

January 2016

PRIM Board Update



PENSION RESERVES
INVESTMENT
MANAGEMENT BOARD

Massachusetts Pension Reserves Investment Management Board

January Performance

Despite the selloff in global equities, the PRIT Core Fund returned -2.5% in January, as the Fund's diversified asset mix helped mitigate losses. Top performers were Core Fixed Income, up 3.4%, and Portfolio Completion Strategies, which returned 2.2%. Placed in perspective, a 60%/40% mix of global equities and core bonds would have returned -3.0% in January. *Please see the chart accompanying this piece showing the PRIT Core Fund vs. one month, fiscal 2016, calendar year, one-year, three-year, five-year and 10-year benchmarks.*

PRIM Stays the Course on Asset Allocation for 2016

In its first meeting of 2016, the PRIM Board chose to maintain the asset allocation targets it originally adopted in 2014. PRIM has taken a more defensive posture for the past several years by reducing the PRIT Fund's global equities exposure to 40% from 49% in 2011, and redeploying those assets to investment strategies that are uncorrelated to equities, i.e., long duration bonds and other low volatility investments within its Portfolio Completion Strategies bucket. Many of the 2016 asset class assumptions were higher this year, resulting in nearly a 6.9% expected 5-7 year return in the 2016 study, versus 6.8% in 2015. Return expectations remained muted for the 30 year return, however, which stayed at 7.8%. The Fund's standard deviation (a measure of risk) was reduced to 12.2% from 12.5% in 2015 (a lower number means less risk); and the 30 year Sharpe Ratio increased to 0.39 from 0.37. This number measures the excess return of the Fund (over the risk-free rate) per each unit of risk (the higher the number, the better).

PRIM Goes Passive in Domestic Large Cap

The PRIM Board approved the recommendation of the Investment Committee to transition its Large Cap Domestic Equity Portfolio to a 100% pure passive strategy. Currently, PRIM has a target of 80% pegged to a passive S&P 500 Index strategy and 20% allocated to "enhanced" index strategies, which seek to provide incremental return above the S&P 500. Based on PRIM staff's research, the median domestic large cap manager does not beat the index net of fees, and active management in this space does not meet PRIM's two pronged test to justify active management: 1) a high dispersion of returns among the best and worst managers and, 2) the median manager must outperform the benchmark net of fees. This reallocation will save PRIM \$4.5 million in annual fees.

Market Snapshot for January 2016

U.S. Gross Domestic Product ("GDP") expanded by 0.7% for the 4th quarter of 2015 in the Commerce Department's first estimate. Unemployment remained level at 5.0%. Jobless

claims, a proxy for layoffs, rose to 282,000, the highest reading for initial claims since April 2015. The U.S. Institute for Supply Management ("ISM") Purchasing Manufacturing Index ("PMI") contracted again in January. The ISM highlighted uncertain macroeconomic conditions and weak oil and gas prices as the main forces weighing on U.S. manufacturers. In its January meeting, the Federal Reserve (the "Fed") kept interest rates unchanged with a target range of rate to 25 to 50 basis points ("bps"). The U.S. Dollar Index appreciated 0.8%, as the Bank of Japan (BoJ) announced a negative interest rate policy and on European Central Bank (ECB) comments about further unconventional measures. Oil prices fell to \$33.6 a barrel, down 9.2% in January.

U.S. equities fell sharply in January as the selloff in Chinese stocks and crude oil, along with weak U.S. economic data, dominated the headlines. Large cap equities fell 5.0%, but outperformed small cap equities, which fell 8.8%.

International equities declined 7.2% in January. European equities returned -6.6%, as oil prices slid, Chinese manufacturing contracted, and corporate earnings were weaker than expected. Japanese equities fell 8.2%, closing in on bear market territory, as Asian stocks felt the impact of concerns over falling oil prices and global growth. In January, the International Monetary Fund (IMF) cut its forecast for global economic growth in 2016 and 2017.

Emerging market equities fell 6.5% in January. Brazilian equities returned -7.3%, led by the troubled oil giant Petrobras and other commodity producers. A deepening recession continues to plague the region, as the Real appreciated 1.6% in January, which hurt Brazilian exporters. Chinese shares lost 12.7%, as investors remained concerned about capital outflows and the People's Bank of China announced the largest downward adjustment to the Yuan since August 2015. In response, the Shanghai Index fell sharply, which forced trading to cease 30 minutes after the stock exchange opened. Frontier markets fell 6.8%.

In fixed income markets, the 20+year STRIPS index rose 6.9% in January. U.S. Treasury 20+year STRIPS yields were 25 bps lower in January, 2.8% versus 3.1% in December. Diversified investment grade bonds, as measured by the Barclays Aggregate Index, gained 1.4% in January. High yield bonds returned -1.6%, as spreads widened. Emerging Markets Debt US dollar denominated (EMD\$) fell -0.2%; however, EDM Local rose 0.4% for the month. The 1.2% gain in bonds prices and 0.5% gain from coupon were offset by a 1.3% loss in foreign currency exchange (FX).

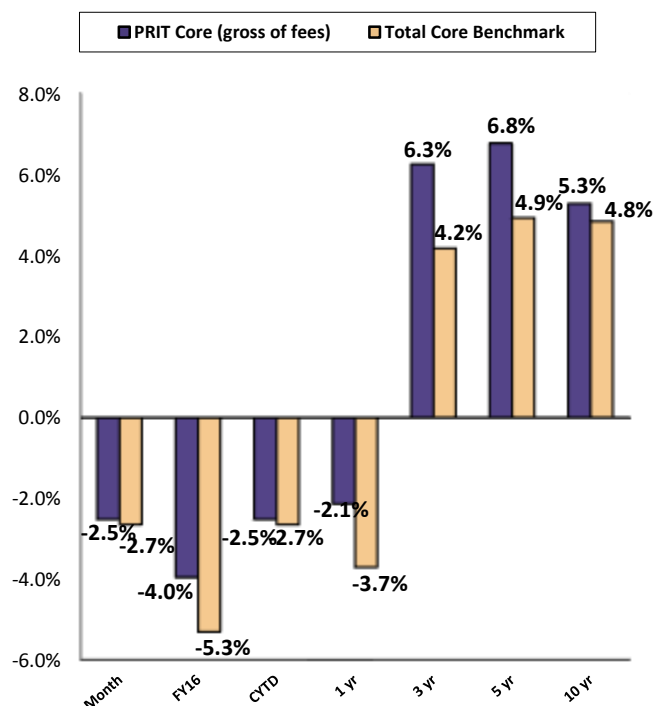
PRIT FUND ASSETS: \$58,029,475,000

PRIT Core Fund as of 1/31/2016

PRIT Core Fund Recap – January 31, 2016

Portfolio	Month	CYTD	1-Year
PRIT Core Total	-2.52%	-2.52%	-2.14%
U.S. Equity	-5.80%	-5.80%	-2.72%
International Equity	-6.73%	-6.73%	-5.66%
Emerging Markets Equity	-6.32%	-6.32%	-18.07%
Core Fixed Income	3.44%	3.44%	-6.39%
Public Value Added FI*	-0.81%	-0.81%	-5.78%
Total Value Added FI**	-0.61%	-0.61%	-4.77%
Private Equity	-0.29%	-0.29%	17.82%
Core Real Estate	-0.70%	-0.70%	9.49%
Timberland	-0.22%	-0.22%	0.31%
Hedge Funds (net of fees)	-1.64%	-1.64%	-3.70%
Portfolio Completion Strategies	2.19%	2.19%	-2.06%

Returns are gross of fees unless otherwise noted. Timberland, Total Value-Added Fixed Income, and Portfolio Completion Strategies sleeves are currently not available through Segmentation; however, the *Public Value Added Fixed Income sleeve is available as of April 1, 2013. **Total Value-Added FI includes returns of Public Value-Added FI and Private Debt. Private Equity is available to Segmented Systems through the Vintage Year Program.



Market Recap January 31, 2016

Global Equity Markets

U.S. Equities:

Index	Month	CYTD	1-Year
S&P 500	-4.96%	-4.96%	-0.67%
Russell 2000 Growth	-10.83%	-10.83%	-10.01%
Russell 2000 Value	-6.72%	-6.72%	-9.94%
Russell 2500 Growth	-9.89%	-9.89%	-8.65%
Russell 2500	-7.97%	-7.97%	-8.77%

International Equities:

Index	Month	CYTD	1-Year
Custom World IMI Ex-US	-7.10%	-7.10%	-8.65%
MSCI Emerging Mkts. IMI	-6.80%	-6.80%	-20.25%

Fixed Income

Index	Month	CYTD	1-Year
Barclays Aggregate	1.38%	1.38%	-0.16%
BC US Treas 20+Yr STRIPS	6.88%	6.88%	-9.62%
ML High Yield Master II	-1.58%	-1.58%	-6.76%
JPM EMBI Global	-0.20%	-0.20%	0.68%
JPM GBI EM Global Div.	0.35%	0.35%	-14.91%

Real Estate

Index	Month	CYTD	1-Year
NCREIF 1-Qtr Lag Private	0.00%	0.00%	13.48%
FTSE EPRA NAREIT Global	-4.26%	-4.26%	-8.86%

Hedge Funds

Index	Month	CYTD	1-Year
HFRI Fund of Funds	-2.95%	-2.95%	-3.33%

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