

PRIM Board Quarterly Update Third Quarter 2021



PRIM Executive Director and Chief Investment Officer Michael G. Trotsky, CFA provided the following information to the PRIM Board at its December 2, 2021, meeting:

Executive Director and Chief Investment Officer Report

We are very pleased to report that the PRIT Fund hit an important new milestone: With the latest valuation at the end of October, the PRIT Fund reached a record \$101 billion, crossing the \$100 billion mark and more than doubling in size over the past 10 years – a remarkable increase, especially when you consider that we pay out more than \$1.2 billion in annual pension payments. We want to thank everyone - PRIM staff, committee members, and Board members - for their hard work and dedication that have allowed us to reach this momentous occasion. This is a hallmark of outstanding performance and an important sign of stability for our 300,000 beneficiaries in a very turbulent and difficult time. We all should be proud of this important milestone – reaching \$100 billion is certainly good news.

During the committee meetings, we highlighted new advances in our ESG investment research, the research we started last year in cooperation with MIT Sloan School and other institutional investors from around the globe. This leading-edge research will enable PRIM to be among the first investors in the world to utilize more reliable ESG ratings to design and implement more impactful investment programs. This environmental focus will include an assessment of PRIM's investment portfolio carbon footprint – past and present – to measure the carbon footprint over time. In addition, PRIM staff launched an important new program as part of PRIM's FUTURE Initiative: a new emerging-diverse manager program championed by Treasurer Goldberg, with a goal of deploying \$1 billion in capital. With the Board's approval, PRIM will hire five new managers to deploy capital to diverse emerging managers. These are managers who generally have a very tough time getting started in the industry. We are very excited about these two initiatives. Additionally, with Board approvals we will deploy approximately \$800 million to six managers in Public Markets and Private Equity along with \$40 million in a new direct real estate opportunity. We will also expand the very successful Private Equity Co-Investment program.

Markets and PRIT Fund Performance

The quarterly results continue to be strong following a record-setting fiscal year 2021 in which the PRIT fund was up approximately 30% and nearly 9% above benchmark. For the September quarter, the PRIT Fund was up 2.4% net of fees despite global markets posting modest losses; domestic and developed international equity market returns in the quarter were essentially flat, but emerging market returns were negative 8% as China fell more than 18% with the prospect of an Evergrande bankruptcy and its possible contagion effects. A 60/40 mix of global stocks and bonds was down 0.6%, but the PRIT Fund fared better and was up 2.4% net of fees for the first fiscal quarter of 2022, well above benchmark. The PRIT Fund ended with a balance of \$98.5 billion, a new record high, and paid out \$523 million in benefits during the quarter. Consistent with recent quarters, private equity again led the way with a return of 13.7% for the quarter. Real Estate was up 6.6% and value-added fixed income was up 2.8%.

Markets have continued to be strong in October and in November the markets were down only fractionally even with the recent selloff. Fourth quarter to date through November, the S&P 500 is up 6.3%, developed international markets down 2.3% and emerging markets down 3.1%, bonds essentially flat and a 60/40 mix of global stocks and bonds is up 1.7%. This fourth quarter positive return happened during a time of mixed economic news and of course, the emergence of the Omicron variant, which we are keeping a watchful eye on.

GDP growth of 2% in Q3 missed expectations, the Federal Reserve announced its intention to accelerate the reduction of asset purchase stimulus programs, and consumer prices, a measure of inflation, surged 6.2% in October, the highest rate in three decades. This usually isn't good for markets. Employment news was somewhat encouraging as the unemployment rate fell, unemployment claims fell, but there are still 7.4 million people unemployed and the number of unemployed per job opening is at the highest levels since the 1960s. 4.4 million employees quit their jobs in September alone, the job quit rate rose to a record 3%, leading economists to call it "The Great Resignation." At the Investment Committee meeting the lack of consensus on the direction of inflation was in plain sight. We had a healthy discussion on both sides of the topic. The Fed's response to inflation, or lack of response in a timely way, will impact markets.

The market has bifurcated into two camps and there is not current consensus on the matter:

- 1) Those that believe inflation is transitory because of COVID and temporary supply shortages.
- 2) Those who believe that inflation may spiral out of control because of wage price escalation.

Time will tell and perhaps the emergence of the new variant will play a role. In the meantime, we will stay the course with our long-term, all-weather portfolio with components that will perform well whatever the environment.

PRIT Fund Performance

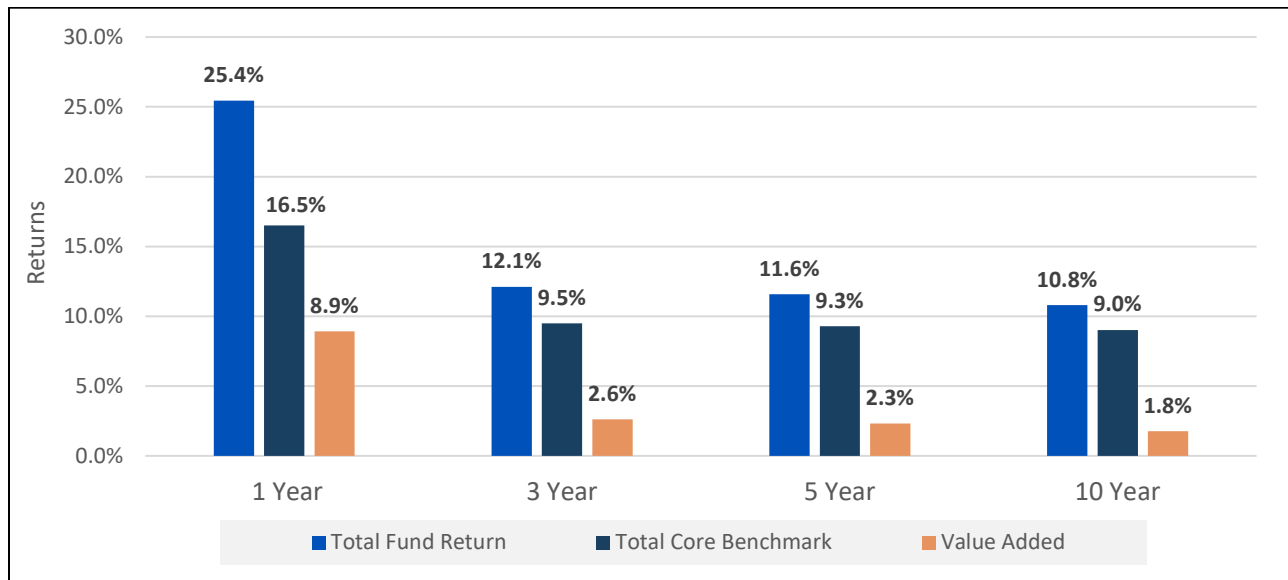
The PRIT Fund had strong positive results despite global markets posting modest losses in the quarter. For the one-year ended September 30, 2021, the PRIT Fund was up 25.4%, (25.0% net), outperforming the total core benchmark of 16.5% by 893 basis points (845 bps net).

- This performance equates to an investment gain of \$19.8 billion, net of fees.
- This outperformance equates to \$6.7 billion of value above the benchmark return, net of fees.
- Net total outflows to pay benefits for the one-year ended September 30, 2021, were approximately \$726 million.

The following charts summarize the PRIT Fund performance for the fiscal year ended September 30, 2021.

Total PRIT Fund Returns

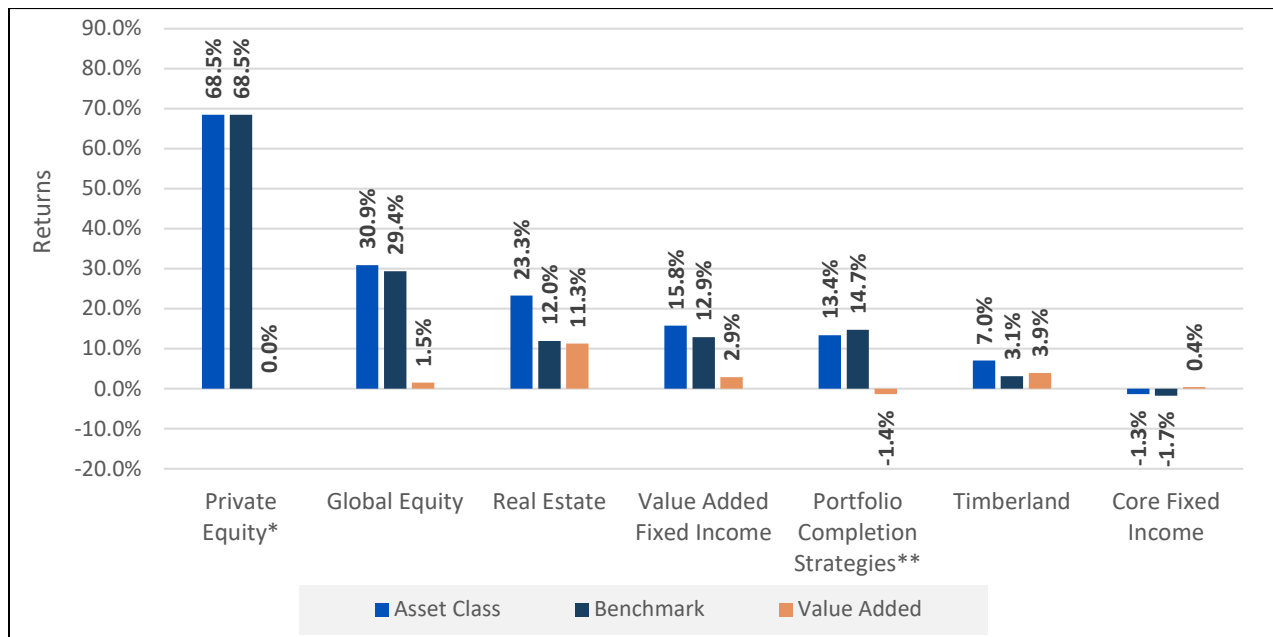
(Gross of Fees) Annualized Returns as of September 30, 2021



Source: BNY Mellon. Totals may not add due to rounding. Total Core Benchmark includes private equity benchmark.

PRIT Performance by Asset Class

(Gross of Fees) Annualized Returns as of September 30, 2021



Source: BNY Mellon. Totals may not add due to rounding. *Benchmark is actual performance. **Hedge Fund returns are net of fees.

PRIT Fund Periodic Table of Returns

(Gross of Fees) as of September 30, 2021

1 Year	3 Year	5 Year	10 Year
PRIVATE EQUITY 68.5%	PRIVATE EQUITY 31.0%	PRIVATE EQUITY 28.1%	PRIVATE EQUITY 21.9%
GLOBAL EQUITY 30.9%	GLOBAL EQUITY 12.7%	GLOBAL EQUITY 13.5%	GLOBAL EQUITY 12.4%
REAL ESTATE 23.3%	REAL ESTATE 9.6%	REAL ESTATE 8.8%	REAL ESTATE 10.9%
VALUE-ADDED FIXED INCOME 15.8%	CORE FIXED INCOME 7.6%	VALUE-ADDED FIXED INCOME 6.8%	VALUE-ADDED FIXED INCOME 6.0%
PCS 13.4%	VALUE-ADDED FIXED INCOME 7.3%	PCS 4.8%	PCS 5.1%
TIMBER 7.0%	PCS 3.1%	TIMBER 4.5%	TIMBER 4.9%
CORE FIXED INCOME (1.3%)	TIMBER 2.4%	CORE FIXED INCOME 3.4%	CORE FIXED INCOME 4.8%

Source: BNY Mellon.

Organizational Updates

PRIM recently announced four promotions and five new employees.

Promotions

Alyssa Fiore was promoted to Senior Investment Officer on the Private Equity team reporting to Michael McGirr. Alyssa joined PRIM in 2016 and has had a big positive impact on PRIM's industry-leading private equity program. Alyssa plays a leading role in sourcing new managers and co-investment opportunities for PRIM, and she has been intimately involved in designing and executing the team's unique and disciplined investment process and research agenda. Additionally, last year Alyssa was responsible for managing and mentoring Private Equity's summer intern who joined from Treasurer Goldberg's Women in Finance Fellowship program.

Minching Kao was promoted to Investment Officer. Minching joined PRIM in 2019 and during the past two years has become a vital member of the Real Estate and Timberland team focusing on investment analysis and modeling, annual performance and budget review, and quarterly valuations. Minching continues to strengthen PRIM's portfolio analytics framework by using her extensive experience in financial modeling, underwriting, and valuation. Her analytical skills are outstanding and the skills she brings to the team are extremely valuable.

Qingmei Li was promoted to Director of Audits and Financial Reporting. Qingmei joined PRIM in 2011 and has been an invaluable member of the Finance team ever since. Qingmei recently reached her 10-year anniversary at PRIM. Qingmei is responsible for the PRIM and PRIT Fund audits, Procurement Process and Benchmarking Agreed Upon Procedures, and the audits of PRIM's separately managed accounts, investment accounts which continue to grow in size and complexity. She is a trusted resource for the entire Finance team and her responsibilities have increased steadily through her tenure. Qingmei is also

responsible each year for PRIM's Annual Comprehensive Financial Report, which has received the GFOA's Certificate of Achievement for Excellence in Financial Reporting for the past 16 years.

Christina Marcarelli, Senior Investment Officer on the Real Estate and Timberland team, was promoted, adding to her title and responsibilities the role of Director of Real Estate Debt. She will also assume management responsibility for Minching Kao. Christina joined the Real Estate and Timberland team as an Investment Officer in 2016 and has been extremely productive, taking on an ever-expanding list of responsibilities across the Real Estate and Timberland portfolios. Over the past three years, she has led PRIM's strategic and manager research of the \$4.7 trillion commercial real estate debt market, becoming PRIM's clear subject matter expert in this area. Her efforts have led to the review of more than \$20 billion in real estate debt opportunities and the deployment of \$200 million in capital.

David Gurtz is taking on a new role as Deputy Chief Investment Officer in charge of strategic priorities, projects, and processes. As a CPA and a CFA, David brings a unique mix of experience and knowledge from both the investment and finance/operations side of PRIM, having formally served in several key roles at PRIM: Chief Financial Officer, Chief Operating Officer, Director of Risk management, Director of Public Markets, and Deputy Chief Investment Officer. Dave's role as Deputy Chief Investment Officer has grown substantially over the past few years as PRIM has taken on several new strategic initiatives. Dave will continue to lead and build out PRIM's FUTURE Initiative, he will chair the Investment Review Team and Investment Team meetings, coordinate the monthly PRIT fund rebalancing, provide research and assistance related to communications efforts and requests for information, lead reviews of PRIM's governance documents including the regular review of PRIM's Investment Policy Statement, oversee committee and Board package preparation, help the Operations team monitor investment manager guideline compliance, track and monitor legislation that may affect PRIM, participate and help coordinate RFP's and ongoing investment due diligence, and more.

New Employees

Michael McElroy has joined us as Senior Investment Officer and Director of Public markets and will report to Michael Trotsky. Michael joins PRIM from Wellington Management where he was a Managing Director for both the systematic and fundamental equity investment teams. Prior to that, he was Head of Global Equity for Batterymarch Financial Management where he was the lead portfolio manager for the systematic global equity portfolios. Previously, Michael served as the Head of Global Equities for Citigroup Asset Management, based in London, where he was responsible for all developed markets portfolio management. Michael earned a Bachelor of Science degree in Mathematics, a Master of Science degree in Transportation Planning, both from MIT, and his Master of Science in Management from the Sloan School of Management at MIT.

Denise Flynn joined PRIM as an Executive Assistant supporting David Gurtz and Michael McElroy. She will report to Deb Coulter. Denise comes to us from the New England Center and Home for Veterans where she served as the Executive Administrative Assistant to the President & Chief Executive Officer. Prior to that, Denise was the Quality Coordinator for Karyopharm Therapeutics, Inc. as well as an Executive Administrative Assistant at Pioneer Investments. Denise has an associate degree in Commercial/Advertising Photography from the Rhode Island School of Photography.

Joseph Kamotho joined PRIM as a Business Systems Analyst on the IT team reporting to David Griswold. He will be working to help support PRIM's IT systems and infrastructure and will help onboard new technologies. Joseph previously worked at Man Numeric where he was responsible for database design, management, and administration. Joseph holds a Bachelor of Science in Management Information Systems from Northeastern University.

Vincent Li joined PRIM as an Investment Operations Analyst reporting to George Tsipakas. Vincent comes to us from the Massachusetts Department of Children & Families (DCF), where he was serving as a Management Analyst. Prior to DCF, he was a Rates Analyst at KPN iBasis. Vincent has a Bachelor of Arts in Economics from the University of California San Diego and is currently a Level II candidate in the CFA® program.

Melissa Ng joined the Investment Operations team as Manager of Real Estate and Timberland, Accounting and Reporting, reporting to George Tsipakas. Melissa comes to us from Hancock Natural Resource Group, (HNRG) where she was a Senior Financial Accountant – Client Reporting. Prior to Hancock, she was a Senior Fund Accountant at GMO Renewable Resources. Melissa has a Bachelor's degree in Business Administration from the University of Massachusetts, Isenberg School of Management, with a major in finance and operations and is currently pursuing a Master of Business Administration at Endicott College, Van Loan School.

Recent Recognition

Matt Liposky, PRIM's Chief Investment Operations Officer, was recently selected to the CFA Institute's GIPS Standards Asset Owner Subcommittee.

Additionally, **Matt Liposky** and **Deb Coulter**, PRIM's Chief Financial Officer and Chief Administration Officer, were recently selected by the Treasurer as recipients for this year's performance recognition program. Each of them was awarded a citation for outstanding performance by the Treasurer in a ceremony in November, and each was recognized for their great work in their respective areas.

PRIM Board Actions

Strategy Group

Risk: Benchmarking Recommendations – Private Debt

The PRIM Board approved the recommendation that the Private Debt benchmark be changed to the Burgiss Distressed Debt benchmark. The Burgiss Distressed Debt benchmark is more representative of the risks and provides enhanced statistical fit to PRIM's Private Debt portfolio.

Additionally, PRIM's benchmarking consultant, Verus, reviewed the Core Fixed Income and Public Value-Added Fixed Income benchmarks and recommended no changes.

Risk: Benchmarking Recommendations – Real Estate

The PRIM Board approved the recommendation to change the PRIT Total Core Private Real Estate benchmark to the NCREIF Fund Index - Open End Diversified Core Equity Net Index (ODCE). The ODCE benchmark is more representative of PRIM's private portfolio risk and leverage profile.

Additionally, the PRIM Board approved the recommendation to change the weighting scheme of the Total Real Estate Benchmark to the corresponding floating weights of the Total Private Real Estate and Total REIT portfolios. This approach is consistent with PRIM's philosophy on private versus public weighting schemes where managing to a fixed target is infeasible.

Public Markets

Manager Recommendations: Arga, Artisan, and Driehaus

The PRIM Board approved the "graduation" and initial allocation of up to \$300 million to Arga Investment Management, LP (Arga) and initial allocations of up to \$150 million to both Artisan Partners LP (Artisan) and Driehaus Capital Management (Driehaus). Arga, a diverse investment management firm, will manage against the MSCI World ex-US benchmark and Artisan and Driehaus will manage against the MSCI World ex-US Small Cap benchmark.

Private Equity

Commitment Summary

PRIM Private Equity 2021 Investment Summary (in millions)	
*Denotes existing PRIM relationship	
Partnership	PRIT Commitment
Approved at the February 24th Board Meeting	
JMI Equity Fund X*	\$80
Thomas H. Lee Equity Fund IX*	\$200
Approved at the May 26th Board Meeting	
Hellman & Friedman Capital Partners X*	\$350
TA Associates XIV*	\$335
TA Select Opportunities Fund II*	\$100
Providence Strategic Growth V*	\$175
Insight Venture Partners XII*	\$150
Insight Partners XII Buyout Annex Fund*	\$50
Insight Partners Fund X Follow-on Fund*	\$75
Quad-C Partners X*	\$150
Thompson Street Fund VI*	\$150
Flagship Pioneering Fund VII*	\$30
Approved as Interim Recommendations on June 15th	
Nordic Capital Evolution Fund*	\$94 (€80)
Index Ventures XI*	\$20
Index Ventures Growth VI*	\$50
Approved at the August 17th Board Meeting	
Tidemark Fund I, L.P.	\$75
Trident IX, L.P.*	\$150
Total	\$2,234
2021 Investment Plan	\$2,100 - \$2,700

Follow-on Investment Recommendation: GTCR Strategic Growth Fund I L.P.

The PRIM Board approved a commitment of up to \$125 million to GTCR Strategic Growth Fund I L.P. (“Strategic Growth Fund”). GTCR is an established private equity firm that executes a buy-and-build strategy in Financial Services & Technology, Growth Business Services, Healthcare, and Technology, Media, and Telecommunications (“TMT”) companies in the United States. GTCR’s senior team has worked together for an average of 18 years. The majority of GTCR’s funds are either in Cambridge Associates’ first or second quartile for fund performance.

Follow-on Investment Recommendation: Georgian Growth Fund VI, L.P. & Georgian Alignment Fund II, L.P.

The PRIM Board approved commitments of up to \$100 million to Georgian Growth Fund VI, L.P. (“Growth Fund VI”) and up to \$50 million to Georgian Alignment Fund II, L.P. (“Alignment Fund II”). PRIM has invested in one prior Georgian fund since 2019. Georgian is a Toronto, Canada based growth equity firm and will make investments in high growth software companies demonstrating efficient and predictable recurring revenue models. Georgian’s senior team has worked together for 13 years. The majority of Georgian’s mature funds are either in Cambridge Associates’ first or second quartile for fund performance.

Follow-on Investment Recommendation: Spark Capital VII, L.P. & Spark Capital Growth IV, L.P.

The PRIM Board approved commitments of up to \$14 million to Spark Capital VII, L.P. (“Spark VII” or “Fund VII”) and up to \$28 million to Spark Capital Growth IV, L.P. (“Growth IV”). Spark Capital (“Spark”) makes venture capital investments in seed, early, and growth stage consumer and technology companies. Spark’s managing partners have worked together for an average of 14 years. PRIM has invested in nine prior Spark funds since 2005.

Private Equity Co-Investment Update and Recommendation

The PRIM Board approved the Co-Investment Guideline change to increase the annual co-investment capital deployment guideline from 20% of total Private Equity annual commitments to 40% of the upper end of PRIM's forecasted total annual Investment Plan. This proposed guideline change increases PRIM's co-investment capacity, ensuring sufficient capacity exists to invest in all qualifying co-investment opportunities in accordance with the PRIM Board approved Co-Investment guidelines.

Real Estate

New Investment Recommendation: 85 Jay Street

The PRIM Board approved a commitment of up to \$40 million for the purchase of 85 Jay Street, New York, NY. Staff recommended that the investment be placed into PRIM's direct real estate investment portfolio. PRIM's operating partner will be RXR Realty, a vertically integrated full-service real estate owner, operator, and developer based in New York. They are one of the largest landlords in New York, with ownership of 25.8 million square feet of commercial properties and 6,300 units of residential rental and for sale properties.

Finance & Administration

Consent Agenda

In April of 2014, the Board approved the implementation of a consent agenda to best utilize Board meeting time to focus on deliberation on the most substantive matters. A consent agenda is a meeting practice whereby routine and other non-controversial voting items that do not require discussion are presented and approved as a single agenda item in a single motion.

The PRIM Board approved the following proposed consent agenda items:

- 1) Approval of Fiscal Year 2021 Audit Results
- 2) Approval of Draft Fiscal Year 2021 Annual Comprehensive Financial Report
- 3) Approval of the Proposed 2022 PRIM Board and Committee Meeting Schedule
- 4) Approval of the Proxy Advisory and Voting Services Request for Proposals (RFP) Recommendation
- 5) Approval of the Information Technology Consulting Services Recommendation

The Client Services team -- Francesco Daniele, Laura Strickland, and Emily Green – will continue to meet with the retirement boards of PRIM's member retirement systems throughout the year. To schedule a visit, please contact Francesco at fdaniele@mapension.com, Laura at lstrickland@mapension.com, Emily at egreen@mapension.com, or call 617-946-8401. We look forward to seeing you soon.