



COMMONWEALTH OF PENNSYLVANIA
PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM

High Yield/Private Credit - Quarterly Report Second Quarter 2017

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Deputy Chief Investment Officer, Non-Traditional Investments

December 7, 2017

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- **Portfolio Overview**
- Performance
- Cash Flow Activity
- Portfolio Detail

Portfolio Overview as of June 30, 2017

- Active Committed Capital of \$9.4 billion to 42 funds across 15 sponsors
- Unfunded commitments of \$2.6 billion*
- Net Asset Value of \$4.5 billion
- The portfolio's net IRR since inception is 8.8%
- The table below summarizes the portfolio's NAV and IRR by vintage year

Vintage Year	Net Asset Value (\$M)	Net IRR Since Inception
2007	\$11.1	6.3%
2008	94.7	13.8%
2009	362.7	9.0%
2010	216.1	9.8%
2011	333.0	8.4%
2012	901.1	5.4%
2013	583.2	6.5%
2014	754.7	8.9%
2015	997.8	16.7%
2016	195.6	13.5%
2017	7.3	(2.1%)
Total	\$4,457.4**	8.8%

*As of June 30, 2017 PSERS is reporting an unfunded amount of \$2.6 billion; For projection purposes, PSERS has written off unfunded amounts for select funds

**The Total Portfolio Net Asset Value and IRRs include hedging of foreign currency since June 2015; prior to this date, the foreign currency was not hedged

Commitments Approved and Executed Since January 1, 2017

Commitments Approved and Executed Since January 1, 2017				
Fund Name	Type	Commitment (\$M)	Date Approved	Date Executed
Cerberus PSERS Levered Loan Opportunities Fund, LP*	Senior Loans	\$75M	6/11/2015	4/11/2017
Park Square – PSERS Credit Opportunities Fund, LP*	Senior Loans	\$150M	8/7/2014	4/28/2017
		\$50M	8/7/2014	8/17/2017
Latitude Management Real Estate Capital IV, Inc.	Real Assets	\$75M	5/25/2016	5/1/2017
Avenue Energy Opportunities Fund II, L.P.	Opportunistic	\$100M	6/16/2017	9/6/2017
Galton Onshore Mortgage Recovery Fund IV, L.P.	Real Assets	\$150M	9/15/2017	10/6/2017
PIMCO BRAVO Fund Onshore Feeder III, L.P.	Real Assets	\$250M	10/5/2017	11/16/2017

*These commitments were increased, by the amounts listed, in accordance with Exhibit D of the Investment Policy Statement, Objectives and Guidelines. Inclusive of the amounts shown above, the total commitments for Park Square – PSERS Credit Opportunities Fund, LP and Cerberus PSERS Levered Loan Opportunities Fund, LP are \$350 million and \$300 million, respectively.



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High Yield/Private Credit Portfolio Snapshot ¹

(\$M)	3/31/2017	6/30/2017	Change
Active Partnerships	41	42	1
Capital Committed ²	\$9,345.7	\$9,435.6	\$89.9
Unfunded Commitment	\$2,653.6	\$2,590.9	(\$62.7)
Capital Contributed	\$7,236.2	\$7,477.3	\$241.1
Capital Distributed	\$4,815.5	\$4,965.5	\$150.0
Market Value	\$4,292.1	\$4,457.4	\$165.3
Total Value Multiple	1.3x	1.3x	-
Since Inception IRR	8.8%	8.8%	-

¹ The High Yield/Private Credit Portfolio includes Private Debt Internal Program investments.

² The change in capital committed during the period is attributable to fluctuations in exchange rates for non-US denominated funds and new commitments made during the period.

Internal Rate of Return (IRR)* as of June 30, 2017

	1 Quarter IRR	1 Year IRR	3 Year IRR	5 Year IRR	Since Inception IRR
Mezzanine	4.7%	7.3%	(2.0%)	2.5%	3.3%
Opportunistic	1.4%	14.9%	8.0%	8.9%	11.3%
PD Internal Program	(2.6%)	(10.7%)	(24.7%)	N/A	(19.2%)
Real Assets	2.8%	8.6%	6.8%	12.1%	8.4%
Senior Loans	2.4%	12.8%	7.1%	9.0%	8.3%
Total Portfolio ¹	1.7%	12.3%	6.1%	8.6%	8.8%
Benchmark ²	2.2%	12.3%	4.5%	6.9%	7.7%

¹ The Total Portfolio returns include hedging of foreign currency since June 2015; prior to this date, the foreign currency was not hedged.

² Barclay's US Corporate High Yield Index

* Dollar-weighted (IRR)

Net Value Drivers as of June 30, 2017

Five Top Net Value Drivers as of June 30, 2017

Investment Name	Vintage Year	Net Value Change (\$M)	1 Quarter IRR	Since Inception IRR
ICG Europe Fund V, L.P.	2011	\$20.2	14.4%	6.1%
Apollo European Principal Finance Fund II (Dollar A), L.P.	2012	10.6	5.9%	10.7%
HayFin Special Opportunities Credit Fund (Parallel), L.P.	2012	9.2	6.3%	3.4%
PSERS TAO Partners Parallel Fund, L.P. - (TAO 3.0)	2015	8.4	9.6%	16.1%
ICG Europe Fund VI, L.P.	2015	7.8	16.2%	53.1%
Total		\$56.2	9.3%	7.6%

Five Bottom Net Value Drivers as of June 30, 2017

Investment Name	Vintage Year	Net Value Change (\$M)	1 Quarter IRR	Since Inception IRR
Avenue Energy Opportunities Fund, L.P.	2015	(\$8.2)	(3.4%)	10.5%
Carlyle Energy Mezzanine Opportunities Fund-Q, L.P.	2012	(7.3)	(8.6%)	(11.8%)
Brigade Structured Credit Offshore Fund	2014	(0.8)	(0.3%)	8.7%
LBC Credit Partners III, L.P.	2013	(0.5)	(0.4%)	11.7%
Bain Capital Middle Market Credit 2010, L.P.	2010	(0.5)	(1.4%)	9.6%
Total		(\$17.3)	(2.3%)	6.4%

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Portfolio Activity as of June 30, 2017

2Q17 (Final)					
(\$M)	New Commitments	Contributions	Distributions	Residual Value	Unfunded
Quarter	\$300.0	\$241.1	\$150.0		
Y-T-D	\$300.0	\$410.4	\$305.3		
I-T-D	\$9,435.6	\$7,477.3	\$4,965.5	\$4,457.4	\$2,590.9

High Yield/Private Credit Portfolio Summary

High Yield/Private Credit Portfolio Summary					
(\$M)	Quarter Ended				Year Ended
	9/30/2016	12/31/2016	3/31/2017	6/30/2017	6/30/2017
Beginning Market Value	\$3,792.9	\$4,080.4	\$4,159.0	\$4,292.1	\$3,792.9
Paid-In Capital	266.7	147.5	169.3	241.1	824.6
Distributions	(133.2)	(203.0)	(155.3)	(150.0)	(641.5)
Net Value Change	154.0	134.1	119.1	74.2	481.4
Ending Market Value	\$4,080.4	\$4,159.0	\$4,292.1	\$4,457.4	\$4,457.4
Unfunded Commitments	\$2,694.9	\$2,780.4	\$2,653.6	\$2,590.9	\$2,590.9
Total Exposure	\$6,775.3	\$6,939.4	\$6,945.7	\$7,048.3	\$7,048.3
Point-to-Point IRR	3.9%	3.3%	2.9%	1.7%	12.4%
Since Inception IRR	8.5%	8.7%	8.8%	8.8%	8.8%

Cash Flow Through September 30, 2017

High Yield/Private Credit Portfolio Cash Flow

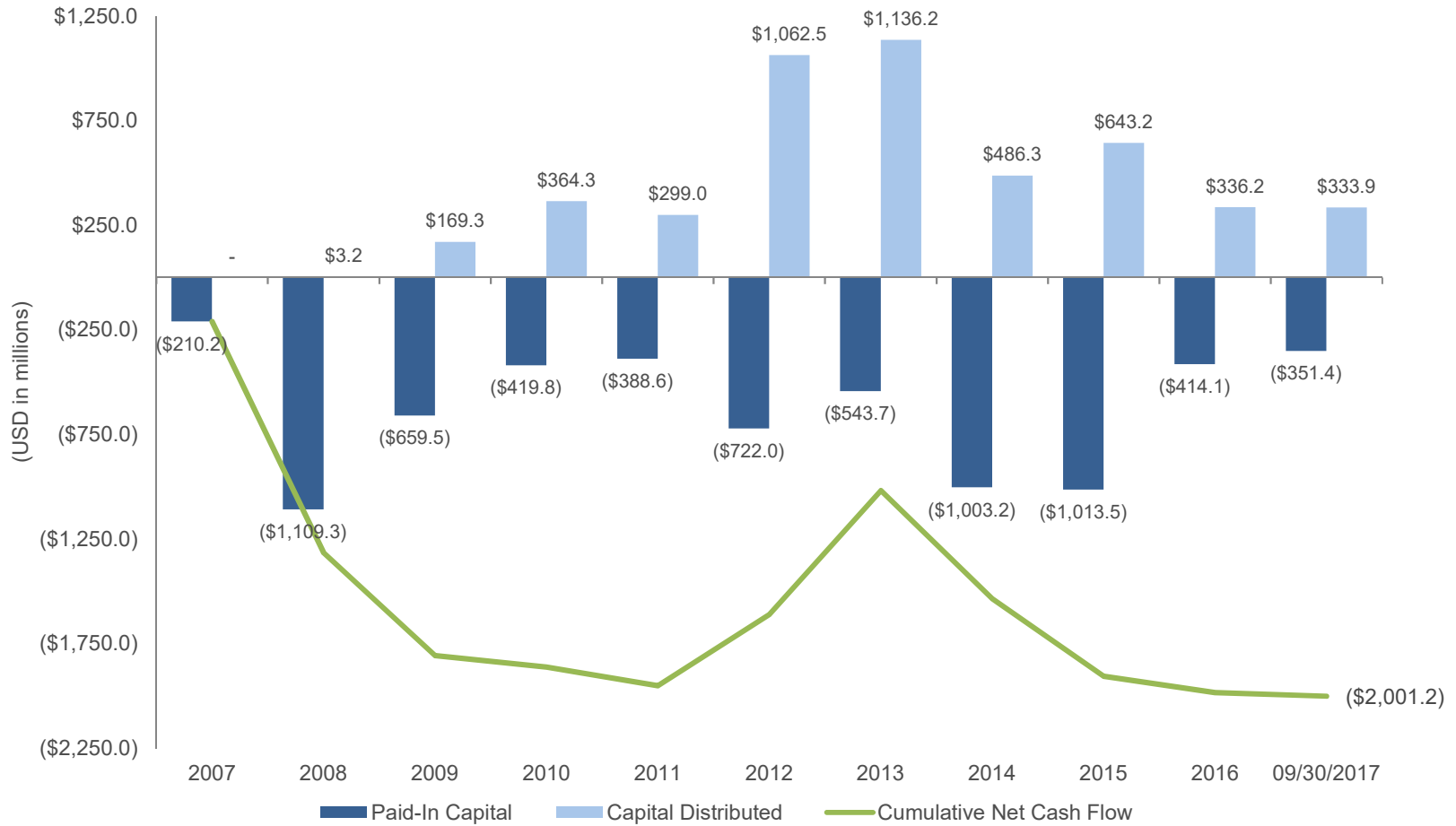
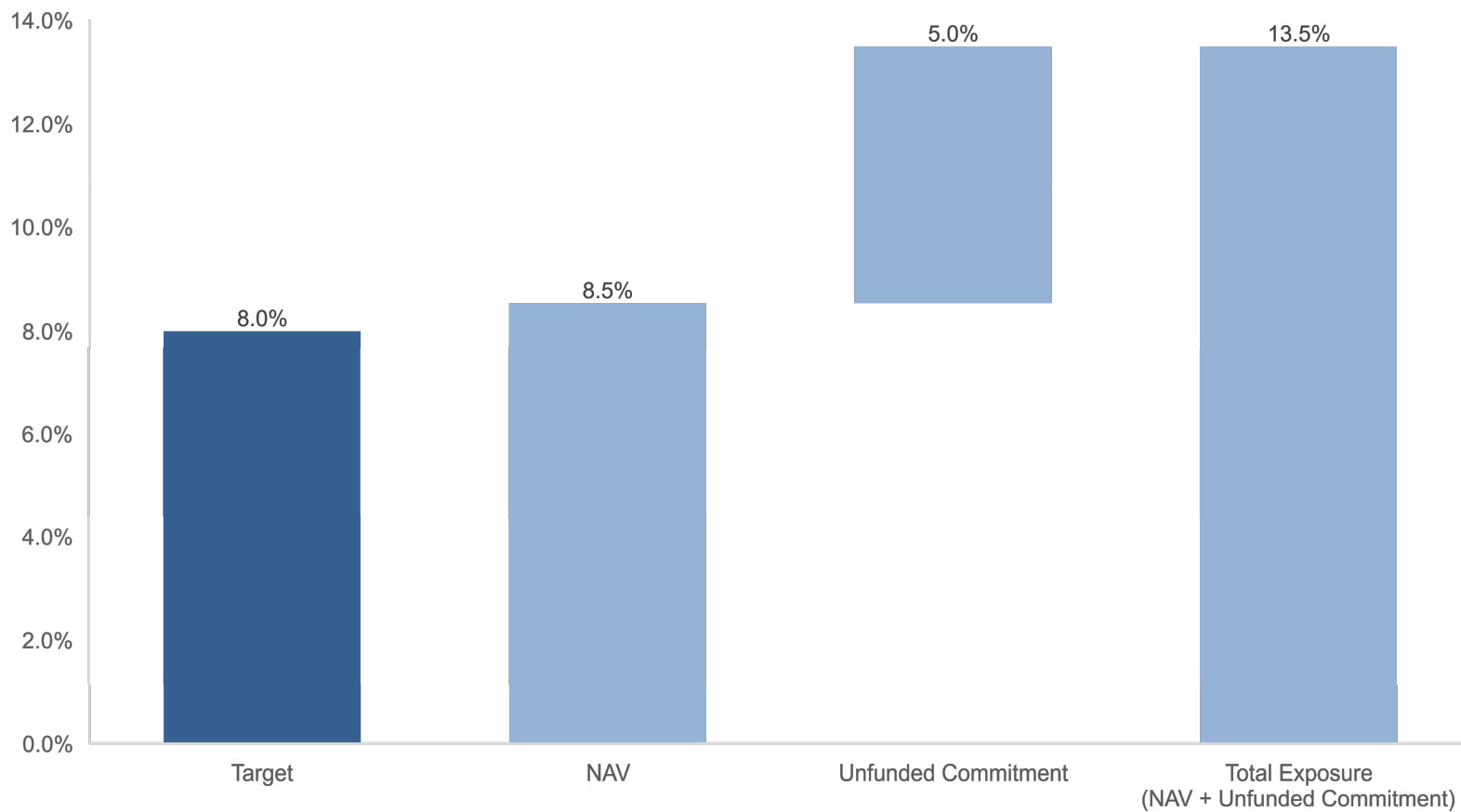


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Portfolio Asset Allocation

(PSERS' Total Fund as of June 30, 2017 \$52.24 billion)

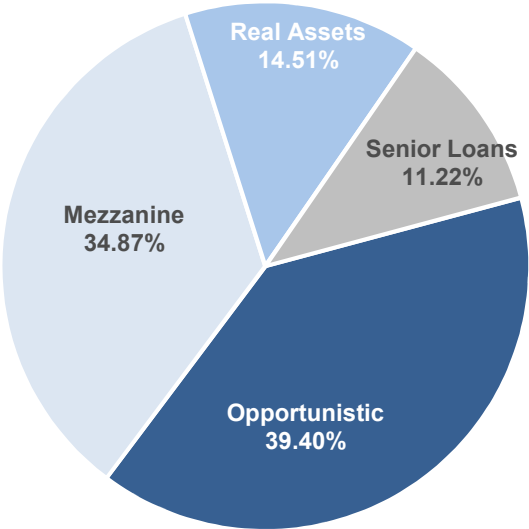


Target allocation was increased to 10% in October 1, 2017.

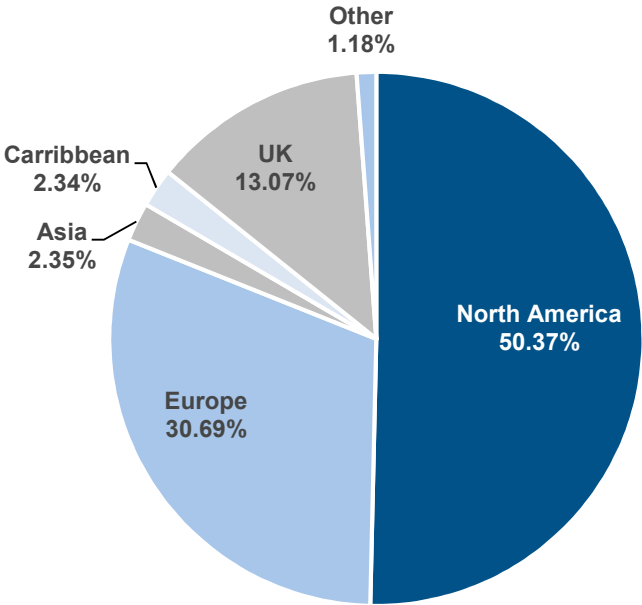


Portfolio Diversification by Investment Style & Region

**Investment Style Diversification
by Total Exposure
As of June 30, 2017**



**Regional Diversification
by Exposed Market Value
As of June 30, 2017**





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