



COMMONWEALTH OF PENNSYLVANIA
PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM

Private Markets Division Quarterly Report Second Quarter 2016

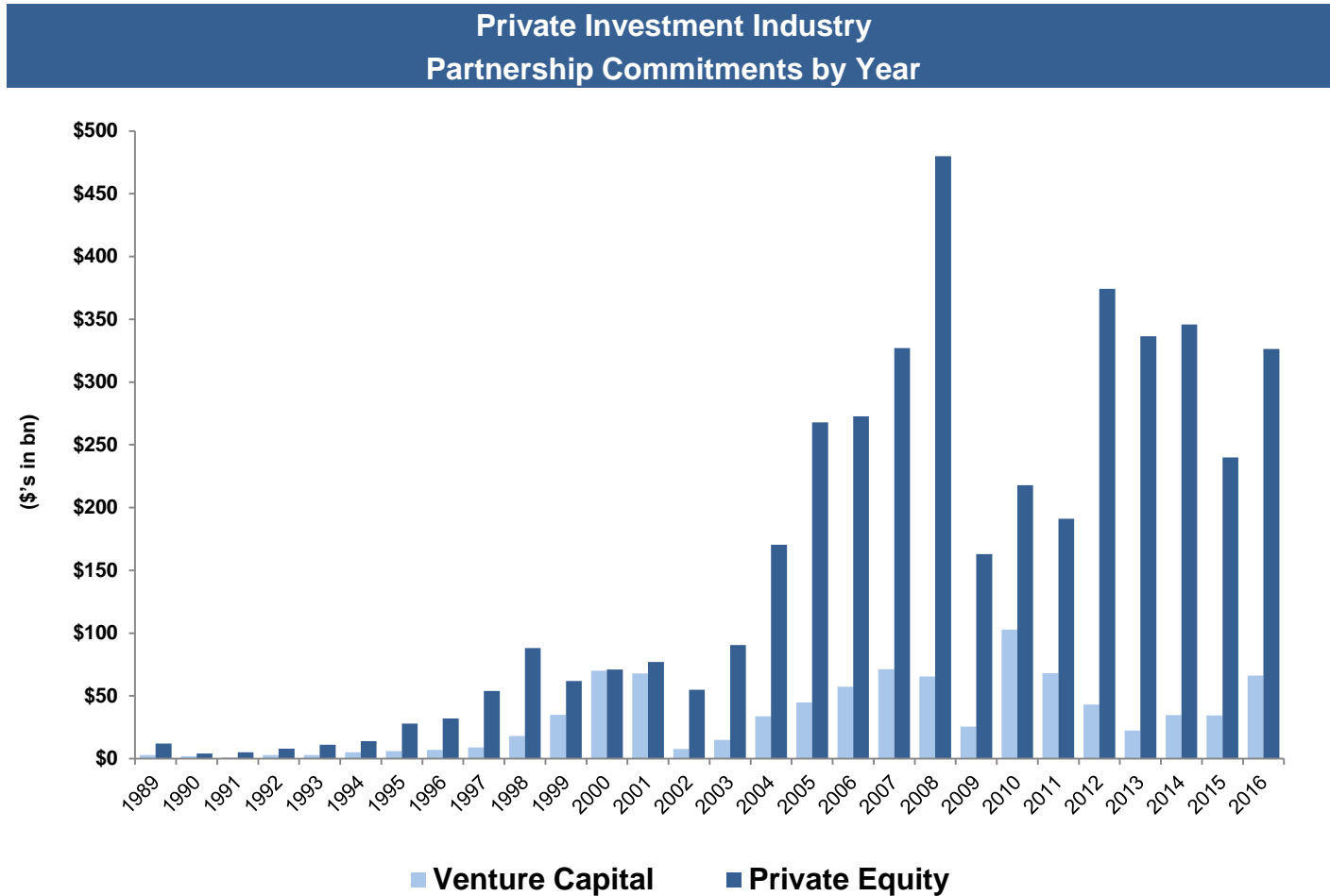
Charles J. Spiller
Deputy Chief Investment Officer, Non-Traditional Investments

March 9, 2017

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- **Commitments**
- Performance
- Cash Flow Activity
- Private Markets Portfolio Detail

Private Investment Industry as of September 30, 2016



Commitments Approved (Since April 1, 2016)

Fund	Type	Approved (\$mm)	Date Approved
Bridgepoint Development Capital III, LP	PE	£75.0	06/10/16
Incline Equity Partners IV, LP	PE	\$100.0	10/07/16
Platinum Equity Capital Partners IV, LP	PE	\$300.0	10/07/16
HgCapital 8, LP	PE	£95.0	12/07/16
HGGC Fund III, LP	PE	\$125.0	12/07/16
LLR Equity Partners V, LP*	VC	\$200.0	12/07/16

*Commitments approved but not yet executed as of the day of this presentation

Commitments Executed (Since April 1, 2016)

Fund	Type	Date Approved	Commitment (\$mm)	Date Executed
L Catterton VIII, LP	PE	03/11/16	\$100.0	05/20/16
Sixth Cinven Fund, LP	PE	03/11/16	€100.0	06/01/16
Strategic Partners Fund VII, LP	PE	03/11/16	\$250.0	06/03/16
Bridgepoint Development Capital III, LP	PE	06/10/16	£75.0	06/16/16
HGGC Fund III, LP	PE	12/07/16	\$125.0	01/06/17
Incline Equity Partners IV, LP	PE	10/07/16	\$100.0	01/17/17
Platinum Equity Capital Partners IV, LP	PE	10/07/16	\$300.0	01/25/17
HgCapital 8, LP	PE	12/07/16	£95.0	02/01/17

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Internal Rate of Return (IRR) for Private Equity, Venture Capital, Special Situations and PEIP as of June 30, 2016 (Final)

	Quarter*	1-Year**	3-Year**	5-Year**	10-Year**	Inception**
Final 2nd Quarter 2016						
Private Equity	2.81%	3.76%	7.68%	8.23%	10.00%	11.58%
Benchmark¹	0.72%	1.71%	4.78%	4.79%	4.07%	5.09%
Venture Capital	4.13%	0.62%	9.43%	8.85%	7.40%	7.06%
Benchmark²	-0.20%	-1.39%	2.07%	1.23%	-0.17%	-0.97%
Special Situations	2.35%	-2.82%	5.26%	6.71%	8.98%	13.24%
Benchmark¹	0.72%	1.71%	4.78%	4.79%	4.07%	5.09%
PE Internal Program	5.86%	24.32%	29.64%	N/A	N/A	32.05%
Benchmark³	-0.95%	-1.25%	0.35%	N/A	N/A	-12.05%
Total Portfolio	3.05%	3.20%	7.97%	8.32%	9.66%	11.21%
Benchmark⁴	0.54%	1.22%	4.42%	4.39%	3.76%	3.16%

* Time-weighted

** Dollar-weighted (IRR)

1) Burgiss Index PE/SS

2) Burgiss Index VC

3) Burgiss Index Int

4) Burgiss Index PE/VC/SS/Int

Internal Rate of Return (IRR) by Strategic Allocation for Special Situations, Venture Capital, Private Equity and PEIP

	PSERS' Market Value	Quarter*	1-Year**	3-Year**	5-Year**	10-Year**	Inception**
<u>June 30, 2016 (Final)</u>							
Special Situations	14.1%	2.4%	-2.8%	5.3%	6.7%	9.0%	13.2%
Venture Capital	12.3%	4.1%	0.6%	9.4%	8.9%	7.4%	7.1%
Private Equity:							
Large Buyout	9.0%	4.6%	9.8%	11.8%	10.7%	9.0%	9.0%
Middle Market Buyout	51.4%	3.1%	3.2%	5.9%	7.2%	10.8%	12.4%
Secondary	8.0%	-1.1%	-0.2%	9.1%	8.0%	8.2%	20.3%
PE Internal Program	5.2%	5.9%	24.3%	29.6%	N/A	N/A	32.1%
Subtotal Private Equity:	73.6%	3.0%	4.8%	8.2%	8.6%	10.2%	11.7%
Total	100.0%	3.1%	3.2%	8.0%	8.3%	9.7%	11.2%
Private Equity Domestic	41.8%	4.2%	5.9%	8.0%	9.9%	9.4%	10.9%
Private Equity International	31.8%	1.5%	3.4%	8.6%	6.8%	11.8%	13.9%

* Time-weighted

** Dollar-weighted (IRR)

Internal Rate of Return (IRR) for Private Equity, Venture Capital, Special Situations and PEIP as of 09/30/16 (Preliminary)

	Quarter*	1-Year**	3-Year**	5-Year**	10-Year**	Inception**
<u>Preliminary 3rd Quarter 2016</u>						
Private Equity	4.0%	10.2%	7.1%	10.2%	9.9%	11.6%
Benchmark¹	1.0%	2.9%	4.8%	5.3%	4.1%	5.1%
Venture Capital	4.0%	8.2%	9.8%	10.7%	7.8%	7.2%
Benchmark²	-0.3%	-0.8%	1.8%	1.4%	-0.2%	-1.0%
Special Situations	2.7%	1.9%	5.7%	9.7%	8.9%	13.2%
Benchmark¹	1.0%	2.9%	4.8%	5.3%	4.1%	5.1%
PE Internal Program	7.6%	28.3%	29.9%	N/A	N/A	32.2%
Benchmark³	-0.7%	-0.2%	0.1%	N/A	N/A	-6.7%
Total Portfolio	4.0%	9.5%	7.7%	10.4%	9.7%	11.3%
Benchmark⁴	0.7%	2.3%	4.3%	4.8%	3.8%	3.2%

* Time-weighted

** Dollar-weighted (IRR)

1) Burgiss Index PE/SS

2) Burgiss Index VC

3) Burgiss Index Int

4) Burgiss Index PE/VC/SS/Int

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- **Cash Flow Activity**
- Private Markets Portfolio Detail

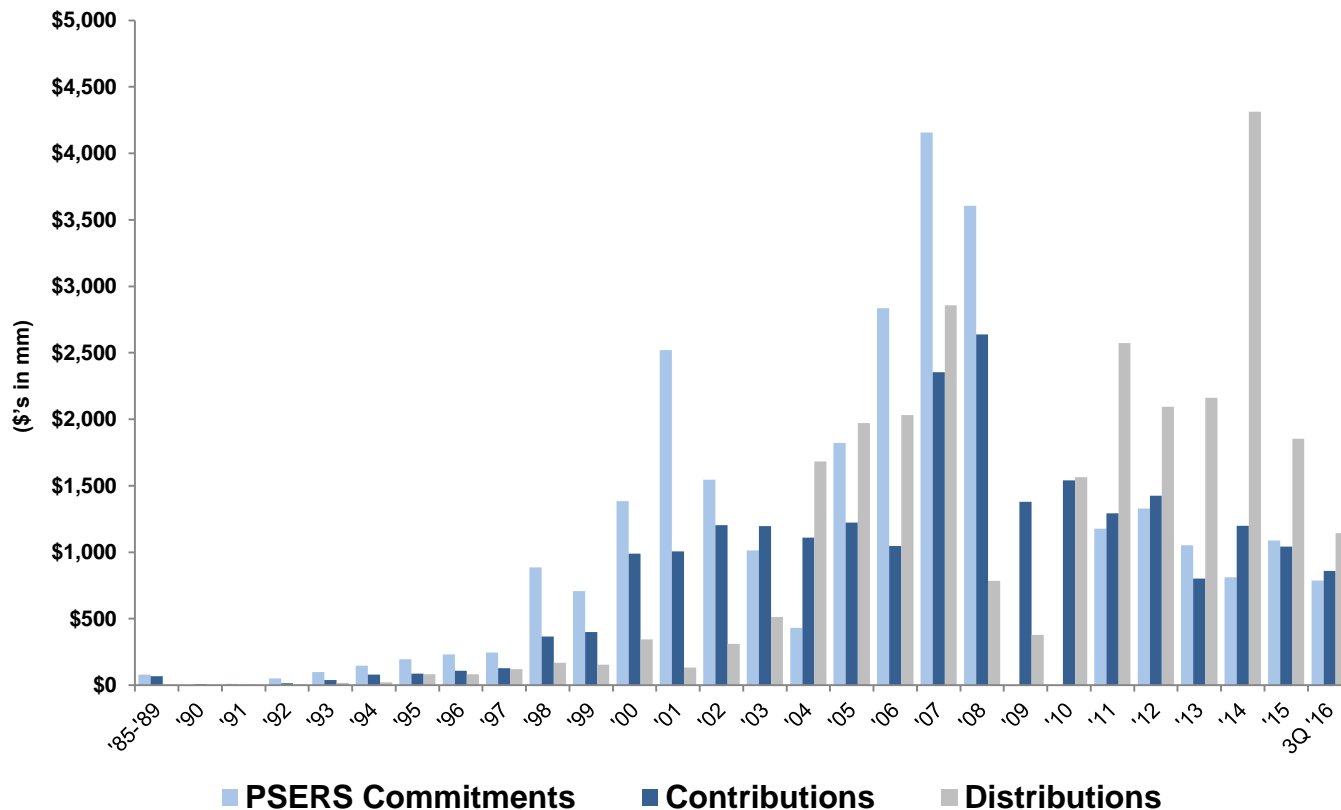
Cash Flow Activity for the Quarters for Private Equity, Venture Capital, Special Situations and PEIP

Final – 2Q 2016					(\$s in mm)
	Commitments	Contributions	Distributions	Residual Value	Unfunded
Quarter	\$609.8	\$278.5	\$399.9		
Y-T-D	\$754.8	\$590.7	\$709.8		
I-T-D	\$27,580.5	\$23,348.4	\$26,939.6	\$7,944.1	\$4,651.7

Prelim – 3Q 2016					(\$s in mm)
	Commitments	Contributions	Distributions	Residual Value	Unfunded
Quarter	\$27.1	\$270.0	\$432.9		
Y-T-D	\$781.2	\$860.7	\$1,142.6		
I-T-D	\$27,611.2	\$23,618.4	\$27,372.5	\$8,090.4	\$4,413.5

Private Markets Portfolio Cash Flow through September 30, 2016 (Preliminary)

Private Markets Portfolio Cash Flow through September 30, 2016 (Preliminary)



Note: Commitments based on executed documents.

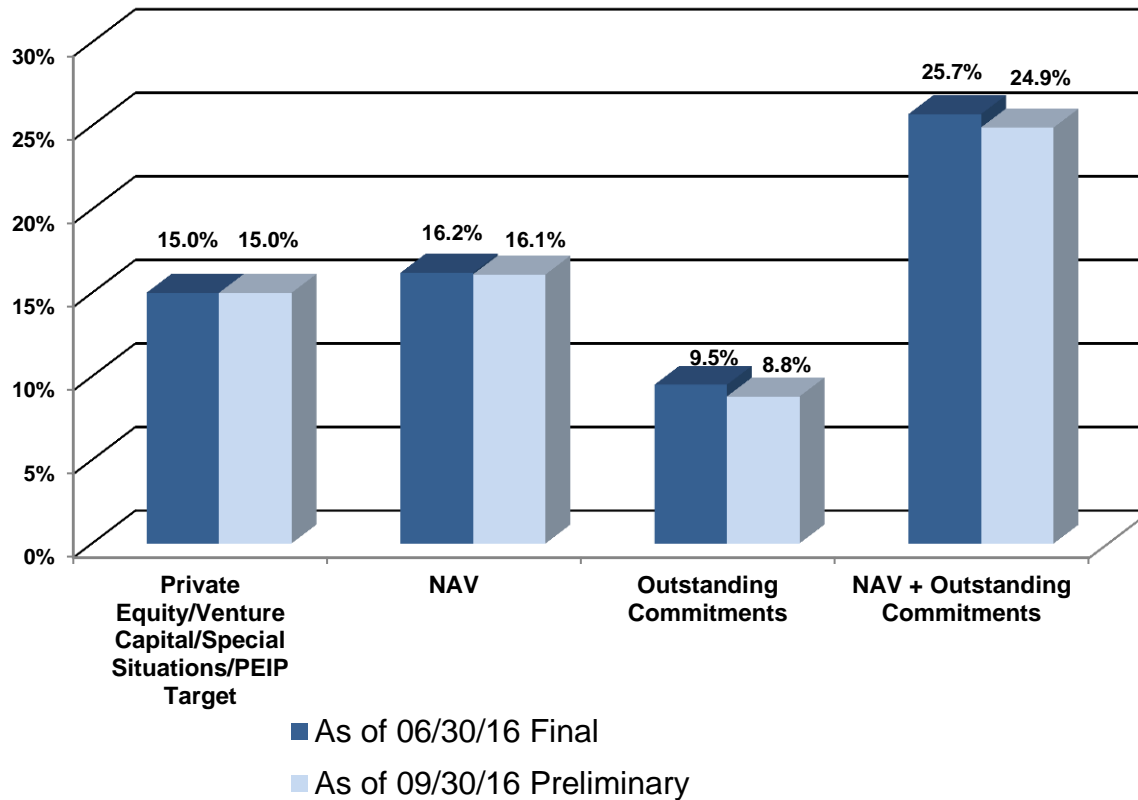


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Private Markets Portfolio Asset Allocation

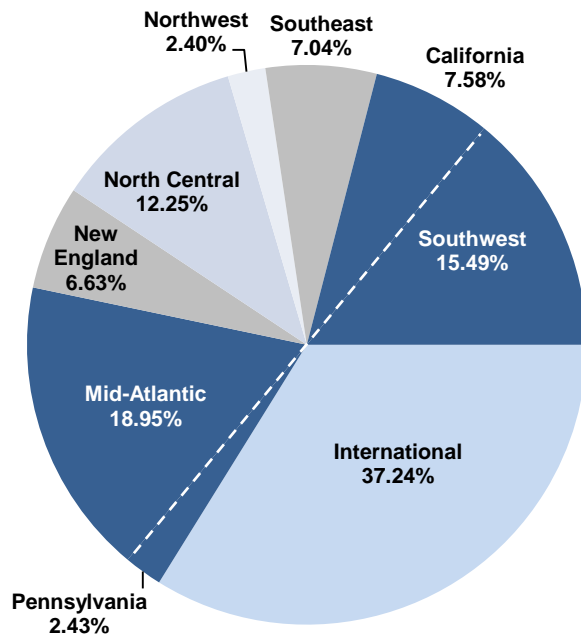
(PSERS' Total Fund at 06/30/16 \$48.96 billion)
(PSERS' Total Fund at 09/30/16 \$50.18 billion)



Regional Distribution PSERS' Partnership Portfolio

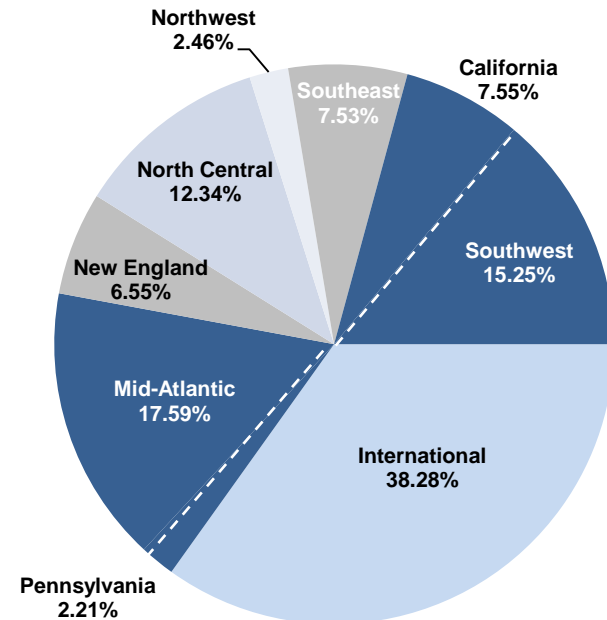
% by Market Value

As of June 30, 2016
(Final)



% by Market Value

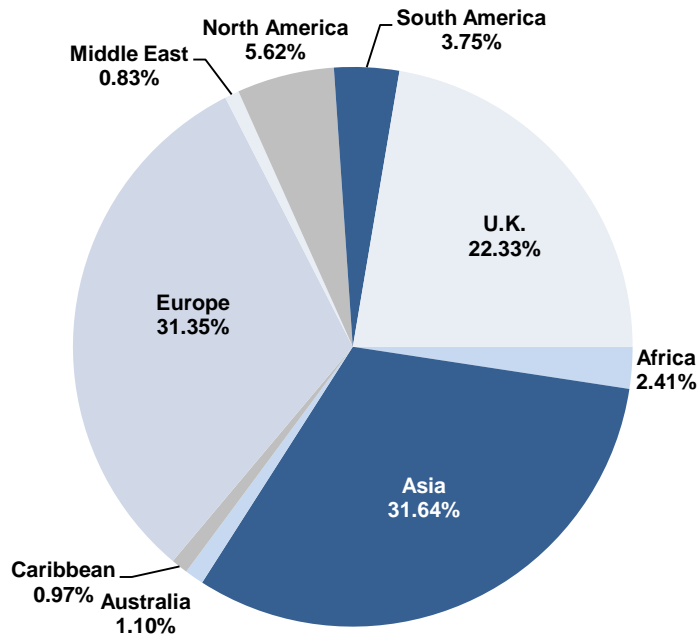
As of September 30, 2016
(Preliminary)



International Distribution PSERS' Partnership Portfolio

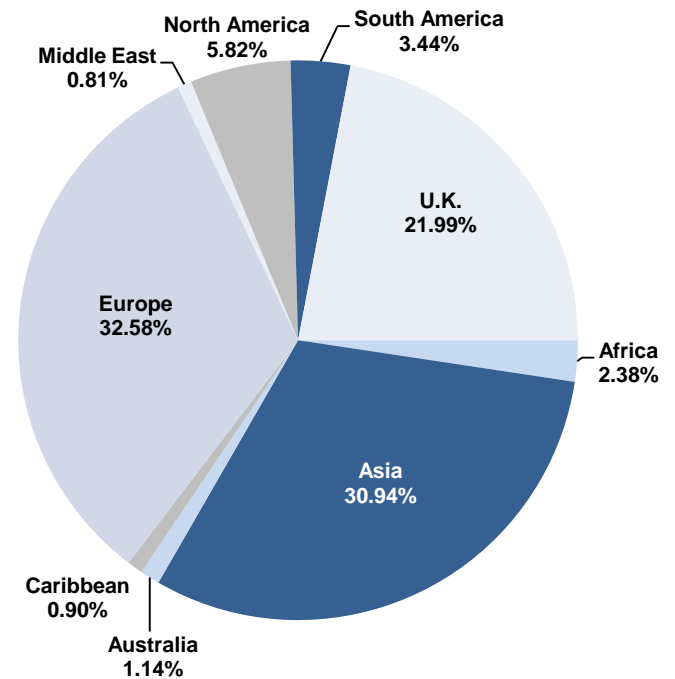
% by Market Value

As of June 30, 2016
(Final)



% by Market Value

As of September 30, 2016
(Preliminary)



Private Markets Portfolio Impact on Pennsylvania

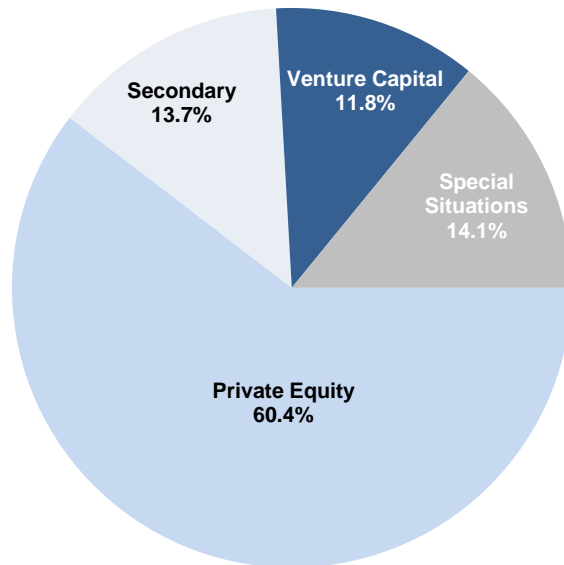
June 30, 2016 (\$s in mm)	Private Equity*	Venture Capital	Special Situations	Total
Funds Headquartered in PA – Market Value	\$196.0	\$508.3	\$221.7	\$926.0
Funds Headquartered in PA – Commitments	\$357.7	\$1,333.0	\$375.0	\$2,065.7
PA-based Investments – Total Value	\$16,364	\$359	\$2,294	\$19,017
PA-based Investments – PSERS' Share	\$1,128	\$114	\$255	\$1,497
Number of people employed	24,033	2,615	11,726	38,374
Payroll	\$584	\$78	\$161	\$823

* Includes Private Equity Internal Program

Portfolio by Investment Style for Private Equity, Venture Capital, and Special Situations

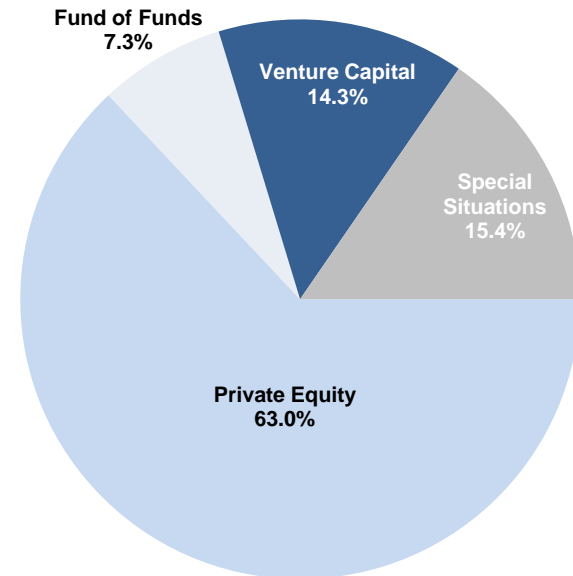
% by Market Value

As of June 30, 2016
PSERS - Final



% by Market Value

As of June 30, 2016
Burgiss





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