

# FUND EVALUATION REPORT

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## Plymouth County Retirement Association

Investment Review  
June 26, 2018



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- 1. Interim Update as of May 31, 2018**
- 2. Hedge Fund Manager Finalist Overview**
- 3. Private Markets 2017 Q4 Report**
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## Interim Update

As of May 31, 2018

## Asset Class Net Performance Summary

	Market Value (\$)	% of Portfolio	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	15 Yrs (%)	Inception (%)	Inception Date
<b>Total Retirement Association</b>	<b>990,466,963</b>	<b>100.0</b>	<b>0.7</b>	<b>0.9</b>	<b>9.9</b>	<b>6.6</b>	<b>7.5</b>	<b>5.4</b>	<b>7.4</b>	<b>8.0</b>	<b>Nov-89</b>
<i>Custom Benchmark - Policy Benchmark</i>			0.3	1.2	10.8	7.5	8.5	6.7	--	--	Nov-89
<b>Domestic Equity Assets</b>	<b>257,046,939</b>	<b>26.0</b>	<b>4.6</b>	<b>4.3</b>	<b>17.1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>16.3</b>	<b>Jan-16</b>
<i>Russell 3000</i>			2.8	2.5	15.1	10.7	12.9	9.2	9.7	15.0	Jan-16
<b>International Developed Market Equity Assets</b>	<b>164,937,020</b>	<b>16.7</b>	<b>-1.6</b>	<b>-1.5</b>	<b>9.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>10.7</b>	<b>Jan-16</b>
<i>MSCI EAFE</i>			-2.2	-1.5	8.0	4.3	5.9	2.1	7.5	9.4	Jan-16
<b>International Emerging Market Equity Assets</b>	<b>98,458,780</b>	<b>9.9</b>	<b>-2.7</b>	<b>-1.5</b>	<b>15.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>16.7</b>	<b>Jan-16</b>
<i>MSCI Emerging Markets</i>			-3.5	-2.6	14.0	6.2	4.5	1.6	11.4	17.8	Jan-16
<b>Global Equity Assets</b>	<b>97,025,937</b>	<b>9.8</b>	<b>-1.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-4.3</b>	<b>Feb-18</b>
<i>MSCI ACWI</i>			0.1	0.1	11.8	7.5	8.9	5.0	8.4	-5.2	Feb-18
<b>Domestic Fixed Income</b>	<b>73,790,173</b>	<b>7.5</b>	<b>0.6</b>	<b>-1.2</b>	<b>0.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.5</b>	<b>Jan-16</b>
<i>75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year</i>			0.7	-1.1	-0.2	1.3	1.6	--	--	2.0	Jan-16
<b>Value Added Fixed Income</b>	<b>72,274,785</b>	<b>7.3</b>	<b>0.0</b>	<b>0.6</b>	<b>2.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>7.3</b>	<b>Jan-16</b>
<i>50% BBgBarc US High Yield/ 50% Credit Suisse Leveraged Loans</i>			0.1	1.0	3.4	4.5	4.5	6.5	6.5	8.3	Jan-16
<b>International Fixed Income</b>	<b>36,596,628</b>	<b>3.7</b>	<b>-1.7</b>	<b>-0.7</b>	<b>3.1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>7.1</b>	<b>Jan-16</b>
<i>Custom Benchmark - Global Fixed Income</i>			-0.9	-4.1	-0.4	3.9	2.9	--	--	5.3	Jan-16
<b>Hedge Fund</b>	<b>40,576,158</b>	<b>4.1</b>	<b>1.0</b>	<b>-0.6</b>	<b>4.7</b>	<b>3.4</b>	<b>5.0</b>	<b>--</b>	<b>--</b>	<b>4.9</b>	<b>Feb-10</b>
<i>HFRI Fund of Funds Composite Index</i>			0.7	1.2	5.6	1.7	3.3	1.4	3.5	3.1	Feb-10
<b>Real Estate</b>	<b>86,401,288</b>	<b>8.7</b>	<b>0.5</b>	<b>0.1</b>	<b>3.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.7</b>	<b>Jan-16</b>
<i>NCREIF-ODCE</i>			0.0	2.2	8.1	10.0	11.4	5.1	8.3	7.7	Jan-16
<b>Private Equity</b>	<b>34,820,641</b>	<b>3.5</b>	<b>0.0</b>	<b>6.8</b>	<b>21.2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>7.1</b>	<b>Jan-16</b>
<i>Cambridge Associates Fund of Funds Composite 1-Quarter Lag</i>			0.0	3.8	15.0	9.3	11.6	7.7	11.3	8.8	Jan-16
<b>Real Assets</b>	<b>21,564,899</b>	<b>2.2</b>	<b>0.0</b>	<b>-2.7</b>	<b>2.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-4.2</b>	<b>Jan-16</b>
<i>CPI+3%</i>			0.4	2.3	5.7	4.9	4.6	4.5	5.1	5.2	Jan-16
<b>Cash and Cash Equivalent</b>	<b>5,838,399</b>	<b>0.6</b>									

## Total Retirement Association

As of May 31, 2018

## Trailing Net Performance

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Retirement Association</b>	<b>990,466,963</b>	<b>100.0</b>	<b>--</b>	<b>0.7</b>	<b>0.9</b>	<b>9.9</b>	<b>6.6</b>	<b>7.5</b>	<b>5.4</b>	<b>8.0</b>	<b>Nov-89</b>
<i>Custom Benchmark - Policy Benchmark</i>				0.3	1.2	10.8	7.5	8.5	6.7	--	Nov-89
<b>Domestic Equity Assets</b>	<b>257,046,939</b>	<b>26.0</b>	<b>26.0</b>	<b>4.6</b>	<b>4.3</b>	<b>17.1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>16.3</b>	<b>Jan-16</b>
<i>Russell 3000</i>				2.8	2.5	15.1	10.7	12.9	9.2	15.0	Jan-16
Rhumblin Russell 1000 Value	32,787,141	3.3	12.8	0.6	-1.9	8.1	7.3	9.9	--	10.3	Apr-13
<i>Russell 1000 Value</i>				0.6	-1.9	8.2	7.4	10.1	7.4	10.5	Apr-13
Rhumblin Russell 1000 Growth	56,172,762	5.7	21.9	4.4	6.2	20.8	13.8	15.6	--	16.0	Jul-09
<i>Russell 1000 Growth</i>				4.4	6.2	21.0	13.9	15.7	10.9	16.1	Jul-09
Fisher Midcap Value	44,456,801	4.5	17.3	2.0	0.7	14.6	10.6	11.0	8.4	7.9	Apr-07
<i>Russell MidCap Value</i>				1.1	-1.0	8.3	7.6	10.8	9.0	7.2	Apr-07
Boston Company Small Cap Growth	49,884,997	5.0	19.4	8.8	14.6	33.3	13.2	15.9	--	16.0	Aug-09
<i>Russell 2000 Growth</i>				6.3	8.8	25.1	10.8	13.3	10.5	15.5	Aug-09
LMCG Small Cap Value	73,727,897	7.4	28.7	5.3	1.6	10.2	10.0	10.6	--	9.6	Mar-11
<i>Russell 2000 Value</i>				5.8	4.8	16.4	11.0	11.0	8.7	10.3	Mar-11
<b>International Developed Market Equity Assets</b>	<b>164,937,020</b>	<b>16.7</b>	<b>16.7</b>	<b>-1.6</b>	<b>-1.5</b>	<b>9.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>10.7</b>	<b>Jan-16</b>
<i>MSCI EAFE</i>				-2.2	-1.5	8.0	4.3	5.9	2.1	9.4	Jan-16
KBI Master Account	76,357,681	7.7	46.3	-2.9	-3.7	4.1	2.0	4.5	1.3	4.1	Jul-05
<i>MSCI EAFE</i>				-2.2	-1.5	8.0	4.3	5.9	2.1	5.0	Jul-05
HGK TS International Equity	48,843,115	4.9	29.6	-0.8	1.1	13.3	7.9	9.0	--	7.7	Feb-11
<i>MSCI EAFE</i>				-2.2	-1.5	8.0	4.3	5.9	2.1	4.8	Feb-11
Copper Rock International Small Cap	39,736,223	4.0	24.1	0.1	0.0	--	--	--	--	1.7	Nov-17
<i>MSCI EAFE Small Cap</i>				-1.0	0.6	14.7	10.3	10.9	6.1	3.3	Nov-17



## Total Retirement Association

As of May 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>International Emerging Market Equity Assets</b>	<b>98,458,780</b>	<b>9.9</b>	<b>9.9</b>	<b>-2.7</b>	<b>-1.5</b>	<b>15.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>16.7</b>	<b>Jan-16</b>
<i>MSCI Emerging Markets</i>				-3.5	-2.6	14.0	6.2	4.5	1.6	17.8	Jan-16
LMCG Emerging Markets	98,458,780	9.9	100.0	-2.7	-1.5	15.7	5.0	--	--	3.9	Sep-13
<i>MSCI Emerging Markets</i>				-3.5	-2.6	14.0	6.2	4.5	1.6	5.1	Sep-13
<b>Global Equity Assets</b>	<b>97,025,937</b>	<b>9.8</b>	<b>9.8</b>	<b>-1.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-4.3</b>	<b>Feb-18</b>
<i>MSCI ACWI</i>				0.1	0.1	11.8	7.5	8.9	5.0	-5.2	Feb-18
First Eagle Global Value Fund	19,246,248	1.9	19.8	0.3	--	--	--	--	--	-3.8	Feb-18
<i>MSCI ACWI</i>				0.1	0.1	11.8	7.5	8.9	5.0	-5.2	Feb-18
Kopernik Global All Cap Fund	19,014,815	1.9	19.6	-2.3	--	--	--	--	--	-4.9	Feb-18
<i>MSCI ACWI</i>				0.1	0.1	11.8	7.5	8.9	5.0	-5.2	Feb-18
Lee Munder Global Multi-Cap Strategy	28,259,566	2.9	29.1	0.4	--	--	--	--	--	-0.7	Mar-18
<i>MSCI ACWI</i>				0.1	0.1	11.8	7.5	8.9	5.0	-1.1	Mar-18
Wellington Durable Enterprises, L.P.	30,505,308	3.1	31.4	0.6	--	--	--	--	--	1.7	Mar-18
<i>MSCI ACWI</i>				0.1	0.1	11.8	7.5	8.9	5.0	-1.1	Mar-18

## Total Retirement Association

As of May 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Domestic Fixed Income</b>	<b>73,790,173</b>	<b>7.5</b>	<b>7.5</b>	<b>0.6</b>	<b>-1.2</b>	<b>0.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.5</b>	<b>Jan-16</b>
<i>75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year</i>				0.7	-1.1	-0.2	1.3	1.6	--	2.0	Jan-16
IR&M Core Bonds	73,790,173	7.5	100.0	0.6	-1.2	-0.1	1.5	1.8	3.6	4.1	Nov-04
<i>75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year</i>				0.7	-1.1	-0.2	1.3	1.6	--	--	Nov-04
<b>Value Added Fixed Income</b>	<b>72,274,785</b>	<b>7.3</b>	<b>7.3</b>	<b>0.0</b>	<b>0.6</b>	<b>2.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>7.3</b>	<b>Jan-16</b>
<i>50% BBgBarc US High Yield/ 50% Credit Suisse Leveraged Loans</i>				0.1	1.0	3.4	4.5	4.5	6.5	8.3	Jan-16
Eaton Vance High Yield	37,337,393	3.8	51.7	-0.1	-0.4	1.7	4.3	4.8	7.3	7.0	Apr-06
<i>ICE BofAML High Yield Master TR</i>				0.0	-0.3	2.3	4.9	4.9	7.7	7.3	Apr-06
THL Bank Loan Select Fund	34,937,392	3.5	48.3	0.1	1.8	3.6	4.6	4.6	--	5.7	Sep-10
<i>Credit Suisse Leveraged Loans</i>				0.2	2.3	4.5	4.2	4.1	5.0	5.0	Sep-10
<b>International Fixed Income</b>	<b>36,596,628</b>	<b>3.7</b>	<b>3.7</b>	<b>-1.7</b>	<b>-0.7</b>	<b>3.1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>7.1</b>	<b>Jan-16</b>
<i>Custom Benchmark - Global Fixed Income</i>				-0.9	-4.1	-0.4	3.9	2.9	--	5.3	Jan-16
Franklin Templeton Emerging Market Bonds	36,596,628	3.7	100.0	-1.7	-0.7	3.0	5.8	3.7	6.2	7.1	May-06
<i>JP Morgan EMBI Global Diversified</i>				-0.9	-4.1	-0.6	4.5	4.3	6.7	7.0	May-06
<b>Hedge Fund</b>	<b>40,576,158</b>	<b>4.1</b>	<b>4.1</b>	<b>1.0</b>	<b>-0.6</b>	<b>4.7</b>	<b>3.4</b>	<b>5.0</b>	<b>--</b>	<b>4.9</b>	<b>Feb-10</b>
<i>HFRI Fund of Funds Composite Index</i>				0.7	1.2	5.6	1.7	3.3	1.4	3.1	Feb-10
ABS Offshore SPC - Global Segregated Portfolio	21,758,500	2.2	53.6	2.0	2.1	7.1	1.9	5.0	--	5.5	Aug-10
<i>HFRI Fund of Funds Composite Index</i>				0.7	1.2	5.6	1.7	3.3	1.4	3.3	Aug-10
Entrust Special Opportunities Fund III, Ltd.	18,817,658	1.9	46.4	0.0	-3.6	5.0	--	--	--	18.8	Oct-16
<i>HFRI Fund of Funds Composite Index</i>				0.7	1.2	5.6	1.7	3.3	1.4	5.9	Oct-16



## Total Retirement Association

As of May 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Real Estate</b>	<b>86,401,288</b>	<b>8.7</b>	<b>8.7</b>	<b>0.5</b>	<b>0.1</b>	<b>3.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.7</b>	<b>Jan-16</b>
<i>NCREIF-ODCE</i>				<i>0.0</i>	<i>2.2</i>	<i>8.1</i>	<i>10.0</i>	<i>11.4</i>	<i>5.1</i>	<i>7.7</i>	<i>Jan-16</i>
<b>Core Real Estate</b>	<b>67,470,179</b>	<b>6.8</b>	<b>78.1</b>	<b>0.7</b>	<b>-0.2</b>	<b>4.8</b>	<b>7.7</b>	<b>9.2</b>	<b>2.3</b>	<b>--</b>	
PRISA I	38,247,254	3.9	56.7	0.0	1.7	6.4	9.7	11.0	3.5	6.7	Sep-04
Invesco REIT	15,695,258	1.6	23.3	3.0	-2.9	2.8	5.5	7.0	6.4	11.1	Dec-02
<i>Wilshire REIT</i>				<i>3.6</i>	<i>-2.8</i>	<i>1.9</i>	<i>4.7</i>	<i>7.1</i>	<i>6.1</i>	<i>10.3</i>	<i>Dec-02</i>
TA Realty Core Property Fund, L.P.	13,527,668	1.4	20.0	0.0	--	--	--	--	--	0.0	Mar-18
<b>Non-Core Real Estate</b>	<b>18,931,108</b>	<b>1.9</b>	<b>21.9</b>	<b>0.0</b>	<b>1.8</b>	<b>-1.2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-3.8</b>	<b>Jan-16</b>
Mesirow Financial International Real Estate Fund I	4,014,981	0.4	21.2								
DSF Multi-Family Real Estate Fund III	7,242,586	0.7	38.3								
AEW Partners Real Estate VIII	3,803,329	0.4	20.1								
DSF Capital Partners IV	2,108,546	0.2	11.1								
Hunt Redevelopment & Renovation	160,896	0.0	0.8								
1921 Realty, Inc	930,409	0.1	4.9								
New Boston Institutional Fund, LP VII	341,364	0.0	1.8								
Berkshire Multifamily Value Fund II	98,968	0.0	0.5								
Carlyle Realty Partners VIII	186,002	0.0	1.0								
Intercontinental Real Estate Investment Fund III	44,027	0.0	0.2								

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As of May 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Private Equity</b>	<b>34,820,641</b>	<b>3.5</b>	<b>3.5</b>	<b>0.0</b>	<b>6.8</b>	<b>21.2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>7.1</b>	<b>Jan-16</b>
<i>Cambridge Associates Fund of Funds Composite 1-Quarter Lag</i>				<i>0.0</i>	<i>3.8</i>	<i>15.0</i>	<i>9.3</i>	<i>11.6</i>	<i>7.7</i>	<i>8.8</i>	<i>Jan-16</i>
<b>Private Equity General</b>	<b>25,738,016</b>	<b>2.6</b>	<b>73.9</b>								
Euro Choice V Programme	5,481,828	0.6	21.3								
Lexington Capital Partners VII	3,276,775	0.3	12.7								
TRG Growth Partnership II	2,526,517	0.3	9.8								
Landmark Equity Partners XIV	1,620,467	0.2	6.3								
Summit Partners Growth Equity Fund IX	2,542,975	0.3	9.9								
Leeds Equity Partners V	2,131,132	0.2	8.3								
Audax Mezzaine Debt IV	1,860,375	0.2	7.2								
Siguler Guff Distressed Opportunities Fund III, LP	1,008,722	0.1	3.9								
Mesirow Financial Capital Partners IX, LP	315,830	0.0	1.2								
Leeds Equity Partners IV	1,006,302	0.1	3.9								
DN Partners II, LP	903,830	0.1	3.5								
Euro Choice II	170,561	0.0	0.7								
RIMCO Royalty Partners, LP	159,083	0.0	0.6								
Charles River Partnership XI	98,303	0.0	0.4								
LLR Equity Partners V, LP.	956,052	0.1	3.7								
Senior Tour Players, L.P.	179,265	0.0	0.7								
Trilantic Capital Partners, L.P.	1,500,000	0.2	5.8								

## Total Retirement Association

As of May 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Venture Capital</b>	<b>10,217,942</b>	<b>1.0</b>	<b>29.3</b>								
Ascent Ventures V	4,319,630	0.4	42.3								
Globespan Capital V	5,417,320	0.5	53.0								
Ascend Ventures II	118,265	0.0	1.2								
Ascent Ventures IV	362,727	0.0	3.5								
<b>Real Assets</b>	<b>21,564,899</b>	<b>2.2</b>	<b>2.2</b>	<b>0.0</b>	<b>-2.7</b>	<b>2.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-4.2</b>	<b>Jan-16</b>
<i>CPI+3%</i>				0.4	2.3	5.7	4.9	4.6	4.5	5.2	Jan-16
JP Morgan Global Maritime Investment	6,499,289	0.7	30.1								
Timbervest Partners III, LP	5,123,217	0.5	23.8								
BTG Pactual Global Timberland Resources	3,434,841	0.3	15.9								
Global Infrastructure Partners III	5,183,559	0.5	24.0								
Basalt Infrastructure Partners II	1,323,993	0.1	6.1								
<b>Cash and Cash Equivalent</b>	<b>5,838,399</b>	<b>0.6</b>	<b>0.6</b>								
Cash	5,838,399	0.6	100.0								

As of May 31, 2018

## Allocation vs. Target

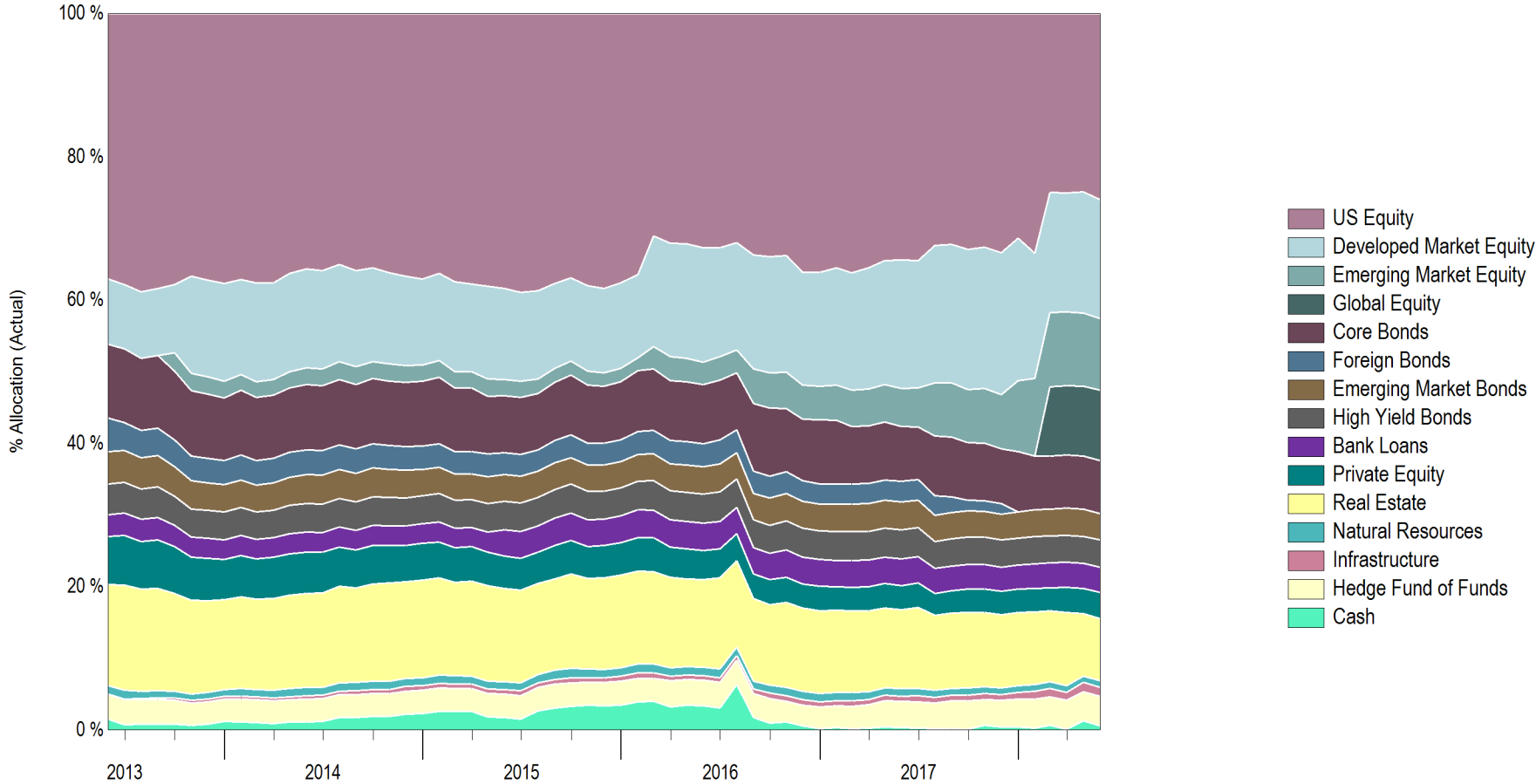
	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
US Equity	\$257,046,939	26%	26%	21% - 36%	Yes
Developed Market Equity	\$164,937,020	17%	6%	1% - 16%	No
Emerging Market Equity	\$98,458,780	10%	10%	5% - 20%	Yes
Global Equity	\$97,025,937	10%	10%	5% - 20%	Yes
Core Bonds	\$73,790,173	7%	9%	4% - 14%	Yes
Emerging Market Bonds	\$36,596,628	4%	2%	0% - 7%	Yes
High Yield Bonds	\$37,337,393	4%	2%	0% - 7%	Yes
Bank Loans	\$34,937,392	4%	2%	0% - 7%	Yes
Private Equity	\$35,955,958	4%	13%	8% - 18%	No
Real Estate	\$86,401,288	9%	10%	5% - 15%	Yes
Natural Resources	\$8,558,058	1%	2%	0% - 4%	Yes
Infrastructure	\$13,006,840	1%	4%	2% - 6%	No
Hedge Fund of Funds	\$40,576,158	4%	4%	2% - 6%	Yes
Cash	\$5,838,399	1%	0%	0% - 3%	Yes
<b>Total</b>	<b>\$990,466,963</b>	<b>100%</b>	<b>100%</b>		

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Total Equity	\$694,000,791	70%	69%	60% - 80%	Yes
Total Fixed Income	\$182,661,586	18%	15%	5% - 25%	Yes
Total Real Assets	\$107,966,187	11%	16%	13% - 19%	No
Cash	\$5,838,399	1%	0%	0% - 3%	Yes

Plymouth County Retirement Association adopted a new asset allocation as of May 2017.



Asset Allocation History  
5 Years Ending May 31, 2018



As of May 31, 2018

## Annual Investment Expense Analysis

As Of May 31, 2018

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
<b>Domestic Equity Assets</b>		<b>\$257,046,939</b>		
Rhumbline Russell 1000 Value	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$32,787,141	\$15,615	0.05%
Rhumbline Russell 1000 Growth	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$56,172,762	\$24,352	0.04%
Fisher Midcap Value	0.80% of First 25.0 Mil, 0.75% of Next 25.0 Mil, 0.67% Thereafter	\$44,456,801	\$345,926	0.78%
Boston Company Small Cap Growth	0.45% of Assets	\$49,884,997	\$224,482	0.45%
LMCG Small Cap Value	0.90% of Assets	\$73,727,897	\$663,551	0.90%
<b>International Developed Market Equity Assets</b>		<b>\$164,937,020</b>		
KBI Master Account	0.65% of Assets	\$76,357,681	\$496,325	0.65%
HGK TS International Equity	1.00% of Assets	\$48,843,115	\$488,431	1.00%
Copper Rock International Small Cap	0.85% of Assets	\$39,736,223	\$337,758	0.85%
<b>International Emerging Market Equity Assets</b>		<b>\$98,458,780</b>		
LMCG Emerging Markets	0.75% of Assets	\$98,458,780	\$738,441	0.75%
<b>Global Equity Assets</b>		<b>\$97,025,937</b>		
First Eagle Global Value Fund	0.75% of Assets	\$19,246,248	\$144,347	0.75%
Kopernik Global All Cap Fund	0.80% of First 50.0 Mil, 0.75% of Next 150.0 Mil, 0.70% of Next 250.0 Mil, 0.65% of Next 350.0 Mil	\$19,014,815	\$152,119	0.80%
Lee Munder Global Multi-Cap Strategy	0.45% of Assets	\$28,259,566	\$127,168	0.45%
Wellington Durable Enterprises, L.P.	0.60% of Assets	\$30,505,308	\$183,032	0.60%
<b>Domestic Fixed Income</b>		<b>\$73,790,173</b>		
IR&M Core Bonds	0.25% of First 50.0 Mil, 0.20% of Next 50.0 Mil, 0.15% Thereafter	\$73,790,173	\$172,580	0.23%
<b>Value Added Fixed Income</b>		<b>\$72,274,785</b>		
Eaton Vance High Yield	0.50% of Assets	\$37,337,393	\$186,687	0.50%
THL Bank Loan Select Fund	0.40% of Assets	\$34,937,392	\$139,750	0.40%
<b>International Fixed Income</b>		<b>\$36,596,628</b>		
Franklin Templeton Emerging Market Bonds	0.99% of Assets	\$36,596,628	\$362,307	0.99%

## Hedge Fund Manager Finalist Overview

## Background

- The Retirement Association has a 4% target allocation to hedge funds.
  - As of May 31, 2018, the Association has \$40.6 million, or 4.1% of total assets, invested across two hedge fund strategies, including:
    - \$21.8 million invested in ABS Global Equity, a traditional long/short fund of funds
    - \$18.8 million invested in EnTrust Special Opportunities Fund III, a closed-end co-investment vehicle (\$25 million commitment)
- We recommend the Board consider an investment of \$20 million with Old Farm Partners and/or EnTrustPermal Special Opportunities Fund IV.



## Search Summary

- On March 1, 2018, Meketa Investment Group issued an RFP on behalf of the Retirement Association. Subsequently, the search was posted to Meketa's website, sent to PERAC, and picked up by a variety of news sources.
- Meketa requested that all respondents submit the RFP by March 15, 2018.
- The following pages are completed in accordance with PERAC regulations, and follow the revised search process provided in the new Chapter 176 regulations enacted at the end of 2011.
  - The ratings reflect Meketa Investment Group's opinions on each manager within the context of the Plymouth County Retirement Association's overall plan.
- At the April 10, 2018 meeting, Meketa presented documentation in accordance with PERAC regulations. Two finalists were selected at that time. The following pages provide additional information on the two managers:
  - Old Farm Partners, LP
  - EnTrustPermal Special Opportunities Funds

## **Old Farm Partners, LP**

## Firm and Strategy

### As of March 31, 2018

Old Farm Partners	
Firm Location	New York, NY
SEC Registration	Yes
Assets Managed	\$168 mm
Firm Inception	June 2016
Investment Professionals	2
Products	1

- Old Farm Partners LP, (“OFP”) launched the Old Farm Partners Master Fund LP, (“The Fund”), on June 1, 2016, with backing from a group of institutional investors including a large university foundation.
- Kieran Cavanna partnered with Nishi Shah and Barry Purcell to form OFP. Mr. Cavanna and Ms. Shah previously worked together in the manager selection group at Soros Fund Management, where Mr. Cavanna was the head of manager selection and Ms. Shah was a senior analyst focused on manager selection and co-investments.
- The third partner is Barry Purcell, who was previously a Partner and COO of Blue Pool Capital, an investment management company based in Hong Kong. Today, Blue Pool Capital is a family office for founders of the Alibaba Group.

### Global Investment Committee and Risk Team

Key Professionals	Area of Specialization	Tenure with Firm (in years)	Experience in the Industry
Kieran Cavanna	Chief Investment Officer	2	22
Nishi Shah	Director of Research	2	11
Barry Purcell	President	2	19

- OFP's team is led by Mr. Cavanna, the firm's co-founder and Chief Investment Officer. Mr. Cavanna held roles with Titan Advisors, a well-known investor in emerging hedge fund managers, and then with Soros Fund Management. At Soros, Mr. Cavanna led all external manager investments.
- Mr. Cavanna works alongside Ms. Shah, who is the firm's Director of Research. Ms. Shah also served in several roles at Soros, each with increasing responsibility. Ms. Shah worked alongside Mr. Cavanna on external manager selection as well as co-investments at Soros.
- The investment team is supported by Barry Purcell, the firm's President and CEO, who handles all non-investment related matters.

## Investment Strategy

- OFP executes a hedge fund allocation strategy that invests predominantly in smaller and mid-sized long-short equity and global macro hedge funds, while also devoting a significant portion of the portfolio to co-investing alongside the underlying managers.
  - Co-investments can be equities, single name credits, or global macro related trades.
- OFP focuses on small to mid-sized managers that tend to be either specialists or managers who traffic in niche strategies. The firm's rationale for this stems from a greater ability to negotiate fees as well as the existence for a greater opportunity set for alpha. Many of the opportunities exploited by their manager roster would be unavailable to larger managers.
- The firm believes that generalist managers tend to lack industry specific knowledge. In addition, they favor managers that are highly concentrated and have historically low correlation to equity markets.
- Mr. Cavanna's tenure at Soros and Titan provided him with relationships, and subsequently access, to managers that would otherwise be closed to new investors.

## Investment Process

- OFP sources both established managers and emerging managers generally through existing relationships and previous investments. Specifically, OFP's relationships include previously successful investment professionals leaving existing hedge funds, industry participants, current portfolio managers, FOFs, family offices, allocators, and service providers.
- OFP prefers to invest with managers with proven track records where OFP can understand the driver of returns, drawdowns, and areas of expertise. They tend to look for performance driven managers that keep assets to a level that maximizes the opportunity to achieve superior returns. OFP often gravitates to industry and asset class specialists.
- Willingness to partner with OFP on co-investments is a consideration in both the sourcing and due diligence stages, but it is not the only determining factor.
- The portfolio will typically hold 15 to 25 managers, which will account for 75% of the portfolio. They have a maximum position size of 10% per manager and require that the underlying manager offer quarterly liquidity. Liquidity is not a hard rule, but will impact sizing.
- Co-investments will account for 25% of the portfolio; each position has a maximum position size of 2% of the total fund, with most co-investment positions around 1% of the fund on average. Today, the co-investment sleeve of the portfolio is approximately 17% of the total fund.
- Overall, the fund targets a 20% to 50% net exposure.

**Performance**  
As of March 31, 2018

Fund	1Q 2018	1 Year	3 Year	5 Year	7 Year	Since Inception
Old Farm Partners	2.48	8.68	-	-	-	7.43
<i>HFRI Fund of Funds Composite Index</i>	0.25	5.52	1.85	3.38	2.57	5.83
<i>MSCI World</i>	-1.28	13.59	7.97	9.70	8.65	14.23

Fund	2017	2016	2015	2014	2013	2012	2011	2010	2009
Old Farm Partners	11.33	-	-	-	-	-	-	-	-
<i>HFRI Fund of Funds Composite Index</i>	7.77	0.51	-0.27	3.37	8.96	4.79	-5.72	5.70	11.47
<i>MSCI World</i>	22.40	7.51	-0.87	4.94	26.68	15.83	-5.54	11.76	29.99

## Old Farm Partners Co-Investment Example

### Texas Pacific Land trust (“TPL”)

- The Texas Pacific Land Trust (TPL) is a \$5.5B market cap company that has been public for more than 100 years, has no sell-side coverage, and is not in any index. TPL owns approximately 890,000 surface acres of perpetual royalty interests on oil and gas production, much of it situated in the Permian Basin in western Texas and New Mexico.
- TPL earns revenues primarily through oil and gas royalties, land easements, and water sales, all of which substantially benefit directly or indirectly due to the growth in drilling activity by multiple oil producers in the Permian Basin. Royalty and easement income are among the highest margin businesses that exist as there are no direct operating expenses associated with such revenues, and while the water business is newer, it exhibits similar margins. Expenses for TPL are currently 10% of revenues and they are a direct beneficiary of the corporate tax cut (their 32% tax rate is now going to 20%). The Trust uses all of their earnings to either buy back shares or issue a dividend.
- Because TPL has a unique business structure, poor disclosure, and zero sell side coverage, it is largely unknown to investors. Old Farm sourced this idea from a manager who is the largest shareholder of the company and has been an investor for the past 20 years. Despite the run up in the stock in the past year, the manager still believes it could double again in the next 12 months on water sales growth (+50% the next 5 years) and continued growth in royalties and easements. Oil volume is also projected to grow substantially based on analysis of the projections by the companies drilling on TPL land.



Fund Terms and Service Providers	
<b>Fund Terms:</b>	
Minimum Investment	\$1,000,000
Management Fee <sup>1</sup>	0.50%
Performance Fee	5%
HWM	Yes
Hurdle	No
General Partner Catch-up	NA
Lockup	Soft lock up 3% paid to fund if redeem in the first 12 months.
Redemptions	Quarterly with 45 days' notice. 25% investor level gate.
<b>Service Providers:</b>	
Auditor	EisnerAmper
Administrator	MUFG Investor Services
Legal	Morgan, Lewis & Bockius

<sup>1</sup> Founders share class. Class A and Class B structures are higher costs and not listed in this document.



## **EnTrustPermal Special Opportunities Funds**

## Firm and Strategy

### As of March 31, 2018

EnTrustPermal	
Firm Location <sup>1</sup>	New York, NY
SEC Registration	Yes
Assets Managed	\$20.3 billion <sup>2</sup>
Firm Inception	1997 <sup>3</sup>
Investment Professionals	43
Products	93 <sup>4</sup>

- EnTrustPermal was formed in January 2016 as a result of the merger between EnTrust Capital and The Permal Group. The Permal Group was a subsidiary of the global asset manager, Legg Mason (NYSE: LM). The transaction closed in May 2016, creating an entity where Legg Mason owns 65% and founder Gregg Hymowitz retained 35% ownership.
- The combined firm manages over \$20.3 billion in total assets on behalf of approximately 700 institutional clients. As of March 2018, the Total Opportunistic Co-Investment Capital was \$6.8 billion; of which \$4.8 billion was invested and had unfunded commitments of \$2.0 billion.<sup>5</sup>
- EnTrustPermal primarily offers hedge fund of fund products; however, the firm has launched multiple co-investment, single strategy, and direct lending funds.
- EnTrustPermal's Special Opportunities Funds focus on thematic high conviction ideas that arise due to market dislocations or catalyst specific investments. The Special Opportunities Funds are structured as drawdown vehicles, allowing the manager to quickly take advantage of co-investment opportunities.

<sup>1</sup> EnTrustPermal also maintains offices in Boston, Chicago, Washington, D.C., London, Paris, Dubai, Hong Kong, Singapore, and Beijing.

<sup>2</sup> As of 3/31/2018. Includes assets under advisement and includes \$684.9 million of mandates awarded but not yet funded.

<sup>3</sup> Represents EnTrust Capital's inception.

<sup>4</sup> Includes 67 customized mandates EnTrustPermal has with institutional clients that are run in separately managed accounts.

<sup>5</sup> Includes co-investment capital in the SO funds along with co-investment allocations in Strategic Partnerships and other commingled funds across EnTrust.

## Global Investment Committee and Risk Team

Key Professionals	Area of Specialization	Tenure with Firm (in years)	Experience in the Industry
Gregg Hymowitz	Chairman and Chief Executive Officer	20	27
Chris Keenan	Co-Head of Global Investments	11	18
Christopher Zuehlsdorff	Co-Head of Global Investments	14	14
Javier Dyer	Senior Managing Director, Investment Research	14	20
Jeffrey Chan	Senior Managing Director, Investment Research	10	16
Robert Kaplan	Senior Managing Director, Investment Research	20	28
Jill Zelenko	Global Chief Risk Officer and Chief Operating Officer	16	38
Bruce Kahne	General Counsel and Chief Compliance Officer (U.S.)	9	20
Michael McDonough	General Counsel and Chief Compliance Officer (International)	10	20
Armar Patel	Managing Director, Investment Risk	7	12
Kristin Weigand	Managing Director, Operational Due Diligence	5	10
Jill Baum	Senior Vice President, Investment Risk	10	10
Harpreet Gill	Senior Vice President, Investment Risk	6	11

- The investment decisions at EnTrustPermal are governed by the firm's Investment Committee, which is chaired by Gregg Hymowitz. The Investment Committee meets bi-weekly to review portfolio decisions and manager approvals. Each transaction is evaluated and ultimately approved by the Investment Committee.
- The Risk Committee is chaired by COO/CRO Jill Zelenko. The Risk Team is independent from the Investment Committee and has the ability to veto any new investment or allocation decision.

## Investment Strategy

- EnTrustPermal's Special Opportunities Funds focus on thematic high conviction ideas that arise due to market dislocations or catalyst-specific investments. The Special Opportunities Funds are structured as drawdown vehicles, allowing the manager to quickly take advantage of co-investment opportunities.
- Special Opportunities Fund IV (SOF IV) will continue to seek investments where EnTrustPermal is the sole investor in a vehicle crafted for the specific opportunity. The firm believes their ability to negotiate fees and access unique investments results in a more effective investment and a more effective co-investment exposure, compared to a fund vehicle shared with other commingled investors.
- The Fund will seek a liquidity spectrum of two to five years, hoping to exploit a timeframe too short for most private market investments, but too long for most hedge fund structures.
- SOF IV's investment strategy will continue with several of SOF III's themes (e.g., distressed sovereign, energy, and commodities), but expand to other areas the firm believe opportunities exist.
- The firm places a significant emphasis on building and maintaining their relationships with managers. As a result of these relationships, managers present EnTrustPermal with their "best ideas" investment opportunities in securities where market dislocations or other events have created attractive valuations. The underlying hedge fund manager typically does not have enough capital, or would prefer to limit the size of the investment in their fund to maintain a diversified portfolio. These managers seek to partner with EnTrustPermal to execute on these deals. EnTrustPermal focuses on managers with at least \$100 million AUM and a track record of three years.
- The SOF IV has raised \$875 million and is expected to close at \$2.0 billion in committed capital. The firm expects to hold 15 to 30 investments averaging 3% to 7% of capital per investment.

## Investment Process

- Ideas are sourced from EnTrustPermal's extensive hedge fund manager network. This network includes over 100 active manager relationships.
- Once investment ideas are sourced, EnTrustPermal gathers data from the investment manager and performs their internal due diligence. The firm utilizes internal resources, Wall Street resources, and their underlying managers to gain additional comfort with and perspective on a potential investment.
- Operational diligence focuses upon the structure of the investment and understanding potential risks the fund may encounter. Because the firm is sourcing ideas from current investment managers, each manager has already been vetted (and continues to be monitored) by the EnTrustPermal operational due diligence team.
- EnTrustPermal has the ability to quickly evaluate a transaction, create unique customized structures, and allocate capital. These efficiencies are paramount in executing when opportunities are time constrained.

## EnTrustPermal Special Opportunities Funds<sup>1</sup>

	Fund I	Fund II	Fund III
Launch/Vintage	2008	2011	2015
Committed Capital	\$0.3 Billion	\$0.9 Billion	\$1.7 Billion
Fund Focus	Debt focused at or near the top of capital structures <ul style="list-style-type: none"> <li>• Senior Bank Debt</li> <li>• Large cap distressed Debt</li> <li>• Emerging Market Sovereign debt</li> </ul>	Decrease debt to less liquid securities and equity positions <ul style="list-style-type: none"> <li>• Eurozone</li> <li>• Structured products</li> <li>• Liquidation claims</li> <li>• Activist equity</li> </ul>	Dislocation opportunities with high conviction <ul style="list-style-type: none"> <li>• Liquidity-driven capital markets</li> <li>• Energy and commodities</li> <li>• Distressed and stressed sovereign debt</li> <li>• Activist equity</li> </ul>
Investment Period	Complete	Complete	3 Year Commitment Period <sup>2</sup>
Reviewed Investments	Approximately 160	Approximately 100	Over 150
Number of Investments <sup>3</sup>	36	32	30
Debt	23	16	10
Equity	13	16	20
Complete Investments	19	15	8
Remaining Investments	17	17	22
EnTrustPermal Fee	Management Fee: 1.25% Incentive Fee: 10%	Management Fee: 1.25% Incentive Fee: 10% subject to hurdle of 7.5%	Management Fee: 1.25% Incentive Fee: 10% subject to hurdle of 7.5%
Underlying Fee	Management Fee: 0.70% Incentive Fee: 12.18%	Management Fee: 0.79% Incentive Fee: 13.00%	Management Fee: 0.20% Incentive Fee: 9.86%

<sup>1</sup> All data as of 6/30/2017 unless otherwise noted.

<sup>2</sup> Plus one additional year at EnTrustPermal's discretion. Commitment Periods end as follows: Class A (February 2018), Class B (September 2018), Class C (February 2019), and Class D (October 2019).

<sup>3</sup> Certain investments were funded by multiple funds and may be counted multiple times. The total number of underlying investments are approximations for Fund I and Fund II, since many underlying vehicles had housed multiple positions.



## Performance As of March 31, 2018

Fund	Net IRR <sup>1</sup> (Invested Capital)	Net IRR (Called Capital)
Special Opportunities Fund III Ltd. Class A	7.02%	5.98%
Special Opportunities Fund II Ltd.	10.11%	8.94%
Special Opportunities Fund I Ltd. Class A	11.98%	-

Fund	1Q 2018	1 Year	3 Year	5 Year	7 Year	Since Inception
Special Opportunities I	0.95	3.75	-0.63	2.62	3.51	9.89
Special Opportunities II <sup>2</sup>	-1.95	1.01	3.05	8.64	-	8.93
Special Opportunities II <sup>3</sup>	-1.64	1.42	3.05	8.94	-	9.36
Special Opportunities III <sup>2</sup>	-1.82	1.90	6.26	-	-	6.47
Special Opportunities III <sup>3</sup>	-1.88	2.34	7.35	-	-	7.48
<i>HFRI Fund of Funds Composite Index</i>	0.25	5.52	1.85	3.38	2.57	1.69 <sup>4</sup>
<i>Russell 3000 Index</i>	-1.09	11.71	8.07	10.85	10.19	8.04 <sup>4</sup>
<i>MSCI World</i>	-1.28	13.59	7.97	9.70	8.65	6.56 <sup>4</sup>

Fund	2017	2016	2015	2014	2013	2012	2011	2010	2009
Special Opportunities I	2.88	1.10	-7.67	5.68	8.59	11.26	6.51	31.40	50.78
Special Opportunities II <sup>2</sup>	4.17	11.70	-3.66	8.95	28.32	12.05	-	-	-
Special Opportunities II <sup>3</sup>	4.29	11.44	-3.95	10.22	29.10	13.27	-	-	-
Special Opportunities III <sup>2</sup>	5.23	14.35	-	-	-	-	-	-	-
Special Opportunities III <sup>3</sup>	5.73	17.41	-	-	-	-	-	-	-
<i>HFRI Fund of Funds Composite Index</i>	7.77	0.51	-0.27	3.37	8.96	4.79	-5.72	5.70	11.47
<i>Russell 3000 Index</i>	18.85	10.41	-1.47	10.45	30.95	13.98	-0.92	14.75	25.46
<i>MSCI World</i>	22.40	7.51	-0.87	4.94	26.68	15.83	-5.54	11.76	29.99

<sup>1</sup> Net IRRs as of 3/31/2018. Represents investment in the first close of each special opportunity fund structure. Investors in different classes may have a different IRR performance experience.

<sup>2</sup> Called

<sup>3</sup> Invested

<sup>4</sup> Using SOF I's inception date of 8/1/2008.





## Special Opportunities Fund III Investment Example

### Uber Technologies, Inc. (“Uber”)

- In February 2015, the Fund invested in the ridesharing mobile application developer, Uber, through a pre-IPO equity investment. This application connects riders with drivers around the world. It is seen as a competitor to public transportation and car ownership.
- The manager, Glade Brook, believes that gaining exposure to Uber through preferred equity would be relatively cheap, and eventually produce a multiple of over 3x based on their expected IPO valuation.
- Uber’s current focus is continued growth in new markets (especially emerging markets) and increased investment in technological innovation (e.g. autonomous cars).
- IRR<sup>1</sup>: 6.46%

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<sup>1</sup> Since investment date through 3/31/18.

Fund Terms and Service Providers	
<b>Fund Terms:</b>	
Minimum Investment	\$5 million <sup>1</sup>
Management Fee <sup>2</sup>	1.25%
Performance Fee	10% subject to the hurdle rate of 7.5%, high water mark, and after-tax clawback
General Partner Catch-up	100% to GP until 10% of net profits has been received
Lockup	3-year investment period where all capital is reinvested; after the 3-year investment period, there is a 1-year GP discretion extension for a maximum of a 4-year investment.
Redemptions	95 days' notice or as capital is realized from investments following investment period
<b>Service Providers:</b>	
Auditor	EisnerAmper, LLP
Administrator	Deutsche Bank
Legal	Dechert, LLP (Onshore) Ogier (Offshore) Walkers (Offshore)

<sup>1</sup> Subject to discretion of Advisor to accept lesser amounts.

<sup>2</sup> On drawn and invested capital only.



# Summary

## Summary

- We recommend the Board consider an investment of \$20 million with Old Farm Partners and/or EnTrustPermal Special Opportunities Fund IV.

# Private Markets 2017 Q4 Report

# ANNUAL REPORT

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## Plymouth County Retirement Association

Private Markets Program  
December 31, 2017



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M E K E T A   I N V E S T M E N T   G R O U P

BOSTON  
MASSACHUSETTS

CHICAGO  
ILLINOIS

MIAMI  
FLORIDA

PORTLAND  
OREGON

SAN DIEGO  
CALIFORNIA

LONDON  
UNITED KINGDOM

1. **Private Equity Program**
2. **Private Real Assets Program**
3. **Private Real Estate Program**
4. **Appendices**
  - Confidentiality
  - Market and Industry Analysis
  - Disclaimer and Valuation Policies
  - Glossary of Terms

The purpose of this document is to offer a review of the Retirement Association's aggregate private market investments.

As of December 31, 2017, the Retirement Association had committed \$349.5 million to 43 partnerships. The reported fair value of those 43 partnerships, in aggregate, was \$157.6 million at the end of the fourth quarter.

Aggregate Private Equity Program <sup>1</sup>		Aggregate Real Assets Program <sup>1</sup>		Aggregate Real Estate Program <sup>1</sup>	
<b>Number of Partnerships</b>	23	<b>Number of Partnerships</b>	6	<b>Number of Partnerships</b>	14
<b>Committed Capital<sup>2</sup></b>	\$131.1 million	<b>Committed Capital<sup>2</sup></b>	\$60.4 million	<b>Committed Capital</b>	\$158.0 million
<b>Capital Called</b>	\$90.0 million	<b>Capital Called</b>	\$22.9 million	<b>Capital Called</b>	\$112.1 million
<b>Distributions</b>	\$77.7 million	<b>Distributions</b>	\$1.6 million	<b>Distributions</b>	\$65.4 million
<b>Reported Value</b>	\$34.7 million	<b>Reported Value</b>	\$18.5 million	<b>Reported Value</b>	\$104.4 million
<b>Total Value Multiple</b>	1.2x	<b>Total Value Multiple</b>	0.9x	<b>Total Value Multiple</b>	1.5x
<b>Net IRR</b>	4.6%	<b>Net IRR</b>	-3.9%	<b>Net IRR</b>	5.5%
<b>Q4 2017 IRR<sup>3</sup></b>	6.2%	<b>Q4 2017 IRR<sup>3</sup></b>	-2.6%	<b>Q4 2017 IRR<sup>3</sup></b>	1.6%
<b>Trailing Year IRR<sup>3</sup></b>	20.5%	<b>Trailing Year IRR<sup>3</sup></b>	1.2%	<b>Trailing Year IRR<sup>3</sup></b>	5.8%

<sup>1</sup> Throughout this report, numbers may not sum due to rounding.

<sup>2</sup> Some partnership commitments were made in foreign currency. This total reflects committed capital in U.S. dollars, adjusted for foreign currency exchange rates, as of the report date.

<sup>3</sup> IRR is net of Meketa Investment Group fees, but gross of prior advisory fees.



**The Retirement Association did not make any new commitments during the fourth quarter of 2017.**

**In aggregate, approximately \$1.8 million was called by the underlying managers from the Retirement Association during the fourth quarter.**

- Audax Mezzanine Fund IV called \$0.9 million from the Association primarily to fund new investments in Z-Medica, a provider of hemostatic gauze products for military and healthcare end markets, TrialCard, a provider of patient affordability and communications solutions for the pharmaceutical industry, and HMT, a manufacturer of aboveground oil and gas storage tanks.
- Summit Partners Growth Equity Fund IX called \$0.4 million from the Association primarily to fund new investments in PrismHR Corporation, a provider of SaaS solutions for the human resource outsourcing industry, Medical Review Institute of America, an independent medical review company, and Harvey Performance, a manufacturer of consumable cutting tools for a variety of end markets.
- Euro Choice V called \$0.2 million from the Association to fund several follow-on investments.

**Distributions received by the Retirement Association from underlying partnerships during the fourth quarter totaled approximately \$3.1 million.**

- Summit Partners Growth Equity Fund IX distributed approximately \$1.0 million to the Association during the quarter in proceeds received from the sale of HealthSun, which returned a total value multiple of 2.8x.
- Mesirow Financial Capital Partners IX distributed proceeds of \$0.4 million to the Association from the realization of VWR Corporation, which returned a total value multiple of 2.2x.
- Lexington Capital Partners VII distributed \$0.4 million to the Association primarily in realized gains received from various underlying partnership investments.

**During the fourth quarter of 2017, the Retirement Association did not make any new commitments.**

**In aggregate, approximately \$1.7 million was called by the underlying managers from the Retirement Association during the fourth quarter.**

- Basalt Infrastructure Partners II called \$0.9 million during the quarter to fund two new investments, including \$0.7 million in North Star, a UK-based provider of essential emergency response and rescue vessels, and \$0.1 million in Mareccio Energia, an Italian small scale solar platform.
- Global Infrastructure Partners III called \$0.8 million during the quarter primarily to fund a new investment in Medallion Gathering & Processing, a crude oil transportation system with over 800 miles of pipeline within the Midland Basin in Texas.

**Distributions received by the Retirement Association from underlying partnerships during the fourth quarter totaled approximately \$0.1 million.**

- Global Infrastructure Partners III distributed proceeds of \$0.1 million to the Association during the quarter, primarily in dividend income received from Gas Natural SDG.

**The Retirement Association did not make any new commitments during the quarter.**

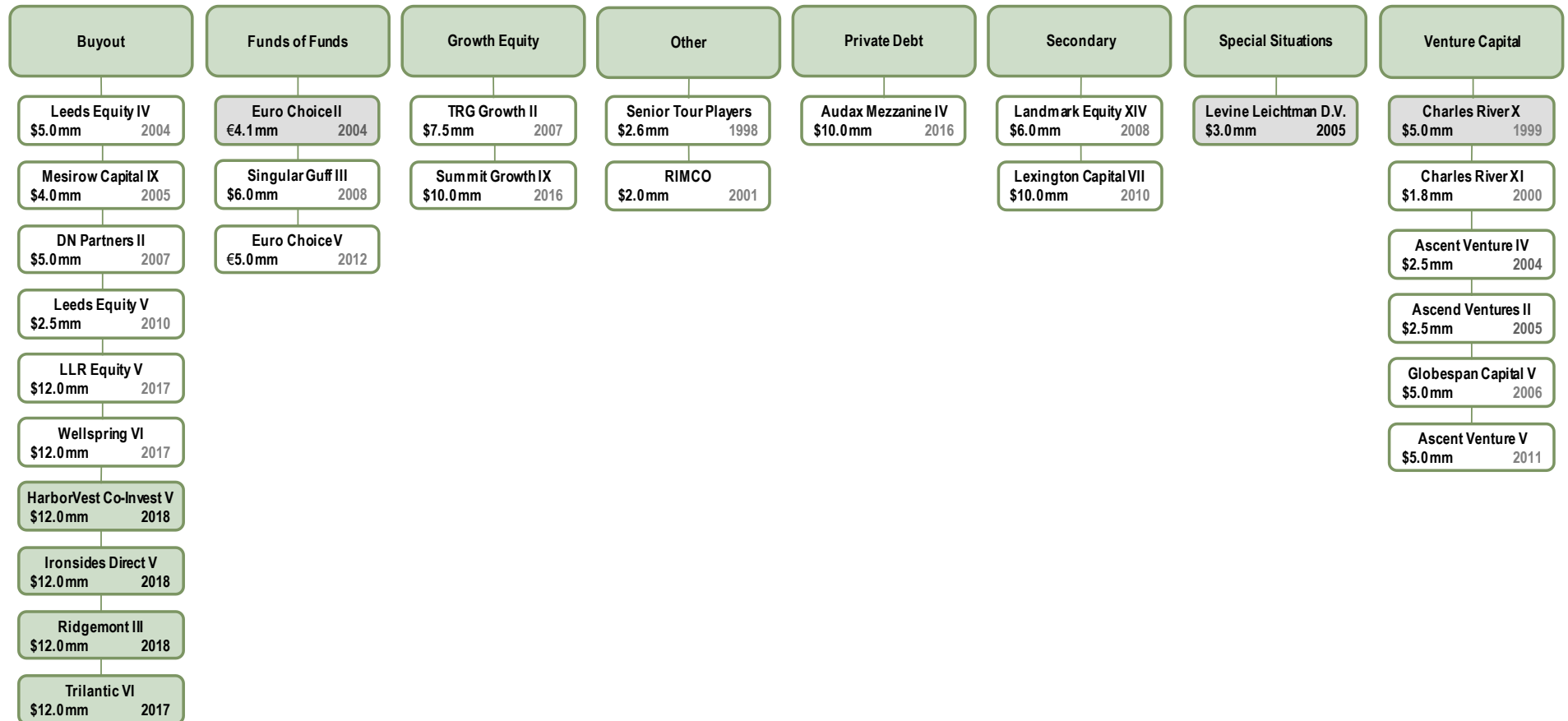
**In aggregate, \$1.5 million was called by the underlying managers from the Retirement Association during the fourth quarter.**

- DSF Multi-Family Real Estate Fund III called approximately \$0.9 million from the Association primarily to fund the purchase of a 246-unit garden-style apartment communicated located in Milford, Connecticut, as well as a 300-unit apartment community located in Tarrytown, New York.
- AEW Partners Real Estate Fund VIII called \$0.5 million from the Association during the quarter to fund continuing investments in the South Bronx Industrial Portfolio (purchasing a 116,260 square-foot industrial building in an in-fill location), Dalfen Industrial Portfolio (purchasing a 84,654 square foot industrial building in Chicago, IL), and Philadelphia Senior Housing portfolio (purchasing a 84-unit/88-bed continuing care senior housing rental community in a suburban market).

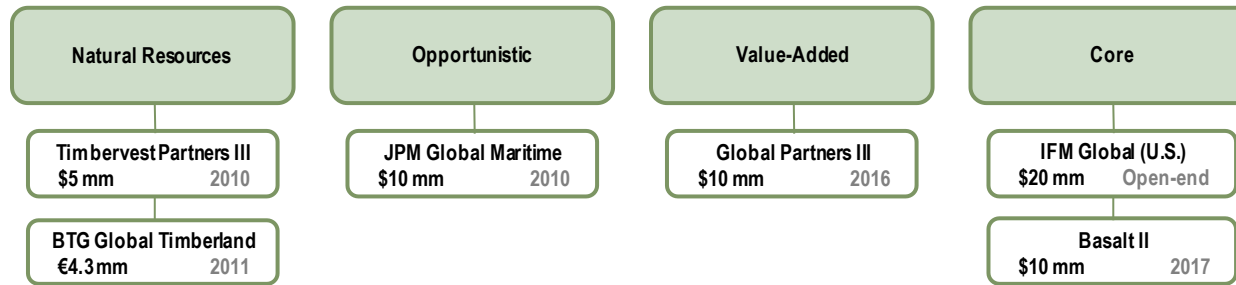
**Distributions received by the Retirement Association from underlying partnerships during the fourth quarter totaled approximately \$3.9 million.**

- New Boston Institutional Fund VII distributed \$1.4 million to the Association during the quarter primarily in proceeds received from various existing portfolio investments.
- DSF Capital Partners IV distributed \$1.2 million to the Association during the quarter primarily in operating proceeds received from existing portfolio investments as well as realization proceeds received in conjunction with the Halstead Danvers asset.
- Real Estate International Partnership Fund I distributed \$0.4 million to the Association during the quarter, representing 100% preferred return from various existing portfolio investments.

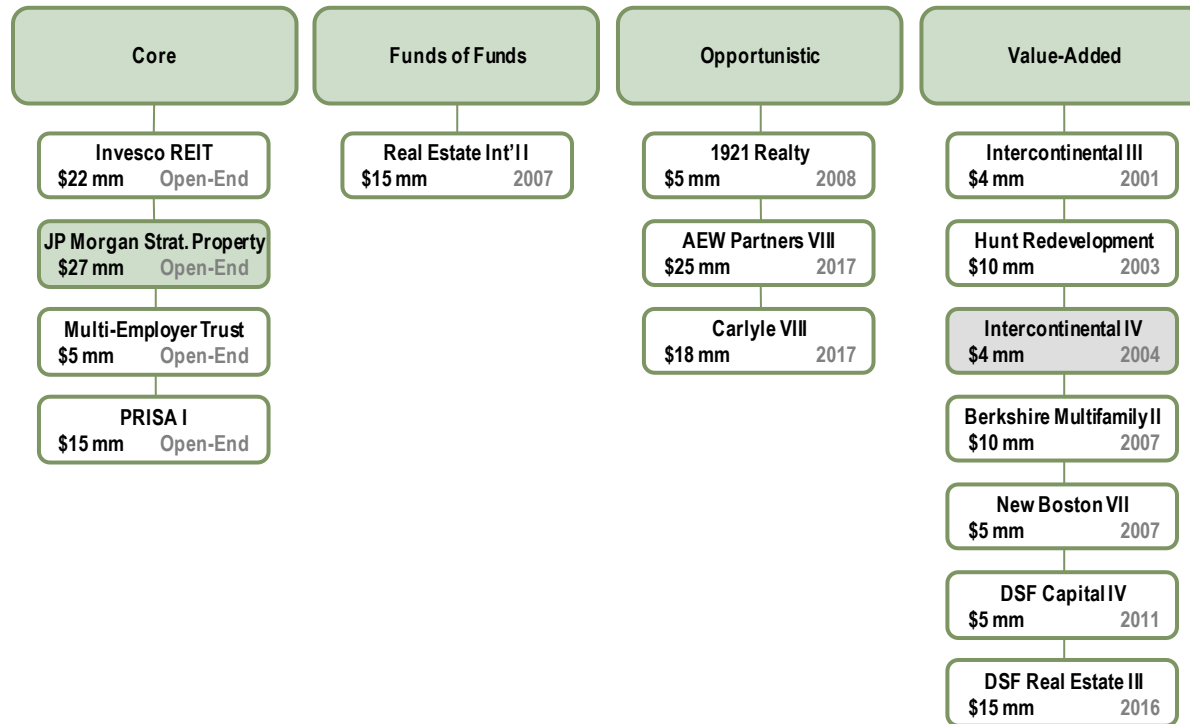
As of May 31, 2018



- White box: Current investment.
- Green box: Investment made subsequent to quarter end and, as such, is not included in any other section of this report.
- Gray box: Liquidated Investment.



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- White box: Current Investment.
- Green box: Investment made subsequent to quarter end and, as such, is not included in any other section of this report.
- Gray box: Liquidated Investment.

## Aggregate Private Equity Program Partnership Roster

	Vintage Year	Commitment (\$ mm)	Committed (%)	Reported Fair Value (\$ mm)	Reported Fair Value (%)
<b>Total Program</b>		<b>131.1</b>	<b>100</b>	<b>34.7</b>	<b>100</b>
<b>Fund of Funds</b>		<b>17.7</b>	<b>13</b>	<b>6.9</b>	<b>20</b>
Euro Choice II, L.P.	2004	5.5	4	0.0	0
Siguler Guff Distressed Opportunities Fund III, L.P.	2008	6.0	5	1.4	4
Euro Choice V, L.P.	2012	6.1	5	5.5	16
<b>Secondary</b>		<b>16.0</b>	<b>12</b>	<b>5.7</b>	<b>16</b>
Landmark Equity Partners XIV, L.P.	2008	6.0	5	2.0	6
Lexington Capital Partners VII, L.P.	2009	10.0	8	3.7	11
<b>Buyout</b>		<b>40.5</b>	<b>31</b>	<b>4.2</b>	<b>12</b>
Leeds Equity Partners IV, L.P.	2004	5.0	4	1.0	3
Mesirow Financial Capital Partners IX, L.P.	2005	4.0	3	0.4	1
DN Partners II, L.P.	2007	5.0	4	0.9	3
Leeds Equity Partners V, L.P.	2010	2.5	2	2.2	6
LLR Equity Partners V, L.P. <sup>1</sup>	2017	12.0	9	NM	NM
Wellspring Capital Partners VI, L.P.	2017	12.0	9	0.0	0
<b>Special Situations</b>		<b>3.0</b>	<b>2</b>	<b>0.0</b>	<b>0</b>
Levine Leichtman Capital Partners Deep Value Fund, L.P.	2005	3.0	2	0.0	0
<b>Private Debt</b>		<b>10.0</b>	<b>8</b>	<b>1.9</b>	<b>6</b>
Audax Mezzanine Fund IV, L.P.	2016	10.0	8	1.9	6
<b>Venture Capital</b>		<b>21.8</b>	<b>17</b>	<b>11.6</b>	<b>33</b>
Charles River Partnership X, L.P.	1999	5.0	4	0.0	0
Charles River Partnership XI, L.P.	2000	1.8	1	0.2	< 1
Ascent Venture Partners IV, L.P.	2004	2.5	2	0.4	1

<sup>1</sup> Due to a negative account balance as of 12/31/17, Reported Fair Value for the Partnership has been listed as "Not Meaningful."



## Aggregate Private Equity Program Partnership Roster

	Vintage Year	Commitment (\$ mm)	Committed (%)	Reported Fair Value (\$ mm)	Reported Fair Value (%)
Ascend Ventures II, L.P.	2005	2.5	2	0.2	1
Globespan Capital Partners V, L.P.	2006	5.0	4	6.1	18
Ascent Venture Partners V, L.P.	2011	5.0	4	4.7	14
<b>Growth Equity</b>		<b>17.5</b>	<b>13</b>	<b>4.1</b>	<b>12</b>
TRG Growth Partnership II, L.P.	2007	7.5	6	2.5	7
Summit Partners Growth Equity Fund IX, L.P.	2016	10.0	8	1.6	5
<b>Other</b>		<b>4.6</b>	<b>4</b>	<b>0.3</b>	<b>1</b>
Senior Tour Players, L.P.	1998	2.6	2	0.2	1
Rimco Production Company, Inc	2001	2.0	2	0.1	< 1



## Aggregate Real Assets Program Partnership Roster

	Vintage Year	Commitment (\$ mm)	Committed (%)	Reported Fair Value (\$ mm)	Reported Fair Value (%)
<b>Total Program</b>		<b>60.4</b>	<b>100</b>	<b>18.5</b>	<b>100</b>
<b>Core</b>		<b>30.0</b>	<b>50</b>	<b>0.8</b>	<b>4</b>
IFM Global Infrastructure (U.S.), L.P.	Open-End	20.0	33	0.0	0
Basalt Infrastructure Partners II	2017	10.0	17	0.8	4
<b>Natural Resources</b>		<b>10.4</b>	<b>17</b>	<b>9.0</b>	<b>49</b>
Domain Timbervest Partners III, L.P.	2010	5.0	8	5.6	30
BTG Pactual Global Timberland Resources Fund, LLC <sup>1</sup>	2011	5.4	9	3.4	19
<b>Opportunistic</b>		<b>10.0</b>	<b>17</b>	<b>6.5</b>	<b>35</b>
JPMorgan Global Maritime Investment	2010	10.0	17	6.5	35
<b>Value-Added</b>		<b>10.0</b>	<b>17</b>	<b>2.2</b>	<b>12</b>
Global Infrastructure Partners III, L.P.	2016	10.0	17	2.2	12

<sup>1</sup> The Retirement Association committed €4.3 million to the Partnership in 2010. The \$5.4 million is an estimated amount based on the contributed capital and unfunded commitment as of 12/31/2017.

## Aggregate Real Estate Program Partnership Roster

	Vintage Year	Commitment (\$ mm)	Committed (%)	Reported Fair Value (\$ mm)	Reported Fair Value (%)
<b>Total Program</b>		<b>158.0</b>	<b>100</b>	<b>104.4</b>	<b>100</b>
<b>Core</b>		<b>42.0</b>	<b>27</b>	<b>84.0</b>	<b>80</b>
PRISA I	Open-End	15.0	9	38.2	37
Multi-Employer Property Trust	Open-End	5.0	3	15.6	15
Invesco Equity Real Estate Securities Trust	Open-End	22.0	14	30.2	29
<b>Opportunistic</b>		<b>48.0</b>	<b>30</b>	<b>3.8</b>	<b>4</b>
1921 Realty, Inc.	2008	5.0	3	0.9	1
AEW Partners Real Estate Fund VIII, L.P.	2017	25.0	16	2.8	3
Carlyle Realty Partners VIII, L.P.	2017	18.0	11	0.1	< 1
<b>Value-Added</b>		<b>53.0</b>	<b>34</b>	<b>10.6</b>	<b>10</b>
Intercontinental Real Estate Investment Fund III, LLC	2001	4.0	3	0.1	< 1
Hunt Redevelopment and Renovation Fund, LLC	2003	10.0	6	1.1	1
Intercontinental Real Estate Investment Fund IV, LLC	2004	4.0	3	0.0	< 1
Berkshire Multifamily Value Fund II, L.P.	2007	10.0	6	0.1	< 1
New Boston Institutional Fund, L.P. VII	2007	5.0	3	0.8	1
DSF Capital Partners IV, L.P.	2011	5.0	3	2.8	3
DSF Multi-Family Real Estate Fund III, L.P.	2016	15.0	9	5.7	5
<b>Fund of Funds</b>		<b>15.0</b>	<b>9</b>	<b>6.0</b>	<b>6</b>
Real Estate International Partnership Fund I, L.P.	2007	15.0	9	6.0	6

## Aggregate Program Performance Summary

Investment Strategy	Capital Committed (\$ mm)	Total Contributions Paid to Date <sup>1</sup> (\$ mm)	Unfunded Commitment <sup>2</sup> (\$ mm)	Total Distributions Received to Date (\$ mm)	Reported Fair Value (\$ mm)	Reported Fair Value Plus Distributions (\$ mm)	Net IRR <sup>3</sup> (%)	Inv. Multiple <sup>4</sup> (x)
<b>Total Program</b>	<b>131.1</b>	<b>90.0</b>	<b>45.8</b>	<b>77.7</b>	<b>34.7</b>	<b>112.4</b>	<b>4.6</b>	<b>1.2</b>
<b>Vintage Year 1998</b>	<b>2.6</b>	<b>2.7</b>	<b>0.0</b>	<b>0.1</b>	<b>0.2</b>	<b>0.3</b>	<b>-13.3</b>	<b>0.1</b>
Senior Tour Players, L.P. Other	2.6	2.7	0.0	0.1	0.2	0.3	-13.3	0.1
<b>Vintage Year 1999</b>	<b>5.0</b>	<b>4.4</b>	<b>0.6</b>	<b>2.2</b>	<b>0.0</b>	<b>2.2</b>	<b>-14.9</b>	<b>0.5</b>
Charles River Partnership X, L.P. Venture Capital	5.0	4.4	0.6	2.2	0.0	2.2	-14.9	0.5
<b>Vintage Year 2000</b>	<b>1.8</b>	<b>1.8</b>	<b>0.0</b>	<b>1.9</b>	<b>0.2</b>	<b>2.1</b>	<b>3.1</b>	<b>1.2</b>
Charles River Partnership XI, L.P. Venture Capital	1.8	1.8	0.0	1.9	0.2	2.1	3.1	1.2
<b>Vintage Year 2001</b>	<b>2.0</b>	<b>2.0</b>	<b>0.0</b>	<b>7.5</b>	<b>0.1</b>	<b>7.6</b>	<b>29.1</b>	<b>3.8</b>
Rimco Production Company, Inc Other	2.0	2.0	0.0	7.5	0.1	7.6	29.1	3.8
<b>Vintage Year 2004</b>	<b>13.0</b>	<b>13.1</b>	<b>0.4</b>	<b>13.3</b>	<b>1.4</b>	<b>14.7</b>	<b>2.0</b>	<b>1.1</b>
Ascent Venture Partners IV, L.P. Venture Capital	2.5	2.5	0.0	0.4	0.4	0.8	-15.9	0.3
Euro Choice II, L.P. Fund of Funds	5.5	5.5	0.4	7.7	0.0	7.7	6.4	1.4
Leeds Equity Partners IV, L.P. Buyout	5.0	5.0	0.0	5.2	1.0	6.2	3.4	1.2
<b>Vintage Year 2005</b>	<b>9.5</b>	<b>11.0</b>	<b>0.3</b>	<b>7.7</b>	<b>0.6</b>	<b>8.3</b>	<b>-5.1</b>	<b>0.8</b>
Ascend Ventures II, L.P. Venture Capital	2.5	2.3	0.2	0.8	0.2	1.0	-8.3	0.4
Levine Leichtman Capital Partners Deep Value Fund, L.P. Special Situations	3.0	4.9	0.0	5.1	0.0	5.1	1.3	1.0
Mesirow Financial Capital Partners IX, L.P. Buyout	4.0	3.8	0.2	1.8	0.4	2.2	-6.9	0.6
<b>Vintage Year 2006</b>	<b>5.0</b>	<b>4.9</b>	<b>0.1</b>	<b>4.6</b>	<b>6.1</b>	<b>10.8</b>	<b>14.0</b>	<b>2.2</b>
Globespan Capital Partners V, L.P. Venture Capital	5.0	4.9	0.1	4.6	6.1	10.8	14.0	2.2

<sup>1</sup> In certain instances, Total Contributions Paid to Date may exceed Capital Committed as certain partnerships may call fees outside of commitment and most partnerships reserve a limited right to recycle capital and/or recall distributions.

<sup>2</sup> Unfunded Commitment amounts are an approximation due to the inclusion of recallable distributions.

<sup>3</sup> The Net IRR calculations were performed by Meketa Investment Group. Total Program IRR is net of fees, expenses, and carried interest for each partnership and net of Meketa Investment Group fees. Partnership and Vintage Year IRRs are net of partnership fees but gross of Meketa Investment Group fees.

<sup>4</sup> The Inv. Multiple calculations were performed by Meketa Investment Group. Total Program Inv. Multiple is net of fees, expenses, and carried interest for each partnership and net of Meketa Investment Group fees. Partnership and Vintage Year Inv. Multiples are net of partnership fees but gross of Meketa Investment Group fees.



## Aggregate Program Performance Summary

	Investment Strategy	Capital Committed (\$ mm)	Total Contributions Paid to Date <sup>1</sup> (\$ mm)	Unfunded Commitment <sup>2</sup> (\$ mm)	Total Distributions Received to Date (\$ mm)	Reported Fair Value (\$ mm)	Reported Fair Value Plus Distributions (\$ mm)	Net IRR <sup>3</sup> (%)	Inv. Multiple <sup>4</sup> (x)
<b>Vintage Year 2007</b>		<b>12.5</b>	<b>9.7</b>	<b>2.8</b>	<b>6.7</b>	<b>3.4</b>	<b>10.1</b>	<b>0.8</b>	<b>1.0</b>
	DN Partners II, L.P.	5.0	2.3	2.7	0.0	0.9	0.9	-13.4	0.4
	TRG Growth Partnership II, L.P.	7.5	7.4	0.1	6.7	2.5	9.2	4.8	1.2
<b>Vintage Year 2008</b>		<b>12.0</b>	<b>12.1</b>	<b>0.2</b>	<b>13.4</b>	<b>3.4</b>	<b>16.8</b>	<b>7.3</b>	<b>1.4</b>
	Landmark Equity Partners XIV, L.P.	6.0	6.2	0.0	5.6	2.0	7.6	7.0	1.2
	Siguler Guff Distressed Opportunities Fund III, L.P.	6.0	5.8	0.2	7.8	1.4	9.2	7.4	1.6
<b>Vintage Year 2009</b>		<b>10.0</b>	<b>10.5</b>	<b>0.0</b>	<b>11.5</b>	<b>3.7</b>	<b>15.2</b>	<b>14.9</b>	<b>1.4</b>
	Lexington Capital Partners VII, L.P.	10.0	10.5	0.0	11.5	3.7	15.2	14.9	1.4
<b>Vintage Year 2010</b>		<b>2.5</b>	<b>3.6</b>	<b>0.0</b>	<b>3.0</b>	<b>2.2</b>	<b>5.2</b>	<b>12.6</b>	<b>1.4</b>
	Leeds Equity Partners V, L.P.	2.5	3.6	0.0	3.0	2.2	5.2	12.6	1.4
<b>Vintage Year 2011</b>		<b>5.0</b>	<b>4.8</b>	<b>0.4</b>	<b>3.0</b>	<b>4.7</b>	<b>7.8</b>	<b>11.2</b>	<b>1.6</b>
	Ascent Venture Partners V, L.P.	5.0	4.8	0.4	3.0	4.7	7.8	11.2	1.6
<b>Vintage Year 2012</b>		<b>6.1</b>	<b>5.4</b>	<b>0.9</b>	<b>1.5</b>	<b>5.5</b>	<b>7.0</b>	<b>11.5</b>	<b>1.3</b>
	Euro Choice V, L.P.	6.1	5.4	0.9	1.5	5.5	7.0	11.5	1.3
<b>Vintage Year 2016</b>		<b>20.0</b>	<b>3.9</b>	<b>16.1</b>	<b>1.2</b>	<b>3.5</b>	<b>4.7</b>	<b>NM</b>	<b>1.2</b>
	Audax Mezzanine Fund IV, L.P.	10.0	2.1	7.9	0.3	1.9	2.2	NM	1.0
	Summit Partners Growth Equity Fund IX, L.P.	10.0	1.8	8.2	1.0	1.6	2.6	NM	1.4
<b>Vintage Year 2017</b>		<b>24.0</b>	<b>0.0</b>	<b>24.0</b>	<b>0.0</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>
	LLR Equity Partners V, L.P. <sup>5</sup>	12.0	0.0	12.0	0.0	NM	NM	NM	NM
	Wellspring Capital Partners VI, L.P.	12.0	0.0	12.0	0.0	NA	NA	NA	NA

<sup>5</sup> Due to a negative account balance as of 12/31/17, Reported Fair Value for the Partnership has been listed as "Not Meaningful."

Aggregate Program Performance Summary

Investment Strategy	Capital Committed (\$ mm)	Total Contributions Paid to Date <sup>1</sup> (\$ mm)	Unfunded Commitment <sup>2</sup> (\$ mm)	Total Distributions Received to Date (\$ mm)	Reported Fair Value (\$ mm)	Reported Fair Value Plus Distributions (\$ mm)	Net IRR <sup>3</sup> (%)	Inv. Multiple <sup>4</sup> (x)
<b>Total Program</b>	<b>60.4</b>	<b>22.9</b>	<b>37.9</b>	<b>1.6</b>	<b>18.5</b>	<b>20.1</b>	<b>-3.9</b>	<b>0.9</b>
<b>Total Closed-end</b>	<b>40.4</b>	<b>22.9</b>	<b>17.9</b>	<b>1.6</b>	<b>18.5</b>	<b>20.1</b>	<b>-3.9</b>	<b>0.9</b>
<b>Vintage Year 2010</b>	<b>15.0</b>	<b>14.2</b>	<b>1.1</b>	<b>1.2</b>	<b>12.1</b>	<b>13.2</b>	<b>-1.8</b>	<b>0.9</b>
Domain Timbervest Partners III, L.P.	5.0	5.0	0.0	0.4	5.6	6.0	3.5	1.2
JPMorgan Global Maritime Investment	10.0	9.2	1.1	0.8	6.5	7.3	-7.6	0.8
<b>Vintage Year 2011</b>	<b>5.4</b>	<b>5.0</b>	<b>0.4</b>	<b>0.1</b>	<b>3.4</b>	<b>3.5</b>	<b>-7.6</b>	<b>0.7</b>
BTG Pactual Global Timberland Resources Fund, LLC	5.4	5.0	0.4	0.1	3.4	3.5	-7.6	0.7
<b>Vintage Year 2016</b>	<b>10.0</b>	<b>2.8</b>	<b>7.3</b>	<b>0.3</b>	<b>2.2</b>	<b>2.6</b>	<b>NM</b>	<b>0.9</b>
Global Infrastructure Partners III, L.P.	10.0	2.8	7.3	0.3	2.2	2.6	NM	0.9
<b>Vintage Year 2017</b>	<b>10.0</b>	<b>0.9</b>	<b>9.1</b>	<b>0.0</b>	<b>0.8</b>	<b>0.8</b>	<b>NM</b>	<b>0.8</b>
Basalt Infrastructure Partners II	10.0	0.9	9.1	0.0	0.8	0.8	NM	0.8
<b>Total Open-end</b>	<b>20.0</b>	<b>0.0</b>	<b>20.0</b>	<b>0.0</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
IFM Global Infrastructure (U.S.), L.P.	20.0	0.0	20.0	0.0	NA	NA	NA	NA

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<sup>2</sup> Unfunded Commitment amounts are an approximation due to the inclusion of recallable distributions.

<sup>3</sup> The Net IRR calculations were performed by Meketa Investment Group. Total Program IRR is net of fees, expenses, and carried interest for each partnership and net of Meketa Investment Group fees. Partnership and Vintage Year IRRs are net of partnership fees but gross of Meketa Investment Group fees.

<sup>4</sup> The Inv. Multiple calculations were performed by Meketa Investment Group. Total Program Inv. Multiple is net of fees, expenses, and carried interest for each partnership and net of Meketa Investment Group fees. Partnership and Vintage Year Inv. Multiples are net of partnership fees but gross of Meketa Investment Group fees.



## Aggregate Program Performance Summary

Investment Strategy	Capital Committed (\$ mm)	Total Contributions Paid to Date <sup>1</sup> (\$ mm)	Unfunded Commitment <sup>2</sup> (\$ mm)	Total Distributions Received to Date (\$ mm)	Reported Fair Value (\$ mm)	Reported Fair Value Plus Distributions (\$ mm)	Net IRR <sup>3</sup> (%)	Inv. Multiple <sup>4</sup> (x)	
<b>Total Program</b>	<b>158.0</b>	<b>112.1</b>	<b>54.1</b>	<b>65.4</b>	<b>104.5</b>	<b>169.9</b>	<b>5.5</b>	<b>1.5</b>	
<b>Total Closed-end</b>	<b>116.0</b>	<b>66.0</b>	<b>54.1</b>	<b>52.4</b>	<b>20.4</b>	<b>72.8</b>	<b>1.8</b>	<b>1.1</b>	
<b>Vintage Year 2001</b>	<b>4.0</b>	<b>4.6</b>	<b>0.0</b>	<b>5.6</b>	<b>0.1</b>	<b>5.7</b>	<b>2.3</b>	<b>1.2</b>	
Intercontinental Real Estate Investment Fund III, LLC	Value-Added	4.0	4.6	0.0	5.6	0.1	5.7	2.3	1.2
<b>Vintage Year 2003</b>	<b>10.0</b>	<b>9.0</b>	<b>1.9</b>	<b>10.6</b>	<b>1.1</b>	<b>11.7</b>	<b>5.1</b>	<b>1.3</b>	
Hunt Redevelopment and Renovation Fund, LLC	Value-Added	10.0	9.0	1.9	10.6	1.1	11.7	5.1	1.3
<b>Vintage Year 2004</b>	<b>4.0</b>	<b>4.6</b>	<b>0.0</b>	<b>2.4</b>	<b>0.1</b>	<b>2.5</b>	<b>-8.0</b>	<b>0.5</b>	
Intercontinental Real Estate Investment Fund IV, LLC	Value-Added	4.0	4.6	0.0	2.4	0.0	2.5	-8.0	0.5
<b>Vintage Year 2007</b>	<b>30.0</b>	<b>26.9</b>	<b>4.3</b>	<b>28.8</b>	<b>6.8</b>	<b>35.7</b>	<b>5.6</b>	<b>1.3</b>	
Berkshire Multifamily Value Fund II, L.P.	Value-Added	10.0	11.3	0.0	17.8	0.1	17.9	11.0	1.6
New Boston Institutional Fund, L.P. VII	Value-Added	5.0	3.0	2.0	3.3	0.8	4.1	6.1	1.4
Real Estate International Partnership Fund I, L.P.	Fund of Funds	15.0	12.7	2.3	7.7	6.0	13.7	0.8	1.0
<b>Vintage Year 2008</b>	<b>5.0</b>	<b>5.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.9</b>	<b>0.9</b>	<b>-16.8</b>	<b>0.2</b>	
1921 Realty, Inc.	Opportunistic	5.0	5.4	0.0	0.0	0.9	0.9	-16.8	0.2
<b>Vintage Year 2011</b>	<b>5.0</b>	<b>5.0</b>	<b>0.0</b>	<b>3.2</b>	<b>2.8</b>	<b>6.0</b>	<b>5.2</b>	<b>1.2</b>	
DSF Capital Partners IV, L.P.	Value-Added	5.0	5.0	0.0	3.2	2.8	6.0	5.2	1.2
<b>Vintage Year 2016</b>	<b>15.0</b>	<b>6.1</b>	<b>9.3</b>	<b>0.6</b>	<b>5.7</b>	<b>6.3</b>	<b>NM</b>	<b>1.0</b>	
DSF Multi-Family Real Estate Fund III, L.P.	Value-Added	15.0	6.1	9.3	0.6	5.7	6.3	NM	1.0

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Aggregate Program Performance Summary

	Investment Strategy	Capital Committed (\$ mm)	Total Contributions Paid to Date <sup>1</sup> (\$ mm)	Unfunded Commitment <sup>2</sup> (\$ mm)	Total Distributions Received to Date (\$ mm)	Reported Fair Value (\$ mm)	Reported Fair Value Plus Distributions (\$ mm)	Net IRR <sup>3</sup> (%)	Inv. Multiple <sup>4</sup> (x)
<b>Vintage Year 2017</b>		<b>43.0</b>	<b>4.4</b>	<b>38.6</b>	<b>1.2</b>	<b>2.8</b>	<b>4.0</b>	<b>NM</b>	<b>0.9</b>
	AEW Partners Real Estate Fund VIII, L.P.	25.0	4.3	20.7	1.2	2.8	4.0	NM	0.9
	Carlyle Realty Partners VIII, L.P.	18.0	0.1	17.9	0.0	0.1	0.1	NM	0.6
<b>Total Open-end</b>		<b>42.0</b>	<b>46.1</b>	<b>0.0</b>	<b>13.0</b>	<b>84.0</b>	<b>97.0</b>	<b>7.2</b>	<b>2.1</b>
	Invesco Equity Real Estate Securities Trust	22.0	23.9	0.0	13.0	30.2	43.2	8.4	1.8
	Multi-Employer Property Trust	5.0	5.0	0.0	0.0	15.6	15.6	6.5	3.1
	PRISA I	15.0	17.2	0.0	0.0	38.2	38.2	6.6	2.2

Open-end Real Estate Time-Weighted Performance

	4Q17 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since Inception (%)	Inception Date
<b>Private Real Estate</b>	<b>1.0</b>	<b>5.7</b>	<b>7.2</b>	<b>9.5</b>	<b>6.8</b>	<b>12/30/1999</b>
Invesco REIT	0.0	4.8	3.9	7.7	9.7	11/20/2002
MSCI US REIT	1.0	3.7	4.0	8.0	9.9	
Multi Employer Property Trust	1.4	5.5	8.5	9.9	6.3	12/30/1999
NCREIF ODCE Equal Weighted (net)	1.9	6.9	9.8	10.6	7.2	
PRISA I	1.7	6.4	9.7	11.0	6.8	6/30/2004
NCREIF ODCE Equal Weighted (net)	1.9	6.9	9.8	10.6	7.1	



The IRR (internal rate of return) and investment multiple are the most meaningful measures of performance for a private equity fund. IRR measures how assets are performing in relation to time. Investment multiple shows the cash on cash return generated on the invested capital by the underlying assets.

As of December 31, 2017, the Retirement Association's Private Equity Program generated a 4.6% net IRR and a 1.2x net TVM. After adjusting for capital calls and distributions that occurred during the quarter, the reported fair value of the Program increased by approximately \$2.1 million or 6.4%, which was primarily driven by increases in the valuations of Globespan Capital Partners V (\$1.3 million or 26.2%), Summit Partners Growth Equity Fund IX (\$0.3 million or 16.2%), and Euro Choice V (\$0.2 million or 4.4%).

As of December 31, 2017, the Retirement Association's Real Assets Program generated a -3.9% net IRR and a 0.9x net TVM. After adjusting for capital calls and distributions that occurred during the quarter, the reported fair value of the Program decreased by approximately \$0.5 million or 2.5%. Performance was primarily driven by a decline in the valuations of BTG Pactual Global Timberland Resources Fund (-\$0.4 million or -11.5%) and Basalt Infrastructure Partners II (-\$0.1 million or -18.0%).

As of December 31, 2017, the Retirement Association's Real Estate Program generated a 5.5% net IRR and a 1.5x net investment multiple. After adjusting for capital calls and distributions that occurred during the quarter, the reported fair value of the Program increased by approximately \$1.7 million, or 1.6%. Performance was primarily driven by increases in the valuations of PRISA I (\$0.6 million or 1.7%), Real Estate International Partnership Fund I (\$0.4 million or 7.8%), and Multi-Employer Property Trust (\$0.2 million or 1.4%).

# Appendices

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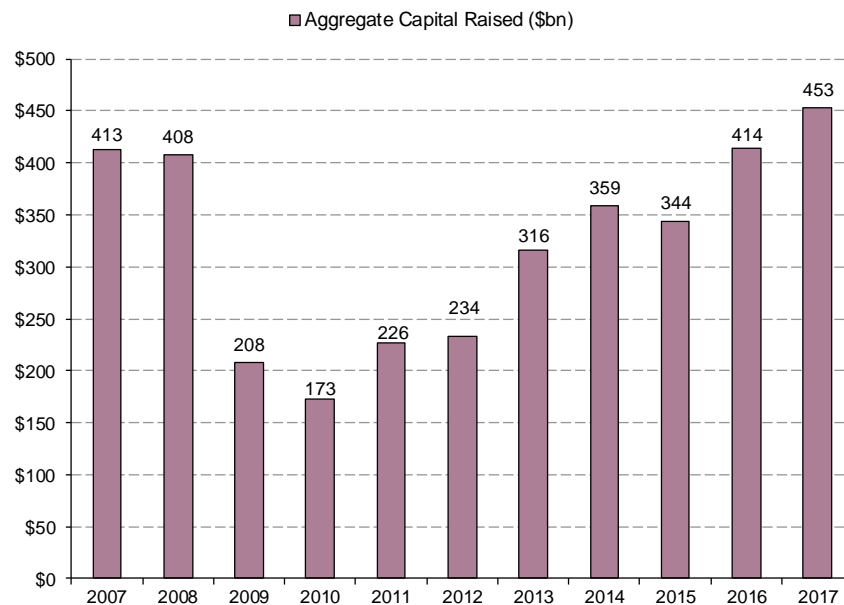
Meketa Investment Group has prepared this report on the basis of sources believed to be reliable. The data are based on matters as they are known as of the date of preparation of the report, and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available.

## Private Equity

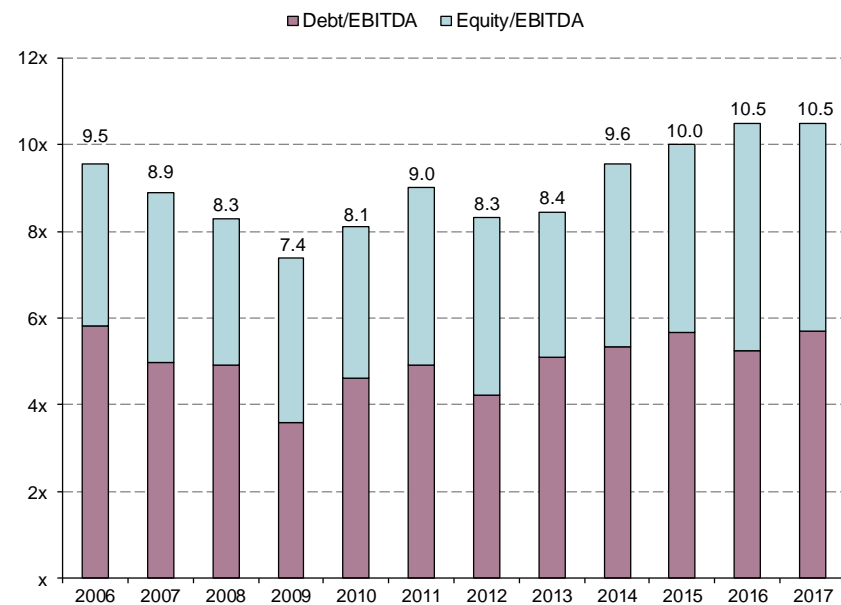
### Private Equity in 2017

The fundraising market for private equity in 2017 continued to be very robust, with \$453 billion of commitments raised during the year. Strong public market returns in North America in 2017 and a relatively robust debt market continued to drive attractive exit valuations in private equity buyout investments. Meanwhile, dry powder levels for private equity overall continued to rise, to just over \$1 trillion at the end of December<sup>1</sup>, raising concerns of increasing competition to find attractive deals. Fundraising for European-focused funds increased to €100 billion, the largest total for the region since prior to the financial crisis, with investors viewing such investments as contrarian given the continued fears over the Eurozone economy and geopolitical tensions. Asia-focused funds raised \$64 billion in 2017, rebounding from a decline in private equity commitments in the region during 2015 and 2016. Venture capital fundraising declined to \$55 billion in 2017, from over \$70 billion in 2016 with the number of funds dropping to its lowest point since 2010. However, venture capital investments continued to increase in 2017, up to \$185 billion in aggregate deal value. Venture capital in North America continued to lead the way in terms of investment activity and fundraising, followed by Asia, which maintained its lead over Europe.

**Global Fundraising<sup>2</sup>**



**Purchase Price break-down All LBO, North America<sup>2</sup>**



<sup>1</sup> Source: Preqin

<sup>2</sup> Source: Pitchbook



## Buyout

North American buyout activity continued to surpass all other regions in fundraising and capital deployment, representing 61% and 66%, respectively, of the global totals in 2017<sup>1</sup>. M&A valuations in the United States as reported by Pitchbook remained at an average 10.5x trailing EBITDA through December 2017. Debt levels for all U.S. buyouts averaged approximately 5.7x trailing EBITDA through December 2017. The largest completed North American deal was Sycamore Partners' \$6.9 billion take-private of Staples, Inc. The IT sector comprised approximately 19% of the aggregate buyout volume, followed by Healthcare at 16% and Industrials at 15%. The European buyout market represented 35% by number and 28% by aggregate value of global deals. Meanwhile, the Asia buyout market represented 5% of all deals globally by number and 18% of aggregate global investment value. In terms of exits by type, trade sales represented the largest at 58% of total global aggregate value, and IPOs at 16%. Sponsor-to-sponsor exit activity represented 26% of the exit market, down from 31% in 2016.

## Private Debt

Debt markets continued to rally in 2017 with spreads across asset classes continuing to compress below historic average levels. Despite benchmark rates rising, investors' search for yield continued to support demand for assets with credit risk. The high yield option-adjusted spread finished the year at 340 basis points, approximately 180 basis points lower than the historic average, and right at the post-crisis tightness reached in mid-2014. High yield bond and bank loan default rates continued to fall in 2017 as energy defaults rolled off and finished the year at 1.3% and 1.8%, respectively. While distressed energy opportunities waned, cracks in other industries emerged, debt prices fell, and in some cases, there were defaults. The largest increase in industry default rates was in retail, which increased from sub-1% to close to 5%. Other larger industries with increases in default rates were broadcasting, health care, and technology. Across these sectors total distressed high yield bonds and bank loans was approximately \$23 billion and \$28 billion, respectively. Overall, however, the distressed ratio remained fairly low. Leverage levels in new issue subordinated debt continued to marginally increase and averaged between 5.0x and 6.0x. Pricing slightly decreased with the cash component on new issue deals ranging from 10-12%. New mezzanine deal volume fell approximately 50% from the 3-year average as the benign credit environment led to borrowers finding cheaper and less restrictive capital. New BDC issuance significantly increased in 2017, which led to further competition with traditional mezzanine structures.

## Venture Capital

Aggregate exit value picked up slightly in 2017 to \$76 billion from \$70 billion in 2016, though it remains down over 40% from the \$134 billion in 2014 exit value. Despite the slight increase in aggregate value, the number of venture exits decreased 16% in 2017 from a year prior and is down 28% from its 2014 peak. Corporate acquisitions accounted for nearly three-quarters of venture-backed liquidity value in 2017, as the IPO window remained tight for venture-backed companies. While exit activity is significantly off its 2014 highs, the aggregate value of venture capital deals announced globally in 2017 reached a record-setting \$185 billion, which is an increase of 24% from its prior 2015 peak. Due to a continued decline in the number of venture deals in 2017, average venture deal size also reached a new high in 2017, up to \$15.6 million from \$11.1 million in 2016. Fundraising slowed meaningfully in 2017 after a banner year in 2016, with aggregate capital raised dropping to \$55 billion across 417 funds – down from the over \$70 billion raised in 2016 across 569 funds. North America continued to lead all regions in fundraising and deal and exit activity. However, venture activity in Greater China continued to catch up to North America, accounting for 36% of global deal volume and 24% of the number of venture deals. Five of the top ten venture capital deals in 2017 involved Asia-based companies, including Didi-Chuxing, which raised \$9.5 billion in two of the largest fundraising rounds of 2017. Softbank contributed to the increased deal activity in 2017, participating in half of the ten largest deals during the year, including investments in Didi Chuxing, WeWork Companies, Grab Holdings, and Flipkart. Again, concerns continued to be raised over lofty valuations of VC-backed companies, coupled with weakness in the exit markets over the past couple of years.

<sup>1</sup> Source: Preqin



## The Global Economy

Global economic activity continued to improve in 2017, with the IMF estimating an increase of 3.8% in real GDP during the year – the highest level since 2011. The economic expansion was shared broadly, as 120 countries accounting for three-quarters of GDP experienced a pickup in growth during the year along with particularly strong growth in some economies in Europe and Asia<sup>1</sup>. As of April 2018, the IMF expected global growth in 2018 to reach 3.9% due to continued accelerated growth in the euro area, Japan, China, and the United States as well as a recovery among commodity exporters. While the global economic outlook for the next few years is positive, the medium-term outlook appears less promising, partially due to slowing momentum from the U.S. tax reform, China's transition to lower growth, and a tightening in global monetary policy. In the long-term, climate change, geopolitical tension, cybersecurity, and the aging population in advanced economies continue to be major threats to global growth.

The headlines in 2017 were dominated by Donald Trump in his first year as U.S. president, rising tensions with North Korea, continued terrorist attacks around the world, and the destructive hurricane season. The global stock market rally also grabbed headlines, with the S&P 500 gaining 21.8%, the MSCI EAFE up 25.0%, and the MSCI EM rising 37.3%. Bitcoin posted even more dramatic gains, rising from under \$1,000 at the beginning of the year to over \$15,000 during the fourth quarter, as cryptocurrencies attracted the attention of users, speculators, and regulators alike. Extensions of oil production cuts by OPEC and Russia, as well as protests in Iran, helped drive oil prices higher. The outlook for developing economies continues to be uncertain. Brazil, Mexico, and emerging Europe are on track to experience significant economic gains, while Libya, Venezuela, and Yemen continue to struggle with economic and political instability. The ongoing conflicts in Syria and Afghanistan as well as tensions between Saudi Arabia and Iran also pose a threat to growth among emerging countries. China's fiscal and monetary future remain uncertain given significant turnover in positions related to elections at the communist party's congress, the appointment of a new PBOC head, and recent attempts to stem capital outflows. Central banks in Japan (BOJ) and Europe (ECB) continue to stimulate their respective economies and hold interest rates low. The populist and antitrade movement gained momentum in 2017 and into 2018 with the recent German election, Catalonia referendum, and the possibility of a trade war between China and the United States.

The U.S. has experienced largely stable growth since the end of the financial crisis, but at levels below prior recoveries. Inflation and wage growth remain low despite the declining unemployment rate, which fell to 4.1% in 2017 from 4.7% at the start of the year. The recent U.S. tax reforms should particularly benefit corporations with a permanent reduction in the tax rate from 35% to 21%. The tax reform could lead to more growth, but also higher inflation and tightening from the Fed. At their December meeting, the Fed hiked rates a fifth time to a range of 1.25% to 1.50% with additional increases expected. The question remains whether we need additional stimulus this late in the economic cycle. Political gridlock in Washington and uncertainty related to the new administration's policies remain as key issues.

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<sup>1</sup> Source: IMF

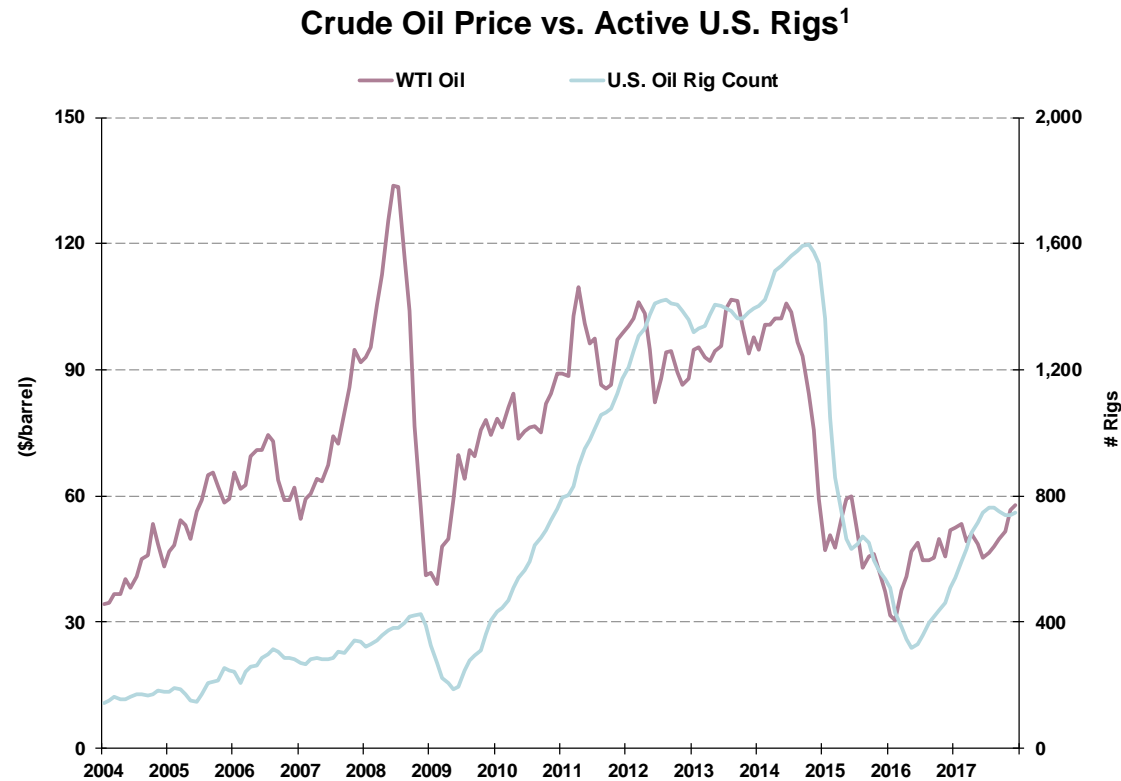


## Natural Resources

### Energy, metals, agriculture, and timber commodities were mixed during the quarter.

- Extensions of oil production cuts by OPEC and Russia, as well as protests in Iran, helped drive oil prices higher. Prices for West Texas Intermediate oil increased to \$58 per barrel representing a 16% quarterly increase and an 11% increase from one year prior. At the end of 2017, there were 748 rigs in operation representing a quarterly net decrease of 4 rigs.
- U.S. gasoline prices for regular blend decreased to \$2.66 per gallon during the fourth quarter, representing a 5% decrease from the previous quarter and a 12% increase from one year prior.
- Henry Hub natural gas spot price was \$2.82/MM BTU at December 31, 2017. Relative to one year prior, natural gas prices were down by 21%. The number of U.S. natural gas rigs decreased by 5 to 182 during the quarter. As liquefied natural gas (“LNG”) export facilities become operational along the Gulf Coast, increased demand for natural gas should help bolster prices.
- The availability of midstream energy infrastructure (e.g., oil and gas gathering systems, pipelines, processing, compression) remains a challenge in certain areas where significant oil and gas exploration and production is occurring. Bottlenecks and a lack of takeaway capacity may contribute to future regional pricing differentials and shut-in hydrocarbon production.
- During the quarter, the price of gold decreased by 4% to \$1,261 per ounce. Relative to the end of 2016, gold prices were up 10%.
- Copper prices rose to \$3.10 per pound during the fourth quarter, representing a 4% increase from the previous quarter and a 21% increase relative to one year prior. Increased global manufacturing activity is contributing to the increase in copper prices.
- Wheat, corn, and soybean prices increased by 3%, 1%, and 1%, respectively during the quarter. Relative to one year prior, wheat was up 30% while corn and soybeans were down by 2% and 5%, respectively. The NCREIF Farmland index experienced a 2.9% increase during the quarter with permanent crops returning 5.2% and row crops returning 1.2%. For the year, NCREIF Farmland index increased by 6.2% primarily due to the strong performance of permanent crops.
- U.S. timber prices spiked subsequent to Hurricane Harvey in August but moderated toward the end of the year. During the quarter, lumber prices increased by 2% while panel prices fell by 16%. Relative to one year prior, lumber and panel prices were up by 21% and 17%, respectively. The NCREIF Timberland index rose by 1.4% during the fourth quarter and was up 3.6% for the year.

Extracted Resources



Oil production in the U.S. is almost at 10 million barrels per day. The low oil price environment experienced over the past years has reduced costs and increased productivity across the industry. Exploration and production companies in the U.S., in general, are focusing activities in strategic areas and divesting non-core assets. Approximately 65% of U.S. oil rigs are currently operating in the Permian and SCOOP/STACK. In the coming years, production growth is expected to come from the Permian and Eagle Ford.

While the U.S. is experiencing robust oil production and growth, the rest of world is in decline. Modest increases in global demand, natural declines from conventional and unconventional production, and increased political instability in the Middle East has the potential to drive prices higher.

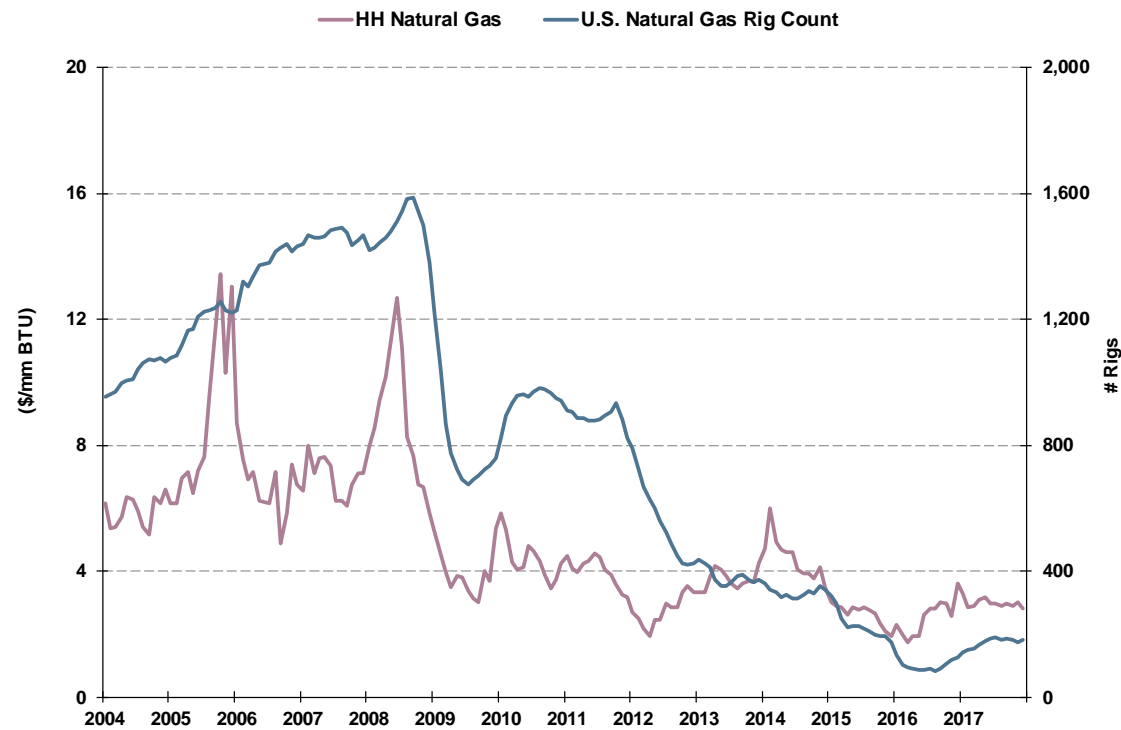
<sup>1</sup> Source: EIA and Baker Hughes





Extracted Resources

Natural Gas Price vs. Active U.S. Rigs<sup>1</sup>

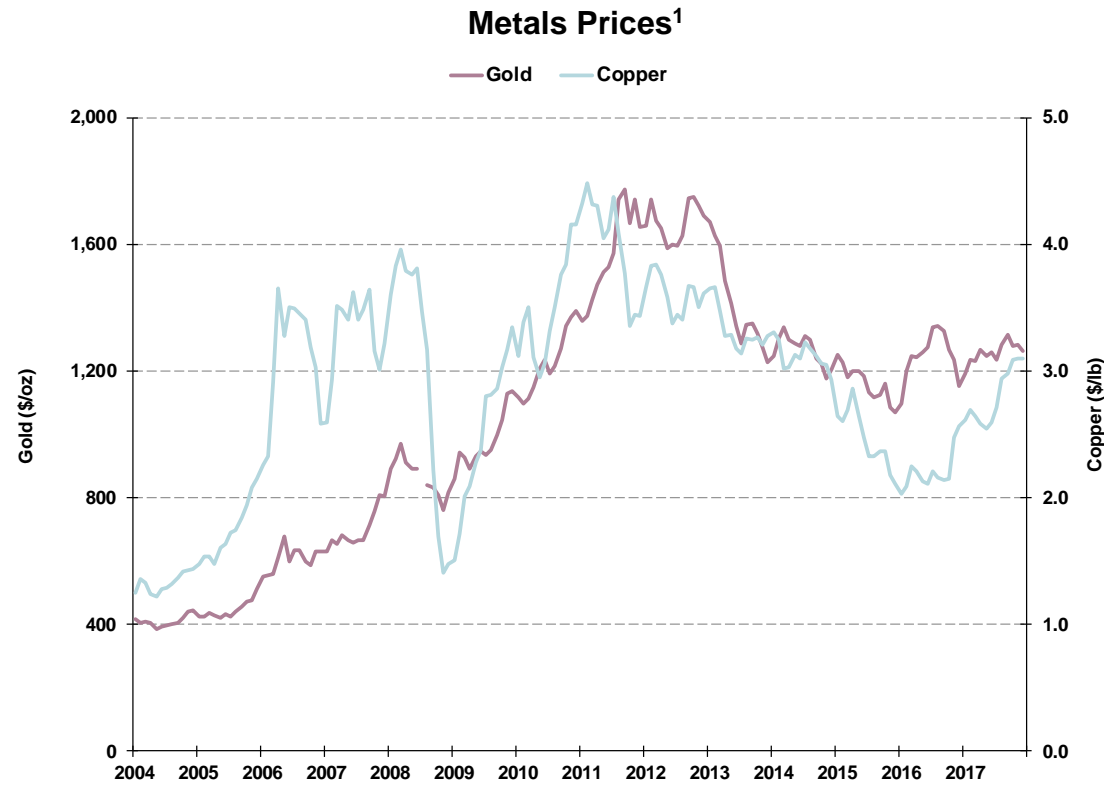


Natural gas production in the U.S. is approximately 82 billion cubic feet per day (“bcf/d”), and this is projected to increase to 96 bcf/d by 2030. LNG export capacity is expected to increase substantially with several facilities along the Gulf Coast coming online in the near term. These facilities will leverage the abundant low-cost supplies of natural gas being produced in the U.S., notably from the North East. Further development of midstream energy assets, both local gathering and processing as well as inter-state long-haul pipelines, will help enhance exports to Mexico and LNG shipments globally.

<sup>1</sup> Source: EIA and Baker Hughes



Extracted Resources

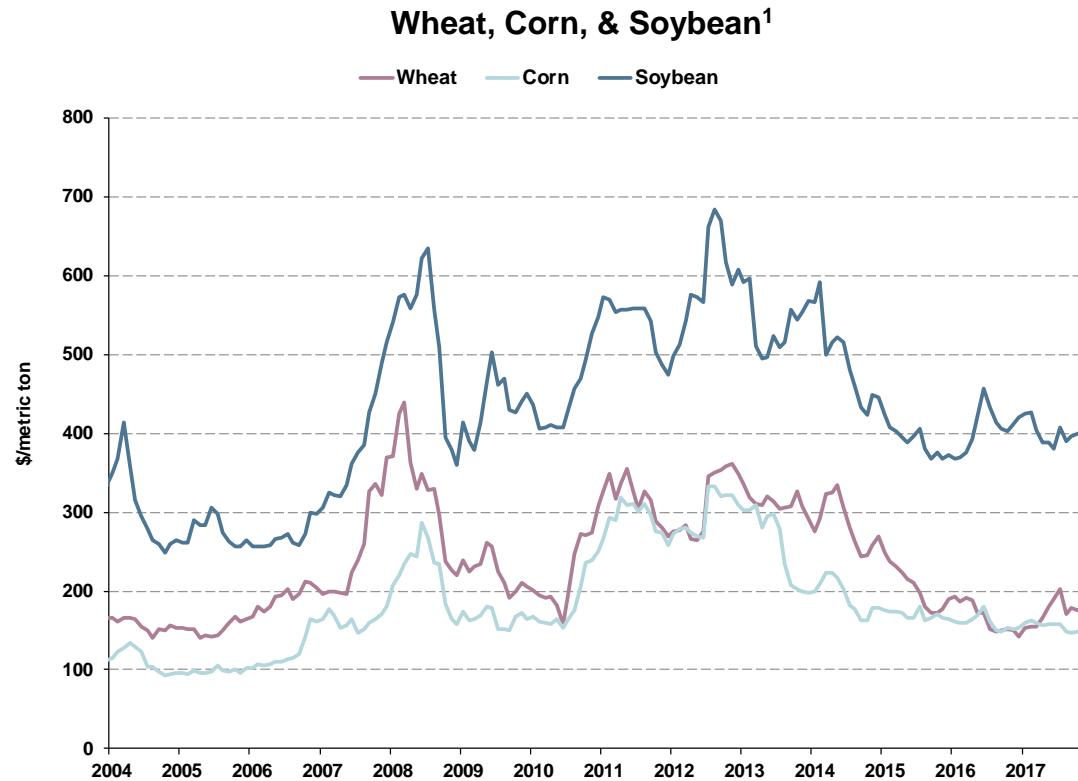


Optimistic global growth expectations and increased manufacturing activity within the U.S., Eurozone, and China are helping drive increased demand for metals and minerals, in general. However, the industry downturn since 2011 has reduced exploration and development of new projects and limited growth of reserves and resources. Access to public equity and debt markets for mining companies remains constrained, and the opportunity for private equity to fill the capital needs gap is prominent.

<sup>1</sup> Source: Index Mundi and Kitco



## Harvested Resources



Natural disasters across the U.S. highlight some of the risks of investing in farmland opportunities as well as the importance of crop insurance. Wildfires in California ravaged vineyards in Napa and Sonoma, and Hurricane Irma’s path through Florida significantly impacted citrus fruits and trees. In 2018, Congress passed a \$90 billion disaster relief package that allocated approximately \$760 million to the Florida agriculture industry’s recovery from Hurricane Irma and greening disease.

The USDA is projecting farmers will increase 2018 plantings for corn and soybeans at the expense of wheat and cotton acreage.

<sup>1</sup> Source: Index Mundi



## Harvested Resources

Trailing Period Returns<sup>1</sup>

<i>As of December 31, 2017</i>	<b>Q4 17</b>	<b>1 Year</b>	<b>5 Years</b>	<b>10 Years</b>
<b>NCREIF Farmland</b>	<b>2.9%</b>	<b>6.2%</b>	<b>11.3%</b>	<b>12.1%</b>
<b>NCREIF Timberland</b>	<b>1.5</b>	<b>3.6</b>	<b>6.2</b>	<b>4.4</b>
<b>S&amp;P 500</b>	<b>6.6</b>	<b>21.8</b>	<b>15.8</b>	<b>8.5</b>
<b>Barclays Aggregate</b>	<b>0.4</b>	<b>3.5</b>	<b>2.1</b>	<b>4.0</b>

Harvested strategies posted positive returns during the fourth quarter with both farmland and timberland outperforming the Barclays Aggregate index while underperforming the S&P 500 index.

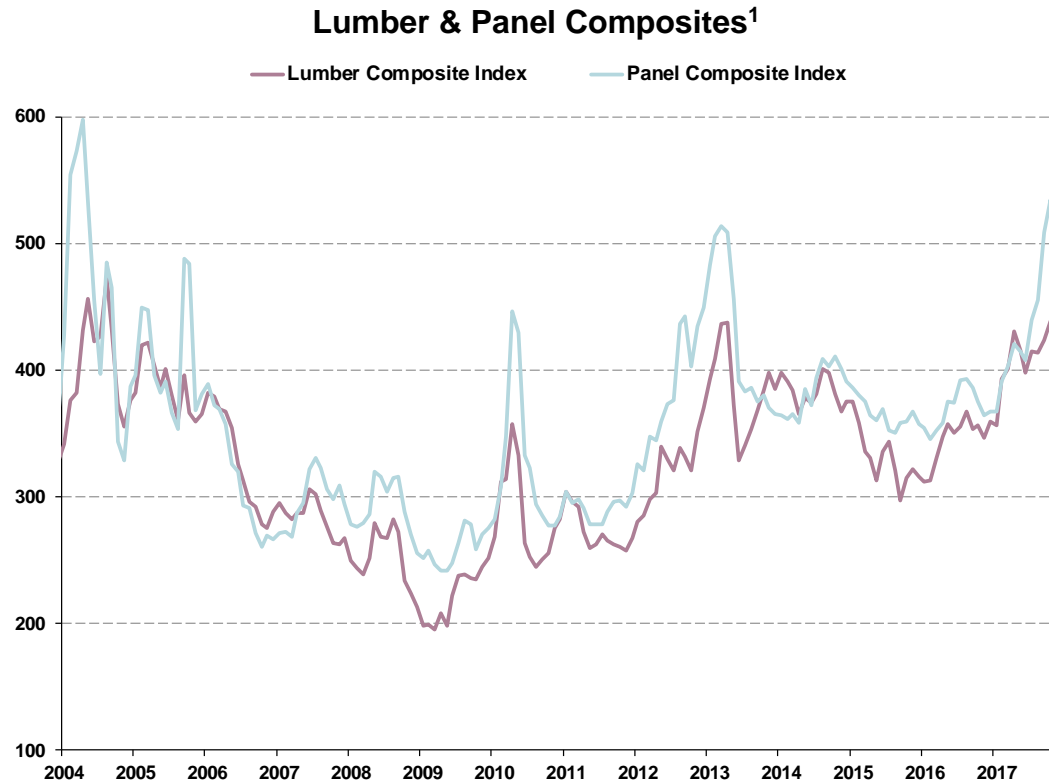
Farmland returns during the quarter were driven by 2.1% income and 0.8% appreciation. Row crops returned a total of 1.2%, and permanent crops generated 5.2%. The Pacific-West region produced the strongest returns of 5.1%. The Lake States region generated the weakest returns of -2.4%.

Timberland returns were driven by 0.7% income and 0.8% appreciation during the quarter. The Pacific Northwest region generated the strongest geographical returns of 3.9%, whereas the Lake States region generated the weakest returns of -3.0%.

<sup>1</sup> Source: National Council of Real Estate Investment Fiduciaries (NCREIF)



Harvested Resources



Timber exports to Asia remained robust, and the Pacific Northwest region continues to be a beneficiary of this demand. Japanese demand for saw logs was strong while demand from China eased. New residential housing starts in the U.S. remained stable at approximately 1.3 million.

The U.S. claims Canada was unfairly providing provincial subsidies that adversely affected the U.S. timber industry. As a result, a final determination for duties on timber imports from Canada were set at an average of 20.8%. Canada has filed a case with the World Trade Organization in response.

<sup>1</sup> Source: Random Lengths



## Infrastructure

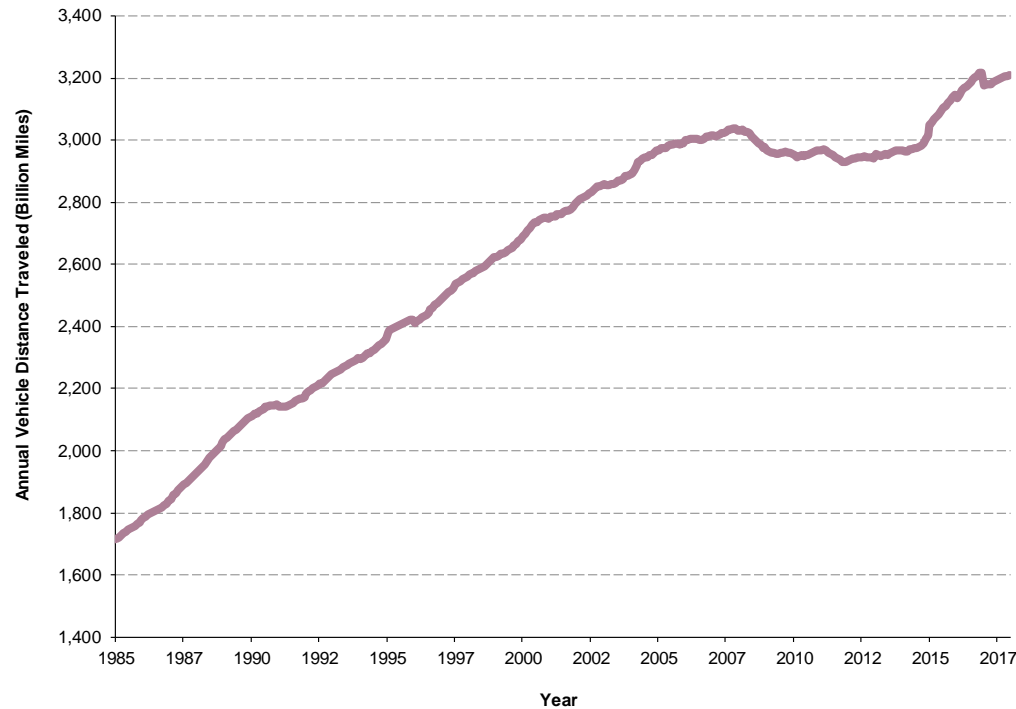
### Infrastructure fundraising and transactions

- Sixty-nine unlisted infrastructure funds closed in 2017, raising a combined \$65 billion, nearly matching the total from 2016. Forty-two percent of aggregate capital raised in 2017 went to the five largest funds, continuing the trend of capital concentration in unlisted infrastructure funds. At year-end 2017, a total of 166 unlisted infrastructure funds were in market, according to Preqin, with a combined fundraising target of approximately \$122 billion.
- The majority of infrastructure capital continues to focus on the developed markets of North America and Europe, accounting for nearly 88% of the capital raised in 2017 and 51 of the 69 funds closed this year. Only seven funds collectively raising \$1.5 billion of capital was secured by Asia-focused funds in 2017, an 86% drop compared to 2016, while 11 Rest of World-focused funds secured \$6.6 billion, \$4.6 billion more compared to last year.
- In terms of strategy focus, unlisted core/core-plus infrastructure funds represented 58% of the number of funds, or 40 closed and 50%, or \$33 billion of commitments in 2017. In terms of sector focus, funds focused on energy and renewables comprised for 35% of the number, or 24 and 20% of the capital, or \$13.1 billion raised in 2017. Funds pursuing a diversified sector strategy secured 72% of capital raised.
- Notable final closes held in 2017 included Global Infrastructure Partners III's fundraise of \$15.8 billion, EQT Infrastructure III's fundraise of €4.0 billion, Actis Energy Infrastructure Fund IV fundraise of \$2.75 billion, and AMP Capital Infrastructure Debt Fund III's fundraise of \$2.5 billion.
- As reported by Preqin, 2,378 deals were completed in 2017, representing a 6% drop in number of deals from 2016. The average deal size in 2017 increased to \$378 million, a 15% increase from 2016.

### Several notable transactions occurred during the fourth quarter

- Gainesville Regional Utilities, which is owned by the City of Gainesville, Florida, acquired a 100% stake in a 102.5 MW biomass electric generating facility from BayCorp Holdings, Energy Management, Fagen Power, and Starwood Energy Group Global for \$750 million.
- Brookfield Renewable Partners, a publicly listed company of Brookfield Asset Management, acquired a 100% stake in TerraForm Global from SunEdison for a total investment of \$750 million. TerraForm Global is a U.S.-based renewable energy company that operates a 952 MW portfolio of solar and wind power assets, predominantly in Brazil, China, and India.
- BlackRock's Global Energy and Power Infrastructure Fund II acquired a 97% stake in Glass Mountain Pipeline from SemGroup's affiliate Rose Rock Midstream for \$310 million alongside a \$10 million investment from Navigator Energy Services. Glass Mountain Pipeline is a 260-mile crude oil pipeline in Oklahoma.

### Moving 12-month Total on All Roads (U.S.)

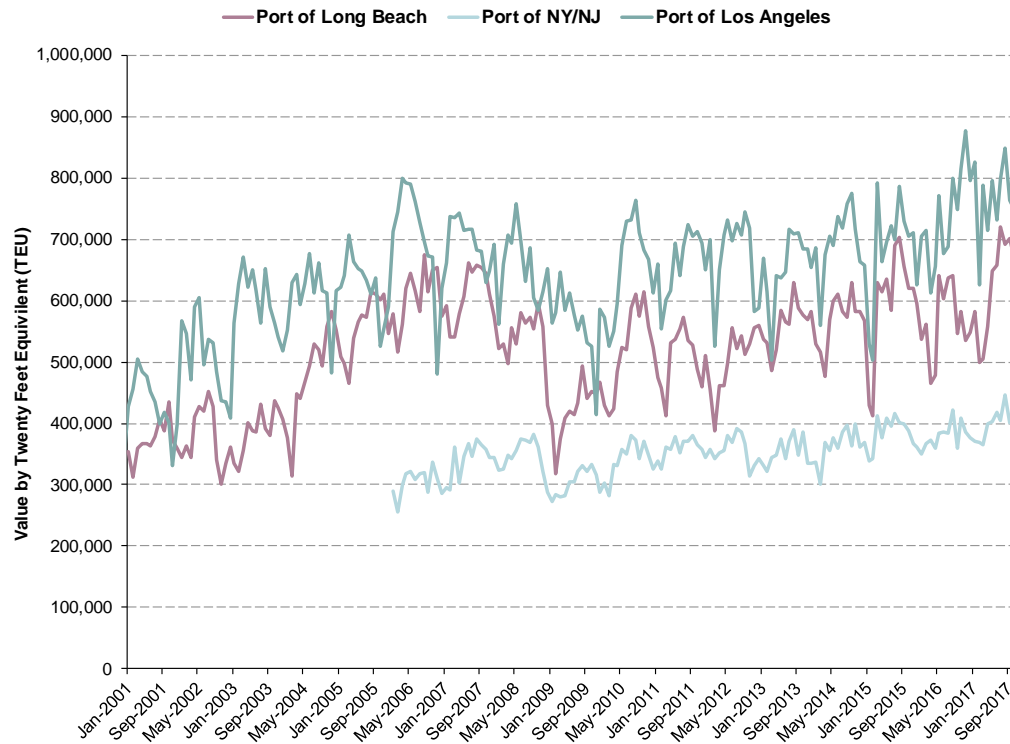


During the fourth quarter of 2017, travel on U.S. roads totaled approximately 798 billion miles. This represented a decrease of -0.5% over the same period in 2016. On a year-to-date basis, Federal Highway Administration data showed vehicle miles traveled increased by 39.3 billion miles, up 1.2% from 2016.

In 2017, the average U.S. price of a gallon of gas came down to a monthly average of \$2.53, with a peak of \$2.76. This compares to \$2.25 and \$2.47 seen in 2016.

According to INRIX data, Los Angeles, New York City, and San Francisco rank as the top three cities in the U.S. in which drivers spend the most hours in traffic.

### U.S. Port Activity – Container Trade in TEUs

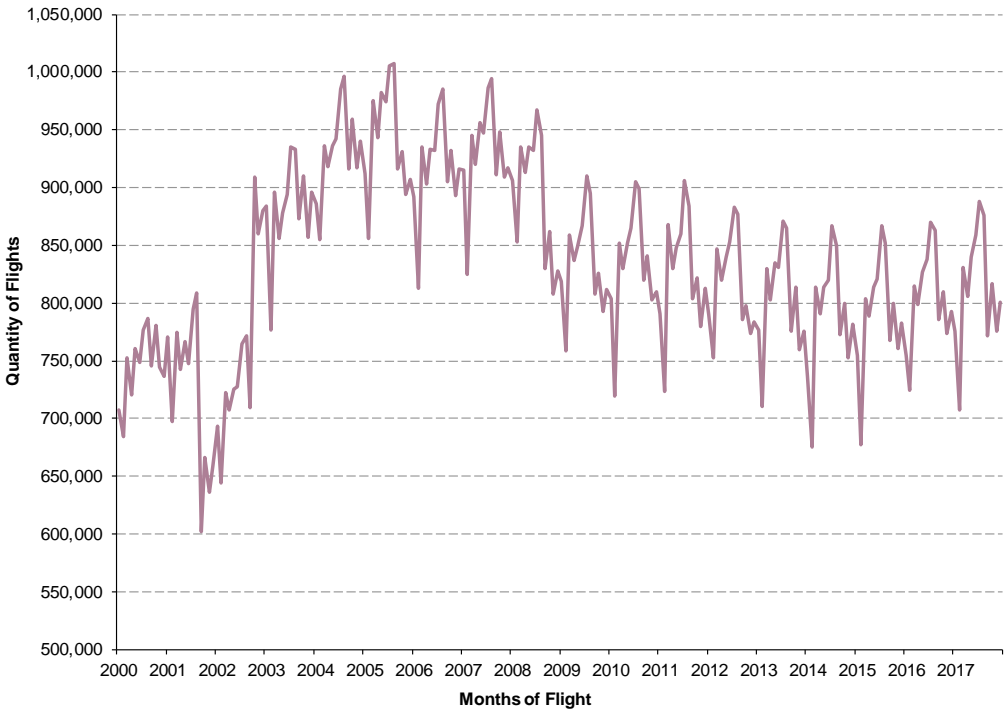


The chart represents the top three U.S. ports by container volume, as measured by twenty-foot equivalent units (TEU). Activity at the three ports provides a high-level representation of the volume of imports received into the U.S. more broadly.

During the fourth quarter of 2017, volumes at the three ports increased by approximately 342,000 TEU, or 6.4% over same period in 2016. On a year-over-year basis, the combined port volumes increased by 1,509,000 TEU, or 7.5%, over 2016. Each port saw an increase in year over year activity. The Port of Los Angeles, Long Beach, and the Port of NY/NJ recorded increases of 5.5% (486,000 TEU), 11.4% (769,000 TEU), and 5.6% (253,000 TEU), respectively, from 2016.



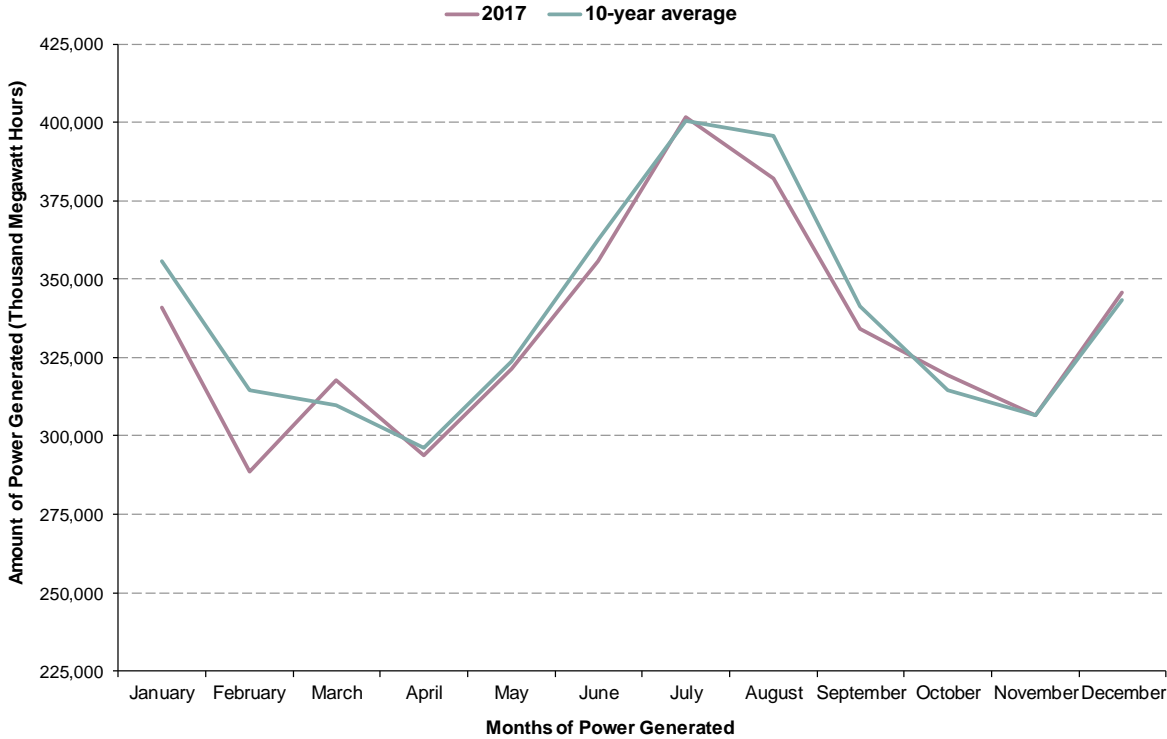
### Total Flights (U.S.)



The summary totals in the chart above represent all U.S. domestic and international flights, excluding foreign point-to-point flights. As shown in the chart, air traffic is cyclical with peaks in the summer months and declines in the winter months.

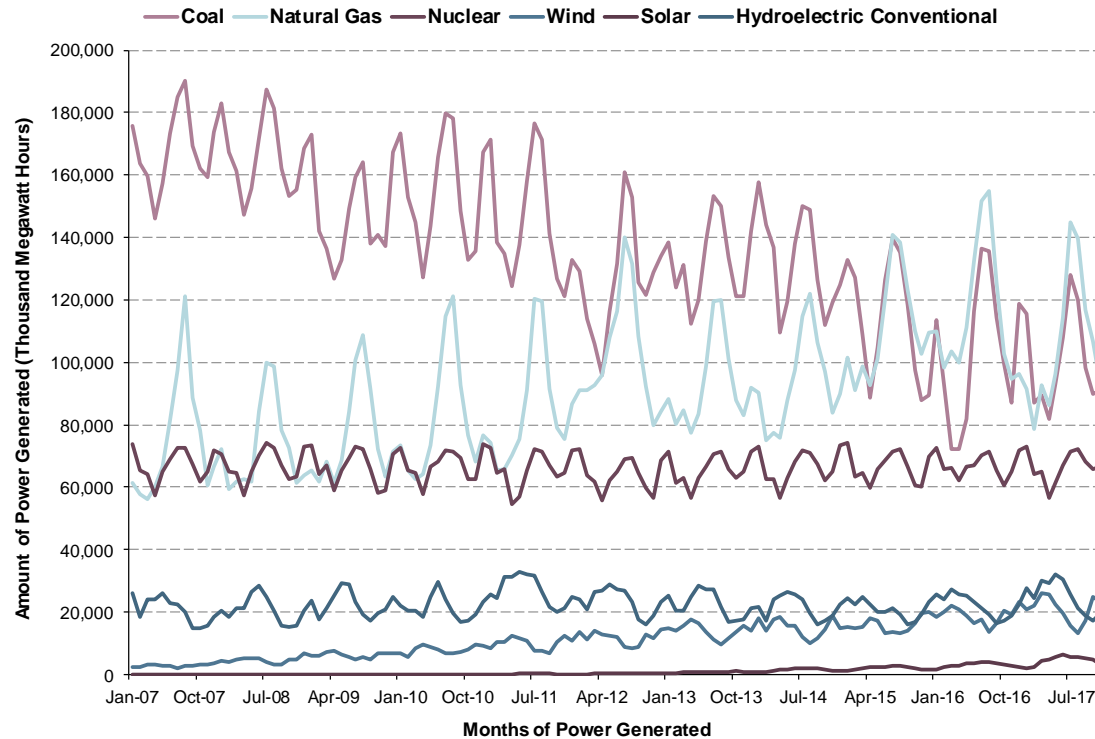
There were over 17,900 more flights during the fourth quarter of 2017, representing a 0.7% increase, compared to the same period in 2016. Air traffic activity also increased by 1.0% year over year from 2016 to 2017. In addition to the number of flights during the fourth quarter increasing year-over-year, the total number of passengers travelling on U.S. and international airlines increased by 3.5% from 2016 to 2017, which indicates higher capacity factors among airlines compared to the prior period.

### Total Power Generation (U.S.)



Net energy generation in the U.S. increased by 1.7% during the fourth quarter, compared to the same period in 2016. On a year over year basis, net energy generation dropped 1.8% in 2017 compared to 2016.

### Power Generation by Source (U.S.)



When comparing individual generation sources in the U.S., natural gas, nuclear, hydroelectric, wind, and solar increased 4.1%, 4.4%, 1.6%, 12.8%, and 31.4%, respectively in the fourth quarter of 2017 as compared to the same period in the previous year, while generation from coal dropped by 5.7% during the same period. Wind and utility scale solar continue to make up a small portion of total net energy generation in the U.S., accounting for only 7.3% and 1.1% of energy generation in the fourth quarter, while coal and natural gas accounted for 29.6% and 31.4%, respectively. However, the growth of wind and solar as sources of energy generation continues to increase at a faster rate than coal and natural gas, especially over the last couple of years.

### Real Estate Fundamentals

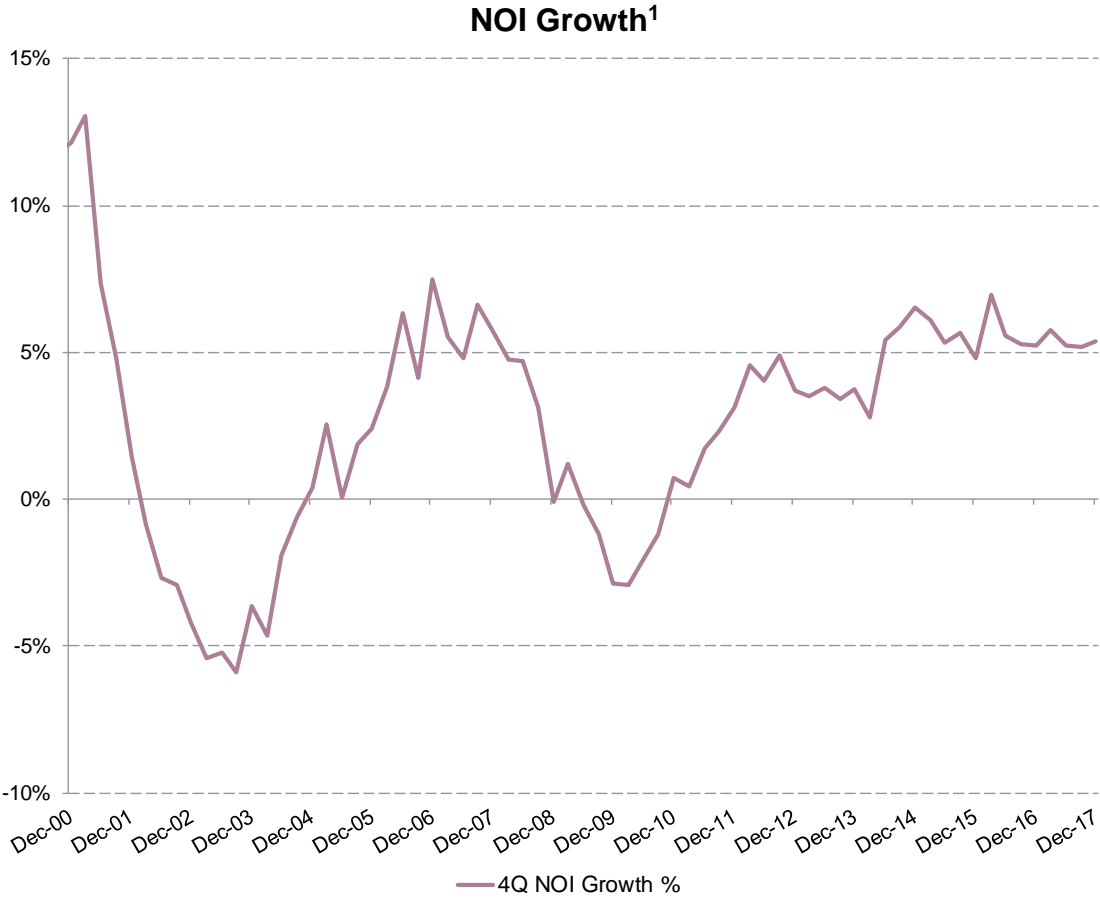
#### Vacancy by Property Type<sup>1</sup>



In the fourth quarter of 2017, vacancy rates across office and industrial properties continued to decrease, while vacancy in multifamily increased slightly and vacancy in retail properties remained relatively flat. Compared to the same period one year ago, vacancy in multifamily properties dropped by 69 basis points, office by 18 basis points, and industrial by 25 basis points, while retail has remained relatively flat. Overall, total vacancy across all property types decreased 37 basis points from Q4 2016. Industrial properties exhibit the highest occupancy rates at 96%, while office properties continue to have the highest vacancy rate of the major property types at 11%.

<sup>1</sup> Source: NCREIF



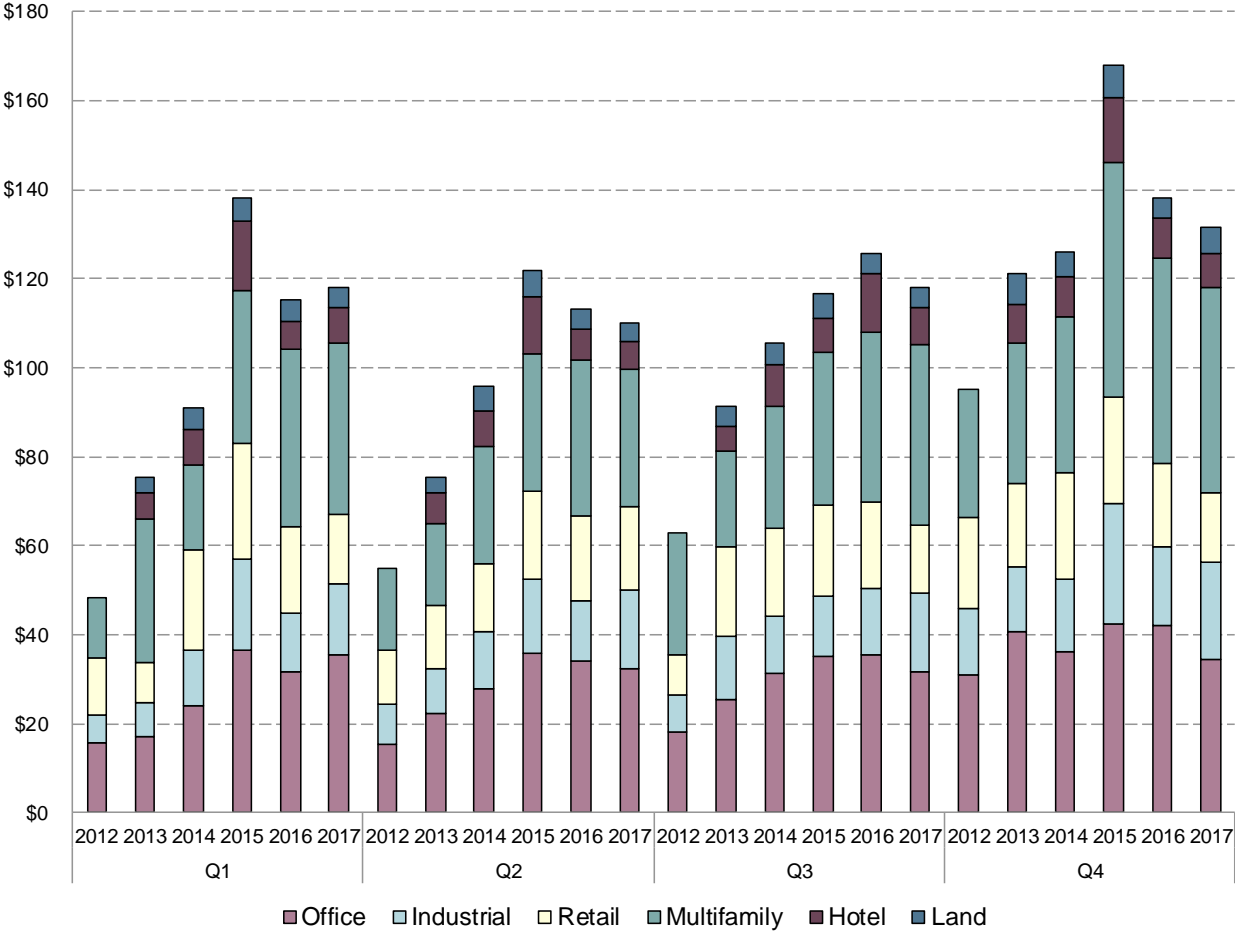


The trailing twelve month rate of NOI growth continued at a strong pace, remaining above 5% through the fourth quarter of 2017. This is largely due to the continued growth of the U.S. economy coupled with only moderate new construction, allowing property owners to increase rents and lease vacant space. The strongest NOI growth in 2017 was office properties, which grew at 8.8% year-over-year ending Q4 2017. Previously, industrial properties had been seeing the highest NOI growth. Retail property NOI growth recovered slightly after a sharp drop-off through the middle of 2017, with a growth rate of only 1.0% in Q4 2017.

<sup>1</sup> Source: NCREIF



Transaction Volume (\$bn)<sup>1</sup>

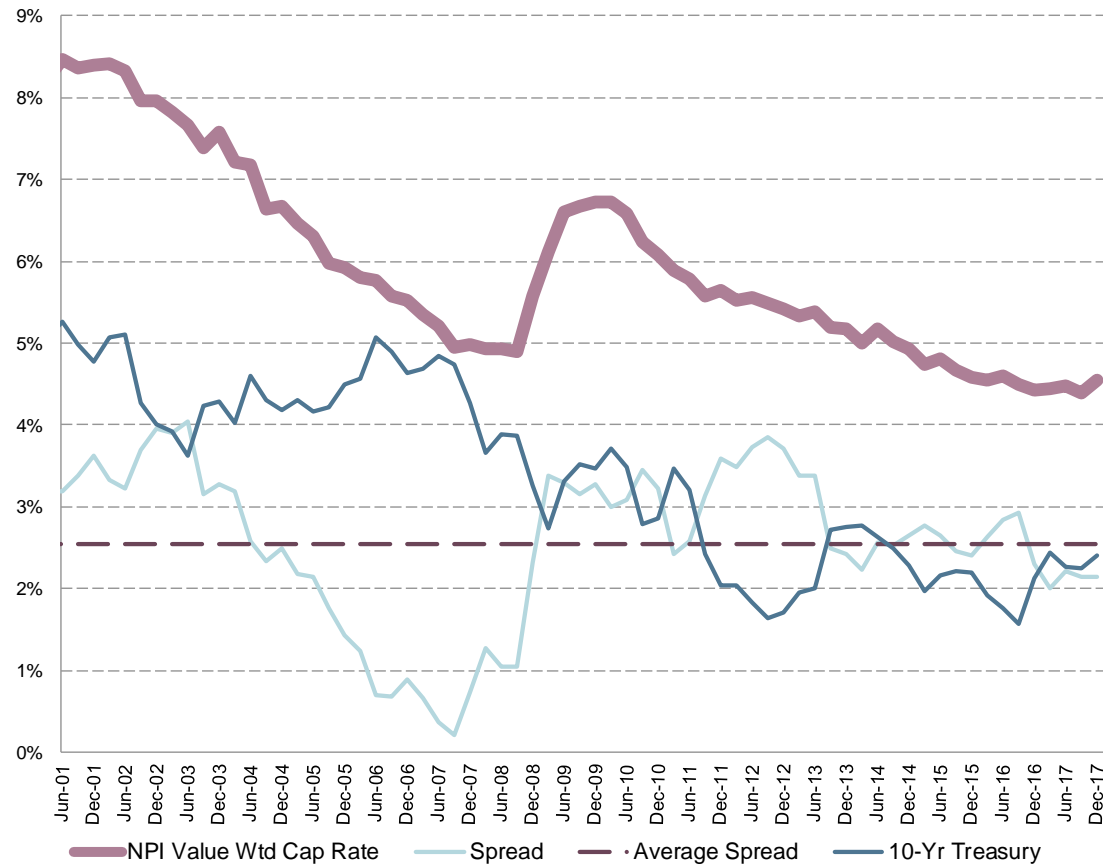


Private real estate transaction volume for properties valued over \$2.5 million decreased 5% in Q4 2017 when compared to Q4 2016. Industrial and multifamily volumes increased 24% and 15%, respectively, over the quarter, while hotel volumes were down 13%, and office and retail volumes were relatively flat. Multifamily and office properties made up the largest percentage of total transaction volume, at 35% and 26%, respectively.

<sup>1</sup> Source: PREA



### Real Estate Capital Markets Cap Rates vs. 10-Year Treasury<sup>1</sup>



The NPI Value Weighted Cap Rate is continuing a declining trend post-GFC. 10-year Treasury yields trended up over the quarter after a slight pullback in Q3 2017. The spread between cap rates and the 10-year Treasury increased slightly, ending the quarter at 2.4%, 15 basis points below the long term average.

<sup>1</sup> Source: NCREIF and U.S. Department of the Treasury



Trailing Period Returns<sup>1</sup>

<i>As of December 31, 2017</i>	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>	<b>10 Years</b>
<b>NFI-ODCE (EW, net)</b>	<b>6.9%</b>	<b>9.8%</b>	<b>10.6%</b>	<b>3.9%</b>
<b>NCREIF Property Index</b>	<b>7.0</b>	<b>9.4</b>	<b>10.2</b>	<b>6.1</b>
<b>NFI-CEVA (EW, net)</b>	<b>8.9</b>	<b>11.9</b>	<b>12.8</b>	<b>4.6</b>
<b>NAREIT Index</b>	<b>8.7</b>	<b>6.7</b>	<b>9.8</b>	<b>7.8</b>

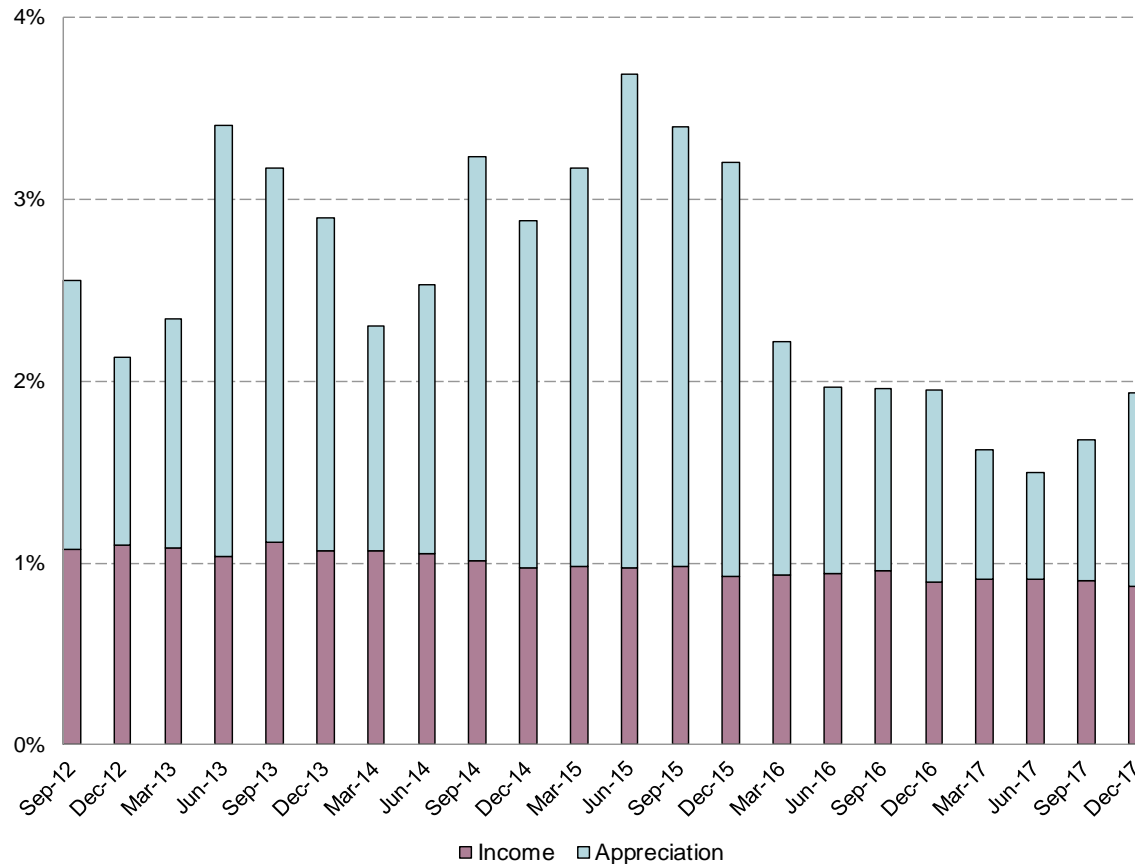
Public and private real estate indices have continued to post positive returns, driven by strong property-level fundamentals and a low interest rate environment. The NFI-CEVA (Closed-End Value Add) Index has outperformed over recent time periods, although the funds included in the index utilize higher leverage and vacancy risk than the comparable indices, which generally include stabilized properties.

<sup>1</sup> Source: NCREIF





### ODCE Return Components<sup>1</sup> (Equal Weight, Net)



The NFI-ODCE Equal Weight return for Q4 2017 was 1.9%, up slightly for the second consecutive quarter from a 7-year low in Q2 2017. The appreciation component of the return has reached 2016 levels at just over 1.0%. Appreciation return is expected to be moderate in the near term due to the stabilization of cap rates. Income return has remained relatively consistent around 1.0%, however has decreased slightly in the trailing year to 0.9%.

<sup>1</sup> Source: NCREIF



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Meketa Investment Group has prepared this report on the basis of sources believed to be reliable. The data are based on matters as they are known as of the date of preparation of the report, and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available.

If we manage your assets on a discretionary basis, please contact us if there are any changes in your financial situation or investment objectives, or if you want to impose any reasonable restrictions on our management of your account or reasonably modify existing restrictions.

In general, the valuation numbers presented in this report are prepared by the custodian bank for listed securities, and by the fund manager or appropriate General Partner in the case of unlisted securities. The data used in the market comparison sections of this report are sourced from various databases. These data are continuously updated and are subject to change.

This report does not contain all the information necessary to fully evaluate the potential risks of any of the investments described herein. Because of inherent uncertainties involved in the valuations of investments that are not publicly traded, any estimated fair values shown in this report may differ significantly from the values that would have been used had a ready market for the underlying securities existed, and the differences could be material. Note that for unlisted securities the valuations may be lagged by one or more calendar quarters, or may reflect original cost.

This document may contain certain forward-looking statements, forecasts, estimates, projections, and opinions (“Forward Statements”). No representation is made or will be made that any Forward Statements will be achieved or will prove to be correct. A number of factors, in addition to any risk factors stated in this material, could cause actual future results to vary materially from the Forward Statements. No representation is given that the assumptions disclosed in this document upon which Forward Statements may be based are reasonable. There can be no assurance that the investment strategy or objective of any fund or investment will be achieved, or that the Retirement System will receive a return of the amount invested.

In some cases Meketa Investment Group assists the Retirement System in handling capital calls or asset transfers among investment managers. In these cases we do not make any representations as to the managers’ use of the funds, but do confirm that the capital called or transferred is within the amounts authorized by the Retirement System.

The values of companies and partnerships in this review are based on audited reports for December 31, 2017, provided by the General Partners, unless otherwise noted.

Because there is no readily accessible market for private markets assets (companies and partnerships), the values placed on private markets assets are calculated by General Partners using conservative and industry standard pricing procedures. Annually, an independent auditor reviews the pricing procedures employed by the General Partner of each partnership.

While all private markets partnerships are audited by an independent entity, there is some discretion as to the method employed to price private companies and, therefore, private markets partnerships. At all times, Meketa Investment Group expects General Partners to utilize conservative and industry standard pricing procedures, and requires the General Partners to disclose those procedures in their reports. However, because of the inherent uncertainty of valuation, these estimated values may differ from the values that would be used if a ready market for the investments existed, and the differences could be significant.

**Absorption:** The amount of inventory or units of a specific commercial property type that become occupied during a specified time period (usually a year) in a given market, typically reported as the absorption rate.

**Advisory Board:** Partnerships often establish an advisory board comprised of representatives of the Limited Partners to oversee the on-going work of the General Partners. Advisory boards typically meet once each year to review the partnership's investments. It is important to note that unlike the Board of Directors of a public company, the advisory board has very little power to control the activities of the General Partners.

**Angel Investor:** Angel investors are individuals who invest their own capital directly in small, early stage companies. Angels are an alternative source of funding for entrepreneurs. Such investments are characterized by high levels of risk and potentially a large return on investment.

**Appraisal:** An estimate of a property's fair market value that is typically based on replacement cost, discounted cash flow analysis and/or comparable sales price.

**Appreciation:** An increase in the value or price of a real estate asset.

**Appreciation Return:** The portion of the total return generated by the change in the value of the real estate assets during the current quarter, as measured by both appraisals and sales of assets.

**Asset Management:** The various disciplines involved with managing real property assets from the time of investment through the time of disposition, including acquisition, management, leasing, operational/financial reporting, appraisals, audits, market review and asset disposition plans.

**Asset Management Fee:** A fee charged to investors based on the amount invested into real estate assets for the fund or account.

**Barrel:** 42 U.S. gallons of oil.

**Base Metals:** Non-precious, non-ferrous metals that include copper, aluminum, lead, nickel, tin, and zinc.

**Base Rent:** A set amount used as a minimum rent with provisions for increasing the rent over the term of the lease.

**Biofuels:** Biofuels are combustible fuels, such as bio-ethanol, that are made and processed from vegetation sources such as corn, sugar cane, barley, or wheat.

**Blind Pool:** Most Limited Partnerships are organized as blind pools, meaning that Limited Partners commit capital to the partnership before any actual investments are made. At the point of commitment, the Limited Partners do not know specifically how their money will be used (hence the term blind pool), and must therefore rely entirely upon the track record and experience of the General Partner.

**BOE/day:** A daily production metric equivalent to the energy content of a barrel of oil equivalent often related to natural gas, natural liquids, and condensates.

**Broker:** A person who acts as an intermediary between two or more parties in connection with a transaction.

**Brownfield:** A project with an operating history. The initial outlay is entirely to the public entity. Brownfield can be considered an easier starting point for investors, given the shorter J-curve and lower level of risk. Meketa Investment Group categorizes a Fund as brownfield if the Fund's investment strategy calls for over 65% of its underlying investments to be in brownfield (operating) assets.

**Buyout Fund:** A buyout partnership uses the partners' capital to purchase existing, established businesses. The acquired firms may be family owned prior to purchase, or may be operating divisions of larger companies seeking to restructure their businesses. In a few cases, the buyout partners may purchase all of the outstanding shares of a publicly traded company, effectively taking it private. Buyout funds are not involved in venture capital or startups.

Buyout partnerships own the acquired companies outright, or in combination with other buyout partnerships. In some cases the buyout partners will replace the existing management with a new team, or the acquired firm will be left autonomous. The buyout partners frequently take one or more board seats in order to ensure control of the business.

**Capital Appreciation:** The change in market value of a property or portfolio adjusted for capital improvements and partial sales.

**Capital Call (Contribution):** Once a partnership has declared its first close, the General Partners will begin to make portfolio investments. As each investment is made, the capital necessary to fund the investment is "called" from the Limited Partners.

**Capitalization Rate:** A percentage that relates the value of an income-producing property to its future income, expressed as net operating income divided by purchase price. This is also referred to as cap rate.

**Carried Interest:** The share of profits that the fund manager is due once it has returned the cost of investment to investors. Carried interest is normally expressed as a percentage of the total profits of the fund. The industry norm is 20%. The fund manager will normally therefore receive 20% of the profits generated by the fund and distribute the remaining 80% of the profits to investors.

**Carrying Value:** The General Partner must list on the partnership's balance sheet a value for every investment held. These valuations are called carrying values, and in most cases are simply the original cost of the investment. Note that carrying values in most cases are not audited and do not represent actual market values.

**Cash Flow Positive:** When a company generates more free cash than it consumes in normal operations, it is deemed to be cash flow positive. Such companies may not need extra financing or debt in order to grow.

**Cash Leasing Farmland:** A low risk/return strategy that shifts the operational risk of farming to a local operator. Farmland investors receive stable lease payments from the local operators who are allowed to farm the land. Cash leasing is typically used for row croplands.

**Cash on Cash Return:** The simple gross total return earned by the Limited Partners, calculated as the total distributions received divided by the total contributions made. Thus, if an investor supplied a total of \$100 in cash calls and contributions, and received over the life of the partnership \$200 in distributions, the cash on cash return would be 100%. The cash on cash return is typically reported as a multiple. In the example above, the investment returned 2x (two times).

**Chip-N-Saw:** Produced from mid-sized trees that are cut and chipped to pulpwood chips or small dimension lumber. Chip-N-Saw is typically derived from trees measuring 10-13" DBH.

**Claw-Back Provision:** A claw-back provision ensures that a General Partner does not receive more than its agreed percentage of carried interest over the life of the fund. So, for example, if a General Partner receives 21% of the partnership's profits instead of the agreed 20%, Limited Partners can claw back the extra one percent.

**Cleantech:** A broad term used to classify products or services that improve energy productivity, performance, or efficiency while reducing input costs, consumption, waste, or pollution. Common products associated with cleantech are wind farms, photovoltaics, fuel cells, biofuels, and smart grid technologies.

**Closed-end Fund:** A commingled fund that has a targeted range of investor capital and a finite life.

**Closings and Closing Dates:** Every partnership must specify the date upon which the General Partners will cease fundraising and begin making actual investments with the Limited Partners' committed capital. That date is called the closing date, and defines the vintage year of the partnership. Most partnerships, however, have several closing dates, and all partnerships must eventually have a final closing. In most cases, the final closing lags six to nine months after the first closing. If a majority of the original Limited Partners consent, a partnership can remain open to new investors after the final closing and while early investments are being made, in order to have time to attract additional investors.

**Co-Investment:** In some cases, Limited Partners want the right to make additional direct investments in one or more of the underlying companies purchased by the General Partner. If the partnership agreement gives co-investment rights to specific Limited Partners, then they may elect to invest additional monies “along side” the General Partner in various deals. In these cases, the co-investing Limited Partners would have two investments in an underlying property: their share of the partnership’s investment, and their direct additional co-investment on the side. Note that co-investment rights may be available only to the largest Limited Partners.

Co-investment rights are often negotiated by very large Limited Partners when they have strong convictions about the deal finding skills of the General Partners, because co-investment rights permit them to make even larger investments in the underlying properties than would otherwise be possible, without paying carried interest.

**Committed Capital:** When a Limited Partnership is formed, each Limited Partner agrees to contribute a specific amount of capital to be invested over the life of the partnership. Once the agreement is signed, the Limited Partners are legally bound and committed to supply the agreed upon capital when it is called for by the General Partner.

**Concession:** A business operated under a contract or license associated with a degree of exclusivity. In the case of a public service concession, a private company (the concessionaire) enters into an agreement with the government to have the exclusive right to operate, maintain and carry out investment in a public asset (such as a utility) for a given number of years.

**Concessions:** Cash or cash equivalents expended by the landlord in the form of rental abatement, additional tenant finish allowance, moving expenses or other monies expended to influence or persuade a tenant to sign a lease.

**Consolidation (Roll Up):** Many industries in America are highly fragmented, as the market space is serviced by a large number of locally owned businesses. By consolidating fragmented industries (i.e., purchasing many local businesses), firms can create a single larger company with greater market control, more attractive financial characteristics, and potentially, better pricing flexibility and lower costs.

**Construction Loan:** Interim financing during the developmental phase of a property.

**Convertible Bonds:** Some private equity partnerships, generally those that provide mezzanine financing, may take convertible bonds as part of their compensation for providing investment capital. The convertible bond pays interest like other bonds, but can be exchanged for shares of the company stock at a favorable price if certain conditions are met, hence the term convertible.

**Core Properties:** The major property types - specifically office, retail, industrial and multifamily. Core assets tend to be built within the past five years or recently renovated. They are substantially leased (90% or better) with higher-credit tenants and well-structured long-term leases with the majority fairly early in the term of the lease. Core assets generate good, stable income that, together with potential appreciation, is expected to generate total returns in the 10% to 12% range.

**Crude Oil:** An unpurified mixture of liquid hydrocarbons derived from rock formations, containing different levels or impurities such as water or sulfur.

**DBH:** DBH (Diameter at Breast Height) is the most common measure made by a forester to determine the growth, volume, yield, and potential of a tree. DBH is defined as 4.5 ft. above the ground on the uphill side of a tree.

**Development Well:** A well drilled in a proven area of an oil or gas reservoir to a depth known to be productive.

**Direct Investment:** Partnerships that invest in companies are said to make direct investments. The alternative is a partnership that invests in other partnerships, a fund of funds.

**Direct Operation Farmland:** A strategy typically employed with permanent crops to retain complete control over the assets. Farmland investors use farmland management firms to operate the farm and add value through increased quality and output. The primary risks associated with direct operation are operating, weather, and marketing risks.

**Diversification:** The process of consummating individual investments in a manner that insulates a portfolio against the risk of reduced yield or capital loss, accomplished by allocating individual investments among a variety of asset types, each with different characteristics.

**Downstream:** Portion of the energy chain that includes oil refineries, petrochemical plants, power generation, and distribution outlets.

**Dry Hole:** An oil well that fails to find or produce any oil or gas.

**Due Diligence:** The process of examining a property, related documents, and procedures conducted by or for the potential lender or purchaser to reduce risk. Applying a consistent standard of inspection and investigation one can determine if the actual conditions do or do not reflect the information as represented.

**E&P:** Acronym for "Exploration and Production" that relates to the exploration, development, and production of crude oil or natural gas reserves. E&P is also referred to as the upstream sector.

**EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization):** The "top line" profits of a private company are the monies earned before paying interest and taxes, and adding back depreciation and amortization. Unlike public companies, which are valued as the multiple of bottom line earnings to the stock price (P/E or price to earnings), private companies are valued as the multiple of EBITDA to the price of the stock.

There is no simple conversion factor that will convert an EBITDA multiple to a P/E for all companies, but in general, a factor of 2 is appropriate. Thus, a private company selling for an EBITDA multiple of 6 is priced about as richly as a public company with a P/E of 12.

**EBITDA Multiples:** The ratio of a private company's top line earnings to the price of its shares. See EBITDA above.

**Enterprise Value:** A measure of a company's value, often used as an alternative to straightforward market capitalization. Enterprise Value is calculated as market cap plus debt, minority interest and preferred shares, minus total cash and cash equivalents.

**Exploratory Well:** A well drilled to find and produce oil or gas in an unproven area or expand production of a previously known reservoir.

**Fee Income:** The General Partners in a private markets partnership generally receive two types of compensation: fee income as payment for their portfolio management services, and a share of any profits (carried interest) as incentive compensation.

**Fuel Cell:** A device that captures the electricity generated from a chemical reaction between a fuel and an oxidant. An example is a hydrogen fuel cell, which uses hydrogen as the fuel and oxygen as the oxidant to produce electricity and water.

**Fund of Funds:** A private markets partnership that consists primarily of investments in other partnerships, as opposed to direct investments in individual companies and deals. The General Partners of a fund of funds thus act as a manager of managers to create a diversified portfolio of partnerships, each of which in turn consists of a portfolio of direct investment deals.

Although a fund of funds is a collection of partnerships, the fund of funds itself is a partnership, and therefore has a vintage year, a commitment period, a distribution phase, and a final end. Thus, fund of funds have finite lifetimes, just like their underlying partnerships.

The advantages of a fund of funds are high diversification and "one stop shopping," i.e., the client has a single relationship with the fund of funds manager.

The disadvantages of fund of funds are higher costs (another entire layer of management fees and carried interest), an additional loss of liquidity, and an additional loss of control by the Limited Partners. Just as with direct private markets funds, a fund of funds is organized as a blind pool. That is, when a new fund of funds is announced, and a subscription target set, early investors do not know what specific sub-funds will be selected by the manager. Generally, the Private Placement Memorandum gives the General Partner almost unlimited latitude in making subsequent investments.

**General Partner:** The control partner in private equity partnerships, analogous to the portfolio manager in a public stock portfolio. Under the IRS code, the General Partner must commit some personal capital to the partnership (a minimum of 1% of the partnership's committed capital), and unlike the Limited Partners, is liable for leverage and other losses generated by the partnership.

**Geothermal Energy:** Energy extracted from the earth's interior to produce heat and electricity. Applications of geothermal energy include conventional geothermal (use of steam to drive turbines), geothermal heat pumps (pipes sunk beneath the earth's surface to act as a heat exchanger during the warmer and colder seasons), and direct heat (hot water pumped from the earth for use as a heat source).

**Greenfield:** A project without an operating history. Some of the initial outlay may be to the public entity, but the majority is used for construction. Greenfield opportunities may take an exceptionally long time to come to fruition. Meketa Investment Group categorizes a Fund as Greenfield if the Fund's investment strategy calls for over 65% of its underlying investments to be in greenfield assets.

**Growth (Expansion Capital):** A strategy that entails providing capital to a private company with the intention that the capital be used to expand operations. Generally, expansion capital strategies result in minority equity positions in companies, but with some degree of control over how the expansion capital is spent.

**Hedging:** Strategy used to limit or offset exposure to pricing risk of an underlying commodity. A common way to execute this strategy is through the use of futures contracts, a financial derivative that allows for the sale of a commodity at a pre-specified price in the future, whether or not the market price increases or decreases at the time. Counterparties to the futures contracts are speculators who are willing to accept the risk of price fluctuations in exchange for the potential upside.

**High-rise:** In the central business district, this could mean a building higher than 25 stories above ground level, but in suburban markets, it generally refers to buildings higher than seven or eight stories.

**Hurdle Rate:** The minimum rate of return that the Limited Partners must receive before the General Partners have a right to a share of any additional profits (carried interest) produced by the partnership's investments. For example, the partnership may specify that once the Limited Partners have received distributions representing an 8% total return on their commitment (the hurdle rate), the General Partner will share in all future distributions until they have been allocated 80% to the Limited Partners, and 20% to the General Partners (their carried interest).

**Hydro Energy:** Energy derived from the natural movement of falling or flowing water. The most common form of hydro energy comes from dammed water driving a turbine and generator to produce electricity. Once a hydroelectric complex is built, no direct waste is produced.

**Hydrocarbon:** A hydrogen and carbon compound created from the decomposition of organic material over time. Most hydrocarbons are found naturally in fossil fuels such as crude oil, natural gas, and coal.

**Improvements:** In the context of leasing, the term typically refers to the improvements made to or inside a building but may include any permanent structure or other development, such as a street, sidewalk, utilities, etc.

**Independent Oil Company:** A company involved in the exploration, production, and development of oil and natural gas that is not a Major Oil Company.

**In-Kind Distribution:** Most distributions from private equity partnerships are in cash. However, in some cases, a private deal will be taken public through an initial public offering (IPO), or through a trade sale for stock to a public company. In these cases, the Limited Partners will receive their distributions in the form of publicly traded common stocks and/or rights and warrants.

**Investment Period:** The period of time after the first closing during which the General Partner will call capital from the Limited Partners and make partnership investments. Legally, the investment period is usually six years. Practically, it is three to four years. Not to be confused with the term of the partnership, generally ten to twelve years.

**IPO (Initial Public Offering):** When a private company issues publicly traded stock, it becomes known as a public company. The initial sale of publicly available stock is called the initial public offering, or IPO.

**IRR (Internal Rate of Return):** The annualized rate of return on capital that is generated or capable of being generated within an investment or portfolio over a period of time, assuming all cash flows can be reinvested at the same rate. Mathematically, the IRR of an investment is the discount rate applied to that investment such that the net present value of the investment is zero. IRR is commonly used to measure profitability by applying the calculation to the after-tax cash flows to arrive at an after-tax equity yield rate.

**J-Curve:** Many private markets partnerships have small negative returns in their first years of operation as capital is invested. The negative returns result because the partnership's investments have not matured and turned a profit, but the partnership has nevertheless experienced various operating costs. When early deals begin to mature and are liquidated at a profit, the partnership's returns should become positive. Thus, the graph of the partnership's returns versus time can resemble the capital letter "J."



**Landfill Methane:** Landfill methane is generated from the decomposition of waste in landfills. Bacteria break down the organic matter, releasing a gas that is rich in methane. By capturing the methane, greenhouse gases released into the atmosphere are reduced, and the gases can be used as an energy source.

**Later Stage Fund:** A venture capital partnership that specializes in investing in startup companies that have already achieved at least some actual revenues, or a venture fund that provides subsequent rounds of venture financing after all of the capital provided in the first rounds has been consumed.

**Lead Investor:** Describes a General Partner who is the “lead” investor in a deal, as opposed to co-investors or follow-on investors. The term implies that the lead investor has taken the lead in sourcing, evaluating, and executing the deal.

**Lease:** An agreement whereby the owner of real property gives the right of possession to another for a specified period of time and for a specified consideration.

**Lease Rate:** The period rental payment to a lessor for the use of assets. It may also be considered as the implicit interest rate in minimum lease payments.

**Leverage:** Many General Partners use both equity capital provided by the Limited Partners and money borrowed from banks or other lenders to finance their investments. Any borrowed money is called leverage. If a deal is successful, leverage can often enhance the returns of the Limited Partners substantially. On the other hand, too much leverage can cripple an investment with interest and financing costs. It is important to note that the Limited Partners are not responsible for the repayment of any borrowed money.

**Leveraged Buyouts:** The purchase of a private or public company wherein the bulk of the purchase price is paid using borrowed money.

**Lifecycle:** The various developmental stages of a property: pre-development, development, leasing, operating and redevelopment (or rehab).

**Limited Partner:** All investors in a Limited Partnership other than the named General Partner are defined under the IRS code as Limited Partners. Limited Partners have only the control rights defined for them in the Private Placement Memorandum, and are generally passive investors in the partnership's deals.

A very important point is that Limited Partner's total liability for all deals made by the partnership are limited strictly by law to the Limited Partner's committed capital. Thus, even if the General Partners borrow a great deal of money (leverage), and lose it all, the lenders have no recourse to the assets of the Limited Partners. In effect, a Limited Partner can lose no more than the amount of money invested.

**Look-Back Provision:** See Claw-Back Provision above.

**Low-rise:** A building with fewer than four stories above ground level.

**Major Oil Company:** One of the original "Seven Sisters" consisting initially of Exxon, British Petroleum, Chevron, Gulf, Mobil, Texaco, and Royal Dutch Shell.

**Market Strategy:** A course of action defined with respect to a particular real estate market phase. For example, consider the market strategy of avoiding real estate transactions when there is an oversupply of space available in the market.

**Market Value:** The most probable price that a property would bring in a competitive and open market under fair sale conditions. Market value also refers to an estimate of this price.

**Mezzanine Financing:** An additional level of financing provided to a private company to expand sales, market share, or develop new products. Most mezzanine financing is structured as a package of high coupon bonds with equity “kickers,” i.e., rights to acquire the company's stock at a favorable price at a future point. Companies seeking mezzanine financing often have substantial revenues, and if not actual profits, the expectation of imminent profitability.

**Midstream:** Portion of the energy chain that transports and stores commodities such as oil and natural gas.

**MMCF:** One million cubic feet.

**Multiples and Multiple Expansion:** Managers purchasing public common stocks often buy companies with low price to earnings multiples when they believe some factor will induce other investors to bid up the price of the stock without an increase in actual earnings, thus causing the price multiple to expand. In the same fashion, a General Partner may purchase a private company with a low EBITDA multiple, expecting to profit through an expansion of that multiple. A typical example of a multiple expansion plan is consolidation. Many small companies, operating independently, may each be priced at relatively low multiples. But if purchased and combined into a larger, cohesive entity, investors might be willing to pay a higher multiple for the aggregate than for any individual component.

**Natural Gas:** A gaseous fossil fuel consisting primarily of methane and other heavier hydrocarbons. Natural gas burns cleaner than oil and coal and is a major source of electricity generation through the use of gas and steam turbines.

**Net Metering:** An arrangement that allows a facility to sell any excess energy it generates back to the electrical grid to offset its consumption.

**Net Operating Income (NOI):** The potential rental income plus other income, less vacancy, credit losses, and operating expenses.

**Oil Sands:** Naturally occurring mixtures of a very dense, tar-like form of petroleum called bitumen and sand or clay. Because of the high production and refining costs associated with oil sands, economic feasibility only occurs with high oil prices.

**OPEC:** OPEC (Organization of Petroleum Exporting Countries) is an oil cartel comprising twelve countries around the world.

**Open-end Fund:** A commingled fund that does not have a finite life, it continually accepts new investor capital and makes new property investments.

**Operator:** The party responsible for managing the asset; may be (and usually is) different than the owner/lessee of the asset.

**Opportunistic:** A phrase generally used by advisers and managers to describe investments in underperforming and/or undermanaged assets that hold the expectation of near-term increases in cash flow and value. Total return objectives for opportunistic strategies tend to be 20% or higher. Opportunistic investments typically involve a high degree of leverage - typically 60% to 100% on an asset basis and 60% to 80% on a portfolio basis.

**Permanent Crops:** Permanent crops include those grown on a tree or vine such as almonds, wine grapes, apples, and oranges. They are usually directly operated to produce higher income returns from crop sales but can carry a higher level of risk.

**PFI:** The Private Finance Initiative specifies a method, developed initially by the U.K. government, to provide financial support for Public-Private Partnerships. This has since been adopted as part of a wider reform program for the delivery of public services which is driven by the WTO, IMF & World Bank as a part of their "deregulation" and privatization drive. In return for their services, the private sector receives payment linked to its performance.

**Pipeline:** A system made of steel piping used to transport oil, gas, and other liquids from one location to another.

**Placement Agent:** Unlike public stock management companies, most of whom utilize an in-house sales force to market their services, private equity partnerships are generally marketed by third-party placement agents. These outside marketing firms and individuals are paid a commission by the General Partner.

**Platform Company:** Some private equity buyout funds attempt to add value by merging companies into larger, more cost efficient enterprises. This strategy generally begins with the acquisition of a platform company, often a market leader, to which other companies are added.

**Possible Reserves:** Reserves of oil or natural gas that have a less likely chance of being recovered than probable reserves. These reserves are often claimed as having a 10% certainty of being produced and are also known as P10 or 3P.

**PPM (Private Placement Memorandum):** Because Limited Partnership interests are not registered with the SEC, private equity managers must distribute a comprehensive document to prospective investors that describes the broad investment thesis of the partnership, and highlights any risks involved in the partnership. This document is called a Private Placement Memorandum.

**PPP:** A Public Private Partnership (or P3) is a system in which a government service or private business venture is funded and operated through a partnership of government and one or more private sector companies. Also referred to as Collective Development Agreements or Alternative Finance Procurement.

**Precious Metals:** Precious metals include gold, silver, palladium, and platinum. These metals have wide industrial uses but are better known for their usage in jewelry, art, and store of value.

**Pre-merch (merchantable):** Logs that do not meet the minimum size, quality, or usable volume required for the commercial sale of timber.

**Privatization:** The transfer of property or control of assets used to provide public services from the public sector to the private sector.

**Probable Reserves:** Probable reserves are those reserves based on median estimates and claim a 50% confidence of recoverability. These reserves are also known as P50 or 2P.

**Producing Well:** A well that produces oil and gas in sufficient quantities such that the revenue generated exceeds the associated production costs and taxes.

**Property Type:** The classification of commercial real estate based on its primary use. The four primary property types are: retail, industrial, office, and multi-family residential.

**Proved Reserves:** Reserves of oil or natural gas that are claimed to have a 90% certainty of being recovered using existing technology. The SEC only allows oil companies to report proved reserves to investors. Proved reserves are also known as P90 or 1P.

**Public to Private:** If a private partnership (or group of private partnerships) purchases all of the outstanding shares of a publicly traded company, the company's shares may be de-listed from the stock exchange. The company is then said to have been "taken private." For example, in June 1989, the private partnership Wings Holdings acquired the public stock of Northwest Airlines in a \$3.65 billion-dollar leveraged buyout. Following this acquisition, Northwest became a privately held corporation for the first time since 1941.

**Pulpwood:** Wood cut and chipped for the manufacturing of paper and paper related products. Pulpwood is typically too small or of insufficient quality for sawtimber and is classified as 6-9" DBH.

**Real Estate Cycles (phases):** The regularly repeating sequence of economic downturns and upturns and associated changes in real estate market transactions tied to market dynamics and changing macroeconomic conditions, whose phases include (in order) recession, recovery, expansion, and oversupply.

**Real Estate Investment Trust (REIT):** An investment vehicle in which investors purchase certificates of ownership in the trust, which in turn invests the money in real property and then distributes any profits to the investors. The trust is not subject to corporate income tax as long as it complies with the tax requirements for a REIT.

Shareholders must include their share of the REIT's income in their personal tax returns. (Barron's Dictionary of Real Estate Terms and Encyclopedia of Real Estate Terms 2nd Edition, Damien Abbott)

**Real Estate Trends:** Long-term movements or tendencies in the demand for commercial real estate (which can typically last for years or decades), usually tied to macro-economic or business cycles.

**Renewable Energy:** Energy derived from natural resources such as solar, wind, geothermal, or biofuels. Unlike oil, natural gas, or coal, these sources of energy are naturally replenished, providing a potential source of cleaner and more sustainable energy.

**Row Crops:** Row crops are those that are planted and harvested annually from the soil, as opposed to trees or vines, and include corn, cotton, rice, soybeans, and vegetables. Row crops are often eligible to receive federal subsidies.

**Sawtimber:** Timber of sufficient size and quality to be cut and harvested for lumber or other solid wood products. Sawtimber is usually derived from trees measuring 14" + DBH.

**Secondary Fund:** Occasionally, a Limited Partner will wish to sell his interest in a partnership before the term of the partnership is completed. Any such sale is termed a secondary market sale. A secondary fund creates a portfolio of partnership interests from earlier partnerships purchased in the secondary market. The advantage of a secondary fund is that it gives investors an opportunity to invest in seasoned partnerships from closed funds of prior vintage years.

**Shadow Tolls:** Payments made by government to the private sector operator of a road based, at least in part, on the number of vehicles using the road. They are currently in operation on some roads in the U.K., and they have also been adopted in other countries.

**Solar Energy:** Source of energy derived from the sun's light and heat. Common solar technologies include photovoltaics (PV) and solar thermal.

**Sponsor:** Every private equity opportunity that Meketa Investment Group evaluates is assigned to a sponsor. This individual, who is a member of Meketa Investment Group's Private Equity Investment Committee, is responsible for the collection of information and the evaluation of the opportunity.

**Submarket:** A segment or portion of a larger geographic market defined and identified on the basis of one or more attributes that distinguish it from other submarkets or locations.

**Take Down/Draw Down:** A take down or a draw down is the same as a capital call.

**Term:** The term of a private partnership is its expected lifetime, and is specified in the Private Placement Memorandum. Most partnerships have a term of ten years, with the option to extend the term once or twice by an additional year if the Limited Partners approve.

The term of a partnership consists of several phases. After the final closing, no new commitments are accepted and the partnership enters the commitment phase or investment phase, legally lasting up to six years, but generally lasting three to four years, during which the individual investments are made. A distribution phase follows, during which mature investments are realized and profits distributed to the partners. The final phase is the liquidation phase, during which all remaining properties and assets are sold in order to terminate the partnership.

**Trade Sale:** The most prevalent exit strategy for many private equity managers involves selling a company in the private markets, usually through an auction process, to other private equity investors or to larger companies. This type of exit is termed a trade sale.

**Turnaround:** A turnaround strategy involves buying a troubled company, usually for a relatively low price, and making significant managerial or organizational changes to better the company's operations and enhance profitability.

**Upstream:** Portion of the energy industry engaged in the exploration, production, and development of crude oil and natural gas reserves.

**Vacancy:** The number of units or space (of a specific commercial type) that are vacant and available for occupancy at a particular point in time within a given market (usually expressed as a vacancy rate).

**Vacancy Rate:** The percentage of the total supply of units or space of a specific commercial type that is vacant and available for occupancy at a particular point in time within a given market.

**Value-added:** A phrase generally used by advisers and managers to describe investments in underperforming and/or undermanaged assets. The objective is to generate 13 % to 18% returns.

**VCOC (Venture Capital Operating Company):** The IRS code defines one category of private partnerships to be venture capital operating companies for tax purposes. The General Partners of VCOCs are not required to register with the SEC as investment advisors. The name venture capital operating company relates only to the partnership's legal and tax structure, and does not imply that the partnership will invest in venture capital deals. For example, a middle market buyout fund, which invests only in mature companies with enterprise values of between \$200 million and \$1 billion, may be structured as a venture capital operating company.

**Veneer:** Continuous sheets of thin wood cut from trees measuring at least 16" + DBH. Veneer is commonly used in the manufacture of furniture and plywood.

**Venture Capital:** Money supplied to entrepreneurs to create new businesses is called venture capital. It is the first stage of financing for any new venture.

Traditionally, the recipient of the venture capital was a small group of entrepreneurs with an idea and a business plan, but no management team, corporate structure, revenues or profits. In the 1990s, however, venture capital was often used to seed established teams of entrepreneurs with well-defined products and in-place corporate structures. Thus, there is great variability in the meaning of venture capital and in the types of deals financed with venture capital money.

**Vintage Year:** The calendar year in which the first cash flow to a partnership occurred. This cash flow can be intended for management fees or investment capital. Vintage year can be used to differentiate the partnerships established over time by a General Partner, to track portfolio commitment pacing, and to benchmark portfolio performance.

**Warrants:** Just like publicly traded companies, private companies may issue warrants to their shareholders or to other groups providing some form of financing. A warrant is the right to purchase shares of the company's stock at a future date at a predetermined price, called the exercise price. Warrants become valuable if the exercise price is below the market price of the stock.

**Wind Energy:** Source of energy derived from wind motion that can be converted to electricity by turning a turbine and generator.

## **Disclaimer, Glossary, and Notes**

The material contained in this report is confidential and may not be reproduced, disclosed, or distributed, in whole or in part, to any person or entity other than the intended recipient. The data are provided for informational purposes only, may not be complete, and cannot be relied upon for any purpose other than for discussion.

Meketa Investment Group has prepared this report on the basis of sources believed to be reliable. The data are based on matters as they are known as of the date of preparation of the report, and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available.

In general, the valuation numbers presented in this report are prepared by the custodian bank for listed securities, and by the fund manager or appropriate General Partner in the case of unlisted securities. The data used in the market comparison sections of this report are sourced from various databases. These data are continuously updated and are subject to change.

This report does not contain all the information necessary to fully evaluate the potential risks of any of the investments described herein. Because of inherent uncertainties involved in the valuations of investments that are not publicly traded, any estimated fair values shown in this report may differ significantly from the values that would have been used had a ready market for the underlying securities existed, and the differences could be material. Note that for unlisted securities the valuations may be lagged by one or more calendar quarters, or may reflect original cost.

This document may contain certain forward-looking statements, forecasts, estimates, projections, and opinions (“Forward Statements”). No representation is made or will be made that any Forward Statements will be achieved or will prove to be correct. A number of factors, in addition to any risk factors stated in this material, could cause actual future results to vary materially from the Forward Statements. No representation is given that the assumptions disclosed in this document upon which Forward Statements may be based are reasonable. There can be no assurance that the investment strategy or objective of any fund or investment will be achieved, or that the Fund will receive a return of the amount invested.

In some cases, Meketa Investment Group assists the Trustees in handling capital calls or asset transfers among investment managers. In these cases, we do not make any representations as to the managers’ use of the funds, but do confirm that the capital called or transferred is within the amounts authorized by the Trustees.

**Credit Risk:** Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

**Duration:** Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

**Information Ratio:** This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

**Jensen's Alpha:** A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk.  $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$ .

**Market Capitalization:** For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

**Market Weighted:** Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

**Maturity:** The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.



**Prepayment Risk:** The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

**Price-Book Value (P/B) Ratio:** The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

**Price-Earnings (P/E) Ratio:** A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about its future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

**Quality Rating:** The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

**Sharpe Ratio:** A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

**Standard Deviation:** A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

**STIF Account:** Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

**Style:** The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

**Yield to Maturity:** The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a “basis book.” For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

Sources: [Investment Terminology](#), International Foundation of Employee Benefit Plans, 1999.  
[The Handbook of Fixed Income Securities](#), Fabozzi, Frank J., 1991.

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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.