State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
MEETING

Location
Alaska State Museum
Lecture Hall
395 Whittier Street
Juneau, Alaska

MINUTES OF
March 29 - 30, 2018

Thursday, March 29, 2018

CALL TO ORDER

CHAIR ROBERT JOHNSON 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 and MR. WILLIAMS were not present at roll call but joined later.

Board Members Present
Robert Johnson, *Chair*
Gail Schubert, *Vice-Chair*
Gayle Harbo, *Secretary*
Tom Brice
Kristin Erchinger (telephonic)
Commissioner Sheldon Fisher
Commissioner Leslie Ridle
Norman West
Bob Williams

Board Members Absent
None

Investment Advisory Council Members Present
Dr. William Jennings
Robert Shaw

Department of Revenue Staff Present
Bob Mitchell, Chief Investment Officer
Scott Jones, State Comptroller
Zachary Hanna, Deputy Chief Investment Officer
Pamela Leary, Director, Treasury Division
Mike Barnhill, Investment Officer
Shane Carson, Investment Officer
Stephen Sikes, Investment Officer
Victor Djajalie, Investment Officer
Mackenzie Willems, Investment Officer
Nick Orr, Investment Officer
Stephanie Alexander, Board Liaison

Department of Administration Staff Present
Kevin Worley, Chief Financial Officer, Division of Retirement & Benefits
Ajay Desai, Director, Division of Retirement & Benefits

Consultants, Invited Participants, and Others Present
Stuart Goering, Department of Law, Assistant Attorney General
Paul Erlendson, Callan Associates, Inc.
Steve Center, Callan Associates, Inc.
Andy Iseri, Callan Associates, Inc.
David Kershner, Conduent HR Services
Scott Young, Conduent HR Services
Benjamin Young, BlackRock
Kathy Malitz, BlackRock
Ted Koros, BlackRock
Laura Champion, BlackRock
John Plowright, T. Rowe Price
Chuck Knudsen, T. Rowe Price
Daniel Ryan, Parametric Portfolio Associates
Tim Atwill, Parametric Portfolio Associates
Tony Dote, Lazard Asset Management
James Donald, Lazard Asset Management
Kelly Carbone, DePrince, Race & Zollo, Inc.
Marc Miller, DePrince, Race & Zollo, Inc.
Joe Fague, PineBridge Investments
Michael Kelly, PineBridge Investments
Kristin Shofner, Fidelity Institutional Asset Management
Dan Tremblay, Fidelity Institutional Asset Management
Cathy Pena, Fidelity Institutional Asset Management

PUBLIC MEETING NOTICE

Board Liaison STEPHANIE ALEXANDER confirmed that public meeting notice requirements had been met.

APPROVAL OF AGENDA

MR. WEST moved to approve the agenda. MS. HARBO seconded the motion.

CHAIR JOHNSON suggested moving 7C, the Defined Contribution Plan Committee report, and some action items from Thursday to Friday because MR. BRICE and MR. WILLIAMS were not present at the beginning of the meeting. With those changes, the agenda was approved.

PUBLIC/MEMBER PARTICIPATION, COMMUNICATIONS AND APPEARANCES

None.

APPROVAL OF MINUTES: December 7 - 8, 2017

MS. HARBO moved to approve the minutes of the December 7 - 8, 2017 meeting of the ARM Board. MRS. SCHUBERT seconded the motion.

With no objections, the minutes were approved.

STAFF REPORTS

1. RETIREMENT & BENEFITS DIVISION REPORT

A. Membership Statistics

MR. WORLEY introduced some Division of Retirement and Benefits employees who attended the meeting.

MR. WORLEY then reviewed retirement membership activity, noting a decrease in active DB membership, as expected since the plan is closed, while DCR membership is increasing.

B. Conduent Consulting Invoices

MR. WORLEY said that quarterly invoice summaries for the plans have been provided at the Board's request. He noted an increase in charges over the six-month period, mainly due to the experience analysis that is being done, as well as new reporting requirements.

MR. DESAI briefly described proposed legislation that pertains to the ARM Board.

COMMISSIONER RIDLE stated that at the request of the Senate President, they have ordered an actuarial analysis of SB 212, which introduces a defined benefit plan for police and firemen, before it

goes to the Finance Committee.

2. TREASURY DIVISION REPORT

DIRECTOR PAM LEARY introduced some new members of the accounting staff who were present. MS. LEARY said that they will be hiring two interns from UAF this year, and they are excited that the intern program is producing some great staff. MS. LEARY noted that over the last three years, the Division has added six positions, and they are still short two investment officers.

MS. LEARY gave a budget update, stating that the budget as provided to the ARM Board is moving through the legislature, and so far it seems to be intact.

MS. LEARY reported that CHAIR JOHNSON had asked her to mention in her report the e-mail from Stephanie Alexander a couple of weeks ago about financial disclosures. The process for making disclosures has been slightly changed in an effort to tighten it up. MS. LEARY reminded ARM Board members that they, as well as IAC members and all Treasury staff, are required to make certain financial disclosures as part of the ethics and financial disclosure agreement, and they will receive these e-mails quarterly.

3. CALENDAR/DISCLOSURES

MS. ALEXANDER reported that there were no items that required additional discussion in the disclosures.

MS. ALEXANDER noted that updates to the 2018 calendar are shown in red, and the draft 2019 calendar is also included. She asked that if anyone has major conflicts, they e-mail her, and said that the 2019 calendar will be finalized at the June meeting.

4. CHIEF INVESTMENT OFFICER REPORT

Chief Investment Officer BOB MITCHELL began with an overview of how he looks at the portfolios, to provide context for the presentations coming up in the meeting. MR. MITCHELL acknowledged that the current low return environment is challenging for a system that is assumed to earn 8 percent over the long term. He recalled the Board's recent discussions of risk and liquidity, and said that his department is in the process of engaging with Callan to review the investment policies. MR. MITCHELL said that rather than relying on market returns or beta, which are not expected to be very high, they should strive to improve their ability to deliver alpha, and explained some steps they are taking. He said that later in the meeting, staff will articulate a goal of outperforming the benchmark and explain their approach.

MR. MITCHELL went through his report on transactions between December 2017 and February 2018 and discussed shifts in asset allocation between equities and fixed income.

5. FUND FINANCIAL PRESENTATION AND CASH FLOW UPDATE

State Comptroller SCOTT JONES presented the fund financials as of the end of February 2018. The total assets in PERS were $18.5 billion; TRS, $9 billion; JRS, $208 million; Military, $40 million; the SBS, $3.9 billion; Deferred Compensation, $931 million. The total assets were $32.5 billion, with $26.3 billion in nonparticipant-directed plans and $6.2 billion in participant-directed plans. Year-to-date investment income was $2.2 billion, and net withdrawals were $592 million. Plan assets were up 5.2%, and up 7.25% due to investment income.

MS. HARBO asked how many of the assets are under internal management, and requested a line on the report in the future including that information. She added that with the ARM Board's great staff, the more they can manage internally and save on fees, the better. MR. JONES answered that in December, about $1.8 billion was managed internally, but that has recently increased to over $7 billion, and said that he will add that to future reports.

CFO KEVIN WORLEY reported on fund contributions and withdrawals. MS. HARBO noted that it appears that about $5 million a month is disbursed from the DC funds, so about $60 million a year is going somewhere else.

6. CHAIR REPORT

CHAIR JOHNSON stated that now that he is Chair, he is more aware of how much activity there is at the Department of Revenue, and he commended MS. ALEXANDER for her work preparing things for the boards and managing communications. CHAIR JOHNSON suggested reviewing the Board Policy and Procedures manual, which he said seems outdated. He also said that it seems like time to revisit the membership on various committees, and asked board members to think about that, noting that the most active committees now are the Audit Committee, the Actuarial Committee, and the Defined Contribution Plan Committee.

7. COMMITTEE REPORTS

A. Audit Committee

CHAIR JOHNSON reported that the Audit Committee had a meeting the day before the full Board meeting, hearing primarily from MR. WORLEY of the DRB about audits being done on municipalities and subdivisions. The committee also discussed the implications of some GASB reporting regulations, and heard a compliance report from MR. McKNIGHT on the many Treasury and other transactions.

B. Actuarial Committee

MS. HARBO reported that the Actuarial Committee met the day before the Board meeting, and telephonically in early February. She thanked SCOTT YOUNG from Conduent, the Division of Retirement and Benefits, and LESLIE THOMPSON from GRS for preparing the data that was needed, particularly for an accurate count of people covered in pre-Medicare and Medicare, which makes a difference in the per-claims cost.

MS. HARBO reported that information on the prescription trend rates from the February meeting led to a decision to increase the trend rate from 5% to 9%. Also, the claims cost methodology will use data from only FY16 and FY17 instead of three years because the Cadillac Tax will impact the liabilities. She also said that the funding method should be changed from level dollar to level percent of pay, because of the GASB 67 requirements. MS. HARBO said that the committee's next meeting will be on May 3rd, when they will get an update on the experience study, discuss demographic assumptions, and get an update on the valuation. Assumptions will then be finalized in June and the 2017 valuation will be adopted.

MS. HARBO read an action item that was passed by the Actuarial Committee recommending that the ARM Board direct staff and the consulting actuary to implement the changes noted above into the June 30th, 2017, PERS and TRS DB Plans actuarial valuation reports.

A roll call vote was taken, and the motion from the Actuarial Committee passed.

C. DC Plan Committee

The DC Plan Committee Report was moved to Friday morning, after Item 15 on the agenda.

D. Retiree Health Plan Advisory Board

MS. HARBO noted that the Retiree Health Advisory Board was established in the fall of 2017 by an administrative order from the Governor. It is a result of efforts by COMMISSIONER FISHER and COMMISSIONER RIDLE. A seven-member board that will be advisory to the health plan held its first meeting February 7th in conjunction with a quarterly meeting of Aetna. Members of the board represent the various retiree groups, and include a finance officer and a member of the public. JUDY SALO, a former senator from Kenai representing TRS, was elected chair, and CAMMY TAYLOR, a PERS member, was elected vice-chair. Members of the Alaska Care Health Team presented an overview of the plans and current issues. MS. HARBO said that the next RFP for a third-party administrator will separate the pharmacy benefit management, as the cost of pharmacy is one big concern.

MS. HARBO noted that the next meeting of the Retiree Health Plan Advisory Board will be May 8th in Anchorage, and all other meetings will be telephonic. COMMISSIONER RIDLE added that the first meeting was organizational and didn't get a lot done, but the board has already been active in participating on some of the RFPs that are currently out. COMMISSIONER RIDLE said that the Department is eager to work with the Board to tackle a lot of issues.

8. LEGAL REPORT

Assistant Attorney General STUART GOERING said that he has nothing new to report, and no updates on any pending securities matters. However, one nonsecurities matter, which the ARM Board has discussed previously, is the Metcalf case, which is currently on remand, pending summary judgment in Superior Court.

9. MANAGEMENT FEES

CIO BOB MITCHELL introduced MACKENZIE WILLEMS, a state investment officer with the Treasury Division. She is a member of the internal equity team and one of the cross-functional teams that focuses on modeling. MR. MITCHELL explained that he has charged her with doing an analysis of historic fees and expenses, and developing a model to project those expenses in the future. He explained that she will report her findings so far, and eventually they will look deeper into underlying expenses and use the model to evaluate the benefits versus the costs incurred.

MS. WILLEMS, an Alaskan-born graduate of UAS, said that she and her colleague EMILY HOWARD have been analyzing fees in an effort to return the maximum benefit net of fees to investors. She explained that the Commissioner invests money in the state Treasury and provides staff to the ARM Board. The Treasury provides investment services on behalf of both the State and the ARM Board. Investment costs that are specifically associated with State or ARM Board investments are expensed to that entity. Other expenses are divided between entities based on the relative value of their investments. Some costs and fees are paid to the custodian bank, State Street, and some to accounting personnel. There are transaction-based costs incurred in the process of trading, external investment management fees, costs for internal management, and costs for software and licensing fees for the indexes used.

MS. WILLEMS showed a table of actual ARM Board expenses over the past seven years, the majority of which are investment management fees. She pointed out that fees as a percentage of assets has increased, which is partly because with more direct investments in private equity, the invoices show the fees, and partly because one of the direct absolute return strategies, Allianz, is paid purely on a performance basis, and they've been doing well the past couple of years.

MS. WILLEMS reminded board members that staff will be recommending some changes of asset allocations and managers which, if implemented, should lower the total fees as a percentage of assets. She said they estimate that they are currently saving about $18.5 million a year from investments brought in-house, and these proposed changes would save an additional $7 million to $8 million per year.

COMMISSIONER FISHER requested more detail next time about how the $18.5 million saved breaks down, asking to see the external management fees as a percentage of the portion of the fund that is being managed externally, and also broken down by asset class. He commented that higher fees are associated with higher performing asset classes.

MS. HARBO thanked MS. WILLEMS for the helpful report, and asked to have the information on expenses under personnel include the number of personnel, which has presumably increased along with costs.

CHAIR JOHNSON recessed the meeting from 10:13 a.m. to 10:27 a.m.

10. ACTUARY REPORTS

DAVID KERSHNER, a retirement actuary from Conduent Human Services, introduced himself and his colleague SCOTT YOUNG, a health actuary who joined the team less than a year ago.

MR. KERSHNER explained that the PERS and TRS DB and DCR plans get annual valuations, and they do valuations every other year for the JRS and the National Guard plan. The main purpose of the valuation is to collect data on new participants and new assets and calculate the valuation assets and liabilities that are used to determine the contributions. This valuation will be used to set the FY20 contribution rates and the state additional contribution for FY20. MR. KERSHNER explained that all the calculations are based on assumptions about future events, and the actuaries compare actual and expected experience with their economic and demographic assumptions, which results in actuarial gains and losses. Several events impacted the 2017 valuations, one of which was the increase in trend rates for prescription drugs. They also changed the methodology for calculating per capita costs for retiree medical plans, and the Cadillac Tax increased liabilities. Pension funds saw lower than expected liabilities because of low inflation and because salaries are not increasing as rapidly as they expected.

MR. KERSHNER noted that assets had gains because FY17 had actual returns of 13%, as opposed to the 8% assumption. Asset gains and losses are recognized over five years to avoid volatility, so they only recognize 20 percent of that gain in this valuation. The presentation showed the funded ratio, the comparison of assets versus the actuarial accrued liability, for both PERS and TRS, for the DB plans and the DCR plans. MR. KERSHNER discussed factors that contributed to decreases in the funded ratio over the past year, and showed historical funded ratios, with a big increase in 2015 when the state contributed $3 billion to the fund. He said that at the May meeting they will discuss changes to the demographic assumptions, and they are currently reviewing economic assumptions, as they do every four years, and those will be presented to the committee in December.

CHAIR JOHNSON asked why the Miscellaneous and Data Changes category was so large, and MR. KERSHNER answered that every year they get better data, and there are always things being identified that they hadn't previously realized.

MR. YOUNG discussed the medical claims per capita cost assumption. With better data, they are doing less estimating, which led to the lower per capita cost than they had assumed. The factors that develop the per capita costs are the claims, or the number of dollars spent, and the enrollment, or the number of people generating those claims. In the past, reports from the plan administrator didn't clearly separate those people who are eligible for Medicare from those who are not, so they had to make estimates to calculate the average cost. This year, the report cleanly split those categories. Also, the number of lives covered was similarly blurred between the pre-Medicare and Medicare groups, and by cases in which people have dual coverage, where both the retiree and their spouse are covering each other as dependents. Those two adjustments to the methodology resulted in a lower average per capita cost, primarily for the pre-Medicare group.

MR. KERSHNER reviewed the contribution rates adopted last year for FY19 and the preliminary FY20 contribution rates, and explained how the calculations are done.

CHAIR JOHNSON asked for clarification of the line titled "State Assistance Contribution Rate." The State of Alaska, as an employer, contributes 22% of its own employees' payroll to PERS, and then also contributes, in this case, 6.61% of all employees' payroll for all employers that are in PERS, including the State itself. After some discussion, it was decided that using the official term, "State Additional Contribution," would more clearly indicate that it applies not only to municipalities and subdivisions but to all State of Alaska employers.

MR. KERSHNER explained some recommended changes to the funding methods based on the experience study they have been doing. The new GASB 74 requires that the normal healthcare cost be determined on a level percentage of pay basis, but the funding valuation has traditionally used a level dollar basis. Changing it to the level percentage of pay basis would result in more consistency between the funding and the accounting. MR. KERSHNER said that level percentage of pay allocates more cost to the future than the current method, so the normal cost will go up and the accrued liability will go down. It would add about 100 basis points, or about 1% of pay, to the total contribution rate.

MR. KERSHNER then brought up the 25-year closed amortization of the unfunded liability, which is in the statute from 2014. He recommended considering changing from a 25-year closed period, which started in 2014 and ends in 2039, to what is called a "layered approach." This change would reduce potential volatility in the state additional contribution, but they need a legal opinion on whether it would require a change in statute.

MR. KERSHNER said that the current assumption for administrative expenses, the 8% return assumption, is assumed to be net of investment management expenses and administrative expenses, both of which are paid from the plan, meaning that the expected return is really higher than 8% to cover those expenses. He said that it is more common to have that assumption be net of investment expenses only and to have an explicit assumption that the administrative expenses will be funded, and this is currently being done with the National Guard plan. MR. KERSHNER recommended that this change also be adopted with the 2018 valuation, and said that if it were currently in effect, the 2017 contribution rates for PERS and for the DB plans would increase by roughly a percentage point, and a much smaller amount for the DCR plans.

14. FIDUCIARY OPINION

MR. GOERING gave his presentation earlier than planned, as the meeting was ahead of schedule. He explained that he was responding to three questions that the Board asked at the previous meeting, and he intended it more as a conversation than a lecture. The questions were about the Board's duties in the selection of the DC Plan participant-directed investment options, the scope of the Board's duty to monitor those investments longitudinally after they have been selected, and the scope of the Board's duty to assist in participant-directed portfolio construction, if any.

MR. GOERING reviewed the statute that covers the Board's role in this process, and emphasized that the Board's duty is statutory, not fiduciary, though how that duty is exercised is controlled by interpretive case law, and also by principles of trust. He stated that the Board's responsibility is to select options which are sufficient for the DC Plan participants to be able to construct a portfolio that is appropriate to a retirement plan, taking into account all the sorts of considerations that investors

generally make about liquidity needs, diversification, and so on. The administrative costs of having a participant-directed plan are borne by the plan, so it is important to balance the number of options against the costs.

MR. GOERING said that three factors the Board should consider in evaluating whether to offer a certain option are whether they believe it is prudent, what the cost of offering it would be, and whether there would be sufficient interest to make the level of fees appropriate for that offering. COMMISSIONER FISHER remarked that he thinks the current trend in DC Plan administration is to reduce the number of offerings, because with too many options, people get confused and make poor choices. That led to the question of how much responsibility the Board has to assist participants in the construction of a portfolio, as it is more work to educate participants about more options. MR. GOERING pointed out that DC Plan participants should have other assets available for investment, as the plan is not expected to cover 100 percent of their retirements, and some people may be using their Alaska retirement funds to diversify or balance other assets that they have. He said that if the Board makes sure that the options are normally distributed among the spectrum of available options, and they avoid offering options that would invite people to make irresponsible investments, they are fulfilling their statutory obligation. Emphasizing that he is not an investment manager, MR. GOERING said that to be legally defensive, the Board should make sure that they offer a normal range, clustered fairly close to the middle of the range of options within whatever analytic axis they use.

Regarding the scope of monitoring, MR. GOERING said that there have been several cases that have made it clear that the U.S. Supreme Court believes there is a common law of retirement trusts or retirement fiduciary obligations. Also, MR. GOERING said that there is an obligation to reexamine options periodically to check if the options have drifted or if changes in the economy or demographics call for changes in options. Benchmarks also must be monitored and kept appropriate, and the range of options offered should be appropriate to the economic conditions of the time.

As to the Board's duty to assist in participant-directed portfolio construction, MR. GOERING said that their job is just to provide the options. Offering plan participants education in order to be able to rationally construct a portfolio is a plan administrator function, not an investment function, and the Department of Administration has delegated that responsibility to Empower. MR. GOERING noted that the Board should communicate with the administrator to be aware of the kind of feedback and questions it gets from participants. He noted that though the ARM Board can delegate fiduciary responsibility, their duty is to delegate prudently, and the ARM Board, the DRB, and other entities must communicate with each other since they bear the responsibility together.

CHAIR JOHNSON commented that in a public institution like the ARM Board, it is important to build a paper trail to show how decisions are made and demonstrate that the Board is offering reasonable selection, reasonable monitoring, and reasonable education. MR. GOERING said that he thinks this board has been significantly above the minimum standard in these aspects, though there is always room for improvement. He said the idea of providing informational links on some of the pages about investments is an excellent suggestion that he hopes will be implemented.

VICE-CHAIR SCHUBERT suggested that the Board should hear a presentation about what kinds of

information are available to participants who are charged with managing their own accounts. MR. GOERING agreed that that might help clarify what is a reasonable number of options, but he cautioned that unlike in a DB plan, where the administrators know what benefits are expected, they don't know as much about DC participants' expectations and goals for their assets.

CHAIR JOHNSON recessed the meeting from 12:06 p.m. to 1:20 p.m.

11. ACTIVE MANAGEMENT IN DOMESTIC EQUITY AND OPPORTUNISTIC STRATEGIES

CIO BOB MITCHELL said that he would discuss the history of active management for the ARM Board, define some things, articulate their approach to active management, and ask that the Board consider the lineup within active management. He said that they want to consider whether there are better ways to do active management of domestic equities and opportunistic strategies.

MR. MITCHELL showed a performance attribution table from a June 30th Callan report, with activity for the more than 25 years that Callan has served as their general consultant. He pointed out that the sum total of their performance relative to their strategic benchmark gross of fees is 9 basis points, and 11 of those 9 basis points came from manager selection. He also pointed out that the manager effect for domestic equity is minus 24 basis points. That means that the actions they have taken in selecting managers and weighting strategies has resulted in performance that is 24 basis points below the benchmark over time.

MR. MITCHELL reviewed a table of different possible mixes of asset classes from PERS last year, and discussed the implications of various choices on returns and risks. He said that finding basis points through active management is very valuable, but the Board has not articulated a clear performance goal or process. He said that staff would propose a 20-basis-point net-of-fee target with a 6-year time horizon for evaluation, which is consistent with the watchlist guidelines. MR. MITCHELL said that having this goal stated would help unify the thinking across the organization in evaluating expenses to get the most bang for their buck. Also, in considering strategic positioning in underlying asset classes, determining the expected contribution to the overall portfolio lays the foundation for how to deploy active management more broadly.

COMMISSIONER FISHER asked why it is expressed solely in terms of return and not also risk. MR. MITCHELL explained that he purposely didn't put a tracking error limitation in because the measurement of risk can be skewed when illiquid asset classes are in the mix. That could give incentive to get more liquidity for smoother return profiles, but wouldn't necessarily reflect the amount of risk that is being taken in the broader portfolio. MR. MITCHELL said that he had calculated that the tracking error has been about 1.55%, and whether or not that is an appropriate level depends on the pain threshold of the Board in accepting short-term losses.

COMMISSIONER FISHER suggested that the question of taking on more risk to deliver more return should probably be considered on the basis of various asset classes, not the portfolio as a whole. He pointed out that certain illiquid asset classes which have no passive alternative must be actively managed, but where there is a passive alternative, the goal of active management would be to beat

that return.

MR. MITCHELL reviewed performance, showing that the return relative to the benchmark has been below zero most of the time. COMMISSIONER FISHER commented that since there is no alternative passive vehicle, even though they have underachieved their benchmark, they have overachieved any other alternative. They've done well against peers and against other asset classes, but maybe the benchmark was set too high. COMMISSIONER FISHER noted that this is another example of why including illiquid asset classes in this discussion distorts the issue.

MR. MITCHELL reviewed some good points made in a presentation by DR. JENNINGS on active management in 2011. Actively managed asset owners must identify good managers, and there are other organizational challenges, like whether the product will stay open, whether the management style will change, whether the portfolio will get too large to effectively deploy its strategy, and how periods of underperformance will influence decisions. MR. MITCHELL said that some mitigators to those risks include the ARM Board's resources for evaluating managers, the due diligence of the staff at Callan, and the IAC.

SHANE CARSON explained staff's approach to deploying active management, which is to be done when no passive option is available. MR. CARSON stated that staff allocates to active security selection and active tactical allocation strategies when they believe there is a reasonable expectation that active management can provide additional value beyond passive management. If staff cannot make this determination, they would reconsider investing in that strategy or explore a passive opportunity. MR. CARSON said that in 2017, the CIO created an internal team dedicated to manager selection, including MR. CARSON, VICTOR DJAJALIE, and a couple of others, to establish a set of criteria to use in evaluating managers. Callan provides a report on active versus passive returns and an investment management fee survey. Staff looks for areas that have historically been successful under active management and avoids those which have not; domestic large cap is a space where it is very difficult for active managers to outperform the S&P 500 net of fees. MR. CARSON said that Callan's analysis helps them calibrate the magnitude of expected outperformance and decide that in some asset classes, passive makes more sense. Small cap, international equities, and international fixed income all have a historical outperformance of 60%, compared to less than 50-50 for large cap equities and high yield.

MR. CARSON said that this analysis helps focus our efforts on those asset classes with a greater chance of success. How to define success depends on the asset class, and active management must be measured over the entire market cycle, which also differs by asset class. Staff establishes absolute and relative performance expectations versus benchmarks and peers.

MR. CARSON explained that increasing the number of investment strategies or managers in a particular asset class reduces active risk, but it spreads out staff resources. Fee structures generally reward higher allocations, but investors must consider liquidity, the investable universe, and their return objectives and risk tolerances in sizing managers. MR. CARSON noted that a change in the broad asset allocation or structural changes in the market could trigger a need to modify the number of managers or resize an allocation.

MR. CARSON commented that whereas any outperformance of an index used to be praised, now active managers' performance is measured against their ability to add value, or alpha. The benchmarks, however, are focused on market beta. MR. MITCHELL explained that alpha targets include all available sources of return that exist beyond beta; there are potentially lower-cost ways to seek out those risk premiums, making them compelling alternatives.

MR. CARSON noted that in April of 2017, an allocation strategy was introduced that invests in rules-based, transparent, and cost-efficient portfolios, and explained that staff believes that they can beat its performance so far by employing active management. MR. CARSON reviewed how the reduction in the size of domestic equity allocation and increased focus on rules-based strategies has squeezed out the available allocation for security selection strategies, which led to staff evaluating the existing lineup of equity and fixed income strategies for redundancy, total portfolio contribution, and size, working toward a more optimal lineup as recommended in the action memo.

MR. MITCHELL emphasized that the action memo is significant, effectively asking that they cull the list of active managers to migrate away from traditional active strategies in large cap. He said that staff is recommending terminating the four active managers that the ARMB currently has for structural reasons. He noted that generally speaking, they do have confidence in these managers, but they think there are better places to deploy that active risk. Also, in small cap, there are currently nine managers; staff would like to remove two of them and increase the proportion of those investments that are managed internally. They also recommend culling one opportunistic equity manager and four opportunistic fixed income managers to redeploy those assets.

MS. HARBO moved to modify the existing manager lineup as recommended in the table on pages 3 and 4 of the action memo, terminating mandates that are not recommended. VICE-CHAIR SCHUBERT seconded the motion.

After considerable discussion, COMMISSIONER FISHER made an explicit request that as a condition of approval of this recommendation, Callan lead a proposal and presentation to the Board about how they propose the Board will provide oversight to internal management.
The motion was amended to include that, with CHAIR JOHNSON adding, "And Callan is to provide an assessment of results."
A roll call vote was taken, and the motion passed unanimously.

CHAIR JOHNSON recessed the meeting from 2:49 p.m. to 3:04 p.m.

12. BLACKROCK U.S. CORE PROPERTY FUND

MR. MITCHELL stated that the purpose of this presentation is to familiarize the Board with a core real estate strategy that BlackRock has in place.

BENJAMIN YOUNG thanked the Board for their long-term relationship with BlackRock. He explained that the BlackRock U.S. Core Property Fund invests in the four major true core real estate assets: multifamily, industrial, office, and retail. The portfolio includes 31 assets and is 95% occupied. BlackRock's real estate platform is global, with $22 billion under management and 215 professionals.

MR. YOUNG described the positions of four leading members of the team and noted that they all have 25 to 30 years of experience, and he discussed how BlackRock does research and a risk and quantitative analysis process that differentiates them from other such managers. He described the target market analysis that they do annually on 80 different U.S. cities and 800 different submarkets, tracking for return, risk profile, cap rates, and market structure (supply and demand).

MR. YOUNG said that BlackRock is unique in that when they analyze an asset, they don't just look at the value of the asset and comparables. He said that they buy 7 terabytes of data a day from third parties to track cell phone movements and figure out where people are really living and working. After they invest in real estate assets, they do their own attribution analysis to determine what was provided by leverage, by sector selection, or by asset selection, to see how successful they were or where they could improve. All of this analysis and expertise drives their performance.

KATHY MALITZ said that she was asked to take the helm of the BlackRock U.S. Core Property Fund in 2011, at which time they did some repositioning of the fund to change some exposures and profiles to reflect the perspective of their research teams. MS. MALITZ said that risk management discipline has been implemented throughout the fund, and in the future they expect performance in this space to come from income and income growth. Therefore, they maintain a high quality portfolio of well-leased real estate assets in markets and sectors across the U.S. that they believe will generate above-average income growth, with an overweight to industrial and apartments because they believe those will deliver the best outperformance.

MS. MALITZ described three themes that underlie their strategy: a primary market focus, an urban bias, and a focus on those subtypes within each of the four main property types which have outperformed historically and they expect will continue to do so. She noted that there is a bias toward coastal markets because these have experienced the most job growth lately.

MS. MALITZ discussed why they feel confident about their current positioning and reviewed factors that will help continue to deliver outperformance, including embedded income growth because their average rents are below market, and engaging in modest value-added projects such as renovations to apartments between renters. They work hard to maintain the overall quality of their portfolio and keep an active pipeline of acquisition opportunities, with a very attractive debt profile.

NICK ORR, investment officer, then explained that the reason for this presentation is that staff would like to redeem the UBS allocation and replace it with BlackRock's U.S. Core Property Fund. He emphasized the 31 years of experience Kathy Malitz has throughout the investment process, 18 of which are in managing portfolios. He reviewed her performance prior to managing the Core Property Fund to show that she has always had impressive returns. He compared BlackRock's performance with that of J.P. Morgan and USB from 2011 to 2017, and noted that with the fee discount BlackRock is offering, the difference is meaningful over time. MR. ORR summed up by saying that Blackrock and Kathy Malitz have demonstrated compelling returns and an attractive risk profile, and they are offering an extremely attractive fee schedule, and he recommends that the ARM Board redeem its UBS allocation and place that money with BlackRock.

Trustees asked some questions of the BlackRock representatives, but the decision was deferred until

the next day.

13. PERFORMANCE MEASUREMENT – FOURTH QUARTER

PAUL ERLENDSON of Callan Associates went over the investment results and market environments through the end of December 2017. He highlighted that GDP growth in the U.S. has been fairly constantly positive since the global financial crisis, the best in the developed world or G20. Also, inflation has been fairly subdued for a long time. The labor participation rate has been around 63% since 2013, though job growth has been strong, and inflation rates should rise when more people are working and consuming goods and services. Energy prices have risen and there's been some inflation in housing.

MR. ERLENDSON reviewed the returns for various asset classes for the past quarter and historically. Emerging markets have done well, and developed markets outside the U.S. were down. MR. ERLENDSON said that tariffs will probably raise the price of certain commodity goods, and noted that China has been a big consumer of raw commodities. As China's growth picks up again, that may affect the environment for commodities.

In the U.S., IT and financials were the largest segments of the economy. Defensive sectors like healthcare and utilities continue to be the poorest performing, and consumer discretionary was a big driver. The large cap and growth sectors performed well, and the recent tax cuts raise the expectations for corporate earnings growth in the future. He pointed out that the growth bias has expressed itself outside the U.S. as well, with a 10% difference between value and growth.
In real estate, industrials have been the strongest performer for seven consecutive quarters, and occupancy rates are up to 93.6% for all property types. MR. ERLENDSON said that real estate has been a great investment for the fund over the past decade.

STEVE CENTER of Callan reviewed asset allocation within the fund. He pointed out that when the opportunistic class was created, the system internally classified all opportunistic as fixed income, which has been revised to separate it into equity and fixed income. One slide illustrated how the PERS and other ARMB plans have asset allocations that differ from most other public funds, with a slightly lower allocation to both domestic equity and domestic fixed income, higher allocation to real assets, and a slightly higher allocation to alternatives. The Sharpe ratio, which measures how efficiently the total fund is performing on a risk-adjusted basis, is 1.8 over the last five years. That is above median, which is good, but over the last 10 years it has been just below median.

MR. CENTER said that the opportunistic asset class was the key reason that the PERS plan slightly lagged its benchmark over the last quarter, but over the longer term, the PERS plan has tracked its overall benchmark fairly closely. He reviewed the performance of various asset classes, and some of the underlying funds for the Defined Contribution plans.

RECESS FOR THE DAY

CHAIR JOHNSON recessed the meeting for the day at 4:30 p.m.
Friday, March 30, 2018

CALL BACK TO ORDER

CHAIR JOHNSON reconvened the meeting at 9:00 a.m. on Friday, March 30. Trustees Schubert, Harbo, Brice, Erchinger, Fisher, Ridle, West, and Williams were also present. CHAIR JOHNSON noted a change to the agenda, placing Item 7C, the DC Committee Report, and investment actions from Item 23B as the second item of business. The presentation on technology and innovation in emerging markets from T. Rowe Price under Item 16 was moved to about 3:00 p.m.

15. ACTIVE CURRENCY MANAGEMENT

ANDY ISERI from Callan, who leads the international manager research group which includes currency, presented an overview of currency hedging. MR. MITCHELL said that the purpose is to introduce the options that are available within currency hedging, and staff will recommend that Callan be engaged to do a manager search for the purpose of currency overlay strategies. He explained that the motivation is to introduce a source of active risk that is a diversifier, consistent with the broader theme of focusing more on alpha and less on beta.

MR. ISERI explained that when an investor buys an international security, two transactions are involved, first buying the currency and then using it to buy the security. The currency component of return in that transaction is equal to the stock component, but is an uncorrelated exposure to equity, sometimes adding volatility, sometimes reducing it. Currency is relative, so if the dollar goes up, the yen goes down, and vice versa. MR. ISERI said that a lot of people don't understand the complex mechanics of currency management, but it is a distinct asset class with a whole industry around it. He gave some examples of the currency effect, some negative, some positive, and explained that currency hedging reduces risk, and currency management can be done at very low risk to get incremental returns. The lack of correlation between currencies and other asset classes adds diversification.

MR. ISERI said that investors have currency exposure if they have international stocks, so they have four choices in managing that exposure: accept it, remove it, remove part of it, or actively manage it. Currently the ARM Board is unhedged; that is, accepting currency exposure as part of doing business. MR. ISERI explained the meaning of hedge, passive hedge, active overlay, and alpha-seeking overlay strategies, and the decisions that go into each.

MR. ISERI stated that the ARM Board does have one equity manager, Arrowstreet, that manages currency, though it is not a big part of what they do. The vast majority of the ARM Board's currency exposure is not managed. He said that other decisions relating to currency management are whether it should be tactical or strategic, how frequently to rebalance, volatility targets, and fees.

Trustees asked a few questions, then MR. ISERI concluded by referring to a paper from Callan about a year ago encouraging all of their clients to have a currency policy, even if it is just to state that they are intentionally remaining unhedged.

CHAIR JOHNSON read the action item pertaining to currency management: The Alaska Retirement

Management Board directs staff to engage Callan to conduct a manager search for one or more currency overlay managers.

MS. HARBO so moved. MR. BRICE seconded the motion.

CIO BOB MITCHELL spoke in favor of active currency management, and said that if the Board approves this action item, his intent would be to present a currency policy and discuss potential managers at a future meeting.

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

7C. DEFINED CONTRIBUTION PLAN COMMITTEE

MR. WILLIAMS reported that the DC Committee met and had a chief pension officer report from KATHY LEA. She presented an update from the Division of Retirement and Benefits, and an update on proposed legislation that affects retirement issues. Then CIO BOB MITCHELL and SHANE CARSON gave three presentations that led to action items on the Environmental Social Governance Fund, the passive U.S. Fixed Investment Fund, and the International Equity Fund, all of which the DC Committee recommend to the ARM Board for approval.

MR. WILLIAMS moved on behalf of the Defined Contribution Committee that the Alaska Retirement Management Board direct staff to maintain the benchmark MCSI USA ESG Leaders Index in the participant-directed ESG option. Additionally, direct staff to modify the option by removing Allianz Global Investors as investment manager and hire Northern Trust Asset Management to passively manage the portfolio, subject to due diligence and contract negotiations.

CHAIR JOHNSON noted that there was robust discussion of this at the DC Committee meeting, and suggested that anyone interested review the notes and minutes of that meeting.

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

MR. WILLIAMS made a second motion on behalf of the DC Committee: For the Participant-Directed Plans, Passive, U.S. Fixed Income Investment Fund, the Alaska Retirement Management Board directs staff to hire BlackRock Institutional Trust Company to manage a passive fixed income option benchmarked to the Bloomberg Barclays U.S. Aggregate Bond Index and map the existing assets from the Long U.S. Treasury Bond Index Fund, the World Government Bond ex-U.S. Index Fund, the Government/Credit Bond Index Fund, and the Intermediate Bond Fund to the U.S. Aggregate Passive Bond Index Fund.

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

MR. WILLIAMS' third action item pertains to the Participant-Directed Plans International Equity Fund. The DC Committee recommends that the Alaska Retirement Management Board direct staff to hire Baillie Gifford as a component investment strategy in the International Equity Fund. MR. MITCHELL explained that this recommendation stems from an observation Callan made when

reviewing the participant-directed plans. Within fixed income, there were a number of passively managed fixed income options that were similar to each other, so they recommended consolidating those into an active strategy and also having a passive option. The DC Committee agreed to make a passive option available and to task staff with bringing back an active fixed income option at a future date. This motion addresses the first part of that discussion in consolidating the existing passive fixed income mandates into a singular passive mandate that is representative of the broad investment-grade bond market.

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

CHAIR JOHNSON thanked Mr. Williams and the DC Committee for their efforts on these actions.

23. INVESTMENT ACTIONS

MR. MITCHELL then discussed a couple of other action items, one of which was the BlackRock U.S. Core Property Fund which was deferred from yesterday. He reviewed the background, then stated that staff recommends that the Alaska Retirement Management Board redeem the full value of the ARM Board investment in the UBS Trumbull Property Fund and commit $200 million to the BlackRock U.S. Core Property Fund.
MR. WEST moved to do so. MR. BRICE seconded the motion.
CHAIR JOHNSON questioned whether the issue of fees was negotiated with UBS given that BlackRock's fee structure is clearly better, and MR. MITCHELL replied that there was a discussion, but UBS was unwilling to reduce fees to BlackRock's level.

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

MR. MITCHELL stated that Dr. Jerrold Mitchell's three-year term is due to expire on June 30, and staff recommends extending his contract for another three-year term. It was confirmed that Dr. Mitchell would be willing.
MRS. HARBO moved to extend Dr. Mitchell's term. MR. BRICE seconded the motion.
A roll call vote was taken, and the motion passed unanimously.

MR. MITCHELL informed the Board of the intent to bring in-house the trading of futures contracts that are associated with cash equitization and the portable alpha program. The cash equitization program began in February 2006, at which time State Street Global Advisors was hired to handle it, with the instruction that staff could take over doing it themselves when they felt they were ready. Currently three parties are involved as manager, custodian, and prime broker; staff would like to be granted the ability to execute those trades directly, which will reduce the work of reconciling accounts between the entities. Staff estimates that they would save about $400,000 a year in management costs by taking the middleman out, and they are confident that they can do it themselves and that they have the systems in place.

MR. MITCHELL said that there is one remaining action item to be deferred until after the presentations in the afternoon.

CHAIR JOHNSON recessed the meeting from 10:17 a.m. until 10:31 a.m.

16. EMERGING MARKETS

MR. MITCHELL said that much of this day would focus on emerging markets, with presentations from each of the three emerging market managers and then a panel discussion. The goal is to provide the Board with an opportunity to hear from these managers, particularly considering the challenging performance in 2017 in this area relative to the benchmark, and to explore how the Board should be thinking about emerging market equity exposure in the broader portfolio.

The presentation "Technology and Innovation Helping to Drive Change" from T. Rowe Price was deferred until after the other presentations.

17. PARAMETRIC EMERGING MARKET EQUITY PORTFOLIO

DAN RYAN, head of relationship management at Parametric, introduced himself and Dr. Tim Atwill, head of investment strategy and research and lead investment strategist for the emerging markets portfolio that Parametric manages for the ARM Board. MR. RYAN thanked the ARM Board for their trust in working with Parametric in this strategy since 2008.

MR. ATWILL discussed the current market cap weights which have China, Korea, and Taiwan making up over half of the market portfolio, and noted that this is a case for the power of diversification. Strategically, emphasizing those three countries means getting a large exposure to the ones that are most linked in to the developed economies. Having a more diversified portfolio should give a higher probability of success on an absolute basis. MR. ATWILL explained that Parametric has a three-step process in which they set diversification targets at the country level to get closer to an equal country-weighted stance. They have a very mechanical and disciplined rebalancing process, so if they get too overweight in any country, they'll rebalance back to its target weight and reinvest the proceeds in the most underweight country. And within countries, they do a similar diversification process at the sector and stock level.

MR. ATWILL discussed factors that affected performance, and when investors should expect this strategy to be more successful or less so. He emphasized that downside protection is a key component of their excess returns, important in such a volatile asset class, but in 2017 there wasn't much downside to protect against, and that poor performance affected the cumulative returns. He stated that this strategy in the long term should result in higher return at lower risk.

Discussion followed about the future of emerging markets, opportunities for investment in China, and demographics in the world. MR. ATWILL stated that historically the more undeveloped economies tend to be where you see the long-term, persistent stock trends, and the past ten years is too short a time period to argue whether or not the demographic trends are working, and he reiterated that the volatility is lower than the benchmark.

18. LAZARD EMERGING MARKET EQUITY PORTFOLIO

MR. MITCHELL introduced TONY DOTE and JAMES DONALD with Lazard Asset Management. MR. DONALD is the head of the emerging market team that runs the relative value strategy for the ARM Board.

MR. DOTE showed that emerging markets is about 23 percent of Lazard's assets and is the second-largest and fastest-growing component of their business. He said that they currently have about $37.5 billion in the strategy that they manage for the ARM Board, and they have 70 people working in emerging markets in eight different equity strategies and four debt strategies. They think the emerging markets are an inefficient area for good stock pickers and good bond pickers, so they can add value to client portfolios. Their public client list is now 114 clients, their largest business in the United States. He explained their strategy, and said that it tends to be in large cap holdings, none under $3 billion. He described some of the types of stocks they own and some of the cycles they have seen.

MR. DOTE reviewed performance and explained contributing factors. MR. DONALD discussed the process that they go through to pick stocks, and he commented that their relative value style was the most out of style it has been since 1999. Last year, the emerging market growth index outperformed the emerging market's value by 1900 basis points. In response to a question from MR. MITCHELL, MR. DONALD commented that with Xi Jin Ping's term now unlimited, there will probably be more state involvement in companies in China, in both state-owned enterprises and the private sector, but the real question is how that will affect the fundamentals. If the fundamentals get worse, it might reduce opportunities in China.

MR. WILLIAMS asked the Lazard representatives what would be a strong rationale for staying with this strategy instead of just going with an index. MR. DOTE answered that over the last five years, growth has been inhibited because highly priced stocks have outperformed low-priced stocks. However, emerging markets are still very inefficient and difficult to index. There are many variables and risks in a changing, growing environment that present opportunities for good pickers to add value.

19. DePRINCE, RACE & ZOLLO EMERGING MARKET PORTFOLIO

MR. MITCHELL introduced DePrince, Race & Zollo as the third emerging market manager, noting that the ARM Board has longer experience with this firm in U. S. microcap.

KELLY CARBONE thanked the ARM Board for allowing them to contribute, and said that they are currently seeing vast opportunities in emerging markets. She said that DRZ currently manages $4.7 billion for exclusively institutional clients. While most assets are in U.S. strategies, they are seeing the most growth and interest in the emerging markets, in which they are managing $300 million with commitments of an additional $100 million to be funded within a few months. MS. CARBONE reviewed their investment methodology and their buy-sell decision process, explaining that they build their own models and they travel extensively and visit companies on a regular basis, constantly reassessing what belongs in the portfolio.

MARC MILLER discussed how emerging markets are doing as an asset class, the differential

between growth and value, and some examples and opportunities within emerging markets. He stated that emerging markets have outperformed most major asset classes in 2017 and the beginning of 2018. On an absolute basis, it is still one of the cheapest asset classes globally. The leading sector has been technology, specifically the Internet sector, with four stocks dominating the returns. Those stocks have very high price to earnings multiples, which MR. MILLER described as being overvalued. The DRZ portfolio doesn't own them because they aren't cheap. He emphasized that over the past 20 years, value has outperformed growth in emerging markets, so their strategy is to look for value.

MR. MILLER showed how the portfolio is currently positioned and discussed things happening in various parts of the world that might affect opportunities. He described their screening process that narrows their universe from 15,000 stocks to 250, of which they look at about 50 new ones per week. MR. MILLER reiterated that they are constantly traveling to various regions and doing due diligence, meeting with companies repeatedly before investing in their stock, sometimes waiting to see how they report over a period of time. He said that if they have any doubts, they don't invest in that stock, no matter how relatively attractive it is, and he attributed their outperformance to specific stock selection.

CHAIR JOHNSON thanked Ms. Carbone and Mr. Miller for their presentation, and recessed the meeting for lunch from 12:17 p.m. until 1:12 p.m.

20. PANEL DISCUSSION: EMERGING MARKET EQUITIES

CIO BOB MITCHELL remarked that he thinks the timing is good to discuss issues pertaining to emerging market equities, after hearing of the relatively difficult performance from the three EM managers.

SHANE CARSON introduced four experts in emerging markets, three of whom spoke to the Board earlier in this meeting. He introduced TIM ATWILL from Parametric, MARC MILLER from DePrince, Race & Zollo, CHUCK KNUDSEN from T. Rowe Price, and JAMES DONALD from Lazard.

MR. CARSON reminded Board members that they just heard discussion of the emerging markets environment and how it has impacted each manager's relative performance, and details regarding the concentration of performance around certain securities. He said that he would try to guide the panel discussion with a series of prepared questions, and he encouraged conversation between the managers and the Trustees.

MR. CARSON asked: Recognizing that emerging market equities have seen approximately two years of positive relative performance compared to developed markets, what are your expectations for EM performance relative to developed markets in the next 3, 5, 10, and even 30 years, and what are the risks to your expectations?

MR. ATWILL said that they would probably expect similar returns as developed market economies, but just as important is that EM has continued to be undiversified to developed market economies. Emerging markets equities have a similar if not elevated return proposal, and are not likely to go up or down at the same time as the rest of the equity portfolio. However, as countries move from the

emerging category to developed, both of those characteristics will change.

MR. MILLER said that they see emerging markets trading at a discount to developed markets, and outperformance comes from a narrow subsector within emerging markets. He said that China will become a bigger component within the index and will be transforming from state-owned enterprise driven companies to non-state-owned enterprise companies. He concluded that they feel that many of these economies will gradually go up to developed, but they think emerging markets will outperform developed in the coming years.

MR. KNUDSEN pointed out that emerging markets have done well over the last couple of years, but that follows an extended period of underperformance. But what he thinks is critical is how much it is transitioning, whether investors can have a little more faith in their growth, higher quality of growth, and companies becoming more investable. He said that he thinks this is the case, and some of the political transitions that are occurring in different countries are very important because they are laying the groundwork for much better macroeconomic policies. He said that he thinks the backdrop for emerging markets is quite positive with risk premiums coming down, and considering that most investors are underweight in this asset class, there is a potential for continued flows into the asset class.

MR. DONALD said that emerging market equities underperformed developed market equities over the past seven years for two reasons. First, investors have been very concerned about economic growth around the world, which has meant that anything that is economically sensitive has done relatively poorly. Second, the emerging markets is where the high capital expenditure has been in the world between 2010 and 2016, so emerging market companies have increased capacity without getting major benefits for doing so. He said that he thinks if the world economy continues to strengthen and investors become less concerned about economy-sensitive stocks, that portends very well for emerging markets, so he thinks they will outperform over the next 3, 5, probably 9 years.

MR. CARSON asked: Discuss EM's rising consumer class and the transition from smokestack to smartphone. How will this transition impact the cyclicality that has been an historical characteristic in emerging markets?

MR. DONALD replied that one of the important things to note is that the biggest sector in emerging markets is technology, though most people associate emerging markets more with commodities. Significant work is going on as industries catch up technologically, with massive investments in things like semiconductors and electronics. There are more value-added industries and multinational emerging market companies, some of which are also active in the developed world, and management has improved. It probably means a greater durability, but with some risks attached.

MR. KNUDSEN said that the emerging economies have already begun the transition, and trade between emerging and developed markets has fallen. Emerging markets now trade more with each other than with other developed markets, and manufacturing and exports as a percentage of GDP have gone down in many of the countries as they transition to a more consumption-led economic model.
He said this provides another driver of economic growth, and these economies will continue to mature. He added that that should help buffer them in periods when the developed world struggles,

and continue to broaden the opportunity set within emerging markets.

MR. MILLER commented that the emerging markets are growing faster than the developed markets, and they may leapfrog technologically because without older technologies and infrastructure in place, they can start right out with modern improvements. He said that small investments can make huge differences and boost productivity, generating much better growth opportunities. Also, in consumer-driven economies, the wealth effect transforms the underlying economy, and demographic trends provide a good backdrop for emerging economies over the next 1, 3, 5, and 10 years.

MR. ATWILL pointed out that it has long been assumed that Taiwan and Korea would move into the developed market indexes, but because of currency controls and the definition of the index, they have not been allowed to move up. However, they do have most of the underpinnings of economic structure and legal protections of a developed economy in place. He said that without Taiwan, Korea, and China, there are almost no technology stocks in that index, so it's really the almost-developed countries that have become more technology-driven. He emphasized that not only are they becoming more modernized, but in general they are building out their entire sector distribution of stocks to be more across the board. Whereas before they were more focused on extracting or manufacturing, they are now focusing more on intellectual property and consumer services.

MR. CARSON asked: I read recently that 10 percent of emerging market stocks are captured in the MSCI Emerging Markets Index. Are the typical mainstream indexes a fair representation of the true opportunity set in the emerging markets?

MR. ATWILL answered yes, in general, and said that MSCI, EMI, and IMI represent the true investment set. He explained that IMI is a newer index that includes small cap. He said that the mainland exchanges in China have not been accessible to foreign investors, but when they are they should certainly be considered for investment. Currently they are left out of the indexes, but other than that exception, he said it seems the coverage is thorough and anything that would be considered investable is included.

MR. MILLER answered that with the changes going on within the MSCI EM Index composition, China will rise to over 35 percent, and currently tech is over 25 percent of the EM index. That is not quite the emerging market exposure that people are looking for when they invest in emerging markets. Also, within China, many of the companies in the index are state-owned enterprises, which also does not quite give the real exposure, so he would say the index is not necessarily representative.

MR. KNUDSEN said that the index is becoming more of a fair representation; the names are there, but investing passively in the index results in a heavier weighting toward the state-owned enterprises and the developed market economies. He said that this asset class is continuing to evolve, and the index is better today than it used to be, but he thinks there is still a gap between what is really the most investable and attractive opportunity set within EM and what is represented by the index.

MR. DONALD added that there's been enormous change in the index, and it is much more representative than it used to be, but there is still room to grow.

CHAIR JOHNSON asked: It seems like there is a disparity growing between China, Taiwan, South Korea, and the rest of the countries in this index. Why aren't they being treated differently, and where are we seeing more proposals for investment in other than just those three large economies?

MR. DONALD responded that they have all been extraordinary beneficiaries of technology doing so well recently. He said he doesn't think many investors are interested in those three countries as a single investment area to focus on. There is a lot of interest in greater China as a theme, which includes Taiwan, and would include A-shares, the mainland shares, and H-shares, the Hong Kong list of shares. He said that if markets start to revert back to value more, those markets might actually retreat more than growing.

MR. CARSON asked: Should investors contemplate a stand-alone investment in China?

MR. DONALD said that if it really is an outstanding opportunity for the investor, and if it fits into their investment goals, then yes, they should. He emphasized that we have to see what happens in China, noting that many state-owned enterprises don't actually have a goal of profitability. He thinks that is changing, since President Xi Jin Ping has closed a couple of the most value-subtracting companies over the past couple of years, but also there are stories of the Communist Party putting people on company boards, and it remains to be seen how that affects their fundamentals. He repeated that China may be a good investment opportunity, but we have to wait and see what they do.

MR. KNUDSEN said that there may be a case for a China-only strategy, but there may be another side to that, which is that China is going to be so big in the index that investors may want to counter that a little and get more exposure to some of the other areas within EM that are getting dwarfed as China gets bigger.

MR. MILLER noted that China is already a significant portion of the index, and there is a lack of transparent track record for many of the companies in EM. Therefore, a China-only strategy wouldn't necessarily be diversifying across the board; it would depend on which companies they invest in. Whether a China-only strategy is a good idea depends on the objectives of the investors.

MR. ATWILL said that maybe it makes sense to split the EM allocation between an MSCI EM ex-China and China, mostly because right now they can't control the China weight in the EM exposure to reflect investors' views on China, which vary widely. The index is becoming mostly China, probably more than half with the inclusion of the A-shares. So in order to control their view on China, it would be necessary to break out that portion of the portfolio into a China-only manager. That would allow the rest of the emerging markets, the more immature and locally focused economies which have fulfilled the historical role that most people are investing in EM for, to come through.

MR. CARSON asked: How does analyst coverage and the efficient flow of information differ from the emerging markets versus developed markets? Does this translate into great opportunities in active management? Does this mean increased risks, and what are those risks? Are investors compensated for those risks?

MR. ATWILL said that he thinks analyst coverage is not that sparing in the emerging markets. That

used to be the case, but as they developed their own financial infrastructure in the more modern economies, it is not so true anymore. He added that in general, they are not huge believers that a lot of efficiency is added by analyst coverage, but because that is not part of their investment process, he passed on the rest of the question.

MR. MILLER said there are probably more inefficiencies than there were 10 years ago, but resources about consensus expectations have been changing, shrinking, and combining, because of regulatory and other changes. He said that coverage for some EM companies is being done out of London by developed market analysts who are always changing and may not have the history or track record for it. He said that their firm does their own individual research, and having that knowledge base and consistent coverage over a period of time helps, especially in a market that is more inefficient. He also noted that since emerging markets underperformed for five years, many people left the industry, so not as many buy-side investors have gone through several cycles, which itself creates inefficiencies. Also, the composition of the index has changed with new companies emerging, which would create more risks.

MR. BRICE asked if there is a product out there for emerging markets that is passive to the index. MR. MILLER answered yes. MR. BRICE then asked if they wanted to have some exposure to emerging markets, what is the disadvantage to being in the passive index versus trying to go through the complexities and the idiosyncratic aspects of every ESG issue, currency issue, and so on with the active?

MR. MILLER answered that they feel they add value through their stock selection. The ARM Board has two value strategies and a growth strategy. The composition of the index, on a passive basis, would be in the growth. That would be very different from the value approach, and they would be buying every single company in the index.

MR. KNUDSEN said that since T. Rowe Price is not one of the EM managers for the Board, he would respond. He said that they do believe that active management makes sense in emerging markets. The index has gotten a little more efficient, but is still relatively inefficient, and gives exposures to areas that they may not want exposure to. He said that this asset class can tend to be very short-term oriented, and while the number of analysts covering stocks has probably increased, the quality of that research has gone down. That provides opportunities for in-depth research to uncover investment opportunities across a growth mandate as well as across a value mandate. As these economies are transitioning to more consumption-led models and better macroeconomic policies, that will help active managers by allowing them to overweight those companies that are becoming the long-term winners.

CHAIR JOHNSON thanked Mr. Carson and the panel participants for the presentation.

21. GLOBAL DYNAMIC ASSET ALLOCATION

CIO BOB MITCHELL explained that one of his areas of strategic focus is to find sources of active risk or alpha that are diversified from the traditional sources of active risk. Tactical asset allocation is one of those sources. PineBridge is one of two firms who are presenting this type of portfolio to

the ARM Board. MR. MITCHELL noted that staff has conducted a fair amount of due diligence on the two strategies that will be presented next and are comfortable with them.

JOE FAGUE introduced himself, from PineBridge's institutional services group, and MIKE KELLY, the global head of PineBridge's multi-asset team. MR. FAGUE explained that PineBridge Investments is the old AIG Asset Management. They were sold in 2010 and have been a fully independent company for eight years, with no affiliation with AIG. About 15 percent of the company is owned by employees, and that percentage is growing. The remaining 85 percent is owned by Pacific Century Group, an Asian investment vehicle owned by Hong Kong multibillionaire Richard Lee. They have headquarters in New York and Hong Kong. They inherited a global investment platform from AIG, and they now manage about $85 billion and have investment teams in 17 countries, working in every available style.

MR. FAGUE introduced the portfolio that PineBridge is offering called Global Dynamic Asset Allocation, which looks to generate alpha through asset allocation. Rather than researching stocks and bonds, they research asset classes. They have researched about 80 different asset classes, but are currently invested in only about 15 of those, with the goal of owning the right asset classes at the right time. They try to identify undervalued asset classes, buy, and hold them for about the 9- to 18-month period that it takes for prices to converge with fundamentals.

MR. FAGUE reviewed the returns from this portfolio, and said that there are three main reasons why people hire them: diversification of alpha sources, diversification by asset class, and the fully transparent portfolio serves as sort of an extension of staff. The various investment professionals in Pine Bridge are available for questions, conference calls, and so on, even if outside the specific mandate that they are running for that client, so the client benefits from their expertise.

MR. KELLY described the portfolio as globally diversified and long-only, seeking equity-like returns at lower risk. He pointed out that there are only about two dozen asset management firms in the world with such a large geographic spread of diversified investment professionals, and they are the only one that is midsize instead of gigantic, which they believe is a big advantage because 200 people are able to know each other, communicate, and collaborate. He showed charts demonstrating that during the crisis of '07-'08 when global equities lost about 20%, they were down only 1%, but during the up periods, they deliver about 85% of the up. Over the full cycle, they deliver 7% to 10%, even during a period when there was a once-in-70-year financial crisis, and with about a third less risk.

MR. KELLY described how they have team members from many different geographic perspectives and skill sets, and with their belief that fundamentals drive markets and every cycle is unique, they try to look forward and consider how assets should be valued in the future. He stated that risk and return to them are equal partners. Being paid to take risk is part of what they do. He said that they have two meetings a year in which the investment teams from 17 different countries all get together so they can get to know each other with organized agendas. People are organized into 19 teams of 10 people each, who meet quarterly, then there are seven monthly meetings and regular communication about how the fundamentals are developing. In their 21-person monthly multi-asset strategy team meetings, they come up with a team generated risk dial score, debate which of the attractively valued asset classes will see improving fundamentals, and score every asset class.

MR. KELLY said that 65 percent of the time they are outperforming over an 18-month period. MR. MITCHELL asked him to say what they would expect: they would expect to be around 6.9% gross of fees, compared to the benchmark of 4.2%.

22. SIGNALING PORTFOLIO

MR. MITCHELL introduced this as the second of the two strategies that he mentioned, a product offered by Fidelity. He introduced KRISTIN SHOFNER.

MS. SHOFNER thanked the ARM Board for their business with Fidelity, and said that her role is working with public funds like the ARM Board. Also attending were DAN TREMBLAY, the institutional portfolio manager for this multi-asset class portfolio, and CATHY PENA, the portfolio manager.

MR. TREMBLAY explained the strategy, emphasizing that two key components are signaling and knowledge sharing. He said that they focus on large, liquid asset classes, which allows them to give timely and transparent signals on how they are viewing risk and levers in the marketplace, and they share timely insights to help clients understand and think through their own risk budgets more effectively.

MS. PENA explained that they track business cycles, the natural ebb and flow from expansion to contraction and back again which the U.S. economy goes through every three to eight years. The business cycle has three components, the profit cycle, the inventory cycle, and the credit cycle, which she compared to the seasons, and the backdrop of fiscal policy is another factor they consider. Fidelity has an economics team whose job is to identify where the major economies are in their business cycles, and they have studied how various asset classes behaved in previous cycles, and developed what they call a business cycle loss aversion process. MS. PENA described the ideas behind this process and explained how they implement the strategy through regular meetings and monthly trading and rebalancing. She showed the track record of their internal pilot portfolio and reiterated that they act as partners in sharing information with clients.

MR. ERLENDSON asked in what sort of economic environment this strategy would seem to be saving the day, and if there might be periods of disappointment. MS. PENA answered that when the market dips like it did in February this strategy may not bear fruit, but that the biggest drawdowns tend to come in recession, and that's where they try to protect capital. She added that analysis shows that in early cycle they add alpha because of risk premiums.

MR. MITCHELL asked the size of the dedicated strategies to the Signaling Portfolio, how it's used within Fidelity, and what the diversification benefits of this strategy are in relation to strategies that are focusing on securities selection. MR. TREMBLAY replied that the underlying building blocks range from $400 million portfolios to $4 or $5 billion portfolios, most with track records of well over 10 years. They have about $20 billion in assets under management, for pension plans, endowments, and others in a very similar strategy where the business cycle input isn't as precise, but is significant. MS. PENA added that this strategy has a very low to negative correlation with strategies that are

trying to add value through security selection.

CHAIR JOHNSON recessed the meeting from 3:10 p.m. to 3:19 p.m.

16. EMERGING MARKETS: TECHNOLOGY AND INNOVATION HELPING TO DRIVE CHANGE

CIO BOB MITCHELL said that in January 2018, T. Rowe Price published a paper titled "Modern Titans of the Information Age," which had some provocative insights that he thought were relevant to the ARM Board's thought process, so he asked them to present it to the Trustees.

CHUCK KNUDSEN said that the crux of the paper was about the impact of technology and of innovation, and people aren't sure how it will affect emerging markets. People may still think of the countries in emerging markets as backwards and volatile, but perspectives are changing as technology impacts those economies and increasingly emanates from them as well. MR. KNUDSEN pointed out that emerging markets have changed since the term was introduced in the 1980s, and these countries represent a huge portion of the global economy, and a predominant share of the younger population of the world. He discussed how the index has changed from initially including only 10 countries to 25 now, and at inception it was more cyclical, with lots of materials, energy, and telecom, but now it's predominantly technology, financials, and consumer stocks. He said that since the global financial crisis, 80 percent of the global growth has emanated from these economies, and consumption is increasing in them as well. He gave a number of examples of situations and opportunities in emerging markets, then Trustees asked some questions. MR. SHAW asked specifically about a China-only allocation, and MR. KNUDSEN replied that there will be an opportunity set opening up there before it gets into the index, and there may be some wisdom in such a strategy if it were carefully tailored.

23. INVESTMENT ACTIONS

A. Investment Advisory Council Position

None.

B. Investment Mandates

CIO BOB MITCHELL asked for permission to hire PineBridge and Fidelity to run the strategies that they presented in this meeting at an initial allocation of $200 million each, subject to Callan's approval and successful contract negotiations. These would be placed in the tactical asset allocation. MR. MITCHELL noted that in the long term, he envisions having up to four distinct strategies placed there, and he thinks it has the benefit of diversifying active risk, and providing staff the opportunity to get access to unique insights from these strategies that they could potentially implement more broadly in the portfolio, with the goal of adding another level in the ability to add performance relative to the benchmark.

MR. MITCHELL stated that <u>staff recommends the ARM Board direct staff to invest up to $200 million initially in each of the PineBridge Investment Global Dynamic Asset Allocation and the</u>

Fidelity Institutional Asset Management Signaling Portfolio strategies, subject to a favorable review from Callan and successful contract negotiations.

MR. BRICE moved to so direct staff. MR. WEST seconded the motion.
A roll call vote was taken, and the motion passed unanimously.

MR. MITCHELL said that there were no further action items under this category.

UNFINISHED BUSINESS

None.

NEW BUSINESS

None.

OTHER MATTERS TO PROPERLY COME BEFORE THE BOARD

None.

PUBLIC/MEMBER COMMENTS

None.

INVESTMENT ADVISORY COUNCIL COMMENTS

None.

TRUSTEE COMMENTS

MS. ERCHINGER thanked everybody, and said that she was sorry she couldn't be here in person. She said she appreciates STEPHANIE ALEXANDER and the work she did preparing for the Actuarial Committee.

FUTURE AGENDA ITEMS

CHAIR JOHNSON noted two future agenda items: one is to present a survey of the information available to the DC and SBS participants, for the Board's awareness; and the other is to have a presentation about the scope of securities lending that they are currently engaged in and discuss proposals and pitfalls about that.

ADJOURNMENT

There being no objection and no further business to come before the board, the meeting was adjourned at 4:10 p.m. on March 30, 2018, on a motion made by MR. WILLIAMS and seconded by MR. WEST.

Chair of the Board of Trustees
Alaska Retirement Management Board

ATTEST:

____
Corporate Secretary