Wilshire

WILSHIRE ASSOCIATES

Wilshire Consulting

Employees' Retirement Fund of the City of Dallas

Investment Performance Analysis

November 30, 2018

Wilshire Consulting

MONTHLY SUMMARY

Investment Performance and Market Values

For Periods Ending November 30, 2018

	Returns								Market Value	
	Month	3 Months	CYTD	1 Year	3 Years	5 Years	Inception Date	Inception Return	$(000)	Percent
Global Equity Composite	1.72	-5.88	-1.60	-0.52	8.22	5.78	8/31/12	8.79	239,050	6.96
Global Low Volatility Composite	2.54	-1.26	2.06	3.15	9.69		6/30/15	8.54	356,070	10.37
Domestic Equity Composite	1.80	-7.34	1.60	2.34	10.91	9.90	12/31/89	10.03	467,383	13.61
International Equity Composite	0.88	-8.25	-12.16	-10.25	5.76	2.59	12/31/89	5.29	462,529	13.47
Global Fixed Income Composite	0.62	-0.78	-1.72	-1.24	1.96	2.56	9/30/95	4.85	474,048	13.80
High Yield Composite	-0.98	-2.12	-0.71	-0.49	5.59	3.76	12/31/96	6.35	340,436	9.91
Credit Opportunities Composite	-1.15	-1.07	-1.30	-0.65			1/31/16	6.55	170,265	4.96
Total Real Estate Composite	1.98	0.37	3.99	4.84	5.99	9.19	12/31/89	6.57	406,424	11.83
Indices										
MSCI ACWI (N)	1.46	-5.73	-2.55	-0.98	8.56	6.15	12/31/00	5.00		
Wilshire 5000	1.93	-5.35	4.45	5.58	11.99	10.77	12/31/84	11.06		
Standard & Poor's 500	2.04	-4.40	5.11	6.28	12.16	11.12	12/31/84	11.19		
MSCI ACWI X US IMI Index (N)	0.85	-7.38	-10.60	-8.49	5.48	2.01	5/31/94	4.65		
MSCI EAFE Index (N)	-0.13	-7.28	-9.39	-7.94	4.12	1.84	12/31/84	8.36		
Bloomberg Aggregate	0.60	-0.84	-1.79	-1.34	1.33	2.03	12/31/84	6.71		
FTSE High Yield Cash Pay	-0.87	-1.86	0.16	0.48	7.01	4.06	12/31/88	7.91		
Wilshire Real Est. Secs	4.68	-1.27	3.87	3.71	6.11	10.20	12/31/84	9.01		
Alerian MLP Index	-0.83	-10.19	-3.38	1.21	1.00	-5.16	12/31/95	11.37		

Manager returns are net of fees.

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	Month	3 Months	CYTD	1 Year	3 Years	5 Years	Inception Date	Inception Return	$(000)	Percent
MLP Composite	-1.72	-11.67	-0.92	4.91	2.68	-1.14	12/31/11	5.25	235,050	6.84
Private Equity Composite	3.32	5.04	13.20	12.30	11.60	12.11	5/31/09	13.50	230,673	6.72
Managed Short Term Composite	0.21	0.53	1.69	1.80	0.96	0.59	12/31/89	2.96	52,452	1.53
Dallas Total Fund	1.02	-3.60	-0.26	0.95	6.89	5.54	12/31/84	9.01	3,434,382	100.00
Policy Index	1.11	-3.40	-0.14	1.26	6.84	5.24	12/31/84	9.61		
Indices										
MSCI ACWI (N)	1.46	-5.73	-2.55	-0.98	8.56	6.15	12/31/00	5.00		
Wilshire 5000	1.93	-5.35	4.45	5.58	11.99	10.77	12/31/84	11.06		
Standard & Poor's 500	2.04	-4.40	5.11	6.28	12.16	11.12	12/31/84	11.19		
MSCI ACWI X US IMI Index (N)	0.85	-7.38	-10.60	-8.49	5.48	2.01	5/31/94	4.65		
MSCI EAFE Index (N)	-0.13	-7.28	-9.39	-7.94	4.12	1.84	12/31/84	8.36		
Bloomberg Aggregate	0.60	-0.84	-1.79	-1.34	1.33	2.03	12/31/84	6.71		
FTSE High Yield Cash Pay	-0.87	-1.86	0.16	0.48	7.01	4.06	12/31/88	7.91		
Wilshire Real Est. Secs	4.68	-1.27	3.87	3.71	6.11	10.20	12/31/84	9.01		
Alerian MLP Index	-0.83	-10.19	-3.38	1.21	1.00	-5.16	12/31/95	11.37		

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Systematic Financial	0.61	-12.38	-4.60	-5.00	11.81	9.57	7/31/03	10.97	63,765	13.64
Russell 2000	1.59	-11.62	0.98	0.57	10.08	7.50	7/31/03	9.36		
Russell 2000 + 1.25%	1.69	-11.31	2.13	1.82	11.33	8.75	7/31/03	10.61		
Redwood Investments *	1.23	-12.04	-1.15	1.06			9/30/16	7.91	32,396	6.93
Russell 2000 Growth	1.56	-13.36	2.69	2.81			9/30/16	12.85		
Russell 2000 Growth +1.50%	1.69	-12.99	4.07	4.31			9/30/16	14.35		
Channing Capital *	3.28	-11.65	-4.61	-7.08	6.47	5.68	11/30/13	5.68	32,601	6.98
Russell 2000 Value	1.61	-9.78	-0.88	-1.83	10.08	6.71	11/30/13	6.71		
Russell 2000 Value + 1.25%	1.72	-9.47	0.26	-0.58	11.33	7.96	11/30/13	7.96		
Domestic Equity Small Cap Composite	1.43	-12.11	-3.72	-4.00	9.25	7.85	5/31/03	9.55	128,762	27.55
Indices										
Wilshire 5000	1.93	-5.35	4.45	5.58	11.99	10.77	12/31/89	9.72		
Standard & Poor's 500	2.04	-4.40	5.11	6.28	12.16	11.12	12/31/89	9.67		
Russell 2000	1.59	-11.62	0.98	0.57	10.08	7.50	12/31/89	9.49		
Russell 1000 Value	2.99	-2.15	1.48	2.96	9.82	8.65	12/31/89	9.69		

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Smith Graham *	1.25	-10.39	-3.80				12/31/17	-3.80	65,797	14.08
Russell Mid Cap	2.46	-6.66	0.95				12/31/17	0.95		
Russell Mid Cap + 2%	2.62	-6.16	2.79				12/31/17	2.79		
T. Rowe Price	2.13	-4.54	5.43	6.19	12.66	11.48	3/31/06	8.96	141,404	30.25
Standard & Poor's 500	2.04	-4.40	5.11	6.28	12.16	11.12	3/31/06	8.42		
Standard & Poor's 500 + 1%	2.12	-4.15	6.03	7.28	13.16	12.12	3/31/06	9.42		
Northern Trust S&P 500 (Lending)	2.04	-4.38	5.12	6.29	12.17	11.16	12/31/94	9.92	131,419	28.12
Standard & Poor's 500	2.04	-4.40	5.11	6.28	12.16	11.12	12/31/94	9.88		
Domestic Equity Composite	1.80	-7.34	1.60	2.34	10.91	9.90	12/31/89	10.03	467,383	100.00
Custom Benchmark	1.93	-5.35	4.45	5.58	11.99	10.77	12/31/89	10.02		
Indices										
Wilshire 5000	1.93	-5.35	4.45	5.58	11.99	10.77	12/31/89	9.72		
Standard & Poor's 500	2.04	-4.40	5.11	6.28	12.16	11.12	12/31/89	9.67		
Russell 2000	1.59	-11.62	0.98	0.57	10.08	7.50	12/31/89	9.49		
Russell 1000 Value	2.99	-2.15	1.48	2.96	9.82	8.65	12/31/89	9.69		

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	Returns								Market Value	
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Adelante Capital Management	5.04	-1.05	2.14	2.04	4.73	9.67	9/30/01	9.79	88,776	21.84
Wilshire Real Est. Secs	4.68	-1.27	3.87	3.71	6.11	10.20	9/30/01	10.30		
Wilshire Real Est. Secs +1%	4.76	-1.02	4.79	4.71	7.11	11.20	9/30/01	11.30		
CenterSquare	4.42	-1.55					5/31/18	6.84	85,990	21.16
Wilshire Real Est. Secs	4.68	-1.27					5/31/18	6.76		
Wilshire Real Est. Secs + 1%	4.76	-1.02					5/31/18	7.26		
REIT Composite	4.73	-1.30	3.05	3.01	4.96	9.57	9/30/01	9.95	174,767	43.00
Wilshire Real Est. Secs	4.68	-1.27	3.87	3.71	6.11	10.20	9/30/01	10.30		
Heitman America Real Estate Trust, LP	0.00	2.00	5.97	7.90	8.26	9.86	11/30/10	11.49	92,828	22.84
NCREIF ODCE NOF	0.00	1.87	5.76	7.71	7.83	9.71	11/30/10	11.00		
Invesco Core Real Estate USA, LLC	0.00	2.59	7.08	9.50	9.13	10.89	11/30/10	11.44	76,091	18.72
NCREIF ODCE NOF	0.00	1.87	5.76	7.71	7.83	9.71	11/30/10	11.00		
Invesco II	0.00	0.00	0.02	0.02	-0.39	-0.28	9/30/13	-0.27	62,739	15.44
Indices										
Wilshire REIT Index	4.69	-1.23	3.85	3.71	5.76	9.90	12/31/89	9.61		
NCREIF ODCE NOF	0.00	1.87	5.76	7.71	7.83	9.71	12/31/98	7.50		

Manager returns are net of fees. Private Core Real Estate manager information is preliminary as market values are not yet finalized by the manager.

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Investment Performance and Market Values

For Periods Ending November 30, 2018

	Returns								Market Value	
	Month	3 Months	CYTD	1 Year	3 Years	5 Years	Inception Date	Inception Return	$(000)	Percent
Private Core Real Estate Composite	0.00	1.64	4.64	6.17	6.50	8.77	9/30/10	10.20	231,657	57.00
Custom Benchmark	0.00	1.46	4.48	5.98	6.03	7.54	9/30/10	9.42		
Total Real Estate Composite	1.98	0.37	3.99	4.84	5.99	9.19	12/31/89	6.57	406,424	100.00
Custom Benchmark	2.34	0.15	4.38	5.05	6.25	9.10	12/31/89	8.63		
Indices										
Wilshire REIT Index	4.69	-1.23	3.85	3.71	5.76	9.90	12/31/89	9.61		
NCREIF ODCE NOF	0.00	1.87	5.76	7.71	7.83	9.71	12/31/98	7.50		

Manager returns are net of fees.

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Employees' Retirement Fund of the City of Dallas

Monthly Performance and Market Value Summary

Periods Ended 11/30/18

Wilshire

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	Multiple [3]
Hamilton Lane Secondary Fund II	2,292,020	25,000,000	22,848,181	26,183,409	Jul-09	8.9%	1.2
Hamilton Lane Secondary Fund III	13,794,901	30,000,000	17,762,479	15,064,144	Nov-12	21.5%	1.6
Hamilton Lane Secondary Fund IV	13,189,438	30,000,000	8,252,242	204,691	Mar-17	-.-	1.6
Hamilton Lane Fund VII Composite	31,967,077	50,000,000	42,992,714	25,954,465	Jan-10	7.1%	1.3
Hamilton Lane Fund VIII (Global)	22,164,599	30,000,000	16,412,837	2,568,375	Nov-12	12.8%	1.5
Hamilton Lane Cash	-	-	-	-	Aug-09	-.-	-.-
GCM Grosvenor - Partnership, L.P.	49,532,495	75,000,000	83,967,836	73,074,602	Jun-11	15.6%	1.5
GCM Grosvenor - Partnership II, L.P. (2014)	48,909,197	60,000,000	52,964,471	18,285,434	Jul-14	7.6%	1.3
GCM Grosvenor - Partnership II, L.P. (2015)	23,071,961	20,000,000	22,346,961	1,146,409	Dec-15	7.9%	1.1
GCM Grosvenor - Partnership II, L.P. (2017)	1,802,734	30,000,000	1,894,113		Jan-18	-.-	1.0
GCM Grosvenor Cash	-	-	-	-	Jun-11	-.-	-.-
Fairview Capital III *	23,948,603	40,000,000	22,671,193	1,630,828	Aug-15	10.0%	1.1
Total Private Equity Composite	**230,673,025**	**390,000,000**	**292,113,027**	**164,112,357**	**Jul-09**	**13.0%**	**1.4**
Public Market Equivalent (PME) [2]	**275,628,297**					**16.4%**	

* Next Generation Manager

[1] Total Value to Paid-in Capital ("TVPI") multiple calculation = *(market value + distributions) / capital called*

[2] The Public Market Equivalent (PME) approach creates a hypothetical investment vehicle that mimics the private equity composite cash flows. The performance difference between the PME vehicle and the private equity portfolio is determined by their net asset value (NAV) at the end of the benchmarking period. The performance of the "public market" is simulated using the monthly S&P 500 index returns, plus a 300 BPs annual hurdle rate.

[3] Private Equity cash account

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	Month	3 Months	CYTD	1 Year	3 Years	5 Years	Inception Date	Inception Return	$(000)	Percent
Acadian International	0.46	-11.34	-14.71	-12.58	8.62	4.69	3/31/89	8.23	95,577	20.66
Custom Benchmark	0.25	-10.62	-13.49	-10.83	5.81	3.46	3/31/89	5.70		
Custom Benchmark + 2%	0.41	-10.12	-11.66	-8.83	7.81	5.46	3/31/89	7.70		
Ativo International *	0.51	-8.47	-8.20				12/31/17	-8.20	32,530	7.03
MSCI EAFE Index (N)	-0.13	-7.28	-9.39				12/31/17	-9.39		
MSCI EAFE Index (N) + 2%	0.04	-6.78	-7.56				12/31/17	-7.56		
AQR Capital Management	1.12	-7.70	-12.49	-10.62	5.68	2.45	3/31/06	2.88	186,360	40.29
Custom Benchmark	0.95	-6.84	-10.13	-8.12	5.43	1.79	3/31/06	2.28		
Custom Benchmark + 1.5%	1.07	-6.47	-8.75	-6.62	6.93	3.29	3/31/06	3.78		
BlackRock ACWI Ex U.S.	0.94	-6.81					5/31/18	-8.33	148,061	32.01
MSCI ACWI Ex U.S. (N)	0.95	-6.84					5/31/18	-8.37		
Global Transition Account									1	0.00
International Equity Composite	0.88	-8.25	-12.16	-10.25	5.76	2.59	12/31/89	5.29	462,529	100.00
Custom Benchmark	0.85	-7.38	-10.60	-8.49	5.48	2.01	12/31/89	4.36		
Indices										
MSCI ACWI X US IMI Index (N)	0.85	-7.38	-10.60	-8.49	5.48	2.01	5/31/94	4.65		
MSCI ACWI ex US (N)	0.95	-6.84	-10.13	-8.12	5.43	1.79	12/31/98	4.47		
MSCI ACWI X US Small Cap (N)	0.25	-10.62	-13.49	-10.83	5.81	3.46	5/31/94	5.38		
MSCI EAFE Index (N)	-0.13	-7.28	-9.39	-7.94	4.12	1.84	12/31/89	4.17		
MSCI Emerging Mkts (N)	4.12	-5.45	-12.24	-9.09	9.41	1.90	12/31/98	8.70		

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Ariel Global *	2.10	-2.78	2.52				12/31/17	2.52	105,324	44.06
MSCI ACWI (N)	1.46	-5.73	-2.55				12/31/17	-2.55		
MSCI ACWI (N) + 1.5%	1.59	-5.36	-1.18				12/31/17	-1.18		
Wellington	1.40	-8.49	-4.82	-4.20	6.01	6.49	8/31/12	11.15	115,754	48.42
MSCI ACWI (N)	1.46	-5.73	-2.55	-0.98	8.56	6.15	8/31/12	9.13		
MSCI ACWI (N) + 2%	1.63	-5.24	-0.72	1.02	10.56	8.15	8/31/12	11.13		
Northern Trust Global Equity	1.54	-6.13	-2.60	-1.01	8.96		9/30/15	10.81	17,971	7.52
MSCI AC World IMI Index (N)	1.41	-6.37	-3.07	-1.49	8.51		9/30/15	10.34		
Global Equity Composite	1.72	-5.88	-1.60	-0.52	8.22	5.78	8/31/12	8.79	239,050	100.00
MSCI ACWI (N)	1.46	-5.73	-2.55	-0.98	8.56	6.15	8/31/12	9.13		
Indices										
MSCI AC World IMI Index (N)	1.41	-6.37	-3.07	-1.49	8.51	6.12	8/31/12	9.23		
MSCI ACWI (N)	1.46	-5.73	-2.55	-0.98	8.56	6.15	8/31/12	9.13		

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Acadian Global Low Vol.	1.94	-1.92	0.10	1.56	9.06		6/30/15	8.07	176,785	49.65
MSCI ACWI (N)	1.46	-5.73	-2.55	-0.98	8.56		6/30/15	6.48		
MSCI ACWI (N) + 2%	1.63	-5.24	-0.72	1.02	10.56		6/30/15	8.48		
MSCI ACWI Min Vol (N)	3.11	-0.68	3.62	4.25	9.75		6/30/15	8.46		
BlackRock Global Low Vol.	3.14	-0.61	4.01	4.70	10.29		6/30/15	8.99	179,286	50.35
MSCI ACWI Min Vol (N)	3.11	-0.68	3.62	4.25	9.75		6/30/15	8.46		
Global Low Volatility Composite	2.54	-1.26	2.06	3.15	9.69		6/30/15	8.54	356,070	100.00
MSCI ACWI Min Vol (N)	3.11	-0.68	3.62	4.25	9.75		6/30/15	8.46		
Indices										
MSCI ACWI Min Vol (N)	3.11	-0.68	3.62	4.25	9.75	8.46	6/30/15	8.46		
MSCI ACWI (N)	1.46	-5.73	-2.55	-0.98	8.56	6.15	6/30/15	6.48		

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Harvest Fund Advisors MLP	-1.71	-12.14	-0.81	4.70	1.82	-1.56	12/31/11	4.53	116,947	49.75
Alerian MLP Index	-0.83	-10.19	-3.38	1.21	1.00	-5.16	12/31/11	0.13		
Alerian MLP Index + 1.5%	-0.71	-9.81	-2.00	2.71	2.50	-3.66	12/31/11	1.63		
Atlantic Trust CIBC	-1.73	-11.19	-1.03	5.12	3.55	-1.39	12/31/11	5.59	118,103	50.25
Alerian MLP Index	-0.83	-10.19	-3.38	1.21	1.00	-5.16	12/31/11	0.13		
Alerian MLP Index + 1.5%	-0.71	-9.81	-2.00	2.71	2.50	-3.66	12/31/11	1.63		
MLP Composite	-1.72	-11.67	-0.92	4.91	2.68	-1.14	12/31/11	5.25	235,050	100.00
Alerian MLP Index	-0.83	-10.19	-3.38	1.21	1.00	-5.16	12/31/11	0.13		
Indices										
Alerian MLP Index	-0.83	-10.19	-3.38	1.21	1.00	-5.16	12/31/11	0.13		
Standard & Poor's 500	2.04	-4.40	5.11	6.28	12.16	11.12	12/31/11	14.41		

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	Month	3 Months	CYTD	1 Year	3 Years	5 Years	Inception Date	Inception Return	$(000)	Percent
Securian Asset Management	0.28	-1.04	-1.52	-1.02	2.41	2.95	6/30/07	4.28	203,339	42.89
Bloomberg Aggregate	0.60	-0.84	-1.79	-1.34	1.33	2.03	6/30/07	3.86		
Bloomberg Aggregate + 0.5%	0.64	-0.72	-1.33	-0.84	1.83	2.53	6/30/07	4.36		
Aberdeen Global Fixed Income	0.99	-0.57	-2.37	-1.92	1.49	2.08	4/30/07	4.28	202,372	42.69
Bloomberg Aggregate	0.60	-0.84	-1.79	-1.34	1.33	2.03	4/30/07	3.71		
Bloomberg Aggregate + 0.5%	0.64	-0.72	-1.33	-0.84	1.83	2.53	4/30/07	4.21		
Garcia Hamilton *	0.51	-0.60	-0.37	0.13	2.06	2.82	10/31/13	2.76	68,338	14.42
Bloomberg Aggregate	0.60	-0.84	-1.79	-1.34	1.33	2.03	10/31/13	1.92		
Bloomberg Aggregate + 0.5%	0.64	-0.72	-1.33	-0.84	1.83	2.53	10/31/13	2.42		
Global Fixed Income Composite	0.62	-0.78	-1.72	-1.24	1.96	2.56	9/30/95	4.85	474,048	100.00
Bloomberg Aggregate	0.60	-0.84	-1.79	-1.34	1.33	2.03	9/30/95	4.97		
Indices										
10 yr Treasury Bellwethers Index	1.46	-0.65	-2.92	-2.68	-0.44	1.63	9/30/95	4.71		
Bloomberg Aggregate	0.60	-0.84	-1.79	-1.34	1.33	2.03	9/30/95	4.97		

* Next Generation Manager. Manager returns are net of fees.

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MONTHLY SUMMARY

Investment Performance and Market Values

For Periods Ending November 30, 2018

	Returns								Market Value	
	Month	3 Months	CYTD	1 Year	3 Years	5 Years	Inception Date	Inception Return	$(000)	Percent
Neuberger Berman	-1.15	-1.07	-1.30	-0.65			1/31/16	6.55	170,265	100.00
Custom Benchmark	-0.74	-1.10	-0.88	-0.41			1/31/16	6.86		
Custom Benchmark + 1%	-0.66	-0.85	0.04	0.59			1/31/16	7.86		
Indices										
ML High Yield Master II Constrained	-0.91	-1.96	-0.06	0.23	7.13	4.41	1/31/16	9.17		
S&P LSTA Leverage Loan Index	-0.90	-0.25	3.07	3.47	5.37	3.68	1/31/16	6.33		
JPM EMBI Global Diversified	-0.42	-1.10	-5.54	-4.85	4.20	4.62	1/31/16	5.03		

Manager returns are net of fees.

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For Periods Ending November 30, 2018

	Returns								Market Value	
	Month	3 Months	CYTD	1 Year	3 Years	5 Years	Inception Date	Inception Return	$(000)	Percent
Oaktree Capital Management	-1.02	-2.44	-1.24	-1.15	5.69	3.22	1/31/97	6.59	169,827	49.89
Citigroup HY Cash Pay Capped	-0.89	-1.90	0.07	0.39	6.86	4.00	1/31/97			
Citigroup High Yield Cash Pay	-0.87	-1.86	0.16	0.48	7.01	4.06	1/31/97	6.77		
Citigroup HY Cash Pay + 1%	-0.79	-1.61	1.07	1.48	8.01	5.06	1/31/97	7.77		
BlackRock	-0.94	-1.80	-0.19	0.17	5.48	3.83	9/30/06	6.12	170,609	50.11
Citigroup HY Cash Pay Capped	-0.89	-1.90	0.07	0.39	6.86	4.00	9/30/06	6.64		
Citigroup High Yield Cash Pay	-0.87	-1.86	0.16	0.48	7.01	4.06	9/30/06	6.74		
Citigroup HY Cash Pay + 1%	-0.79	-1.61	1.07	1.48	8.01	5.06	9/30/06	7.74		
High Yield Composite	-0.98	-2.12	-0.71	-0.49	5.59	3.76	12/31/96	6.35	340,436	100.00
Citigroup High Yield Cash Pay	-0.87	-1.86	0.16	0.48	7.01	4.06	12/31/96	6.77		
Indices										
10 yr Treasury Bellwethers Index	1.46	-0.65	-2.92	-2.68	-0.44	1.63	12/31/96	4.72		
91-Day Treasury Bill	0.21	0.53	1.69	1.80	0.97	0.59	12/31/96	2.21		
FTSE High Yield Cash Pay	-0.87	-1.86	0.16	0.48	7.01	4.06	12/31/96	6.74		

Manager returns are net of fees.

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MONTHLY SUMMARY

Investment Performance and Market Values

For Periods Ending November 30, 2018

	Returns								Market Value	
	Month	3 Months	CYTD	1 Year	3 Years	5 Years	Inception Date	Inception Return	$(000)	Percent
Cash Account	0.21	0.53	1.69	1.80	0.96	0.59	12/31/87	3.32	52,452	100.00
Managed Short Term Composite	0.21	0.53	1.69	1.80	0.96	0.59	12/31/89	2.96	52,452	100.00
Indices										
91-Day Treasury Bill	0.21	0.53	1.69	1.80	0.97	0.59	12/31/89	2.97		

Manager returns are net of fees.

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