fargo's business retirement services division; and at Merrill Lynch. He has a B.S. in marketing from Syracuse University. Mr. Robertson holds FINRA Series 3, 7 and 66 licenses.

**Patti S. Almanza**
*Director, Chief Compliance Officer, NFJ Investment Group LLC*
Ms. Almanza is a director at NFJ, an Allianz Global Investors company. She is responsible for overseeing NFJ's compliance program, including implementing written policies and procedures to address risks and potential conflicts of interest, and to ensure compliance with SEC regulations. Ms. Almanza has 29 years of investment-industry experience. Before joining the firm in 2005, she was the adviser chief compliance officer for Brazos Capital Management and the fund chief compliance officer for Brazos Mutual Funds.

**Kim R. Walker**
*Vice President, Equity Trading Manager, US and International*
Mr. Walker is an equity trading manager and vice president with NFJ, an Allianz Global Investors company. He is responsible for managing daily operations and trading-department personnel. Mr. Walker has 29 years of investment-industry experience. Before joining the firm in 2008, he was a senior equity trader, trading department manager and vice president at Kopp Investment Advisors. Before that, Mr. Walker was a senior trader for American Express Financial Advisors and a senior market maker for Dain Bosworth. Mr. Walker has a B.A. from Bethel University. He is a member of the Dallas Security Traders Association and a past president of the Minnesota Security Dealers Association.

# Proposed Fee Schedule

## NFJ International Value

| Vehicle | Securities Investment Trust (SIT) | Separately Managed Account |
|---|---|---|
| Fees | 0.65% on first $50 M<br>0.60% on next $50 M<br>0.55% on next $50 M<br>0.47% Thereafter<br><br>Minimum Investment: $1 M | 0.60% on first $50 M<br>0.55% on next $50 M<br>0.50% on next $50 M<br>0.43% Thereafter<br><br>Minimum Investment: $25 M |
| Reporting | BNY Mellon provides monthly statements supplemented by AGI Client Service reporting | Standard SMA reporting |

Allianz Global Investors

# Disclosure

# NFJ International Value GIPS Disclosure

**NFJ International Value**

| |
|---|
| Minimum Separate Account<br>$25 M |
| 0.85% on first $25 M<br>0.75% on next $25 M<br>0.60% on next $50 M<br>0.45% Thereafter |

The Firm: Allianz Global Investors U.S. LLC (AllianzGI US) is an SEC registered investment adviser that provides investment management and advisory services primarily to separate accounts of institutional clients and registered and unregistered investment funds. For GIPS purposes, the Firm is defined and held out to the public as the investment management and advisory services provided by AllianzGI US and its SEC registered investment adviser subsidiary NFJ Investment Group LLC; excluding (1) administrative and/or sub adviser oversight services, and (2) separately managed account (wrap) services. Effective April 1, 2013, the scope of AllianzGI US's investment advisory business now includes assets previously managed by RCM Capital Management LLC ("RCM") and Caywood-Scholl Capital Management LLC ("Caywood-Scholl"), each of which merged into AllianzGI US on April 1, 2013 (the "Merger"). However, the total Firm assets presented reflect only the assets under management of the Firm prior to the Merger. The Firm's list of composite descriptions, as well as information regarding the Firm's policies for valuing portfolios, calculating performance, and preparing compliant presentations, are available upon request.

Compliance Statement: The Firm claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS Standards, including the GIPS Guidance Statement on Performance Record Portability. The Firm intends to claim compliance with GIPS with respect to all assets under management, including all assets previously managed by RCM and Caywood-Scholl, by April 1, 2014. On January 1, 2013, Allianz Global Investors Solutions LLC ("AGIS") merged into AllianzGI US, and therefore the scope of AllianzGI US's investment advisory business now includes the investment advisory services provided by the teams previously associated with AGIS. For the purpose of GIPS, and the verification of the Firm for the period ended December 31, 2012, the Firm does not include the investment advisory services provided by the legacy AGIS teams. AllianzGI US and/or, as applicable, its predecessor firm has been independently verified for the periods from January 1, 1997 through December 31, 2012.

Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the Firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. The NFJ International Value composite has been examined for the periods March 1, 2003 through December 31, 2012. The verification and performance examination reports are available upon request.

The Composite: The NFJ International Value Composite (the "Composite") is generally diversified with an emphasis on companies with low valuations and market capitalizations greater than $1 billion, is typically invested in ADR's traded in the U.S. but is not limited to such securities. As of March 1, 2012, the portfolios may also invest in the ordinary shares of stock traded in local foreign markets. The composite was redefined to broaden the scope of investments available to the composite strategy. In addition, a significant portion of the Composite is invested in securities that are expected to pay dividends. The Composite was created on March 1, 2003. The Composite includes all actual fee paying discretionary institutional and mutual fund accounts (including sub-advisory relationships) with comparable investment objectives and risks, managed by AllianzGI US for at least one full month. There is no minimum account size for inclusion in the composite. The Composite can include both tax-exempt and taxable accounts. All earnings are reinvested. No leverage has been used in the accounts included in the Composite. In the event of a significant cash flow to an account which is defined by AllianzGI US's policies and procedures as 25% or more of the beginning market value, the account will be removed from composite for one full month. Additional information regarding the treatment of significant cash flows is available upon request.

Prior to July 1, 2010, the composite performance presented consists of the portfolios of NFJ Investment Group, LLC, , which, as a result of an internal corporate reorganization, now are part of the Firm. Such performance results have been linked to the results achieved at the Firm in compliance with the GIPS standards on performance record portability.

Portfolio Returns: Returns are calculated on a total return basis, including all dividends and interest, accrued income, realized and unrealized gains or losses, and are net of all brokerage commissions, execution costs and without provision for federal or state income taxes. Returns are net of any foreign withholding taxes on dividends, interest and earnings. Performance results are expressed in U.S. dollars.

Fees: Performance results stated to be "gross" do not reflect the deduction of investment advisory fees. Gross performance results earned on behalf of AllianzGI US's clients will be reduced by AllianzGI US's advisory fees. Net performance results, which reflect the deduction of the highest applicable investment advisory fees, are also displayed. AllianzGI US investment advisory fees are usually accrued monthly based on the market value of the assets in a portfolio, including cash or its equivalent, held for investment, at the end of each month. NFJ's standard advisory fees, as reported in Form ADV Part 2A Brochure for the investment style described herein, are 0.85% annually on the first $25 million, 0.75% on the next $25 million, 0.60% on the next $50 million, and 0.45% in excess of $100 million.

Index: The MSCI All Country World Ex-US Index measures the equity market performance of the developed and emerging markets, excluding the United States. The MSCI ACWI (All Country World Index) Index is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global developed and emerging markets. The Index is calculated with gross dividends and approximates the maximum possible dividend reinvestment. The amount deemed reinvested is the dividends distributed to individuals residing in the country of the company, but does not include tax credits. This unmanaged market index is provided to represent the investment environment existing during the time periods shown. For comparison purposes, the index is a fully invested index, which includes reinvestment of income. The returns for this unmanaged index do not include any transaction costs, management fees or other costs. The primary benchmark as of 6/30/2008 is the MSCI All Country World ex-U.S. Index. Although the NFJ Investment Group is a value investor, the broader ex-U.S. index provides a more accurate benchmark because it is more inclusive. Furthermore, our selection universe is primarily composed of ADR's, and thus many of the deepest value names which are included in the MSCI All-Country World ex-U.S. Value index are not included in our selection universe. Previous benchmark from 1/1/2005 to 6/30/2008 was the MSCI All Country World ex US Value Index. Prior to that the previous benchmark was the MSCI World ex- US. All returns presented are calculated using U.S. dollars.

Internal Dispersion: The internal dispersion is an asset weighted dispersion measure that explains the deviation of gross annual account returns from the Composite annual account return. Assuming "normal" distribution of returns, plus or minus one standard deviation from the mean return encompasses 68% of all possible outcomes. The internal dispersion may not be meaningful for composites consisting of five or fewer portfolios or for periods of less than one full year. Internal dispersion of annual returns for all portfolios in the NFJ International Value Composite is shown for the full year using equal weighting of accounts for calendar years prior to 2005 and asset weighting of accounts for calendar years commencing in 2005.

Representative Account: Certain characteristics of the securities held in a representative account managed in the NFJ International Value Strategy by AllianzGI US ("Representative Account") (and included in the Composite) may be displayed in this presentation. On any given date, any particular portfolio managed in NFJ International Value strategy may include securities not held by the Representative Account and may not hold each security held in the Representative Account. A security included in the Representative Account may not be available for purchase at a time in the future, or if available, the prices or other characteristics of the securities may have changed. Consequently, any particular account may have portfolio characteristics and performance that differ from those of the Representative Account.

Estimated Data: Certain projected characteristics (such as the forward P/E ratio) of the Representative Account and indices shown may have been estimated in this brochure. Estimated data reflect subjective judgments and assumptions and unexpected events may occur. Therefore, there can be no assurance that developments will transpire as forecasted in this brochure.

Past performance is not indicative of future results. Gross returns do not give effect to investment advisory fees, which would reduce such returns. Investment advisory fees are described further in Form ADV Part 2A Brochure of the investment adviser. Advisory fees deducted periodically from accounts can have an impact on performance. As an example, the effect of investment advisory fees on the total value of a portfolio assuming (1) $1,000,000 investment, (2) portfolio return of 5% per year, and (3) 1.00% annual investment advisory fee would be $10,268.81 in the first year, $56,741.68 over five years, and $129,160.05 over ten years. Actual fees charged may vary by portfolio due to various conditions, including account size. The net-of fee results for individual accounts and for different time periods may vary. Unless otherwise noted, equity index performance is calculated with gross dividends reinvested and estimated tax withheld, and bond index performance includes all payments to bondholders, if any. Indexes are referred to for comparative purposes only and are not intended to parallel the risk or investment style of the portfolios in the Composite. Indexes do not utilize leverage. Index calculations do not reflect fees, brokerage commissions or other expenses of investing. Investors may not make direct investment into any index. Index data contained herein (and all trademarks related thereto) are owned by the indicated index provider, and may not be redistributed. The information herein has not been approved by the index provider.

# NFJ International Value GIPS Composite

As of December 31, 2012

**NFJ International Value Composite**

| Year | Composite Return Gross (%) | Composite Return Net (%) | MSCI ACWI xUS Index Returns (1) | Composite 3-Yr St. Dev. (%) (4) | Benchmark 3-Yr St. Dev. (%) (4) | Internal Dispersion (6) | Number of Portfolios in the Composite at Year End | Composite Total Assets at Year End (USD $ M) | Total Firm Assets (USD $ M) (3) |
|---|---|---|---|---|---|---|---|---|---|
| 2003 (2,5) | 60.9 | 60.0 | 49.6 | - | - | - | 1 | 1.8 | 4,141 |
| 2004 (5) | 29.3 | 28.3 | 21.4 | - | - | - | 1 | 2.4 | 5,876 |
| 2005 (5) | 19.9 | 18.9 | 17.1 | - | - | - | 1 | 28.7 | 9,996 |
| 2006 | 32.4 | 31.3 | 27.2 | 13.4 | 10.2 | - | 1 | 210.9 | 16,032 |
| 2007 | 28.9 | 27.7 | 17.1 | 12.9 | 10.6 | - | 1 | 1,063.0 | 20,416 |
| 2008 | -44.3 | -44.9 | -45.2 | 23.4 | 20.9 | - | 1 | 961.4 | 16,118 |
| 2009 | 43.0 | 41.6 | 42.2 | 27.6 | 25.3 | - | 3 | 1,587.3 | 20,618 |
| 2010 | 11.7 | 10.7 | 11.6 | 28.8 | 27.3 | - | 5 | 2,958.0 | 39,522 |
| 2011 | -10.0 | -10.7 | -13.3 | 22.8 | 22.7 | - | 3 | 2,746.4 | 37,395 |
| 2012 | 22.1 | 21.0 | 17.4 | 18.6 | 19.2 | - | 15 | 5,292.9 | 44,058 |

(1) The MSCI ACWI xUS returns, which do not reflect the deduction of investment advisory fees, have been provided for comparison purposes and have not been examined by independent accountants.
(2) Partial years, March 1, 2003 through December 31, 2003.
(3) Prior to December 31, 2010 the total firm assets include only NFJ Investment Group assets.
(4) The three-year annualized standard deviation measures the variability of the composite and the index returns over the preceding 36-month period.
(5) The three-year annualized standard deviation is not presented because there are less than 36 monthly returns for the composite and benchmark.
(6) Standard deviation is not considered statistically meaningful when there are five or fewer portfolios in the composite during the period.

**Investments in overseas markets may pose special risks, including currency fluctuation and political risks, and the portfolio is expected to be more volatile than a U.S.-only portfolio. These risks are generally intensified for investments in emerging markets. Small- and mid-cap stocks may be subject to a higher degree of risk than more established companies' securities. The illiquidity of the markets for these stocks may adversely affect the value of these investments.**

# Additional Disclosure

All materials are presented for Institutional Client use only and are not intended for distribution to the public. The strategy may not achieve its desired results. Past performance is not indicative of future results.

All returns are gross unless otherwise noted. Gross returns do not give effect to investment advisory fees, which would reduce such returns. Investment advisory fees are described further in Form ADV Part 2A Brochure of the investment adviser named in the performance presentation of the relevant strategy (the "Adviser"). Advisory fees deducted periodically from accounts can have an impact on performance. As an example, the effect of investment advisory fees on the total value of a portfolio assuming (a) $1,000,000 investment, (b) portfolio return of 5% per year, and (c) 1.00% annual investment advisory fee would be $10,268.81 in the first year, $56,741.68 over five years, and $129,160.05 over ten years. Actual fees charged may vary by portfolio due to various conditions, including account size. The presentation may also contain net performance information. Notes to the performance presentation contained herein describe the methodology used to calculate "net of fee" performance.

The results for individual accounts and for different time periods may vary. Descriptions of a strategy's investment process, and "targeted", "expected" and similar forward-looking portfolio information are based on the Adviser's future expectations regarding the strategy. Although the Adviser manages the strategy with the goal of achieving these expectations, actual results may vary, and the publication of these expectations should not be construed as a guarantee. Representative account characteristics do not reflect composite performance, which may be different. On any given date, any portfolio managed in the indicated strategy may include securities not held by the representative account, and may not hold each security held in the representative account. Consequently, any particular account may have portfolio characteristics and performance that differ from those of the representative account. Portfolio characteristics and other information contained in this presentation have been obtained from independent research providers and other sources the Adviser believes to be reliable, but the Adviser cannot guarantee that the information is accurate, current or complete. Estimates (est.) are preliminary and unaudited. For more information regarding account characteristics, please contact Allianz Global Investors U.S. LLC. ("AllianzGI US")

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The asset and industry reports contained herein are unaudited. The summation of dollar values and percentages reported may not equal the total values, due to rounding discrepancies. Where applicable, currency conversions are provided by Russell Performance Universe and are based on monthly linked performance converted from U.S. dollar, and exchange rates are provided by the Federal Reserve Statistical Release as of month end.

Unless otherwise noted, equity index performance is calculated with gross dividends reinvested and estimated tax withheld, and bond index performance includes all payments to bondholders, if any. Indexes are referred to for comparative purposes only and are not intended to parallel the risk or investment style of the portfolios managed by the Adviser. Indexes do not utilize leverage. Index calculations do not reflect fees, brokerage commissions or other expenses of investing. Investors may not make direct investments into any index. Index data contained herein (and all trademarks related thereto) are owned by the indicated index provider, and may not be redistributed. MSCI or other index providers have not approved, reviewed or produced this report, make no express or implied warranties or representations and are not liable whatsoever for any data in the report. You may not redistribute the MSCI or other index data or use it as a basis for other indices or investment products. No part of this material may be reproduced in any form, or referred to in any other publication, without express written permission.

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Allianz Global Investors U.S. LLC ("AllianzGI US") is an SEC registered investment adviser that provides investment management and advisory services primarily to separate accounts of institutional clients and registered and unregistered investment funds. AllianzGI US manages client portfolios (either directly or through model delivery and wrap fee programs) applying traditional and systematic processes across a variety of investment strategies. AllianzGI US may also provide consulting and research services in connection with asset allocation and portfolio structure analytics. Effective April 1, 2013, AllianzGI US's total firm assets under management include assets previously managed by RCM Capital Management LLC and Caywood-Scholl Capital Management LLC, each of which merged into AllianzGI US on April 1, 2013. NFJ Investment Group LLC is an SEC registered investment adviser and wholly-owned subsidiary of AllianzGI US.

# ARROWSTREET CAPITAL

LIMITED PARTNERSHIP

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April 25, 2014

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# *Firm* *OVERVIEW*

## SPECIALIST GLOBAL/INTERNATIONAL AND EMERGING MARKETS EQUITIES MANAGER

- Strategy built from sound investment intuition
- Multi-dimensional forecasting approach
- Work exclusively with institutional investors

## COMMITMENT TO ONGOING RESEARCH PROGRAM

- Strong ties to academic community

## OWNED AND CONTROLLED BY SENIOR MANAGEMENT

# ARROWSTREET CAPITAL
LIMITED PARTNERSHIP

## Peter Rathjens, Ph.D.
Partner, CIO

### PORTFOLIO MANAGEMENT

| Name | Year Joined ASC | Industry Exp. |
|---|---|---|
| John Capeci, Ph.D.<br>*Partner* | 1999 | 19 |
| Ezra Levine, CFA<br>*Partner* | 1999 | 20 |
| Manolis Liodakis, Ph.D.<br>*Partner* | 2012 | 15 |
| Alex Ogan<br>*Partner* | 2005 | 8 |
| George Pararas, CFA<br>*Partner* | 2002 | 17 |
| Michael Zervas, CFA<br>*Partner* | 2004 | 12 |

## Bruce Clarke, CFA
Partner, Executive Chairman

### INVESTMENT PROCESSES

| Name | Year Joined ASC | Industry Exp. |
|---|---|---|
| Sam Thompson, Ph.D.<br>*Partner* | 2005 | 8 |
| Marta Campillo, Ph.D.<br>*Partner* | 1999 | 17 |

## Anthony Ryan, CFA
Partner, CEO

### RESEARCH

| Name | Year Joined ASC | Industry Exp. |
|---|---|---|
| John Campbell, Ph.D.<br>*Partner* | 1999 | 21 |
| Tuomo Vuolteenaho, Ph.D.<br>*Partner* | 2004 | 10 |
| Alex Merlis, CFA<br>*Partner* | 2006 | 12 |
| Derek Vance, CFA<br>*Partner* | 2008 | 6 |
| Yijie Zhang, Ph.D.<br>*Partner* | 2006 | 7 |

### COMPLIANCE

### CLIENT REPORTING

### CLIENT RELATIONSHIP MANAGEMENT & BUSINESS DEVELOPMENT

### LEGAL

### INFORMATION TECHNOLOGY

### FINANCE

This organizational chart is provided as of January 1, 2014.

# ASSETS UNDER MANAGEMENT AND CLIENT BASE

*As of December 31, 2013*

## REPRESENTATIVE CLIENTS

### NORTH AMERICA

Air Canada Pension Investment Division
CalPERS
Casey Family Programs
Caterpillar Inc.
Hewlett-Packard Company
Indiana Public Retirement System
Kaiser Permanente
Missouri Education Pension Trust
National Grid
Oregon State Treasury
State Teachers Retirement System of Ohio
Sonoma County Employees' Retirement Association
Southern California Edison Company
Union Pacific Corporation
United Technologies Corporation
University of Washington
Virginia Retirement System
YMCA

### EUROPE

Blue Sky Group
Church of England
Rexam PLC

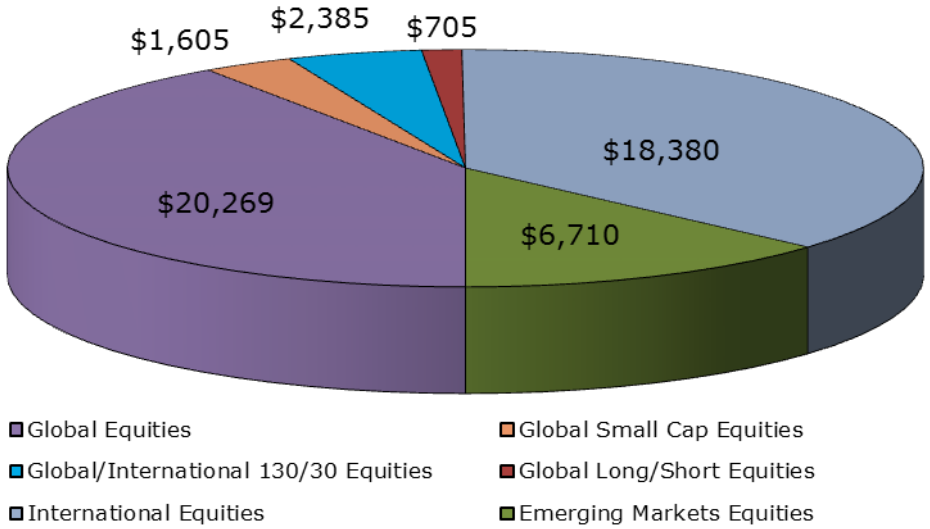
### AUSTRALIA

Annuitas Management Limited
ANZ OnePath
Macquarie Bank Ltd.
Victorian Funds Management Corporation

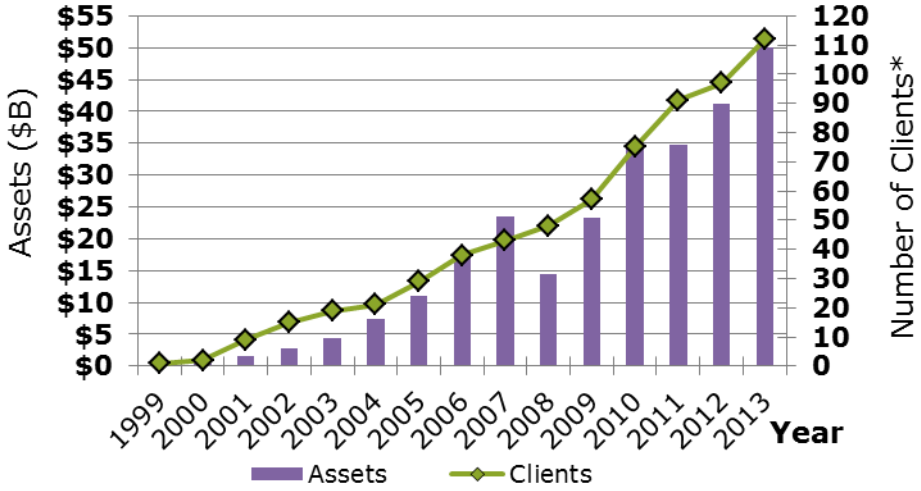
Selection Criteria: Representative clients are chosen due to their recognition in the marketplace and their willingness to allow us to use their name. It is not known whether the listed clients approve or disapprove of Arrowstreet Capital, Limited Partnership or the advisory services provided by Arrowstreet Capital, Limited Partnership.

**Number of clients include investors in commingled funds sub-advised by Arrowstreet and for whom Arrowstreet provides direct client service.*

## ASSETS UNDER MANAGEMENT BY STRATEGY*($MM)*




## ASSET & CLIENT GROWTH



# *International Equity*
# *STRATEGY*

## CONSISTENTLY OUTPERFORM BROAD INTERNATIONAL INDICES

Target Outperformance: 3% per year over a market cycle

Target Risk: 4% – 7% per year

## CORE INVESTMENT STYLE

Style neutral over long periods

Risk controlled

Outperform during a broad range of market environments

## DIVERSIFICATION FROM OTHER MANAGERS

# PORTFOLIO CONSTRUCTION

CLIENT PORTFOLIOS BUILT CONSIDERING FORECASTS, RISKS AND TRANSACTION COSTS

## ALPHA FORECASTS FOR PORTFOLIO CANDIDATES

9,000+ STOCKS

### TRANSACTION COSTS

Reflecting trade size and expected holding period

### RISK ESTIMATES

Proprietary risk model

### STYLE CONSTRAINTS

Control portfolio tilts

### POSITION LIMITS

(relative to the benchmark)

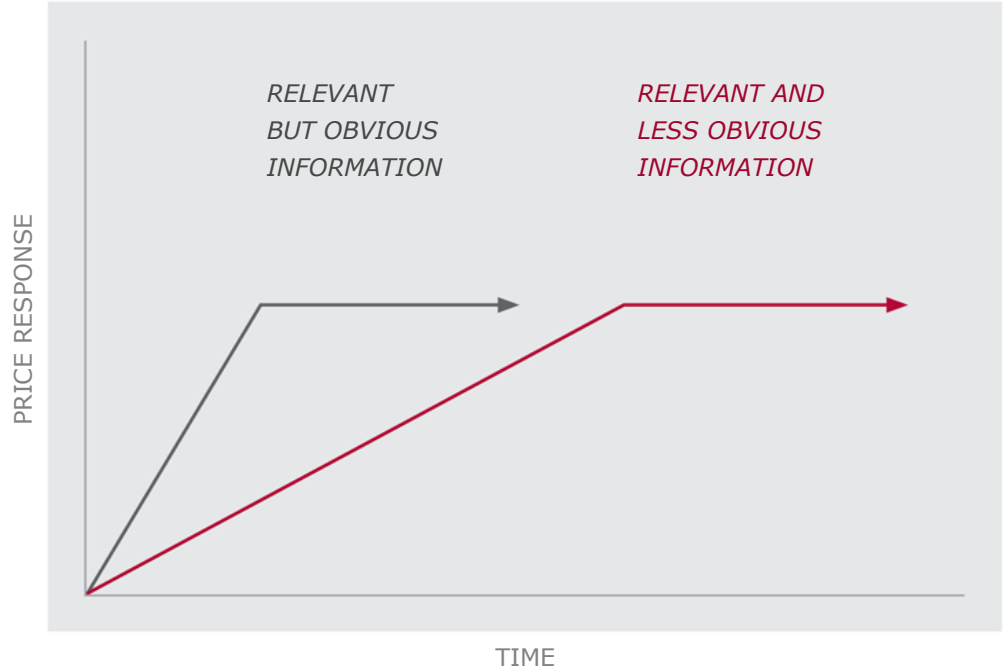
| | |
|---|---|
| Country: | +/- 10% |
| Sector: | +/- 15% |
| Basket: | +/- 5% |
| Stock: | +/- 3% |

## PORTFOLIO

150–450 STOCKS
STYLE NEUTRAL
RISK CONTROLLED

# INVESTMENT PHILOSOPHY

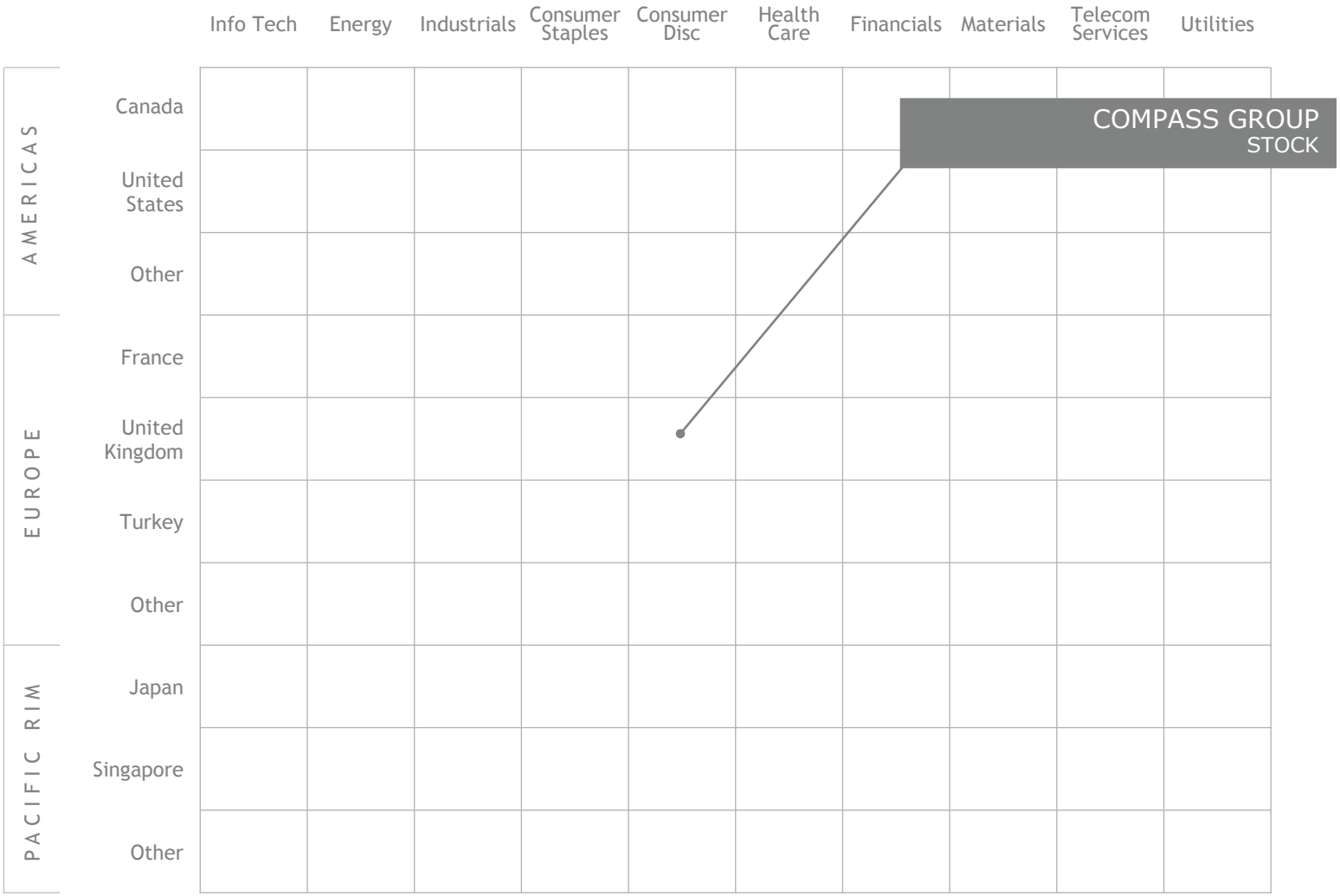
ADDING VALUE BY IDENTIFYING INVESTMENT SIGNALS THAT ARE RELEVANT TO PRICES AND LESS OBVIOUS TO INVESTORS



# DEFINING DIRECT EFFECTS

INFLUENCE OF STOCK INFORMATION

- VALUATION
- MOMENTUM
- QUALITY
- HIGH FREQUENCY
- CATALYSTS
- EXTREME SENTIMENT

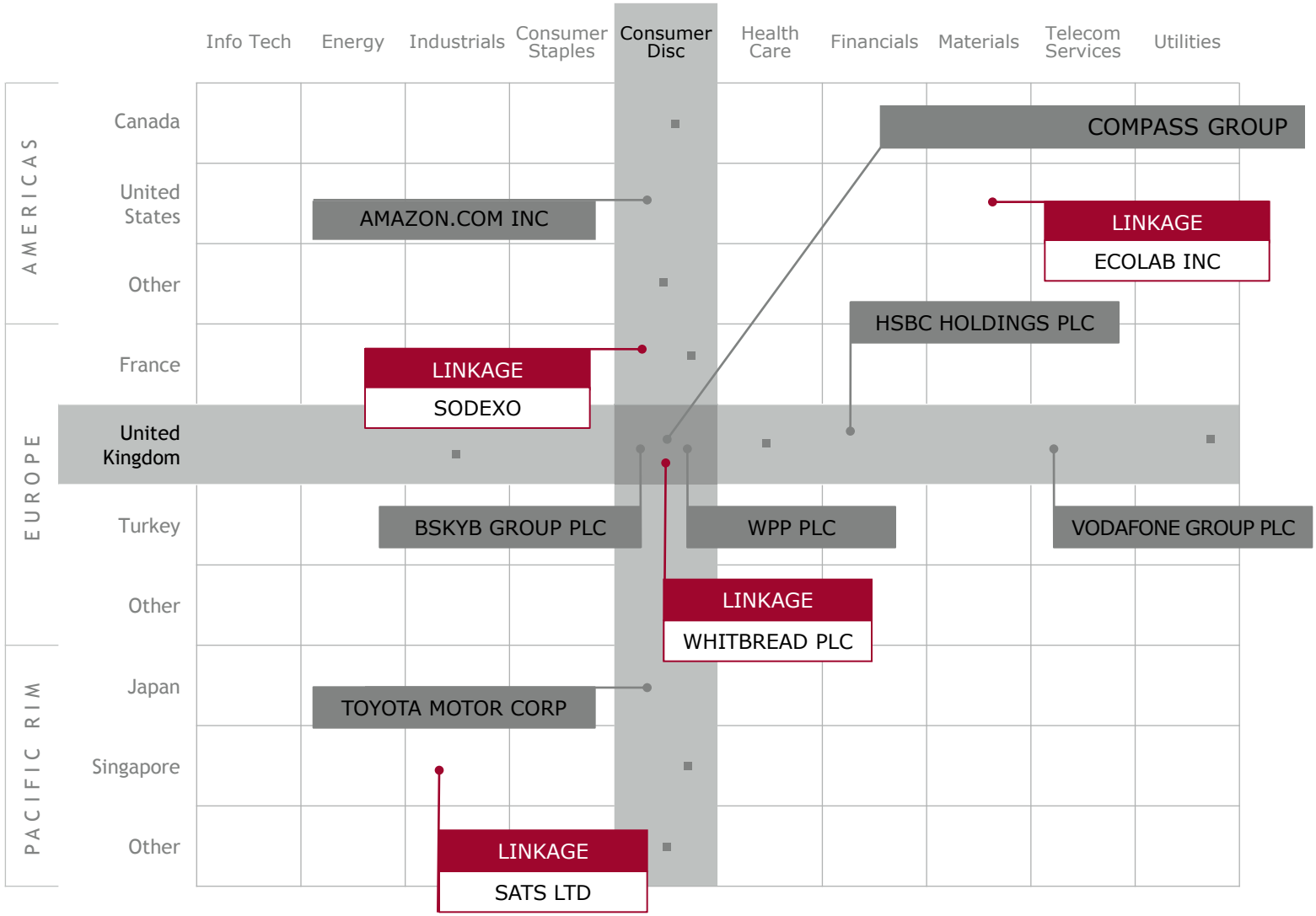



References to specific stocks, countries, sectors or baskets are shown for informational purposes only and are not intended as investment advice.

# DEFINING INDIRECT EFFECTS

INFLUENCE OF INDIRECT EFFECTS AND EXPANDED LINKAGES

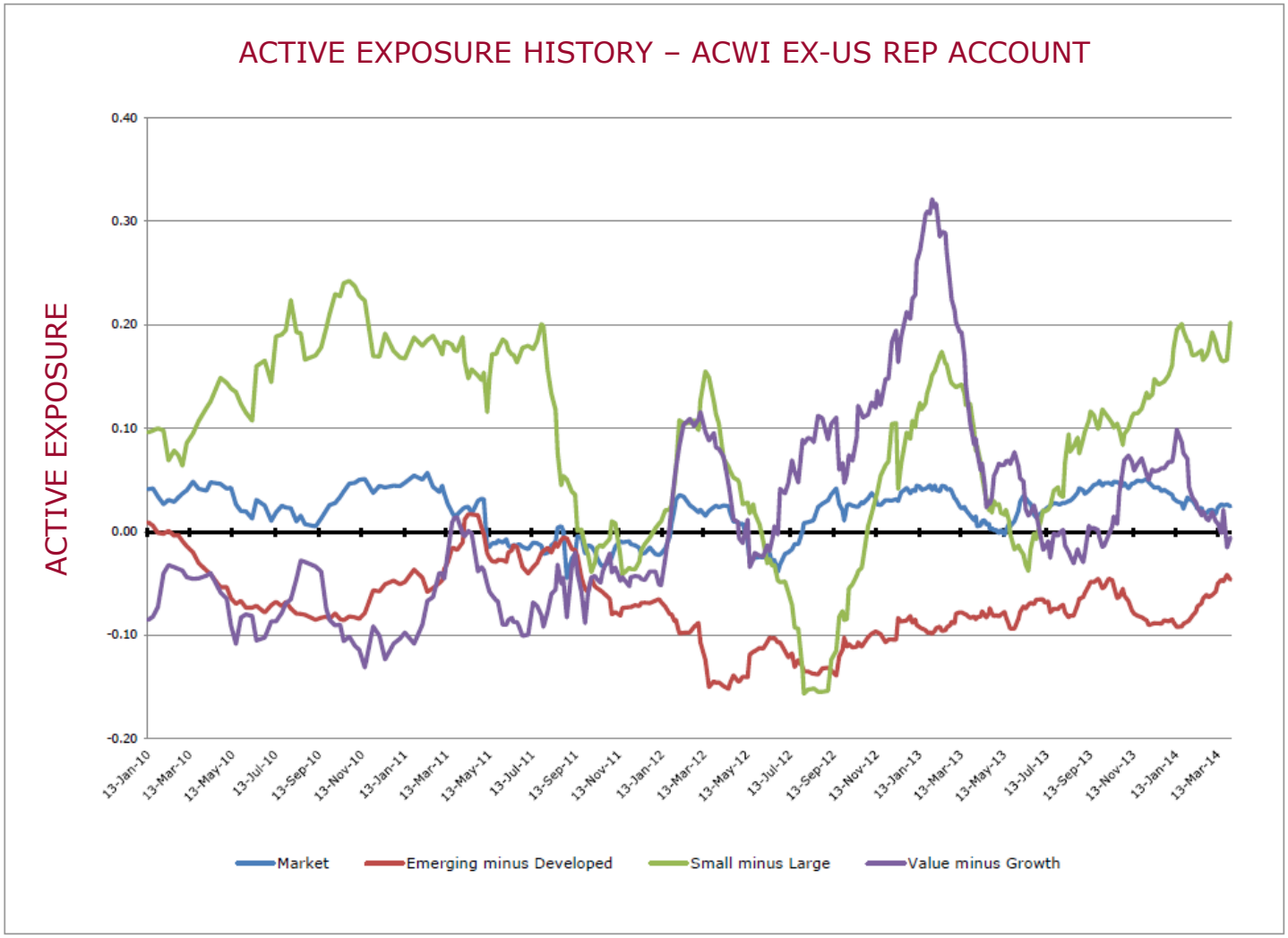
- VALUATION
- MOMENTUM
- QUALITY
- HIGH FREQUENCY
- CATALYSTS
- EXTREME SENTIMENT




References to specific stocks, countries, sectors or baskets are shown for informational purposes only and are not intended as investment advice.

# RISK MANAGEMENT & PORTFOLIO CONSTRUCTION

A CORE PROCESS THAT TACTICALLY ADJUSTS EXPOSURES




*Source: Arrowstreet internal systems. The above chart is provided for informational purposes only and is not intended as investment advice.*

# ACTIVE (BENCHMARK RELATIVE) WEIGHTS
# INTERNATIONAL EQUITY – ACWI EX-US REPRESENTATIVE PORTFOLIO

*As of December 31, 2013*

| | Total | Consumer Discretionary | Consumer Staples | Energy | Financials | Health Care | Industrials | Information Technology | Materials | Telecomm. Services | Utilities |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **--** | **5.65** | **-6.89** | **-4.02** | **-8.38** | **4.62** | **6.07** | **5.59** | **-6.18** | **4.30** | **-1.07** |
| **DEV Australia** | **-2.76** | 0.30 | -0.44 | -0.30 | -2.50 | 0.88 | -0.07 | 0.51 | -0.92 | -0.11 | -0.09 |
| **DEV Austria** | **0.20** | -- | -- | 0.13 | -0.03 | -- | 0.16 | -0.00 | -0.04 | -0.01 | -0.00 |
| **DEV Belgium** | **0.17** | -0.02 | -0.10 | 0.09 | -0.01 | -0.05 | 0.11 | -0.01 | -0.08 | 0.26 | -0.01 |
| **DEV Canada** | **-2.20** | 1.08 | -0.24 | -1.86 | -0.82 | -0.24 | 0.80 | 0.31 | -0.93 | -0.18 | -0.12 |
| **DEV Denmark** | **0.82** | 0.05 | -0.07 | -- | 0.36 | 0.14 | 0.34 | 0.02 | -0.02 | -0.01 | -- |
| **DEV Finland** | **0.17** | 0.12 | -0.01 | 0.12 | 0.22 | -0.02 | -0.19 | -0.15 | 0.14 | -0.02 | -0.05 |
| **DEV France** | **-0.01** | 0.41 | -0.69 | -0.70 | -0.09 | 0.19 | -0.46 | 1.72 | -0.42 | 0.04 | -0.02 |
| **DEV Germany** | **1.89** | -0.58 | -0.26 | 0.13 | 1.46 | -0.79 | 1.13 | 0.06 | -0.88 | 1.34 | 0.28 |
| **DEV Hong Kong** | **0.84** | 1.42 | -- | -0.01 | -0.74 | -0.00 | 0.31 | 0.10 | -0.00 | -0.03 | -0.20 |
| **DEV Ireland** | **0.49** | -0.02 | -0.05 | -- | 0.46 | -- | -0.02 | -- | 0.12 | -- | -- |
| **DEV Israel** | **0.44** | -0.00 | -0.01 | -0.01 | 0.48 | -0.17 | -0.01 | 0.06 | -0.03 | 0.13 | -- |
| **DEV Italy** | **2.02** | -0.07 | -0.01 | -0.37 | 1.17 | -0.02 | 0.31 | 0.06 | 0.04 | 0.61 | 0.30 |
| **DEV Japan** | **9.57** | 2.57 | -0.61 | 0.24 | -1.85 | 1.02 | 4.80 | 3.23 | 1.03 | -0.77 | -0.09 |
| **DEV Netherlands** | **0.84** | 0.19 | -0.53 | -0.06 | 0.31 | -- | 0.58 | -0.03 | -0.15 | 0.52 | -- |
| **DEV New Zealand** | **-0.09** | 0.05 | -0.00 | -0.00 | -0.01 | -0.02 | -0.02 | -0.01 | -0.03 | -0.02 | -0.02 |
| **DEV Norway** | **0.78** | -0.02 | 0.54 | -0.18 | 0.02 | -0.01 | 0.05 | 0.52 | -0.07 | -0.08 | -- |
| **DEV Portugal** | **0.18** | 0.23 | -0.00 | -0.03 | -0.03 | -- | 0.03 | -- | -0.01 | 0.03 | -0.04 |
| **DEV Singapore** | **-1.10** | -0.09 | -0.06 | -0.02 | -0.57 | -0.01 | -0.22 | -0.01 | -0.00 | -0.12 | -0.00 |
| **DEV Spain** | **0.10** | -0.06 | -0.05 | -0.11 | -1.05 | 0.73 | -0.08 | 0.76 | -0.01 | -0.26 | 0.24 |
| **DEV Sweden** | **2.28** | 1.15 | 0.37 | -0.02 | -0.19 | 0.41 | 0.02 | 0.12 | -0.06 | 0.47 | -- |
| **DEV Switzerland** | **-0.63** | -0.38 | -0.83 | -0.08 | -0.99 | 0.63 | 0.77 | 0.17 | -0.40 | 0.48 | -0.00 |
| **DEV United Kingdom** | **-4.76** | 1.41 | -2.08 | -2.42 | -2.77 | 2.30 | -0.88 | -0.37 | -1.41 | 2.06 | -0.60 |
| **EMK Brazil** | **-2.04** | -0.14 | -0.34 | -0.29 | -0.58 | -0.02 | -0.12 | -0.06 | -0.36 | -0.05 | -0.07 |
| **EMK Chile** | **-0.32** | -0.04 | -0.04 | -0.03 | -0.06 | -0.00 | -0.03 | -0.01 | -0.03 | -0.01 | -0.08 |
| **EMK China** | **-1.20** | -0.29 | -0.25 | -0.52 | 1.22 | -0.09 | -0.33 | -0.47 | -0.17 | -0.15 | -0.16 |
| **EMK Colombia** | **-0.19** | -- | -0.01 | -0.04 | -0.08 | -- | -0.00 | -- | -0.04 | -- | -0.02 |
| **EMK Czech Republic** | **-0.05** | -0.00 | -0.00 | -- | -0.02 | -- | -- | -- | -- | -0.01 | -0.02 |
| **EMK Egypt** | **-0.06** | -0.00 | -0.00 | -0.00 | -0.03 | -- | -- | -- | -0.00 | -0.01 | -- |
| **EMK Greece** | **0.75** | -0.03 | -- | -0.01 | 0.33 | -- | -0.01 | -- | -0.01 | 0.47 | -0.01 |
| **EMK Hungary** | **-0.05** | -- | -- | -0.01 | -0.02 | -0.01 | -- | -- | -- | -0.00 | -- |
| **EMK India** | **-0.98** | -0.10 | -0.13 | -0.14 | -0.30 | -0.09 | -0.07 | 0.02 | -0.09 | -0.03 | -0.05 |
| **EMK Indonesia** | **-0.48** | -0.09 | -0.06 | -0.02 | -0.16 | -0.01 | -0.04 | -0.00 | -0.03 | -0.05 | -0.02 |
| **EMK Malaysia** | **-0.83** | -0.09 | -0.09 | -0.05 | -0.24 | -0.03 | -0.11 | -0.00 | -0.04 | -0.08 | -0.09 |
| **EMK Mexico** | **-1.03** | -0.10 | -0.25 | -- | -0.19 | -0.01 | -0.11 | -- | -0.17 | -0.20 | -- |
| **EMK Peru** | **-0.08** | -- | -0.00 | -0.00 | -0.04 | -- | -0.00 | -- | -0.03 | -- | -- |
| **EMK Philippines** | **-0.18** | -0.01 | -0.01 | -0.00 | -0.07 | -- | -0.05 | -- | -0.00 | -0.02 | -0.02 |
| **EMK Poland** | **-0.35** | -0.01 | -0.01 | -0.05 | -0.19 | -- | -0.01 | -0.01 | -0.04 | -0.01 | -0.03 |
| **EMK Russia** | **2.99** | -0.01 | -0.08 | 2.80 | 0.50 | -0.00 | -0.00 | -- | -0.09 | -0.10 | -0.02 |
| **EMK South Africa** | **-1.54** | -0.33 | -0.10 | -0.14 | -0.41 | -0.09 | -0.09 | -0.01 | -0.18 | -0.19 | -- |
| **EMK South Korea** | **-1.77** | -0.63 | -0.18 | -0.07 | -0.45 | -0.06 | -0.38 | 0.42 | -0.34 | -0.03 | -0.05 |
| **EMK Taiwan** | **-2.63** | -0.18 | -0.08 | -0.01 | -0.45 | -0.03 | -0.13 | -1.32 | -0.34 | -0.10 | -0.00 |
| **EMK Thailand** | **-0.22** | -0.03 | -0.05 | -0.09 | -0.16 | -0.01 | -0.03 | -0.01 | -0.05 | 0.22 | -0.01 |
| **EMK Turkey** | **0.75** | -0.02 | -0.04 | 0.14 | 0.18 | 0.09 | 0.11 | -0.00 | -0.02 | 0.32 | -0.00 |

| Range | | |
|---|---|---|
| Max | Min | Color Code |
| >.15 | 0.15 | |
| 0.15 | 0.00 | |
| 0.00 | -0.15 | |
| -0.15 | <-0.15 | |

**Top 5 Active Weights**

| Stock | Basket | Active Weight |
|---|---|---|
| Vodafone Group PLC | United Kingdom Telecommunication Services | 1.44% |
| Gazprom OAO | Russia Energy | 1.33% |
| Alcatel-Lucent SA | France Information Technology | 1.25% |
| Roche Holding Ltd Genusssch. | Switzerland Health Care | 1.19% |
| GlaxoSmithKline plc | United Kingdom Health Care | 1.00% |

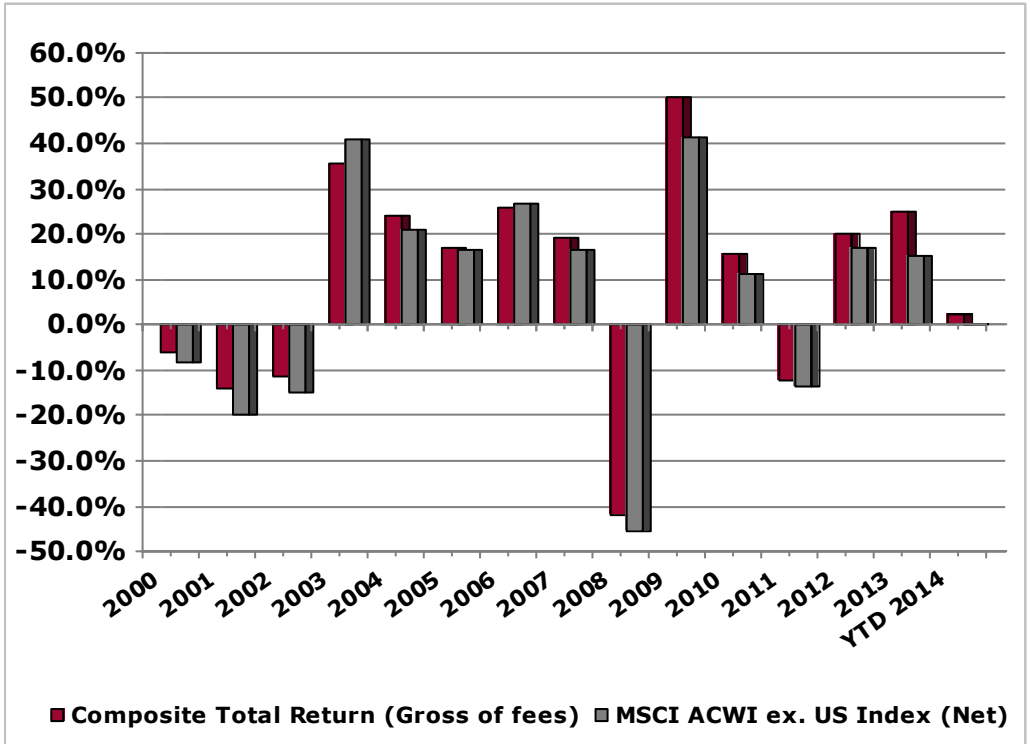
Note: Information presented above is based on the longest standing account in the International Equity – ACWI ex. US Composite as December 31, 2013. The information presented above is not an endorsement of any particular region, sector, or stock.

Portfolio weights are measured at the end of the calendar period indicated. Weights may temporarily drift beyond position limits in between trading sessions because of price movements.

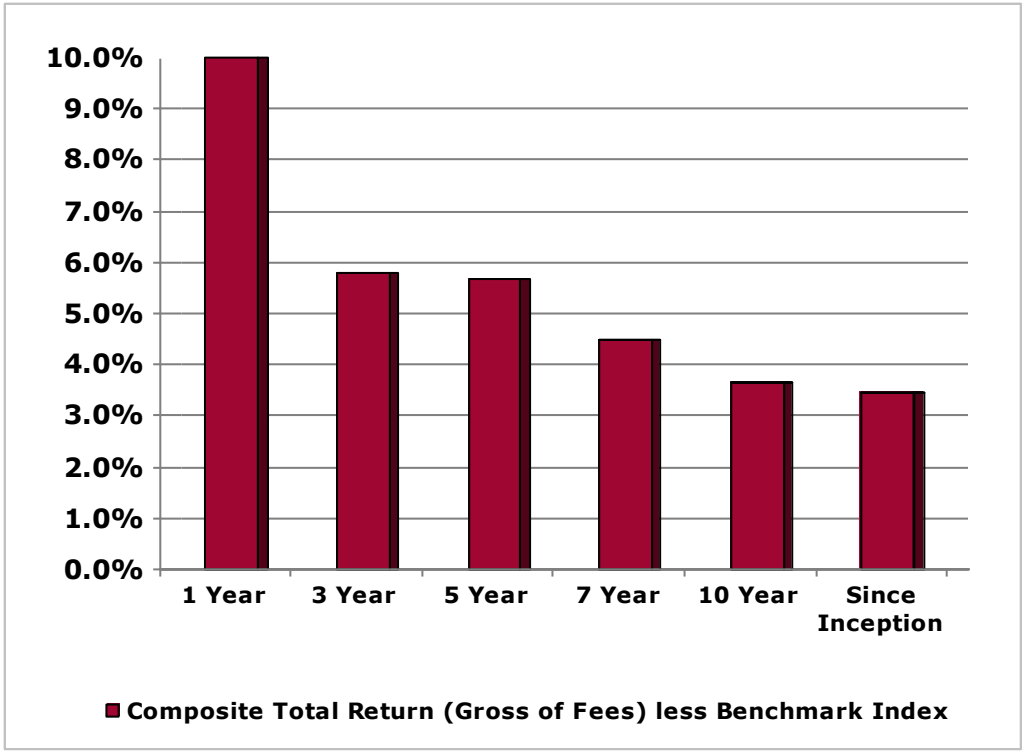
# PERFORMANCE
# INTERNATIONAL EQUITY – ACWI EX-US STRATEGY[1]

*As of February 28, 2014[2]*

## PERFORMANCE vs. INDEX (%)




## ANNUALIZED VALUE ADDED (%)[3]




[1]See International Equity Strategy All World Ex. U.S. Composite Performance Review Report for important disclosures to be read in conjunction with the performance results presented herein. Results presented are in U.S. dollars (USD). Performance results presented herein are shown gross of management fees and include the reinvestment of income. Actual performance results of the clients of the Firm are reduced by management fees. For example, if a portfolio appreciated by 10% each year for ten years with no fees deducted, the average annualized return would be 10%. If the portfolio was charged investment management fees of 0.75% for each of the ten years, then the average annualized return would have been 9.18%. Investment advisory fees applicable to the strategy are described in the Form ADV Part II Brochure. The return information presented represents past performance and is not a guarantee of future results.

[2] Please note that the inception date of this composite was 6/1/2000. Returns for the year 2000 reflect the time period 6/1/2000-12/31/2000.

[3] Value added represents the difference between the composite total return gross of fees and the benchmark. The value added figures are calculated to multiple decimal places and rounded to two decimal places.

# EXAMPLE TRADE

| | |
|---|---|
| **Stock:** | **Compass Group** |
| **Region:** | **Europe** |
| **Country:** | **United Kingdom** |
| **Sector:** | **Consumer Discretionary** |

**September 17, 2012**

**Sell -0.09**

| | Level | Change Since | |
|---|---|---|---|
| **Direct Effects (Stock Factors)** | **17-Sep** | **14-Sep** | **10-Sep** |
| Catalyst Signals | -0.12 | -0.05 | -0.05 |
| Extreme Sentiment Signals | -0.10 | -0.04 | 0.10 |
| High Frequency Signals | 0.07 | -0.01 | -0.07 |
| Momentum Signals | 0.03 | 0.01 | 0.05 |
| Quality Signals | -0.11 | 0.00 | -0.01 |
| Value Signals | 0.14 | 0.00 | 0.00 |

| **Indirect Effects** | **17-Sep** | **14-Sep** | **10-Sep** |
|---|---|---|---|
| **Country/Sector Basket Factors** | | | |
| Catalyst Signals | 0.11 | 0.00 | 0.00 |
| Extreme Sentiment Signals | -0.19 | 0.01 | 0.03 |
| Momentum Signals | -0.08 | 0.02 | -0.14 |
| Quality Signals | 0.17 | 0.00 | 0.01 |
| Value Signals | -0.02 | 0.00 | 0.03 |
| **Country Factors** | | | |
| Extreme Sentiment Signals | -0.01 | -0.01 | -0.02 |
| Momentum Signals | 0.09 | 0.00 | -0.01 |
| **Sector Factors** | | | |
| Momentum Signals | -0.02 | -0.03 | -0.14 |

| **Expanded Linkages** | **17-Sep** | **14-Sep** | **10-Sep** |
|---|---|---|---|
| Valuation Signals | -0.03 | 0.01 | 0.02 |
| Momentum Signals | -0.44 | 0.01 | -0.29 |

| | | | |
|---|---|---|---|
| **Monthly Excess Return Forecast** | -0.49 | -0.07 | -0.49 |
| **Annualized Excess Return Forecast** | -5.88 | | |

| **Portfolio Construction (Optimization)** | | | |
|---|---|---|---|
| | **New Position** | **Initial Position** | **Change** |
| Portfolio Weight | 0.21 | 0.30 | **-0.09** |
| Benchmark Weight | 0.09 | 0.09 | |
| Active Weight | 0.12 | 0.21 | |
| Transaction Cost Estimate: | 0.44 (Above Average) | | |
| Risk Contribution: | Increases Risk (Value-minus-growth Beta) | | |

References to stocks are not intended as investment advice to any person. Arrowstreet Capital, Limited Partnership may have already bought or sold or may in the future buy and sell these securities on behalf of its clients. A complete list of buys and sells is available upon request. These securities do not represent all of the securities that Arrowstreet Capital, Limited Partnership may trade in on behalf of its clients. There can be no assurance that an investment in the securities of these issuers, or in any investment recommendation, has been or will be profitable to the clients of Arrowstreet Capital, Limited Partnership.

# COMPOSITE PERFORMANCE REVIEW
# INTERNATIONAL EQUITY – ACWI EX-US STRATEGY[1]

*As of February 28, 2014*

| | | Composite Total Return (Gross of Fees) | Composite Total Return (Net of Fees)[2] | Benchmark: MSCI ACWI Ex. U.S. Index (Net) | Value Added (vs. Gross Return)[3] | End of Period Assets ($Mil) | # of Portfolios | Composite Dispersion[4] | % of Total Firm Assets |
|---|---|---|---|---|---|---|---|---|---|
| **2000** | **6/1/2000 – 12/31/2000** | -5.95% | -6.34% | -8.42% | **2.48%** | $94 | 1 | N/A | 28% |
| **2001** | **Year End** | -14.14% | -14.73% | -19.73% | **5.59%** | $81 | 1 | N/A | 5% |
| **2002** | **Year End** | -11.36% | -11.97% | -14.95% | **3.59%** | $71 | 1 | N/A | 3% |
| **2003** | **Year End** | 35.59% | 34.88% | 40.83% | **-5.25%** | $1,591 | 4 | N/A | 36% |
| **2004** | **Year End** | 24.26% | 23.58% | 20.91% | **3.35%** | $2,579 | 6 | N/A | 35% |
| **2005** | **Year End** | 17.01% | 16.38% | 16.62% | **0.39%** | $3,905 | 12 | 0.43% | 35% |
| **2006** | **Year End** | 25.98% | 25.29% | 26.65% | **-0.67%** | $4,885 | 12 | 1.38% | 28% |
| **2007** | **Year End** | 19.07% | 18.43% | 16.65% | **2.42%** | $5,650 | 12 | 1.31% | 24% |
| **2008** | **Year End** | -42.06% | -42.39% | -45.52% | **3.47%** | $3,460 | 15 | 1.27% | 24% |
| **2009** | **Year End** | 50.10% | 49.30% | 41.45% | **8.66%** | $5,753 | 16 | 4.28% | 25% |
| **2010** | **Year End** | 15.46% | 14.86% | 11.15% | **4.31%** | $8,295 | 16 | 0.78% | 24% |
| **2011** | **Year End** | -12.21% | -12.75% | -13.71% | **1.49%** | $7,696 | 21 | 0.78% | 22% |
| **2012** | **Year End** | 20.24% | 19.54% | 16.83% | **3.41%** | $10,022 | 21 | 0.66% | 24% |
| **2013** | **Year End** | 24.89% | 24.17% | 15.29% | **9.61%** | $12,875 | 22 | 1.18% | 26% |
| **2014** | **1/1/2014 – 2/28/2014** | 2.37% | 2.37% | 0.25% | **2.11%** | $12,885 | 22 | -- | 26% |
| | **Year-to-Date** | 2.37% | 2.37% | 0.25% | **2.11%** | $12,885 | 22 | -- | 26% |
| | **Trailing 1 Year** | 22.25% | 21.54% | 12.25% | **10.00%** | $12,885 | 22 | -- | 26% |

| Annualized Returns | | | | |
|---|---|---|---|---|
| | Composite Total Return (Gross of Fees) | Composite Total Return (Net of Fees)[2] | Benchmark: MSCI ACWI Ex. U.S. Index (Net) | Value Added (vs. Gross Return)[3] |
| **Trailing 3 Year** | 9.79% | 9.14% | 3.98% | **5.81%** |
| **Trailing 5 Year** | 22.92% | 22.22% | 17.26% | **5.66%** |
| **Trailing 7 Year** | 6.55% | 5.95% | 2.06% | **4.49%** |
| **Trailing 10 Year** | 10.80% | 10.18% | 7.16% | **3.64%** |
| **Since Inception (6/1/2000)** | 7.96% | 7.35% | 4.50% | **3.47%** |

| Annualized Three-Year Standard Deviation | | | |
|---|---|---|---|
| **Year** | **Period End** | **Composite Standard Deviation[5]** | **Benchmark Standard Deviation[5]** |
| **2011** | **Year End** | 23.48% | 22.71% |
| **2012** | **Year End** | 19.56% | 19.26% |
| **2013** | **Year End** | 19.18% | 18.79% |
| **2014** | **2/28/2014** | 16.87% | 16.65% |

[1]See Performance Disclosures for important disclosure information. Results presented above are in U.S. dollar (USD).
[2] Total return net of fees were calculated using the composite fee schedule in effect at that time and assumes only investment management base fees are charged for the International Equity Strategy (0.80% for the first $50 million; 0.65% for the next $50 million; and 0.55% thereafter.) Prior to October 1, 2010, the fees charged were as follows, (0.75% for the first $50 million; 0.60% for the next $50 million; and 0.50% thereafter). Fees are computed based on the average daily net asset values during the quarter without separate adjustments for contributions/withdrawals. Fees are assumed to be paid on the last day of each quarter. Prior to 2008, fee rates were applied to end of quarter market values and were adjusted for contributions/withdrawals within that quarter. Actual fees charged vary from portfolio to portfolio.
[3] Value added represents the difference between the composite total return gross of fees and the benchmark. The value added figures are calculated to multiple decimal places and rounded to two decimal places.
[4] Dispersion is only presented for composites with more than five portfolios for the entire year. Composite dispersion is computed using an asset weighted standard deviation measure using assets at the beginning of each year. Only those portfolios with a full year of results are included in this computation. Several characteristics, individually or in combination, may lead to dispersion of performance among portfolios within a composite. These include, most prominently, cash flows in and out of a portfolio, treatment of currency, and individual portfolio restrictions.
[5]The three-year annualized standard deviation measures the variability of the composite (gross) and the benchmark returns over the preceding 36 month period.

# COMPOSITE PERFORMANCE REVIEW DISCLOSURES
# INTERNATIONAL EQUITY – ACWI EX-US STRATEGY

a) The "Firm" claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. The Firm has been independently verified for the periods December 1, 1999 through September 30, 2012. Prior to April 1, 2003, the verifier was PricewaterhouseCoopers LLP and from April 1, 2003 through September 30, 2009, the verifier was Wolf & Company, P.C. For the period October 1, 2009 through September 30, 2012, the verifier was KPMG LLP. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. The International Equity Strategy All World Ex. U.S. Composite has been examined for the periods June 1, 2000 through September 30, 2012. The verification and performance examination reports are available upon request.

b) The term "Firm" used to determine total assets includes all GIPS discretionary and non-discretionary fee paying portfolios of Arrowstreet Capital, Limited Partnership. There are no non-fee paying portfolios. Arrowstreet Capital, Limited Partnership is an independent investment adviser registered under the Investment Advisers Act of 1940.

c) The International Equity Strategy All World Ex. U.S. Composite (created on June 1, 2000) consists of all discretionary fee paying portfolios that follow an international equity strategy that seek to outperform its benchmark by investing primarily in publicly traded equities in both the developed and emerging equity markets, excluding the United States. The risks of international equities, and especially emerging markets equities, are generally somewhat higher than the risks of U.S. equities, as reflected in their somewhat larger return volatility. International equities also may entail some risks of exposure to currencies other than the portfolio's base currency.

d) A new portfolio is included in a composite in the first full month following inception and a terminated portfolio is included through the last full month preceding its termination. A complete list of composite descriptions is available upon request. Additional information regarding the Firm's policies and procedures for valuing portfolios, calculating performance, and preparing compliant presentations is available upon request.

e) The return information presented in this report represents past performance and is not a guarantee of future results.

f) Composite returns have been computed net of commissions and transaction costs, include the reinvestment of income and have been presented both gross and net of investment advisory fees. Dividend income is recorded on an accrual basis net of nonreclaimable withholding taxes as they apply to individual portfolios within the composite. Further, certain portfolios, upon the specific direction by clients, may have additional administrative costs reflected in their accounting records and gross of fee computation.

g) The MSCI ACWI Ex. U.S. Index, Net, is a fully invested capitalization weighted index that assumes reinvestment of dividends and is net of withholding taxes retained at the source for foreigners who do not benefit from a double taxation treaty. Prior to February 1, 2001, the MSCI ACWI Ex. U.S. Index was presented gross of applicable withholding taxes. Index returns do not include any transaction costs, management fees or other costs.

h) Forward foreign currency exchange contracts are used to manage the currency exposure of the portfolios relative to the benchmark within certain tolerances as determined by the Firm and subject to portfolio investment guidelines, as applicable. Forward foreign currency exchange contracts are not used in those markets where the Firm considers it prohibitively expensive to hedge.

# BIOGRAPHIES

| NAME/TITLE | RESPONSIBILITIES | BEGAN AT FIRM | YRS. EXP. | EDUCATION | PRIOR EXPERIENCE |
|---|---|---|---|---|---|
| SENIOR MANAGEMENT | | | | | |
| Bruce Clarke, CFA<br>PARTNER, EXECUTIVE CHAIRMAN | Develops and implements the firm's strategic business plan | 1999 | 33 | London Business School, MBA: 1984; University of British Columbia, B.Com: 1980 | 1994-1999: President and CEO, PanAgora<br>1988-1994: Director of Global Investments, PanAgora<br>1987-1988: Corporate Finance, IMI<br>1984-1987: Portfolio Manager, Shearson Lehman Global Asset Management<br>1980-1982: Financial Analyst, Pemberton Securities |
| Peter Rathjens, Ph.D.<br>PARTNER, CHIEF INVESTMENT OFFICER | Responsible for the firm's investment products; Chairs the firm's Investment Committee | 1999 | 32 | Princeton University, Ph.D. in Economics: 1990; Oberlin College, B.A. in Economics and Mathematics: 1981 | 1998-1999: CIO, PanAgora<br>1995-1999: Director of Global Investments, PanAgora<br>1991-1995: Director of Research, PanAgora<br>1990-1991: Equity Analyst, Colonial Management<br>1988-1990: Assistant Professor of Economics, Brandeis University<br>1986-1988: Instructor of Economics, Princeton University<br>1983-1984: Quantitative Analyst, Lehman Brothers<br>1981-1983: Analyst, Data Resources |
| Anthony Ryan, CFA<br>PARTNER, CHIEF EXECUTIVE OFFICER | Develops and implements the firm's strategic business plan | 2011 | 26 | London School of Economics, M.Sc.: 1986; University of Rochester, B.A.: 1985 | 2009-2011: Chief Administrative Officer, Fidelity Investments<br>2006-2009: U.S. Treasury Department<br>2000-2006: Partner, Head of Global Business Development & Client Relations, Grantham, Mayo, van Otterloo & Co. LLC<br>1994-2000: State Street Global Advisors, Principal, State Street Corporation<br>1988-1994: Manager, Global Investments, PanAgora Asset Management<br>1987-1988: Manager, Equity Investments, The Boston Company |
| John Campbell, Ph.D.<br>PARTNER | Develops and implements the firm's research agenda | 1999 | 21 | Yale University, Ph.D. in Economics: 1984; Oxford University, B.A. in Economics: 1979 | 1994-Present: Professor of Applied Economics, Harvard University<br>1998-1999: Director of External Research, PanAgora<br>1992-1998: Academic Advisory Committee, PanAgora<br>1984-1994: Professor of Economics, Princeton University |

# BIOGRAPHIES

| NAME/TITLE | RESPONSIBILITIES | BEGAN AT FIRM | YRS. EXP. | EDUCATION | PRIOR EXPERIENCE |
|---|---|---|---|---|---|
| INVESTMENT PROFESSIONALS | | | | | |
| John Capeci, Ph.D.<br>PARTNER | Implements the firm's investment strategies | 1999 | 19 | Princeton University, Ph.D. in Economics: 1990; Harvard University, A.B. in Economics: 1984 | 1998-1999: Director of Research, PanAgora<br>1994-1998: Senior Investment Manager, PanAgora<br>1990-1995: Assistant Professor, Brandeis University |
| Ezra Levine, CFA<br>PARTNER | Implements the firm's investment strategies | 1999 | 20 | Brandeis University, M.S. in Finance: 2011; Northeastern University, B.S. in Business Administration: 1992 | 1998-1999: Global Investment Manager, PanAgora<br>1995-1998: Analyst and Trader, Walden Capital Management<br>1993-1995: Trader, Valores Bursatiles de Mexico |
| Manolis Liodakis, Ph.D.<br>PARTNER | Implements the firm's investment strategies | 2012 | 15 | City University, London, Ph.D. in Finance: 1999; University of Birmingham, MBA in Finance: 1996; Athens University of Economics & Business, B.S. in Economics & Business: 1994 | 2008-2011: Managing Director of Global Equities Hybrid Strategies, Citadel Asset Management<br>2001-2008: Managing Director-Head of European Quantitative Equity Research, Citigroup Global Markets<br>2000-2001: Strategist, Morgan Stanley<br>1998-2000: Associate, Salomon Brothers |
| Alex Ogan<br>PARTNER | Implements the firm's investment strategies | 2005 | 8 | Harvard College, A.B. in Economics: 2005 | 2003-2004: Project Engineer, Aaxis Technologies |
| George Pararas, CFA<br>PARTNER | Implements the firm's investment strategies | 2002 | 17 | Babson College, MBA in Finance: 2011; Georgetown University, B.S. in Business Administration: 1996 | 2000-2002: Analyst, Putnam Investments<br>1998-2000: Senior Investment Associate, PanAgora<br>1996-1998: Registered Representative, Fidelity Investments |
| Michael Zervas, CFA<br>PARTNER | Implements the firm's investment strategies | 2004 | 12 | Stonehill College, B.S. in Business Administration: 2001 | 2001-2004: Consultant, FactSet Research Systems |

# BIOGRAPHIES

| NAME/TITLE | RESPONSIBILITIES | BEGAN AT FIRM | YRS. EXP. | EDUCATION | PRIOR EXPERIENCE |
|---|---|---|---|---|---|
| INVESTMENT PROFESSIONALS | | | | | |
| Sam Thompson, Ph.D.<br>PARTNER | Designs, develops, and maintains the investment systems used to support the management of client portfolios | 2005 | 8 | University of California at Berkeley, Ph.D. in Economics and M.A. in Statistics: 2000; Yale University, B.A. in Economics: 1995 | 2005-2006: Consultant, Arrowstreet Capital<br>2004-2005: Associate Professor of Economics, Harvard University<br>2000-2004: Assistant Professor of Economics, Harvard University |
| Marta Campillo, Ph.D.<br>PARTNER | Designs, develops, and maintains the investment systems used to support the management of client portfolios | 1999 | 17 | Boston University, Ph.D. in Economics: 2000; Universidad Complutense, M.A.: 1992; Institute of Fiscal Studies, M.A.: 1990; Universidad de Autonoma, B.S.: 1989 | 1997-1999: Teaching Assistant – Dept. of Economics, Boston University<br>1995-1997: Research Assistant – Prof. Jeffrey Miron, Boston University<br>1990-1993: Research Associate-Foundation of Applied Economics Studies, FEDEA |
| Tuomo Vuolteenaho, Ph.D.<br>PARTNER | Develops and implements the firm's research agenda | 2004 | 10 | University of Chicago, Ph.D. in Finance: 2000; Helsinki School of Economics and Business Administration, M.S. in Economics: 1995 | 2004: Consultant, Arrowstreet Capital<br>2000–2004: Assistant Professor of Economics, Harvard University<br>1995–2000: Teaching Assistant, University of Chicago |
| Alex Merlis, CFA<br>PARTNER | Develops and enhances the firm's forecasting and risk models | 2006 | 12 | Boston University, M.A. in Mathematical Finance: 2006; Harvard University, A.B. in Physics and S.M. in Engineering Sciences: 1996 | 2003-2005: Quantitative Long/Short Analyst, Citadel Investment Group<br>2002-2003: Quantitative Analyst, StarMine Corp. |
| Derek Vance, CFA<br>PARTNER | Develops and enhances the firm's forecasting and risk models | 2008 | 6 | Harvard College, A.B. in Economics: 2007 | 2007-2008: Analyst, Goldman Sachs |
| Yijie Zhang, Ph.D.<br>PARTNER | Develops and enhances the firm's forecasting and risk models | 2006 | 7 | Yale University, Ph.D. in Finance: 2006; Rutgers University, M.S. in Economics: 2000; Tsignhua (Qinghua) University, B.A. in Finance: 1997 | 2003-2006: Teaching Assistant, Yale University |

# BIOGRAPHIES

| NAME/TITLE | RESPONSIBILITIES | BEGAN AT FIRM | YRS. EXP. | EDUCATION | PRIOR EXPERIENCE |
|---|---|---|---|---|---|
| BUSINESS DEVELOPMENT | | | | | |
| Michael Stanton, CFA<br>PARTNER | Responsible for the firm's sales and marketing efforts | 2006 | 20 | Colby College, B.A. in Government: 1992 | 2000–2006: Managing Director of Consultant Relations, Babson Capital Management<br>1994–2000: Consultant Relations Associate, Putnam Investments<br>1993–1994: Investor Services, Putnam Investments |
| Neil Garceau<br>MANAGER | Responsible for the firm's sales and marketing efforts | 2010 | 18 | Bentley University, M.S. in Finance: 1999; University of Rhode Island, B.S. in Accounting: 1992 | 2002-2009: Institutional Relationship Manager, The Boston Company Asset Management<br>1998-2002: Senior Financial Analyst, The Boston Company Asset Management<br>1995-1998: Senior Legal and Compliance Analyst, The Boston Company Asset Management<br>1993-1995: Senior Financial Auditor, Mellon Financial Corporation |

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BAILLIE GIFFORD

# Alaska Retirement Management Board (ARMB)

April 2014

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## Past Performance

Past performance is not a guide to future performance. Changes in investment strategies, contributions or withdrawals may materially alter the performance, strategy and results of the portfolio.

Material market or economic conditions will have an impact on investment results.

The returns presented in this document are gross of fees unless otherwise stated and reflect the reinvestment of dividends and interest.

All investment strategies have the potential for profit and loss.

Historical performance results for investment indices and/or categories, generally do not reflect the deduction of transaction costs and/or custodial charges or the deduction of an investment management fee, the incurrence of which would have the effect of decreasing historical performance results.

## Stock Examples

Any stock examples used in this presentation are not intended to represent recommendations to buy or sell, neither is it implied that they will prove profitable in the future. It is not known whether they will feature in any future portfolio produced by us.

Any individual examples will represent only a small part of the overall portfolio and are inserted purely to help illustrate our investment style.

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# Baillie Gifford

Long-established asset management partnership

— Stability: organic growth since 1908

— Autonomy: owned by 39 full-time partners

— Sole focus: investment management

— Bottom-up growth investing

# North American Clients

| | No. of Clients | Assets $m |
|---|---|---|
| Total Firm Assets | 362 | 174,384 |
| North American Clients' Assets | 201 | 73,372 |

| | No. of Clients | Assets $m | Inception* |
|---|---|---|---|
| International Focus Assets | 34 | 7,568 | |
| ACWI ex US Focus | 16 | 2,194 | (06/30/02) |

| Long Standing International Focus Clients | Other Notable International Focus Clients | Other Baillie Gifford Clients |
|---|---|---|
| Massachusetts Pension Reserves Investment Management Board | The American Baptist Home Mission Society | New York City Police Pension Fund |
| University of Illinois Foundation | San Mateo County Employees' Retirement Association | State Board of Administration of Florida |
| Salvation Army Southern Territory | The PNC Financial Services Group | California State Employees Retirement System |
| NiSource | Hallmark Cards | Energizer |
| Puerto Rico Teachers' Retirement System | Harbor Capital Advisors | The Vanguard Group |
| | | Boy Scouts of America |

The clients identified in the above list were selected based on a variety of factors, including name recognition, industry, geographic region and investment mandate.
The selection of clients for the list is not based on performance criteria. It is not known whether the listed clients approve or disapprove of Baillie Gifford or services provided.
Client count includes segregated and North American pooled clients. As of December 31, 2013. US dollars.
*Composite inception.

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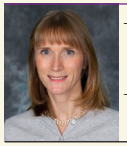
# International Focus Strategy Supported by Firm-wide Research

## 96 investment professionals across 17 teams

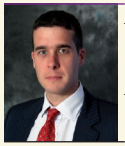
### Regional Equities (38)

#### Developed Asian Equities



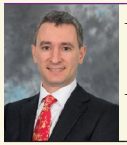
- Elaine Morrison
  25 years' experience
  25 years with BG
- 5 Inv. professionals

#### European Equities



- Tom Coutts
  15 years' experience
  15 years with BG
- 5 Inv. professionals

#### Emerging Markets Equities



- Richard Sneller
  20 years' experience
  20 years with BG
- 9 Inv. professionals

#### Japanese Equities

- Sarah Whitley
  34 years' experience
  34 years with BG
- 6 Inv. professionals

#### North American Equities

- Mick Brewis
  29 years' experience
  29 years with BG
- 6 Inv. professionals

#### UK Equities

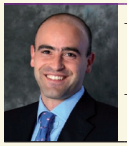
- Gerard Callahan
  23 years' experience
  23 years with BG
- 7 Inv. professionals

### Global/International Equities (36)

#### ACWI Alpha

- Angus Franklin
  20 years' experience
  20 years with BG
- 3 Inv. professionals

#### EAFE Alpha

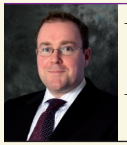


- Kavé Sigaroudinia
  15 years' experience
  15 years with BG
- 4 Inv. professionals

#### Global Alpha

- Charles Plowden
  31 years' experience
  31 years with BG
- 5 Inv. professionals

#### Global Discovery



- Douglas Brodie
  13 years' experience
  13 years with BG
- 6 Inv. professionals

#### Global Income Growth

- Dominic Neary
  16 years' experience
  5 years with BG
- 4 Inv. professionals

#### Global Opportunities

- Gerald Smith
  27 years' experience
  27 years with BG
- 4 Inv. professionals

#### Long Term Global Growth

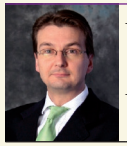
- James Anderson
  31 years' experience
  31 years with BG
- 6 Inv. professionals

#### Global Sector Research Specialists

- Technology
- Resources
- Energy
- 4 Inv. Professionals

### Fixed Income and Multi Asset (22)

#### Credit



- Stephen Rodger
  23 years' experience
  14 years with BG
- 8 Inv. professionals

#### Diversified Growth

- Patrick Edwardson
  21 years' experience
  21 years with BG
- 6 Inv. professionals

#### Rates and Currencies

- Steven Hay
  20 years' experience
  10 years with BG
- 8 Inv. professionals

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# Investment Philosophy

## Growth

— We believe superior profit growth leads to outperformance in the long run

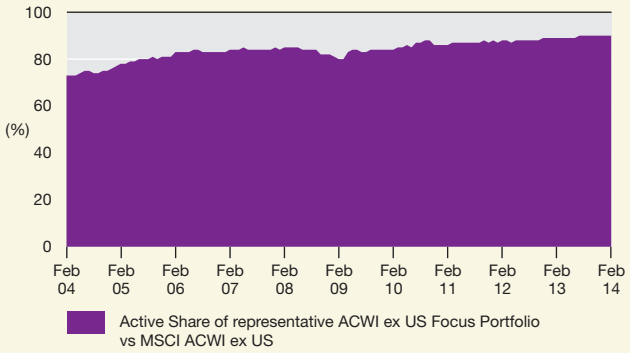
## Active

— Bottom-up stock selection enables exploitation of inefficiencies

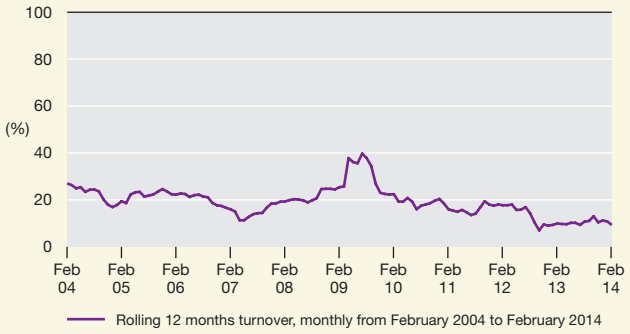
## Long Term

— Share prices reflect fundamentals over the long term

Active Share† for a Typical International Focus Portfolio




Turnover for a Typical International Focus Portfolio




Source: Baillie Gifford & Co/APT.

Growth, active, long term

# Investment Process

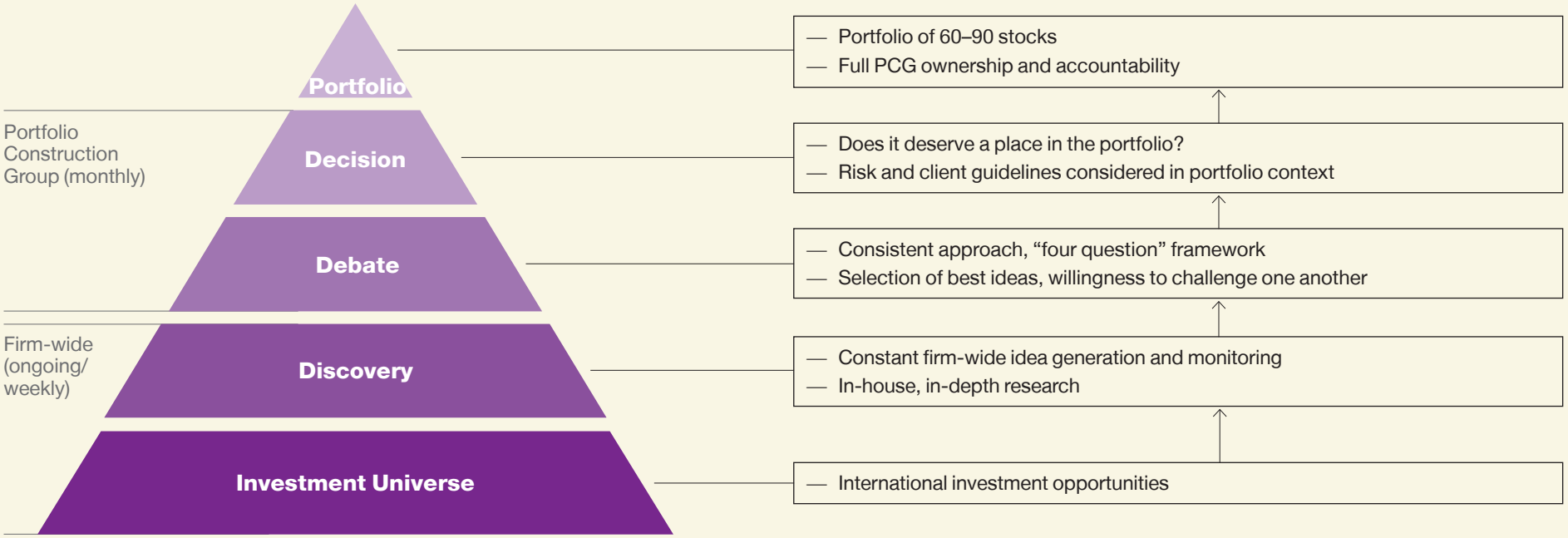
## Firm-wide Discovery

## Portfolio Construction Group Debate and Decision

| Iain Campbell | Gerard Callahan | Paul Faulkner | Joe Faraday |
|---|---|---|---|
| — 10 yrs' experience | — 23 yrs' experience | — 14 yrs' experience | — 12 yrs' experience |
| — 10 yrs with Baillie Gifford | — 23 yrs with Baillie Gifford | — 14 yrs with Baillie Gifford | — 12 yrs with Baillie Gifford |

Best ideas from firm-wide research; Portfolio Construction Group ownership and accountability

# Portfolio Construction



# Investment Criteria

Four Key Questions

| | | |
|---|---|---|
| **Growth/Quality** | **Will this company be significantly larger in five years?** | — Sustainable competitive advantage and market share?<br>— Favorable industry background?<br>— If not, why should this be of further interest?<br>— How will growth be financed; worthwhile returns? |
| **Management** | **Are management sensible guardians of our clients' capital?** | — Motivations; alignment of long-term interests?<br>— Strategic ambitions? |
| **Valuation** | **Why is this growth not reflected in the current share price?** | — Likely valuation in five years? (reflecting five years' outlook after that) |
| **Discipline** | **What would make us sell?** | — Any 'non-negotiable' aspects to investment case?<br>— Awareness of key risks |

Common investment language supported by four question framework

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# ACWI ex US Focus Portfolio

| Market Cap Percentiles (market cap range) | Consumer Discretionary | Consumer Staples | Energy | Financials | Health Care | Industrials | Information Technology | Materials | Total (Index) |
|---|---|---|---|---|---|---|---|---|---|
| 91–100 ($159–$262bn) | | Nestlé | | | Roche | | Samsung Electronics | BHP Billiton | 8 (10) |
| 81–90 ($103–$149bn) | | Unilever | Total | | Novo Nordisk | | | | 5 (10) |
| 71–80 ($73bn – $102bn) | Inditex | | | UBS | | | TSMC ADR | | 4 (10) |
| 61–70 ($50bn–$73bn) | | | BG Group | Standard Chartered<br>Itau Unibanco SA ADR | | | | | 4 (10) |
| 51–60 ($35bn–$50bn) | Naspers | Imperial Tobacco<br>Woolworths<br>Walmex | | | | Jardine Strategic | Baidu.com ADR<br>Hon Hai Precision GDR | | 8 (10) |
| 41–50 ($25bn–$35bn) | | | | Svenska Handelsbanken<br>United Overseas Bank<br>Investor<br>BOC Hong Kong | | Atlas Copco | | | 7 (10) |
| 31–40 ($16bn–$25bn) | Rakuten<br>adidas | Kao | | | | Scania<br>CNH Industrial<br>Kone<br>Schindler<br>Legrand<br>SMC | | | 11 (10) |
| 21–30 ($10bn–$16bn) | Li & Fung | Carlsberg<br>Coca-Cola Enterprises<br>Asahi Group | | Kinnevik<br>Hargreaves Lansdown<br>MS&AD Insurance<br>Garanti Bankasi | Olympus<br>Novozymes | Geberit<br>Brambles | | Johnson Matthey | 19 (10) |
| 11–20 ($6bn–$10bn) | ASOS<br>Shimano<br>Mahindra & Mahindra GDR | LG Household & Healthcare Pref<br>Tsingtao Brewery<br>Colruyt | | EXOR<br>Bank Negara Indonesia<br>Samsung Fire & Marine Insurance | Mettler-Toledo | Intertek<br>Weir | | | 16 (10) |
| 1–10 ($0.5bn–$6bn) | Rightmove<br>Mitchells & Butlers<br>Trade Me<br>Café de Coral<br>Aristocrat Leisure<br>Sankyo Gunma | DIA<br>Clicks<br>Puregold Price Club<br>Treasury Wine Estates | Wood Group | CF Alba | Cochlear<br>Mindray Medical International ADR<br>bioMerieux<br>Mesoblast<br>Protalix BioTherapeutics | SEEK<br>THK | Imagination Technologies<br>Recall | Kazakhmys | 20 (10) |

Based on a representative portfolio, as of February 28, 2014. US dollars. Excludes cash. Index=MSCI ACWI ex US.
Source: Factset/Baillie Gifford & Co.

## Opportunities across the market cap spectrum

# Our Approach to Risk

Focus on company fundamentals

Sensible portfolio construction guidelines

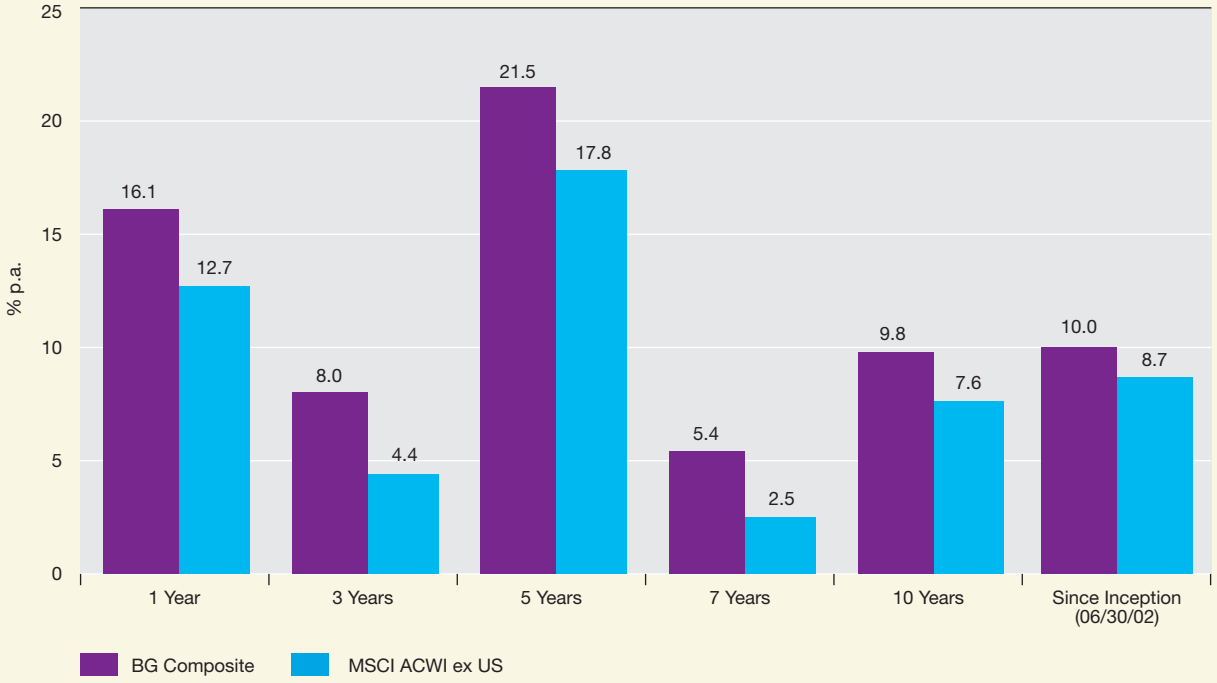
Oversight by independent Investment Risk team

| Typical position guidelines vs international benchmark | |
|---|---|
| Sectors | +/-10% |
| Countries | +/-10% |
| Stocks | +/-5% |
| Indicative no. of stocks | 60–90 |

Comprehensive approach to risk

# ACWI ex US Focus Performance

Annualized Returns (% p.a.)




Annualized periods ended February 28, 2014. US dollars.

The ACWI ex US Focus strategy is more concentrated than the MSCI ACWI ex US.

The returns presented above are gross of fees and reflect the reinvestment of dividends and interest. The results do not reflect the deduction of investment management fees; the client's return will be reduced by the management fees and any other expenses incurred in the management of its account. For example, a $55 million account, paying a 0.55% annual fee, with a given rate of 10% annualized over a 10-year period would result in a net-of-fee return of 9.45% p.a. This performance reflects the performance of clients of the advisor and other entities within the Baillie Gifford group. Fees are described in Part II of Form ADV which is available on request.

## Proven track record – repeatable process

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# Conclusion

Why Baillie Gifford?

— Stable partnership

— A culture of continuity and teamwork

— Committed to servicing our clients

International Focus

— Bottom-up growth investing

— Active and patient approach

— Proven track record

Firm wide philosophy, repeatable process

# Appendices

# ACWI ex US Focus Portfolio Holdings

| | % |
|---|---|
| Roche | 3.2 |
| ASOS | 2.8 |
| Kinnevik | 2.6 |
| Svenska Handelsbanken | 2.5 |
| Novo Nordisk | 2.4 |
| BG Group | 2.2 |
| Carlsberg | 2.1 |
| Hargreaves Lansdown | 2.0 |
| Scania | 1.9 |
| Naspers | 1.9 |
| Atlas Copco | 1.9 |
| MS&AD Insurance | 1.8 |
| Johnson Matthey | 1.7 |
| Nestlé | 1.7 |
| Samsung Electronics | 1.7 |
| Rakuten | 1.7 |
| Baidu.com ADR | 1.7 |
| DIA | 1.6 |
| Shimano | 1.6 |
| Rightmove | 1.5 |
| Cochlear | 1.5 |

| | % |
|---|---|
| TSMC ADR | 1.5 |
| United Overseas Bank | 1.5 |
| SEEK | 1.4 |
| THK | 1.4 |
| CNH Industrial | 1.4 |
| Olympus | 1.3 |
| Coca-Cola Enterprises | 1.3 |
| Unilever | 1.3 |
| CF Alba | 1.3 |
| Intertek | 1.2 |
| Inditex | 1.2 |
| Geberit | 1.2 |
| EXOR | 1.2 |
| Mitchells & Butlers | 1.2 |
| Kone | 1.1 |
| Asahi Group | 1.1 |
| Mahindra & Mahindra GDR | 1.1 |
| BHP Billiton | 1.1 |
| Mettler-Toledo | 1.1 |
| Trade Me | 1.0 |
| Tsingtao Brewery | 1.0 |

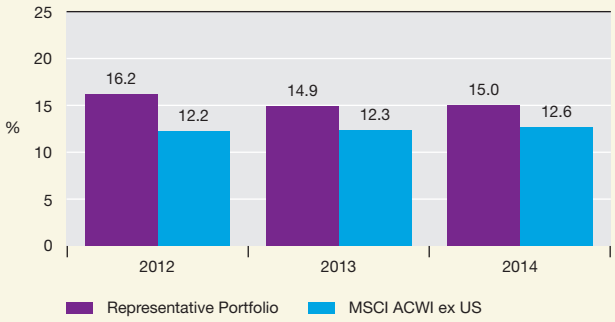
| | % |
|---|---|
| Kao | 1.0 |
| Café de Coral | 1.0 |
| Hon Hai Precision GDR | 1.0 |
| Bank Negara Indonesia | 1.0 |
| Schindler | 1.0 |
| LG Household & Healthcare Pref | 1.0 |
| Garanti Bankasi | 1.0 |
| Samsung Fire & Marine Insurance | 0.9 |
| Weir | 0.9 |
| Aristocrat Leisure | 0.9 |
| Wood Group | 0.9 |
| Brambles | 0.9 |
| Legrand | 0.9 |
| Jardine Strategic | 0.8 |
| Total | 0.8 |
| SMC | 0.8 |
| Standard Chartered | 0.8 |
| Imperial Tobacco | 0.8 |
| Woolworths | 0.8 |
| adidas | 0.8 |
| UBS | 0.8 |

| | % |
|---|---|
| Novozymes | 0.7 |
| Mindray Medical International ADR | 0.7 |
| Itau Unibanco SA ADR | 0.7 |
| Investor | 0.7 |
| Li & Fung | 0.7 |
| Clicks | 0.6 |
| bioMerieux | 0.6 |
| Puregold Price Club | 0.6 |
| Imagination Technologies | 0.6 |
| Kazakhmys | 0.6 |
| Walmex | 0.6 |
| Mesoblast | 0.6 |
| Colruyt | 0.6 |
| Treasury Wine Estates | 0.5 |
| BOC Hong Kong | 0.5 |
| Protalix BioTherapeutics | 0.5 |
| Sankyo Gunma | 0.4 |
| Recall | 0.1 |
| Cash | 2.9 |
| **Total** | **100.0** |

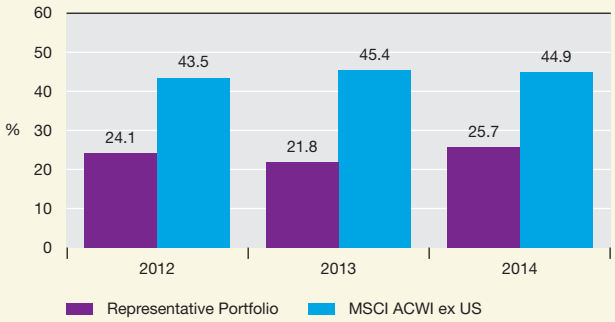
Based on a representative portfolio, as of February 28, 2014.

# The Outcome

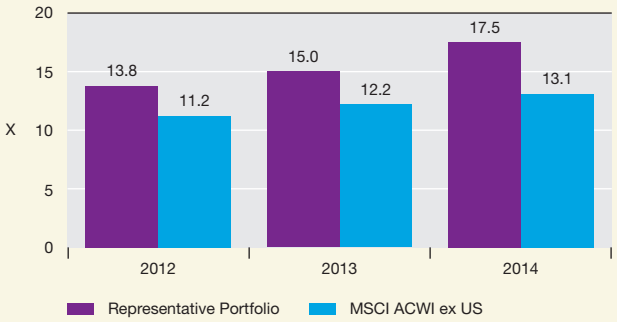
## Return on Equity*




## Debt/Equity Ratio




## Price/Earnings*

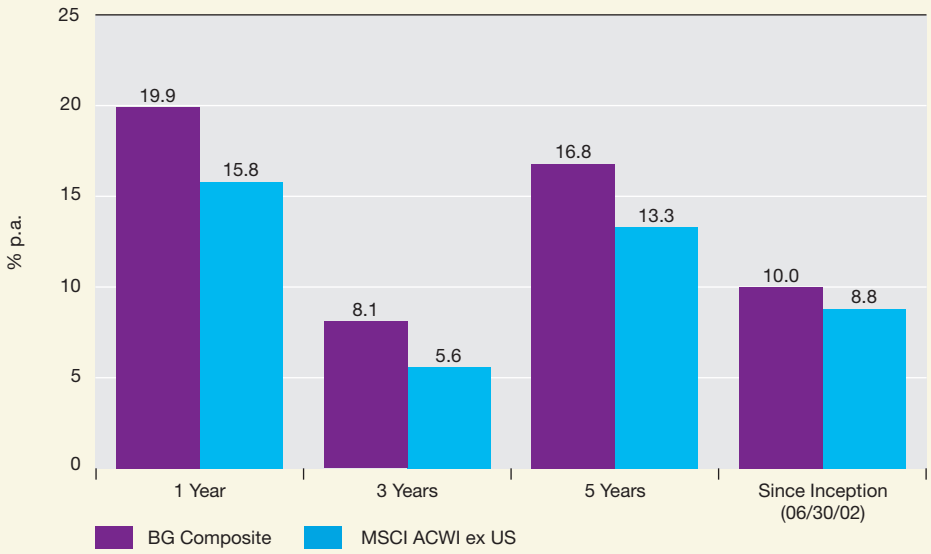



Source: UBS, US dollars, February 28. Representative ACWI ex US Focus portfolio.
*12 month forward estimate.

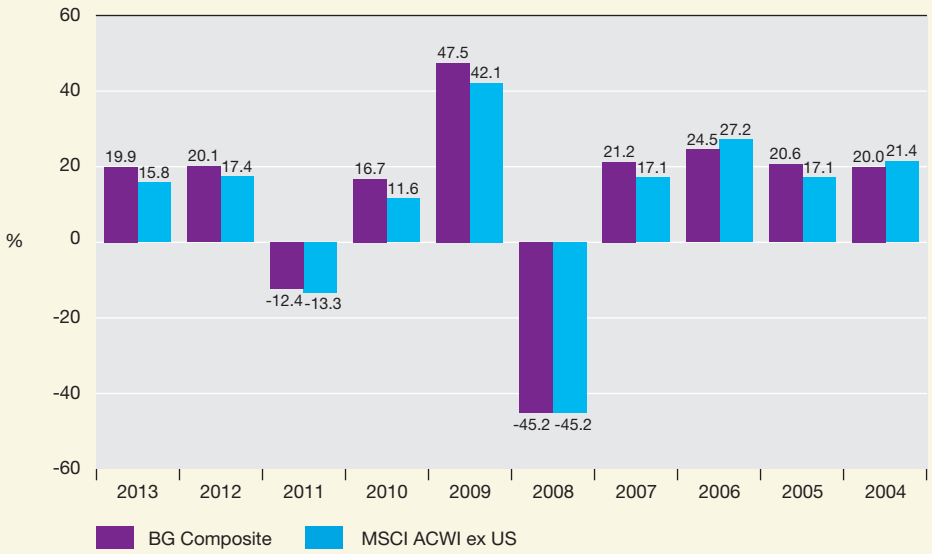
## Consistent over time

# ACWI ex US Focus Performance

## Annualized Returns (% p.a.)




## Calendar Year Returns (%)




Annualized periods ended December 31, 2013.

Annual periods end December 31.

US dollars.

The ACWI ex US Focus strategy is more concentrated than the MSCI ACWI ex US.

The returns presented above are gross of fees and reflect the reinvestment of dividends and interest. The results do not reflect the deduction of investment management fees; the client's return will be reduced by the management fees and any other expenses incurred in the management of its account. For example, a $55 million account, paying a 0.55% annual fee, with a given rate of 10% annualized over a 10-year period would result in a net-of-fee return of 9.45% p.a. This performance reflects the performance of clients of the advisor and other entities within the Baillie Gifford group. Fees are described in Part II of Form ADV which is available on request.

## Proven track record – repeatable process

# International Focus Portfolio Construction Group Investor Biographies

## Gerard Callahan

— 23 years' experience
— 23 years with Baillie Gifford

Gerard graduated BA in Politics, Philosophy and Economics from Oxford University in 1991. He joined Baillie Gifford the same year and became a Partner in 2000. Gerard is an Investment Manager and has been a member of the International Focus Portfolio Construction Group since 2007 and Chairman since 2010.

## Paul Faulkner

— 14 years' experience
— 14 years with Baillie Gifford

Paul graduated BSc in Geology from the University of Edinburgh, and MSc in Petroleum Geo-science from Imperial College, and holds a PhD in Geology/Geophysics from Cambridge University. Paul who is a CFA Charterholder, joined Baillie Gifford in 2000. He is an Investment Manager and has been a member of the International Focus Portfolio Construction Group since 2008.

## Iain Campbell

— 10 years' experience
— 10 years with Baillie Gifford

Iain graduated BA in Modern History from Oxford University in 2000. He worked for Goldman Sachs and travelled in Asia, before joining Baillie Gifford in 2004. Iain is an Investment Manager and has been a member of the International Focus Portfolio Construction Group since 2010.

## Joe Faraday

— 12 years' experience
— 12 years with Baillie Gifford

Joe graduated MEng in Chemical Engineering from Cambridge University in 2002 and he joined Baillie Gifford the same year. Joe is a CFA Charterholder and has an MBA. He has been a member of the International Focus Portfolio Construction Group since 2007.

G·I·P·S
Global Investment Performance Standards

## Performance Results

| | |
|---|---|
| **Composite** | International Non-US Equities - Focus (MSCI AC World Free ex US) |
| **Benchmark** | MSCI AC World ex US |
| **Currency** | US$ |
| **Period Ended** | 31 December 2013 |

For GIPS® purposes, we have defined the Firm as all those actual fee paying accounts within Baillie Gifford & Co and all of its wholly or jointly owned affiliates.

Notes

1. Baillie Gifford claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS® standards. Baillie Gifford has been independently verified for the periods 1 January 1994 to 31 December 2012. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS® standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS® standards. The International Non-US Equities - Focus (MSCI AC World Free ex US) composite has been examined for the periods 1 January 2003 to 31 December 2012. The verification and performance examination reports are available on request.
2. The composite is defined as: All portfolios managed by the International Focus Portfolio Construction Group, with an International (non-US) equity mandate benchmarked to the MSCI All Countries World Free ex US index with an objective to equal or outperform the index, taking the appropriate risk to do so.
3. The composite definition was amended on 20 August 2013. Wording that compared the number of holdings of this composite to that of another composite has been removed as there is no longer a significant difference in the concentration of holdings between the two strategies. 'All portfolios managed by the International Focus Portfolio Construction Group' was also added to the composite definition.
4. Gross of fees performance returns are presented before management and custodial fees but after all trading expenses. Returns are presented net of withholding taxes on dividends, interest income and capital gains where applicable. Net-of-fees performance returns are calculated by deducting the highest fee of 0.60% from the annual or annualised composite return. The management fee schedule is as follows: 0.60% on the first US$25m; 0.50% on the next US$75m; 0.40% on the next US$300m; 0.30% thereafter. This may not necessarily represent the actual fee charged.
5. Additional information regarding policies for valuing portfolios, calculating performance and preparing compliant presentations is available on request.
6. The composite dispersion of annual returns is indicated by the performance of individual accounts representing the highest and lowest returns. Dispersion of returns is calculated for portfolios included in the composite for the full year. Where the composite contains less than five funds at year end no dispersion figure is provided.
7. This composite was created on 11 August 2005. A complete list and description of the firm's composites and performance results is available on request.
8. Currency hedging may have been used in some of the portfolios in the composite. This occurs when it is felt that a currency is significantly over or undervalued, to protect the underlying assets in that currency.

GIPS® is a registered trademark of CFA Institute. CFA Institute has not been involved in the preparation or review of this report.

G·I·P·S
Global Investment Performance Standards

## Annual Performance Results to December 2013

**Composite** International Non-US Equities - Focus (MSCI AC World Free ex US)

**Benchmark** MSCI AC World ex US

**Currency** US$

| Year End | Composite Return Gross of Fees % | Benchmark Return % | No of Funds | Composite Dispersion % (High –Low) | Composite Total Assets at End of Period US$ m | % of Firm Assets |
|---|---|---|---|---|---|---|
| 2013 * | 19.9 | 15.8 | 12 | 1.3 | 1,839.3 | 1.1 |
| 2012 | 20.1 | 17.4 | 9 | 2.9 | 1,078.1 | 0.8 |
| 2011 | -12.4 | -13.3 | 7 | 1.0 | 797.0 | 0.8 |
| 2010 | 16.7 | 11.6 | 5 | 1.7 | 832.7 | 0.8 |
| 2009 | 47.5 | 42.1 | <5 | 0.0 | 658.3 | 0.8 |
| 2008 | -45.2 | -45.2 | 5 | 1.0 | 496.8 | 0.8 |
| 2007 | 21.2 | 17.1 | 5 | 2.2 | 915.4 | 0.9 |
| 2006 | 24.5 | 27.2 | 5 | 1.2 | 891.8 | 1.0 |
| 2005 | 20.6 | 17.1 | <5 | 0.0 | 514.3 | 0.7 |
| 2004 | 20.0 | 21.4 | <5 | 0.0 | 561.6 | 1.0 |

* Not independently verified

## Risk Results to December 2013

| Year End | Composite 3 Yr St Dev (% p.a.) | Benchmark 3 Yr St Dev (% p.a.) | Tracking Error 3 Yr St Dev (% p.a.) |
|---|---|---|---|
| 2013 | 15.2 | 16.2 | 2.9 |
| 2012 | 18.7 | 19.2 | 2.6 |
| 2011 | 22.3 | 22.7 | 2.5 |
| 2010 | 28.3 | 27.3 | 3.5 |
| 2009 | 26.2 | 25.3 | 3.5 |

## Supplementary Information: Annualised Performance Results to December 2013

| | Composite Gross of Fees % p.a. | Benchmark % p.a. |
|---|---|---|
| 1 Year | 19.9 | 15.8 |
| 3 Years | 8.1 | 5.6 |
| 5 Years | 16.8 | 13.3 |
| 10 Years | 10.0 | 8.0 |
| Since Inception ( 30/06/02) | 10.0 | 8.8 |

* These returns are supplemental to the composite presentation and are not verified by an independent third party.

# Manager Diversification

Gary Bader, CIO
April 2014

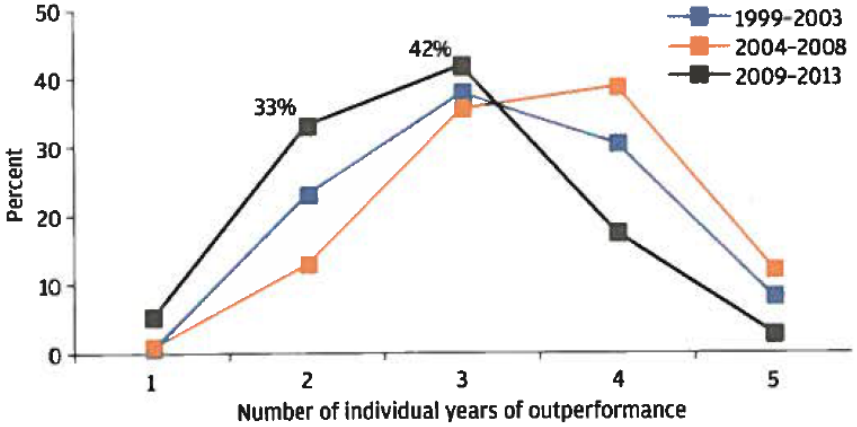
# Even Good Managers Underperform

- JP Morgan analyzed year-by-year performance of managers who outperformed over a 5 year period (ending June 2013).

- More than 75% of the managers had two or more individual years of underperformance.

**Even *successful** managers underperform their respective ETFs in some years**

**EXHIBIT 14A: LARGE CAP CORE, % OF ACTIVE MANAGERS BY YEARS OF OUTPERFORMANCE OVER A 5-YEAR PERIOD**




Source: J.P. Morgan, eVestment; data as of June 2013.

*Successful managers are defined as those outperforming their respective ETFs over a given five-year period, regardless of performance in any individual year.

# Staff Simulation

Staff ran a Monte Carlo simulation to analyze the performance impact of additional managers on a small cap portfolio:

- 1 – 5 managers
- 3 year periods
- Each manager generates 100bps net annual excess return (5% standard deviation)
- Excess returns uncorrelated to the index
- Model run with excess returns at various correlations to each other

# Staff Simulation

- The probability of beating the index increases with the number of managers.
- The magnitude of improvement decreases with number of managers, but overall probability continues to increase.
- Ideal situation: group of active managers that can generate excess returns that are uncorrelated or negatively correlated.

**Probability of Beating Index over 3 years**

| #/Managers | 0.5 Correlated | Uncorrelated |
|---|---|---|
| 1 | 61.9% | 62.0% |
| 2 | 64.0% | 68.1% |
| 3 | 65.2% | 71.2% |
| 4 | 67.7% | 74.2% |
| 5 | 69.4% | 77.4% |

**Probability of Beating Index over 6 years**

| #/Managers | 0.5 Correlated | Uncorrelated |
|---|---|---|
| 1 | 66.7% | 66.6% |
| 2 | 70.2% | 73.8% |
| 3 | 72.4% | 79.1% |
| 4 | 74.8% | 82.8% |
| 5 | 77.0% | 86.1% |

# Active Management Premium

- Callan presented a summary of active management premiums to the ARMB at the April 2013 meeting.

- Callan showed how managers within style groups fared relative to stock and bond market indices.

- There is a wide range of relative returns across styles, with small cap and international managers tending to outperform broad market measures over 3 year periods.

# Active Management Premium

## International Equity Core Plus Broad Style vs MSCI ACWI ex-US

**Percent of Three-Year periods where Manager Beat Benchmark by more than Hurdle – by Percentile**

| Hurdle | 0.45% | 0.50% | 0.55% | 0.60% | 0.65% | 0.70% | 0.75% | 0.80% | 0.85% | 0.90% |
|---|---|---|---|---|---|---|---|---|---|---|
| Median | 59% | 59% | 58% | 58% | 58% | 56% | 55% | 54% | 54% | 54% |
| 45th Percentile | 65% | 65% | 65% | 65% | 61% | 58% | 58% | 58% | 58% | 58% |
| 40th Percentile | 74% | 71% | 71% | 71% | 71% | 69% | 69% | 68% | 65% | 64% |
| 35th Percentile | 84% | 81% | 80% | 78% | 78% | 75% | 75% | 75% | 75% | 74% |
| 30th Percentile | 95% | 95% | 95% | 94% | 94% | 94% | 94% | 89% | 86% | 83% |
| 25th Percentile | 100% | 100% | 100% | 100% | 100% | 100% | 99% | 98% | 98% | 98% |

**Average Annualized Excess Return – Median Manager: 1.98%**

- The median International Equity Core Plus Broad Style active manager beat the MSCI ACWI ex-US Index by 45bps, 59% of the time.

Source: Callan

# Takeaways

- Increasing the number of active managers in a portfolio may increase the probability of generating excess returns.

- Active managers in the non-US and small cap spaces may be more likely to outperform broad market measures.

- Even managers who outperform their indices over longer periods may experience years of underperformance.

# ALASKA RETIREMENT MANAGEMENT BOARD

| | | | |
|---|---|---|---|
| SUBJECT: | Global Equity ex-US | ACTION: | X |
| DATE: | April 25, 2014 | INFORMATION: | |

BACKGROUND:

On September 19, 2013, the Alaska Retirement Management Board (ARMB) directed Callan to conduct a search for one or more Global ex-US investment managers due to the concentration of assets among international managers as compared to ARMB's Domestic Equity portfolio. This concentration would be increased with the anticipated rebalancing flows as a result of the Global Equity ex-US underweight and Domestic Equity overweight relative to target asset allocations.

As of February 28, 2014, ARMB's portfolio was underweight the Global Equity ex-US target weight of 25% by 1.1% while being overweight the Broad Domestic Equity target weight of 26% by 3.7%.

STATUS:

On November 26, 2013, Callan concluded its Global ex-US search, selecting 11 finalists. In further narrowing down the finalist list, staff analyzed the candidate firms' investment philosophy, style, track record, risks, fees, and capacity. Upon narrowing the list down to three managers, staff conducted on-site due diligence at the offices of Allianz Global Investors U.S. LLC (Allianz), Arrowstreet Capital, L.P. (Arrowstreet), and Baillie Gifford International LLC (Baillie Gifford) to meet with portfolio managers, analysts, traders, compliance personnel, and other key individuals.

It is the recommendation of staff to consider Allianz, Arrowstreet, and Baillie Gifford to each manage Global ex-US equity mandates for the ARMB. All three managers have extensive track records displaying their ability to outperform consistently and through various market environments. The three managers display differing philosophies and styles which staff view as complimentary to each other and the Global Equity ex-US portfolio as a whole.

RECOMMENDATION:

The Alaska Retirement Management Board hire Allianz, Arrowstreet, and Baillie Gifford to each manage a $200 million Global ex-US equity portfolio, subject to successful contract and fee negotiations.

***ALASKA RETIREMENT MANAGEMENT BOARD***
***M E M O R A N D U M***

To: ARMB Trustees
From: Judy Hall
Date: April 11, 2014
Subject: Financial Disclosures

As required by AS 37.10.230 and Alaska Retirement Management Board policy relating to investment conduct and reporting, trustees and staff must disclose certain financial interests. We are hereby submitting to you a list of disclosures for individual transactions made by trustees and staff.

| Name | Position Title | Disclosure Type | Disclosure Date |
|---|---|---|---|
| Bob Mitchell | Senior Investment Officer | Equities | 2/26/14<br>3/7/14 |
| Victor Djajalie | Investment Officer | Equities | 2/26/14 |
| | | | |
| | | | |
| | | | |

Alaska Retirement Management Board
2014 Meeting Calendar

| | |
|---|---|
| April 23 – Wednesday | Committee Meetings: Legislative<br>Evaluation Committees: General Consultant<br>Real Estate Consultant<br>IAC |
| April 24-25<br>Thursday-Friday<br>Anchorage | *Adopt Asset Allocation<br>*Performance Measurement – 4th Quarter<br>*Buck Consulting Actuary Report<br>*GRS Actuary Certification<br>*Review Private Equity Annual Plan<br>*Manager Presentations |
| June 25 – Wednesday | Committee Meetings: Audit |
| June 26-27<br>Thursday-Friday<br>Anchorage | *Final Actuary Report/Adopt Valuation/Contribution Rates<br>*Performance Measurement – 1st Quarter<br>*Manager Presentations |
| September 17 – Wednesday | Committee Meetings: Audit<br>Budget<br>Legislative<br>Real Assets<br>Salary Review |
| September 18-19<br>Thursday-Friday<br>Fairbanks | *Audit Results/Assets – KPMG<br>*Approve Budget<br>*Performance Measurement – 2nd Quarter<br>*Real Estate Annual Plan<br>*Real Estate Evaluation – Townsend Group<br>*Manager Presentations |
| October 16-17<br>New York City | Education Conference |
| October ___ | Audit Committee |
| December 3 – Wednesday | Committee Meetings: Audit<br>Legislative |
| December 4-5<br>Thursday-Friday<br>Anchorage | Audit Report - KPMG<br>Performance Measurement – 3rd Quarter<br>Manager Review (Questionnaire)<br>Private Equity Review<br>*Manager Presentations |