THE INVESTMENT COMMITTEE
OF THE
MARYLAND STATE RETIREMENT AND PENSION SYSTEM

MINUTES OF OPEN MEETING

May 21, 2019

The Investment Committee convened on Tuesday, May 21, 2019 at 10:50 a.m. in the 16th Floor Board Room of the State Retirement Agency, SunTrust Building, 120 E. Baltimore Street, Baltimore, MD.

Committee Members Attending:	Michael K. Barry	Charles W. Johnson (1)
	David Brinkley	Stephen Kitsoulis
	Eric Brotman	Nancy K. Kopp
(1) Via telephone	Jamaal R. Craddock	Theresa Lochte
	Peter Franchot	Richard Norman
	David Hamilton	Douglas Prouty
	Linda A. Herman, Vice-Chair (1)	Michael J. Stafford, Jr.
	Sheila Hill	Lamont Tarbox
	F. Patrick Hughes, Chairman	
Also Attending:	Justin Hayes	Dean Kenderdine
	Tom Brennan	Andrew Palmer, CIO

Mr. Hughes, Chairman, called the Investment Committee meeting to order at 9:50 a.m.

Item 1: Motion by the Investment Committee to meet in Closed Session

On a motion made and seconded, the Investment Committee voted without objection to meet in Closed Session at 9:50 a.m. for the purposes of:

(a) interviewing candidates for the position of Public Advisor to the Investment Committee, pursuant to General Provisions Art., Section 3-103(a)(1)(i), the exercise of an administrative function and General Provisions Art., Section 3-305(b)(1)(i), the appointment, employment, assignment, promotion, discipline, demotion, compensation, removal, resignation, or performance evaluation of appointees, employees, or officials over whom it has jurisdiction;

(b) selecting a candidate for the position of Public Advisor to the Investment Committee for recommendation to the Board of Trustees, pursuant to General Provisions Art., Section 3-103(a)(1)(i), the exercise of an administrative function and General Provisions Art., Section 3-305(b)(1)(i), the appointment, employment, assignment, promotion, discipline, demotion, compensation, removal, resignation, or performance evaluation of appointees, employees, or officials over whom it has jurisdiction; and

(c) reviewing the closed session Investment Committee minutes, pursuant to General Provisions Art., Section 3-103(a)(1)(i), the exercise of an administrative function.

CLOSED SESSION

Committee Members Attending: (1) Via telephone	Michael K. Barry David Brinkley Eric Brotman Jamaal R. Craddock Peter Franchot David Hamilton Linda A. Herman, Vice-Chair (1) Sheila Hill F. Patrick Hughes, Chairman	Charles W. Johnson (1) Stephen Kitsoulis Nancy K. Kopp Theresa Lochte Richard Norman Douglas Prouty Michael J. Stafford, Jr. Lamont Tarbox
Also Attending:	Justin Hayes Tom Brennan	Dean Kenderdine Andrew Palmer, CIO

Item 6: Motion by Investment Committee to adjourn closed session
On a motion made and seconded, the Investment Committee voted to adjourn closed session and return to open session at 10:50 a.m.

During closed session, the Investment Committee discussed and took action on the following matters:

The Committee interviewed candidates for the position of public advisor and voted to recommend that the Board of Trustees re-appoint Michael Barry to serve as a public advisor of the Investment Committee.

The Investment Committee reviewed and ratified the Closed Session minutes from the February 19, 2019 meeting.

The Investment Committee reviewed and ratified the Closed Session minutes from the March 19, 2019 meeting

OPEN SESSION

Committee Members Attending: (1) Via telephone	Michael K. Barry David Brinkley Eric Brotman Jamaal R. Craddock Peter Franchot David Hamilton Linda A. Herman, Vice-Chair (1) Sheila Hill F. Patrick Hughes, Chairman	Charles W. Johnson (1) Stephen Kitsoulis Nancy K. Kopp Theresa Lochte Richard Norman Douglas Prouty Michael J. Stafford, Jr. Lamont Tarbox
Also Attending:	Victor Adekoya Phillip Anthony (MLIS) James Atwater, Jr. (Marathon) Anish Bedi Frank E. Benham (Meketa) Tom Brennan Robert Burd, Deputy CIO Antionette Butcher	Matthew Jackson (MLIS) Faina Kashtelyan Gregory Kasten Larry Katsafanas Dean Kenderdine Thomas Kurowski (Alex Brown) Michael McCord Matt Mullarkey (Aksia)

Rachel Cohen, OAG	Mary Mustard (Meketa)
Mike Fang	Ashu Pal
Eric Farls	Andrew Palmer, CIO
David Ferguson	Stephen Reilly
Anne Gawthrop	David Rongione, Chief Internal Auditor, Internal Auditing Div.
Michael Golden	Dan Schick
Dimitri Grechenko	Jody Shaw, OAG
Lynsie Hall (OmniLearn)	Frederick "Beau" Smith
Alex Harisiadis, OAG	Patricia Wild
Justin Hayes	Jennifer Wildeman (Aksia)
Levar Hewlett	

Item 7: Ratification of Open Session Minutes
On a motion made and seconded, the Investment Committee ratified the February 19, 2019 open meeting minutes with a correction made by Treasurer Kopp that her absence was not excused. Minutes will reflect change.

Item 8: Ratification of Open Session Minutes
On a motion made and seconded, the Investment Committee ratified the March 19, 2019 open meeting minutes.

Item 9: Review of the Criteria for the Chief Investment Officer's Evaluation
Discussion was held by the Trustees and they decided to defer this topic on a motion by Mr. Stafford, seconded by Mr. Brotman.

Item 10: Asset Allocation Study
Mr. Palmer began discussion of this agenda item by providing context to the work behind the asset allocation study. Mr. Palmer reviewed the various discussions relating to asset allocation over the course of the prior year including a presentation by the Real Estate consultant, Townsend, in September of 2018; an asset allocation best practices session at the Board retreat presented by Meketa; a presentation by the Private Equity consultant, Pavilion/Mercer, in November of 2018; a recent memo regarding Emerging Markets equity; a presentation by the Absolute Return consultant, Aksia; a survey regarding the Committee's risk preferences conducted by Meketa; and Mr. Palmer's request for asset allocation ideas individually from each board member.

Meketa reviewed the results of the Board survey on risk preferences. This survey was developed to further refine the asset allocation review process and to incorporate increased feedback from the Board. The key survey results showed that the main objectives of the plan are to minimize the average contributions into the System, as well as minimizing the contribution uncertainty; during a market crisis; there is not an expectation for the State to increase contributions; projected cash flows are an important parameter in the construction of the investment program; Staff's ability to deviate from the asset allocation policy targets can add value; the Board is comfortable paying higher fees for strategies that may produce higher net returns; and producing a return pattern that is different than peers is a perceived risk.

It was noted that only 9 Committee members responded to the survey. Mr. Hughes expressed his disappointment in the response rate and commented that a small group may reach a different conclusion than the entire Investment Committee. Mr. Tarbox commented positively by saying the survey was helpful. Ms. Lochte commented that the survey results were meaningless with only half of the Committee responding. Mr. Hamilton suggested that a focus group might be helpful to make sure the answers are understood.

Ms. Mustard (Meketa) suggested perhaps there is a tech oriented solution to assist in collecting responses in the future.

Mr. Benham (Meketa) began discussion on the asset allocation review by commenting that there are no significant changes to the recommendation. Approximately 20 different portfolio scenarios were analyzed as part of this review. The recommendation is to focus the Real Estate allocation on private assets, as opposed to publicly traded REITs, as REITs are included in the Public Equity allocation. Mr. Benham explained that public real estate securities were utilized while the portfolio was growing towards its allocation target as a liquid source of exposure to real estate. Since the Real Estate portfolio has largely reached its target, this funding source is no longer needed. However, the recommendation maintains the potential for the use of public real estate assets as an out-of-benchmark investment within the real estate allocation but with a range of 0-30%.

Mr. Benham referred the discussion to page 34 of 105 to discuss the efficient frontier. He noted that while markets change over time as the chart shows, investors still get paid to take risk. Mr. Benham explained that because the fourth quarter of 2018 experienced a downturn, return expectations increased somewhat as a result.

Mr. Brotman asked if removing public real estate securities would increase Real Estate fees. Mr. Benham answered positively as private assets carry a higher management fee. Mr. Benham referred to page 37 of 105 to highlight that approximately 3% of Public Equity is comprised of public real estate securities.

Mr. Stafford commented that except for cash and U.S. bonds, everything else has lower return expectations today relative to ten years ago. Mr. Benham pointed out that to meet the actuarial rate of return, the System has to accept a sufficient amount of risk. Mr. Benham further pointed to the "less risk" column on page 36 of 105 which shows the pros and cons of taking less risk.

Regarding levered TIPS, Mr. Palmer indicated Staff continues to look for ways to use appropriate leverage as a means of extending the efficient frontier. Mr. Kitsoulis asked whether there is a way to change the structure of the portfolio and get more of an effect. Mr. Palmer replied that moving the portfolio 1-2% does not move the bottom line very much. Mr. Palmer further commented that one of the risks associated with leverage is peer risk, as the risk and return profile of the fund would be different than our peers. Mr. Benham added that the System could lever Absolute Return, or long bonds for example; it doesn't have to be TIPS.

Mr. Hughes commented that there is more opportunity to add value in Private Equity and asked for Meketa's thoughts. Mr. Benham answered that alpha can still be generated in public markets, but it is much more difficult. Mr. Benham agreed that it is easier to produce excess returns in private markets. He also added that Credit and Core Real Estate act more like equity, so it is important to look for real portfolio diversifiers.

Mr. Barry asked if the current risk profile is most appropriate for the System. Mr. Benham discussed the charts on pages 55 and 57 of 105 regarding Sequence of Returns With and Without Cash Flows. He indicated that if the System compounds 7.45% with no cash flows, the path doesn't matter as much. However, including negative cash flows and different paths can change long term outcomes.

Mr. Brotman suggested to maintain the current course and that the asset allocation is sound. He added that Meketa's analysis is excellent. With the right discipline, the current asset allocation should meet the plan's objectives. Mr. Brotman further suggested that the System segregate a portion of plan assets as a funding source for the next ten years of benefits payments. With this structure, the System can withstand any future downturn.

Ms. Herman commented about the idea of leverage. She indicated that leverage had been discussed during prior meetings, an analysis should be presented to the Committee on why leverage is or is not going to be used. She also asked why Staff was moving to passive management and what the cost of managing assets internally would be. She suggested that staff should find skillful active managers who can add value.

Mr. Barry asked about the appropriate drawdown risk and what kind of drawdown can the System sustain. Mr. Benham responded that this question is one of the reasons why Meketa conducted the risk survey. Mr. Benham further commented that the current level of risk is appropriate for the System. Mr. Barry responded that there is an ability and willingness aspect; we have to square the two. He asked if we can take more risk at the right time, but at what point do we make behavioral mistakes. Mr. Benham referred back to page 59 of 105 pointing out that System's projected funded status under a scenario of weak near-term returns and negative cash flows recovers in later years and therefore the System has the ability to take risk.

Mr. Brotman commented on the System's behavior during the Great Financial Crisis in 2008. Mr. Hughes shared that the System did not maintain its conviction during this time. Asset allocation was changed to reduce risk after the crisis. Mr. Brotman asked if there is anything we can do to make it more difficult for future Board's to reverse the current course. Mr. Brotman suggested an asset segregation of structured maturities to immunize a portion of the portfolio that would allow the System to maintain its policy, plan and conviction. Mr. Tarbox pointed out that the System already has a dedicated 10% allocation to long government bonds that serves that purpose. Mr. Franchot suggested a "message in a bottle" to the future Committee members.

Mr. Brotman made a motion on two items: 1) focus the Real Estate portfolio on private assets and adjust the benchmark to reflect this change. However, public real estate securities can still be utilized in this asset class based on market opportunity; 2) to maintain a 50% weighting to Growth Equity, with the policy allocation to Public Equity to adjust based on the illiquid allocation to Private Equity, and to address illiquidity in the private Real Estate portfolio, the policy allocation to Rate Sensitive will adjust based on the actual allocation to Real Estate. Ms. Lochte seconded the motion. Motion passed with no opposition.

Item 11: Absolute Return Review

The System's Absolute Return consultant, Aksia, presented to the Committee. Since becoming the System's consultant, Aksia has conducted a full review of all portfolio holdings, finalized long-term goals with staff, re-underwrote all portfolio holdings, coordinated with staff on the redemption of nine positions (five Absolute Return and four Public Equity) and the addition of three new strategies in Absolute Return and one in Public Equity.

Mr. Mullarkey commented the hedge fund sector had experienced moderate outflows. In his view, less money in the sector is good as it weeds out lower return managers. Where performance was worse, assets disappeared. Mr. Mullarkey further commented that the market seems a bit rich, so Aksia is recommending to take beta out of client portfolios.

Mr. Barry asked who has responsibility for structuring the Absolute Return portfolio. Aksia responded that structuring the portfolio is a collaboration between Aksia and Mr. Kasten. Mr. Kasten agreed and described an example of how the collaboration works.

Mr. Kitsoulis asked if this portfolio is a source of cash. Mr. Palmer responded that some mandates are liquid, while some have lock-ups, particularly where the System believes it appropriate to match the liquidity term to the investment life of the underlying assets. Staff prefers to not have recurring lock-ups.

Mr. Barry commented that hedge funds are not an asset class. He also noted that there seems to be a deterioration of performance since 2014. Mr. Mullarkey responded that if a manager was short, performance has not been good. He further commented that there could be a potential problem for mangers if they are out of discipline when shorting becomes profitable. Mr. Mullarkey also pointed out that investment rates are low and that increased use of passive strategies made it difficult to perform fundamental analysis and get paid for it. Mr. Barry questioned why the System is invested in this asset class. Mr. Mullarkey responded that this asset class is not correlated to the rest of the portfolio and it can help the plan meet its long term targets.

Mr. Stafford asked whether the System should use more or less hedge funds outside of the Absolute Return portfolio and whether the Absolute Return portfolio is structured as desired. Aksia responded that the first question is outside of their scope, and as to the second question, there is still some over-concentration but that the appropriate work is being done to remedy it. Mr. Palmer commented that hiring the right manager is most important. Performance of the portfolio lagged in the past, in part, because the allocation was filled too quickly. The portfolio ended up with managers that were highly correlated. Now, staff is building a portfolio more patiently based on desired characteristics.

Mr. Barry asked whether there is a "wish list" of hedge funds and how they are targeted, and what the beta target of the portfolio is. Aksia responded that there is a wish list, and it has been communicated with Mr. Kasten and Mr. Palmer. Aksia also noted that they have a scarce capacity list that is offered to clients, but it is also important to maintain a direct relationship with funds, which Mr. Kasten has been cultivating. Mr. Kasten responded that the beta target of the portfolio is 0.2 or lower to the MSCI ACWI index, which is a reasonable target because it allows some multi-strategy managers the latitude to increase equity exposure at times, which would not be the case if the target were 0.0 or 0.1.

Item 12: Meketa Reports

Meketa presented their quarterly report. Mr. Benham commented that the fourth quarter 2018 experienced a sharp selloff with the 1st quarter 2019 witnessing a rebound. The System returned 6.2% net of fees compared to the Policy Benchmark return of 6.72%,during the quarter with REITs, Domestic Equity, and Emerging Markets showing the best absolute performance. At the end of the quarter, all asset classes were within their respective target allocations ranges.

Item 13: Report from CIO

Mr. Palmer presented his CIO Review for the quarter, commenting that the fourth quarter of 2018 benefited the System due to lower beta of the portfolio when markets were falling. However, in the first quarter of 2019 the System suffered from lower beta as markets rebounded. The beta effects largely offset during the two quarters. However, the equity portfolio has underperformed because of a historically large underperformance of equity factors. Offsetting the public equity to some degree, the Private Equity portfolio continued to experience strong returns. The Absolute Return portfolio has provided recent positive performance. Going forward, Staff expects equity factors to improve and expects some reversal in the impact of pricing lags in the Credit, Natural Resources and Real Estate portfolios.

Mr. Palmer highlighted three positives 1) 10 year return is 9.5% and 7.8% for 3 years; 2) the realized risk continues to be lower than the benchmark; and 3) the currency program has helped to offset the impact of a stronger U.S. dollar on the ex-US portfolio. In addition, there have been three new personnel hires with two in Fixed Income and one in Private Equity.

Mr. Palmer discussed the updated timeline for internal management, focusing on TIPS. Meketa is reviewing the operations manual to suggest potential improvements. Some manual processes will be required initially as staff continues to evaluate solutions for trade order management, investment book of record, and compliance. In the coming months, staff will be requesting amendments to its fiscal 2020 budget to implement a long term solution.

Mr. Palmer also shared that risk management is another area of progress. Page 14 of the CIO Review provides forward looking tracking error as measured by portfolio construction decisions. This contemporaneous report provides more timely information than the Barra system and shows that most of the tracking error risk comes from individual security selection decisions made by managers and small impacts from allocation and benchmark misfit (hiring managers with benchmarks different than that assigned by the board).

<u>Item 14: Investment Reports</u>

The Committee received the following investment reports:

- State Street Performance Reports
- Terra Maria Performance Reports
- Private Markets Performance Reports
- Securities Lending Report
- Division's FY19 Travel Plan - Update
- Quarterly ORP Performance Report
- OPEB-PHBT Update
- New Hire Manager Report

On the Directors Desk:

- Broker Commission Reports

Adjournment — There being no further business before the Investment Committee, on a motion made by Mr. Brotman and seconded by Mr. Stafford, the meeting adjourned at 2:37 p.m.

Respectfully submitted,

Andrew C. Palmer
Chief Investment Officer