



**PENSION RESERVES
INVESTMENT
MANAGEMENT BOARD**

Minutes of the PRIM Investment Committee Meeting
Tuesday, May 2, 2017

Committee member attendees:

- Treasurer Deborah B. Goldberg, Chair (arrived at 9:44 a.m.)
- Sarah Kim, Esq. Treasurer’s Designee
- Michael Even, CFA
- Constance M. Everson, CFA
- Ruth Ellen Fitch (arrived at 9:41 a.m.)
- James Hearty
- Edward Kane
- Paul E. Shanley, Esquire

Committee members not present:

- Joseph Bonfiglio
- C. LaRoy Brantley
- Peter Monaco
- Glenn P. Strehle, CFA
- Timothy Vaill

The PRIM Investment Committee meeting was called to order at 9:35 a.m. There was not a quorum.

I. Executive Director/Chief Investment Officer Comments

Market Summary

Michael G. Trotsky, CFA, Executive Director and Chief Investment Officer, provided the Committee with an assessment of markets, including:

Financial markets continue to grind higher despite signals that tax reform, deregulation and infrastructure spending – essentially the Trump pro-growth agenda—may be harder to achieve than originally thought.

In the United States, we continue to see slow economic growth and mixed economic indicators, while Europe is clearly picking up and China, may be slowing down. Importantly, in the first calendar quarter we saw sentiment of equity investors and bond investors begin to diverge: equities continued higher while bond yields, particularly long-duration bonds, moved lower. This may signal a change in expectations around the long-term health of the global economy. While equity investors are optimistic and stock prices have moved steadily higher since last November, bond investors have grown more cautious recently, causing long-term yields to move lower.

And while market volatility has been low while markets have moved higher, we are still mindful of the many economic and geopolitical risks that could disrupt this trend in the future. Without additional economic data to confirm a more robust global expansion, equity valuations and expectations remain elevated, and we believe it is prudent to remain cautious, therefore the asset allocation adjustments we made earlier in the year remain appropriate.

(with the arrival of Ruth Ellen Fitch, a quorum was established)

Constance M. Everson, CFA, Committee member, shared her analysis of the global economic situation with the Committee. She referred to the JP Morgan Global PMI (the formal name for the Purchasing Manager’s Index), which showed an improvement in manufacturing activity. The economic growth represented the fourth effort at a global rebound since 2009, however, the sustainability of this “4th try” was not assured, Ms. Everson said. She believed the latest improvement in activity became possible with

a late-2015 burst of local-currency bank lending in China, that sharply coincided with the surge in commodity prices, global trade, orders and PMI readings. Ms. Everson suggested it was the expansion in credit that allowed all participants in the global supply chain to boost production, by allowing Chinese firms to meet orders, after a hiatus due to credit scarcity and liquidity problems. Sixteen months later, however, commodity prices were falling again, and economically sensitive equity sectors were selling off. Indicators of consumer activity remained very slow, Ms. Everson said, and long bond yields had stopped rising the previous December.

PRIT Fund Performance Summary

Mr. Trotsky reviewed PRIT Fund performance with the Committee, highlighting key points including:

As of March 31, 2017, the PRIT Fund net asset value stood at \$65.1 billion.

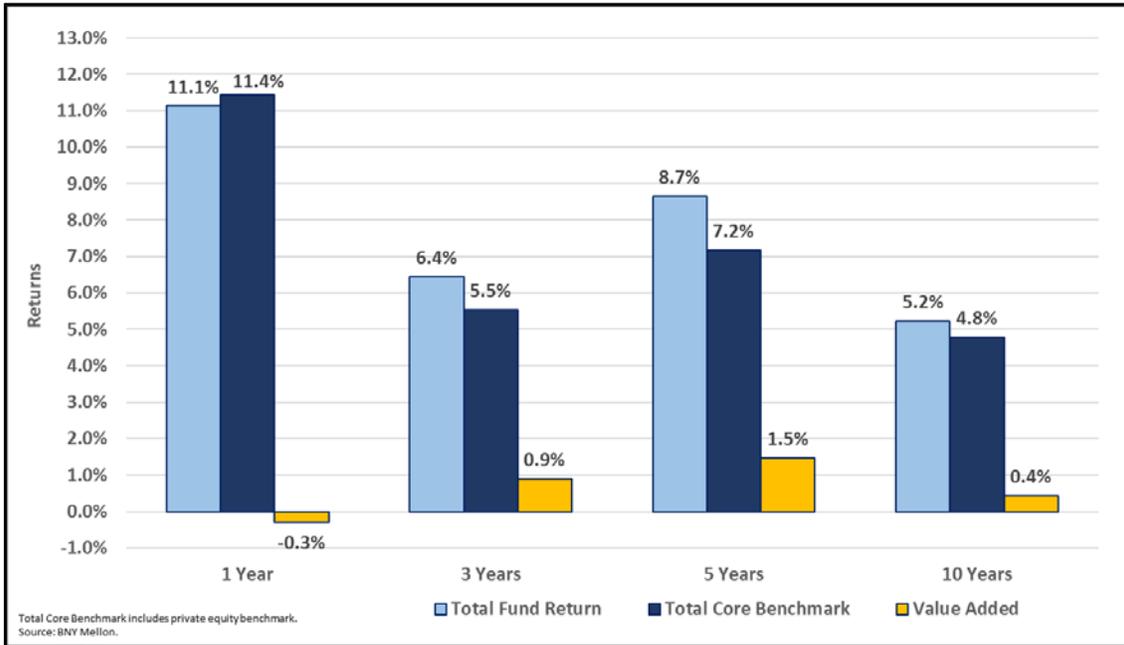
For the quarter ended March 31, 2017, the PRIT Fund was up 4.9%, outperforming the total core benchmark of 4.2% by 66 basis points.

- This performance equates to an investment gain of \$3.0 billion over the quarter.
- This outperformance equates to \$412 million of value above the benchmark return over the quarter.
- Six of the seven major asset classes outperformed their respective benchmarks over the quarter.
- The one underperforming asset class was Value Added Fixed Income, with most the underperformance having been driven by the volatility of the Distressed Debt benchmark vs. the volatility of the actual Distressed Debt portfolio. Mr. Trotsky noted that later in the agenda, PRIM staff would recommend benchmark changes to help address this volatility mismatch.

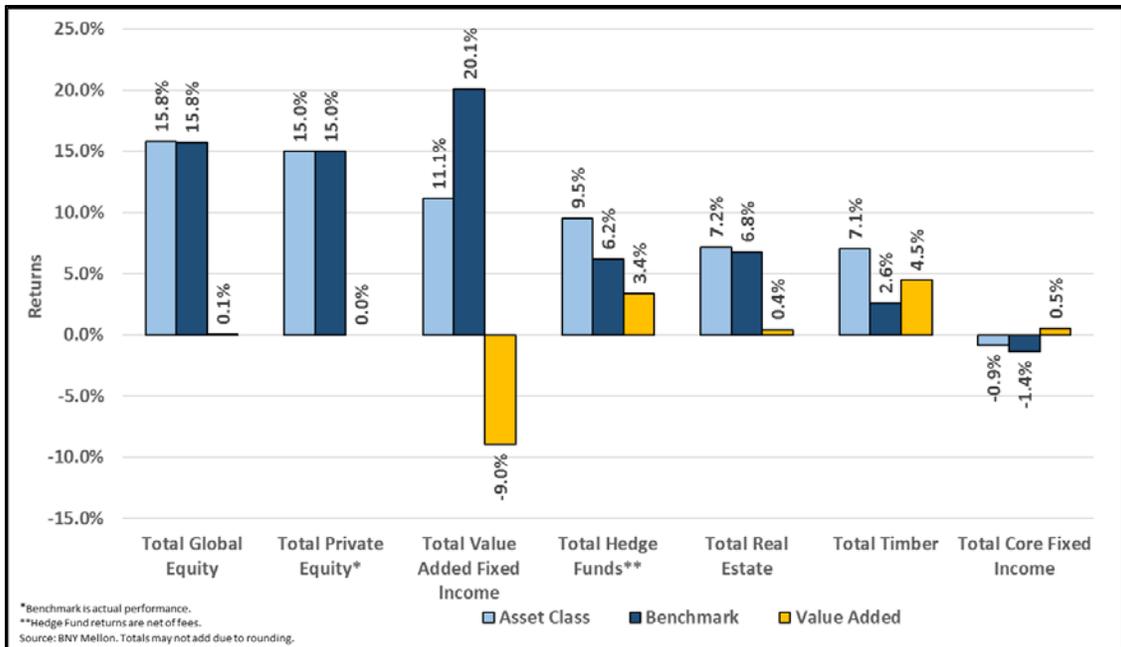
For the one-year ended March 31, 2017, the PRIT Fund was up 11.1%, underperforming the total core benchmark of 11.4% by 30 basis points.

- This performance equates to an investment gain of \$6.7 billion over the year.
- This underperformance equates to \$181 million of value below the benchmark return over the year.
- Six of the seven major asset classes outperformed their respective benchmarks over the year.
- Net total outflows to pay benefits for the one-year ended March 31, 2017 were approximately \$1.5 billion over the year.

Total PRIT Fund Returns (Gross of Fees)
Annualized Returns as of March 31, 2017



PRIT Asset Class Performance (Gross of Fees)
Trailing 1-year Performance as of March 31, 2017



PRIT Core Fund Performance Summary
Gross of Fees Performance
Trailing 1-Year Performance as of March 31, 2017

Trailing 1-Year Performance: Mar. 31, 2017	Return	Benchmark Return	Over/(Under) Benchmark (bps)	\$Value (millions)	% of PRIT Fund
Total PRIT Fund	11.1%	11.4%	(30)	65,083	100%
Total Global Equity	15.8%	15.8%	5	28,996	44.6%
<i>Domestic Equity</i>	<i>17.9%</i>	<i>18.5%</i>	<i>(56)</i>	<i>12,829</i>	<i>19.7%</i>
<i>International Developed</i>	<i>11.1%</i>	<i>11.9%</i>	<i>(75)</i>	<i>11,263</i>	<i>17.3%</i>
<i>Emerging Markets</i>	<i>21.4%</i>	<i>17.0%</i>	<i>443</i>	<i>4,903</i>	<i>7.5%</i>
Private Equity	15.0%	15.0%	0	6,960	10.7%
Real Estate	7.2%	6.8%	40	6,369	9.8%
Total Timberland	7.1%	2.6%	446	2,451	3.8%
Hedge Funds	9.5%	6.2%	335	5,522	8.5%
Value Added Fixed Income	11.1%	20.1%	(899)	5,354	8.2%
Core Fixed Income	-0.9%	-1.4%	50	7,606	11.7%

PRIT Asset Class Performance (Gross of Fees)
Annualized Returns as of March 31, 2017

1 Year	3 Year	5 Year	10 Year
GLOBAL EQUITY 15.8%	PRIVATE EQUITY 15.4%	PRIVATE EQUITY 17.5%	PRIVATE EQUITY 13.7%
PRIVATE EQUITY 15.0%	REAL ESTATE 10.9%	REAL ESTATE 11.3%	TIMBER 6.6%
VALUE-ADDED FIXED INCOME 11.1%	TIMBER 5.6%	GLOBAL EQUITY 9.0%	VALUE-ADDED FIXED INCOME 6.6%
HEDGE FUNDS (NET OF FEES) 9.5%	GLOBAL EQUITY 5.3%	TIMBER 7.0%	REAL ESTATE 6.4%
REAL ESTATE 7.2%	CORE FIXED INCOME 5.3%	HEDGE FUNDS (NET OF FEES) 5.4%	CORE FIXED INCOME 5.0%
TIMBER 7.1%	VALUE-ADDED FIXED INCOME 3.2%	VALUE-ADDED FIXED INCOME 5.1%	GLOBAL EQUITY 4.4%
CORE FIXED INCOME (0.9%)	HEDGE FUNDS (NET OF FEES) 2.7%	CORE FIXED INCOME 4.0%	HEDGE FUNDS (NET OF FEES) 3.1%

Organizational Update

Mr. Trotsky informed the Committee of recent changes and awards involving PRIM staff, including:

Luis J. Roman, Ph.D. joined the PRIM team as Senior Investment Officer – Director of Risk Management on April 17. Mr. Trotsky told the Committee: Luis joins us after more than 20 years in the investment industry and academia. Prior to joining PRIM, Luis was the U.S. Head of Multi Asset Class and Alternatives Investment Risk at Columbia Threadneedle Investments, Global Head of Fixed Income Investment Risk at State Street Global Advisors and a Quantitative Analyst at Putnam Investments. He is a recognized expert in the design and implementation of risk management processes for asset management firms. Luis began his career in academia where he was a visiting assistant professor at the University of California in Irvine and the Worcester Polytechnic Institute. He earned his Master's of Science in Applied Mathematics from the University of Chicago and his Ph.D. in Mathematics from the University of Minnesota.

Bill Li, CFA, CAIA – Investment Officer – Hedge Funds and Low Volatility Strategies, recently earned the Chartered Alternative Investment Analyst (CAIA) designation after passing the required two-part exam. The CAIA curriculum covers a broad knowledge base in alternative investments including hedge funds, private equity, real assets and structured products.

For the second consecutive year, PRIM's PCS team (Eric R. Nierenberg, Ph.D. and Bill Li, CFA, CAIA) has been named finalists at the Institutional Investor Magazine's 15th Annual Hedge Fund Industry Awards to be held in June in New York City. The award recognizes excellence in innovation and thought leadership in the Hedge Fund space. PRIM's team joins four other finalists from North America in the Large Public Plan category. As a reminder, PRIM won this award last year. It is highly unusual to be nominated for the same award two years in a row, and a fitting tribute to the leadership that PRIM has demonstrated in the Hedge Fund sector.

Investment Team Personnel Moves

- We are rolling out a series of personnel moves focused on enhancing PRIM's role as a leading innovator and performance leader among public pension funds.
- Michael R. Bailey, Senior Investment Officer for Private Equity, will become the second person to take part in PRIM's Professional Development Program, which rotates asset class heads through teams other than their own. Michael joined PRIM in 2013.
- Sarah N. Samuels, CFA, CAIA, Deputy Chief Investment Officer, will add responsibility for Hedge Funds to her current responsibilities overseeing Public Markets. Sarah was the first participant in PRIM's Professional Development Program. She joined PRIM in 2011.
- Eric R. Nierenberg, Ph.D., who, since joining PRIM in 2012 has been Senior Investment Officer – Director of Hedge Funds and Low Volatility Strategies, has been named PRIM's Chief Strategy Officer. In this new role, Eric will look across the entire \$65 billion investment portfolio for innovative approaches to identify diversification strategies, enhance returns and reduce fees.

Dr. Nierenberg's designation as PRIM's Chief Strategy Officer is effective immediately. The re-aligning of responsibilities related to Hedge Funds will be a gradual process with no fixed timetable.

II. Approval of the Minutes (Voting Item)

The PRIM Investment Committee unanimously approved the minutes of its January 31, 2017 meeting.

III. Project SAVE: Phase II Update

Michael Even, CFA, Committee member, informed the Committee of a refining of the scope for Phase II of Project SAVE, which is an exploration of internal investment management. Mr. Even explained that

internal investment management is common and a growing trend among public pension funds. Mr. Even held preliminary discussions with PRIM staff to determine various ways PRIM might bring management of investments in-house. From these meetings, Mr. Even determined that a grassroots approach was the best approach, and PRIM should focus on projects PRIM can carry out that have high impact but low operational demands. Mr. Even said his plan is to collect ideas from the individual asset teams to create a list of initial projects and complete a budget by the third quarter of calendar 2017. Mr. Even said that some challenges to this phase are that PRIM needs to increase its staff and add depth and expertise, as well as potentially modify its infrastructure.

IV. Public Markets Performance Summary

Sarah Samuels, CFA, CAIA, Deputy Chief Investment Officer, discussed details of the public markets portfolio's performance with the Committee. Ms. Samuels noted that absolute performance in the trailing year was strong. There are three themes behind this performance, she said. The first theme is that risk assets performed tremendously well. For example, the PRIT Fund's global equity portfolio was up 16% and high-yield bonds rose 14%. The second theme is quality underperformed in the last year, both for stocks and bonds. This had some negative implications for some of our active managers. The third theme is interest rates have risen across the curve. Due to the increase in interest rates, STRIPS have fallen 7%. This rise in long duration interest rates reflects the optimism surrounding President Trump's growth and inflationary policies.

V. Hedge Funds and Portfolio Completion Strategies Performance Summary

Eric Nierenberg, Ph.D., Senior Investment Officer-Director of Hedge Funds and Low Volatility Strategies, provided information to the Committee about hedge fund and portfolio completion strategies performance. He noted PRIM's hedge funds portfolio delivered very good returns, both in absolute and relative terms, for the quarter. The one-year return was 9.5% and the volatility of PRIM's hedge funds was extremely low for the year, resulting in a Sharpe ratio of 5.6, with a ratio above 1 being really good, he said. Dispersion between hedge fund strategies was relatively low, and the majority of the alpha was derived from manager selection.

VI. Private Equity Performance Summary

Michael Bailey, Senior Investment Officer – Director of Private Equity, updated the Committee on private equity performance. Mr. Bailey observed:

PRIM's private equity portfolio had a strong one-year return of 15% (gross), more than 1% greater than the 10-year performance. Currently, private company valuations are quite high. Corporations have liquidity and are using surplus cash to acquire new businesses. This has also been a good quarter and a good year for the distressed debt portfolio, as credit markets rallied for low-rated issuers.

VII. Benchmark Review (Voting Item)

Donald Payne, Risk Management Officer, presented the results of the PRIT Fund benchmark review.

Mr. Payne defined the characteristics of a good benchmark for evaluating investment performance and noted it should involve the recognition of both return and risk. It was noted that the framework of a good benchmark established by the CFA Institute states that a benchmark should be unambiguous, investable, measurable and appropriate. PRIM staff, along with PRIM advisors (Callan, Hamilton Lane, Townsend and Aberdeen), reviewed the current benchmarks of the PRIT Fund to determine if they were the most appropriate benchmarks available. Mr. Payne outlined the differences between investable and non-investable benchmarks and cited some limitations and weaknesses around non-investable benchmarks. Mr. Payne noted that most of the portfolio, including global equities, core fixed income, REITs and value-

added fixed income, except for alternative fixed income, have investable benchmarks that PRIM advisors deemed appropriate. The remainder of the portfolio (Real Estate, Timberland, Hedge Funds, Private Equity, Portfolio Completion Strategies and Alternative Fixed Income) have non-investable benchmarks that create difficulties in comparing relative performance due to limited transparency, ambiguous universes, selection bias and high tracking error.

Mr. Payne stated that PRIM staff, along with Hamilton Lane and Aberdeen, recommended enhancements to three of PRIM's non-investable benchmarks: 1) alternative fixed income, 2) private equity, and 3) hedge funds. First, the current alternative fixed income benchmark, the Altman NYU Salomon Center Combined Default Public Bond and Bank Loans index (Altman), is more volatile and less representative of the longer-term investment period of 3 years of PRIM's alternative fixed income portfolio. To better evaluate the performance and dampen the short-term volatility of the Altman benchmark, PRIM staff, along with Hamilton Lane, recommend changing the current Altman benchmark to the Altman benchmark annualized over a 3-year rolling period. Second, Mr. Payne noted that PRIM's Private Equity portfolio has meaningful exposure to western Europe, however, PRIM's current Private Equity benchmark is a U.S.-only benchmark. Therefore, to better align PRIM's Private Equity portfolio with a more relevant benchmark, PRIM staff, along with Hamilton Lane, recommended changing the current Private Equity benchmark, Russell 3000 +3%, to a blend of the Russell 3000 +3% and the MSCI Europe +3%. The new blended benchmark would be based on the exposure of PRIM's Private Equity portfolio to European-based funds (currently 84% domestic/16% European). Third, Mr. Payne noted that as outlined in the 2017 Hedge Fund annual plan, PRIM's hedge fund portfolio does not seek to replicate the strategy composition of the global HFRI benchmark. Therefore, PRIM staff, along with Aberdeen, recommended changing PRIM's Hedge Fund benchmark from the global HFRI benchmark to a blend of HFRI strategy specific benchmarks based upon the PRIM Hedge Fund portfolio strategies.

Mr. Even asked whether there is a simpler benchmark than the Altman benchmark and how direct hedge fund success can be assessed? Corinne English, of Hamilton Lane, explained there is no perfect alternative fixed income benchmark and a variety of benchmarks are used by PRIM's peers. Ms. English further noted that while there is no perfect benchmark that compares well with PRIM's alternative fixed income portfolio, the Altman remains the best-available benchmark. However, annualizing the Altman over a 3-year rolling period would better align the volatility of the Altman to PRIM's alternative fixed income portfolio, she said. Mr. Trotsky said that hedge funds are picked to complete the portfolio and should be measured against their respective underlying strategies.

After the presentation and discussion concluded, the Investment Committee voted unanimously to recommend to the PRIM Board that the Board approve the changes to the Alternative Fixed Income, Private Equity and Hedge Fund benchmarks as described in Appendix E of the Expanded Agenda, and further to authorize the Executive Director to take all actions necessary to effectuate this vote.

The PRIM Investment Committee meeting adjourned at 11:30 a.m.

List of documents and other exhibits used at the meeting:

- *Minutes of the PRIM Investment Committee Meeting of January 31, 2017*
- *PRIT Fund Performance*
- *Committee member Constance Everson, CFA's handout to her remarks*
- *Project SAVE: Phase II Internal Investment Management*
- *Benchmark Review*