PENSION RESERVES INVESTMENT MANAGEMENT BOARD

Minutes of the PRIM Investment Committee Meeting
Tuesday, August 1, 2017

Committee member attendees:

- Treasurer Deborah B. Goldberg, Chair (arrived at 9:44 a.m.)
- Sue Perez, Esq., Treasurer's Designee
- Joseph Bonfiglio
- Michael Even, CFA
- Constance M. Everson, CFA
- Ruth Ellen Fitch (arrived at 9:41 a.m.)
- James Hearty
- Peter Monaco
- Philip Rotner
- Paul E. Shanley, Esquire
- Glenn P. Strehle, CFA
- Timothy Vaill

Committee members not present:

- C. LaRoy Brantley

The PRIM Investment Committee meeting was called to order at 9:37 a.m.

I. Approval of the Minutes (Voting Item)

The PRIM Investment Committee unanimously approved the minutes of its May 1, 2017 meeting.

II. Executive Director/Chief Investment Officer Comments

Michael G. Trotsky, CFA, Executive Director and Chief Investment Officer, comments to the Committee included:

Fiscal year 2017 was exceptionally strong for PRIM. The PRIT Fund ended the fiscal year at $67 billion, a record high. The PRIT Fund was up 13.2% (gross of fees), outperforming its benchmark by 127 basis points. On a net-of-fees basis, the PRIT Fund was up 12.8%, outperforming its benchmark by 79 basis points. Six of the seven major asset classes outperformed their benchmarks. For the first time in several years, international equities outperformed domestic equities, though all equities were up strongly. As you know, we have maintained our relatively high exposure to international equities and this served us well in the fiscal year. We are especially pleased with our performance given that we have systematically de-risked our portfolio over the past several years.

Private Equity returned 21.3% for the year, Global Equities returned 20.9%, Value-added Fixed Income returned 10.3%, and Hedge Funds were up 9.4% (net of fees). Real Estate and Timberland performed well, returning 6.8% and 8.3%, respectively, for the fiscal year.

PRIM completed its first ever direct real estate acquisition, acquiring 21 acres of prime office space land in Santa Clara, California. Executing the transaction directly will save PRIM more than $11 million in management fees over the expected life of the investment. Project SAVE is alive and well, deeply imbedded in our DNA, and we have now identified over $160 million in value-enhancing strategies, well above our initial target of $100 million. We also have launched Project SAVE Phase II – a careful deployment of direct investing – under Investment Committee member Mike Even's insightful supervision.

At PRIM, we believe that any investment should be analyzed on three equally important parameters: return, risk and cost, and that it is incomplete to evaluate the success of any investment program on just one of those parameters. Too often in the investment world, we see investment programs evaluated solely on return, occasionally on cost, and very seldom, virtually never, on risk. We have noticed that few peer organizations can accurately measure and assess investment risk. We have allocated resources to measuring and controlling risk, and any new investment at PRIM takes risk into account. In fact, every investment we make at PRIM takes all three parameters into account: return, risk and cost.

Over the past few years we have re-engineered our hedge fund portfolio, re-engineered the fixed income portfolio, and added significant risk-reducing strategies such as long-duration Treasury securities, agriculture, the put-spread collar options strategy, and alternative risk premia harvesting strategies. We have reached an important milestone in the Hedge Fund portfolio, often a misunderstood investment strategy. Now, more than 50% of our direct hedge fund portfolio is invested in separately managed accounts, providing improved transparency, more control and lower fees than the commingled fund format that had been the norm. Many in the nation are now following our lead, and we should all be proud that the Hedge Fund group is a recognized leader. And as a great illustration of our attention to risk, the Hedge Fund portfolio returned 9.4% net of fees, 3.1% above the benchmark, while exhibiting extremely low realized volatility of approximately 1.5%. This realized volatility, combined with a return of 9.4%, was the highest risk-adjusted return in the entire PRIM portfolio.

Those are a few important highlights of our investment program: Solid results, a careful focus on returns, risks and costs, and continued nation-leading innovation across the program. Organizationally as well, fiscal 2017 was another outstanding year. Once again, we are pleased to report that no senior-level employees departed, and consistent with the Board-approved hiring plans, we filled seven staff vacancies with top talent. We are now nearly fully-staffed with exceptional investment and finance professionals and all our job postings attract literally hundreds of talented and well-qualified applicants.

We developed a Board-approved, multi-year staff hiring plan in each functional area to ensure that we are appropriately resourced going forward. Our team continues to be recognized around the nation for the success and innovation of our investment program and for the transparency and completeness of our financial reporting. We have never been stronger, but retention of key employees remains our primary concern. The employment environment in the nation, and in the region, is strong – there are opportunities for our employees outside of PRIM – and we have spent considerable time and effort on retention strategies for key PRIM employees. We all must be vigilant to ensure we provide a challenging and rewarding opportunity for all our employees, and a culture and work environment that our employees value.

To that end, in May we announced a series of personnel moves on the investment team. The changes provide stimulating new challenges for three strong professionals and will enhance PRIM's role as a leading innovator and performance leader among public pension funds. This year we will look for similar opportunities for other deserving members on the investment staff and on the finance staff. To recap:

- Eric R. Nierenberg, Ph.D., Director of Hedge Funds and Low Volatility Strategies, was named PRIM's Chief Strategy Officer. In this new role, Eric will look across the entire $67 billion investment portfolio for innovative approaches to identify diversification strategies, enhance returns and reduce fees.

- Sarah N. Samuels, CFA, CAIA, will add responsibility for Hedge Funds to her current responsibilities overseeing Public Markets and investment research. Sarah was the first participant in PRIM's Professional Development Program.
- Michael Bailey, Senior Investment Officer – Director of Private Equity, will be the second person to take part in PRIM's Professional Development Program. As you may remember, the program rotates asset class heads through teams' other than their own.

The organization has never been stronger or more innovative, not only in the investment arena but also in the finance, legal and operations areas. Again, we were awarded the Government Finance Officers Association certificate for the completeness and transparency of our financial reporting, and as a result of our outstanding legal successes, our Deputy Executive Director and General Counsel, Chris Supple, has been reappointed to a second term as Chair of the Securities Litigation Committee of NAPPA, the National Association of Public Pension Attorneys. (Last term, Chris was co-Chair.)

There is no doubt our investment program is trend-setting and thoughtful, but without the finance and legal staff running in lock step with our investment program, none of PRIM's success would be possible. They are a group of consistent enablers, they enable, they make possible, they implement, account for, measure, control, and document our innovative and diverse investment program. That is no easy task, especially considering that with over 100 clients expertly supported by Paul Todisco and his Client Service staff, we already have one of the most complex accounting and reporting structures in the country. We have the great luxury of this group's professionalism and expertise and we don't take them for granted.

Economic news is encouraging and the global economy is slowly improving. The U.S. economy and the Eurozone have gathered momentum while slightly lower growth in China may be offset by faster growth in other emerging markets such as Brazil and Russia. Furthermore, central banks across the globe generally remain accommodative, while the United States Federal Reserve held rates steady recently, after three rate hikes since December.

Inflation remains subdued even as Gross Domestic Product growth in the U.S. rebounded to 2.6% in Q2 from 1.2% (revised) in Q1, and labor markets continue to improve -- the unemployment rate at 4.3% is the lowest in 16 years. Driving the improving GDP growth, real consumption was up 2.8% on strong consumer expenditures, business investments were up 5.2%, and equipment investment up 8%. June existing home sales fell 1.8% amid tight supply, while housing starts reached a 4-month high. Finally, S&P earnings for this earnings season have been strong, generally higher than expectations.

Constance M. Everson, CFA, Committee member, shared her analysis of the global economic situation with the Committee. Ms. Everson said it is important to remember that "economic problems cause bear markets," regardless of whatever other factors prognosticators may blame. She said she is not as optimistic about the economy as what appears to be the consensus of many economists, but in the meantime, "this is an opportunity to make some money in a broad range of equity assets – until the day we have an economic decline." She said she believes the stock market could be undergoing revaluation in a delayed response to ultra-low interest rates. A revaluation provides the best explanation of the major indices' ability to rise despite sharp sector rotations year-to-date, and despite changing expectations for growth.

Mr. Trotsky asked Ms. Everson to discuss the behavior of fixed income and equity markets relative to each other. Ms. Everson said investors pessimistic about meeting return requirements in fixed-income may be turning to equity markets instead because equities are long-duration also and offer a competitive yield. She noted that "investors need specific reasons, at present, to invest in bonds"

Mr. Even asked whether the driving force was investors finally accepting that low yields for fixed income instruments could be "permanent." Ms. Everson agreed it was a key premise for a revaluation of equity markets, and a very likely outcome for bond yields, even if they were above their 2016 lows and rose a bit further now. "You get the yield you can tolerate," she said. Treasurer Goldberg noted that the staff in her office has yet to see any signs of increase in the yield of state bonds in the market.

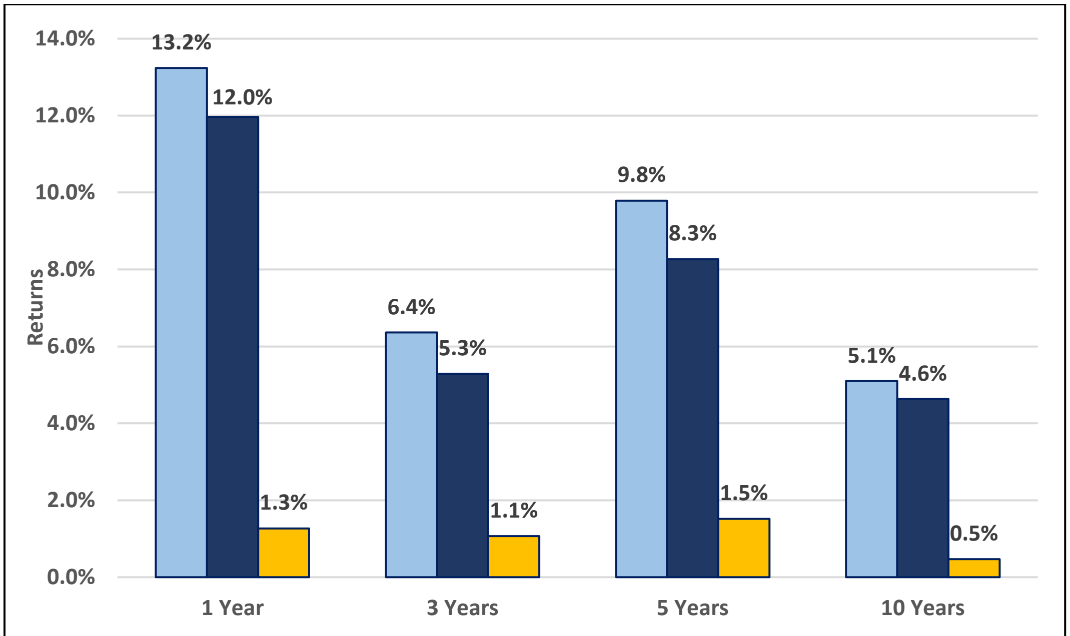
Mr. Trotsky noted that in this environment the PRIT Fund has performed well:

For the one-year ended June 30, 2017, the PRIT Fund was up 13.2% gross of fees, outperforming its benchmark of 12.0% by 127 basis points. On a net-of-fees basis, the PRIT Fund was up 12.8%, outperforming its benchmark by 79 basis points.

- This performance equates to an investment gain of $7.7 billion, net of fees.
- This outperformance equates to $480 million of value above the benchmark return, net of fees.
- Six of the seven major asset classes outperformed their respective benchmarks.
- Net total outflows to pay benefits for the one-year ended June 30, 2017, were approximately $1.5 billion.

Total PRIT Fund Returns

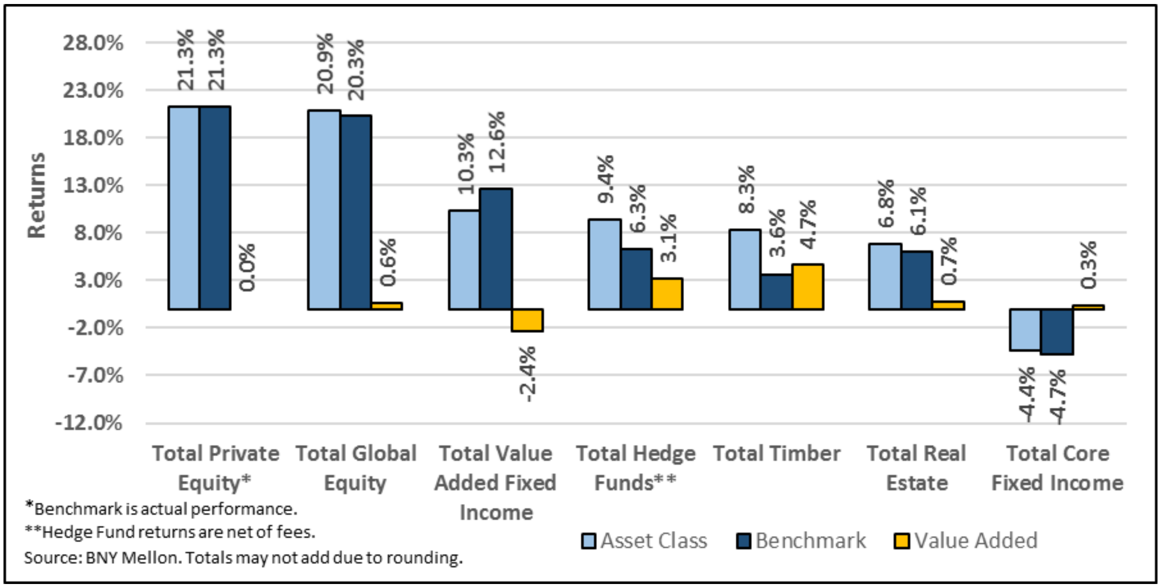
Annualized Returns as of June 30, 2017 *(Gross of Fees)*



Source: BNY Mellon.

PRIT Asset Class Performance

Trailing 1-year Performance as of June 30, 2017 *(Gross of Fees)*



PRIT Core Fund Performance Summary

Trailing 1-Year Performance as of June 30, 2017 *(Gross of Fees)*

Trailing 1-Year Performance: June 30, 2017	Return	Benchmark Return	Over/(Under) Benchmark (bps)	$Value (millions)	% of PRIT Fund
Total PRIT Fund	**13.2%**	**12.0%**	**127**	**66,850**	**100%**
Total Global Equity	**20.9%**	**20.3%**	**60**	**30,498**	**45.7%**
Domestic Equity	18.6%	18.7%	(8)	13,216	19.8%
International Developed	20.2%	20.4%	(16)	12,038	18.0%
Emerging Markets	28.2%	23.4%	479	5,243	7.9%
Private Equity	**21.3%**	**21.3%**	**0**	**7,092**	**10.6%**
Real Estate	**6.8%**	**6.1%**	**70**	**6,048**	**9.1%**
Total Timberland	**8.3%**	**3.6%**	**467**	**2,483**	**3.7%**
Hedge Funds	**9.4%**	**6.3%**	**313**	**5,580**	**8.4%**
Value Added Fixed Income	**10.3%**	**12.6%**	**(235)**	**5,403**	**8.1%**
Core Fixed Income	**-4.4%**	**-4.7%**	**33**	**7,984**	**12.0%**

PRIT Asset Class Performance

Annualized Returns as of June 30, 2017 *(Gross of Fees)*

1 Year	3 Year	5 Year	10 Year
PRIVATE EQUITY 21.3%	PRIVATE EQUITY 16.3%	PRIVATE EQUITY 17.9%	PRIVATE EQUITY 13.4%
GLOBAL EQUITY 20.9%	REAL ESTATE 10.3%	REAL ESTATE 11.4%	VALUE-ADDED FIXED INCOME 6.7%
VALUE-ADDED FIXED INCOME 10.3%	TIMBER 6.1%	GLOBAL EQUITY 11.3%	REAL ESTATE 6.5%
HEDGE FUNDS (NET OF FEES) 9.4%	GLOBAL EQUITY 5.4%	TIMBER 7.4%	TIMBER 6.1%
TIMBER 8.3%	CORE FIXED INCOME 4.7%	HEDGE FUNDS (NET OF FEES) 6.0%	CORE FIXED INCOME 5.3%
REAL ESTATE 6.8%	VALUE-ADDED FIXED INCOME 2.8%	VALUE-ADDED FIXED INCOME 5.1%	GLOBAL EQUITY 4.2%
CORE FIXED INCOME (4.4%)	HEDGE FUNDS (NET OF FEES) 2.4%	CORE FIXED INCOME 3.9%	HEDGE FUNDS (NET OF FEES) 2.8%

III. Public Markets & Investment Research

a. Performance Summary

Sarah Samuels, CFA, CAIA, Deputy Chief Investment Officer, discussed details of the public markets portfolio's performance with the Committee. Ms. Samuels said three themes describe fiscal 2017 performance: lower quality stocks and bonds outperformed higher quality stocks and bonds; higher risk assets outperformed lower-risk assets; non-U.S. assets in general, and emerging markets assets in particular, outperformed U.S. assets.

A composite measure of global equities, which comprise $30 billion of the PRIT Fund, rose 21% and outperformed its benchmark by 60 basis points, Ms. Samuels said. This 21% return contributed two-thirds of the total PRIT Fund's 13.2% return, she said. Within public equities, emerging markets equities rose the most – 21% – Ms. Samuels said, due in large part to strong economic performance in China and other emerging countries in Asia. Ms. Samuels said PRIM's core fixed income investments, reflecting the performance of the sector overall, lost value during the period, but PRIM's public fixed income managers out-performed their benchmarks.

Committee member Peter Monaco asked Ms. Samuels if the PRIT Fund should continue to invest in high yield corporate debt given its near peak valuations. Mr. Trotsky said PRIM staff has discussed high yield corporate debt at length and may find attractive ways to invest through PRIM's new Other Credit Opportunities sleeve.

b. Liquidity Study Presentation

Ms. Samuels along with Chuck LaPosta, CFA, Senior Investment Officer, presented the findings of a study of PRIM's liquidity. Ms. Samuels said the purpose of the study was to determine whether PRIM would be able to meet its obligations to pay benefits under various hypothetical market scenarios and whether PRIM could do so without selling assets prior to allowing those assets to recover any value they lost in a downturn. To conduct the study, Ms. Samuels said, PRIM staff explored the potential impact of extreme market activity on: asset class returns; private market capital calls and distributions; client activity; contributions from the state; and benefit payments. The PRIT Fund was found to be adequately positioned to meet any foreseeable liquidity needs, Ms. Samuels said, adding that the study will be utilized as part of PRIM's asset allocation process next year.

Mr. Monaco asked whether PRIM might benefit from putting into place a line of credit facility that could be used in extreme situations. Mr. Trotsky said staff had analyzed the potential cost and found the costs were excessive given the benefits such a facility would confer to PRIM.

IV. Hedge Funds and Portfolio Completion Strategies Performance Summary

Eric Nierenberg, Ph.D., Chief Strategy Officer, provided information to the Committee about hedge fund and portfolio completion strategies performance. He said the hedge fund program achieved a "perfect storm" in a positive sense during fiscal 2017, with strong performance and extremely low risk. For the year, he said, hedge funds generated a Sharpe Ratio of 5.7.

Treasurer Goldberg said her counterparts around the country increasingly are asking how PRIM is achieving its hedge fund results.

Mr. Nierenberg said PRIM's systematic macro investments did well, while risk premia performance was "mildly disappointing." He said Ms. Samuels and he have been traveling to meet with existing and potential PRIM investment managers as part of the transition of hedge funds to Ms. Samuels.

Mr. Monaco asked why PRIM continues to invest in fund of funds manager PAAMCO. Mr. Nierenberg said in response that PAAMCO gives PRIM access to certain "nascent managers" whose track records are too short to merit attention from PRIM staff but that nonetheless offer the PRIT Fund desirable exposure.

V. Private Equity Performance Summary

Michael Bailey, Senior Investment Officer – Director of Private Equity, updated the Committee on private equity performance. Mr. Bailey said the portfolio has "shifted into high gear" and attributed the strong performance during fiscal 2017 – return of 21.3% – to demand for the businesses private equity general partners are prepared to sell. Mr. Bailey said this demand is driven in part by a credit environment that has made it relatively easy for portfolio companies to take on debt to fuel growth and relatively easy for buyers of businesses to raise the capital to fund purchases. For the second year in a row, he said, portfolio companies are selling for 10 times cash flow.

Committee member Glenn P. Strehle, CFA, inquired as to whether PRIM would need to add staff to pursue additional private equity co-investment activities. Mr. Bailey responded: "The short answer is, 'absolutely.'"

VI. Request for Proposals for Risk Measurement Systems and Advisory Services (Voting Item)

Luis Roman. Ph.D., Senior Investment Officer – Director of Risk Management, presented a staff recommendation for the issuance of a Request for Proposals (RFP) for Risk Measurement Systems and Advisory Services. He noted that the current contract with MSCI expires in July 2018.

The Investment Committee unanimously voted to recommend to the PRIM Board that it approve the issuance of a Request for Proposals for Risk Measurement Systems and Advisory Services, and further to authorize the Executive Director to take all actions necessary to effectuate this vote.

The PRIM Investment Committee meeting adjourned at 11:50 a.m.

List of documents and other exhibits used at the meeting:

- *Minutes of the PRIM Investment Committee Meeting of May 2, 2017*
- *PRIT Fund Performance Report*
- *BNY Mellon Gross of Fees Performance Report*
- *Liquidity Study Presentation*