State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
MEETING

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

MINUTES OF
June 20 - 21, 2019

Thursday, June 20, 2019

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

Nine ARMB trustees were present at roll call to form a quorum.

Board Members Present
Robert Johnson, *Chair*
Tom Brice, *Vice-Chair*
Gayle Harbo, *Secretary*
Lorne Bretz
Allen Hippler
Commissioner Bruce Tangeman
Commissioner Kelly Tshibaka (arrived late)
Norman West
Bob Williams

Board Members Absent
None

Investment Advisory Council Members Present
Dr. William Jennings
Dr. Jerry Mitchell
Robert Shaw

Department of Revenue Staff Present
Bob Mitchell, Chief Investment Officer
Scott Jones, State Comptroller
Pamela Leary, Director, Treasury Division
Zachary Hanna, Chief Investment Officer
Shane Carson, State Investment Officer
Stephanie Alexander, Board Liaison
Mark Moon
Steve Sikes
Michelle Prebula
Kayla Wisner
Sean Howard
Nick Orr
Ben Garrett
Katelynn Bushnell
Casey Colton
Sam Hobbs
Hunter Romberg
Victor Djajalie
Kekama Tuiofu
Greg Samorajski

Department of Administration Staff Present
Kevin Worley, Chief Financial Officer, DRB

ARMB Legal Counsel
Stuart Goering, Department of Law, Assistant Attorney General

Consultants, Invited Participants, and Others Present
Paul Erlendson, Callan Associates, Inc.
Steve Center, Callan Associates, Inc.
Jay Kloepfer, Callan Associates, Inc.
David Kershner, Buck
Scott Young, Buck
Amanda Montgomery, Allianz Global Investors
Anthony Wong, Allianz Global Investors
Christian McCormick, Allianz Global Investors
Allan Duckett, Schroders
Jack Lee, Schroders
Raymond Maguire, Schroders
Paul Wood, Gabriel Roeder Smith

Members of the Public
Bradley Owens, RPEA

PUBLIC MEETING NOTICE

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

APPROVAL OF AGENDA

VICE CHAIR BRICE moved to approve the agenda. MR. WEST seconded the motion.

VICE CHAIR BRICE requested to include a section on procurement actions just before Investment Actions, for the purpose of accepting the findings of the Proposal Evaluation Committee for the independent audit of state performance consultants. Also, MR. MITCHELL noted that under Asset Allocation, the resolution numbers needed to be changed from 2018-03 and 2018-04 to 2019-03 and 2019-04.

With those changes, the agenda was adopted.

PUBLIC/MEMBER PARTICIPATION, COMMUNICATIONS AND APPEARANCES

BRADLEY OWENS, executive vice-president of the Retired Public Employees of Alaska, or RPEA, informed the ARM Board of the status of two lawsuits involving changes by DOA in 2014 to the retiree dental plan and to the retiree medical benefits plan. In the first suit, the court recently ruled that the dental plan is a constitutionally protected retirement benefit, the same as medical benefits, and the changes made by DOA in 2014 were a diminishment of the dental benefits prior to 2014. The court is currently determining how to remedy those unlawful changes, which may take four to six months.

Regarding the changes made in 2014 by DOA to the retiree medical benefits plan, RPEA has asked the court to clarify what specific fiduciary duties DOA owes to retirees when it makes such changes. MR. OWENS explained that DOA and RPEA agree that a 2003 case defines the process applicable to changes to the plan, but they disagree on what the specific elements of the process are, when it must be utilized, and who is responsible to initiate and perform the process. This lawsuit is still in its initial phases, but RPEA hopes the court will rule on both cases by the end of the year.

APPROVAL OF MINUTES: April 4 - 5, 2019

MS. HARBO moved to approve the minutes of the April 4 - 5, 2019 meeting of the ARM Board. VICE CHAIR BRICE seconded the motion. MS. HARBO noted a correction on page 25 in the second to last paragraph, from "with" to "without any understanding of their wishes." Also, she noted that in Trustee Comments, she had thanked Gail Schubert and Kris Erchinger for their years of service and dedication, and that should be included.

With those changes, the minutes were approved.

STAFF REPORTS

1. RETIREMENT & BENEFITS DIVISION REPORT

A. Buck Consulting Invoices

MR. WORLEY directed Board members to the summary of monthly billings for Buck, including quarterly reports with comparisons to the same time frame in the prior year, included at the request of the Board. MS. HARBO questioned whether presentations to Senate Finance were paid for out of pension funds or legislative funds, and MR. WORLEY replied that those come from pension funds.

B. Membership Statistics

MR. WORLEY reported on retirement system membership through the quarter ending March 31. MS. HARBO noted over 1,000 full disbursements or full retirements from DC over the first three quarters of the year. MR. WORLEY said there would be more discussion of that under Fund Financials.

DRB Update/Legislation Summary

MR. WORLEY reminded that Board that DIRECTOR AJAY DESAI has been before the Board and various committees discussing the DRB's modernization project, which will update their combined retirement system with a new platform, with an RFP expected to be issued in July.

MR. WORLEY explained that House Bill 39, Section 34, appropriates the additional state contribution from the legislature, and the numbers are currently $159 million for PERS and $141 million for TRS. The only other item passed this session that affects the Division is SB 44 expanding providers eligible to participate in telemedicine, which shouldn't have much impact.

MS. HARBO commented on SB 102 on the retirement incentive, that several earlier retirement incentive programs had a negative impact on the systems because the actuary at the time didn't take into account healthcare for life, so if it is to be considered again, the two actuaries must take a good look at it.

MR. WILLIAMS questioned why people in Tier 1 and Tier 2 defined benefit programs would fully cash out, and MR. WORLEY replied that typically those would be people who are not fully vested, and there is counseling for those fully vested on the rights they are giving up. However, some people have circumstances like being covered under another plan.

2. TREASURY DIVISION REPORT

DIRECTOR PAM LEARY said that the only thing she had to report was that they are still awaiting a final budget from the governor.

3. CALENDAR/DISCLOSURES

MS. ALEXANDER directed Board members to the disclosure memo and calendar in the meeting packet. On the 2020 calendar, she noted that an Actuarial Committee meeting on January 20 would have to be rescheduled because that is Martin Luther King Jr. Day.

VICE CHAIR BRICE commented that the Operations Committee had been discussing Board travel, and although it was expected that the September meeting would be telephonic, considering the number of issues to be addressed then, it might be better to have the December or March meeting telephonically instead. CHAIR JOHNSON added that he thought the majority of Board Trustees believe that personal attendance is critical, and he asked Commissioner Tangeman what he thought. COMMISSIONER TANGEMAN said that he thought that having the telephonic meeting in March would be acceptable, and he had verified that the State Office Building in Fairbanks does have video capability. MS. ALEXANDER said that she would send out an updated calendar.

4. CHIEF INVESTMENT OFFICER REPORT

Chief Investment Officer BOB MITCHELL wished everyone a happy summer solstice. He directed Board members to the summary of portfolio moves, noting that he had accidentally duplicated No. 9 and No. 36. CIO MITCHELL reminded the Board that Resolution 2017-05 delegated authority to the CIO to make asset allocation moves at his discretion and report those moves to the Board, which is the purpose of this report. He reviewed the sections of the report titled Rebalance Transactions; Futures, Rolls, and Adjustments; and Investment Actions. He added that this is the third year of their resurrected college internship program, and they have hired two interns: Ben Garrett from UAA; and Katelynn Bushnell from UAF, who also interned last year.

MR. MITCHELL noted that a second page of the report details, by request, the amount of assets that are managed internally, which is about $10 billion, including equity portfolios, fixed income portfolios, and investments in alternative asset classes.

MR. MITCHELL told the Board that today's meeting would include part two of Callan's response to an asset liability study of the plan, and a discussion from Callan about the asset allocation plan, which is an annual exercise, but a little different with a new framework they have developed this year. Also, under investment action items, he said he would be recommending that the Board authorize staff to engage Callan to conduct a risk parity search for a portion of the assets that the ARM Board manages.

CHAIR JOHNSON asked how the ARM Board investments compared to the Permanent Fund investments in the same time frame. MR. MITCHELL responded that it depends on the time frame, and the two funds report differently, but they are fairly close to each other, and over relatively long time periods, the ARM Board appears to have pretty decent performance relative to its benchmarks.

MR. WILLIAMS asked if it was easier to compare looking at year-to-year performance, and MR. MITCHELL replied that even annual performance can be misleading, particularly with illiquid asset classes, and time frames of multiple years give a better perspective, which is why they track rolling six-year net-of-fee performance. MR. WILLIAMS asked for a rough estimate of how the ARM Board compares to the Permanent Fund in the percentage of fees they pay, and MR. MITCHELL

replied that that is a difficult question. He explained that there are investment manager fees, and another element of compensation which is incentive-based. The incentive-based components are not reported by the ARM Board, but are by the Permanent Fund. MR. MITCHELL said that the ARM Board is taking strides internally to increase the ability to identify those incentive fees, and the Permanent Fund is ahead on that point. He concluded that it's an apples-to-oranges comparison, but he thinks they are probably comparable.

5. FUND FINANCIAL PRESENTATION

COMPTROLLER SCOTT JONES indicated the April fund financials in the meeting packet, and gave some updates for June. He stated that as of June 19, 2019, total nonparticipant-directed plans stood at roughly $26.7 billion.

CFO KEVIN WORLEY highlighted two items from the DRB report. As a result of House Bill 47 from last year which pertained to PERS employers that had a 25 percent decrease in their population from the 2010 census data, salary reductions for five employers resulted in a State of Alaska contribution of $141,000. Also, on page 3 of the DRB report, he said they are considering different ways to present the disbursement schedule to make it more user-friendly. MS. HARBO asked a couple of questions for clarification, then asked if the EGWP subsidy was going to be constant at $3.4 million a month; MR. WORLEY replied that that amount covered a couple of months, and they expect it to be about $1.5 million for PERS and about half that for TRS.

MR. WILLIAMS asked whether the average disbursement or refund under TRS DB of about $217,000 indicates that almost everyone who is cashing out would be vested. MR. WORLEY replied that it depends on the situation, and they don't get into all the details, but retirement managers do contact vested participants who cash out. He said they would check on whether the average participant cashing out is vested or not.

6. CHAIR REPORT

CHAIR JOHNSON said he had nothing specific to report.

7. COMMITTEE REPORTS

A. Audit Committee

CHAIR JOHNSON reported that the Audit Committee had met the previous day and had presentations from KPMG and from MR. JONES and MR. WORLEY. The process on the RFP for an auditor has been completed, and the contract with KPMG has been renewed on a two, three, and five basis which could provide for up to ten years of service. That contract will come into effect on July 1 of this year.

CHAIR JOHNSON said that the Audit Committee reviewed the upcoming audit plan, which is a little compressed as a result of some of the delays earlier in the year in the delivery of actuarial results and adoption of those changes by the Board.

CHAIR JOHNSON reported that also, the schedules relating to GASB 68 and 75 allocating amounts due among employees and employers were delivered by KPMG and the DRB, effective as of June 30, 2018. That report was delivered early, and CHAIR JOHNSON expressed that that was highly appreciated by the municipalities and other employers who depend on that information.

CHAIR JOHNSON said that MR. JONES had reported on SOC 1 standards, or controls of service organizations, and that an independent review of State Street's internal controls and cybersecurity measures show them to be on a good track.

Also, the Audit Committee heard reports from PAM LEARY of the Department of Revenue Treasury Division and MR. WORLEY from the Department of Administration DRB on personnel changes, and reviewed organization charts. Some part-time employees have been converted to full-time, and some roles that employees play have been adjusted, all seemingly positive, CHAIR JOHNSON said.

B. Actuarial Committee

MR. WEST said that since the Actuarial Committee is virtually a committee of the whole, he wouldn't report on every item in detail, but as a result of the delayed experience study, the preparation of the actuarial reports has been delayed, and now they are coming up against a deadline. He explained that the process was started earlier in the year, and the review actuary, GRS, is required to report to the committee any differences that they find in their sampling of Buck's information. A number of issues have come up, and the process is still not complete. They expect to have a conference call on July 31, and they have to get the financial statements out by October 15th. The report has to be adopted by the Board and the information must be included in the fund financials so the auditors can review it, then the financials can be part of the state's comprehensive financial report.

MR HIPPLER asked the cause of the increase in liabilities of $800 million on the pension side in PERS. MR. KERSHNER replied that most of it was due to the assumption changes. VICE CHAIR BRICE added that changes to the inflation assumptions as a result of the experience study decreased the expected rate of return from 8 percent to 7.38 percent.

C. DC Plan Committee

BOB WILLIAMS, chairman of the DC Plan Committee, said that they had an exciting, short meeting. Chief Pension Officer KATHY LEA gave an update on the Retirement and Benefits legislative summary. There was also an Empower presentation with their new concierge service, and a packet is coming out soon highlighting and clarifying healthcare for DC members. Also, DRB had a webinar that reached over 500 people, and they are working on getting information out effectively to participants.

MR. WILLIAMS said that he was excited to hear about a negotiated agreement between the Fairbanks North Star Borough School District and the Fairbanks Education Association to strengthen benefits for Tier III teachers. Also, CIO BOB MITCHELL gave a presentation on the target date fund simulation update, and MR. WILLIAMS asked Trustees who weren't there to get a copy of it. MR. WILLIAMS said that T. Rowe Price had also given a presentation that complemented Mr. Mitchell's, looking at a longer career path but with a similar message.

MR. WILLIAMS reported that the DC Plan Committee also had presentations from staff that led to a couple of action items to be considered under Investment Actions.

MS. HARBO asked whether the DC Committee had ever discussed auto-escalation. She noted that the plans lose a lot of people at the five-year point, which is a loss of about $6 million a month to the DC plans. MS. HARBO speculated that it might require legislation, but she wondered whether it would be possible to have an auto-escalation of the employer contribution at the 4- or 5- year point, and maybe again a couple of years later, to give people more incentive to stay longer. She said that this is done in the private sector, but she doesn't know how much it is done in public pensions. MR. WILLIAMS answered that they have not discussed that topic, but there have been studies showing that automatic enrollment into something like deferred compensation does help hold onto employees.

CHAIR JOHNSON added the observation that the Department of Administration and DRB are perpetually working on ways to make their IT interface with the beneficiaries better, yet there was still a presentation by a manager of a private investment fund commenting that she was hearing anecdotally from her clients that it was difficult to obtain information and data that an investor might want, which shows that there is always room for improvement. MR. WILLIAMS added that it seemed to be something that the person was able to find a few months ago, and DRB staff had said that they could find the information, and maybe something had changed on the website to make it more visible; but also, such problems could be resolved by following up with people.

D. Operations Committee

MR. BRICE said that the Operations Committee met directly after the DC Committee, and they received a legislation update from MR. WORLEY. Also, they had a vigorous discussion about travel and budget changes and how that impacts the Board's decisions and ability to work together for the good of the beneficiaries. They also heard from CIO MITCHELL about Resolutions 2019-05 and 2019-06, which the Board will review in Friday's meeting, and had a brief discussion about upcoming issues and possible directions that the committee will be taking, and a brief conversation on participation in the National Council of Teachers Retirement.

E. Alaska Retiree Health Plan Advisory Board

MS. HARBO reported that the ARHPA Board had met May 8th in Anchorage, and most of the Board members met the day before with the TPA, Aetna, to hear their quarterly report. They were joined by PAULA VRANA as a new deputy commissioner for both days, and it was a very good meeting. MS. HARBO complimented the health team that works in DRB for their excellent work in the smooth rollout of the OptumRx program in January.

MS. HARBO said that the main focus of the rehab committee, as it is called, is a modernization program, with 20 topics that they are working on. In between the four Board meetings, a subcommittee works to make sure there is no diminishment of benefits. Two benefits of special interest to retirees are the wellness benefit and the enhanced travel to Outside to get less expensive healthcare. Also, the Tele-Town Hall, introduced by Commissioner Tshibaka, taking place at the same time as this ARM Board meeting, is very beneficial in answering questions from retirees, with

usually 400 to 1,000 participating.

8. LEGAL REPORT

ARM Board legal counsel STUART GOERING noted that the matters brought up during the public member participation section have been previously reported on to the ARM Board. When there is a change in status in those cases, he said he will make a further report.

9. ACTUARY REPORTS: 2018 ACTUARIAL VALUATION DB AND DCR; PERS AND TRS PLANS

MR. DAVID KERSHNER and MR. SCOTT YOUNG from Buck reviewed the presentation in the Board meeting packet, which they had gone through in detail in the Actuarial Committee meeting the day before. The results of the June 30, 2018 actuarial valuations of the retirement systems, including PERS, TRS, the PERS and TRS DCR Plans, and JRS and National Guard, are all final, except for a couple of minor issues on the National Guard valuation, which they don't expect to change the results materially, if at all. MR. KERSHNER explained that the purpose of the valuations is to measure the funded status of each plan, the comparison between the invested assets and the liabilities. Then they review the experience on both assets and liabilities for the most recent year, and compare that to what they expected to happen. That creates what they call actuarial gains or losses, depending on whether the experience was favorable or unfavorable to the plan. MR. KERSHNER said that this is the first valuation that reflects the new assumptions from the four-year experience study, so they measured the effects of those assumptions and methods that the Board adopted in January. Also, for PERS, TRS, and JRS, they are reflecting the effect of the EGWP implementation, which reduced the healthcare liabilities. These results form the basis for the contribution rates that the Board will be adopting in September for FY21.

MR. KERSHNER stated that the market return on assets was 8.2 percent net of expenses, compared to the 8 percent assumption for the Plan year starting July 1, 2017. To smooth out the volatility of market gains and losses on the contribution rates, they use what is called an actuarial value of assets, which recognizes market gains and losses over a five-year period, and the return on the actuarial value of assets was 6.1 percent. The funded ratio, which is the comparison of the actuarial assets to actuarial liabilities, increased slightly for PERS and a little more for TRS, with three contributing factors: the regular experience gains and losses on both assets and liabilities; the effects of the new assumptions; and the effect of the EGWP implementation, which reduced the liabilities. The result is that overall, the plans are better funded as of June 30, 2018 than they were on June 30, 2017.

MR. KERSHNER explained that the funded status of the healthcare liabilities is over 100 percent, so the FY20 additional state contributions would be allocated 100 percent to the pension trust rather than split according to the unfunded liability. He directed Board members to an extra handout that revised the projections to reflect that decision. MR. WILLIAMS thanked MR. KERSHNER for making that update and adjusting a table of projections overnight.

MR. KERSHNER next reported on gains and losses to the plan, showing for both PERS and TRS, pension and healthcare, the main sources of the gains and losses. The two largest sources of gains on the pension side were gains from salary increases and the COLA and PRPA. Under healthcare, the

largest source of gains was due to medical claims experience. MR. YOUNG explained how the medical claims experience was affected by the discovery that in the prior year, the data they received included some claims for audio and visual benefits totaling about $10 million, slightly less than 2 percent of the total. Those claims shouldn't have been included, and by excluding them this year they got a lower starting point, which produced an actuarial gain. Other factors were that the actual increase of average costs from the prior to the current year was lower than the assumption, and because they base the assumption on the two prior years, dropping FY 16 and using FY18 was favorable.

MR. KERSHNER stated that the PERS pension liabilities increased by $555 million due to the new assumptions from the experience study, and the healthcare liabilities increased by $760 million, for a total of $1.3 billion.

MR. HIPPLER asked whether that $555 million was broken out, and what assumptions had been wrong to come up with this change; MR. KERSHNER explained that the assumptions weren't wrong, but were reset based on the last four years of experience. Decreasing the investment return assumption means more assets have to be put aside to pay the promised benefits. Also, the salary increase assumption was lowered, and changes were made to almost all of the demographic assumptions, such as mortality and turnover. The combined effects of those changes led to the $555 million. But the largest impact was from lowering the investment return assumption from 8 percent to 7.38 percent.

CHAIR JOHNSON explained that the law obligates the Board to go through an assumption review every four or five years, and this exercise was done primarily over last year, with the results coming out in the fall, but not formally adopted by the Board until January of this year, shortly before the new Trustees took office. MS. HARBO suggested that the new Board members should have a copy of that experience study.

MR. KERSHNER reviewed the summary of changes from the experience study, explaining that besides the changes already discussed, they also changed the cost method to allocate healthcare liabilities between past and future periods from level dollar to level percentage of pay, and added an administrative expense load to the normal cost, which is the cost of current year benefit accruals for PERS, TRS, and JRS. Another significant change was the method that is used to amortize the unfunded liability, from a closed 25-year period to a layered amortization method; that didn't affect the liabilities, but affected the funding of the unfunded liability going forward. After some clarification of how the layered approach works, MR. KERSHNER went on to show graphs of participant counts, actives, retirees, payroll figures, funded ratios, and so on. He pointed out that they are currently just above 35,000 participants, projected to increase to about 37,000 or 38,000 in 2027 or 2028, then to drop off because the DB plans are closed; in 20 years the number of retirees is projected to be about the same as now.

MR. KERSHNER reviewed the projected additional state contributions, noting that the intention to allocate the FY 20 additional state contribution entirely to pension will not affect the overall contribution amount. Discussion followed about how the additional state contribution is set, and how the contribution rates will start to decline as the unfunded liability is funded.

CHAIR JOHNSON recessed the meeting from 10:45 a.m. to 10:59 a.m.

10. PERFORMANCE MEASUREMENT – 1st QUARTER

PAUL ERLENDSON from Callan thanked the ARM Board on behalf of himself and all of his colleagues for renewing their contract with Callan, and he said they look forward to working diligently with the Board to make things work the best they can.

MR. ERLENDSON stated that the Board of Trustees has essentially three levers to control what happens with assets. The least important is which managers run the money. Second is how asset classes are populated, and the most important factor is the asset allocation that is chosen, how much in return-seeking assets, how much in public versus private markets. He said that the ARM Board performance report going back 10 years shows that 100 percent of what has happened has been explained by asset allocation. The 10-year return on the funds is about 10 percent, and almost all of it was because of asset allocation, with very little added by managers. But when the period is shortened to six or five or three years, the returns in total have been lower when the manager effect has been greater. MR. ERLENDSON stated that managers have contributed something in the neighborhood of between 7 and 10 percent of the total return.

MR. ERLENDSON explained that the money invested can only do what the capital markets provide. If the economy is growing, equities will give a share of that growth, but if the economy is not growing, one way to make money is to loan money and get interest payments, as long as those interest payments are higher than the rate of inflation. By mixing those two approaches, returns are blended and risk is mitigated.

MR. ERLENDSON discussed growth in GDP, projections for the future, and the labor market, with low unemployment in the U.S., Mexico, Japan, and China, but high unemployment in the Euro zone, which affects opportunities for investing. He said that inflation has been relatively muted, not only in the U.S. but worldwide, concluding that the inflation that people have been worried about for over 10 years has not transpired. He explained that high employment rates make it hard to fill jobs, and economic growth can be hindered if there aren't people to get the work done. He looked at market patterns over the past couple of decades, and noted that after 10 years of a positive market, one would expect a correction to be coming up.

MR. ERLENDSON reviewed performance of various asset classes, and emphasized that the single most important issue is, once a strategic asset allocation has been developed, not to second-guess it when market conditions change. He noted that a significant portion of assets are invested in real assets, and real estate and private equity have contributed significantly to overall performance results. Not being marked to market every day like stocks and bonds, price changes in real assets happen over longer periods, dampening volatility. Private assets are harder to benchmark and need to be evaluated more carefully.

STEVE CENTER went over the performance of the funds, starting with the PERS DC Plan, which ended the quarter with $1.1 billion under management. About 60 percent of the plan is invested in the target date funds, a proportion that most of the plans have in common. He said that the PERS plan has been cash flow positive for quite some time, with about $26 billion in net inflows during the first quarter. The TRS DC Plan had about $11 million of net inflows in the first quarter.

MR. CENTER noted that the deferred comp plan had a different asset allocation, with only about a quarter invested in target date suites, and the remainder pretty evenly split between the passive allocation and the active investment options; it stood at about a billion dollars at the end of the first quarter, and is cash flow negative, with about $2 million in net outflows each quarter.

MR. CENTER discussed the performance of the various building blocks within the deferred compensation plans. Overall performance for the target date suite has been positive; he noted that the target date suite that Alaska uses does have a slightly higher equity allocation than the peer groups they track at Callan, so there is a higher level of standard deviation, owing to slightly more risk. However, he said that the actual standard deviation for the options has been lower than the stated benchmarks over all of those time periods.

MR. CENTER reviewed the passive and active options, and said that everything has tracked the benchmarks and performed well. In response to a question about the risk quadrant from MR. WILLIAMS, he said that the funds are being compensated well for the risks that they are taking.

MR. CENTER then discussed the defined benefit plans, using the PERS portfolio for illustrative purposes. The underlying building blocks for the different plans are about the same, with JRS and the military plan having slightly different asset allocations. He reviewed the asset allocation of the PERS plan, and said the reason they talk about it every quarter is to remind people how it differs from its peers, such as having a lower allocation to fixed income, and he showed that it has performed fairly well, at or above median, relative to Callan's Public Fund Sponsor Database.

MR. CENTER reviewed the Sharpe ratio, which is a measure of risk-adjusted return. A Sharpe ratio of 1 means a fund is performing well for the amount of risk that it is taking. The 10-year Sharpe Ratio for the PERS plan is 1.2, which is quite strong and in the top quartile of the peer group. As for standard deviation, which is one area where being lower is good, the PERS plan has exhibited a lower than median standard deviation over all time periods.

MR. CENTER explained attribution tables, and said that they want to look at where the plan has differed from an asset allocation basis relative to the targets. He said that the plans are usually kept fairly close to their target allocations, and explained how deviations are measured, so that when a plan is underweight to a strong performing asset class, the asset allocation effect will be negative, and when the plan is overweight to a strong performing asset class, it will be positive. These deviations tend to be fairly low, but the manager effect is where impacts will be seen. When an asset class is overperforming its target, the manager effect will be positive, but if it is underperforming its target, the manager effect will be negative. This quarter, private equity and opportunistic lagged their benchmarks. MR. CENTER pointed out that private equity also is not valued frequently, and it will never have a one-quarter return of 12.75 percent like the public markets; as a result, the benchmark is a bit of a mismatch, so the negative 1.089 percent manager effect is not as concerning. MR. ERLENDSON said that they need to come up with some kind of proxy for private equity, and longer periods should show higher returns than the public market alternative, but over short periods, the information is of negligible value.

CHAIR JOHNSON asked how the benchmark that is set at 350 basis points over public markets was decided by Callan, and MR. CENTER replied that private equity is notoriously difficult to benchmark,

but there are options, like benchmarking relative to peers, or using some kind of market-based proxy, which is what PERS does, taking a public market benchmark and adding a liquidity premium. MR. ERLENDSON said that Callan worked with ARMB staff to come up with that benchmark, but he thinks most people would agree that 350 over public markets is pretty high. MR. BOB MITCHELL added that the 350 basis points is established in the investment guidelines in the private equity annual plan, and it would be taken up again in December. He said that the performance has been broadly consistent with that since the inception of the program, and there has been discussion about lowering that premium, which was one of the things that came out of the review of investment guidelines that Callan conducted. MR. BOB MITCHELL said that a return premium should be expected because there should be a benefit to getting the liquidity, but the question is what the minimum threshold is that they would be willing to accept. MR. WILLIAMS asked whether there is a risk in setting too low of a benchmark on private equity. MR. CENTER answered that there is a risk in setting it too low, and that would be seen in a downward-trending equity market; he said that some of their clients remove the noise that comes from a benchmark mismatch by making their private equity always match its benchmark, so then the manager effect is only seen in other asset classes.

MR. CENTER discussed the performance of the PERS and TRS plans relative to peers, and said that while the plans did trail the target benchmark by 2 percent over the last year, both are ahead by about 70 basis points; a full 1 percent over the last two years; and 70 basis points over the last three years. Over five and seven years, PERS and TRS are ahead of peers by about half a percent, and over ten years they approximately match the benchmark. Over the full 27.5 years that Callan has been tracking, both plans are slightly ahead of the benchmark by about 10 basis points.

MR. CENTER reviewed the performance of various asset classes, and noted that large cap domestic equity, which is now about 50 percent passive, lags the benchmark over most time periods, and there would be a proposal later in the meeting to remove more risk and move to more passive in that class. MR. ERLENDSON noted that the ARM Board has a low allocation to fixed income compared to others, having decided to have a low amount to make it a high-quality, short-duration portfolio. It didn't perform as well as peers, but that is because many have significantly more risk in their fixed income portfolios.

MR. WILLIAMS asked at what level manager effect should be a concern; MR. CENTER replied that there will be instances where the asset class should be expected to underperform, so it's not necessarily good to set a certain threshold. MR. ERLENDSON added that manager effect should be viewed by asset class, so for example, in publicly traded equities, the numbers should be positive, or managers aren't doing their job. He said that the ARM Board portfolio has a value bias, and a growth bias instead might result in a return of 5 or 6 percent more, so that is an explainable underperformance; the question then is whether being tilted toward value is the right kind of structure. MR. ERLENDSON said that they should look at asset class manager effect, and it's important to use attribution to figure out why returns are different from their goal.

11. FIDUCIARY/LEGAL EDUCATION

MR. GOERING explained that with a few new Trustees, it's important to give some context to what the Board does. This discussion of fiduciary duty satisfies the requirement in statute for annual training, and MR. GOERING said he also wants to identify some topics for additional Board and

individual training.

MR. GOERING explained that fiduciary duty comes from several sources, primarily statutory, some common law; and, although this Board is not subject to ERISA, it is likely that courts would use ERISA principles to help answer questions. He said that having fiduciary duty implies and necessitates a great confidence and trust and a high degree of good faith. The Board needs to work together to meet the responsibility that they have taken on.

MR. GOERING reviewed the two statutes that apply to fiduciary duty, and said that the important thing about having to follow the prudent investor rule is that there is no ideal prudent behavior that fits all situations and all times. The environment, the economy, the plans, demographics, and liabilities are constantly changing, and many different decisions could be considered prudent, but they have to fit the situation. Also, the purpose for investing must be considered, and the statute says that the Board's job is to invest "consistent with standards of prudence in a manner sufficient to meet the liabilities and pension obligations of the systems, plan, program, trusts." MR. GOERING noted that MR. MITCHELL was reluctant to draw comparisons to the Permanent Fund, because they are not really comparable; the purpose of the Permanent Fund and of the pension funds are very different.

MR. GOERING said that there are both objective and subjective components to the prudent investor rule, and the Board will be judged on what it does about things that they know about and would be expected to respond to. Not everyone on the Board has the same knowledge, and it is incumbent upon the people who have expertise to contribute that expertise when appropriate.

MR. GOERING explained that another important component in the statute is the Board's power to delegate. The Board has expert advisors, general consultants, the Investment Advisory Council, managers, and investment officers that they can delegate to and rely on their expertise.

MR. GOERING said that fiduciary duty applies to all of the funds that the Board manages, not just the DB plans but even the DC self-directed plans. The responsibility in the latter context is narrower, to provide a range of options to the DC plan participants so that they can construct a reasonable investment portfolio. The Board decides what options to offer and has a responsibility to manage those options in a responsible way. He emphasized that it is an ongoing process, and Trustees need to consider whether decisions made in the past continue to be prudent. Also, they are required to exercise their fiduciary duty in the sole financial best interest of the fund entrusted to the fiduciary. MR. GOERING explained that sole financial best interest focuses on the financial outcomes; they aren't to engage in social engineering or try to accomplish political policy goals. However, he said that he thinks there has been a change over time in how sole financial best interest has been viewed, with it now being acknowledged that things like ESG factors are important in assessing the long-term financial prospects of companies.

MR. GOERING asked rhetorically, "Isn't it really impossible to carry a fiduciary duty as a part-time board?" He said the answer is clearly yes, it is. However, the legislature has provided a lot of help in the resources named above, and he said the Board has done well in utilizing those resources, and he encourages them to continue to do so, because without them the Board wouldn't be able to do what it does.

MR. GOERING emphasized that the principal thing the Board has control over is process, and it's important to have processes in place and to follow them, and refine and improve those processes over time. Process starts with the structure of the organization, some of which is statutory, and how they govern themselves, in this case with a committee structure. The Board also has the ability to adopt policies, and they have a Policies and Procedures manual. Staff and auditors make sure those policies and procedures are followed. Also, the Board receives reports, not just from its staff, but also from outside managers, general consultants, and real assets consultants, which are a very important part of the process. MR. GOERING said that the Board needs to think of process as an organism, something which is living, growing, responding to its environment, changing over the course of time.

One important thing that the Board does is delegate, some of which is statutory like the Department of Revenue as staff, and also to others outside of state government. The statute says that the fiduciary duty is breached if the person to whom the Board delegates doesn't meet the applicable standard of prudence, but it says that if the Board prudently delegates, they are protected from liability. It is important to have processes in place to detect and prevent breaches of duty by delegees.

MR. GOERING said that while the Board has the Department of Revenue as staff, the scope of what they delegate to staff is within the Board's control. The CIO and some others have been given the ability to do some things without explicit authority, sometimes based on certain conditions, or within certain limits, or with notification to the Board Chair, but the scope of such delegation is always under the Board's control. He said the Board should consider the scope of delegation on a regular basis, and he discussed examples of what is and is not considered delegating when hiring fund managers.

MR. GOERING said that for the most part, consultants, attorneys, and advisors to the Board have professional responsibilities, but are not fiduciaries as to the Board's work. MR. GOERING said that the fiduciary duty is carried by the Board, and the statute says that each member has a fiduciary duty as well, so the question is how to reconcile one's individual duty as a Trustee to the Board's fiduciary duty as a whole. He said that even though each Trustee fits into a certain area, such as two PERS and two TRS members, they do not represent those constituents; they have a fiduciary responsibility to the plans, not to the component of the plans that they have been appointed from. In most cases, the interests of the constituents and the plans are aligned, but if there is a conflict, Trustees should do what is best for the plans. He said that it is important for Trustees to recognize when they need to rely on the expertise of others or do some research, to know the limitations of their knowledge and work to minimize those limitations. He concluded by urging Board members again to use the resources that have been provided to help them make the best decisions.

CHAIR JOHNSON recessed the meeting from 12:15 p.m. to 1:30 p.m.

12. ASSET ALLOCATION REVIEW AND APPROVAL

CIO BOB MITCHELL said that there have been a number of discussions between staff and the Board over the past year regarding asset allocation, and he gave some tentative suggestions at the April meeting, which have been incorporated into subsequent discussions with Callan. He reviewed recent actions to provide context for the asset allocation discussion to follow.

MR. MITCHELL said that the major decisions that the Board makes are asset allocation, manager

structure and implementation, and monitoring results. He quoted from the ARM Board's Policy and Procedures manual that the fund's purpose is to "achieve the expected long-term total return, as determined by the actuarially required rate of return, while minimizing risk as determined by the projected standard deviation of the range of potential future returns." He said that the expected return requirement was changed in January from 8 percent to 7.38 percent, and in looking at asset allocations to achieve that objective, they use Callan's capital market assumptions. There is still a difference in underlying inflation assumptions, so that has to be calibrated.

MR. MITCHELL noted the observation that the portfolio as a whole has become riskier over time, and the reaction of the Board has been gradual. He explained that in the '90s, the fund was 40 or 50 percent fixed income, and now it's down to 10 or 15 percent. He said the capital market assumptions are a function of the time horizon, and although the ARM Board typically looks at a 10-year horizon, Callan has longer-dated capital market assumptions as well. That led to the framework he presented, with steps to follow in deciding on asset allocation: first, identify the time horizon; then the asset classes; then analyze what combination of those give the expectation of achieving the expected return with a minimum amount of risk. He also added the step of identifying the policy portfolio, to have a separate policy benchmark.

MR. MITCHELL explained that as the time horizon is extended, expected returns go up. He said that there are three raw ingredients to capital market assumptions: the expected return of each asset class; the riskiness of each asset class as represented by the standard deviation; and the correlation of the performance of these asset classes. As the time horizon is extended, less risk is necessary, but with a shorter time horizon, if the return objective doesn't change because of the lower underlying assumptions, more risk must be taken to achieve that objective.

MR. MITCHELL said that the ARM Board has a relatively long time horizon, with benefits to be paid for decades into the future, and longer time horizons are less reactive to annual changes in the market, which leads to a more stable asset allocation. He explained how duration of the liabilities interacts with earnings assumptions, and reviewed weighted average time to payment and sequence risk as factors to be considered.

MR. MITCHELL reviewed the existing strategic asset allocation for the majority of the plans, excluding the military plan. About a third of the portfolio is in alternative assets: real assets, private equity, and absolute return. He said that they are about to engage a new real assets consultant, and in September the Board would consider the real assets annual plan, but overall they are happy with it, and it has provided diversification cash flow into the plan.

MR. MITCHELL showed that absolute return is relatively expensive, with high management fees, which raises the bar on why the plan should invest in that asset class. He noted that absolute return has been in the portfolio for 15 years, and has basically delivered performance equivalent to fixed income.

MR. MITCHELL explained that there is no passive option in alternative investments, and the dispersion of outcomes is significantly higher than in public markets, so there is an increased burden on the Board and staff to select the right managers to execute in those asset classes. He showed the range of outcomes in private equity, and said that staff have concluded that they should exit

investment in that asset class. There were a total of seven strategies in absolute return, and they terminated one in April. Of the six remaining, they want to keep three, which he said he would characterize as not traditional absolute return because they have other properties. One is a private credit investment that they would move to fixed income, and two are factor-based and they would move them to opportunistic. He said they also believe there is merit in collapsing cash and fixed income into one asset class, since cash is basically fixed income, and the benchmark would be changed to reflect that. They would also reorient opportunistic. He said they would recommend an allocation that has more fixed income than currently, which would give flexibility to make some efforts to improve performance.

MR. BOB MITCHELL concluded by saying that they envision the focus moving to tactical asset allocation, and they are going to propose a risk parity strategy in an action memo. There was some discussion of the proposal to eliminate absolute return, and of the three strategies that they propose to keep and reclassify. MR. HIPPLER asked whether the remaining mandate that is more like fixed income provides hedging value in the sense of performing in a divergent way from equities; MR. MITCHELL replied that that is the goal, and funds of this nature generally have a relatively low correlation to equities, which is the main reason for investing in hedge funds or absolute return.

13. PERS/TRS ASSET LIABILITY STUDY
FY20 ASSET ALLOCATION

JAY KLOEPFER from Callan gave the second part of his presentation from the April meeting. He reminded the Board that they had seen the actuarial liability model, which used 2017 valuation because the actuary was still working on the 2018 valuation with the experience study. Callan received the changes, and now the 2018 valuation is built into the model. He said that with the new actuarial and inflation assumptions, the target is 7.13. He said they modeled all four of the major plans, PERS and TRS, medical and pension. They concluded that it still makes sense to invest those plans the same, even though there are differences between medical and pension, which are different kinds of formulas. He said they actually ran the study seven ways, with those four plans separately, then with just TRS and just PERS separate from each other, and then everything together. They've added uncertainty and engaged in a process called the Monte Carlo simulation, which allows them to build a range of potential results, which will all help inform a recommendation for a final portfolio.

MR. KLOEPFER reviewed the number of participants in the plans, active and retired, and commented that the plans are very mature and have been closed to new participants for over 10 years, so the inactive liabilities are more dominant now. He showed the impact of variability from inflation with all four plans combined, giving a range of results for liabilities. Inflation impacts salaries, which impacts the final calculation and the benefits paid. However, he said the real variability comes from the investment side. He went over cash flow projections and some rules of thumb, saying that a manageable rate is 5 percent of funds going out, but beyond 8 or 9 percent, liquidity needs can dominate what an investment program can do. Net outflow for PERS ranges from 4 to just over 5 percent, and for TRS it is from about 5 to a little more than 6 percent. So even though there is a fair time horizon left, it is becoming more important to consider liquidity, which he said is typical of mature plans.

MR. KLOEPFER reviewed projected funded status, using the assumption of 7.38 percent, and

showed that both plans are projected to improve in their funded status over time, with TRS a little better funded after 10 years. MR. HIPPLER asked if this improvement in the funding is predicated on the projected additional state contributions; MR. KLOEPFER replied yes, that this model assumes the state will fulfill the contribution policy that is currently stated.

MR. KLOEPFER explained risks that can affect the liabilities, including inflation risk and its effects on salaries and on healthcare costs, and the capital markets themselves if there is a downdraft or if investments underperform expectations. He reviewed capital market expectations, which the Board went through in April, and stated that the current portfolio has 10 percent in fixed income, 4 percent in opportunistic, 1 percent cash, and roughly 85 percent in growth assets. He described it as a growth-oriented portfolio, and said that it may be wise to reconsider the level of risk. He said that about a third of the portfolio is in alternatives, and that is not unusual among big public funds, but it's also an element of liquidity and risk that is being reevaluated by many. He noted that if expectations keep being lowered without changing the target return, it pushes funds further out on the risk spectrum. Time horizon is one of the best ways to address this problem.

MR. KLOEPFER said that last year there were three corrections, yet the equity market was still only down 5 percent, but it was a wake-up call for many funds.

As for why longer time horizons result in better forecasts, he explained that they believe there is a long-term mean to which the asset class returns can revert, or "long-term annualized equilibrium." If the time horizon is longer and the target is the same, it may not be necessary to take as much risk to get there. However, some funds have tried to use longer-term numbers to justify maintaining a high expected rate of return, and the ARM Board has already lowered theirs. MR. KLOEPFER showed what it would take to achieve 7.13 percent with different time horizons with examples of different asset mixes; he explained how the calculations are done, and went over the simulated results. He said the intention is to consider the financial condition of the plan under the expected case and then simulate what the range of results are to see what might be an appropriate mix to consider going forward. They've used the asset model and the model of liabilities, and then they did the Monte Carlo simulation. He explained the Monte Carlo simulation as a set of expectations for all the parts of the capital market, for inflation, for interest rates, and for each of the different asset classes. With a return and a risk and a correlation, they have distribution results for each, from which they can solve for the financial condition of the plan. He said that they went through that whole process 2,000 times for each plan separately, then added them all together for the range of potential outcomes for market assets and projected liability 10 years out.

MR. HIPPLER asked whether the model projected any risk for the ongoing commitment from the State of Alaska to pay $200 million a year to this fund; MR. KLOEPFER replied that they assume that the funding policy will be followed, and it assumes that in a worst-case outcome, the funding policy will cause a greater contribution to be made. MR. HIPPLER commented that that is significant, that part of the model is pushing some risk onto the state in the form of potentially demanding larger contributions in the future; MR. BOB MITCHELL agreed, emphasizing that the riskier the portfolio, the greater the possibility for large required payments from the state. If risk is dialed back, the magnitude of those potential payments would also decline, and this model is not reflecting that because it assumes that the state stands by as a shock absorber. MR. HIPPLER noted that also, a more conservative investment policy on average will require the state to contribute more.

MR. KLOEPFER reviewed cumulative employer contributions for all the plans over a 10-year period, making the point that the plans are not fully funded and part of the commitment of the current funding policy is to put in the normal cost plus to pay down the unfunded liability, amortized over a certain period of time. The actuary does that valuation every year. Now they are trying to model the plan over the next 10 years and simulate what could happen with capital market uncertainty. He noted that when they did this study 10 years ago, the number was much bigger, and the ARM Board has made substantial contributions to the plans and changes to the plans, trying to reduce the unfunded liability. CHAIR JOHNSON pointed out that it isn't a policy, it's the law.

MR. ERLENDSON explained that the challenge is to decide on what basis to choose one mix over another, and that's where risk/reward tradeoffs come in. A more aggressive mix might mean needing to put in an extra billion dollars over the next 10 years.

MR. KLOEPFER discussed funded status outcomes and how the results varied for the four asset mixes shown. He said there is a meaningful chance that the plan could have a surplus 10 years out, but that is not the expected case; he said that in comparing the mixes, they should look at reward versus risk, or how much is the ultimate cost reduced in the expected case, and how much does it go up in the worst case?

MR. KLOEPFER said that in trying to make a decision, they need to consider how much it will cost the sponsor over the long term, how much risk to take to try to close the gap, and if there is a benefit to be had from making any change. He said one of the first questions is whether they can just keep the current portfolio; he said he expected to recommend lower risk, but the time horizon is still long, and liquidity needs are manageable with the current asset allocation and funding policy. He said that illiquid investments are about a third of the portfolio, and the Board may want to consider reducing that amount, because quick changes aren't possible with those asset classes. He said the current target is well diversified in its exposure to stocks and bonds, to private equity, a collection of real assets, a collection of diversifying strategies and hedge funds; however, through discussion with CIO MITCHELL and his staff, they think some changes may be worthwhile, specifically a little more in risk-mitigating assets, and rearranging the diversification in the portfolio. Fixed income could be an excellent source of liquidity, but it's now at only 10 percent. MR. KLOEPFER emphasized that return alone is not going to achieve funded status, and the funding policy is necessary to make progress toward that goal. There is a lot of sensitivity, both to funded status and contributions to the capital market risk, which is why they suggest reconsidering the current risk posture for the fund. He recommended a target similar to Mix 3, which is a little less risky than the current portfolio but still diversified.

MR. KLOEPFER said that the Board should be congratulated on both sets of funds, because they have made substantial progress since the last study. He acknowledged that contributions have helped a lot, and he knows the numbers can be daunting. He said the riskier portfolio for the past 10 years has achieved return, but they might want to lower the risk now. He then went into more detail on things to consider if they decide to implement the recommended Mix 3. MR. ERLENDSON noted that these assumptions are predicated on getting index benchmark returns, so implementation would be passive except for the private markets, and they would have further recommendations about that. MR. BOB MITCHELL reviewed and explained how the current asset allocation differs from Mix 3

and Mix 4, and how some asset classes might be adjusted in each case. He pointed out that Mix 3 would lower the risk profile considerably compared to a small loss of return, and it's the state and the other employers in the plan who ultimately bear that risk if the expected returns don't occur. MR. KLOEPFER summed up by reviewing the recommended changes, saying that it's going to take some time to implement them if the Board so decides, and there are considerations of cost and how many assets are up in the air at once.

MR. WILLIAMS asked if keeping the 20-year timeline means that next year they are still looking ahead 20 years, and in five years they are still looking out 20 years; MR. KLOEPFER replied yes. MR. WILLIAMS asked then as they get closer to the end of the plan paying out, if the timelines would be shorter, because it would be done, but right now it makes sense to look forward 20 years; MR. KLOEPFER said yes. MR. WILLIAMS commented that if what the Board is doing now is getting close to 7 in their analysis, and the target is 7.13, then the question is, how much more risk to take to try to get that additional .13, and he thinks it would be unwise to take a lot of risk to get marginally more return. He wants to get the best value for the State of Alaska, but doesn't want to take a whole lot of risk to get there.

CIO BOB MITCHELL added that he had checked with Buck, and they said they would be comfortable with the existing 7.38 percent assumption with the mix under consideration. He asked MR. KLOEPFER to talk briefly about the military plan; the difference is that there are not private assets in that plan, and Mix 4 is similar to the current portfolio for that fund.

MR. HIPPLER asked if the plan were more poorly funded or better funded, would that impact what a prudent trustee would seek as a target return; MR. KLOEPFER replied that they do deal with plans that are 40 percent funded, and Callan advises that they aren't comfortable with an 85 or 90 percent growth exposure at 40 percent because the plans are five or six years away from going to zero. But intelligent people can see the same data and make different decisions, so it's a philosophical question of whether to take less risk because the discount rate is lower.

ACTION ITEMS:
Resolution 2019-03
Resolution 2019-04

MR. BOB MITCHELL emphasized that asset allocation is one of the most important decisions that the Board makes, and he reviewed the changes that are proposed for FY20 with Mix 3. He said that the second resolution adopts Mix 4 for the military plan, which has the same expected return as the existing portfolio. CHAIR JOHNSON suggested postponing the vote on Resolution 2019-03 until after the presentation the next day on manager structure and absolute return, but the Board was able to address Resolution 2019-04.

VICE CHAIR BRICE moved to adopt Resolution 2019-04. MS. HARBO seconded the motion. MR. BOB MITCHELL stated that the resolution adopts an asset allocation for the Alaska National Guard and Naval Militia Retirement System which has the same expected return as the existing allocation, adjusted for Callan's most recent capital market assumptions.

A roll call vote was taken, and Resolution 2019-04 passed unanimously.

In response to a question from MR. WILLIAMS, MR. BOB MITCHELL agreed that the Board could vote on the investment action item to eliminate absolute return as an asset class. MR. MITCHELL read the action item entitled "Absolute Return Terminations, PAAMCO Prisma and Zebra Capital Management": "Staff recommends the Alaska Retirement Management Board direct staff to terminate the absolute return investment mandates managed by PAAMCO Prisma and Zebra Capital Management." He noted that he had previously shared staff's view of absolute return, that it is opaque and relatively expensive to invest in, and it has outcomes net of fees that have not been compelling since the inception of the program. MR. MITCHELL said that there are six mandates currently in the program, three of which they want to retain, and those are the subject of another action memo; three others they request to terminate, one with Prisma and two with Zebra.

CHAIR JOHNSON asked whether MR. MITCHELL feels comfortable that he has conveyed in today's meeting to the Board such information as he has to support this proposition; MR. MITCHELL said yes. CHAIR JOHNSON then asked the IAC members if they have any comment; DR. JERRY MITCHELL replied that they have discussed this recommendation with staff, and he thinks it's a good decision. MR. SHAW concurred.

VICE CHAIR BRICE moved the ARM Board direct staff to terminate the absolute return investment mandates manages by PAAMCO Prisma and Zebra Capital Management, to be implemented in FY20, so effective July 1, 2019. MR. WEST seconded the motion.

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

After some discussion of Resolution 2019-03, MR. WILLIAMS commented that he thinks waiting until the next day to vote on it is good. MR. WEST explained how the projected contribution rates are computed by the actuary, and if there are losses, they have to be made up, but are smoothed over the period of time.

MR. WEST said that it is actually the Board's responsibility, not CIO Mitchell's, to set the rates. He explained that Mr. Mitchell is the investment manager who gives the Board guidance, and Callan gives the Board results. The 7.38 percent is actually the real rate of return for the prior four-year experience study, which the Board didn't change, and decided to stay with. He pointed out that those assumptions come from a mathematical model from the real world, whereas the actuaries deal in estimations of the future.

RECESS FOR THE DAY

CHAIR JOHNSON recessed the meeting for the day at 3:45 p.m.

Friday, June 21, 2019

CALL BACK TO ORDER

CHAIR JOHNSON reconvened the meeting at 9:00 a.m. on Friday, June 21.
All Board members were present.

ACTION ITEMS: Resolution 2019-03

CHAIR JOHNSON took up the allocation discussion first because he wanted to have all the Callan people available to answer questions. CIO BOB MITCHELL repeated that one of the most important responsibilities of the Board is to adopt the asset allocation, and staff recommends an asset allocation based on their best thinking, which is reflected in Resolution 2019-03.

MR. BOB MITCHELL reviewed the factors that led to this recommendation, and pointed out that in addition to the asset allocation, the resolution lists the expected geometric mean and the standard deviation, which is consistent with the information from MR. KLOEPFER's presentation Thursday. MR. MITCHELL said that he had confirmed with Buck that this asset allocation would be consistent with that return expectation.

VICE CHAIR BRICE moved Resolution 2019-03. MS. HARBO seconded the motion.

VICE CHAIR BRICE briefly summarized that this allocation would increase broad domestic equity from 24 to 26 percent, drop global equity from 22 to 18 percent, raise fixed income aggressively from 10 percent to about 24 percent, drop opportunistic from 10 percent to 8, back off real assets from 17 percent to 13, and increase private equity from 9 to 11, plus completely get rid of absolute return. MR. MITCHELL confirmed that, then VICE CHAIR BRICE asked what the risk number was like last year compared to this number of 13.8; MR. MITCHELL replied that in the existing asset allocation, the risk is 14.79, so the new allocation is roughly 1 percent lower in risk, and about 7 percent lower in absolute returns.

MR. WEST asked over what period of time the transition would be made; MR. MITCHELL replied that they intend to make substantial progress in the first quarter and most of the progress over the first two quarters.

Trustees asked some questions, then a roll call vote was taken. Resolution 2019-03 passed unanimously.

14. MANAGER STRUCTURE

CIO BOB MITCHELL began by saying that though asset allocation is probably the most important decision the Board makes, manager structure is also very important. Manager structure is how the asset allocation is implemented, and includes questions like whether to have passive or active investments in asset classes, how many managers to have, and how to weigh the allocation to the various strategies within each asset class.

MR. MITCHELL said that at the September meeting, in conjunction with the annual real assets plan and with the new real assets consultant, an underwrite of the real assets asset manager structure and international equities is planned, and in December, they will consider the annual plan for private equities. In absolute return, he explained that the intention is to move the Crestline Strategies to fixed income, which does not require an action memo, and the JP Morgan and Man Group strategies will be moved to opportunistic.

MR. MITCHELL explained that the opportunistic asset class was formed starting in FY17; staff has conducted a review of the underlying strategies, and they want to move some of the fixed income components that are broader than Treasuries from opportunistic into the fixed income asset class. Also, they have conducted a review of what he characterized as defensive equity strategies, and reached the conclusion that the combination of passive investments and factor-based or factor-tilted allocations result in higher risk-adjusted returns than defensive equities do. Therefore, they plan to collapse strategies that are somewhat dedicated to equities and fixed income.

MR. MITCHELL reminded the Board of conversations about potentially adding a risk parity strategy; he said that their intent would be to incorporate that within the opportunistic asset class if the action memo later is approved. He showed a table of the changes to be made and explained how various strategies would be moved and reclassified, with some terminations.

MR. MITCHELL said that staff is more favorable to active management in areas of the portfolio where they think the odds are better of outperforming, and explained how they came up with that view. He showed how they used information from Callan to estimate the proportion of active managers that outperform the benchmark by asset class, and he reviewed the percentages, or the odds, for each; he said that staff's view is that the odds are better in international equities for active management than they are in domestic equities. There are two components to considering active management: the odds of success, and the reward for getting it right.

MR. MITCHELL said that 10 years ago his view would have been different, but in recent years, technology has advanced and academic research is starting to influence what they can invest in, particularly in factor-based strategies, which they discussed at the April meeting. He briefly explained that in factor-based strategies, by accepting various risk premia, investors should expect to get additional performance. He explained that after considerable academic study, consensus has coalesced around certain factors, and the performance of these multifactor strategies resembles the performance of some active managers. If a factor-based portfolio can be overlaid on a passive portfolio at lower management fees and achieve outcomes that are similar or maybe better than active in some cases, why have active management? This raises the bar.

MR. MITCHELL showed analyses of a potential 70 percent passive, 30 percent multifactor-based portfolio for domestic equity and for international equity, and it turns out that combination would have performed better than the current mix with active managers in both of those asset classes, gross of fees.

In domestic equities, MR. MITCHELL said that they recommend employing the S&P 1500 index instead of the Russell 3000, and collapsing the number of mandates in domestic equities, both internally and externally managed. He contrasted the S&P 1500 to the Russell 3000 and explained their reasoning, discussing other indexes as well.

MR. MITCHELL showed excerpts from Callan charts on where it makes sense to be active, and discussed the difficulty of implementing active management in an asset class. Investors have to hire the right managers, monitor them, weight them, and decide how reactive to be to changes, so it is preferable to do active management only in areas where the odds are good. He reviewed the structural

mix that they are looking to implement in domestic equities, and outlined their recommendations. He said that the head of their internal equity team estimated that the recommended changes would reduce turnover by 5 percent, and it would be easier operationally to have their managers managing fewer portfolios.

VICE CHAIR BRICE commented that he has been on the Board since 2012, and the message from the IAC, staff, and everyone has been in favor of active management, so this is a major paradigm shift, and he asked for feedback from the IAC. DR. JENNINGS said that he thinks this is a good move which simplifies larger allocations, and said he is a bigger advocate for passive than some of his colleagues. He noted that the changes embedded in the move from the Russell 2000 to the S&P 600 is toward higher quality and more liquidity, as well as things that are essentially factors. Moving from the most popular index product to the second or third most popular is a little out of the mainstream, but it's not radical, and DR. JENNINGS said that he endorses it.

DR. JERRY MITCHELL agreed with Dr. Jennings, and said that if he has any reservation, it is just that when the decision is made to do this, they need to stick with it for a while. VICE CHAIR BRICE questioned whether the timing is right for this; DR. JERRY MITCHELL replied that no one can tell what the market is going to do, but he thinks it is a good thing to do now.

MR. SHAW commented that any plan has limited resources as to staffing and where to spend their time and energy, so it's important to get the most bang for the buck. He agrees that active management should be reserved for areas where there is a high probability of outperformance, and passive makes sense for the rest.

MR. WILLIAMS asked whether the S&P 900 has an index fund; MR. BOB MITCHELL replied that it would be managed internally. MR. WILLIAMS asked whether staff could execute these passive benchmarks as well as Vanguard and at a similar fee structure; MR. MITCHELL answered that he estimates the fee load for internal equities at about 3 basis points, and thinks it will go down a little bit, but one could argue that it's a bit higher than what they might get externally. However, one must consider whether it is a commodity, or a source of value added, or if there are other benefits from this investment; the in-house perspective can be valuable at times, but they do need to be competitive with external management. He said they are still building the strategy, and they will continue to evaluate the cost structure and look for ways to rationalize it from a commodity perspective. Also, their implementation has what he characterizes as a relatively tight tracking error. They want to deliver the returns of the underlying benchmarks, and there may be opportunities to marginally improve performance. The internal equity team is also looking at potentially deploying international equity investments, which becomes a scale issue, whether to increase the scale or increase the active risk, and a third option is to look at ways to rationalize expenses relative to external sources. MR. MITCHELL said that it's a journey, and they aren't done yet.

MR. WILLIAMS commented that he had always thought of small cap active managers as completely outperforming small caps to an index, and the S&P 600 chart shows that that is not really the case, which surprises him; he asked whether Mr. Mitchell thought there is a possibility in the future that that could happen in other areas as well. MR. MITCHELL replied that he is not aware of any indices on the international side, but at the top of a research agenda he would ask if there is a way they could prod the S&P or develop a quality-based index in-house that could potentially capture that. He said

that would be a lot of work, though, and he'd prefer the S&P do it, but there have been studies showing that the quality tilt seen on the domestic side appears to be robust across the majority of international markets as well.

MR. WEST explained that earlier in the 21st century, the accounting profession in the U.S. expanded its depth, partly with government prodding, and new agencies were created. As a result, now there is a lot of very detailed, similar information from everyone who issues domestic securities under the securities and exchange rules, and the analytics are more automated, so it is hard for any stock picker to have a real advantage over another. He said this is the result of tighter rules, and he pointed out that in some foreign countries, reporting that complies with standards might report the same event quite differently, because the standards aren't as tight. He summarized that the information available on domestic equities has increased, and is tightly controlled, so there is less room for interpretation and it's harder to pick an oddball because everyone knows about it.

CHAIR JOHNSON recessed the meeting from 10:42 a.m. to 10:54 a.m.

15. CHINA STRATEGY MANAGER (ALLIANZ GLOBAL INVESTORS)

CIO MITCHELL said that in June of 2018, staff requested the Board authorize them to engage Callan in a search for a China equity mandate. Callan developed a list of eight semifinalists; staff conducted due diligence and selected two finalists for the Board's consideration, Allianz and Schroders. MR. MITCHELL said that at the end of the meeting there would be an action item requesting that the Board engage one of the two managers for a $100 million mandate.

AMANDA MONTGOMERY from Allianz, who is part of the institutional client service team in San Diego, introduced ANTHONY WONG, a portfolio manager for the strategy being discussed, who works out of Hong Kong. She also introduced CHRISTIAN McCORMICK, a senior product specialist who is based in the U.S. but works closely with the China equity team.

MR. WONG explained that the China A-Share market had never been relevant to offshore or global investors until recently, but there have been positive developments over the past year, starting with how big it has gotten; the total market cap of just the Onshore China A market is now at a similar level with the total Euro area, and the Onshore market alone accounts for 70 percent of the overall China equity space. Also, the China A market has become much more accessible to foreign investors, and last year the MSCI decided to include China A-shares in their emerging market index, which has changed the mentality of global investors. MR. WONG said that the China economy accounts for 15 percent of global GDP, but is still underrepresented in the global investors portfolio.

MR. McCORMICK explained the market cap breakdown in the China Onshore market, with A-shares available to foreign investors and listed in the Shenzhen and Shanghai stock exchanges. China stocks that are listed in Hong Kong or U.S. ADR are referred to as Offshore. There are about 3,600 stocks that are only available on the Shenzen or Shanghai stock exchanges and can only be accessed via the quota systems or through Stock Connect. Of those, about 1,300 are currently available through Stock Connect, and the main obstacle for eligibility is the market cap minimum, which equates to about $870 or $880 million in U.S. market cap. Those 1,300 represent a pool that Allianz would invest in, and the MSCI inclusion and other upcoming inclusions open up the Chinese capital markets and

enhance the institutional investor participation. MR. McCORMICK said that over the long term, that should decrease some of the risk and professionalize the market.

MR. McCORMICK said they often are asked, if there are stocks listed in Hong Kong and in U.S. ADRs and some of the broader indices, why a stand-alone China A allocation is a good idea. He explained that the Offshore stocks are dominated by communications, energy, and utilities, and not investing directly in China A stocks means missing out on a wide variety of sectors, especially pro-growth ones like industrials and healthcare.

MR. McCORMICK showed 10 years of correlation using the underlying benchmarks to represent the China A-Share market and others such as world equities and European equities, stating that China A-Shares has a very low correlation, about .4 to Global Emerging Markets and about .6 to the Hong Kong-listed China stocks. This indicates that China A-Shares are affected by domestic factors in China, while the others are much bigger and more exposed to international influences, which makes China A-Shares a good diversification opportunity.

MR. BOB MITCHELL asked about the investment vehicle under consideration and where the assets would be custodied if they invest in this strategy; MR. McCORMICK replied that last year, they developed a U.S. LLC with Ohio State University, which is domiciled in the U.S. and custodied with State Street. There is an internal contract for Anthony Wong and his team to manage those assets, which are traded through Stock Connect.

MR. HIPPLER asked whether the correlation between U.S. equities and China A-Shares, currently about .3, has declined over the last couple of years due to the performance of the Chinese stock market, and what it would have looked like in 2016 or 2017. MR. WONG replied that they would expect the correlation between the China A-Share market and the rest of the world to go up, but very gradually, as participation by global institutional investors rises. He said that currently, about 4 percent of the daily turnover in the China A market is coming from foreign institutional investors, very different from the offshore stock markets, including Hong Kong, in which 80 percent of the turnover is from global institutional investors; it will probably take quite some time for the two to converge.

CHAIR JOHNSON asked how the Board should explain to its beneficiaries that they are going to invest in a China-only strategy at a time when there are significant trade war issues and friction in the region; MR. WONG replied that it should be a long-term investment, as it is an emerging market, and as growth in China becomes more sustainable, the risk of investing in China should be lower. Also, he said that there are a lot of economy companies available, so investments are supporting the long-term growth of China. He said that in the near term, those policy headwinds or trade disputes between the U.S. and China may have a negative impact on investment sentiment, but the fundamental impact on the Chinese economy would be quite limited. He also stated that the Chinese government this year is more ready to deploy its monitoring of fiscal policy to protect the downside risk of the Chinese economy; the government has already injected liquidity, and the interbank interest rate has come down a lot. Other initiatives like tax cuts and infrastructure adjustment also help cushion the downside risk.

MR. WILLIAMS asked how much of an issue things like suspensions of trading are, and whether they think it will improve, stay the same, or get worse; MR. McCORMICK replied that it has

improved tremendously, with trade suspensions systematically coming down. Also, the Chinese government has imposed much tighter restrictions on when a company can suspend its shares, and such actions are almost nonexistent in the 1,300 stocks in Stock Connect.

MS. MONTGOMERY emphasized that their strategy is designed to deliver consistent performance driven by stock selection, not sector allocation or rotation. Risk management is at the heart of what they do, and can be seen in the disciplined portfolio construction. MS. MONTGOMERY said that they believe their edge is in risk management and mitigating the nonfundamental noise of the very volatile Onshore China A market.

MS. MONTGOMERY said that Allianz Global Investors manages $600 billion in 25 offices around the globe, investing in nearly all asset classes. They are owned by one of the world's largest insurance companies, Allianz SE, which has been in the asset management business for 125 years, with a culture of risk management from the top down. In the Asia Pacific region, they have over $25 billion invested, with 117 investment professionals among five offices. She also highlighted their "Grassroots Research," a unique external network research capability that they have used successfully in the region for over 20 years.

MS. MONTGOMERY showed five China equity strategies going back to 1985, but focused on the China A-Share market that they are presenting today, which is 100 percent China Onshore. The strategy was launched in 2009, and the assets under managements are currently about $970 billion, with more expected soon from another institutional investor.

VICE CHAIR BRICE brought up an article in BuzzFeed recently that featured the ARM Board as an investor in industries that were engaged in the surveillance activities of the Chinese government, and he asked what they are doing to mitigate such "headline risks" for investors. MR. WONG replied that the company in question is Hikvision, the Chinese global leader in producing surveillance cameras, and they held an engagement meeting with Hikvision to share with them the global investor concern about their ESG positioning. The initial feedback from management was that they would reduce their business cooperation with local governments, and do business through wholesalers or project solution providers, which will help avoid social responsibility concerns.

MR. McCORMICK discussed the Grassroots Research tool, a proprietary expert network internal to Allianz. This group does not have portfolio management responsibilities; it is a network of industry contacts, academics, and reporters from which their portfolio managers or analysts can commission reports to verify what executive management of a company is telling them. He said that the lack of significant institutional presence within the China market means fewer resources by which to vet what company management tells them, and historically company management in the China A area has tended to be overly optimistic with financial projections and so on. Grassroots provides an invaluable, unbiased resource.

MR. WONG went over how they manage their China A-Share strategy, saying that they try to adopt an institutional investment approach in a retail investment-driven emerging market. Over 80 percent of the daily turnover comes from retail individuals, who are relatively unsophisticated, usually short-term focused and following price momentum, and paying very little attention to company fundamentals and risk management. This results in frequent sector rotations and drastic share price

movements, creating a lot of opportunities for active disciplined investors. MR. WONG said that for the China A-Share fund, the style is growth at reasonable price, with a primary focus on picking stocks with sustainable and superior growth, but they don't want to overpay, so they emphasize the valuation and quality of companies.

MR. WONG said that they believe risk management is very important, so they keep cash at a minimum level and do not do market timing. They focus purely on bottom-up stock selection, aiming to minimize uncertainty at the market and the industry level and to deliver a much more consistent and repeatable outperformance against the market. He said that their sector deviation against the benchmark is usually plus or minus 5 percent, and most of their alpha has come from stock selection only.

MR. ERLENDSON asked what currency risk is in this strategy and whether they do anything to manage that risk; MR. WONG replied that they do not do any currency hedging, but in conducting stock analysis, RMB is a major consideration.

MR. WONG described their four-step investment process, and emphasized a few points about their implementation: they do in-depth due diligence; they commission a Grassroots Research study when they need deeper understanding; they collaborate and communicate all the time with all the investment professionals under one roof; and they have monthly risk management meetings, analyzing down to the single-stock level.

MR. BOB MITCHELL asked about the quality of financial statements in mainland China companies relative to developed markets and how Allianz addresses that; MR. WONG replied that China's companies are up to the global accounting standards in reporting, but there is always a question about the transparency or the corporate governance issue, because management teams have some discretion regarding how much revenue to recognize on the books. He said they pay particular attention to the management incentive to try to minimize the risk of corporate governance.

MR. WONG reviewed their stock selection criteria, the three most important being growth, quality, and valuation, and discussed how they structure their portfolio.

MS. MONTGOMERY showed their performance, and said that the investment vehicle that the ARM Board would be considering is priced at 75 basis points, but they have agreed to discount that to 64 basis points. VICE CHAIR BRICE asked about the size of the fund and number of participants; MS. MONTGOMERY stated that the fund was seeded by Ohio State last year, which is still the only participant, and is at around $50 million today.

16. CHINA STRATEGY MANAGER (SCHRODERS)

Schroders is the second finalist for the China strategy. ALLAN DUCKETT, director of institutional sales for Schroders, introduced colleagues JACK LEE, the lead portfolio manager for the China A-Share strategy that they are presenting, and RAYMOND MAGUIRE, the head of research for Asian equities strategies.

MR. DUCKETT said that Schroders has one of the most experienced China A teams in the industry,

and their research platform differentiates them from competitors. He said that they have 20 investment professionals focused on this strategy, with an average industry experience of 16 years, and he emphasized the consistency of Schroders' returns.

MR. LEE said that they have just one weighted China approach when researching China stocks, because regardless of whether a stock is listed in Hong Kong or the U.S. or China A-Shares, they share the same fundamentals. He highlighted the experience of their analysts and said that most of them stay with the firm for a long time. MR. LEE gave some background on himself, then addressed the question of why invest in China A-Shares right now. He said that China A is more representative of the entire China economy, compared to the Offshore China space which is focused on technology and financials. He said that in the China A-Share market, investors should focus on finding consumption proxy, or investing in companies that will share some of the consumption power of the China economy as it develops, like home appliance companies and consumer stocks. He said that now is a good time because the market is reasonably valued, and with the MSCI inclusion, there will be more capital inflows and a lot of opportunities for active managers to add alpha.

CHAIR JOHNSON asked how to present the idea of investing in a China-only strategy to the beneficiaries at a time when there is a trade war and regional unrest; MR. LEE answered that China is willing to negotiate in trade disputes and to cooperate regarding protection of intellectual properties. MR. MAGUIRE added that political risk will always have to be managed, but the exciting thing about the China A-Share market is that many of the drivers are domestically oriented, and exports to the U.S. are only about 5 percent of China GDP.

MR. LEE said that what contrasts Schroders from other players is their strong investment philosophy of not investing in the entire economy, but being a bottom-up stock picker, using research and a robust process to support their decisions. As in most emerging markets, there may be pitfalls if investors don't do their research, but well-chosen stocks can add a lot of alpha, which is why they have significant exposure to the mid cap space and look carefully at company governance.

CIO MITCHELL asked for comment on the quality of financial statements of mainland China companies and how they manage that quality when looking at a company; he also asked about the investment vehicle that is being contemplated and where the assets would be custodied. MR. LEE replied that he understands concerns that there could be a potential seizure of assets in China, but he thinks the chances are slim. However, he said that the funds would be custodied at J.P. Morgan in Hong Kong under the QV scheme. MR. DUCKETT explained that the vehicle would be a U.S. publicly traded mutual fund. They would first access China A securities through Hong Kong Connect and P-notes, and later QV access would be set up. MR. MAGUIRE said that the rating agencies of corporate governance in Asia and emerging markets don't work because of a lack of good data, so that a lot of the so-called best performing companies are ones they won't touch. He showed a forensic accounting model called "Red Flags," which can analyze 15,000 companies globally across 90 different financial metrics which they triangulate, and they benchmark across local industry peers and global peers. MR. MAGUIRE said he has not come across any company in the world that has beat this system, and it is a crucial part of their research process.

MR. BRICE asked about precautions they use to protect investors from "headline risk"; MR. MAGUIRE replied that having a team with lots of experience who understand management and these

businesses is important, and besides the forensic accounting they have qualitative framework looking at how the companies interact with their stakeholders, regulators, customers, suppliers, employees, and communities. Regarding Hikvision, he said they invested in it early, and did due diligence, but with the recent developments a U.S. firm has been hired to investigate, and Schroders is also waiting for that information. Both MR. MAGUIRE and MR. LEE said that technology and surveillance are everywhere, and information goes to governments as well as to corporations that may be involved in malpractice.

MR. BOB MITCHELL asked about assertions that the Hikvision technology is being used to target minorities within China, and how they weigh the benefits against potential human rights issues. Again, MR. LEE said the reality is that surveillance is everywhere. He said that they spoke to the company and learned that Hikvision is aware of the risk of bad publicity since the media has reported about their equipment being used at an "education camp," and they are going to try to avoid that kind of business, but when they are just the provider of technology or a contractual party, they don't necessarily know how their equipment is being used.

MR. ERLENDSON said that over the last several years, the Chinese government has arguably managed its currency for import/export purposes; he asked whether, in managing the portfolio, they look at currency implications for a U.S. investor at the company level, or if they look at it at the portfolio level as a factor to be managed. MR. LEE replied that they don't try to predict the currency on the portfolio level unless the companies that they invest in have a certain implication toward the currency, such as Chinese airlines with significant exposure to foreign borrowing. In such cases, they will consider the currency implication, and in other cases, if a company has significant export exposure to the U.S. or other parts of the world, then they are being exposed to currency risk and Schroders would assess that risk; however, he said that domestic exposure has more effect than export exposure because a lot of revenues are driven internally in China's large economy.

MR. MAGUIRE emphasized that their philosophy and process has a quality bias. He said that as to the question of whether companies have U.S. dollar debts and therefore a currency risk, he thinks the bigger question is about the risk of currency devaluation because of being a U.S. dollar investor. He said it is a risk, but the government has a pretty good track record of managing it, and the debt within the system is very much internal, Chinese banks lending to Chinese companies.

VICE CHAIR BRICE asked how old this strategy is, how many participants there are, and how large it is. MR. DUCKETT answered that total assets are $1.847 billion, with three institutional investors having $653 billion and the rest in a mutual fund; the strategy has existed since 2013.

MR. MITCHELL asked about the number and concentration of investors in the investment vehicle that the ARM Board is contemplating; MR. DUCKETT said it would be a new investment vehicle that would take about four months to launch. VICE CHAIR BRICE asked how large they expect it to get; MR. DUCKETT said that it is constrained by capacity and the limit across all of the strategies would be about $5 billion. MR. LEE pointed out that that number could change as more investment opportunities open up.

MR. SHAW asked about state-owned enterprises, or SOEs, being 80 percent of the A-Share market, and asked whether those would be excluded because of government intervention; MR. MAGUIRE

said that most of them do get excluded due to Schroders' process, and there is not a great alpha opportunity there anyway.

MR. DUCKETT discussed performance, showing that they outperform 5 percent of the time in normal markets and hold up well in down markets; he showed an average performance of 11.96 percent over a three-year time period, the best being 17.6 percent and the worst 7 percent since the strategy's inception. He said that the vehicle would be open only to institutional clients, and there will be a $10 million minimum, and he offered the ARM Board a 10 percent discount to the existing mandate.

CHAIR JOHNSON recessed the meeting from 12:31 p.m. until 1:52 p.m.

17. IAC PRESENTATION

DR. WILLIAM JENNINGS explained that he would like to have a facilitated discussion about investment governance and deciding who gets to decide. He described a book and an article that he had read about these issues, and said the message is that addressing governance issues may be hard, but it needs to be faced head-on. There are many players who could be making decisions, including the Board, staff, or outsiders that the Board has delegated to. There may be parameters set so someone else can execute decisions, then the Board monitors that, or the Board may be centrally involved in making very specific decisions. This is framed as the separation of governing and managing. He quoted from the book, *Fortune and Folly*: "Policy issues are inescapably the court of governing fiduciaries. Executing day-to-day investment decisions and hiring the people to do it, not so much."

DR. JENNINGS explained to Board members that in New Zealand, rather than being called trustees, they would be called guardians of the pension trust. And in Australia, they use the word "superintend," which implies more than just passive oversight.

DR. JENNINGS explained that this discussion is a result of a report from Callan on policies and procedures in which they concluded with a few paragraphs on taking a look at other governance models. He explained that governance may range from cases in which the CIO is given more and more delegated responsibility, even to asset allocation, to those in which the Board does nothing but asset allocation and everything else is the purview of staff, to be reported to the Board. He said that the ARM Board needs to decide where the dividing line is between Board responsibility and staff responsibility. He said that the legislature sets the various positions, and may set policies to prohibit investing in certain companies for various reasons, like being involved in surveillance.

DR. JENNINGS said that historically, the Board is responsible for manager selection, and they also have some parameters around certain actions or thresholds in which authority has been delegated to staff. He said the Board needs to decide where in the spectrum is an appropriate level for their focus. He reviewed some factors that would affect that decision, such as how much time they have, how much time they spend together as a Board, and how comfortable they are with staff and their competence. Quoting himself from the CFA analyst curriculum, DR. JENNINGS said, "Effective investment governance ensures that decisions are made by the folks with the necessary skills and capacity." He said the governing mindset doesn't mean the Board can't ask tough questions, and he would encourage discussion. He asked whether there are decisions that are small enough dollar

amounts that they are comfortable with delegating; MR. WILLIAMS said yes, because if every little thing had to come before the Board, they would have to meet every day, and they have worked with this staff for a long time and he thinks there are high levels of trust. MR. WEST commented that if something is within the policy and within the mandates and within the asset allocation set in policy, then it's fine; he commented that they are seldom presented with managers that do exactly the same thing, and once the Board decides to hire one, it's Mr. Mitchell's job to carry that out, so they are delegating to him every time.

DR. JENNINGS encouraged the Board to think about delegating more of the decisions to staff, saying that they have a history of conservatism in delegation, and reminding them that in MR. GOERING's presentation yesterday, he explained that there were multiple provisions for delegation. CHAIR JOHNSON commented that the statute says the Board shall do certain things, but also carries the provision that they may delegate; he said he thinks they have struck a reasonable balance of having resolutions in place that have an upward dollar amount, and a sense that when something is really new and different, it should come before the Board. He said that making too much of a bright line could lead to arguments about jurisdiction instead of dealing with material things.

MR. WEST described an experience when he constructed a hedge fund in derivatives for his financial institution, and the market blew up, and the board of directors had a private meeting with regulators that he wasn't even aware of, but because he had thoroughly explained it to the board beforehand and they had agreed to it, they accepted their responsibility in what happened and didn't blame him. He said that there is some comfort in knowing that the Board knows what is happening, regardless of whether it is in their realm of responsibility or is delegated.

MR. BOB MITCHELL added that more eyeballs are always good, but there is a limit to the amount of time the Board can spend on things. However, he thinks overcommunication by staff will reduce the likelihood of surprises and probably deepen the Board's understanding, with a marginal impact on the amount of time that is spent. VICE CHAIR BRICE commented that the Operations Committee can help define those lines and develop this conversation. DR. JENNINGS said that the fact of having an Operations Committee could be seen as having a governance area of responsibility, which is an improvement. He suggested that some committee should take on assessing the governance of the Board as a whole. He suggested a survey of the nine members, and the Chair talking with them about leadership and whether they are spending time on the things they ought to spend time on.

MR. GOERING added that this is not the only board or agency that he deals with, and he often uses the governance of the ARM Board as an example of how to do it. He said that this board has committee charters that are reviewed annually and include self-evaluations, and that is exemplary.

18. PROCUREMENT ACTIONS

<u>VICE CHAIR BRICE moved that the RFP Evaluation Committee recommends to the Board that staff publish a Notice of Intent to award the ARM Board performance consultant audit contract to Antos Advisors LLC. And on expiration of the 10-day notice period, if there are no protests, that a contract be entered into with Antos Advisors LLC to perform our audit of the performance consultants.</u>

VICE CHAIR BRICE explained that the RFP was published, and though there were several inquiries, only one proposal was received within the deadline, which did meet the minimum qualifications for the position. Staff provided each committee member with the RFP, a copy of the proposal, and the scoring evaluation sheet for the purpose of independently reviewing and scoring this proposal consistently and fairly. Staff provided the cost proposal to the committee after the scores were finalized. The committee met June 12 and found Antos Advisors qualified for this contract.

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

19. INVESTMENT ACTIONS

CIO BOB MITCHELL went through the investment action items.

A. Alaska Target Retirement 2065 Trust

The first action item related to establishing a new target date fund trust, which is done every five years. The DC Committee evaluated the proposal and is recommending the fund be established.

CIO MITCHELL said that staff recommends the Alaska Retirement Management Board direct staff to add the Alaska Target Retirement 2065 Trust to the current suite of available participant-directed investment options.

MR. WILLIAMS so moved on behalf of the DC Committee. A roll call vote was taken, and the motion passed unanimously.

B. T. Rowe Price U.S. Bond Trust Benchmark Change

MR. MITCHELL said that the second action item is also a recommendation from the DC Committee. He explained that currently the majority of the investments in the buying component of the target date fund are benchmarked against an index called the intermediate aggregate index, which are primarily 1- to 10-year maturity investments. The proposal is to broaden the benchmark to include all investment-grade bonds, U.S. dollar-denominated bonds, including those that extend beyond the intermediate 10-year horizon. He explained that the decision to use the intermediate aggregate index was made in 2013, but as part of the process of evaluating the target date glide path, they had an opportunity to reexamine that, and with T. Rowe Price they collectively came to this recommendation.

MR. WILLIAMS, on behalf of the DC Committee, moved to have the Alaska Retirement Management Board direct staff to change the U.S. Bond Trust benchmark to the Bloomberg Barclays U.S. Aggregate Bond Index.

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

C. Resolution 2019-05: Modify Intermediate U.S. Treasury Fixed Income Investment Guidelines

MR. MITCHELL said that the third action memo related to modifying the investment guidelines for

the Intermediate Treasury Fixed Income mandate, which is housed within the fixed income asset class for the DB plans. He reminded the Board of engaging Callan to conduct a review of investment guidelines, and said he would characterize most of the recommendations as clarifications, updates, or minor edits. The Operations Committee has reviewed this item and recommended that the Board adopt the new investment guidelines. CHAIR JOHNSON pointed out that the actual revisions are in an attachment to Draft Resolution 2019-05.

On behalf of the Operations Committee, VICE CHAIR BRICE moved that the Board approve Resolution 2019-05 modifying the Intermediate U.S. Treasury Fixed Income Investment Guidelines.

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

D. Resolution 2019-06: Adopt Domestic Fixed Income Investment Guidelines and Authorize Investment

MR. MITCHELL said that the next action memo related to the adoption of Domestic Fixed Income Investment Guidelines and authorizing investment in that strategy. He explained that this would be a mandate within the fixed income asset class that would be managed against the Bloomberg Barclays Aggregate Index. The motivation for this request was the anticipation of increased fixed income within the portfolio and the desire to broaden the mandate. These guidelines were modeled on the intermediate Treasury benchmark with some changes; the Operations Committee has reviewed those changes and is recommending that the Board consider adoption of the resolution to adopt these investment guidelines.

VICE CHAIR BRICE moved that the Board approve Resolution 2019-06, adopting the Domestic Fixed Income Investment Guidelines and authorize staff to create an account and investment portfolio subject to these investment guidelines.

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

E. China Equity Manager Hire

MR. MITCHELL's fifth action item related to the hiring of a China manager. He reminded Board members that staff intends to review the international equity asset class manager structure at the next meeting, and in light of that, staff requested to withdraw this action memo. With no objection, the discussion was tabled, and CHAIR JOHNSON thanked Mr. Mitchell for arranging the presentations from managers in this strategy.

F. Risk Parity Search

The next action item related to a risk parity search, which hadn't been discussed at the committee level or in any of the prior presentations, so MR. MITCHELL explained the background. In October of 2018, the Board heard a presentation from Keith Haydon at Man called "How would a hedge fund guy invest a public pension portfolio?" The conclusion looked a lot like risk parity, which is an investment strategy that attempts to allocate risk across asset classes, and to apply leverage to that portfolio to improve the total return. The expectation is that it would have improved risk-adjusted

returns and less reliance on the performance of the equity market to generate those returns. Trustees expressed an interest in receiving more information on this topic, so they had educational presentations at the December and the April meetings.

MR. MITCHELL explained that staff believes that an investment in a risk parity strategy would help broaden diversification within active strategies, and would be appropriately housed within the opportunistic asset class. For that reason, staff recommends the Alaska Retirement Management Board direct staff to engage Callan to conduct a search for a risk parity manager.

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

MR. WILLIAMS asked about the time and effort involved in engaging Callan to do a search; MR. MITCHELL replied that it is a significant commitment, with a fair amount of due diligence and staff participation. MR. WILLIAMS asked the amount that is under consideration; MR. MITCHELL answered that they are considering putting $500 million in, which represents about 2 percent of the entire portfolio.

MR. HIPPLER said that he thinks the Board needs more education on this concept before engaging a manager; MR. MITCHELL stated that there have been three presentations on risk parity. CHAIR JOHNSON noted that regrettably, Mr. Hippler wasn't a participant in those discussions, but said that he wasn't sure he himself could explain what a risk parity manager does. CHAIR JOHNSON pointed out that engaging new managers over time has led to a situation where they have a large number of equity managers, some of which they are considering terminating because there are so many and it makes more sense to keep it in-house, and he asked whether this concept isn't contrary to that.

MR. MITCHELL agreed that more managers result in splintering the pie, but said that 2 percent is arguably not big enough to matter, and they are considering this as an opportunity to get exposure and see what the performance is like before deciding whether to increase that exposure, and he thinks risk parity has potential to be a good diversifier.

MS. HARBO suggested that the previous discussions of risk parity should be in the meeting minutes from December and April, so Trustees could read about them.

MR. WEST commented that he likes the risk parity approach because he understands the theory, but he still wants to see details of how a manager would do it. He pointed out that this is not Callan's area of expertise, and to make a decision on whether or not to invest, he would have to see a presentation from an investment manager.

A roll call vote was taken, and the motion to direct staff to engage Callan to conduct a search for a risk parity manager was approved by a vote of 6 to 3.

CHAIR JOHNSON asked Mr. Mitchell to arrange a brief refresher on risk parity at the September meeting.

G. Public Infrastructure and MLP Termination

MR. MITCHELL said that the next item, "Public Infrastructure and MLP Termination," was motivated by the fact that public strategies within the real assets class are attempting to replicate the performance of private assets; also, the strategic asset allocation work with Callan suggests that the optimal allocation to real assets would be 8 percent, whereas the ARM Board has a target of 17 percent for FY19 and 13 percent for FY20. MR. MITCHELL said that terminating these strategies would be an efficient way to lower the allocation, so staff recommends that the Alaska Retirement Management Board liquidate its investments in public infrastructure and MLPs, terminating the public infrastructure mandates managed by Lazard Asset Management and Brookfield Investment Management as well as the MLP mandates managed by Advisory Research and Tortoise Capital Advisors.

VICE CHAIR BRICE so moved. MR. HIPPLER seconded the motion.

MR. WEST asked about the time it would take to terminate these and obtain the proper value; MR. MITCHELL replied that it would probably take multiple months, maybe two quarters or longer, as they would monitor market conditions and adjust the speed of the liquidations accordingly.

MR. WILLIAMS asked, since this investment was only started in 2012, if it has had enough time to play out, and how much of this decision is related to high fees and diversification. MR. MITCHELL replied that he hesitates to characterize the expectations at inception, but MLPs have turned out to be more energy sensitive than they appreciated at first, and the performance has been more volatile than anticipated. Also, the correlation to the equity markets, the fees, and the desire to lower the overall real asset allocation are all factors in this decision.

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

H. Absolute Return Terminations: PAAMCO Prisma and Zebra Capital Management

MR. MITCHELL noted that this action item, "Absolute Return Terminations: PAAMCO Prisma and Zebra Capital Management," was acted upon by the Board on Thursday.

I. Opportunistic Asset Class Restructuring

MR. MITCHELL said that the next two action items follow directly from the manager structure presentation this morning, and the first relates to opportunistic asset class restructuring. MR. MITCHELL explained that opportunistic currently includes strategies that he characterizes as defensive equities as well as a variety of fixed income strategies, and it is staff's view that they would be better off owning a combination of passive and factor-based strategies. Also, as part of the downsizing that they anticipate, they have lowered the allocation to opportunistic overall from 10 percent to 8 percent. They also want to terminate three fixed income mandates that overlap with others, so managers can be consolidated to reduce the number of mandates that are doing similar things. MR. MITCHELL said that staff has concluded that they should terminate MacKay Shields, Mondrian, and Western Asset Management Company, and transfer the two remaining fixed income strategies, the real estate high income and tactical bond strategies, to the fixed income asset class.

MR. MITCHELL said that staff is recommending the Alaska Retirement Management Board adopt the proposed changes as detailed in the table attached to the action memo.

VICE CHAIR BRICE so moved. MR. WEST seconded the motion.

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

J. Domestic Equity Asset Class Restructuring

MR. MITCHELL's last action memo, entitled "Domestic Equity Asset Class Restructuring," was covered in detail in his manager structure presentation, so he skipped to the recommended actions on the last page. He said that staff is proposing to consolidate the number of mandates in large and mid cap to the S&P 900, which would be internally managed, and to two factor-based portfolios. Also, there are a number of small cap strategies that staff recommends terminating and moving the assets to the S&P small cap index that is also managed internally. The names of the managers to be terminated are ArrowMark Small Cap Growth, BMO Global Asset Management, DePrince, Race & Zollo, Frontier Capital Management, Jennison Associates, Lord Abbot Micro Cap, T. Rowe Small Cap Growth, Victory Capital Management, and Zebra Capital Management.

MR. WILLIAMS commented that when they are moving to things that are pretty common and there are external index funds that match, he would be interested in hearing back periodically about how the Board's costs and performance compare to those. He would like to know if there is any added value, or if it helps staff learn or increase their capacity to do things. MR. ERLENDSON said he supports this proposed action.

VICE CHAIR BRICE moved to approve the recommended actions. MR. WEST seconded the motion.

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

UNFINISHED BUSINESS

None.

NEW BUSINESS

None.

OTHER MATTERS TO PROPERLY COME BEFORE THE BOARD

None.

PUBLIC/MEMBER COMMENTS

None.

INVESTMENT ADVISORY COUNCIL COMMENTS

CHAIR JOHNSON noted that this is MR. SHAW's last meeting as a member of the Investment Advisory Council, and said on behalf of the Board that they appreciate his tenure and efforts. MR. SHAW commented that it has been unbelievably enjoyable serving on the IAC for the last six years, and he will miss the trips to Juneau, which is always an opportunity to have dinner with his father. He said that in his interview six years ago, he had said that he figured he would get as much out of being on the Advisory Council as he hoped the Board would get out of it, and from his perspective, that has definitely been the case. He said he appreciates everything over the last six years, and he thanked the Board very much.

TRUSTEE COMMENTS

MR. BRICE said that it was a good meeting, and he thanked staff for all they've done. He thanked Mr. Shaw for his service to the Trust, and wished him good luck in his future endeavors.

MS. HARBO also thanked MR. Shaw for his service, and said he has been great, and has made some nice comments about how this Board works that she appreciated.

MS. HARBO also thanked staff from the Department of Revenue and the Department of Administration for all the work they do to make these meetings successful and smooth.

COMMISSIONER TANGEMAN thanked the Board, and said that these meetings are entertaining and interesting, and he loves the participation and all the questions. It's a very engaged Board that is fun to be part of. Also, he thanked the staff for the great work that they do.

MR. WILLIAMS thanked staff as well, saying that he had a couple of meetings prior to this, with Bob Mitchell and with Ajay Desai and Kathy Lea; he said staff does a very good job, and he is impressed with the quality. He commented that he learned a lot from the presentations in this meeting, and suggested that a future meeting might discuss strategies to head off price gouging in high-frequency trading, which he has heard about in Michael Lewis's podcast and book *The Flash Boys.*

MR. WILLIAMS also thanked Mr. Shaw for his service. He said that it is an honor to be part of this Board, and Bob Shaw had been very helpful to him at times when he struggled to understand something or to decide his position. He thanked Mr. Shaw for the times he has tutored him and given advice, plus a lot of additional perspective and context.

MR. WEST seconded all that was said thanking staff and each other, and said he has especially appreciated his conversations with Bob Shaw and appreciates his service to the Board.

FUTURE AGENDA ITEMS

MR. HIPPLER said he would like a discussion of guidance the Board can provide to participants to step up their contributions, suggesting mechanisms to automatically ramp it up to increase the percentage and likelihood of success in retirement. MR. WILLIAMS said he would welcome that

item with enthusiasm on the next agenda of the DC Plan Committee. MS. HARBO reminded them of her suggestion of auto-escalation on the part of employers also.

CHAIR JOHNSON suggested that they ought to do a review of their proxy policy, an idea stimulated in part by ESG considerations that have been brought up, and they should have a discussion soon explaining risk parity to help the new members of the Board to feel comfortable with that topic. MR. MITCHELL responded that the proxy policy request has been received by staff within the Operations Committee, so they would intend to present to that committee; CHAIR JOHNSON replied that that makes sense, but probably at some point they will have to take Board action on it.

MR. MITCHELL said he plans to have an educational presentation in September about the risk parity search and hold back execution of engaging Callan pending that presentation. MR. WILLIAMS requested that the presentations that have been recently received on risk parity would be recirculated to all Trustees so they could review them before the next meeting.

ADJOURNMENT

There being no objection and no further business to come before the board, the meeting was adjourned at 3:30 p.m. on June 21, 2019, on a motion made by MS. HARBO and seconded by VICE CHAIR BRICE.

Chair of the Board of Trustees
Alaska Retirement Management Board

ATTEST:

Corporate Secretary

Note: An outside contractor recorded and transcribed the meeting and prepared the summary minutes. For in-depth discussion and more presentation details, please refer to the transcript or recording of the meeting and presentation materials on file at the ARMB office.