pmrs pennsylvania MUNICIPAL RETIREMENT SYSTEM

Pennsylvania Municipal Retirement System

Executive Summary (Finalized)
September 2019

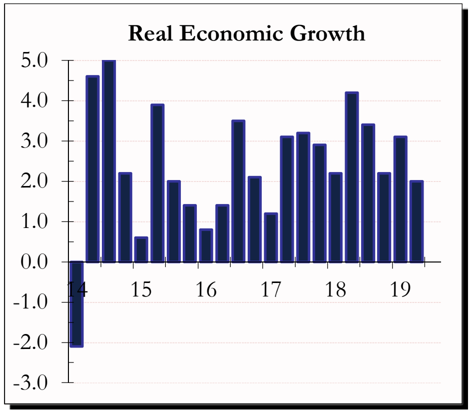
DAHAB ASSOCIATES

New York Massachusetts Pennsylvania Texas Florida

ECONOMIC ENVIRONMENT

Mixed Reviews

US economic data was largely stable, though it continues to moderate. While some market forecasters point to the (slightly) inverted yield curve as indicative of a downturn, most of the well-known leading indicators remain upbeat. The Federal Reserve, however, did lower its benchmark interest rate twice in the quarter, citing weaker global growth and modest inflation.



GDP increased 2.1% in the third quarter, a slight decline from the 2nd quarter's 2.0% gain. This expected drop can be attributed to the slump in the ISM Manufacturing Index. In September, the index fell from 49.1 to a decade low of 47.8. Some economists attribute this decline partly to a strike at General Motors, which began in mid-September; yet it remains to be seen if this decline was a one-off or a precursor of things to come.

Unemployment remains very low at 3.7% and while wage growth has started to pick up, it is still lower than anticipated. On the other hand, new non-farm jobs came in lower than expected: 130,000 versus the predicted 158,000. Labor force participation stayed at 63.2%. It's noteworthy that women have accounted for most of the new jobs in the labor force during the past few years, while the male labor force participation rate has hovered around 68% during the same period.

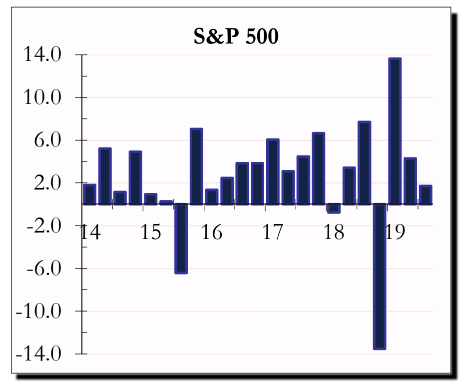
In August, the Congressional Budget Office (CBO) updated its projections for federal tax receipts and disbursements during the period of Fiscal Year (FY) 2019 through FY 2029. For FY 2019, the CBO projects a significant deficit of $960 billion, which is approximately 4.5% of GDP. This deficit compares to the long run average deficit, running at 2.1% of GDP. Making the assumption that deficits will continue to rise in dollar terms, they should remain fairly stable as a percent of GDP.

The American consumer continues to be a bright spot for the economy. Real personal consumption expenditures rose at a 4.6% annual rate. In addition, real government consumption and gross investment grew robustly at both federal and state levels.

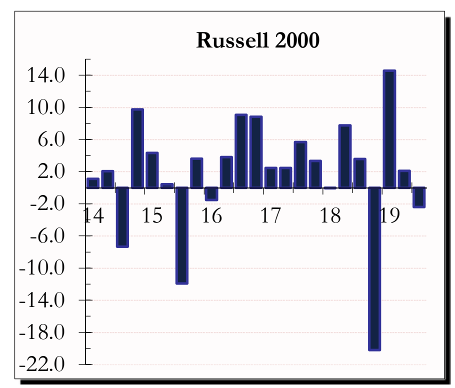
DOMESTIC EQUITIES

Large Caps Lead the Way

Domestic equity markets ended the quarter slightly up, continuing the uptrend seen year-to-date. However, the positive returns seen at quarter-end masked the inter-quarter volatility that was experienced. Most of the gain can be attributed to large capitalization companies, which saw positive returns in line with the broad market. In contrast, small capitalization companies saw declines of nearly twice the magnitude of their large-cap counterparts.



While the energy sector was a huge drag to small-cap performance, down 22%, the other sectors did not perform much better. 8 of 11 sectors saw losses in the quarter. The three sectors that outperformed (Consumer Staples, Utilities, and Real Estate) are typically seen as "risk-off" sectors and could signal a change to a more defensive posture by investors.

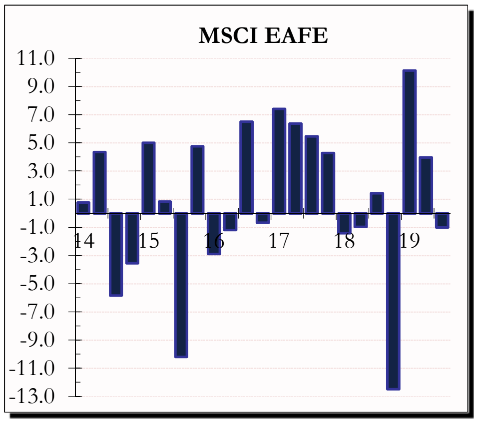


Much ink has been spilled about the death of Value investing, but it saw a resurgence this quarter, especially when moving down the cap spectrum. In the small-cap space the value benchmark beat its counterpart in growth by 360 basis points. Large cap growth names bucked the trend, however, and saw gains that barely beat their value equivalents. Growth has been on an incredible run over the past ten years, and has been led by large cap technology names.

INTERNATIONAL EQUITIES

Concerns on Trade

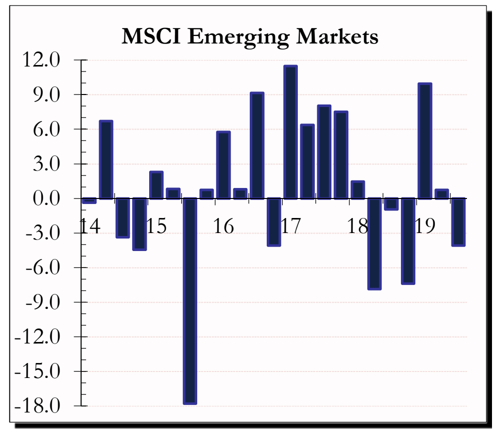
International stocks faltered slightly in the third quarter. Not only was the MSCI EAFE Index down 1.0%, but declines were widespread, with losses suffered by 72% of countries represented in the index. Hong Kong stocks declined the most (-11.9%), triggered by the ongoing political protests there. The protests contributed to its weakest economy in nearly a decade. Retail sales declined 23% year-over-year with no end in sight to the demonstrations. As a result, Fitch downgraded Hong Kong's credit rating, denting the island's reputation for stability and ease of doing business.



Singapore securities also detracted, as US-China trade deliberations weighed on that market. In Europe, Sweden's market was down 4.8% due to a government budget that hinted at smaller-than-expected spending increases.

Belgium enjoyed the largest gains in the index (+3.5%) due to a rebound in fixed investment. Japan was another bright spot (+3.3%). Some commentators attributed this gain to the election win by the incumbent Liberal Democratic Party -- a win that confirmed the continuation of current fiscal policy. In turn, the steady policy helped return market stability after a rise in Japan's consumption tax. One point of caution regarding Japan's performance is that its year-to-date return has significantly outpaced company earnings. The Netherlands (+2.5%) was another key contributor in stemming European market losses. Retail sales and manufacturing picked up despite elevated inflation. Against this backdrop, the Dutch government unveiled an expansionary 2020 budget.

Emerging Markets (EM) gave up a good portion of year-to-date return during the volatile third quarter. The US-China trade dispute reduced investors' appetite for risk in the emerging market equity space. China (-3.7%) modestly underperformed the broader EM market (-3.0%) as the US implemented 10% trade tariffs on $300 billion of Chinese goods. Following this announcement, the renminbi weakened beyond the symbolic seven-per-dollar threshold. In response, the US Treasury labeled the country a currency manipulator.



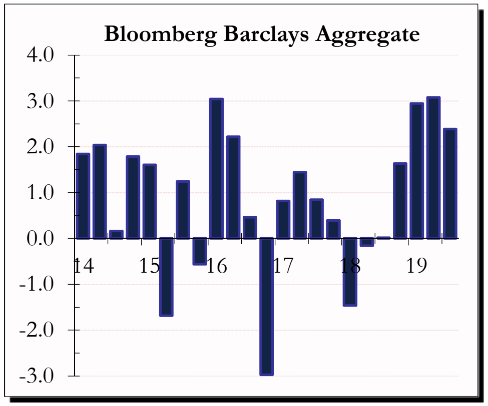
Argentina was by far the weakest performer in the EM Index, as a surprising primary election result triggered a sharp sell-off in equities (-46.8%). US dollar strength continues to move markets that are sensitive to it, notably South Africa and Indonesia. Saudi Arabia and Colombia underperformed due to oil price weakness.

Turkey saw robust gains (+11.7%), as its central bank cut interest rates by an unexpected 7.5%. Taiwan also outperformed (+5.9%), driven by strong performance in technology stocks.

BOND MARKET

Low Yields Get Lower

Bond markets continue to see positive returns this year. The Bloomberg Barclays Capital Aggregate and the Bloomberg Barclays Global Aggregate were up 2.4% and 0.7%, respectively in the third quarter. Corporate bonds continue to outperform government bonds. They benefited from a decline in global yields. Higher yielding, less credit-worthy bonds continue to do better than their less risky counterparts.



Declines in global yields led to a number of records: Germany issues negative-yielding 30-year bonds for the first time, while US and UK 30-year yields likewise fell to all-time lows. In the US, the yield curve inverted between the 2- and 10-year Treasury yields for the first time since 2006.

The Fed cut interest rates by 25 basis points in both July and September, citing weakening global growth and modest inflation.

Due to the lower yields, corporate bond issuance continue to pick up. The first week in September $74 billion worth of new investment grade bonds were sold, setting a record for the amount of issuance. Apple and Disney issued noteworthy deals of $7 billion each.

European government bonds rallied on the European Central Bank's (ECB) rate cut and the resumption of a €20 billion per month bond-buying program. ECB President Mario Draghi said aggressive stimulus measures are necessary to help offset the damaging effects of trade wars and slowing economic growth. Germany in particular, teetered on the edge of recession during the quarter as its auto industry was hit hard by global trade disruptions.

CASH EQUIVALENTS

Keeping Pace with CPI

The three-month T-Bill returned 0.5% for the third quarter and 2.3% for the latest one-year. Treasuries with maturities longer than one-year achieved a latest 12-month return of at least 4%. Future returns for cash equivalents seem dim, with the 30-year Treasury yield sitting near 2%.

Economic Statistics

	Current Quarter	Previous Quarter
GDP	2.1%	2.0%
Unemployment	3.5%	3.7%
CPI All Items Year/Year	1.7%	1.6%
Fed Funds Rate	2.00%	2.50%
Industrial Capacity	77.5%	77.9%
US Dollars per Euro	1.12	1.14

Major Index Returns

Index	Quarter	12 Months
Russell 3000	1.2%	2.9%
S&P 500	1.7%	4.3%
Russell Midcap	0.5%	3.2%
Russell 2000	-2.4%	-8.9%
MSCI EAFE	-1.0%	-0.8%
MSCI Emg Markets	-4.1%	-1.6%
NCREIF ODCE	1.3%	5.6%
U.S. Aggregate	2.4%	10.4%
90 Day T-bills	0.5%	2.3%

Domestic Equity Return Distributions

Quarter

	VAL	COR	GRO
LC	1.4	1.4	1.5
MC	1.2	0.5	-0.7
SC	-0.6	-2.4	-4.2

Trailing Year

	VAL	COR	GRO
LC	4.0	3.9	3.7
MC	1.6	3.2	5.2
SC	-8.3	-8.9	-9.7

Market Summary

- Domestic equity markets continue their strong run
- Unemployment decreased to 3.5%.
- The US dollar continued to strengthen.
- Value performed equal or better than their growth counterparts across all cap sizes.
- Large cap equities continue to perform better than their smaller competitors.

INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's total portfolio was valued at $2,611,855,597, a decrease of $27,032,443 from the June ending value of $2,638,888,040. Last quarter, the account recorded total net withdrawals of $20,699,221 in addition to $6,333,222 in net investment losses. The fund's net investment loss was a result of income receipts totaling $6,693,050 and realized and unrealized capital losses totaling $13,026,272.

RELATIVE PERFORMANCE

Total Fund

During the third quarter, the Composite portfolio lost 0.2%, which ranked in the 97th percentile of the Public Fund universe. Over the trailing twelve-month period, the portfolio returned 2.8%, which ranked in the 84th percentile. Since December 1985, the account returned 8.7% annualized and ranked in the 0th percentile.

Large Cap Equity

The large cap equity portfolio returned 0.6% last quarter; that return was 1.1% less than the S&P 500 Index's return of 1.7% and ranked in the 73rd percentile of the Large Cap universe. Over the trailing year, the large cap equity portfolio returned 5.4%; that return was 1.1% above the benchmark's 4.3% return, ranking in the 28th percentile. Since December 1985, this component returned 10.9% per annum. For comparison, the S&P 500 returned an annualized 10.6% over the same time frame.

Small Cap Equity

For the third quarter, the small cap equity segment returned -2.7%, which was 0.3% below the Russell 2000 Index's return of -2.4% and ranked in the 69th percentile of the Small Cap universe. Over the trailing year, this segment returned -8.0%, which was 0.9% greater than the benchmark's -8.9% return, and ranked in the 58th percentile.

International Equity

In the third quarter, the international equity segment lost 0.6%, which was 0.4% above the Blended International Index's return of -1.0% and ranked in the 25th percentile of the International Equity universe. Over the trailing twelve-month period, this segment returned 2.1%, which was 2.9% greater than the benchmark's -0.8% performance, and ranked in the 23rd percentile.

Emerging Markets Equity

Last quarter, the emerging markets equity segment lost 4.3%, which was 0.2% below the Blended Emerging Markets Index's return of -4.1% and ranked in the 67th percentile of the Emerging Markets universe. Over the trailing twelve-month period, this segment returned -2.0%, which was 0.4% below the benchmark's -1.6% performance, ranking in the 72nd percentile.

Real Estate

In the third quarter, the real estate segment gained 0.8%, which was 0.6% less than the NCREIF Property Index's return of 1.4%. Over the trailing year, this component returned 5.4%, which was 0.8% below the benchmark's 6.2% performance. Since December 1985, this component returned 6.9% per annum, while the NCREIF Property Index returned an annualized 7.8% over the same time frame.

Fixed Income

During the third quarter, the fixed income segment returned 2.3%, which was equal to the Bloomberg Barclays Aggregate Index's return of 2.3% and ranked in the 66th percentile of the Core Fixed Income universe. Over the trailing year, this segment's return was 10.3%, which was equal to the benchmark's 10.3% return, and ranked in the 66th percentile. Since December 1985, this component returned 6.5% annualized. The Bloomberg Barclays Aggregate Index returned an annualized 6.4% over the same period.

ASSET ALLOCATION

On September 30, 2019, the allocation of assets was as follows*:

TOTAL PORTFOLIO	**100.0%**	**$2,611,855,597**
Domestic Large Cap	25.7%	$671,262,239
Domestic Small Cap	13.9%	$364,282,620
Total Domestic Equity	**39.6%**	**$1,035,544,859**
International Developed Markets	14.9%	$389,239,853
International Emerging Markets	9.5%	$247,393,031
Total International Equity	**24.4%**	**$636,632,884**
Total Equity	**64.0%**	**$1,672,177,743**
Real Estate	**19.2%**	**$500,312,332**
Fixed Income	**15.4%**	**$402,314,970**
Cash and Equivalents	**1.4%**	**$37,050,552**

* Numbers may not add to 100% due to rounding.

EXECUTIVE SUMMARY - GROSS OF FEES

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	10 Year	Since 12/85
Total Portfolio	-0.2	13.2	2.8	9.3	7.4	8.8	8.7
PUBLIC FUND RANK	(97)	(44)	(84)	(6)	(10)	(22)	----
SHADOW INDEX	0.2	11.9	1.9	8.1	6.9	8.5	8.6
Domestic Equity	-0.6	21.0	0.7	13.9	10.7	12.8	----
DOMESTIC EQUITY RANK	(66)	(33)	(49)	(27)	(33)	(50)	----
Russell 3000	1.2	20.1	2.9	12.8	10.4	13.1	10.5
Large Cap Equity	0.6	22.9	5.4	16.2	12.2	14.1	10.9
LARGE CAP RANK	(73)	(21)	(28)	(17)	(21)	(26)	----
S&P 500	1.7	20.6	4.3	13.4	10.8	13.2	10.6
Small Cap Equity	-2.7	17.1	-8.0	10.0	8.3	12.0	----
SMALL CAP RANK	(69)	(42)	(58)	(41)	(60)	(64)	----
Russell 2000	-2.4	14.2	-8.9	8.2	8.2	11.2	9.2
International Equity	-0.6	16.5	2.1	9.2	5.6	7.1	----
INTERNATIONAL EQUITY RANK	(25)	(18)	(23)	(16)	(28)	(36)	----
Int'l Index	-1.0	13.3	-0.8	7.0	3.7	5.6	----
S&P BMI Ex US	-0.9	13.0	-2.0	6.7	3.8	5.7	----
MSCI World Ex US	-0.8	14.2	-0.4	7.1	3.7	5.4	7.2
MSCI EAFE	-1.0	13.3	-0.8	7.0	3.8	5.4	7.6
Emerging Markets Equity	-4.3	5.9	-2.0	6.0	2.3	3.3	----
EMERGING MARKETS RANK	(67)	(66)	(72)	(50)	(67)	(91)	----
EM Index	-4.1	6.2	-1.6	6.4	2.6	3.9	----
S&P BMI EMGM	-3.7	7.9	1.5	6.8	3.2	4.2	----
MSCI Emg Mkts	-4.1	6.2	-1.6	6.4	2.7	3.7	----
Real Estate	0.8	4.5	5.4	6.8	7.9	8.4	6.9
NCREIF NPI	1.4	4.8	6.2	6.8	8.6	9.8	7.8
Aggregate Index	2.3	8.5	10.3	2.9	3.4	3.8	6.4
Fixed Income	2.3	8.6	10.3	3.0	3.4	3.8	6.5
CORE FIXED INCOME RANK	(66)	(78)	(66)	(84)	(86)	(91)	----
Aggregate Index	2.3	8.5	10.3	2.9	3.4	3.8	6.4

ASSET ALLOCATION

Large Cap Equity	25.7%	$ 671,262,239
Small Cap	13.9%	364,282,620
Int'l Equity	14.9%	389,239,853
Emerging Markets	9.5%	247,393,031
Real Estate	19.2%	500,312,332
Fixed Income	15.4%	402,314,970
Cash	1.4%	37,050,552
Total Portfolio	100.0%	2,611,855,597

INVESTMENT RETURN

Market Value 6/2019	$ 2,638,888,040
Contribs / Withdrawals	- 20,699,221
Income	6,693,050
Capital Gains / Losses	- 13,026,272
Market Value 9/2019	$ 2,611,855,597

EXECUTIVE SUMMARY - NET OF FEES

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Total Portfolio - Net	-0.3	12.8	2.3	8.8	6.9	8.3
SHADOW INDEX	0.2	11.9	1.9	8.1	6.9	8.5
Domestic Equity - Net	-0.7	20.5	0.1	13.3	10.2	12.4
Russell 3000	1.2	20.1	2.9	12.8	10.4	13.1
Large Cap Equity - Net	0.5	22.4	4.9	15.6	11.7	13.6
S&P 500	1.7	20.6	4.3	13.4	10.8	13.2
Small Cap Equity - Net	-2.8	16.6	-8.5	9.5	7.7	11.5
Russell 2000	-2.4	14.2	-8.9	8.2	8.2	11.2
International Equity - Net	-0.7	16.1	1.7	8.7	5.1	6.5
Int'l Index	-1.0	13.3	-0.8	7.0	3.7	5.6
S&P BMI Ex US	-0.9	13.0	-2.0	6.7	3.8	5.7
MSCI World Ex US	-0.8	14.2	-0.4	7.1	3.7	5.4
MSCI EAFE	-1.0	13.3	-0.8	7.0	3.8	5.4
Emerging Markets Equity - Net	-4.3	5.8	-2.1	5.9	2.2	3.2
EM Index	-4.1	6.2	-1.6	6.4	2.6	3.9
S&P BMI EMGM	-3.7	7.9	1.5	6.8	3.2	4.2
MSCI Emg Mkts	-4.1	6.2	-1.6	6.4	2.7	3.7
Real Estate - Net	0.6	3.8	4.5	5.8	6.9	7.4
NCREIF NPI	1.4	4.8	6.2	6.8	8.6	9.8
Aggregate Index	2.3	8.5	10.3	2.9	3.4	3.8
Fixed Income - Net	2.3	8.5	10.3	2.9	3.4	3.7
Aggregate Index	2.3	8.5	10.3	2.9	3.4	3.8

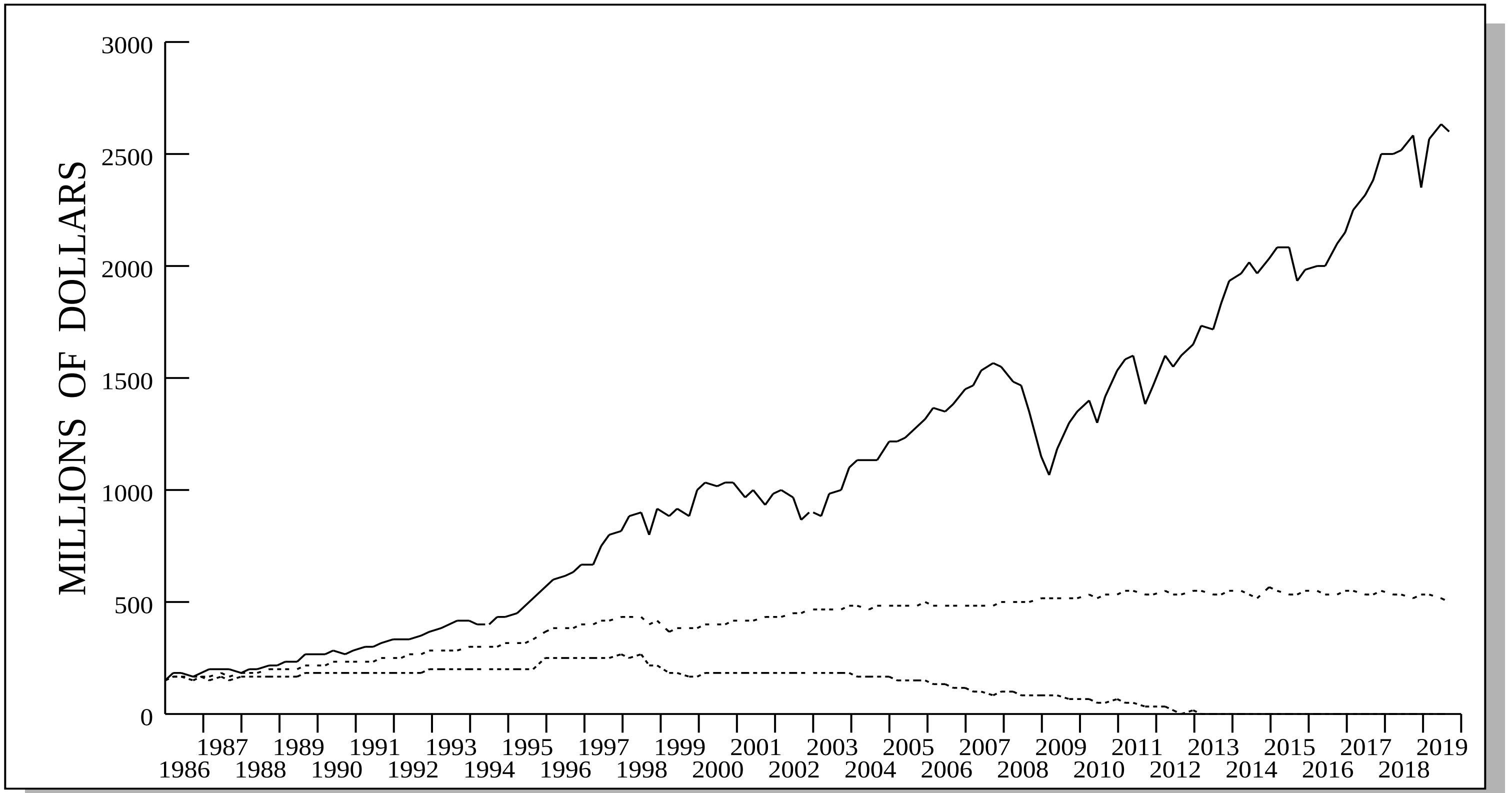
ASSET ALLOCATION

Large Cap Equity	25.7%	$ 671,262,239
Small Cap	13.9%	364,282,620
Int'l Equity	14.9%	389,239,853
Emerging Markets	9.5%	247,393,031
Real Estate	19.2%	500,312,332
Fixed Income	15.4%	402,314,970
Cash	1.4%	37,050,552
Total Portfolio	100.0%	2,611,855,597

INVESTMENT RETURN

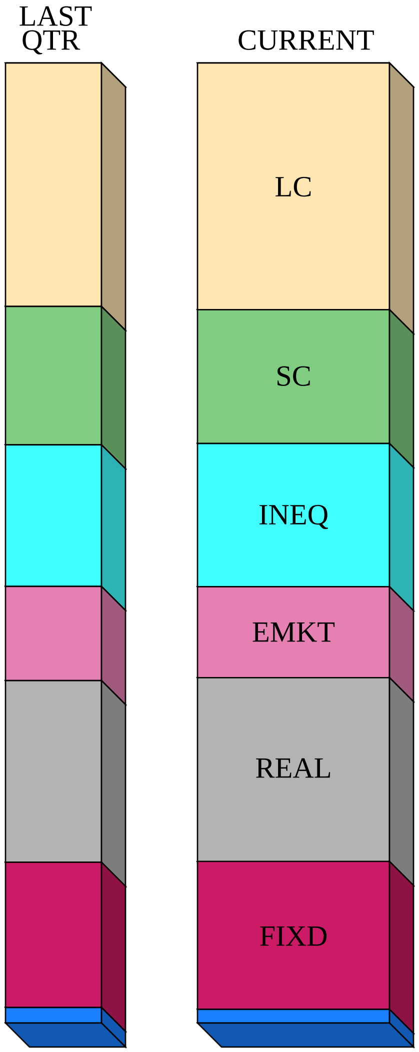
Market Value 6/2019	$ 2,638,888,040
Contribs / Withdrawals	- 20,699,221
Income	6,693,050
Capital Gains / Losses	- 13,026,272
Market Value 9/2019	$ 2,611,855,597

INVESTMENT GROWTH



VALUE ASSUMING	
5.25% RETURN	$ 503,611,052

	LAST QUARTER	PERIOD 12/85 - 9/19
BEGINNING VALUE	$ 2,638,888,040	$ 162,395,431
NET CONTRIBUTIONS	- 20,699,221	-384,679,744
INVESTMENT RETURN	- 6,333,222	2,834,139,910
ENDING VALUE	$ 2,611,855,597	$ 2,611,855,597
INCOME	6,693,050	561,222,647
CAPITAL GAINS (LOSSES)	- 13,026,272	2,272,917,263
INVESTMENT RETURN	- 6,333,222	2,834,139,910



	VALUE	PERCENT	TARGET	DIFFERENCE + / -
LARGE CAP EQUITY	$ 671, 262, 239	25.7%	25.0%	0.7%
SMALL CAP EQUITY	364, 282, 620	13.9%	15.0%	-1.1%
INTERNATIONAL EQUITY	389, 239, 853	14.9%	15.0%	-0.1%
EMERGING MARKETS EQUITY	247, 393, 031	9.5%	10.0%	-0.5%
REAL ESTATE	500, 312, 332	19.2%	20.0%	-0.8%
FIXED INCOME	402, 314, 970	15.4%	15.0%	0.4%
CASH & EQUIVALENT	37, 050, 552	1.4%	0.0%	1.4%
TOTAL FUND	$ 2, 611, 855, 597	100.0%		

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ALLOCATIONS & TARGETS AS OF SEPTEMBER 2019

Manager	Target	Market Value	%	+ / -	Market Value Ex-cash	%	+ / -
Total Portfolio	**-**	**$2,611,855,597**	**100%**		**$2,611,855,597**	**100%**	
Large Cap	**25**	**691,155,931**	**26.5**	**1.5**	**671,262,239**	**25.7**	**0.7**
Eagle		147,555,253	5.6		141,717,245	5.4	
Federated		101,294,244	3.9		97,903,797	3.7	
LSV Large Cap		160,176,552	6.1		159,257,726	6.1	
Polen		226,511,135	8.7		216,764,724	8.3	
SSgA S&P 500		55,618,747	2.1		55,618,747	2.1	
Small Cap	**15**	**369,686,513**	**14.2**	**-0.8**	**364,282,620**	**13.9**	**-1.1**
AMI		34,403,203	1.3		33,523,089	1.3	
Copeland		45,429,768	1.7		42,994,661	1.6	
Emerald		62,766,642	2.4		61,963,524	2.4	
LSV Small Cap		72,033,258	2.8		71,568,817	2.7	
Smith, Graham & Co		71,255,310	2.7		70,434,197	2.7	
SSgA Russell 2000		83,798,332	3.2		83,798,332	3.2	
International Equity	**15**	**395,433,301**	**15.1**	**0.1**	**389,239,853**	**14.9**	**-0.1**
GlobeFlex		4,212	0.0		4,212	0.0	
HGK		121,152,901	4.6		117,447,427	4.5	
Jarislowsky Fraser		674,450	0.0		508,332	0.0	
Johnston		111,942,612	4.3		109,725,691	4.2	
Loop (transitional)		104,935	0.0		0	0.0	
Mercator		17,618	0.0		17,618	0.0	
SSgA International		161,533,659	6.2		161,533,659	6.2	
WHV		2,914	0.0		2,914	0.0	
Emerging Markets	**10**	**247,393,031**	**9.5**	**-0.5**	**247,393,031**	**9.5**	**-0.5**
SSgA Emerging Mkts		247,393,031	9.5		247,393,031	9.5	
Real Assets	**20**	**500,312,332**	**19.2**	**-0.8**	**500,312,332**	**19.2**	**-0.8**
Forest		135,802,793	5.2		135,802,793	5.2	
PRISA I		51,125,042	2.0		51,125,042	2.0	
PRISA II		103,380,918	4.0		103,380,918	4.0	
TIAA N. Front St.		2,336,497	0.1		2,336,497	0.1	
TIAA CREF		207,667,082	8.0		207,667,082	8.0	
Fixed Income	**15**	**402,314,970**	**15.4**	**0.4**	**402,314,970**	**15.4**	**0.4**
SSgA BC Aggregate		402,314,970	15.4		402,314,970	15.4	
Cash & Equivalents	**0**	**5,559,519**	**0.2**	**0.2**	**37,050,552**	**1.4**	**1.4**
BNY Cash		426,502	0.0		426,502	0.0	
STIP Cash		5,133,017	0.2		5,133,017	0.2	
Manager Cash		*n/a*	-		31,491,033	1.2	

MANAGER QUARTERLY FEE SUMMARY

ALL FEES ARE ESTIMATED / ACCRUED

PORTFOLIO	TOTAL RETURN (GROSS OF FEES)	FEE	% FEE
AMI	-8.7%	$74,793	0.20%
COPELAND	2.1%	$92,844	0.21%
EAGLE	-0.9%	$280,603	0.19%
EMERALD	-6.5%	$132,429	0.09%
FEDERATED	0.4%	$192,038	0.19%
FOREST	-4.1%	$252,270	0.18%
HARDMAN JOHNSTON	-1.5%	$177,408	0.16%
HGK	0.6%	$199,491	0.17%
LSV LARGE CAP	1.4%	$148,272	0.09%
LSV SMALL CAP	-0.6%	$103,118	0.14%
POLEN	0.9%	$224,619	0.10%
PRISA SA	1.5%	$122,870	0.24%
PRISA II	1.7%	$282,675	0.28%
SMITH, GRAHAM & CO	0.8%	$124,440	0.18%
SSgA	-0.2%	$117,085	0.01%
CONSERVATIVE S&P 500	1.7%	$4,892	0.01%
RUSSELL 2000	-2.4%	$7,522	0.03%
DEVELOPED INTERNATIONAL	-0.9%	$23,977	0.01%
EMERGING MARKETS	-4.3%	$49,609	0.02%
BOND MARKET INDEX	2.3%	$31,084	0.01%
TIAA CREF	3.6%	$452,710	0.22%
TIAA N. FRONT STREET	1.1%	$12,500	0.51%

MANAGER PERFORMANCE SUMMARY - GROSS OF FEES

Portfolio	(Universe)	QTR	CYTD	1 Year	3 Years	5 Years	10 Years	Inception	
Composite	(Public Fund)	-0.2 (97)	13.2 (44)	2.8 (84)	9.3 (6)	7.4 (10)	8.8 (22)	8.7 ----	12/85
Shadow Index		*0.2 ----*	*11.9 ----*	*1.9 ----*	*8.1 ----*	*6.9 ----*	*8.5 ----*	*8.6 ----*	*12/85*
SSgA	(Balanced)	-0.2 (90)	8.5 (97)	4.1 (55)	5.1 (95)	3.8 (96)	5.0 (98)	6.4 ----	03/97
Shadow Index		*-0.2 ----*	*8.8 ----*	*4.4 ----*	*5.2 ----*	*3.9 ----*	*5.2 ----*	*7.1 ----*	*03/97*
Federated	(LC Growth)	0.4 (56)	27.3 (10)	8.6 (20)	17.4 (31)	---- ----	---- ----	11.6 (65)	06/15
Russell 1000G		*1.5 ----*	*23.3 ----*	*3.7 ----*	*16.9 ----*	*13.4 ----*	*14.9 ----*	*13.6 ----*	*06/15*
Polen	(LC Growth)	0.9 (47)	25.7 (21)	9.9 (13)	20.2 (7)	17.8 (2)	---- ----	16.9 (8)	09/10
Russell 1000G		*1.5 ----*	*23.3 ----*	*3.7 ----*	*16.9 ----*	*13.4 ----*	*14.9 ----*	*15.2 ----*	*09/10*
Eagle	(LC Value)	-0.9 (95)	21.3 (16)	4.2 (34)	15.3 (4)	---- ----	---- ----	15.3 (4)	03/16
Russell 1000V		*1.4 ----*	*17.8 ----*	*4.0 ----*	*9.4 ----*	*7.8 ----*	*11.5 ----*	*10.5 ----*	*03/16*
LSV Large Cap	(LC Value)	1.4 (58)	15.2 (81)	-2.3 (88)	9.5 (68)	7.0 (77)	11.9 (53)	8.5 ----	03/04
Russell 1000V		*1.4 ----*	*17.8 ----*	*4.0 ----*	*9.4 ----*	*7.8 ----*	*11.5 ----*	*7.7 ----*	*03/04*
AMI	(SC Growth)	-8.7 (94)	0.5 (99)	-24.0 (99)	---- ----	---- ----	---- ----	-2.5 (99)	09/17
Russell 2000G		*-4.2 ----*	*15.3 ----*	*-9.7 ----*	*9.8 ----*	*9.1 ----*	*12.2 ----*	*4.6 ----*	*09/17*
Copeland	(SC Growth)	2.1 (3)	23.3 (22)	5.8 (3)	---- ----	---- ----	---- ----	11.1 (40)	09/17
Russell 2000G		*-4.2 ----*	*15.3 ----*	*-9.7 ----*	*9.8 ----*	*9.1 ----*	*12.2 ----*	*4.6 ----*	*09/17*
Emerald	(SC Growth)	-6.5 (76)	17.7 (54)	-8.1 (62)	12.2 (62)	11.9 (38)	15.2 (25)	10.9 ----	09/98
Russell 2000G		*-4.2 ----*	*15.3 ----*	*-9.7 ----*	*9.8 ----*	*9.1 ----*	*12.2 ----*	*7.6 ----*	*09/98*
LSV Small Cap	(SC Value)	-0.6 (60)	14.6 (64)	-8.0 (61)	---- ----	---- ----	---- ----	1.5 (78)	12/16
Russell 2000V		*-0.6 ----*	*12.8 ----*	*-8.3 ----*	*6.5 ----*	*7.2 ----*	*10.1 ----*	*2.1 ----*	*12/16*
Smith, Graham & Co	(SC Value)	0.8 (35)	19.8 (17)	-6.7 (53)	---- ----	---- ----	---- ----	1.7 (76)	12/16
Russell 2000V		*-0.6 ----*	*12.8 ----*	*-8.3 ----*	*6.5 ----*	*7.2 ----*	*10.1 ----*	*2.1 ----*	*12/16*
HGK	(Intl Eq)	0.6 (10)	14.4 (30)	1.5 (27)	9.5 (14)	5.7 (28)	---- ----	9.3 (10)	03/12
S&P BMI Ex US		*-0.9 ----*	*13.0 ----*	*-2.0 ----*	*6.7 ----*	*3.8 ----*	*5.7 ----*	*6.0 ----*	*03/12*
Hardman Johnston	(Intl Eq)	-1.5 (43)	17.9 (12)	4.4 (14)	10.8 (7)	7.6 (11)	---- ----	8.7 (14)	03/12
S&P BMI Ex US		*-0.9 ----*	*13.0 ----*	*-2.0 ----*	*6.7 ----*	*3.8 ----*	*5.7 ----*	*6.0 ----*	*03/12*
PRISA II SA		1.7 ----	5.3 ----	6.8 ----	8.6 ----	10.8 ----	13.1 ----	4.8 ----	06/07
NCREIF ODCE		*1.3 ----*	*3.8 ----*	*5.6 ----*	*7.3 ----*	*9.3 ----*	*10.9 ----*	*5.6 ----*	*06/07*
PRISA SA		1.5 ----	4.9 ----	6.9 ----	7.9 ----	9.8 ----	11.7 ----	7.9 ----	12/90
NCREIF ODCE		*1.3 ----*	*3.8 ----*	*5.6 ----*	*7.3 ----*	*9.3 ----*	*10.9 ----*	*7.6 ----*	*12/90*
TIAA CREF		3.6 ----	7.7 ----	9.7 ----	8.2 ----	8.7 ----	7.7 ----	3.9 ----	06/08
NCREIF ODCE		*1.3 ----*	*3.8 ----*	*5.6 ----*	*7.3 ----*	*9.3 ----*	*10.9 ----*	*5.4 ----*	*06/08*
TIAA 1721 N. Front St.		1.1 ----	2.9 ----	-3.5 ----	0.0 ----	---- ----	---- ----	0.0 ----	06/16
NCREIF NPI		*1.4 ----*	*4.8 ----*	*6.2 ----*	*6.8 ----*	*8.6 ----*	*9.8 ----*	*6.8 ----*	*06/16*
Forest		-4.1 ----	-0.9 ----	-1.8 ----	3.7 ----	4.7 ----	4.5 ----	5.0 ----	03/99
NCREIF Timber		*0.2 ----*	*1.3 ----*	*2.1 ----*	*3.1 ----*	*4.4 ----*	*4.0 ----*	*6.2 ----*	*03/99*

MANAGER PERFORMANCE SUMMARY - NET OF FEES

Portfolio	QTR	CYTD	1 Year	3 Years	5 Years	10 Years	Inception	
Composite	-0.3	12.8	2.3	8.8	6.9	8.3	----	12/85
Shadow Index	*0.2*	*11.9*	*1.9*	*8.1*	*6.9*	*8.5*	*8.6*	*12/85*
SSgA	-0.2	8.5	4.0	5.1	3.8	4.9	6.4	03/97
Shadow Index	*-0.2*	*8.8*	*4.4*	*5.2*	*3.9*	*5.2*	*7.1*	*03/97*
Federated	0.3	26.6	7.8	16.5	----	----	10.8	06/15
Russell 1000G	*1.5*	*23.3*	*3.7*	*16.9*	*13.4*	*14.9*	*13.6*	*06/15*
Polen	0.8	25.3	9.4	19.8	17.4	----	16.4	09/10
Russell 1000G	*1.5*	*23.3*	*3.7*	*16.9*	*13.4*	*14.9*	*15.2*	*09/10*
Eagle	-1.1	20.7	3.4	14.4	----	----	14.5	03/16
Russell 1000V	*1.4*	*17.8*	*4.0*	*9.4*	*7.8*	*11.5*	*10.5*	*03/16*
LSV Large Cap	1.3	14.9	-2.6	9.1	6.6	11.4	8.0	03/04
Russell 1000V	*1.4*	*17.8*	*4.0*	*9.4*	*7.8*	*11.5*	*7.7*	*03/04*
AMI	-8.9	-0.1	-24.6	----	----	----	-3.3	09/17
Russell 2000G	*-4.2*	*15.3*	*-9.7*	*9.8*	*9.1*	*12.2*	*4.6*	*09/17*
Copeland	1.9	22.6	4.9	----	----	----	10.2	09/17
Russell 2000G	*-4.2*	*15.3*	*-9.7*	*9.8*	*9.1*	*12.2*	*4.6*	*09/17*
Emerald	-6.7	17.3	-8.6	11.7	11.4	14.7	10.4	09/98
Russell 2000G	*-4.2*	*15.3*	*-9.7*	*9.8*	*9.1*	*12.2*	*7.6*	*09/98*
LSV Small Cap	-0.8	14.1	-8.5	----	----	----	1.0	12/16
Russell 2000V	*-0.6*	*12.8*	*-8.3*	*6.5*	*7.2*	*10.1*	*2.1*	*12/16*
Smith, Graham & Co	0.6	19.1	-7.4	----	----	----	1.0	12/16
Russell 2000V	*-0.6*	*12.8*	*-8.3*	*6.5*	*7.2*	*10.1*	*2.1*	*12/16*
HGK	0.4	13.8	0.8	8.8	4.9	----	8.6	03/12
S&P BMI Ex US	*-0.9*	*13.0*	*-2.0*	*6.7*	*3.8*	*5.7*	*6.0*	*03/12*
Hardman Johnston	-1.6	17.4	3.8	10.1	6.9	----	8.0	03/12
S&P BMI Ex US	*-0.9*	*13.0*	*-2.0*	*6.7*	*3.8*	*5.7*	*6.0*	*03/12*
PRISA II SA	1.4	4.4	5.6	7.4	9.7	11.9	3.7	06/07
NCREIF ODCE	*1.3*	*3.8*	*5.6*	*7.3*	*9.3*	*10.9*	*5.6*	*06/07*
PRISA SA	1.3	4.2	5.8	6.9	8.8	10.6	----	12/90
NCREIF ODCE	*1.3*	*3.8*	*5.6*	*7.3*	*9.3*	*10.9*	*7.6*	*12/90*
TIAA CREF	3.4	7.0	8.8	7.3	7.7	6.8	3.0	06/08
NCREIF ODCE	*1.3*	*3.8*	*5.6*	*7.3*	*9.3*	*10.9*	*5.4*	*06/08*
TIAA 1721 N. Front St.	0.6	1.3	-5.5	-2.5	----	----	-2.5	06/16
NCREIF NPI	*1.4*	*4.8*	*6.2*	*6.8*	*8.6*	*9.8*	*6.8*	*06/16*
Forest	-4.3	-1.4	-2.5	2.8	3.8	3.6	4.5	03/99
NCREIF Timber	*0.2*	*1.3*	*2.1*	*3.1*	*4.4*	*4.0*	*6.2*	*03/99*

MANAGER VALUE ADDED

Portfolio	Benchmark	1 Quarter	1 Year	3 Years	5 Years
SSgA	Shadow Index	0.0	-0.3	-0.1	-0.1
Federated	Russell 1000G	-1.1	4.9	0.5	N/A
Polen	Russell 1000G	-0.6	6.2	3.3	4.4
Eagle	Russell 1000V	-2.3	0.2	5.9	N/A
LSV Large Cap	Russell 1000V	0.0	-6.3	0.1	-0.8
AMI	Russell 2000G	-4.5	-14.3	N/A	N/A
Copeland	Russell 2000G	6.3	15.5	N/A	N/A
Emerald	Russell 2000G	-2.3	1.6	2.4	2.8
LSV Small Cap	Russell 2000V	0.0	0.3	N/A	N/A
Smith, Graham & Co	Russell 2000V	1.4	1.6	N/A	N/A
HGK	S&P BMI Ex US	1.5	3.5	2.8	1.9
Hardman Johnston	S&P BMI Ex US	-0.6	6.4	4.1	3.8
PRISA II SA	NCREIF ODCE	0.4	1.2	1.3	1.5
PRISA SA	NCREIF ODCE	0.2	1.3	0.6	0.5
TIAA CREF	NCREIF ODCE	2.3	4.1	0.9	-0.6
TIAA 1721 N. Front St.	NCREIF NPI	-0.3	-9.7	-6.8	N/A
Forest	NCREIF Timber	-4.3	-3.9	0.6	0.3
Total Portfolio	**Shadow Index**	**-0.4**	**0.9**	**1.2**	**0.5**

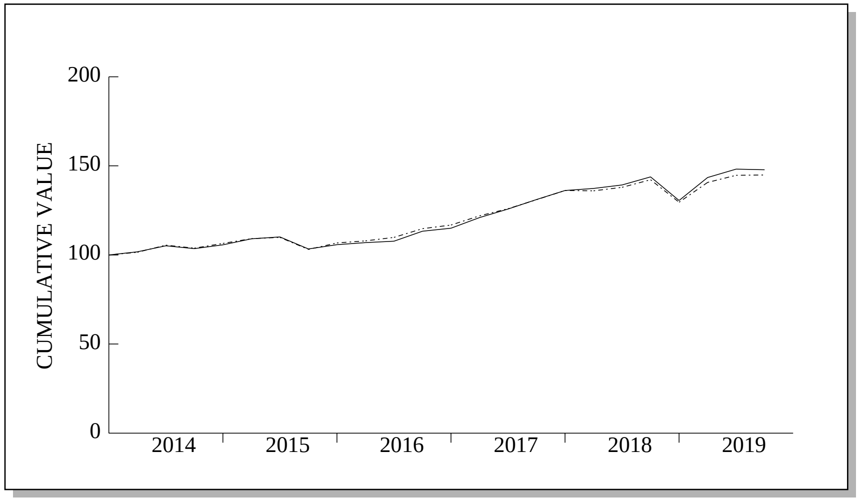
INVESTMENT RETURN SUMMARY - ONE QUARTER

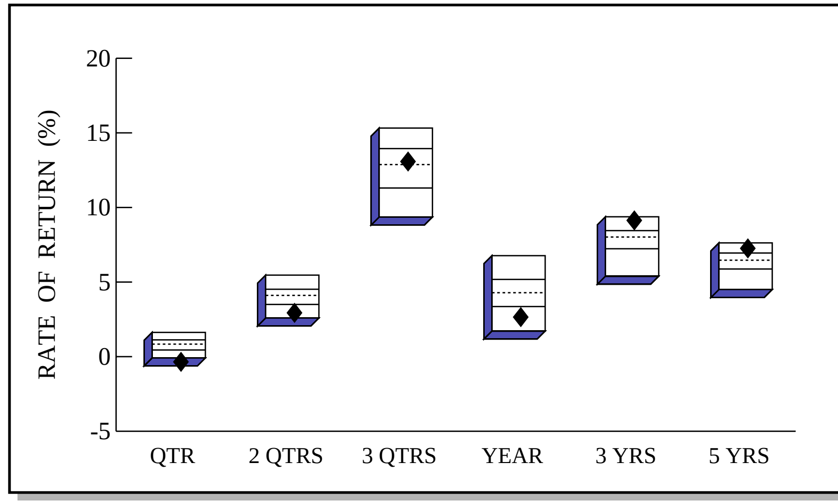
Name	Quarter Total Return	Market Value June 30th, 2019	Net Cashflow	Net Investment Return	Market Value September 30th, 2019
SSgA S&P 500 (LCC)	1.7	58,148,137	-3,500,000	970,610	55,618,747
Federated (LCG)	0.4	101,028,662	-183,669	449,251	101,294,244
Polen (LCG)	0.9	224,619,012	-219,804	2,111,927	226,511,135
Eagle (LCV)	-0.9	149,152,657	-282,999	-1,314,405	147,555,253
LSV Large Cap (LCV)	1.4	158,172,903	-151,289	2,154,938	160,176,552
SSgA Russell 2000 (SMDC)	-2.4	22,154,197	61,500,000	144,135	83,798,332
AMI (SCG)	-8.7	37,739,234	-73,881	-3,262,150	34,403,203
Copeland (SCG)	2.1	44,546,870	-54,030	936,928	45,429,768
Emerald (SCG)	-6.5	140,844,961	-70,175,883	-7,902,436	62,766,642
LSV Small Cap (SCV)	-0.6	72,582,196	-103,156	-445,782	72,033,258
Smith, Graham & Co (SCV)	0.8	70,845,248	-121,957	532,019	71,255,310
Loop Transition (INEQ)	---	105,030	0	-95	104,935
GlobeFlex (INEQ)	---	4,330	0	-118	4,212
HGK (INEQ)	0.6	120,651,094	-198,384	700,191	121,152,901
Hardman Johnston (INEQ)	-1.5	113,788,785	-175,228	-1,670,945	111,942,612
Mercator (INEQ)	---	18,404	0	-786	17,618
WHV (INEQ)	---	3,044	0	-130	2,914
Jarislowsky Fraser (INEG)	---	691,576	0	-17,126	674,450
SSgA World Ex-US (INEQ)	-0.9	162,925,641	0	-1,391,982	161,533,659
SSgA Emerging Markets (EMKT)	-4.3	258,394,373	0	-11,001,342	247,393,031
PRISA II SA (REAL)	1.7	101,915,896	-282,675	1,747,697	103,380,918
PRISA SA (REAL)	1.5	50,468,306	-122,870	779,606	51,125,042
TIAA CREF (REAL)	3.6	203,373,417	-2,499,627	6,793,292	207,667,082
TIAA 1721 N. Front St. (REAL)	1.1	2,437,702	-114,207	13,002	2,336,497
Forest (TIMB)	-4.1	141,604,956	0	-5,802,163	135,802,793
SSgA Bond Market (CFI)	2.3	399,408,467	-6,200,000	9,106,503	402,314,970
BNY Cash (CASH)	---	665,486	-244,380	5,396	426,502
Treasury STIP (CASH)	---	2,597,456	2,504,818	30,743	5,133,017
Total Portfolio	**-0.2**	**2,638,888,040**	**-20,699,221**	**-6,333,222**	**2,611,855,597**

MANAGER RISK STATISTICS SUMMARY - FIVE-YEAR HISTORY

Name	Alpha	Batting Average	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
SSgA *Shadow Index*	-0.09	0.600	0.48	-0.33	98.7	100.0
SSgA S&P 500 *S&P 500*	0.02	0.900	0.98	-0.36	99.8	99.7
Polen *Russell 1000G*	5.96	0.650	1.48	0.91	111.7	57.8
LSV Large Cap *Russell 1000V*	-1.03	0.500	0.60	-0.18	95.1	102.8
SSgA Russell 2000 *Russell 2000*	0.09	0.950	0.57	1.53	100.4	99.7
Emerald *Russell 2000G*	2.41	0.650	0.70	0.61	117.0	101.4
HGK *S&P BMI Ex US*	1.87	0.600	0.45	0.44	111.9	92.4
Hardman Johnston *S&P BMI Ex US*	3.28	0.700	0.54	0.85	134.8	96.7
SSgA World Ex-US *MSCI World Ex US*	-0.21	0.450	0.28	-3.69	98.9	101.2
SSgA Emerging Markets *EM Index*	-0.34	0.450	0.17	-0.45	100.6	103.5
PRISA II SA *NCREIF ODCE*	0.73	0.800	5.15	1.69	116.1	----
PRISA SA *NCREIF ODCE*	0.58	0.550	5.11	0.63	105.2	----
TIAA CREF *NCREIF ODCE*	8.71	0.550	3.30	-0.22	93.1	----
Forest *NCREIF Timber*	6.88	0.450	0.81	0.07	81.4	----
SSgA Bond Market *Aggregate Index*	0.02	1.000	0.77	1.39	100.5	99.6

TOTAL RETURN COMPARISONS

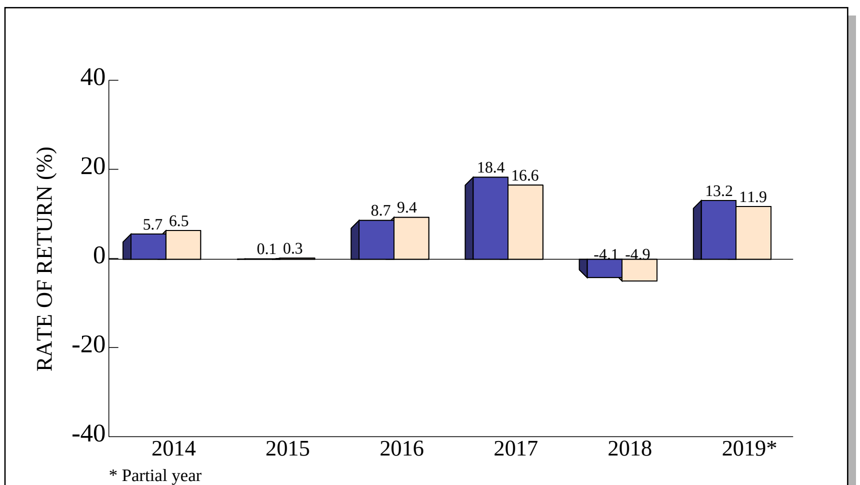




Public Fund Universe

PORTFOLIO

SHADOW INDEX



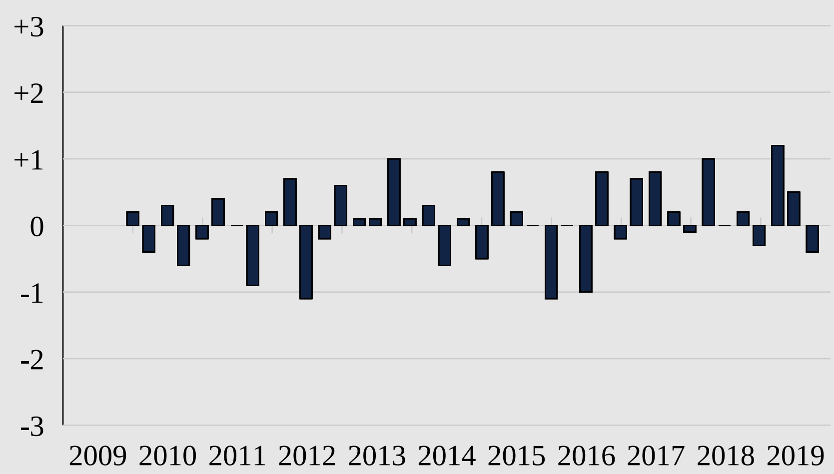
					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	-0.2	3.0	13.2	2.8	9.3	7.4
(RANK)	(97)	(88)	(44)	(84)	(6)	(10)
5TH %ILE	1.6	5.5	15.3	6.8	9.4	7.6
25TH %ILE	1.1	4.5	13.9	5.2	8.4	7.0
MEDIAN	0.8	4.1	12.9	4.3	8.0	6.5
75TH %ILE	0.4	3.5	11.3	3.4	7.2	5.9
95TH %ILE	-0.1	2.6	9.4	1.7	5.4	4.5
Shadow Idx	***0.2***	***3.0***	***11.9***	***1.9***	***8.1***	***6.9***

Public Fund Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: SHADOW INDEX

VARIATION FROM BENCHMARK

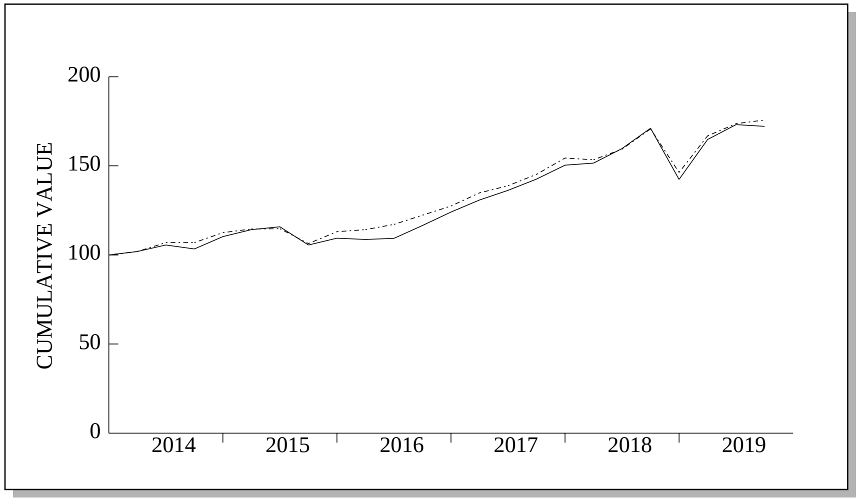


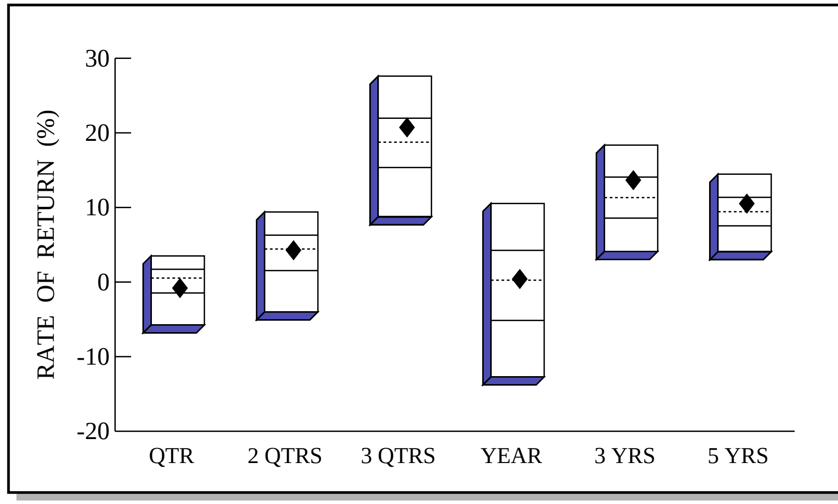
Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**26**
Quarters Below the Benchmark	**14**
Batting Average	**.650**

RATES OF RETURN

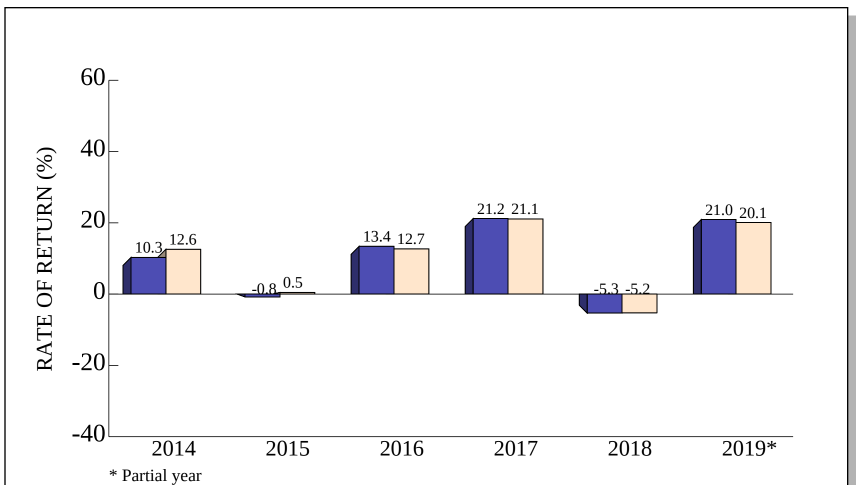
Date	Portfolio	Benchmark	Difference
12/09	3.7	3.5	0.2
3/10	3.4	3.8	-0.4
6/10	-6.0	-6.3	0.3
9/10	9.1	9.7	-0.6
12/10	7.3	7.5	-0.2
3/11	4.3	3.9	0.4
6/11	0.6	0.6	0.0
9/11	-12.1	-11.2	-0.9
12/11	6.6	6.4	0.2
3/12	9.2	8.5	0.7
6/12	-3.3	-2.2	-1.1
9/12	4.5	4.7	-0.2
12/12	2.5	1.9	0.6
3/13	5.5	5.4	0.1
6/13	0.4	0.3	0.1
9/13	6.6	5.6	1.0
12/13	5.8	5.7	0.1
3/14	1.8	1.5	0.3
6/14	3.3	3.9	-0.6
9/14	-1.5	-1.6	0.1
12/14	2.0	2.5	-0.5
3/15	3.3	2.5	0.8
6/15	0.9	0.7	0.2
9/15	-6.2	-6.2	0.0
12/15	2.4	3.5	-1.1
3/16	1.1	1.1	0.0
6/16	0.8	1.8	-1.0
9/16	5.2	4.4	0.8
12/16	1.5	1.7	-0.2
3/17	5.1	4.4	0.7
6/17	4.0	3.2	0.8
9/17	4.2	4.0	0.2
12/17	3.9	4.0	-0.1
3/18	0.8	-0.2	1.0
6/18	1.4	1.4	0.0
9/18	3.3	3.1	0.2
12/18	-9.2	-8.9	-0.3
3/19	9.8	8.6	1.2
6/19	3.3	2.8	0.5
9/19	-0.2	0.2	-0.4

DOMESTIC EQUITY RETURN COMPARISONS





Domestic Equity Universe



* Partial year

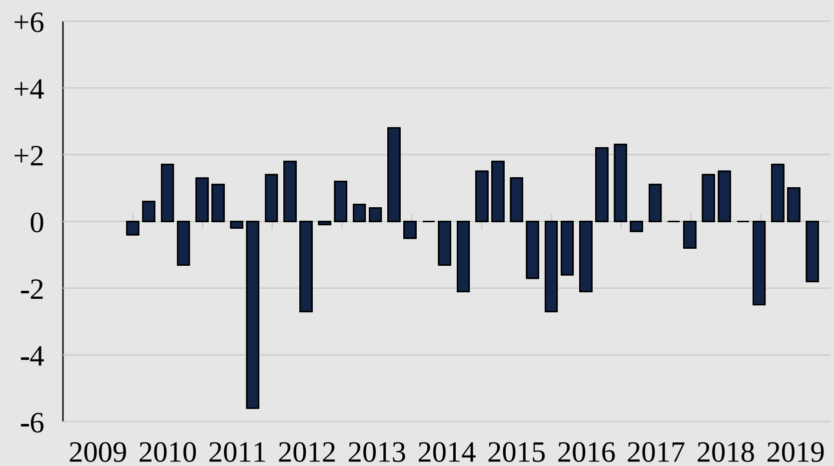
					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	-0.6	4.5	21.0	0.7	13.9	10.7
(RANK)	(66)	(50)	(33)	(49)	(27)	(33)
5TH %ILE	3.5	9.4	27.6	10.6	18.4	14.5
25TH %ILE	1.7	6.3	22.0	4.3	14.1	11.4
MEDIAN	0.5	4.4	18.7	0.3	11.3	9.4
75TH %ILE	-1.5	1.5	15.4	-5.1	8.6	7.5
95TH %ILE	-5.8	-4.0	8.8	-12.7	4.1	4.1
Russ 3000	***1.2***	***5.3***	***20.1***	***2.9***	***12.8***	***10.4***

Domestic Equity Universe

DOMESTIC EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: RUSSELL 3000

VARIATION FROM BENCHMARK



Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**23**
Quarters Below the Benchmark	**17**
Batting Average	**.575**

RATES OF RETURN

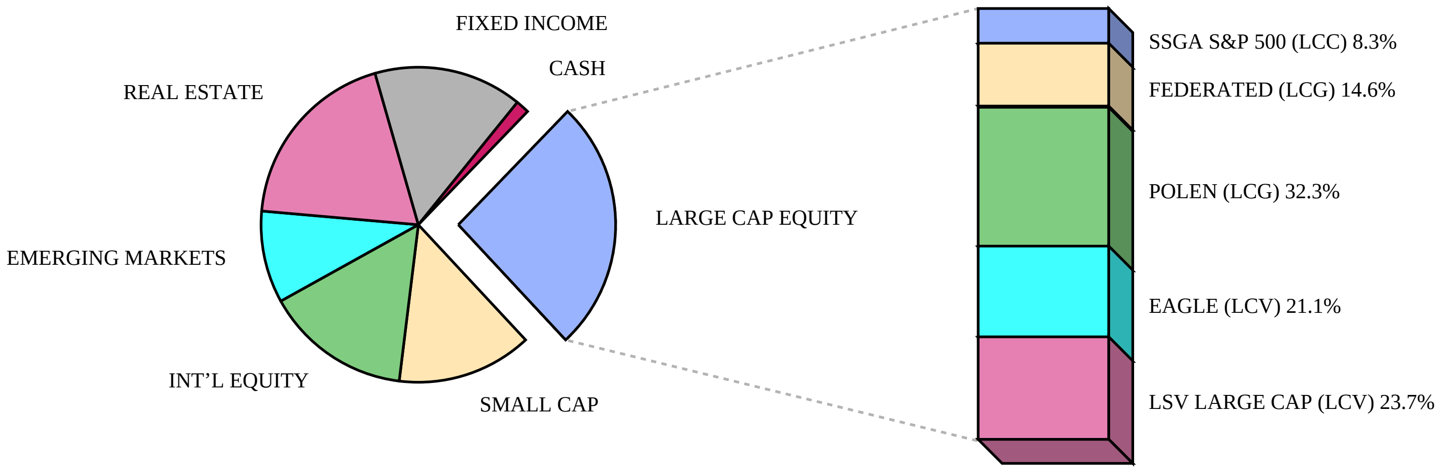
Date	Portfolio	Benchmark	Difference
12/09	5.5	5.9	-0.4
3/10	6.5	5.9	0.6
6/10	-9.6	-11.3	1.7
9/10	10.2	11.5	-1.3
12/10	12.9	11.6	1.3
3/11	7.5	6.4	1.1
6/11	-0.2	0.0	-0.2
9/11	-20.9	-15.3	-5.6
12/11	13.5	12.1	1.4
3/12	14.7	12.9	1.8
6/12	-5.8	-3.1	-2.7
9/12	6.1	6.2	-0.1
12/12	1.5	0.3	1.2
3/13	11.6	11.1	0.5
6/13	3.1	2.7	0.4
9/13	9.2	6.4	2.8
12/13	9.6	10.1	-0.5
3/14	2.0	2.0	0.0
6/14	3.6	4.9	-1.3
9/14	-2.1	0.0	-2.1
12/14	6.7	5.2	1.5
3/15	3.6	1.8	1.8
6/15	1.4	0.1	1.3
9/15	-8.9	-7.2	-1.7
12/15	3.6	6.3	-2.7
3/16	-0.6	1.0	-1.6
6/16	0.5	2.6	-2.1
9/16	6.6	4.4	2.2
12/16	6.5	4.2	2.3
3/17	5.4	5.7	-0.3
6/17	4.1	3.0	1.1
9/17	4.6	4.6	0.0
12/17	5.5	6.3	-0.8
3/18	0.8	-0.6	1.4
6/18	5.4	3.9	1.5
9/18	7.1	7.1	0.0
12/18	-16.8	-14.3	-2.5
3/19	15.7	14.0	1.7
6/19	5.1	4.1	1.0
9/19	-0.6	1.2	-1.8

LARGE CAP EQUITY MANAGERS

PMRB's aggregate large cap portfolio (excluding cash) returned 0.6%, which was 1.1% below the S&P 500 index return of 1.7%. Three of the four active large cap managers trailed behind their benchmarks. LSV's large cap portfolio matched its value benchmark.

SSgA S&P 500 (Core)	SSgA's S&P 500 fund continued to closely track the S&P 500 index over the short and long term. At quarter-end, this fund was valued at $55,618,747.
Federated (Growth)	The Federated portfolio's large cap component fell short of its benchmark by 1.1%. Mixed selection effects resulted in a third quarter return that was relatively flat next to the benchmark's modest growth. The Information Technology sector, which still towered over the other sectors despite being below market weight, did not keep pace with its index counterpart. This effect was countered by better results in the Communication Services, Consumer Discretionary, Health Care, and Materials sectors, but at quarter end, the portfolio was still behind the index.
Polen (Growth)	The invested portion of the portfolio returned 1.0%, which was 0.5% below the index. The Polen portfolio's concentration in Information Technology put it at a disadvantage in the third quarter. This sector produced middling returns in the broader market and unfavorable selection in the portfolio resulted in a contraction during the quarter. The Financials and Health Care sectors also lost ground. Strong returns in the second most heavily weighted sector, Consumer Discretionary partially offset the negative effects from the above mentioned sectors.
Eagle (Value)	The Eagle portfolio's invested portion returned -0.9%, compared to the benchmark's 1.4% return. Differences in allocation reduced the portfolios exposure to the weakest sectors (Energy and Materials), as well as the strongest (Consumer Staples, Real Estate, and Utilities). Unfortunately, the portfolio underperformed the index in all six invested sectors, leading to its contraction in an otherwise generally positive market environment.
LSV Large Cap (Value)	The LSV large cap portfolio returned 1.4%, which was equal to the index. While the LSV Large Cap portfolio did not benefit from the market performance of the Utilities sector, nor did it keep pace in the Real Estate sector, it did outperform in the Materials sector and significantly controlled losses in the Energy sector. These factors washed out to produce a quarterly return in line with the Russell 1000 Value index.

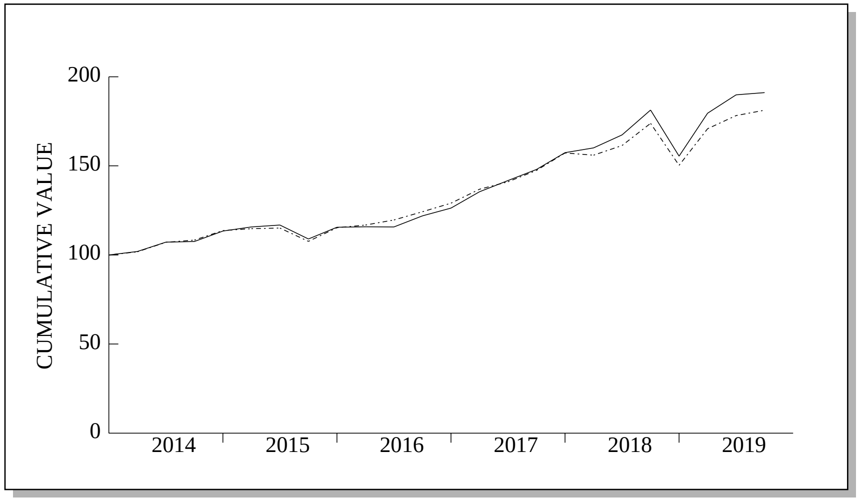
LARGE CAP EQUITY MANAGER SUMMARY

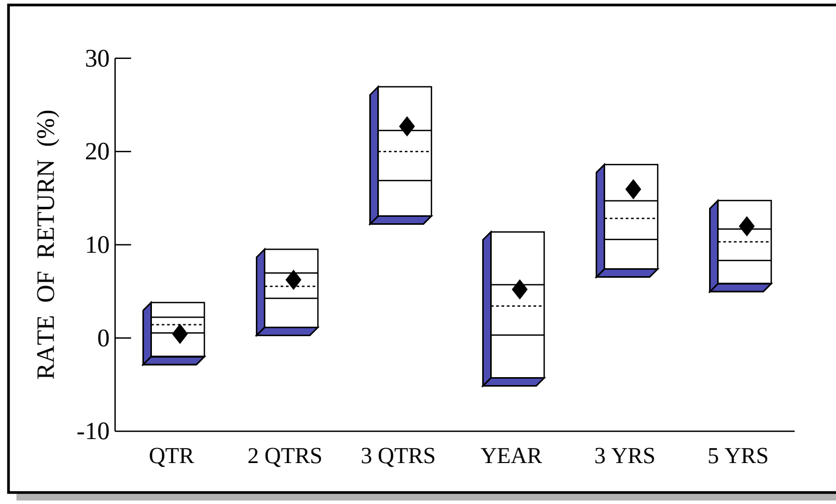


COMPONENT RETURNS AND RANKINGS

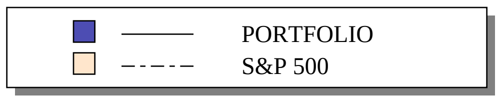
MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
SSGA S&P 500	(Large Cap Core)	1.7	(45)	20.5	(43)	4.3	(38)	13.4	(33)	10.8	(35)	$55,618,747
S&P 500		*1.7*	----	*20.6*	----	*4.3*	----	*13.4*	----	*10.8*	----	----
FEDERATED	(Large Cap Growth)	0.4	(56)	28.3	(6)	9.0	(17)	18.2	(25)	----	----	$97,903,797
POLEN	(Large Cap Growth)	1.0	(47)	26.8	(14)	10.4	(12)	21.1	(4)	18.6	(1)	$216,764,724
Russell 1000 Growth		*1.5*	----	*23.3*	----	*3.7*	----	*16.9*	----	*13.4*	----	----
EAGLE	(Large Cap Value)	-0.9	(95)	22.1	(13)	4.3	(33)	15.7	(3)	----	----	$141,717,245
LSV LARGE CAP	(Large Cap Value)	1.4	(58)	15.4	(77)	-2.2	(87)	9.6	(66)	7.0	(76)	$159,257,726
Russell 1000 Value		*1.4*	----	*17.8*	----	*4.0*	----	*9.4*	----	*7.8*	----	----
TOTAL	**(Large Cap)**	**0.6**	**(73)**	**22.9**	**(21)**	**5.4**	**(28)**	**16.2**	**(17)**	**12.2**	**(21)**	**$671,262,239**
S&P 500		*1.7*	----	*20.6*	----	*4.3*	----	*13.4*	----	*10.8*	----	----

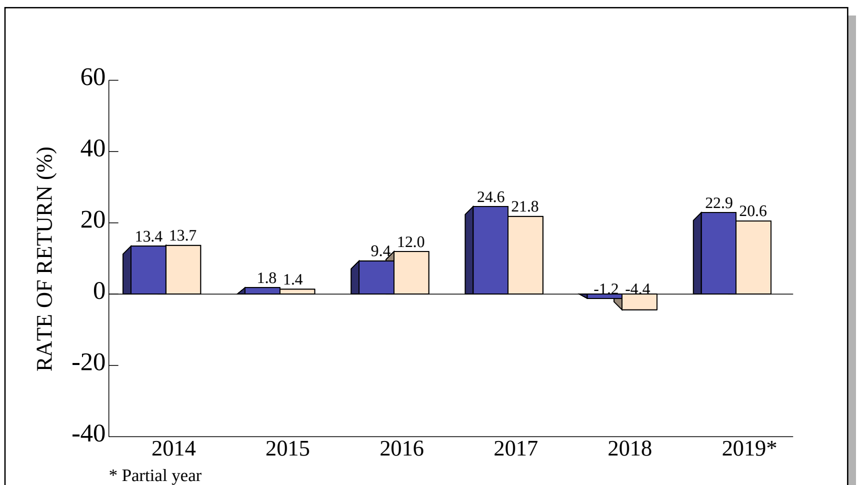
LARGE CAP EQUITY RETURN COMPARISONS





Large Cap Universe





* Partial year

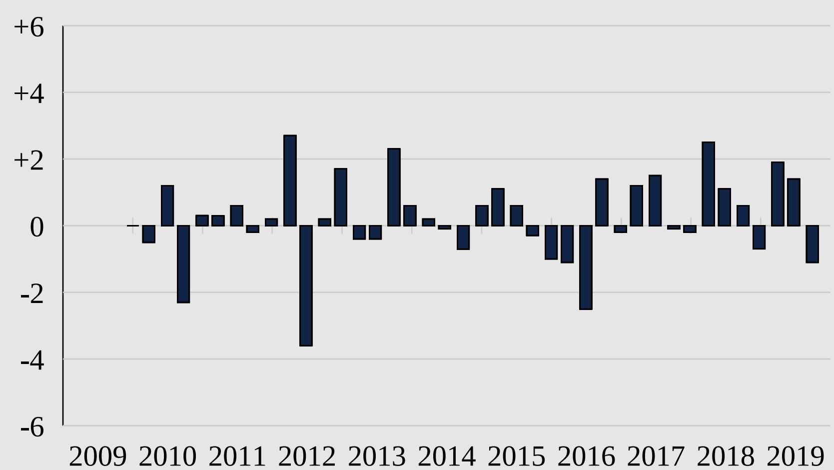
	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	0.6	6.4	22.9	5.4	16.2	12.2
(RANK)	(73)	(33)	(21)	(28)	(17)	(21)
5TH %ILE	3.8	9.5	26.9	11.4	18.6	14.8
25TH %ILE	2.2	7.0	22.3	5.7	14.7	11.7
MEDIAN	1.4	5.6	20.0	3.4	12.8	10.3
75TH %ILE	0.5	4.3	16.9	0.3	10.6	8.3
95TH %ILE	-2.0	1.1	13.1	-4.3	7.4	5.8
S&P 500	***1.7***	***6.1***	***20.6***	***4.3***	***13.4***	***10.8***

Large Cap Universe

LARGE CAP EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: S&P 500

VARIATION FROM BENCHMARK



Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**23**
Quarters Below the Benchmark	**17**
Batting Average	**.575**

RATES OF RETURN

Date	Portfolio	Benchmark	Difference
12/09	6.0	6.0	0.0
3/10	4.8	5.3	-0.5
6/10	-10.2	-11.4	1.2
9/10	9.0	11.3	-2.3
12/10	11.1	10.8	0.3
3/11	6.2	5.9	0.3
6/11	0.7	0.1	0.6
9/11	-14.1	-13.9	-0.2
12/11	12.0	11.8	0.2
3/12	15.3	12.6	2.7
6/12	-6.4	-2.8	-3.6
9/12	6.5	6.3	0.2
12/12	1.3	-0.4	1.7
3/13	10.2	10.6	-0.4
6/13	2.5	2.9	-0.4
9/13	7.5	5.2	2.3
12/13	11.1	10.5	0.6
3/14	2.0	1.8	0.2
6/14	5.1	5.2	-0.1
9/14	0.4	1.1	-0.7
12/14	5.5	4.9	0.6
3/15	2.0	0.9	1.1
6/15	0.9	0.3	0.6
9/15	-6.7	-6.4	-0.3
12/15	6.0	7.0	-1.0
3/16	0.2	1.3	-1.1
6/16	0.0	2.5	-2.5
9/16	5.3	3.9	1.4
12/16	3.6	3.8	-0.2
3/17	7.3	6.1	1.2
6/17	4.6	3.1	1.5
9/17	4.4	4.5	-0.1
12/17	6.4	6.6	-0.2
3/18	1.7	-0.8	2.5
6/18	4.5	3.4	1.1
9/18	8.3	7.7	0.6
12/18	-14.2	-13.5	-0.7
3/19	15.5	13.6	1.9
6/19	5.7	4.3	1.4
9/19	0.6	1.7	-1.1

SMALL CAP EQUITY MANAGERS

Last quarter, the Russell 2000 Growth Index returned -4.2% versus -0.6% for the Russell 2000 Value Index. The portfolio's small cap component (excluding cash) lost 2.7%, while the Russell 2000 index walked back 2.4%. Copeland and Smith, Graham beat their respective indices, but the other small cap managers matched or missed their marks.

SSgA (Core)

The SSgA small cap component performed in line with the Russell 2000 index. At quarter end, this investment was valued at $83,798,332.

AMI (Growth)

AMI's invested portion lost 9.0% last quarter, well behind the Russell 2000 Growth index. The small cap growth market shrank in the third quarter and the AMI portfolio doubled down on the benchmark's losses. Selection was the main factor; only the Materials sector, which made up 4.2% of the portfolio, outperformed its index counterpart. The Financials sector walked back the most, but the heavily weighted Information Technology sector also had a large negative impact.

Copeland (Growth)

The Copeland portfolio's invested equities returned 2.2%, a strong performance for mostly negative market environment. There were a few sectors that nose-dived in the small cap growth market, but the portfolio made gains in most of these sectors, putting significant daylight between its return and that of the index. These flipped sectors included Communication Services, Energy, and Health Care. Positive market returns in the Real Estate and Utilities sectors were improved upon in the Copeland portfolio.

Emerald (Growth)

The Emerald small cap component was down 6.5%. Selection effects were mixed in the third quarter; six sectors failed to beat their index counterparts, including Consumer Discretionary and Health Care, which together made up about half the portfolio. The next two largest sectors, Industrials and Information Technology also fell short on performance and together made up about a third of the portfolio.

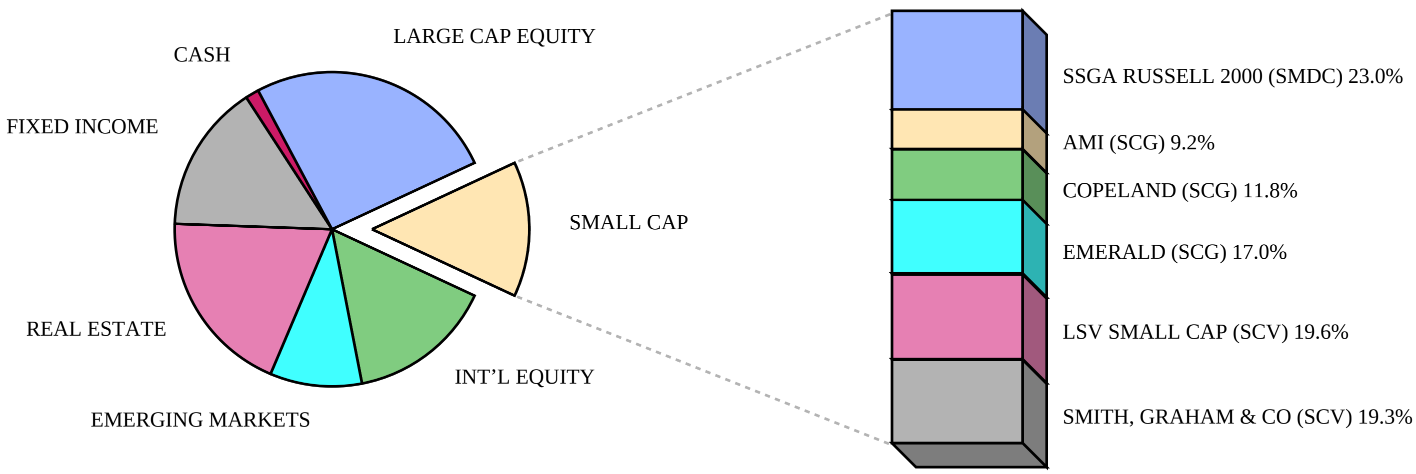
LSV Small Cap (Value)

The LSV small cap value equity segment slipped 0.6%, which was in line with the value index. Detractors to performance included Communication Services, Consumer Staples, Materials, and Utilities, which all posted losses below the index. Positive allocation effects pushed performance in the other direction, in particular through increased weight in the Consumer Discretionary and Information Technology sectors, which had the best returns in the small cap value market.

Smith, Graham & Co (Value)

The invested portion of the Smith, Graham & Co portfolio returned 0.8%. The portfolio's extra weight in the Consumer Discretionary and Information Technology sectors allowed it to take better advantage of positive returns there that were somewhat elusive elsewhere in the small cap value market. Likewise, the reduced positions in Energy and Materials lessened exposure to sectors that contracted.

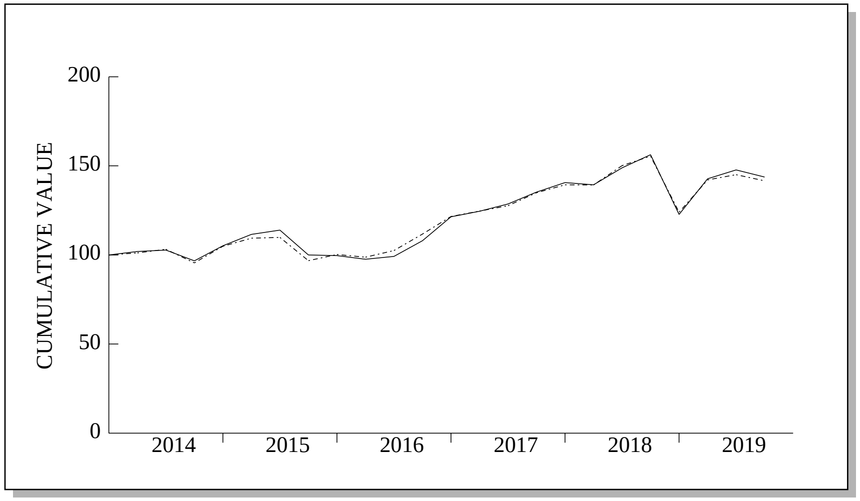
SMALL CAP EQUITY MANAGER SUMMARY

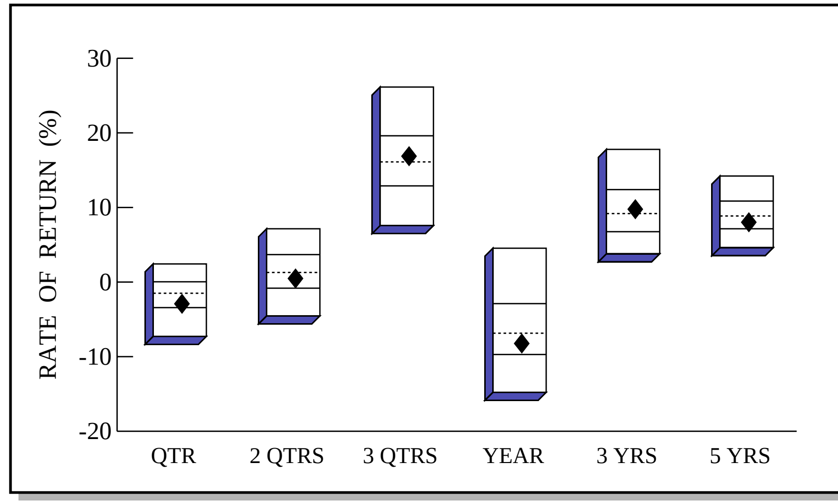


COMPONENT RETURNS AND RANKINGS

MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
SSGA RUSSELL 2000	(Small Cap)	-2.4	(64)	14.2	(66)	-8.8	(67)	8.3	(60)	8.3	(60)	$83,798,332
Russell 2000		*-2.4*	*----*	*14.2*	*----*	*-8.9*	*----*	*8.2*	*----*	*8.2*	*----*	*----*
AMI	(Small Cap Growth)	-9.0	(96)	0.5	(99)	-24.9	(99)	----	----	----	----	$33,523,089
COPELAND	(Small Cap Growth)	2.2	(3)	24.5	(19)	5.9	(3)	----	----	----	----	$42,994,661
EMERALD	(Small Cap Growth)	-6.5	(76)	18.5	(52)	-8.4	(63)	12.5	(59)	12.2	(33)	$61,963,524
Russell 2000 Growth		*-4.2*	*----*	*15.3*	*----*	*-9.7*	*----*	*9.8*	*----*	*9.1*	*----*	*----*
LSV SMALL CAP	(Small Cap Value)	-0.6	(60)	14.8	(61)	-8.1	(61)	----	----	----	----	$71,568,817
SMITH, GRAHAM & CO	(Small Cap Value)	0.8	(35)	20.0	(16)	-6.8	(54)	----	----	----	----	$70,434,197
Russell 2000 Value		*-0.6*	*----*	*12.8*	*----*	*-8.3*	*----*	*6.5*	*----*	*7.2*	*----*	*----*
TOTAL	**(Small Cap)**	**-2.7**	**(69)**	**17.1**	**(42)**	**-8.0**	**(58)**	**10.0**	**(41)**	**8.3**	**(60)**	**$364,282,620**
Russell 2000		*-2.4*	*----*	*14.2*	*----*	*-8.9*	*----*	*8.2*	*----*	*8.2*	*----*	*----*

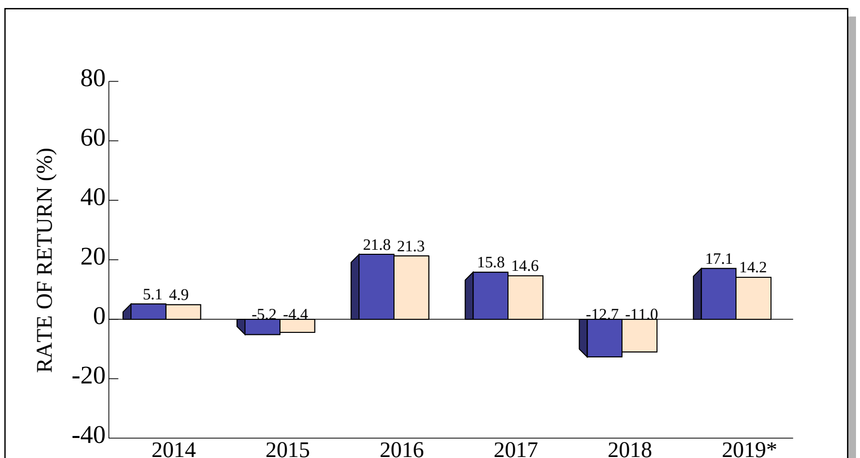
SMALL CAP EQUITY RETURN COMPARISONS





Small Cap Universe

PORTFOLIO
RUSSELL 2000



* Partial year

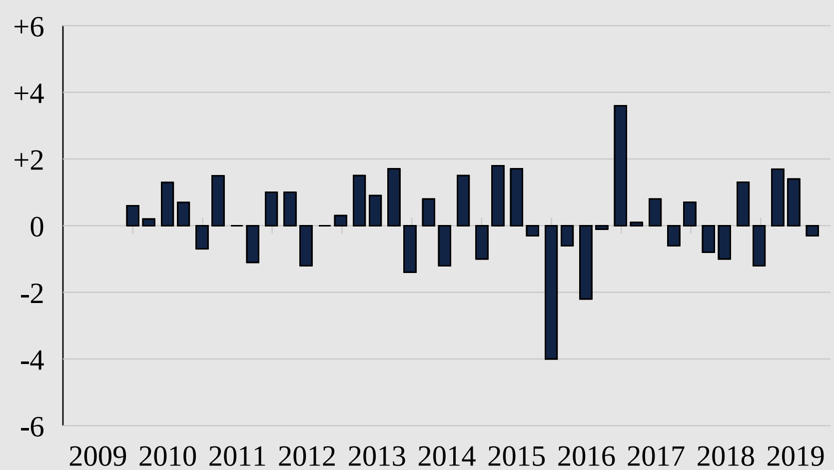
					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	-2.7	0.7	17.1	-8.0	10.0	8.3
(RANK)	(69)	(58)	(42)	(58)	(41)	(60)
5TH %ILE	2.4	7.1	26.2	4.5	17.8	14.2
25TH %ILE	0.0	3.7	19.6	-2.9	12.4	10.8
MEDIAN	-1.5	1.3	16.1	-6.9	9.2	8.9
75TH %ILE	-3.4	-0.8	12.9	-9.7	6.7	7.1
95TH %ILE	-7.3	-4.5	7.6	-14.8	3.8	4.6
Russ 2000	***-2.4***	***-0.4***	***14.2***	***-8.9***	***8.2***	***8.2***

Small Cap Universe

SMALL CAP EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: RUSSELL 2000

VARIATION FROM BENCHMARK



Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**24**
Quarters Below the Benchmark	**16**
Batting Average	**.600**

RATES OF RETURN

Date	Portfolio	Benchmark	Difference
12/09	4.5	3.9	0.6
3/10	9.1	8.9	0.2
6/10	-8.6	-9.9	1.3
9/10	12.0	11.3	0.7
12/10	15.6	16.3	-0.7
3/11	9.4	7.9	1.5
6/11	-1.6	-1.6	0.0
9/11	-23.0	-21.9	-1.1
12/11	16.5	15.5	1.0
3/12	13.4	12.4	1.0
6/12	-4.7	-3.5	-1.2
9/12	5.2	5.2	0.0
12/12	2.1	1.8	0.3
3/13	13.9	12.4	1.5
6/13	4.0	3.1	0.9
9/13	11.9	10.2	1.7
12/13	7.3	8.7	-1.4
3/14	1.9	1.1	0.8
6/14	0.8	2.0	-1.2
9/14	-5.9	-7.4	1.5
12/14	8.7	9.7	-1.0
3/15	6.1	4.3	1.8
6/15	2.1	0.4	1.7
9/15	-12.2	-11.9	-0.3
12/15	-0.4	3.6	-4.0
3/16	-2.1	-1.5	-0.6
6/16	1.6	3.8	-2.2
9/16	8.9	9.0	-0.1
12/16	12.4	8.8	3.6
3/17	2.6	2.5	0.1
6/17	3.3	2.5	0.8
9/17	5.1	5.7	-0.6
12/17	4.0	3.3	0.7
3/18	-0.9	-0.1	-0.8
6/18	6.8	7.8	-1.0
9/18	4.9	3.6	1.3
12/18	-21.4	-20.2	-1.2
3/19	16.3	14.6	1.7
6/19	3.5	2.1	1.4
9/19	-2.7	-2.4	-0.3

INTERNATIONAL & EMERGING MARKETS EQUITY MANAGERS

PMRB's aggregate developed international portfolio (excluding cash) returned -0.6% over the quarter, 0.4% above the MSCI EAFE Index return of -1.0%. The S&P BMI Developed Markets Ex US returned -0.9% vs -0.8% for the MSCI World Ex US. The Emerging Markets portfolio, driven by its only manager, SSgA, gained 0.7%, in line with the MSCI Emerging Markets Index.

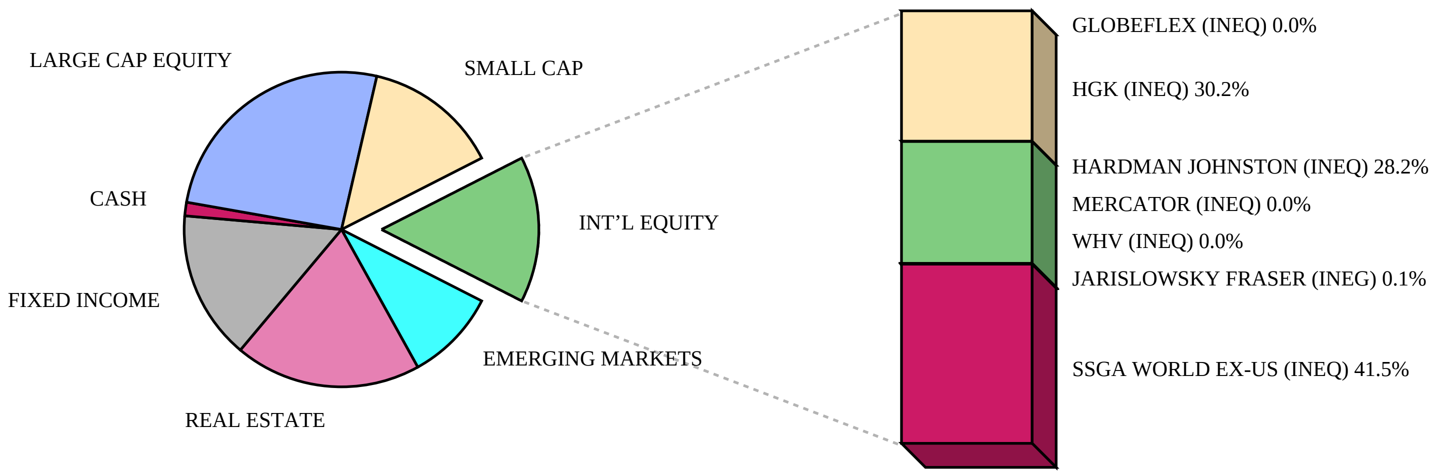
SSgA Developed The SSgA developed markets component returned -0.9% during the quarte. Over the trailing year, this component was down 0.5%. This investment was valued at $161,239,853 at quarter end.

Hardman Johnston The Hardman Johnston international equity component lost 1.5% over the quarter. Over the last four quarters, the component gained 3.4%, while the S&P BMI Developed Ex US lost 2.0%.

HGK HGK's equity component return of 0.6% was 1.5% ahead of the S&P BMI Developed Ex US. Over the trailing year, the HGK international equity component gained 1.5%.

SSgA Emerging The SSgA emerging markets fund lost 4.3% during the quarter. Over the trailing five years, annualized, this component gained 2.3%. At quarter end, this fund was valued at $247,393,031.

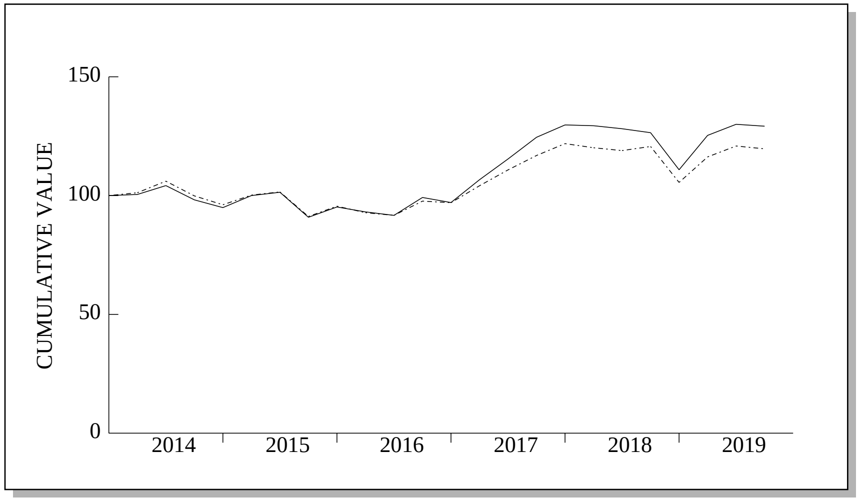
INTERNATIONAL EQUITY MANAGER SUMMARY

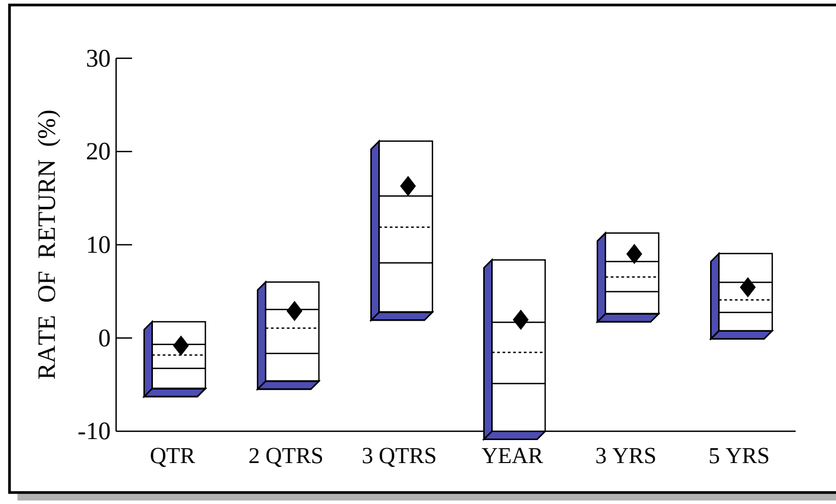


COMPONENT RETURNS AND RANKINGS

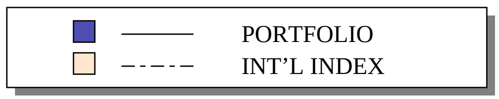
MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
GLOBEFLEX	(International Equity)	----	----	----	----	----	----	----	----	----	----	$4,212
HGK	(International Equity)	0.6	(10)	14.8	(27)	1.5	(27)	9.9	(11)	5.9	(26)	$117,447,427
HARDMAN JOHNSTON	(International Equity)	-1.5	(43)	18.9	(9)	3.4	(17)	10.8	(7)	7.6	(11)	$109,725,691
MERCATOR	(International Equity)	----	----	----	----	----	----	----	----	----	----	$17,618
WHV	(International Equity)	----	----	----	----	----	----	----	----	----	----	$2,914
S&P BMI Developed Ex US Index		*-0.9*	*----*	*13.0*	*----*	*-2.0*	*----*	*6.7*	*----*	*3.8*	*----*	*----*
JARISLOWSKY FRASER	(International Equity)	----	----	----	----	----	----	----	----	----	----	$508,332
MSCI EAFE		*-1.0*	*----*	*13.3*	*----*	*-0.8*	*----*	*7.0*	*----*	*3.8*	*----*	*----*
SSGA WORLD EX-US	(International Equity)	-0.9	(28)	14.0	(32)	-0.5	(40)	6.9	(43)	3.5	(62)	$161,533,659
MSCI World Ex US		*-0.8*	*----*	*14.2*	*----*	*-0.4*	*----*	*7.1*	*----*	*3.7*	*----*	*----*
TOTAL	**(International Equity)**	**-0.6**	**(25)**	**16.5**	**(18)**	**2.1**	**(23)**	**9.2**	**(16)**	**5.6**	**(28)**	**$389,239,853**
Blended International Index		*-1.0*	*----*	*13.3*	*----*	*-0.8*	*----*	*7.0*	*----*	*3.7*	*----*	*----*

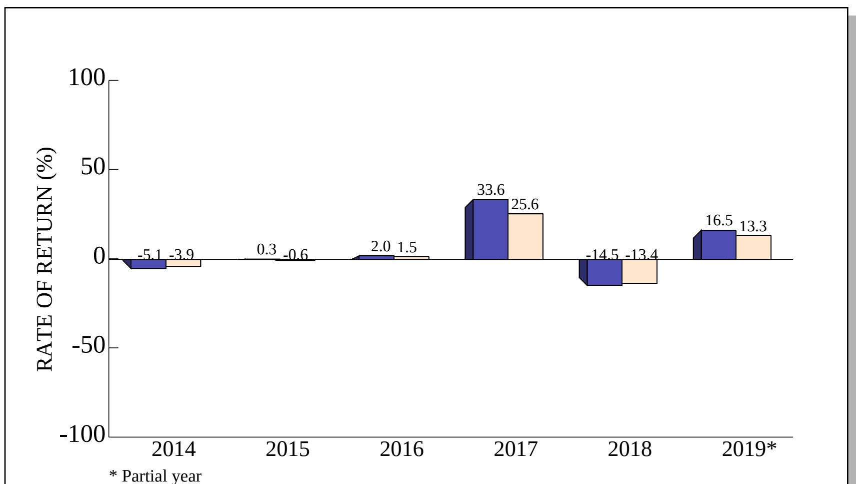
INTERNATIONAL EQUITY RETURN COMPARISONS





International Equity Universe





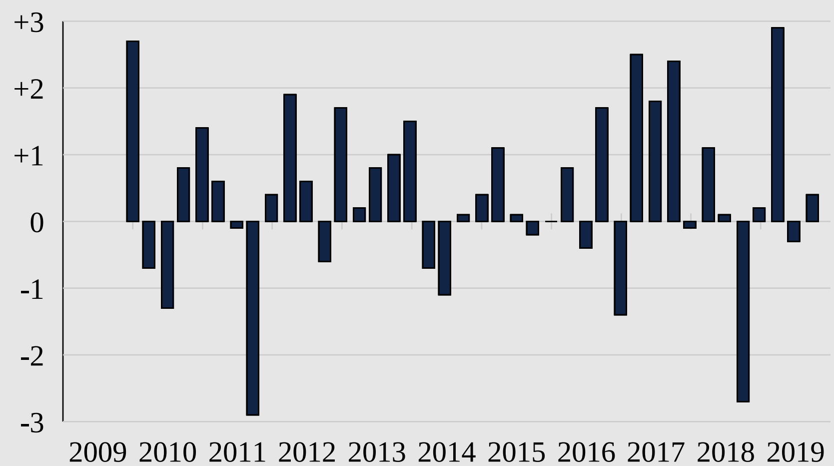
					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	-0.6	3.1	16.5	2.1	9.2	5.6
(RANK)	(25)	(25)	(18)	(23)	(16)	(28)
5TH %ILE	1.7	6.0	21.1	8.4	11.3	9.1
25TH %ILE	-0.7	3.1	15.2	1.7	8.2	6.0
MEDIAN	-1.8	1.1	11.9	-1.6	6.5	4.1
75TH %ILE	-3.3	-1.7	8.1	-4.9	5.0	2.8
95TH %ILE	-5.4	-4.6	2.8	-10.0	2.6	0.8
Intl Index	***-1.0***	***2.9***	***13.3***	***-0.8***	***7.0***	***3.7***

International Equity Universe

INTERNATIONAL EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: BLENDED INTERNATIONAL INDEX

VARIATION FROM BENCHMARK

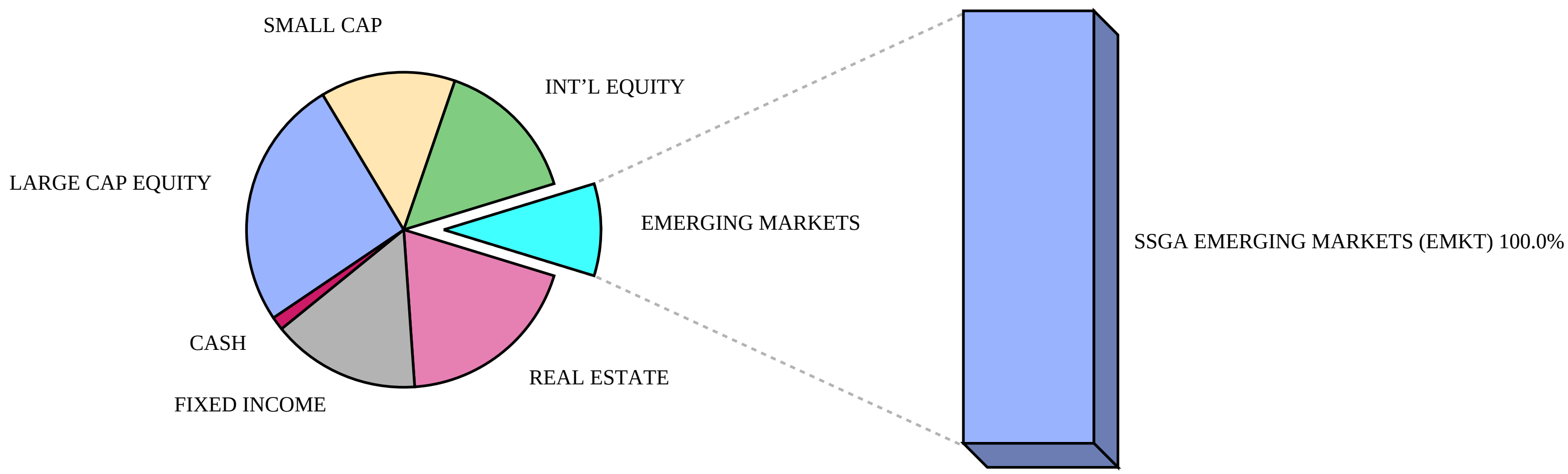


Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**27**
Quarters Below the Benchmark	**13**
Batting Average	**.675**

RATES OF RETURN

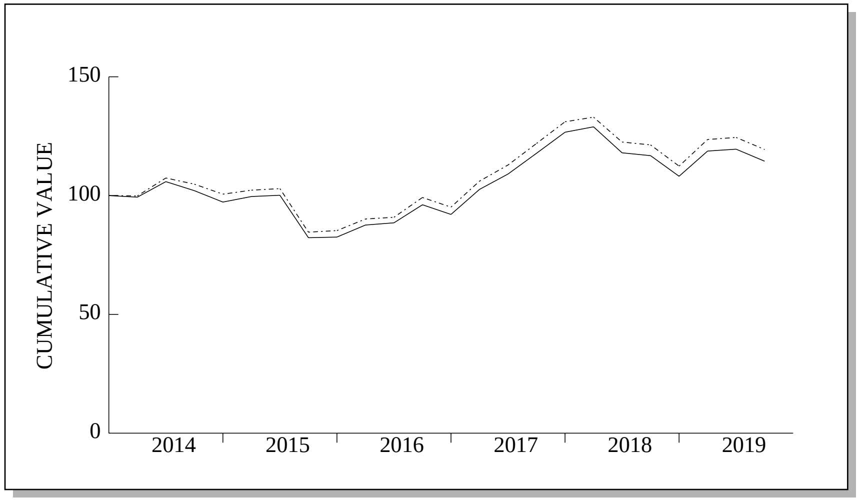
Date	Portfolio	Benchmark	Difference
12/09	5.0	2.3	2.7
3/10	1.4	2.1	-0.7
6/10	-14.0	-12.7	-1.3
9/10	17.3	16.5	0.8
12/10	9.5	8.1	1.4
3/11	4.6	4.0	0.6
6/11	0.5	0.6	-0.1
9/11	-22.2	-19.3	-2.9
12/11	3.7	3.3	0.4
3/12	14.2	12.3	1.9
6/12	-6.6	-7.2	0.6
9/12	7.1	7.7	-0.6
12/12	7.5	5.8	1.7
3/13	5.1	4.9	0.2
6/13	-1.0	-1.8	0.8
9/13	12.9	11.9	1.0
12/13	6.9	5.4	1.5
3/14	0.5	1.2	-0.7
6/14	3.7	4.8	-1.1
9/14	-5.8	-5.9	0.1
12/14	-3.3	-3.7	0.4
3/15	5.3	4.2	1.1
6/15	1.4	1.3	0.1
9/15	-10.4	-10.2	-0.2
12/15	4.7	4.7	0.0
3/16	-2.1	-2.9	0.8
6/16	-1.6	-1.2	-0.4
9/16	8.2	6.5	1.7
12/16	-2.1	-0.7	-1.4
3/17	9.9	7.4	2.5
6/17	8.2	6.4	1.8
9/17	7.9	5.5	2.4
12/17	4.2	4.3	-0.1
3/18	-0.3	-1.4	1.1
6/18	-0.9	-1.0	0.1
9/18	-1.3	1.4	-2.7
12/18	-12.3	-12.5	0.2
3/19	13.0	10.1	2.9
6/19	3.7	4.0	-0.3
9/19	-0.6	-1.0	0.4

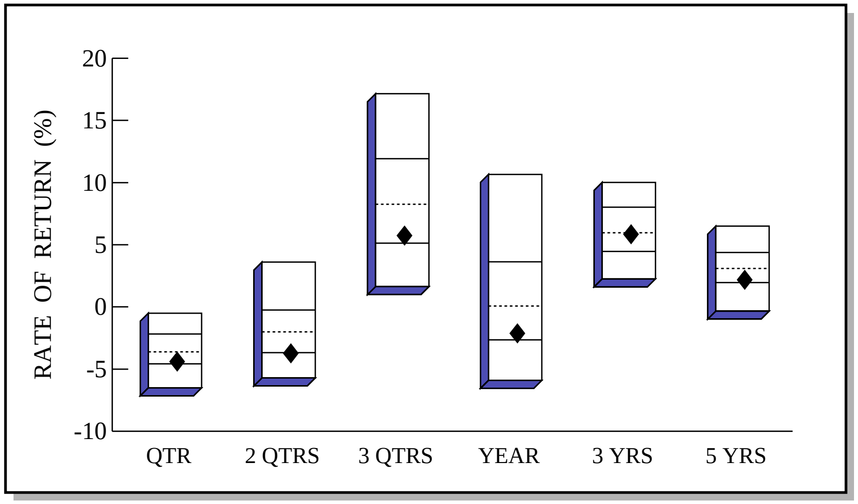
EMERGING MARKETS EQUITY MANAGER SUMMARY



		COMPONENT RETURNS AND RANKINGS					
MANAGER	**(UNIVERSE)**	**QTR**	**YTD**	**1 YEAR**	**3 YEARS**	**5 YEARS**	**MARKET VALUE**
SSGA EMERGING MARKETS	(Emerging Markets)	-4.3 (67)	5.9 (66)	-2.0 (72)	6.0 (50)	2.3 (67)	$247,393,031
Blended Emerging Markets Index		*-4.1 ----*	*6.2 ----*	*-1.6 ----*	*6.4 ----*	*2.6 ----*	*----*
TOTAL	**(Emerging Markets)**	**-4.3 (67)**	**5.9 (66)**	**-2.0 (72)**	**6.0 (50)**	**2.3 (67)**	**$247,393,031**
Blended Emerging Markets Index		*-4.1 ----*	*6.2 ----*	*-1.6 ----*	*6.4 ----*	*2.6 ----*	*----*

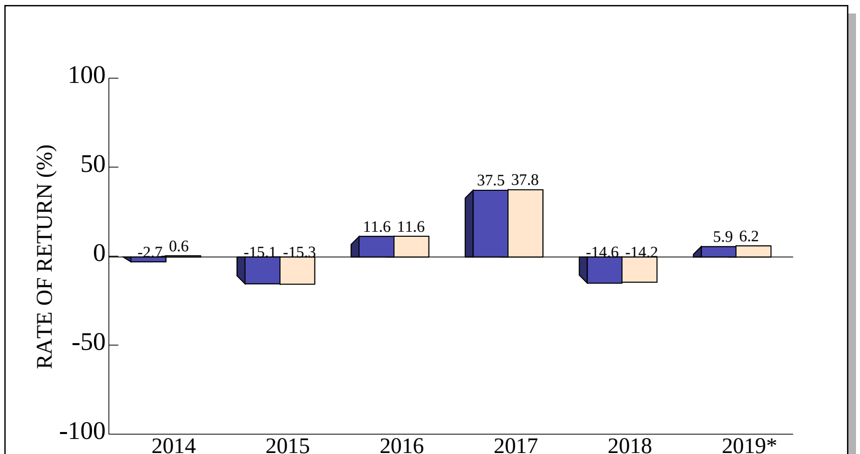
EMERGING MARKETS EQUITY RETURN COMPARISONS





Emerging Markets Universe

PORTFOLIO
EM INDEX



* Partial year

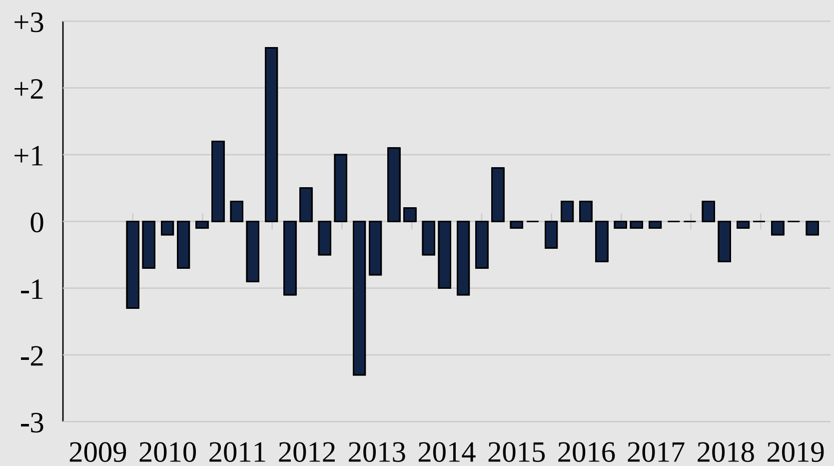
	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	-4.3	-3.6	5.9	-2.0	6.0	2.3
(RANK)	(67)	(71)	(66)	(72)	(50)	(67)
5TH %ILE	-0.5	3.6	17.1	10.7	10.0	6.5
25TH %ILE	-2.2	-0.2	11.9	3.6	8.0	4.4
MEDIAN	-3.6	-2.0	8.3	0.1	6.0	3.1
75TH %ILE	-4.6	-3.7	5.1	-2.7	4.5	2.0
95TH %ILE	-6.5	-5.7	1.6	-5.9	2.3	-0.3
EM Index	***-4.1***	***-3.4***	***6.2***	***-1.6***	***6.4***	***2.6***

Emerging Markets Universe

EMERGING MARKETS EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: BLENDED EMERGING MARKETS INDEX

VARIATION FROM BENCHMARK

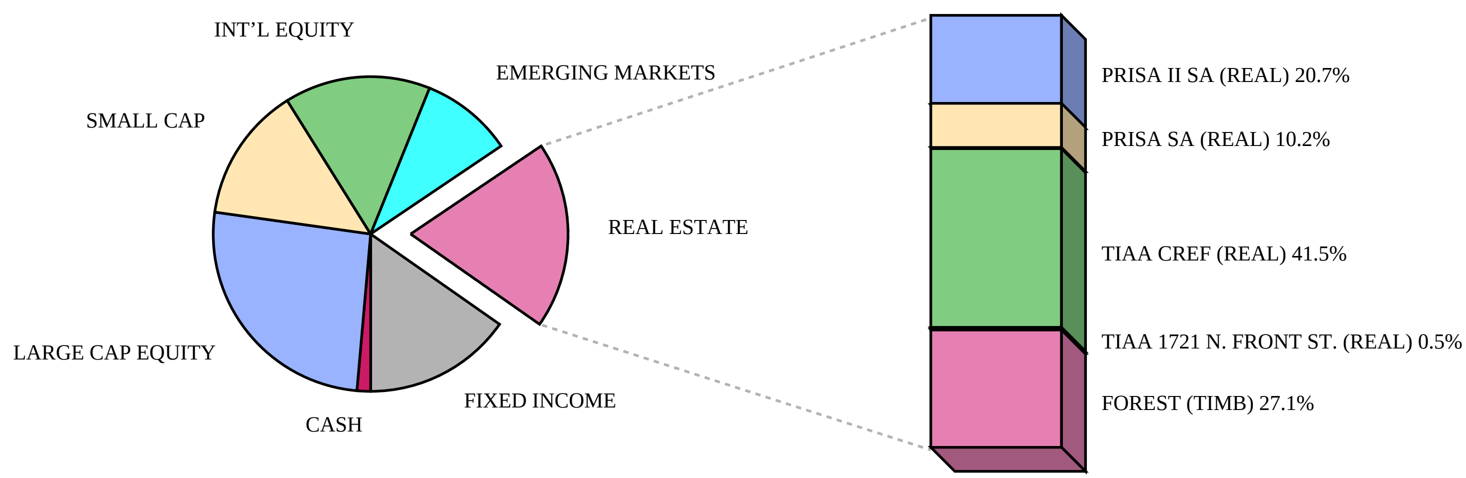


Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**16**
Quarters Below the Benchmark	**24**
Batting Average	**.400**

RATES OF RETURN

Date	Portfolio	Benchmark	Difference
12/09	8.8	10.1	-1.3
3/10	2.1	2.8	-0.7
6/10	-8.4	-8.2	-0.2
9/10	17.9	18.6	-0.7
12/10	7.2	7.3	-0.1
3/11	1.9	0.7	1.2
6/11	-1.2	-1.5	0.3
9/11	-23.4	-22.5	-0.9
12/11	5.7	3.1	2.6
3/12	13.8	14.9	-1.1
6/12	-8.4	-8.9	0.5
9/12	7.0	7.5	-0.5
12/12	6.6	5.6	1.0
3/13	-2.6	-0.3	-2.3
6/13	-8.1	-7.3	-0.8
9/13	5.8	4.7	1.1
12/13	2.2	2.0	0.2
3/14	-0.7	-0.2	-0.5
6/14	6.6	7.6	-1.0
9/14	-3.6	-2.5	-1.1
12/14	-4.7	-4.0	-0.7
3/15	2.4	1.6	0.8
6/15	0.6	0.7	-0.1
9/15	-17.8	-17.8	0.0
12/15	0.3	0.7	-0.4
3/16	6.1	5.8	0.3
6/16	1.1	0.8	0.3
9/16	8.6	9.2	-0.6
12/16	-4.2	-4.1	-0.1
3/17	11.4	11.5	-0.1
6/17	6.3	6.4	-0.1
9/17	8.0	8.0	0.0
12/17	7.5	7.5	0.0
3/18	1.8	1.5	0.3
6/18	-8.5	-7.9	-0.6
9/18	-1.0	-0.9	-0.1
12/18	-7.4	-7.4	0.0
3/19	9.8	10.0	-0.2
6/19	0.7	0.7	0.0
9/19	-4.3	-4.1	-0.2

REAL ESTATE MANAGER SUMMARY



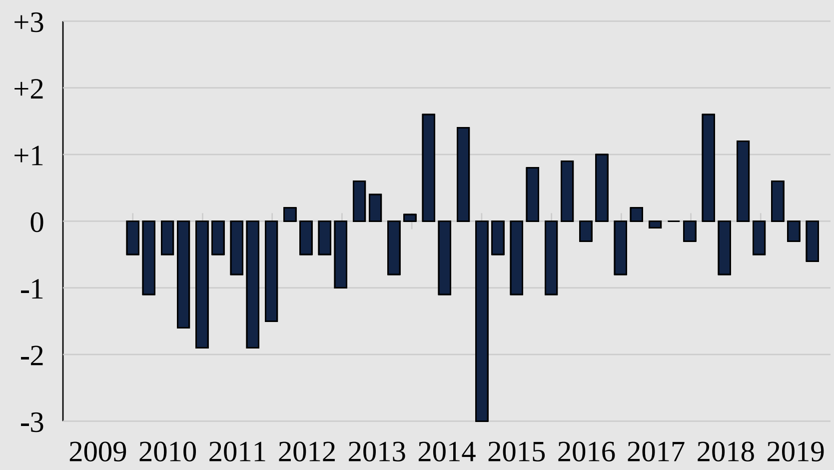
COMPONENT RETURNS AND RANKINGS

MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
PRISA II SA		1.7	----	5.3	----	6.8	----	8.6	----	10.8	----	$103,380,918
PRISA SA		1.5	----	4.9	----	6.9	----	7.9	----	9.8	----	$51,125,042
TIAA CREF		3.6	----	7.7	----	9.7	----	8.2	----	8.7	----	$207,667,082
NCREIF NFI-ODCE Index		*1.3*	*----*	*3.8*	*----*	*5.6*	*----*	*7.3*	*----*	*9.3*	*----*	*----*
TIAA 1721 N. FRONT ST.		1.1	----	2.9	----	-3.5	----	0.0	----	----	----	$2,336,497
NCREIF Property Index		*1.4*	*----*	*4.8*	*----*	*6.2*	*----*	*6.8*	*----*	*8.6*	*----*	*----*
FOREST		-4.1	----	-0.9	----	-1.8	----	3.7	----	4.7	----	$135,802,793
NCREIF Timber Index		*0.2*	*----*	*1.3*	*----*	*2.1*	*----*	*3.1*	*----*	*4.4*	*----*	*----*
TOTAL		**0.8**	----	**4.5**	----	**5.4**	----	**6.8**	----	**7.9**	----	**$500,312,332**
NCREIF Property Index		*1.4*	*----*	*4.8*	*----*	*6.2*	*----*	*6.8*	*----*	*8.6*	*----*	*----*

REAL ESTATE QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: NCREIF PROPERTY INDEX

VARIATION FROM BENCHMARK



Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**14**
Quarters Below the Benchmark	**26**
Batting Average	**.350**

RATES OF RETURN

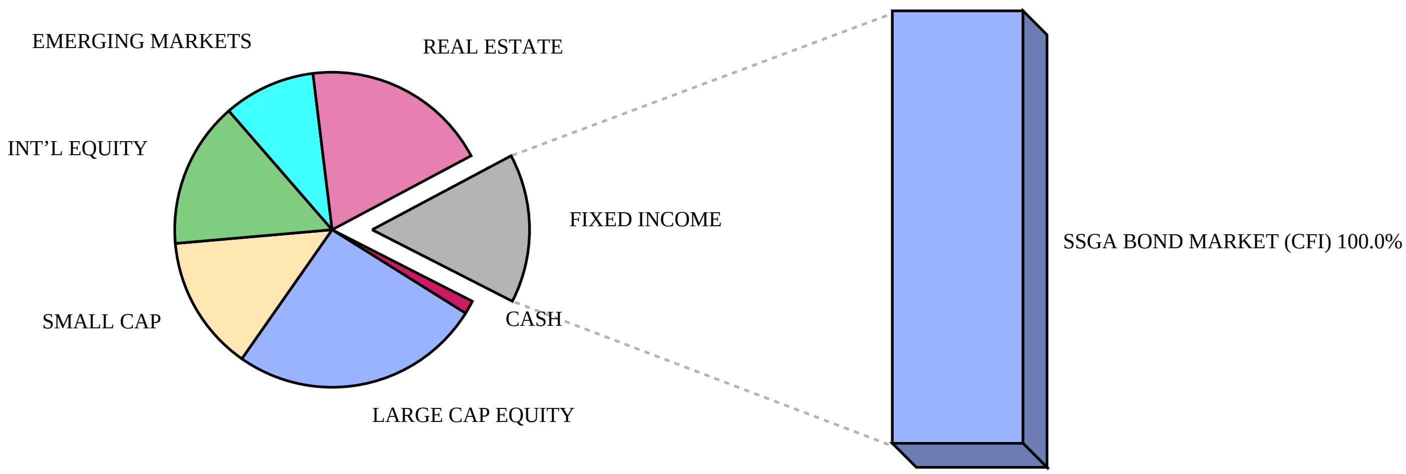
Date	Portfolio	Benchmark	Difference
12/09	-2.6	-2.1	-0.5
3/10	-0.3	0.8	-1.1
6/10	2.8	3.3	-0.5
9/10	2.3	3.9	-1.6
12/10	2.7	4.6	-1.9
3/11	2.9	3.4	-0.5
6/11	3.1	3.9	-0.8
9/11	1.4	3.3	-1.9
12/11	1.5	3.0	-1.5
3/12	2.8	2.6	0.2
6/12	2.2	2.7	-0.5
9/12	1.8	2.3	-0.5
12/12	1.5	2.5	-1.0
3/13	3.2	2.6	0.6
6/13	3.3	2.9	0.4
9/13	1.8	2.6	-0.8
12/13	2.6	2.5	0.1
3/14	4.3	2.7	1.6
6/14	1.8	2.9	-1.1
9/14	4.0	2.6	1.4
12/14	0.0	3.0	-3.0
3/15	3.1	3.6	-0.5
6/15	2.0	3.1	-1.1
9/15	3.9	3.1	0.8
12/15	1.8	2.9	-1.1
3/16	3.1	2.2	0.9
6/16	1.7	2.0	-0.3
9/16	2.8	1.8	1.0
12/16	0.9	1.7	-0.8
3/17	1.7	1.5	0.2
6/17	1.7	1.8	-0.1
9/17	1.7	1.7	0.0
12/17	1.5	1.8	-0.3
3/18	3.3	1.7	1.6
6/18	1.0	1.8	-0.8
9/18	2.9	1.7	1.2
12/18	0.9	1.4	-0.5
3/19	2.4	1.8	0.6
6/19	1.2	1.5	-0.3
9/19	0.8	1.4	-0.6

FIXED INCOME MANAGER

The Bloomberg Barclays US Aggregate Index returned 2.3% last quarter, while the Bloomberg Barclays Gov/Credit index was up 2.6%. For the trailing year they were up 10.3% and 11.3%, respectively.

SSgA (Broad Market)	The SSgA fixed income component returned 2.3% last quarter. Over the trailing five years, the fund rose 3.4% per annum, in line with the Bloomberg Barclays Aggregate Index. At year end, this investment was valued at $402,314,970.

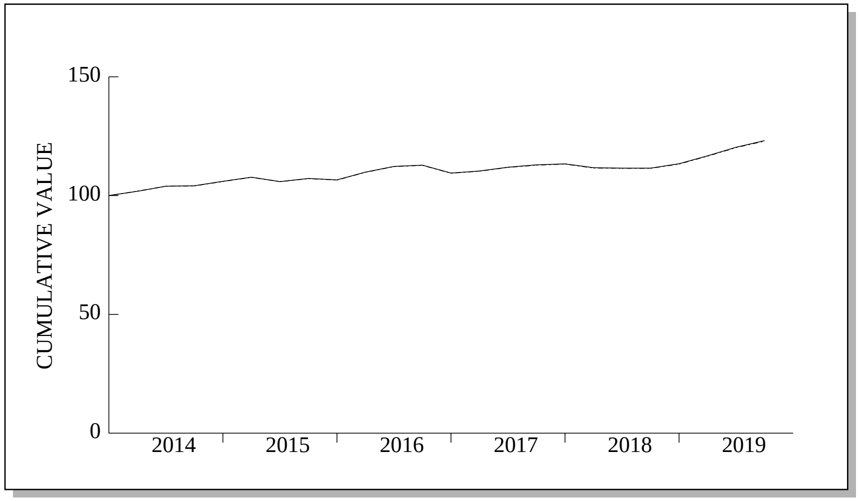
FIXED INCOME MANAGER SUMMARY

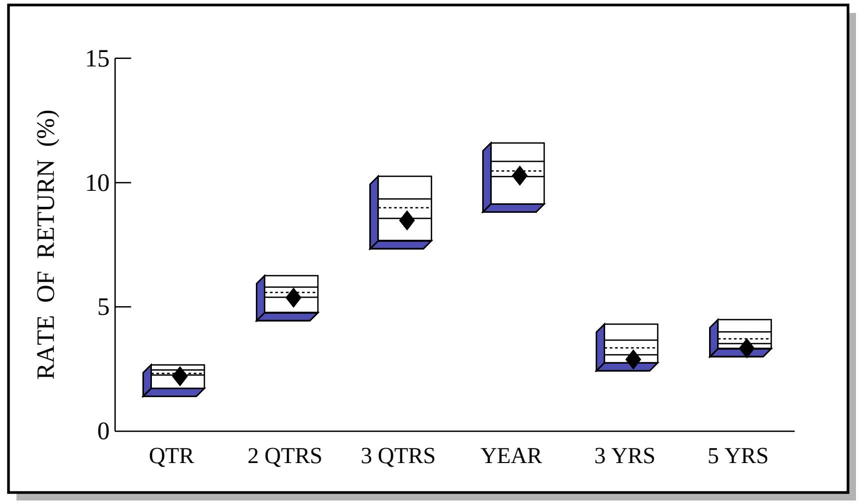


COMPONENT RETURNS AND RANKINGS

MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
SSGA BOND MARKET	(Core Fixed Income)	2.3	(66)	8.6	(78)	10.3	(66)	3.0	(84)	3.4	(86)	$402,314,970
Bloomberg Barclays Aggregate Index		*2.3*	*----*	*8.5*	*----*	*10.3*	*----*	*2.9*	*----*	*3.4*	*----*	*----*
TOTAL	**(Core Fixed Income)**	**2.3**	**(66)**	**8.6**	**(78)**	**10.3**	**(66)**	**3.0**	**(84)**	**3.4**	**(86)**	**$402,314,970**
Bloomberg Barclays Aggregate Index		*2.3*	*----*	*8.5*	*----*	*10.3*	*----*	*2.9*	*----*	*3.4*	*----*	*----*

FIXED INCOME RETURN COMPARISONS

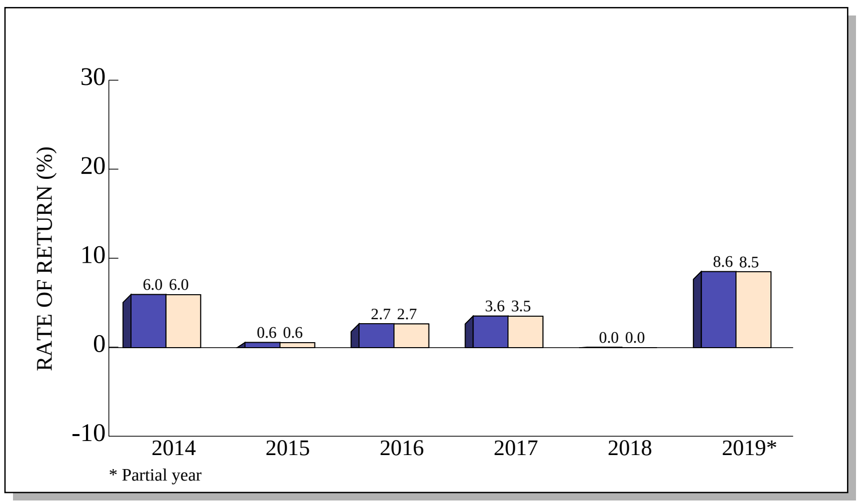




Core Fixed Income Universe

PORTFOLIO

AGGREGATE INDEX



* Partial year

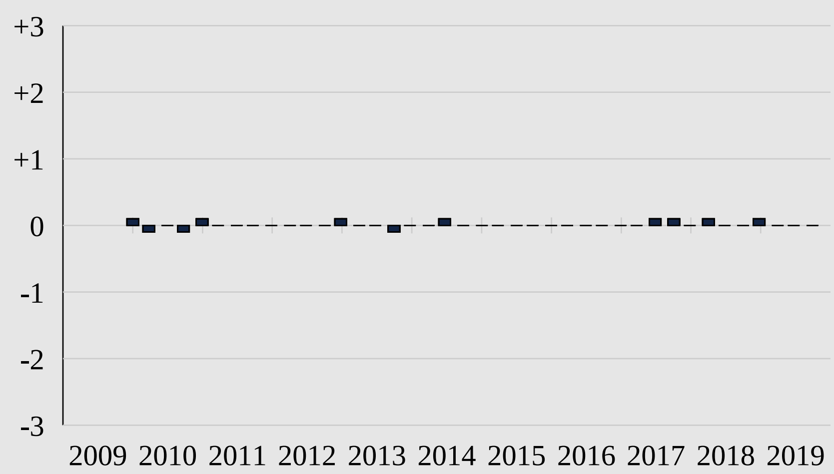
					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	2.3	5.4	8.6	10.3	3.0	3.4
(RANK)	(66)	(66)	(78)	(66)	(84)	(86)
5TH %ILE	2.7	6.3	10.3	11.6	4.3	4.5
25TH %ILE	2.5	5.8	9.3	10.9	3.7	4.0
MEDIAN	2.3	5.6	9.0	10.5	3.4	3.7
75TH %ILE	2.3	5.4	8.6	10.2	3.1	3.5
95TH %ILE	1.7	4.8	7.7	9.1	2.8	3.3
Agg	***2.3***	***5.4***	***8.5***	***10.3***	***2.9***	***3.4***

Core Fixed Income Universe

FIXED INCOME QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: BLOOMBERG BARCLAYS AGGREGATE INDEX

VARIATION FROM BENCHMARK

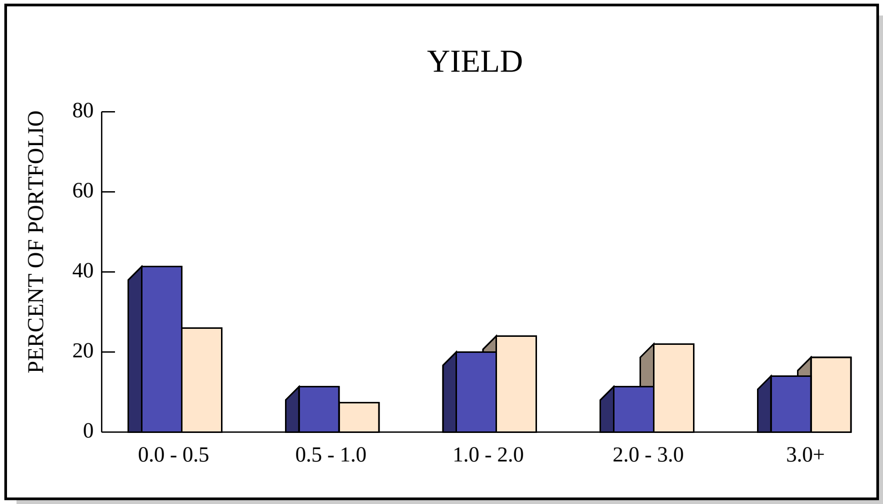


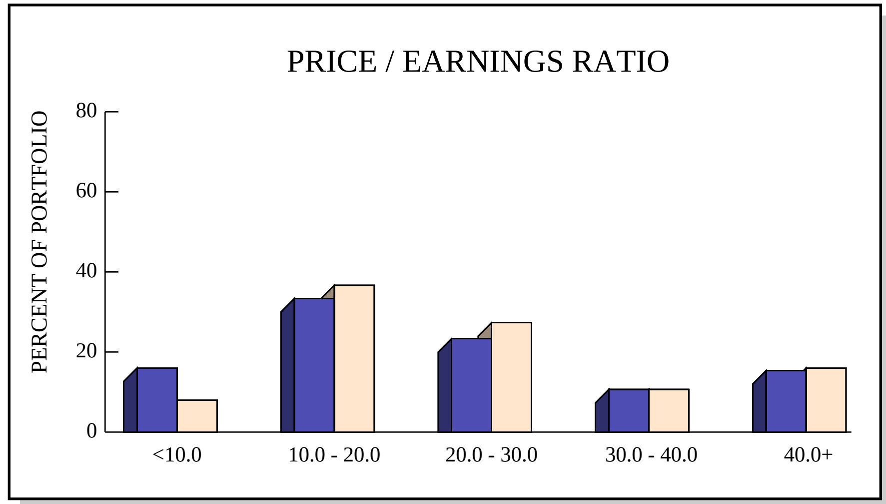
Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**37**
Quarters Below the Benchmark	**3**
Batting Average	**.925**

RATES OF RETURN

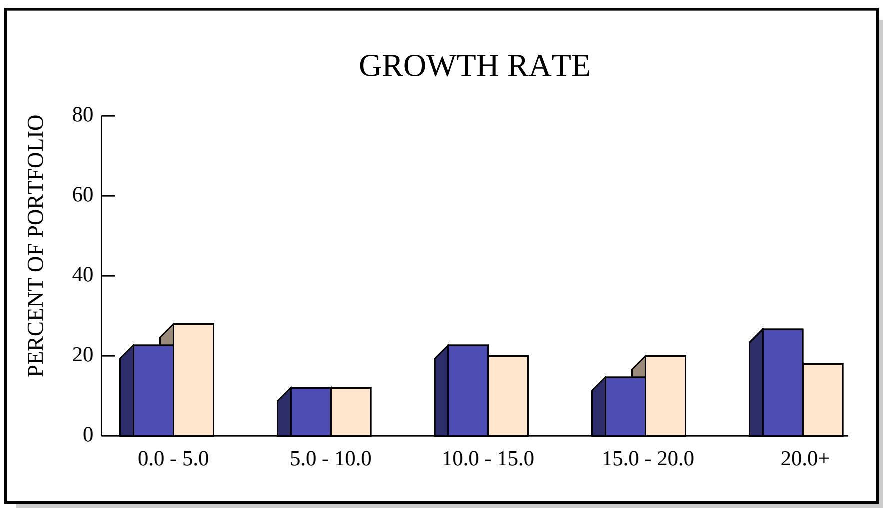
Date	Portfolio	Benchmark	Difference
12/09	0.3	0.2	0.1
3/10	1.7	1.8	-0.1
6/10	3.5	3.5	0.0
9/10	2.4	2.5	-0.1
12/10	-1.2	-1.3	0.1
3/11	0.4	0.4	0.0
6/11	2.3	2.3	0.0
9/11	3.8	3.8	0.0
12/11	1.1	1.1	0.0
3/12	0.3	0.3	0.0
6/12	2.1	2.1	0.0
9/12	1.6	1.6	0.0
12/12	0.3	0.2	0.1
3/13	-0.1	-0.1	0.0
6/13	-2.3	-2.3	0.0
9/13	0.5	0.6	-0.1
12/13	-0.1	-0.1	0.0
3/14	1.8	1.8	0.0
6/14	2.1	2.0	0.1
9/14	0.2	0.2	0.0
12/14	1.8	1.8	0.0
3/15	1.6	1.6	0.0
6/15	-1.7	-1.7	0.0
9/15	1.2	1.2	0.0
12/15	-0.6	-0.6	0.0
3/16	3.0	3.0	0.0
6/16	2.2	2.2	0.0
9/16	0.5	0.5	0.0
12/16	-3.0	-3.0	0.0
3/17	0.8	0.8	0.0
6/17	1.5	1.4	0.1
9/17	0.9	0.8	0.1
12/17	0.4	0.4	0.0
3/18	-1.4	-1.5	0.1
6/18	-0.2	-0.2	0.0
9/18	0.0	0.0	0.0
12/18	1.7	1.6	0.1
3/19	2.9	2.9	0.0
6/19	3.1	3.1	0.0
9/19	2.3	2.3	0.0

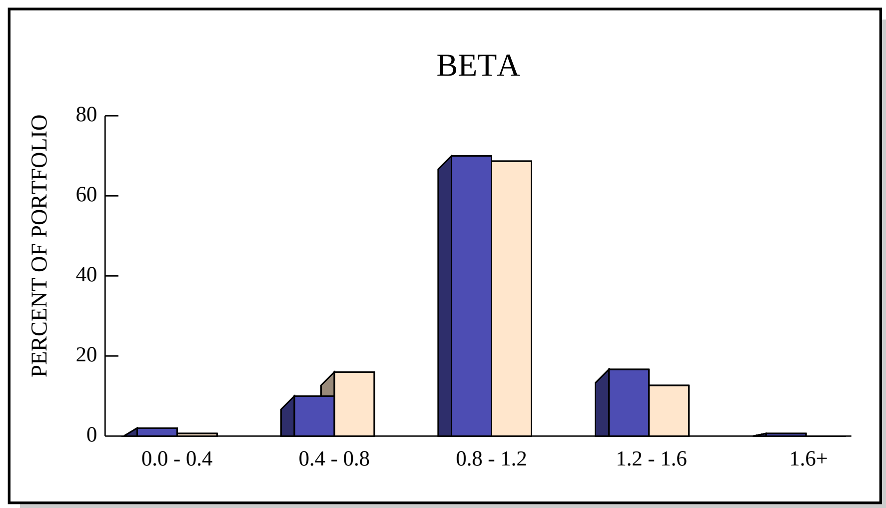
STOCK CHARACTERISTICS



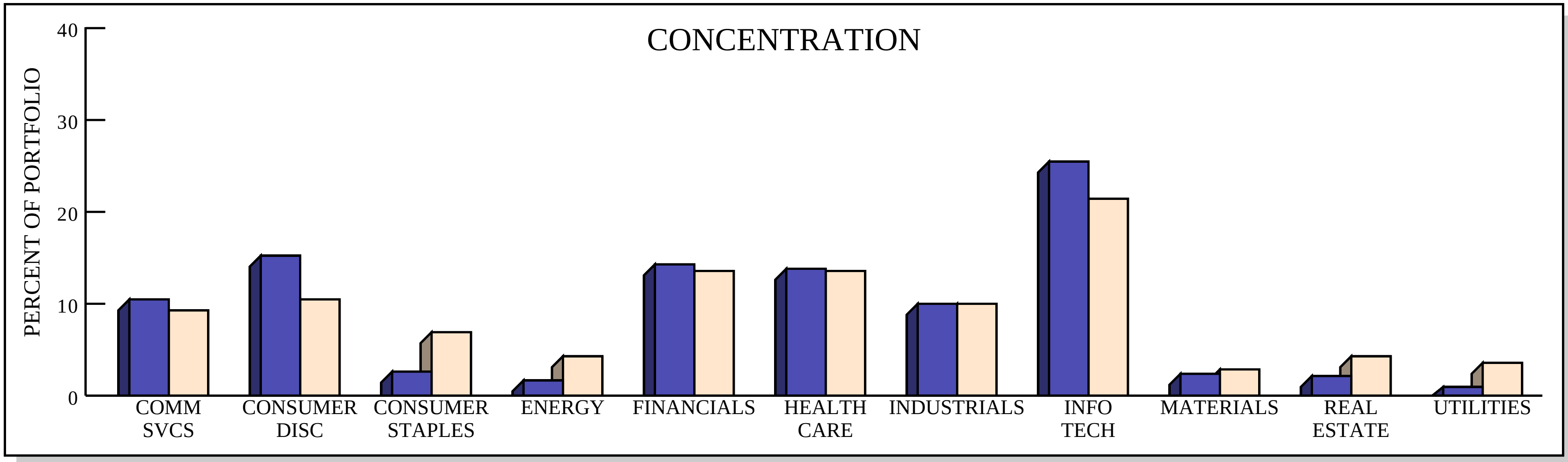


	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	2,637	1.4%	15.1%	23.4	1.01
RUSSELL 3000	3,005	1.8%	12.0%	26.3	0.98

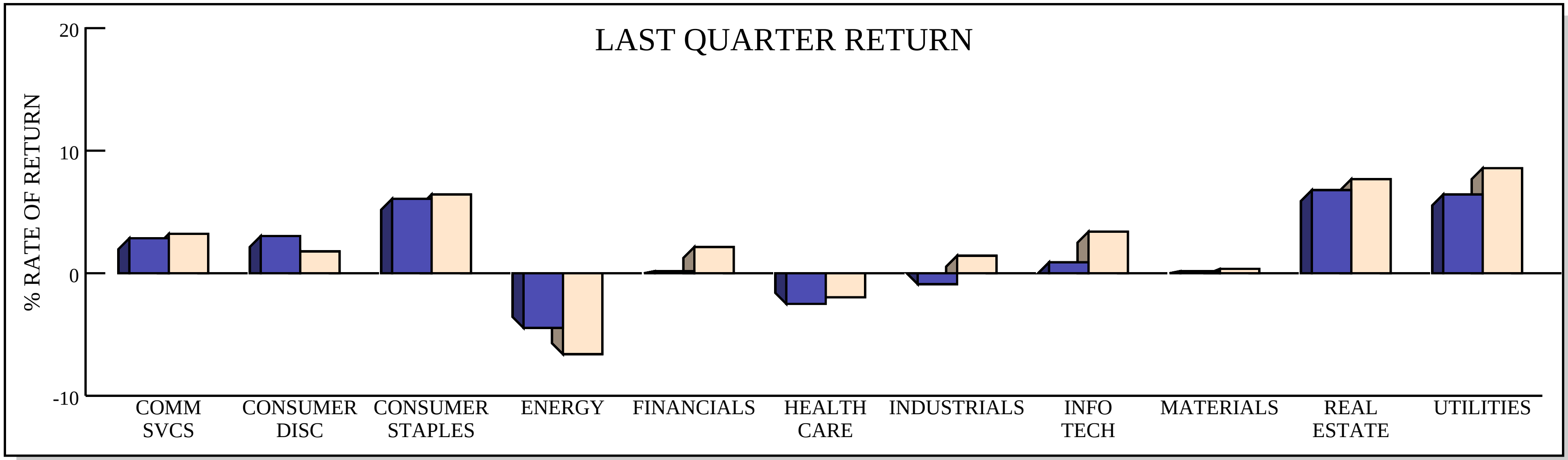




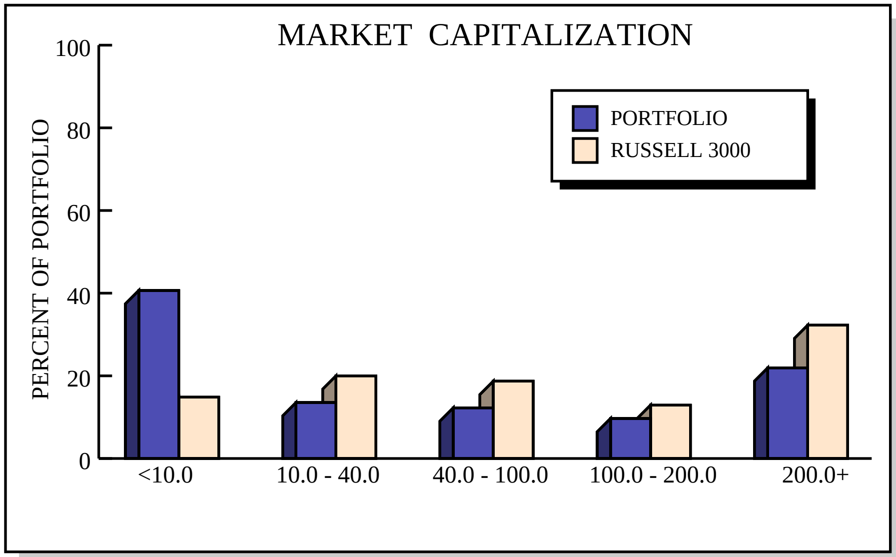
STOCK INDUSTRY ANALYSIS

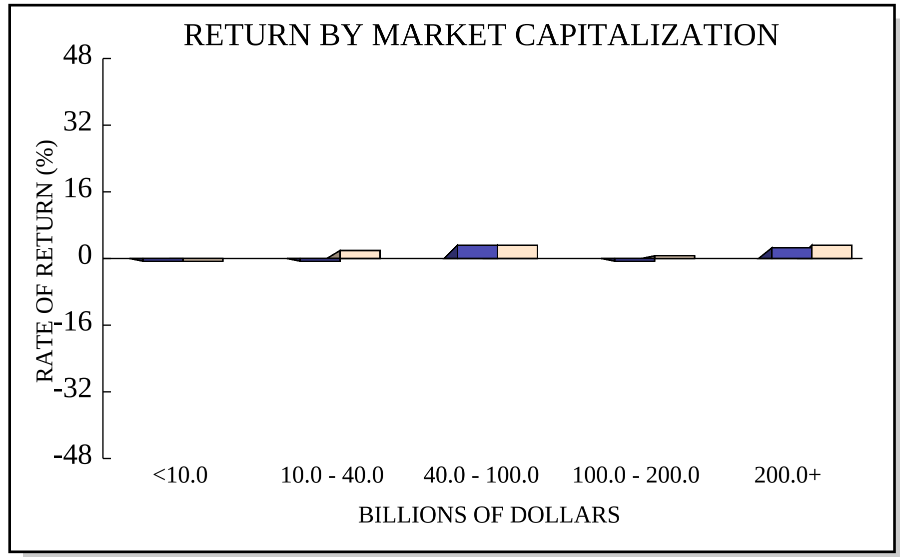


PORTFOLIO RUSSELL 3000



TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	$ 41,988,867	4.05%	4.1%	Information Technology	$ 1061.6 B
2	ALPHABET INC-CL C	29,710,687	2.87%	12.8%	Communication Services	423.4 B
3	FACEBOOK INC-CLASS A	24,215,319	2.34%	-7.7%	Communication Services	428.4 B
4	VISA INC-CLASS A SHARES	20,283,075	1.96%	-0.8%	Information Technology	297.1 B
5	MASTERCARD INC - A	15,688,328	1.51%	2.8%	Information Technology	272.4 B
6	ORACLE CORP	15,492,981	1.50%	-3.0%	Information Technology	180.6 B
7	ZOETIS INC	14,700,623	1.42%	9.9%	Health Care	59.5 B
8	ADOBE INC	13,111,101	1.27%	-6.2%	Information Technology	133.7 B
9	AMAZON.COM INC	12,661,728	1.22%	-8.3%	Consumer Discretionary	858.7 B
10	BERKSHIRE HATHAWAY INC-CL B	12,099,484	1.17%	-2.4%	Financials	288.4 B

Domestic Industry Sector Allocations
(Percent of Invested Equity)
As of September 30, 2019

	Comm Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities
Eagle	28.8	17.3	0.0	0.0	30.5	2.7	7.0	13.8	0.0	0.0	0.0
LSV Large Cap	7.4	11.0	5.7	3.7	17.7	15.0	12.5	19.5	5.0	1.5	1.0
Russell 1000 Value	8.2	6.1	9.2	8.4	23.6	12.4	9.4	6.0	4.3	5.5	7.0
Federated	6.4	13.2	1.1	0.0	4.3	23.8	12.4	32.8	2.8	3.2	0.0
Polen	17.5	21.8	0.0	0.0	2.1	10.2	0.0	48.5	0.0	0.0	0.0
Russell 1000 Growth	11.4	14.4	4.9	0.3	3.2	14.2	10.0	37.6	1.4	2.6	0.0
AMI	0.0	8.3	13.6	1.5	6.0	25.1	13.5	27.7	4.2	0.0	0.0
Copeland	3.9	11.0	6.8	3.9	15.3	13.5	15.7	13.5	3.3	8.3	4.7
Emerald	2.9	20.7	3.9	1.7	8.9	28.2	15.4	16.4	0.6	1.3	0.0
Russell 2000 Growth	2.4	12.2	3.5	0.6	6.0	27.4	19.9	18.1	3.2	4.9	1.8
LSV Small Cap	2.0	12.7	1.1	3.7	23.0	11.1	19.5	12.9	6.6	6.4	0.9
Smith, Graham & Co	0.0	17.2	0.6	1.8	22.0	13.4	14.3	25.9	2.1	1.4	1.3
Russell 2000 Value	2.4	9.9	2.6	6.0	30.5	4.9	13.0	8.3	4.5	11.5	6.5
S&P 500	10.4	10.1	7.6	4.5	12.9	13.7	9.3	21.9	2.7	3.2	3.6

Allocations may not total to 100% due to rounding.

International Industry Sector Allocations

As of September 30, 2019

	Comm Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities	Cash
HGK	**2.5**	**22.2**	**3.7**	**2.6**	**10.9**	**3.1**	**29.2**	**12.8**	**0.0**	**5.4**	**3.9**	**3.5**
Hardman Johnston	**4.6**	**19.9**	**2.1**	**0.0**	**11.8**	**17.0**	**26.4**	**18.2**	**0.0**	**0.0**	**0.0**	**---**
S&P Developed Ex US BMI	**5.1**	**11.1**	**10.1**	**5.6**	**18.2**	**10.1**	**15.5**	**8.7**	**7.4**	**4.7**	**3.5**	**---**

Allocations may not total to 100% due to rounding. Sector weights for international equity portfolios are provided by each respective manager and may differ slightly from custodian accounting.

APPENDIX - MAJOR MARKET INDEX RETURNS

Economic Data	Style	QTR	YTD	1 Year	3 years	5 Years
Consumer Price Index	Economic Data	0.2	2.2	1.7	2.1	1.5
Domestic Equity	**Style**	**QTR**	**YTD**	**1 Year**	**3 years**	**5 Years**
Russell 3000	Broad Equity	1.2	20.1	2.9	12.8	10.4
S&P 500	Large Cap Core	1.7	20.6	4.3	13.4	10.8
Russell 1000	Large Cap	1.4	20.5	3.9	13.2	10.6
Russell 1000 Growth	Large Cap Growth	1.5	23.3	3.7	16.9	13.4
Russell 1000 Value	Large Cap Value	1.4	17.8	4.0	9.4	7.8
Russell Mid Cap	Midcap	0.5	21.9	3.2	10.7	9.1
Russell Mid Cap Growth	Midcap Growth	-0.7	25.2	5.2	14.5	11.1
Russell Mid Cap Value	Midcap Value	1.2	19.5	1.6	7.8	7.5
Russell 2000	Small Cap	-2.4	14.2	-8.9	8.2	8.2
Russell 2000 Growth	Small Cap Growth	-4.2	15.3	-9.7	9.8	9.1
Russell 2000 Value	Small Cap Value	-0.6	12.8	-8.3	6.5	7.2
International Equity	**Style**	**QTR**	**YTD**	**1 Year**	**3 years**	**5 Years**
MSCI All Country World Ex US	Foreign Equity	-1.7	12.1	-0.7	6.8	3.4
MSCI EAFE	Developed Markets Equity	-1.0	13.3	-0.8	7.0	3.8
MSCI EAFE Growth	Developed Markets Growth	-0.4	18.4	2.6	8.2	5.9
MSCI EAFE Value	Developed Markets Value	-1.6	8.3	-4.3	5.7	1.6
MSCI Emerging Markets	Emerging Markets Equity	-4.1	6.2	-1.6	6.4	2.7
Domestic Fixed Income	**Style**	**QTR**	**YTD**	**1 Year**	**3 years**	**5 Years**
Bloomberg Barclays Aggregate Index	Core Fixed Income	2.3	8.5	10.3	2.9	3.4
Bloomberg Barclays Capital Gov't Bond	Treasuries	2.4	7.7	10.4	2.3	2.9
Bloomberg Barclays Capital Credit Bond	Corporate Bonds	3.0	12.6	12.6	4.3	4.5
Intermediate Aggregate	Core Intermediate	1.4	6.2	8.1	2.4	2.7
ML/BoA 1-3 Year Treasury	Short Term Treasuries	0.6	3.0	4.4	1.5	1.3
Bloomberg Barclays Capital High Yield	High Yield Bonds	1.3	11.4	6.4	6.1	5.4
Alternative Assets	**Style**	**QTR**	**YTD**	**1 Year**	**3 years**	**5 Years**
Bloomberg Barclays Global Treasury Ex US	International Treasuries	0.4	5.4	7.5	0.5	1.4
NCREIF NFI-ODCE Index	Real Estate	1.3	3.8	5.6	7.3	9.3
HFRI FOF Composite	Hedge Funds	-0.9	5.8	0.6	3.4	2.1

APPENDIX - DISCLOSURES

* The shadow index is a customized index that matches your portfolio's asset allocation on a monthly basis.
  This index was calculated using the following asset classes and corresponding benchmarks:

Large Cap Equity	S&P 500
Small Cap Equity	Russell 2000
International Equity	Blended International Index
Emerging Markets Equity	Blended Emerging Markets Index
Real Estate	NCREIF Property Index
Fixed Income	Bloomberg Barclays Aggregate Index
Cash & Equivalent	90 Day T Bill

* The Blended International Index utilizes the returns of the S&P Developed BMI through April 30, 2015 and the MSCI EAFE Index thereafter.
* The Blended Emerging Markets Index utizes the returns of the S&P Emerging BMI through April 30, 2015 and the MSCI Emerging Markets Index thereafter.
* Dahab Associates utilizes data provided by a custodian and other vendors it believes are reliable. However, it cannot assume responsibility for errors and omissions therefrom.
* All returns were calculated on a time-weighted basis, and are gross of fees unless otherwise noted.
* All returns for periods greater than one year are annualized.
* Dahab Associates uses the modified duration measure to present average duration.
* All values are in US dollars.

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
REAL ESTATE
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.

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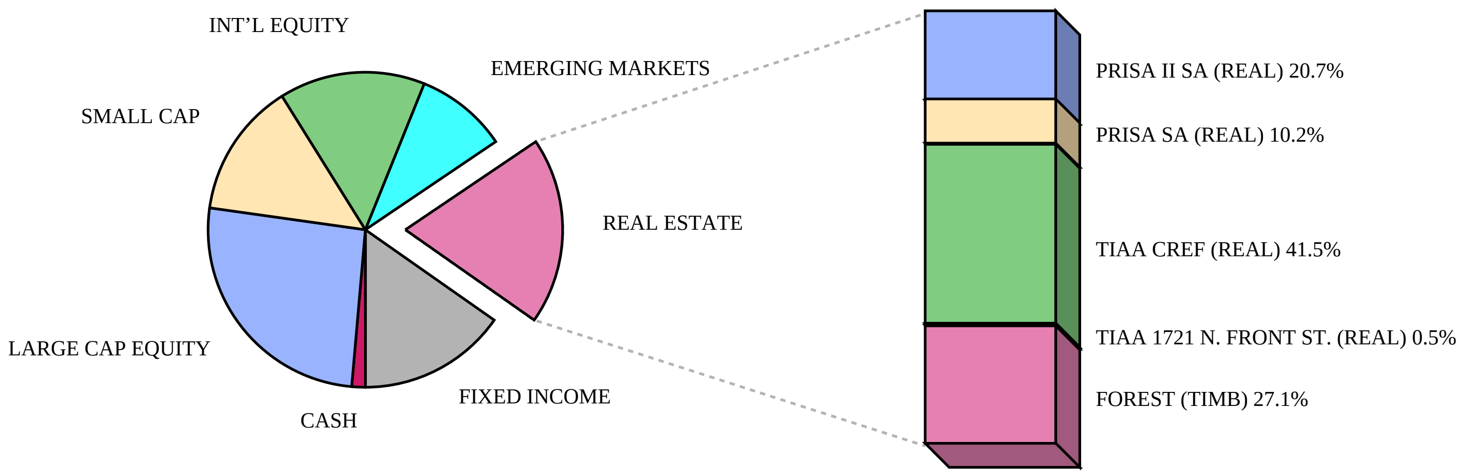
REAL ESTATE MANAGER SUMMARY



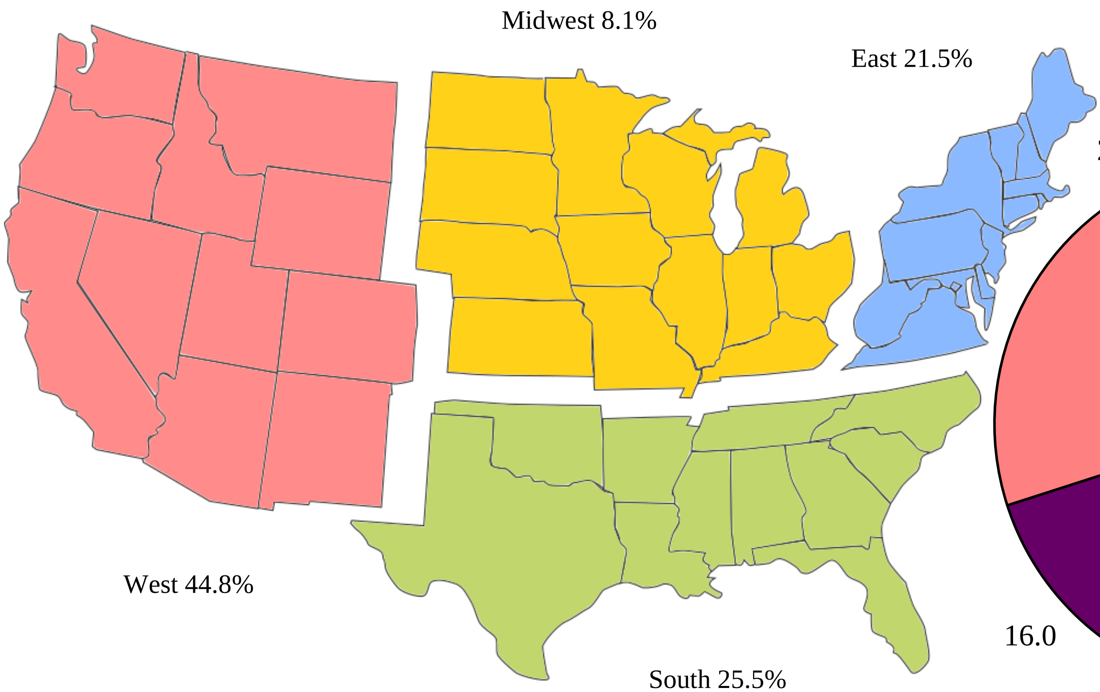
COMPONENT RETURNS AND RANKINGS

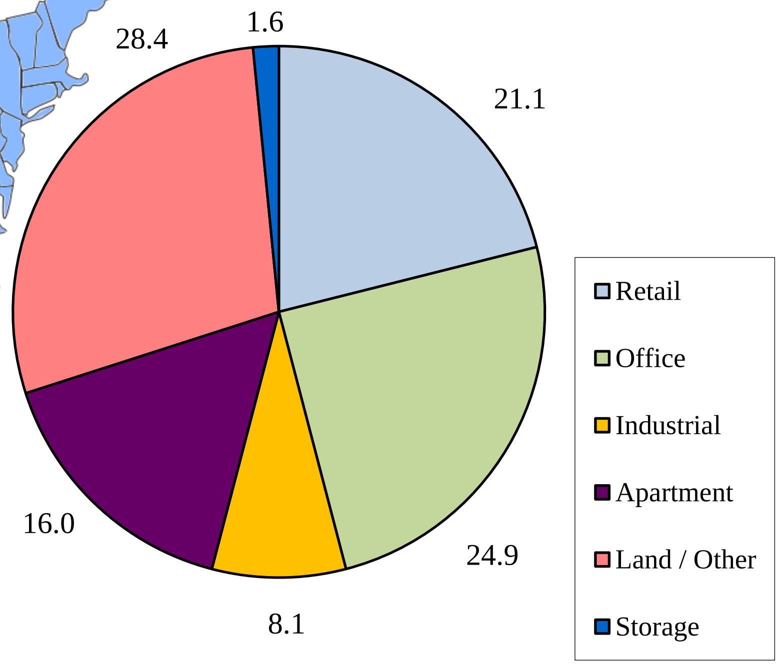
MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
PRISA II SA		1.7	----	5.3	----	6.8	----	8.6	----	10.8	----	$103,380,918
PRISA SA		1.5	----	4.9	----	6.9	----	7.9	----	9.8	----	$51,125,042
TIAA CREF		3.6	----	7.7	----	9.7	----	8.2	----	8.7	----	$207,667,082
NCREIF NFI-ODCE Index		*1.3*	*----*	*3.8*	*----*	*5.6*	*----*	*7.3*	*----*	*9.3*	*----*	*----*
TIAA 1721 N. FRONT ST.		1.1	----	2.9	----	-3.5	----	0.0	----	----	----	$2,336,497
NCREIF Property Index		*1.4*	*----*	*4.8*	*----*	*6.2*	*----*	*6.8*	*----*	*8.6*	*----*	*----*
FOREST		-4.1	----	-0.9	----	-1.8	----	3.7	----	4.7	----	$135,802,793
NCREIF Timber Index		*0.2*	*----*	*1.3*	*----*	*2.1*	*----*	*3.1*	*----*	*4.4*	*----*	*----*
TOTAL		**0.8**	----	**4.5**	----	**5.4**	----	**6.8**	----	**7.9**	----	**$500,312,332**
NCREIF Property Index		*1.4*	*----*	*4.8*	*----*	*6.2*	*----*	*6.8*	*----*	*8.6*	*----*	*----*

PMRS Real Estate Commitment

As of September 30th, the Pennsylvania Municipal Retirement System's aggregate real estate portfolio was valued at $500,312,332, representing 19.2% of the total System's assets. TIAA distributed $2.5 million in July. For reference, the NCREIF Property Index returned 1.4% in the third quarter. Over the trailing year, that index returned 6.2%, and an annualized 8.6% for the last five years. Over the same time frames, the Bloomberg Barclays Aggregate Index returned 2.3%, 10.3%, and an annualized 3.4%, respectively.

Property Type/Geographical Distribution





PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM REAL ESTATE MANAGERS

PRISA SA

PRISA is an open-end, commingled, broadly diversified, core real estate equity fund invested in completed, income producing and well-leased properties.

Investment Return

On September 30th, 2019, the Pennsylvania Municipal Retirement System's Prudential PRISA SA portfolio was valued at $51,125,042, representing an increase of $656,736 from the June quarter's ending value of $50,468,306. Last quarter, the Fund posted withdrawals totaling $122,870, which partially offset the portfolio's net investment return of $779,606. Since there were no income receipts for the third quarter, the portfolio's net investment return figure was the product of net realized and unrealized capital gains totaling $779,606.

Property Type/Geographical Distribution

The office sector made up 35.8% of the PRISA SA portfolio. Industrial and retail properties made up 16.3% and 15.1% respectively. Apartments comprised 25.0% of the portfolio’s value, storage was 6.0%, and the remaining 1.8% was in other sectors or vacant land.

Geographically, PRISA’s portfolio was mostly situated in the East and West, whose percentages were 38.7% and 35.7%. Another 18.0% of the portfolio was situated in the South, while the remaining 7.6% resided in the Midwest.

Account Performance

During the third quarter, the Prudential PRISA SA account returned 1.5%, which was 0.2% above the NCREIF NFI-ODCE Index's return of 1.3%. Over the trailing year, the portfolio returned 6.9%, which was 1.3% above the benchmark's 5.6% return. Since December 1990, the Prudential PRISA SA portfolio returned 7.9% per annum, while the NCREIF NFI-ODCE Index returned an annualized 7.6% over the same time frame.

PRISA II

Investment Return

As of September 30th, 2019, the Pennsylvania Municipal Retirement System's Prudential PRISA II SA portfolio was valued at $103,380,918, which represented an increase of $1,465,022 from the June quarter's ending value of $101,915,896. Last quarter, the portfolio recorded a net withdrawal of $282,675, which only partially offset the fund's net investment return of $1,747,697. In the absence of income receipts for the quarter, the portfolio's net investment return was the product of $1,747,697 in realized and unrealized capital gains.

Property Type/Geographical Distribution

PRISA II, like PRISA, situates the largest component of its portfolio in office properties: 36.1% in this case. Retail and apartments also comprised significant portions, with the former at 19.0%, and the latter at 33.6%. Storage made up 4.6%. Investment in land was 5.1%, and industrial properties represented 1.6%.

Geographically, 32.4% of this portfolio was situated in the West, 42.9% resided in the East, while 22.5% was in the South. The remaining 2.2% was located in the Midwest.

Account Performance

In the third quarter, the Prudential PRISA II SA account gained 1.7%, which was 0.4% greater than the NCREIF NFI-ODCE Index's return of 1.3%. Over the trailing twelve-month period, the account returned 6.8%, which was 1.2% greater than the benchmark's 5.6% performance. Since June 2007, the Prudential PRISA II SA portfolio returned 4.8% annualized, while the NCREIF NFI-ODCE Index returned an annualized 5.6% over the same time frame.

FOREST INVESTMENT ADVISORS

The Forest Investment Advisors account is a discretionary account invested in land holdings mostly in the South, with lesser representation in the East and West.

Investment Return

As of September 30th, 2019, the Pennsylvania Municipal Retirement System's Forest Investment Associates Keystone Forest Investments portfolio was valued at $135,802,793, a decrease of $5,802,163 relative to the June quarter's ending value of $141,604,956. Last quarter, the Fund recorded no net contributions or withdrawals and posted a net investment loss for the period of $5,802,163. Since there were no income receipts during the third quarter, the portfolio's net investment losses were solely the result of capital losses (realized and unrealized).

Property Type/Geographical Distribution

The Forest fund held 48.1% of its assets in the South, 22.5% in the East, and 29.9% in the West. The Forest Investment Advisors account was solely invested in Timberland.

Forest held investments in Bear Island (Virginia), Fitz-Weller (New York), Carter-Pasture (Texas), Dupont (Georgia), Bennetts Creek (North Carolina), Black River (South Carolina), Coquille (Oregon), Bucktails (Pennsylvania), and North River (Washington).

Account Performance

During the third quarter, the Forest Investment Associates Keystone Forest Investments portfolio lost 4.1%, which was 4.3% less than the NCREIF Timber Index's return of 0.2%. Over the trailing year, the account returned -1.8%, which was 3.9% less than the benchmark's 2.1% return. Since March 1999, the portfolio returned 5.0% per annum, while the NCREIF Timber Index returned an annualized 6.2% over the same period.

TIAA-CREF

TIAA CREF is a discretionary account with investments in office, retail, industrial, and multi-family properties. The account holds eight properties: The Shoppes at Monarch Lakes is a retail shopping center in Miramar, Florida, and Des Peres Corner, another retail shopping center, is located in Des Peres, Missouri. The SR Ranch Shopping Center and Copley Corporate Center are located in San Diego, California. Industrial properties include Republic Distribution Center in Pasadena, Texas and the 526 Rt. 46 property is located in Teterboro, New Jersey. Stream Uptown is an apartment building in Seattle, Washington. The portfolio's most recent acquisition, the Fairway Center, is located in Connecticut.

TIAA CREF is a non-leveraged investment, whereas portfolios in the NCREIF NFD-ODCE index do utilize leverage.

Investment Return

On September 30th, 2019, the Pennsylvania Municipal Retirement System's TIAA CREF portfolio was valued at $207,667,082, representing an increase of $4,293,665 from the June quarter's ending value of $203,373,417. Last quarter, the Fund posted withdrawals totaling $2,499,627, which offset the portfolio's net investment return of $6,793,292. Income receipts totaling $2,840,273 plus net realized and unrealized capital gains of $3,953,019 combined to produce the portfolio's net investment return.

Property Type/Geographical Distribution

As of the quarter end, the TIAA CREF portfolio was situated mostly in the West, which comprised 63.5%. The Midwest represented 16.6%, while the South made up 14.4% and the remaining 5.4% was in the East.

Retail space was the largest sector, making up 37.6%. Offices comprised 32.0%, while 15.6% was in apartments and 14.8% was industrial.

Account Performance

For the third quarter, the TIAA CREF account gained 3.6%, which was 2.3% greater than the NCREIF NFI-ODCE Index's return of 1.3%. Over the trailing twelve-month period, the account returned 9.7%, which was 4.1% above the benchmark's 5.6% performance. Since June 2008, the portfolio returned 3.9% per annum, while the NCREIF NFI-ODCE Index returned an annualized 5.4% over the same period.

TIAA NORTH FRONT STREET

The office building at 1721 N. Front St. in Harrisburg, PA was purchased in 2016.

Investment Return

On September 30th, 2019, the Pennsylvania Municipal Retirement System's TIAA CREF 1721 North Front Street portfolio was valued at $2,336,497, representing a decrease of $101,205 relative to the June ending value of $2,437,702. Over the last three months, the portfolio recorded $114,207 in net withdrawals, which overshadowed the fund's net investment return of $13,002. In the absence of income receipts during the quarter, the portfolio's net investment return figure was the result of $13,002 in realized and unrealized capital gains.

Account Performance

For the third quarter, the TIAA CREF 1721 North Front Street portfolio returned 1.1%, which was 0.3% less than the NCREIF Property Index's return of 1.4%. Over the trailing twelve-month period, the account returned -3.5%, which was 9.7% below the benchmark's 6.2% return. Since June 2016, the portfolio returned 0.0% on an annualized basis, while the NCREIF Property Index returned an annualized 6.8% over the same period.

Real Estate Investor Report
TIAA CREF (Excluding N. Front Street)

Net IRR Since Inception		**7.02%**	**As of**
Market Value	**$**	**207,667,082**	**9/30/2019**

Year		Capital Calls		Distributions		Fees
2008	$	34,330,250	$	-	$	244,006
2009	$	-	$	1,168,000	$	319,220
2010	$	50,300,736	$	-	$	422,549
2011	$	23,903,720	$	406,336	$	690,494
2012	$	-	$	3,600,000	$	892,330
2013	$	15,642,440	$	6,240,000	$	972,519
2014	$	47,594,800	$	28,000,000	$	1,210,923
2015	$	-	$	24,000,000	$	1,493,589
2016	$	26,333,676	$	6,308,805	$	1,604,408
2017	$	-	$	8,062,624	$	1,709,860
2018	$	-	$	7,721,531	$	1,756,438
2019	$	-	$	5,158,785	$	1,347,039
Total	**$**	**198,105,622**	**$**	**90,666,081**	**$**	**12,663,375**

Pennsylvania Municipal Retirement System

Performance Report (Finalized)

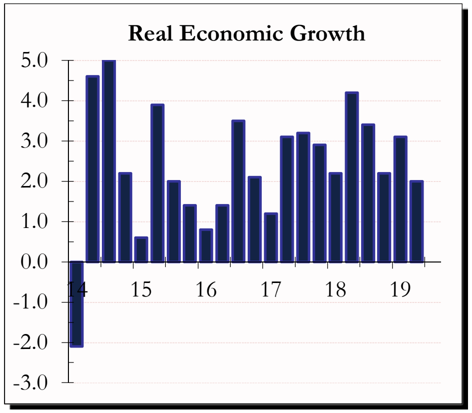
September 2019

New York Massachusetts Pennsylvania Texas Florida

ECONOMIC ENVIRONMENT

Mixed Reviews

US economic data was largely stable, though it continues to moderate. While some market forecasters point to the (slightly) inverted yield curve as indicative of a downturn, most of the well-known leading indicators remain upbeat. The Federal Reserve, however, did lower its benchmark interest rate twice in the quarter, citing weaker global growth and modest inflation.



GDP increased 2.1% in the third quarter, a slight decline from the 2nd quarter's 2.0% gain. This expected drop can be attributed to the slump in the ISM Manufacturing Index. In September, the index fell from 49.1 to a decade low of 47.8. Some economists attribute this decline partly to a strike at General Motors, which began in mid-September; yet it remains to be seen if this decline was a one-off or a precursor of things to come.

Unemployment remains very low at 3.7% and while wage growth has started to pick up, it is still lower than anticipated. On the other hand, new non-farm jobs came in lower than expected: 130,000 versus the predicted 158,000. Labor force participation stayed at 63.2%. It's noteworthy that women have accounted for most of the new jobs in the labor force during the past few years, while the male labor force participation rate has hovered around 68% during the same period.

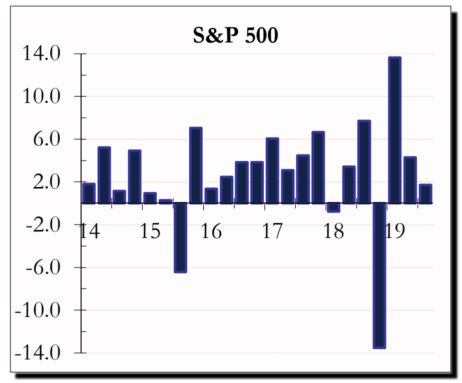
In August, the Congressional Budget Office (CBO) updated its projections for federal tax receipts and disbursements during the period of Fiscal Year (FY) 2019 through FY 2029. For FY 2019, the CBO projects a significant deficit of $960 billion, which is approximately 4.5% of GDP. This deficit compares to the long run average deficit, running at 2.1% of GDP. Making the assumption that deficits will continue to rise in dollar terms, they should remain fairly stable as a percent of GDP.

The American consumer continues to be a bright spot for the economy. Real personal consumption expenditures rose at a 4.6% annual rate. In addition, real government consumption and gross investment grew robustly at both federal and state levels.

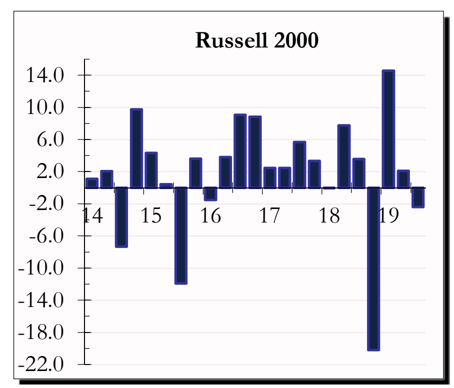
DOMESTIC EQUITIES

Large Caps Lead the Way

Domestic equity markets ended the quarter slightly up, continuing the uptrend seen year-to-date. However, the positive returns seen at quarter-end masked the inter-quarter volatility that was experienced. Most of the gain can be attributed to large capitalization companies, which saw positive returns in line with the broad market. In contrast, small capitalization companies saw declines of nearly twice the magnitude of their large-cap counterparts.



While the energy sector was a huge drag to small-cap performance, down 22%, the other sectors did not perform much better. 8 of 11 sectors saw losses in the quarter. The three sectors that outperformed (Consumer Staples, Utilities, and Real Estate) are typically seen as "risk-off" sectors and could signal a change to a more defensive posture by investors.

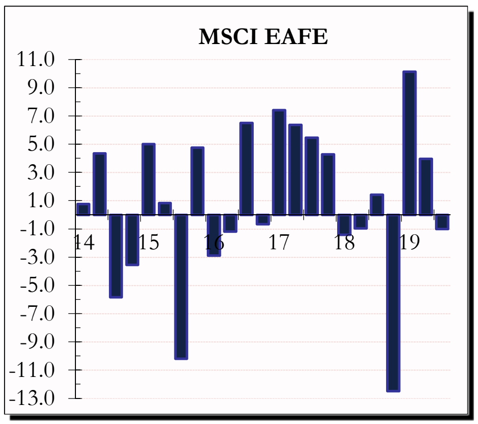


Much ink has been spilled about the death of Value investing, but it saw a resurgence this quarter, especially when moving down the cap spectrum. In the small-cap space the value benchmark beat its counterpart in growth by 360 basis points. Large cap growth names bucked the trend, however, and saw gains that barely beat their value equivalents. Growth has been on an incredible run over the past ten years, and has been led by large cap technology names.

INTERNATIONAL EQUITIES

Concerns on Trade

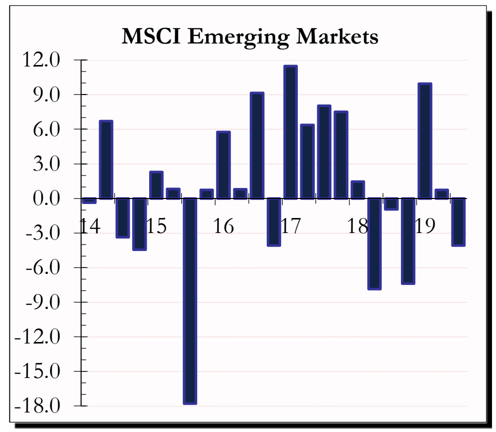
International stocks faltered slightly in the third quarter. Not only was the MSCI EAFE Index down 1.0%, but declines were widespread, with losses suffered by 72% of countries represented in the index. Hong Kong stocks declined the most (-11.9%), triggered by the ongoing political protests there. The protests contributed to its weakest economy in nearly a decade. Retail sales declined 23% year-over-year with no end in sight to the demonstrations. As a result, Fitch downgraded Hong Kong's credit rating, denting the island's reputation for stability and ease of doing business.



Singapore securities also detracted, as US-China trade deliberations weighed on that market. In Europe, Sweden's market was down 4.8% due to a government budget that hinted at smaller-than-expected spending increases.

Belgium enjoyed the largest gains in the index (+3.5%) due to a rebound in fixed investment. Japan was another bright spot (+3.3%). Some commentators attributed this gain to the election win by the incumbent Liberal Democratic Party -- a win that confirmed the continuation of current fiscal policy. In turn, the steady policy helped return market stability after a rise in Japan's consumption tax. One point of caution regarding Japan's performance is that its year-to-date return has significantly outpaced company earnings. The Netherlands (+2.5%) was another key contributor in stemming European market losses. Retail sales and manufacturing picked up despite elevated inflation. Against this backdrop, the Dutch government unveiled an expansionary 2020 budget.

Emerging Markets (EM) gave up a good portion of year-to-date return during the volatile third quarter. The US-China trade dispute reduced investors' appetite for risk in the emerging market equity space. China (-3.7%) modestly underperformed the broader EM market (-3.0%) as the US implemented 10% trade tariffs on $300 billion of Chinese goods. Following this announcement, the renminbi weakened beyond the symbolic seven-per-dollar threshold. In response, the US Treasury labeled the country a currency manipulator.



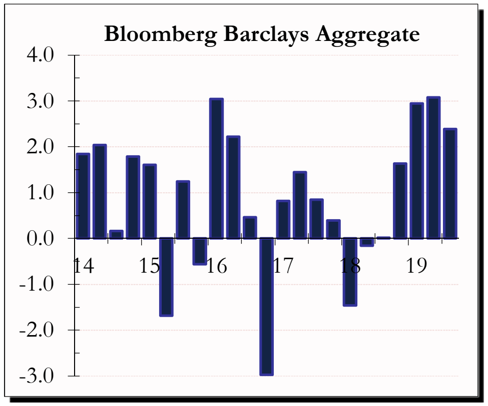
Argentina was by far the weakest performer in the EM Index, as a surprising primary election result triggered a sharp sell-off in equities (-46.8%). US dollar strength continues to move markets that are sensitive to it, notably South Africa and Indonesia. Saudi Arabia and Colombia underperformed due to oil price weakness.

Turkey saw robust gains (+11.7%), as its central bank cut interest rates by an unexpected 7.5%. Taiwan also outperformed (+5.9%), driven by strong performance in technology stocks.

BOND MARKET

Low Yields Get Lower

Bond markets continue to see positive returns this year. The Bloomberg Barclays Capital Aggregate and the Bloomberg Barclays Global Aggregate were up 2.4% and 0.7%, respectively in the third quarter. Corporate bonds continue to outperform government bonds. They benefited from a decline in global yields. Higher yielding, less credit-worthy bonds continue to do better than their less risky counterparts.



Declines in global yields led to a number of records: Germany issues negative-yielding 30-year bonds for the first time, while US and UK 30-year yields likewise fell to all-time lows. In the US, the yield curve inverted between the 2- and 10-year Treasury yields for the first time since 2006.

The Fed cut interest rates by 25 basis points in both July and September, citing weakening global growth and modest inflation.

Due to the lower yields, corporate bond issuance continue to pick up. The first week in September $74 billion worth of new investment grade bonds were sold, setting a record for the amount of issuance. Apple and Disney issued noteworthy deals of $7 billion each.

European government bonds rallied on the European Central Bank's (ECB) rate cut and the resumption of a €20 billion per month bond-buying program. ECB President Mario Draghi said aggressive stimulus measures are necessary to help offset the damaging effects of trade wars and slowing economic growth. Germany in particular, teetered on the edge of recession during the quarter as its auto industry was hit hard by global trade disruptions.

CASH EQUIVALENTS

Keeping Pace with CPI

The three-month T-Bill returned 0.5% for the third quarter and 2.3% for the latest one-year. Treasuries with maturities longer than one-year achieved a latest 12-month return of at least 4%. Future returns for cash equivalents seem dim, with the 30-year Treasury yield sitting near 2%.

Economic Statistics

	Current Quarter	Previous Quarter
GDP	2.1%	2.0%
Unemployment	3.5%	3.7%
CPI All Items Year/Year	1.7%	1.6%
Fed Funds Rate	2.00%	2.50%
Industrial Capacity	77.5%	77.9%
US Dollars per Euro	1.12	1.14

Major Index Returns

Index	Quarter	12 Months
Russell 3000	1.2%	2.9%
S&P 500	1.7%	4.3%
Russell Midcap	0.5%	3.2%
Russell 2000	-2.4%	-8.9%
MSCI EAFE	-1.0%	-0.8%
MSCI Emg Markets	-4.1%	-1.6%
NCREIF ODCE	1.3%	5.6%
U.S. Aggregate	2.4%	10.4%
90 Day T-bills	0.5%	2.3%

Domestic Equity Return Distributions

Quarter

	VAL	COR	GRO
LC	1.4	1.4	1.5
MC	1.2	0.5	-0.7
SC	-0.6	-2.4	-4.2

Trailing Year

	VAL	COR	GRO
LC	4.0	3.9	3.7
MC	1.6	3.2	5.2
SC	-8.3	-8.9	-9.7

Market Summary

- Domestic equity markets continue their strong run
- Unemployment decreased to 3.5%.
- The US dollar continued to strengthen.
- Value performed equal or better than their growth counterparts across all cap sizes.
- Large cap equities continue to perform better than their smaller competitors.

INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's total portfolio was valued at $2,611,855,597, a decrease of $27,032,443 from the June ending value of $2,638,888,040. Last quarter, the account recorded total net withdrawals of $20,699,221 in addition to $6,333,222 in net investment losses. The fund's net investment loss was a result of income receipts totaling $6,693,050 and realized and unrealized capital losses totaling $13,026,272.

RELATIVE PERFORMANCE

Total Fund

During the third quarter, the Composite portfolio lost 0.2%, which ranked in the 97th percentile of the Public Fund universe. Over the trailing twelve-month period, the portfolio returned 2.8%, which ranked in the 84th percentile. Since December 1985, the account returned 8.7% annualized and ranked in the 0th percentile.

Large Cap Equity

The large cap equity portfolio returned 0.6% last quarter; that return was 1.1% less than the S&P 500 Index's return of 1.7% and ranked in the 73rd percentile of the Large Cap universe. Over the trailing year, the large cap equity portfolio returned 5.4%; that return was 1.1% above the benchmark's 4.3% return, ranking in the 28th percentile. Since December 1985, this component returned 10.9% per annum. For comparison, the S&P 500 returned an annualized 10.6% over the same time frame.

Small Cap Equity

For the third quarter, the small cap equity segment returned -2.7%, which was 0.3% below the Russell 2000 Index's return of -2.4% and ranked in the 69th percentile of the Small Cap universe. Over the trailing year, this segment returned -8.0%, which was 0.9% greater than the benchmark's -8.9% return, and ranked in the 58th percentile.

International Equity

In the third quarter, the international equity segment lost 0.6%, which was 0.4% above the Blended International Index's return of -1.0% and ranked in the 25th percentile of the International Equity universe. Over the trailing twelve-month period, this segment returned 2.1%, which was 2.9% greater than the benchmark's -0.8% performance, and ranked in the 23rd percentile.

Emerging Markets Equity

Last quarter, the emerging markets equity segment lost 4.3%, which was 0.2% below the Blended Emerging Markets Index's return of -4.1% and ranked in the 67th percentile of the Emerging Markets universe. Over the trailing twelve-month period, this segment returned -2.0%, which was 0.4% below the benchmark's -1.6% performance, ranking in the 72nd percentile.

Real Estate

In the third quarter, the real estate segment gained 0.8%, which was 0.6% less than the NCREIF Property Index's return of 1.4%. Over the trailing year, this component returned 5.4%, which was 0.8% below the benchmark's 6.2% performance. Since December 1985, this component returned 6.9% per annum, while the NCREIF Property Index returned an annualized 7.8% over the same time frame.

Fixed Income

During the third quarter, the fixed income segment returned 2.3%, which was equal to the Bloomberg Barclays Aggregate Index's return of 2.3% and ranked in the 66th percentile of the Core Fixed Income universe. Over the trailing year, this segment's return was 10.3%, which was equal to the benchmark's 10.3% return, and ranked in the 66th percentile. Since December 1985, this component returned 6.5% annualized. The Bloomberg Barclays Aggregate Index returned an annualized 6.4% over the same period.

ASSET ALLOCATION

On September 30, 2019, the allocation of assets was as follows*:

TOTAL PORTFOLIO	**100.0%**	**$2,611,855,597**
Domestic Large Cap	25.7%	$671,262,239
Domestic Small Cap	13.9%	$364,282,620
Total Domestic Equity	**39.6%**	**$1,035,544,859**
International Developed Markets	14.9%	$389,239,853
International Emerging Markets	9.5%	$247,393,031
Total International Equity	**24.4%**	**$636,632,884**
Total Equity	**64.0%**	**$1,672,177,743**
Real Estate	**19.2%**	**$500,312,332**
Fixed Income	**15.4%**	**$402,314,970**
Cash and Equivalents	**1.4%**	**$37,050,552**

* Numbers may not add to 100% due to rounding.

EXECUTIVE SUMMARY - GROSS OF FEES

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	10 Year	Since 12/85
Total Portfolio	-0.2	13.2	2.8	9.3	7.4	8.8	8.7
PUBLIC FUND RANK	(97)	(44)	(84)	(6)	(10)	(22)	----
SHADOW INDEX	0.2	11.9	1.9	8.1	6.9	8.5	8.6
Domestic Equity	-0.6	21.0	0.7	13.9	10.7	12.8	----
DOMESTIC EQUITY RANK	(66)	(33)	(49)	(27)	(33)	(50)	----
Russell 3000	1.2	20.1	2.9	12.8	10.4	13.1	10.5
Large Cap Equity	0.6	22.9	5.4	16.2	12.2	14.1	10.9
LARGE CAP RANK	(73)	(21)	(28)	(17)	(21)	(26)	----
S&P 500	1.7	20.6	4.3	13.4	10.8	13.2	10.6
Small Cap Equity	-2.7	17.1	-8.0	10.0	8.3	12.0	----
SMALL CAP RANK	(69)	(42)	(58)	(41)	(60)	(64)	----
Russell 2000	-2.4	14.2	-8.9	8.2	8.2	11.2	9.2
International Equity	-0.6	16.5	2.1	9.2	5.6	7.1	----
INTERNATIONAL EQUITY RANK	(25)	(18)	(23)	(16)	(28)	(36)	----
Int’l Index	-1.0	13.3	-0.8	7.0	3.7	5.6	----
S&P BMI Ex US	-0.9	13.0	-2.0	6.7	3.8	5.7	----
MSCI World Ex US	-0.8	14.2	-0.4	7.1	3.7	5.4	7.2
MSCI EAFE	-1.0	13.3	-0.8	7.0	3.8	5.4	7.6
Emerging Markets Equity	-4.3	5.9	-2.0	6.0	2.3	3.3	----
EMERGING MARKETS RANK	(67)	(66)	(72)	(50)	(67)	(91)	----
EM Index	-4.1	6.2	-1.6	6.4	2.6	3.9	----
S&P BMI EMGM	-3.7	7.9	1.5	6.8	3.2	4.2	----
MSCI Emg Mkts	-4.1	6.2	-1.6	6.4	2.7	3.7	----
Real Estate	0.8	4.5	5.4	6.8	7.9	8.4	6.9
NCREIF NPI	1.4	4.8	6.2	6.8	8.6	9.8	7.8
Aggregate Index	2.3	8.5	10.3	2.9	3.4	3.8	6.4
Fixed Income	2.3	8.6	10.3	3.0	3.4	3.8	6.5
CORE FIXED INCOME RANK	(66)	(78)	(66)	(84)	(86)	(91)	----
Aggregate Index	2.3	8.5	10.3	2.9	3.4	3.8	6.4

ASSET ALLOCATION

Large Cap Equity	25.7%	$ 671,262,239
Small Cap	13.9%	364,282,620
Int’l Equity	14.9%	389,239,853
Emerging Markets	9.5%	247,393,031
Real Estate	19.2%	500,312,332
Fixed Income	15.4%	402,314,970
Cash	1.4%	37,050,552
Total Portfolio	100.0%	2,611,855,597

INVESTMENT RETURN

Market Value 6/2019	$ 2,638,888,040
Contribs / Withdrawals	- 20,699,221
Income	6,693,050
Capital Gains / Losses	- 13,026,272
Market Value 9/2019	$ 2,611,855,597

EXECUTIVE SUMMARY - NET OF FEES

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Total Portfolio - Net	-0.3	12.8	2.3	8.8	6.9	8.3
SHADOW INDEX	0.2	11.9	1.9	8.1	6.9	8.5
Domestic Equity - Net	-0.7	20.5	0.1	13.3	10.2	12.4
Russell 3000	1.2	20.1	2.9	12.8	10.4	13.1
Large Cap Equity - Net	0.5	22.4	4.9	15.6	11.7	13.6
S&P 500	1.7	20.6	4.3	13.4	10.8	13.2
Small Cap Equity - Net	-2.8	16.6	-8.5	9.5	7.7	11.5
Russell 2000	-2.4	14.2	-8.9	8.2	8.2	11.2
International Equity - Net	-0.7	16.1	1.7	8.7	5.1	6.5
Int'l Index	-1.0	13.3	-0.8	7.0	3.7	5.6
S&P BMI Ex US	-0.9	13.0	-2.0	6.7	3.8	5.7
MSCI World Ex US	-0.8	14.2	-0.4	7.1	3.7	5.4
MSCI EAFE	-1.0	13.3	-0.8	7.0	3.8	5.4
Emerging Markets Equity - Net	-4.3	5.8	-2.1	5.9	2.2	3.2
EM Index	-4.1	6.2	-1.6	6.4	2.6	3.9
S&P BMI EMGM	-3.7	7.9	1.5	6.8	3.2	4.2
MSCI Emg Mkts	-4.1	6.2	-1.6	6.4	2.7	3.7
Real Estate - Net	0.6	3.8	4.5	5.8	6.9	7.4
NCREIF NPI	1.4	4.8	6.2	6.8	8.6	9.8
Aggregate Index	2.3	8.5	10.3	2.9	3.4	3.8
Fixed Income - Net	2.3	8.5	10.3	2.9	3.4	3.7
Aggregate Index	2.3	8.5	10.3	2.9	3.4	3.8

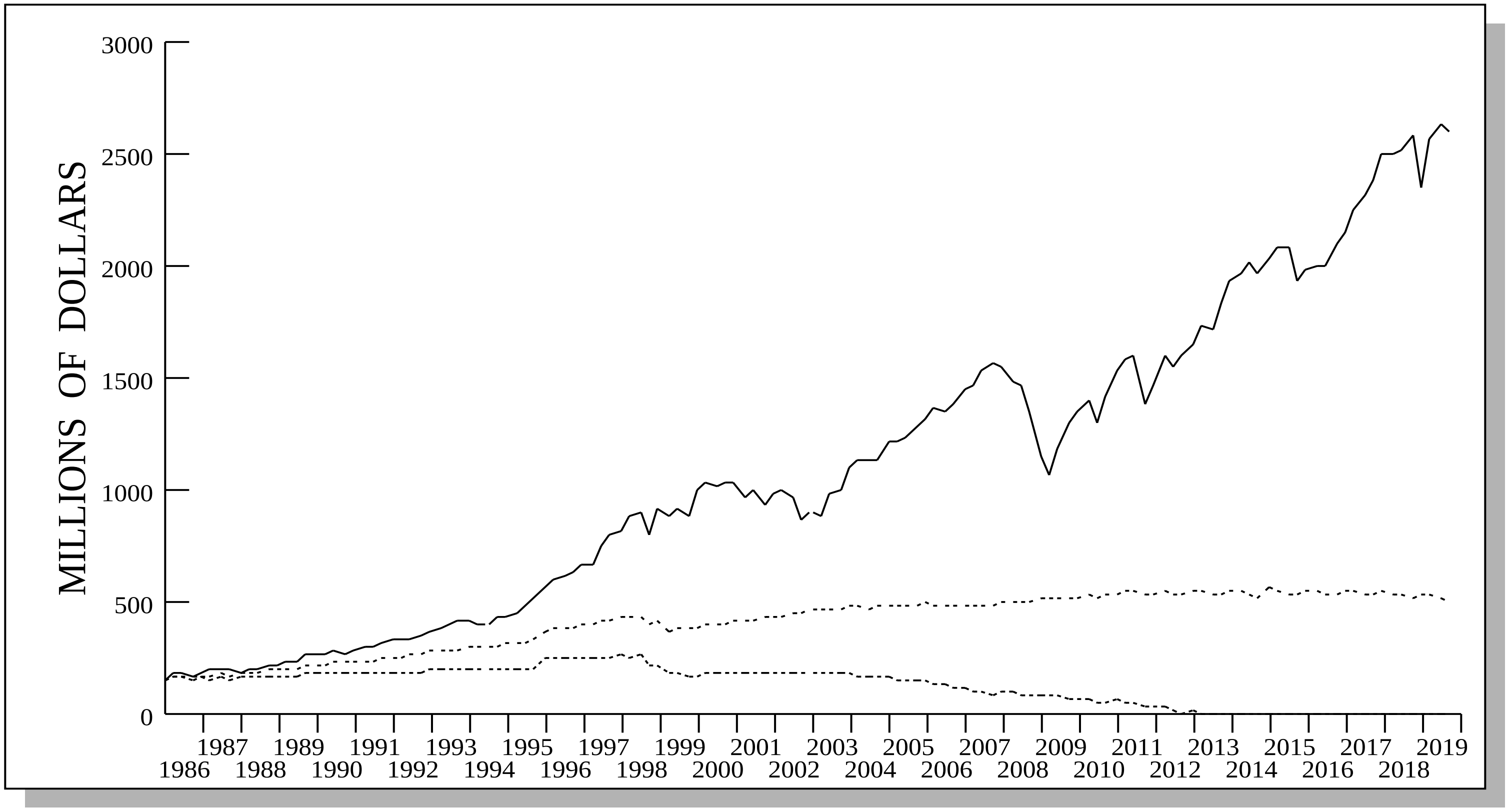
ASSET ALLOCATION

Large Cap Equity	25.7%	$ 671,262,239
Small Cap	13.9%	364,282,620
Int'l Equity	14.9%	389,239,853
Emerging Markets	9.5%	247,393,031
Real Estate	19.2%	500,312,332
Fixed Income	15.4%	402,314,970
Cash	1.4%	37,050,552
Total Portfolio	100.0%	2,611,855,597

INVESTMENT RETURN

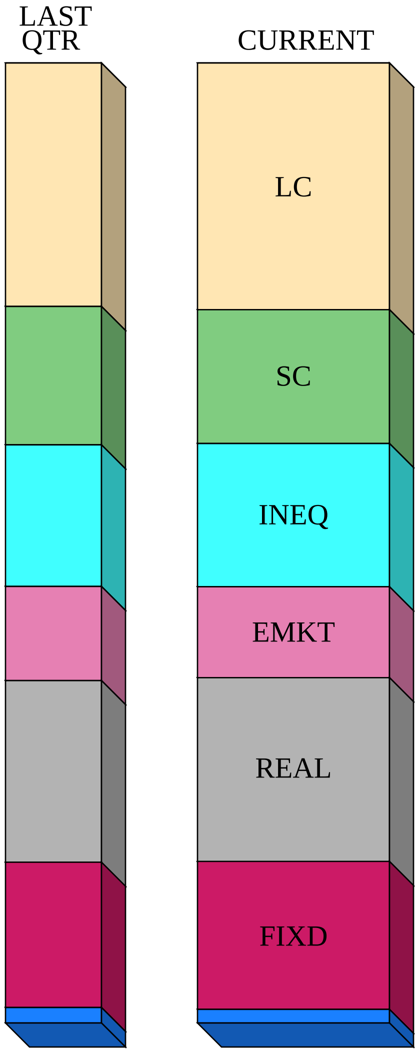
Market Value 6/2019	$ 2,638,888,040
Contribs / Withdrawals	- 20,699,221
Income	6,693,050
Capital Gains / Losses	- 13,026,272
Market Value 9/2019	$ 2,611,855,597

INVESTMENT GROWTH



VALUE ASSUMING
5.25% RETURN $ 503,611,052

	LAST QUARTER	PERIOD 12/85 - 9/19
BEGINNING VALUE	$ 2,638,888,040	$ 162,395,431
NET CONTRIBUTIONS	- 20,699,221	-384,679,744
INVESTMENT RETURN	- 6,333,222	2,834,139,910
ENDING VALUE	$ 2,611,855,597	$ 2,611,855,597
INCOME	6,693,050	561,222,647
CAPITAL GAINS (LOSSES)	- 13,026,272	2,272,917,263
INVESTMENT RETURN	- 6,333,222	2,834,139,910



	VALUE	PERCENT	TARGET	DIFFERENCE + / -
LARGE CAP EQUITY	$ 671, 262, 239	25.7%	25.0%	0.7%
SMALL CAP EQUITY	364, 282, 620	13.9%	15.0%	-1.1%
INTERNATIONAL EQUITY	389, 239, 853	14.9%	15.0%	-0.1%
EMERGING MARKETS EQUITY	247, 393, 031	9.5%	10.0%	-0.5%
REAL ESTATE	500, 312, 332	19.2%	20.0%	-0.8%
FIXED INCOME	402, 314, 970	15.4%	15.0%	0.4%
CASH & EQUIVALENT	37, 050, 552	1.4%	0.0%	1.4%
TOTAL FUND	$ 2, 611, 855, 597	100.0%		

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ALLOCATIONS & TARGETS AS OF SEPTEMBER 2019

Manager	Target	Market Value	%	+ / -	Market Value Ex-cash	%	+ / -
Total Portfolio	**-**	**$2,611,855,597**	**100%**		**$2,611,855,597**	**100%**	
Large Cap	**25**	**691,155,931**	**26.5**	**1.5**	**671,262,239**	**25.7**	**0.7**
Eagle		147,555,253	5.6		141,717,245	5.4	
Federated		101,294,244	3.9		97,903,797	3.7	
LSV Large Cap		160,176,552	6.1		159,257,726	6.1	
Polen		226,511,135	8.7		216,764,724	8.3	
SSgA S&P 500		55,618,747	2.1		55,618,747	2.1	
Small Cap	**15**	**369,686,513**	**14.2**	**-0.8**	**364,282,620**	**13.9**	**-1.1**
AMI		34,403,203	1.3		33,523,089	1.3	
Copeland		45,429,768	1.7		42,994,661	1.6	
Emerald		62,766,642	2.4		61,963,524	2.4	
LSV Small Cap		72,033,258	2.8		71,568,817	2.7	
Smith, Graham & Co		71,255,310	2.7		70,434,197	2.7	
SSgA Russell 2000		83,798,332	3.2		83,798,332	3.2	
International Equity	**15**	**395,433,301**	**15.1**	**0.1**	**389,239,853**	**14.9**	**-0.1**
GlobeFlex		4,212	0.0		4,212	0.0	
HGK		121,152,901	4.6		117,447,427	4.5	
Jarislowsky Fraser		674,450	0.0		508,332	0.0	
Johnston		111,942,612	4.3		109,725,691	4.2	
Loop (transitional)		104,935	0.0		0	0.0	
Mercator		17,618	0.0		17,618	0.0	
SSgA International		161,533,659	6.2		161,533,659	6.2	
WHV		2,914	0.0		2,914	0.0	
Emerging Markets	**10**	**247,393,031**	**9.5**	**-0.5**	**247,393,031**	**9.5**	**-0.5**
SSgA Emerging Mkts		247,393,031	9.5		247,393,031	9.5	
Real Assets	**20**	**500,312,332**	**19.2**	**-0.8**	**500,312,332**	**19.2**	**-0.8**
Forest		135,802,793	5.2		135,802,793	5.2	
PRISA I		51,125,042	2.0		51,125,042	2.0	
PRISA II		103,380,918	4.0		103,380,918	4.0	
TIAA N. Front St.		2,336,497	0.1		2,336,497	0.1	
TIAA CREF		207,667,082	8.0		207,667,082	8.0	
Fixed Income	**15**	**402,314,970**	**15.4**	**0.4**	**402,314,970**	**15.4**	**0.4**
SSgA BC Aggregate		402,314,970	15.4		402,314,970	15.4	
Cash & Equivalents	**0**	**5,559,519**	**0.2**	**0.2**	**37,050,552**	**1.4**	**1.4**
BNY Cash		426,502	0.0		426,502	0.0	
STIP Cash		5,133,017	0.2		5,133,017	0.2	
Manager Cash		*n/a*	-		31,491,033	1.2	

MANAGER QUARTERLY FEE SUMMARY

ALL FEES ARE ESTIMATED / ACCRUED

PORTFOLIO	TOTAL RETURN (GROSS OF FEES)	FEE	% FEE
AMI	-8.7%	$74,793	0.20%
COPELAND	2.1%	$92,844	0.21%
EAGLE	-0.9%	$280,603	0.19%
EMERALD	-6.5%	$132,429	0.09%
FEDERATED	0.4%	$192,038	0.19%
FOREST	-4.1%	$252,270	0.18%
HARDMAN JOHNSTON	-1.5%	$177,408	0.16%
HGK	0.6%	$199,491	0.17%
LSV LARGE CAP	1.4%	$148,272	0.09%
LSV SMALL CAP	-0.6%	$103,118	0.14%
POLEN	0.9%	$224,619	0.10%
PRISA SA	1.5%	$122,870	0.24%
PRISA II	1.7%	$282,675	0.28%
SMITH, GRAHAM & CO	0.8%	$124,440	0.18%
SSgA	-0.2%	$117,085	0.01%
CONSERVATIVE S&P 500	1.7%	$4,892	0.01%
RUSSELL 2000	-2.4%	$7,522	0.03%
DEVELOPED INTERNATIONAL	-0.9%	$23,977	0.01%
EMERGING MARKETS	-4.3%	$49,609	0.02%
BOND MARKET INDEX	2.3%	$31,084	0.01%
TIAA CREF	3.6%	$452,710	0.22%
TIAA N. FRONT STREET	1.1%	$12,500	0.51%

MANAGER PERFORMANCE SUMMARY - GROSS OF FEES

Portfolio	(Universe)	QTR	CYTD	1 Year	3 Years	5 Years	10 Years	Inception	
Composite	(Public Fund)	-0.2 (97)	13.2 (44)	2.8 (84)	9.3 (6)	7.4 (10)	8.8 (22)	8.7 ----	12/85
Shadow Index		*0.2 ----*	*11.9 ----*	*1.9 ----*	*8.1 ----*	*6.9 ----*	*8.5 ----*	*8.6 ----*	*12/85*
SSgA	(Balanced)	-0.2 (90)	8.5 (97)	4.1 (55)	5.1 (95)	3.8 (96)	5.0 (98)	6.4 ----	03/97
Shadow Index		*-0.2 ----*	*8.8 ----*	*4.4 ----*	*5.2 ----*	*3.9 ----*	*5.2 ----*	*7.1 ----*	*03/97*
Federated	(LC Growth)	0.4 (56)	27.3 (10)	8.6 (20)	17.4 (31)	---- ----	---- ----	11.6 (65)	06/15
Russell 1000G		*1.5 ----*	*23.3 ----*	*3.7 ----*	*16.9 ----*	*13.4 ----*	*14.9 ----*	*13.6 ----*	*06/15*
Polen	(LC Growth)	0.9 (47)	25.7 (21)	9.9 (13)	20.2 (7)	17.8 (2)	---- ----	16.9 (8)	09/10
Russell 1000G		*1.5 ----*	*23.3 ----*	*3.7 ----*	*16.9 ----*	*13.4 ----*	*14.9 ----*	*15.2 ----*	*09/10*
Eagle	(LC Value)	-0.9 (95)	21.3 (16)	4.2 (34)	15.3 (4)	---- ----	---- ----	15.3 (4)	03/16
Russell 1000V		*1.4 ----*	*17.8 ----*	*4.0 ----*	*9.4 ----*	*7.8 ----*	*11.5 ----*	*10.5 ----*	*03/16*
LSV Large Cap	(LC Value)	1.4 (58)	15.2 (81)	-2.3 (88)	9.5 (68)	7.0 (77)	11.9 (53)	8.5 ----	03/04
Russell 1000V		*1.4 ----*	*17.8 ----*	*4.0 ----*	*9.4 ----*	*7.8 ----*	*11.5 ----*	*7.7 ----*	*03/04*
AMI	(SC Growth)	-8.7 (94)	0.5 (99)	-24.0 (99)	---- ----	---- ----	---- ----	-2.5 (99)	09/17
Russell 2000G		*-4.2 ----*	*15.3 ----*	*-9.7 ----*	*9.8 ----*	*9.1 ----*	*12.2 ----*	*4.6 ----*	*09/17*
Copeland	(SC Growth)	2.1 (3)	23.3 (22)	5.8 (3)	---- ----	---- ----	---- ----	11.1 (40)	09/17
Russell 2000G		*-4.2 ----*	*15.3 ----*	*-9.7 ----*	*9.8 ----*	*9.1 ----*	*12.2 ----*	*4.6 ----*	*09/17*
Emerald	(SC Growth)	-6.5 (76)	17.7 (54)	-8.1 (62)	12.2 (62)	11.9 (38)	15.2 (25)	10.9 ----	09/98
Russell 2000G		*-4.2 ----*	*15.3 ----*	*-9.7 ----*	*9.8 ----*	*9.1 ----*	*12.2 ----*	*7.6 ----*	*09/98*
LSV Small Cap	(SC Value)	-0.6 (60)	14.6 (64)	-8.0 (61)	---- ----	---- ----	---- ----	1.5 (78)	12/16
Russell 2000V		*-0.6 ----*	*12.8 ----*	*-8.3 ----*	*6.5 ----*	*7.2 ----*	*10.1 ----*	*2.1 ----*	*12/16*
Smith, Graham & Co	(SC Value)	0.8 (35)	19.8 (17)	-6.7 (53)	---- ----	---- ----	---- ----	1.7 (76)	12/16
Russell 2000V		*-0.6 ----*	*12.8 ----*	*-8.3 ----*	*6.5 ----*	*7.2 ----*	*10.1 ----*	*2.1 ----*	*12/16*
HGK	(Intl Eq)	0.6 (10)	14.4 (30)	1.5 (27)	9.5 (14)	5.7 (28)	---- ----	9.3 (10)	03/12
S&P BMI Ex US		*-0.9 ----*	*13.0 ----*	*-2.0 ----*	*6.7 ----*	*3.8 ----*	*5.7 ----*	*6.0 ----*	*03/12*
Hardman Johnston	(Intl Eq)	-1.5 (43)	17.9 (12)	4.4 (14)	10.8 (7)	7.6 (11)	---- ----	8.7 (14)	03/12
S&P BMI Ex US		*-0.9 ----*	*13.0 ----*	*-2.0 ----*	*6.7 ----*	*3.8 ----*	*5.7 ----*	*6.0 ----*	*03/12*
PRISA II SA		1.7 ----	5.3 ----	6.8 ----	8.6 ----	10.8 ----	13.1 ----	4.8 ----	06/07
NCREIF ODCE		*1.3 ----*	*3.8 ----*	*5.6 ----*	*7.3 ----*	*9.3 ----*	*10.9 ----*	*5.6 ----*	*06/07*
PRISA SA		1.5 ----	4.9 ----	6.9 ----	7.9 ----	9.8 ----	11.7 ----	7.9 ----	12/90
NCREIF ODCE		*1.3 ----*	*3.8 ----*	*5.6 ----*	*7.3 ----*	*9.3 ----*	*10.9 ----*	*7.6 ----*	*12/90*
TIAA CREF		3.6 ----	7.7 ----	9.7 ----	8.2 ----	8.7 ----	7.7 ----	3.9 ----	06/08
NCREIF ODCE		*1.3 ----*	*3.8 ----*	*5.6 ----*	*7.3 ----*	*9.3 ----*	*10.9 ----*	*5.4 ----*	*06/08*
TIAA 1721 N. Front St.		1.1 ----	2.9 ----	-3.5 ----	0.0 ----	---- ----	---- ----	0.0 ----	06/16
NCREIF NPI		*1.4 ----*	*4.8 ----*	*6.2 ----*	*6.8 ----*	*8.6 ----*	*9.8 ----*	*6.8 ----*	*06/16*
Forest		-4.1 ----	-0.9 ----	-1.8 ----	3.7 ----	4.7 ----	4.5 ----	5.0 ----	03/99
NCREIF Timber		*0.2 ----*	*1.3 ----*	*2.1 ----*	*3.1 ----*	*4.4 ----*	*4.0 ----*	*6.2 ----*	*03/99*

MANAGER PERFORMANCE SUMMARY - NET OF FEES

Portfolio	QTR	CYTD	1 Year	3 Years	5 Years	10 Years	Inception	
Composite	-0.3	12.8	2.3	8.8	6.9	8.3	----	12/85
Shadow Index	*0.2*	*11.9*	*1.9*	*8.1*	*6.9*	*8.5*	*8.6*	*12/85*
SSgA	-0.2	8.5	4.0	5.1	3.8	4.9	6.4	03/97
Shadow Index	*-0.2*	*8.8*	*4.4*	*5.2*	*3.9*	*5.2*	*7.1*	*03/97*
Federated	0.3	26.6	7.8	16.5	----	----	10.8	06/15
Russell 1000G	*1.5*	*23.3*	*3.7*	*16.9*	*13.4*	*14.9*	*13.6*	*06/15*
Polen	0.8	25.3	9.4	19.8	17.4	----	16.4	09/10
Russell 1000G	*1.5*	*23.3*	*3.7*	*16.9*	*13.4*	*14.9*	*15.2*	*09/10*
Eagle	-1.1	20.7	3.4	14.4	----	----	14.5	03/16
Russell 1000V	*1.4*	*17.8*	*4.0*	*9.4*	*7.8*	*11.5*	*10.5*	*03/16*
LSV Large Cap	1.3	14.9	-2.6	9.1	6.6	11.4	8.0	03/04
Russell 1000V	*1.4*	*17.8*	*4.0*	*9.4*	*7.8*	*11.5*	*7.7*	*03/04*
AMI	-8.9	-0.1	-24.6	----	----	----	-3.3	09/17
Russell 2000G	*-4.2*	*15.3*	*-9.7*	*9.8*	*9.1*	*12.2*	*4.6*	*09/17*
Copeland	1.9	22.6	4.9	----	----	----	10.2	09/17
Russell 2000G	*-4.2*	*15.3*	*-9.7*	*9.8*	*9.1*	*12.2*	*4.6*	*09/17*
Emerald	-6.7	17.3	-8.6	11.7	11.4	14.7	10.4	09/98
Russell 2000G	*-4.2*	*15.3*	*-9.7*	*9.8*	*9.1*	*12.2*	*7.6*	*09/98*
LSV Small Cap	-0.8	14.1	-8.5	----	----	----	1.0	12/16
Russell 2000V	*-0.6*	*12.8*	*-8.3*	*6.5*	*7.2*	*10.1*	*2.1*	*12/16*
Smith, Graham & Co	0.6	19.1	-7.4	----	----	----	1.0	12/16
Russell 2000V	*-0.6*	*12.8*	*-8.3*	*6.5*	*7.2*	*10.1*	*2.1*	*12/16*
HGK	0.4	13.8	0.8	8.8	4.9	----	8.6	03/12
S&P BMI Ex US	*-0.9*	*13.0*	*-2.0*	*6.7*	*3.8*	*5.7*	*6.0*	*03/12*
Hardman Johnston	-1.6	17.4	3.8	10.1	6.9	----	8.0	03/12
S&P BMI Ex US	*-0.9*	*13.0*	*-2.0*	*6.7*	*3.8*	*5.7*	*6.0*	*03/12*
PRISA II SA	1.4	4.4	5.6	7.4	9.7	11.9	3.7	06/07
NCREIF ODCE	*1.3*	*3.8*	*5.6*	*7.3*	*9.3*	*10.9*	*5.6*	*06/07*
PRISA SA	1.3	4.2	5.8	6.9	8.8	10.6	----	12/90
NCREIF ODCE	*1.3*	*3.8*	*5.6*	*7.3*	*9.3*	*10.9*	*7.6*	*12/90*
TIAA CREF	3.4	7.0	8.8	7.3	7.7	6.8	3.0	06/08
NCREIF ODCE	*1.3*	*3.8*	*5.6*	*7.3*	*9.3*	*10.9*	*5.4*	*06/08*
TIAA 1721 N. Front St.	0.6	1.3	-5.5	-2.5	----	----	-2.5	06/16
NCREIF NPI	*1.4*	*4.8*	*6.2*	*6.8*	*8.6*	*9.8*	*6.8*	*06/16*
Forest	-4.3	-1.4	-2.5	2.8	3.8	3.6	4.5	03/99
NCREIF Timber	*0.2*	*1.3*	*2.1*	*3.1*	*4.4*	*4.0*	*6.2*	*03/99*

MANAGER VALUE ADDED

Portfolio	Benchmark	1 Quarter	1 Year	3 Years	5 Years
SSgA	Shadow Index	0.0	-0.3	-0.1	-0.1
Federated	Russell 1000G	-1.1	4.9	0.5	N/A
Polen	Russell 1000G	-0.6	6.2	3.3	4.4
Eagle	Russell 1000V	-2.3	0.2	5.9	N/A
LSV Large Cap	Russell 1000V	0.0	-6.3	0.1	-0.8
AMI	Russell 2000G	-4.5	-14.3	N/A	N/A
Copeland	Russell 2000G	6.3	15.5	N/A	N/A
Emerald	Russell 2000G	-2.3	1.6	2.4	2.8
LSV Small Cap	Russell 2000V	0.0	0.3	N/A	N/A
Smith, Graham & Co	Russell 2000V	1.4	1.6	N/A	N/A
HGK	S&P BMI Ex US	1.5	3.5	2.8	1.9
Hardman Johnston	S&P BMI Ex US	-0.6	6.4	4.1	3.8
PRISA II SA	NCREIF ODCE	0.4	1.2	1.3	1.5
PRISA SA	NCREIF ODCE	0.2	1.3	0.6	0.5
TIAA CREF	NCREIF ODCE	2.3	4.1	0.9	-0.6
TIAA 1721 N. Front St.	NCREIF NPI	-0.3	-9.7	-6.8	N/A
Forest	NCREIF Timber	-4.3	-3.9	0.6	0.3
Total Portfolio	**Shadow Index**	**-0.4**	**0.9**	**1.2**	**0.5**

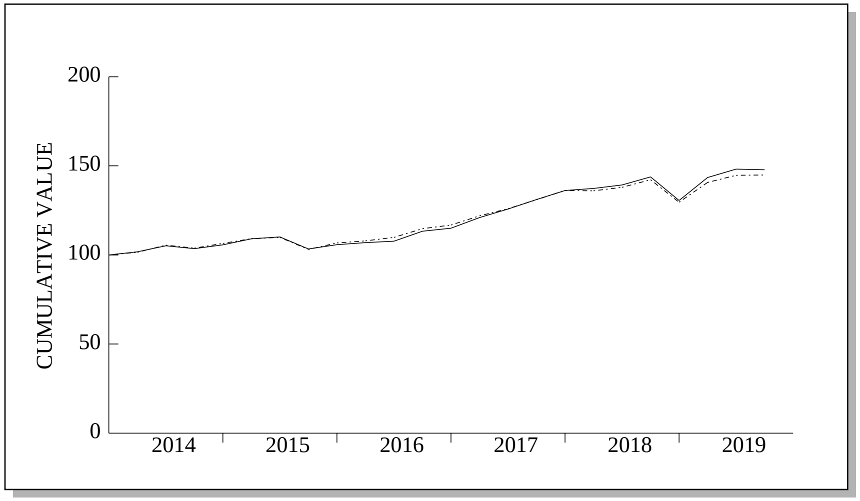
INVESTMENT RETURN SUMMARY - ONE QUARTER

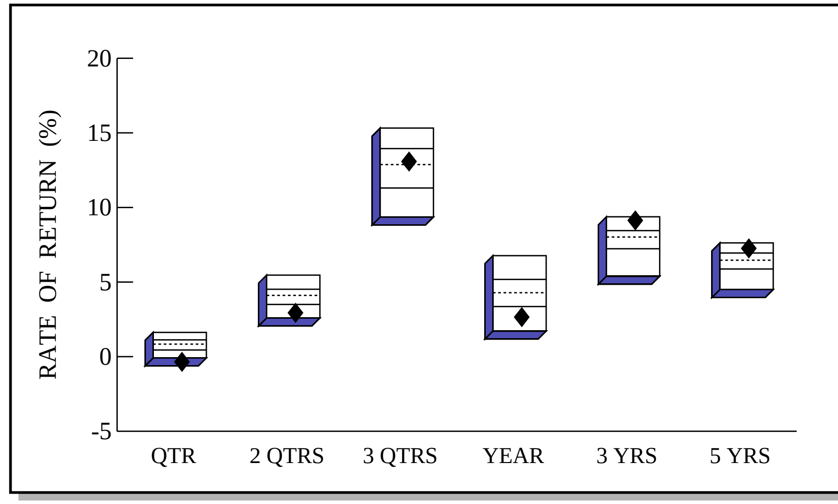
Name	Quarter Total Return	Market Value June 30th, 2019	Net Cashflow	Net Investment Return	Market Value September 30th, 2019
SSgA S&P 500 (LCC)	1.7	58,148,137	-3,500,000	970,610	55,618,747
Federated (LCG)	0.4	101,028,662	-183,669	449,251	101,294,244
Polen (LCG)	0.9	224,619,012	-219,804	2,111,927	226,511,135
Eagle (LCV)	-0.9	149,152,657	-282,999	-1,314,405	147,555,253
LSV Large Cap (LCV)	1.4	158,172,903	-151,289	2,154,938	160,176,552
SSgA Russell 2000 (SMDC)	-2.4	22,154,197	61,500,000	144,135	83,798,332
AMI (SCG)	-8.7	37,739,234	-73,881	-3,262,150	34,403,203
Copeland (SCG)	2.1	44,546,870	-54,030	936,928	45,429,768
Emerald (SCG)	-6.5	140,844,961	-70,175,883	-7,902,436	62,766,642
LSV Small Cap (SCV)	-0.6	72,582,196	-103,156	-445,782	72,033,258
Smith, Graham & Co (SCV)	0.8	70,845,248	-121,957	532,019	71,255,310
Loop Transition (INEQ)	---	105,030	0	-95	104,935
GlobeFlex (INEQ)	---	4,330	0	-118	4,212
HGK (INEQ)	0.6	120,651,094	-198,384	700,191	121,152,901
Hardman Johnston (INEQ)	-1.5	113,788,785	-175,228	-1,670,945	111,942,612
Mercator (INEQ)	---	18,404	0	-786	17,618
WHV (INEQ)	---	3,044	0	-130	2,914
Jarislowsky Fraser (INEG)	---	691,576	0	-17,126	674,450
SSgA World Ex-US (INEQ)	-0.9	162,925,641	0	-1,391,982	161,533,659
SSgA Emerging Markets (EMKT)	-4.3	258,394,373	0	-11,001,342	247,393,031
PRISA II SA (REAL)	1.7	101,915,896	-282,675	1,747,697	103,380,918
PRISA SA (REAL)	1.5	50,468,306	-122,870	779,606	51,125,042
TIAA CREF (REAL)	3.6	203,373,417	-2,499,627	6,793,292	207,667,082
TIAA 1721 N. Front St. (REAL)	1.1	2,437,702	-114,207	13,002	2,336,497
Forest (TIMB)	-4.1	141,604,956	0	-5,802,163	135,802,793
SSgA Bond Market (CFI)	2.3	399,408,467	-6,200,000	9,106,503	402,314,970
BNY Cash (CASH)	---	665,486	-244,380	5,396	426,502
Treasury STIP (CASH)	---	2,597,456	2,504,818	30,743	5,133,017
Total Portfolio	**-0.2**	**2,638,888,040**	**-20,699,221**	**-6,333,222**	**2,611,855,597**

MANAGER RISK STATISTICS SUMMARY - FIVE-YEAR HISTORY

Name	Alpha	Batting Average	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
SSgA *Shadow Index*	-0.09	0.600	0.48	-0.33	98.7	100.0
SSgA S&P 500 *S&P 500*	0.02	0.900	0.98	-0.36	99.8	99.7
Polen *Russell 1000G*	5.96	0.650	1.48	0.91	111.7	57.8
LSV Large Cap *Russell 1000V*	-1.03	0.500	0.60	-0.18	95.1	102.8
SSgA Russell 2000 *Russell 2000*	0.09	0.950	0.57	1.53	100.4	99.7
Emerald *Russell 2000G*	2.41	0.650	0.70	0.61	117.0	101.4
HGK *S&P BMI Ex US*	1.87	0.600	0.45	0.44	111.9	92.4
Hardman Johnston *S&P BMI Ex US*	3.28	0.700	0.54	0.85	134.8	96.7
SSgA World Ex-US *MSCI World Ex US*	-0.21	0.450	0.28	-3.69	98.9	101.2
SSgA Emerging Markets *EM Index*	-0.34	0.450	0.17	-0.45	100.6	103.5
PRISA II SA *NCREIF ODCE*	0.73	0.800	5.15	1.69	116.1	----
PRISA SA *NCREIF ODCE*	0.58	0.550	5.11	0.63	105.2	----
TIAA CREF *NCREIF ODCE*	8.71	0.550	3.30	-0.22	93.1	----
Forest *NCREIF Timber*	6.88	0.450	0.81	0.07	81.4	----
SSgA Bond Market *Aggregate Index*	0.02	1.000	0.77	1.39	100.5	99.6

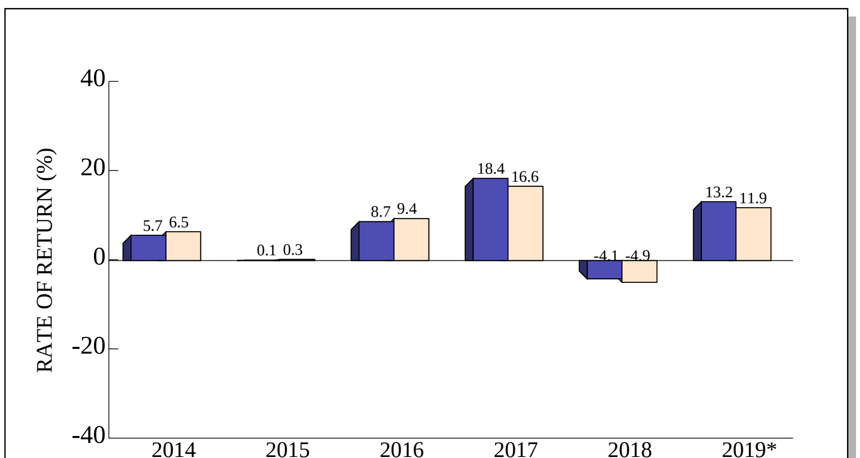
TOTAL RETURN COMPARISONS





Public Fund Universe

PORTFOLIO
SHADOW INDEX



* Partial year

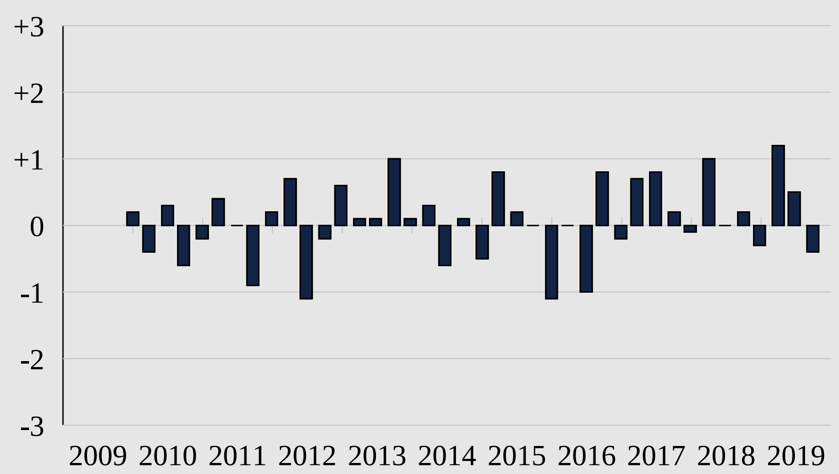
				------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	-0.2	3.0	13.2	2.8	9.3	7.4
(RANK)	(97)	(88)	(44)	(84)	(6)	(10)
5TH %ILE	1.6	5.5	15.3	6.8	9.4	7.6
25TH %ILE	1.1	4.5	13.9	5.2	8.4	7.0
MEDIAN	0.8	4.1	12.9	4.3	8.0	6.5
75TH %ILE	0.4	3.5	11.3	3.4	7.2	5.9
95TH %ILE	-0.1	2.6	9.4	1.7	5.4	4.5
Shadow Idx	***0.2***	***3.0***	***11.9***	***1.9***	***8.1***	***6.9***

Public Fund Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: SHADOW INDEX

VARIATION FROM BENCHMARK

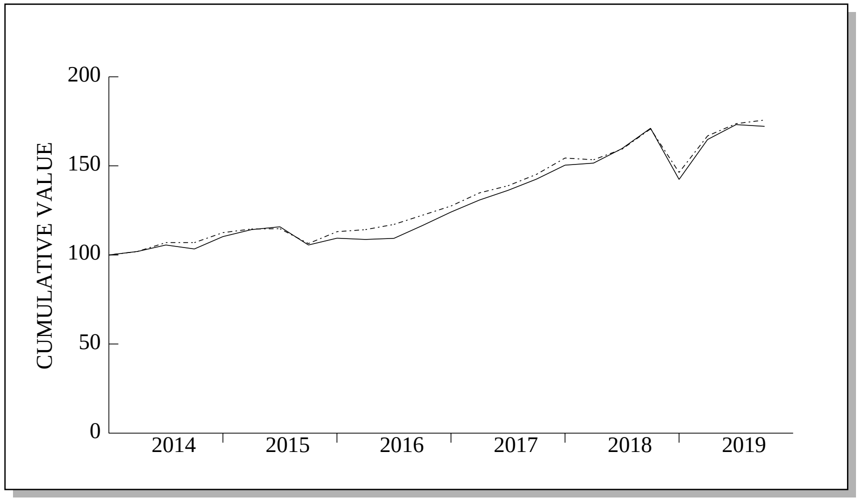


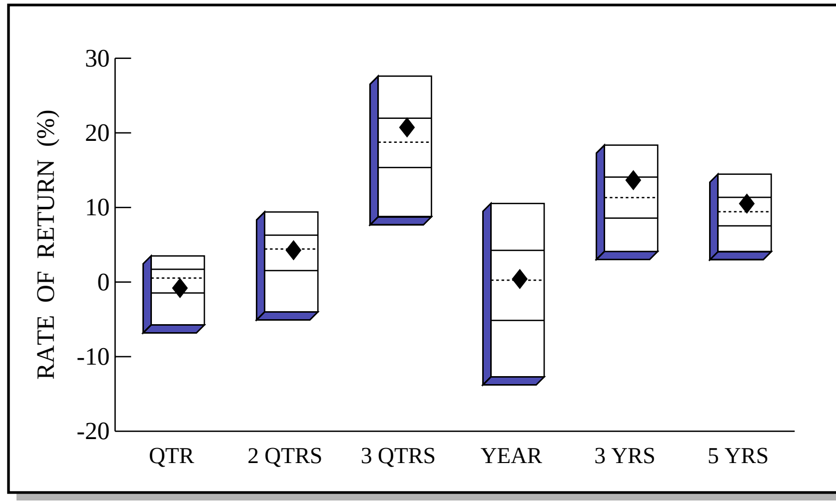
Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**26**
Quarters Below the Benchmark	**14**
Batting Average	**.650**

RATES OF RETURN

Date	Portfolio	Benchmark	Difference
12/09	3.7	3.5	0.2
3/10	3.4	3.8	-0.4
6/10	-6.0	-6.3	0.3
9/10	9.1	9.7	-0.6
12/10	7.3	7.5	-0.2
3/11	4.3	3.9	0.4
6/11	0.6	0.6	0.0
9/11	-12.1	-11.2	-0.9
12/11	6.6	6.4	0.2
3/12	9.2	8.5	0.7
6/12	-3.3	-2.2	-1.1
9/12	4.5	4.7	-0.2
12/12	2.5	1.9	0.6
3/13	5.5	5.4	0.1
6/13	0.4	0.3	0.1
9/13	6.6	5.6	1.0
12/13	5.8	5.7	0.1
3/14	1.8	1.5	0.3
6/14	3.3	3.9	-0.6
9/14	-1.5	-1.6	0.1
12/14	2.0	2.5	-0.5
3/15	3.3	2.5	0.8
6/15	0.9	0.7	0.2
9/15	-6.2	-6.2	0.0
12/15	2.4	3.5	-1.1
3/16	1.1	1.1	0.0
6/16	0.8	1.8	-1.0
9/16	5.2	4.4	0.8
12/16	1.5	1.7	-0.2
3/17	5.1	4.4	0.7
6/17	4.0	3.2	0.8
9/17	4.2	4.0	0.2
12/17	3.9	4.0	-0.1
3/18	0.8	-0.2	1.0
6/18	1.4	1.4	0.0
9/18	3.3	3.1	0.2
12/18	-9.2	-8.9	-0.3
3/19	9.8	8.6	1.2
6/19	3.3	2.8	0.5
9/19	-0.2	0.2	-0.4

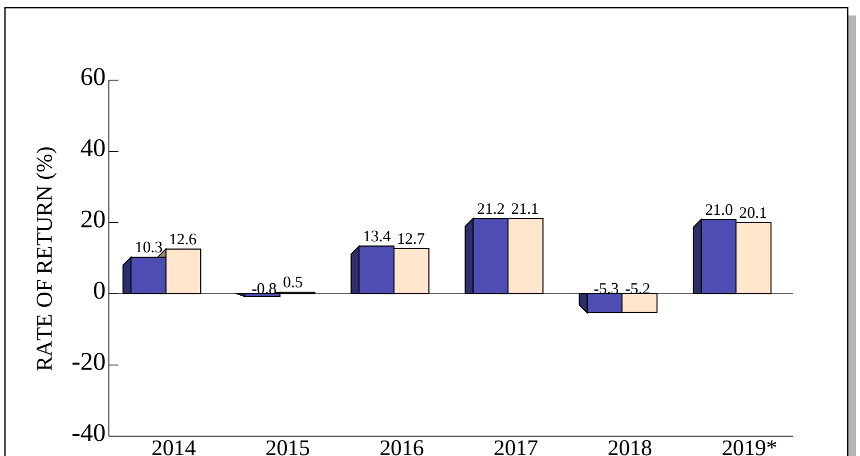
DOMESTIC EQUITY RETURN COMPARISONS





Domestic Equity Universe

PORTFOLIO
RUSSELL 3000



* Partial year

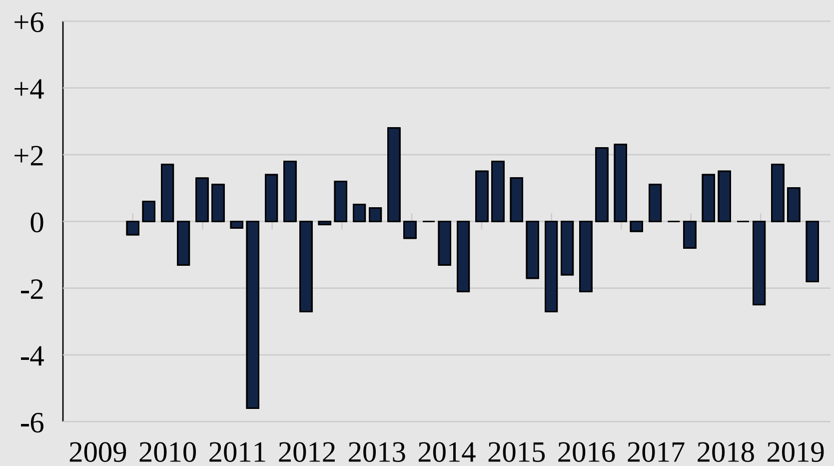
	------ANNUALIZED------					
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	-0.6	4.5	21.0	0.7	13.9	10.7
(RANK)	(66)	(50)	(33)	(49)	(27)	(33)
5TH %ILE	3.5	9.4	27.6	10.6	18.4	14.5
25TH %ILE	1.7	6.3	22.0	4.3	14.1	11.4
MEDIAN	0.5	4.4	18.7	0.3	11.3	9.4
75TH %ILE	-1.5	1.5	15.4	-5.1	8.6	7.5
95TH %ILE	-5.8	-4.0	8.8	-12.7	4.1	4.1
Russ 3000	***1.2***	***5.3***	***20.1***	***2.9***	***12.8***	***10.4***

Domestic Equity Universe

DOMESTIC EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: RUSSELL 3000

VARIATION FROM BENCHMARK



Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**23**
Quarters Below the Benchmark	**17**
Batting Average	**.575**

RATES OF RETURN

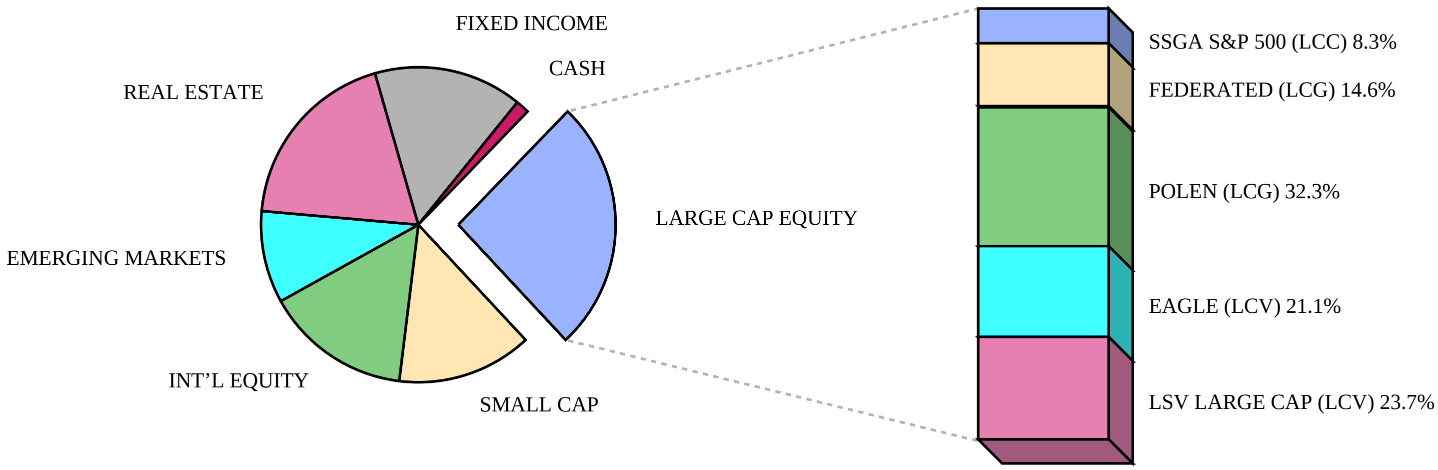
Date	Portfolio	Benchmark	Difference
12/09	5.5	5.9	-0.4
3/10	6.5	5.9	0.6
6/10	-9.6	-11.3	1.7
9/10	10.2	11.5	-1.3
12/10	12.9	11.6	1.3
3/11	7.5	6.4	1.1
6/11	-0.2	0.0	-0.2
9/11	-20.9	-15.3	-5.6
12/11	13.5	12.1	1.4
3/12	14.7	12.9	1.8
6/12	-5.8	-3.1	-2.7
9/12	6.1	6.2	-0.1
12/12	1.5	0.3	1.2
3/13	11.6	11.1	0.5
6/13	3.1	2.7	0.4
9/13	9.2	6.4	2.8
12/13	9.6	10.1	-0.5
3/14	2.0	2.0	0.0
6/14	3.6	4.9	-1.3
9/14	-2.1	0.0	-2.1
12/14	6.7	5.2	1.5
3/15	3.6	1.8	1.8
6/15	1.4	0.1	1.3
9/15	-8.9	-7.2	-1.7
12/15	3.6	6.3	-2.7
3/16	-0.6	1.0	-1.6
6/16	0.5	2.6	-2.1
9/16	6.6	4.4	2.2
12/16	6.5	4.2	2.3
3/17	5.4	5.7	-0.3
6/17	4.1	3.0	1.1
9/17	4.6	4.6	0.0
12/17	5.5	6.3	-0.8
3/18	0.8	-0.6	1.4
6/18	5.4	3.9	1.5
9/18	7.1	7.1	0.0
12/18	-16.8	-14.3	-2.5
3/19	15.7	14.0	1.7
6/19	5.1	4.1	1.0
9/19	-0.6	1.2	-1.8

LARGE CAP EQUITY MANAGERS

PMRB's aggregate large cap portfolio (excluding cash) returned 0.6%, which was 1.1% below the S&P 500 index return of 1.7%. Three of the four active large cap managers trailed behind their benchmarks. LSV's large cap portfolio matched its value benchmark.

SSgA S&P 500 (Core)	SSgA's S&P 500 fund continued to closely track the S&P 500 index over the short and long term. At quarter-end, this fund was valued at $55,618,747.
Federated (Growth)	The Federated portfolio's large cap component fell short of its benchmark by 1.1%. Mixed selection effects resulted in a third quarter return that was relatively flat next to the benchmark's modest growth. The Information Technology sector, which still towered over the other sectors despite being below market weight, did not keep pace with its index counterpart. This effect was countered by better results in the Communication Services, Consumer Discretionary, Health Care, and Materials sectors, but at quarter end, the portfolio was still behind the index.
Polen (Growth)	The invested portion of the portfolio returned 1.0%, which was 0.5% below the index. The Polen portfolio's concentration in Information Technology put it at a disadvantage in the third quarter. This sector produced middling returns in the broader market and unfavorable selection in the portfolio resulted in a contraction during the quarter. The Financials and Health Care sectors also lost ground. Strong returns in the second most heavily weighted sector, Consumer Discretionary partially offset the negative effects from the above mentioned sectors.
Eagle (Value)	The Eagle portfolio's invested portion returned -0.9%, compared to the benchmark's 1.4% return. Differences in allocation reduced the portfolios exposure to the weakest sectors (Energy and Materials), as well as the strongest (Consumer Staples, Real Estate, and Utilities). Unfortunately, the portfolio underperformed the index in all six invested sectors, leading to its contraction in an otherwise generally positive market environment.
LSV Large Cap (Value)	The LSV large cap portfolio returned 1.4%, which was equal to the index. While the LSV Large Cap portfolio did not benefit from the market performance of the Utilities sector, nor did it keep pace in the Real Estate sector, it did outperform in the Materials sector and significantly controlled losses in the Energy sector. These factors washed out to produce a quarterly return in line with the Russell 1000 Value index.

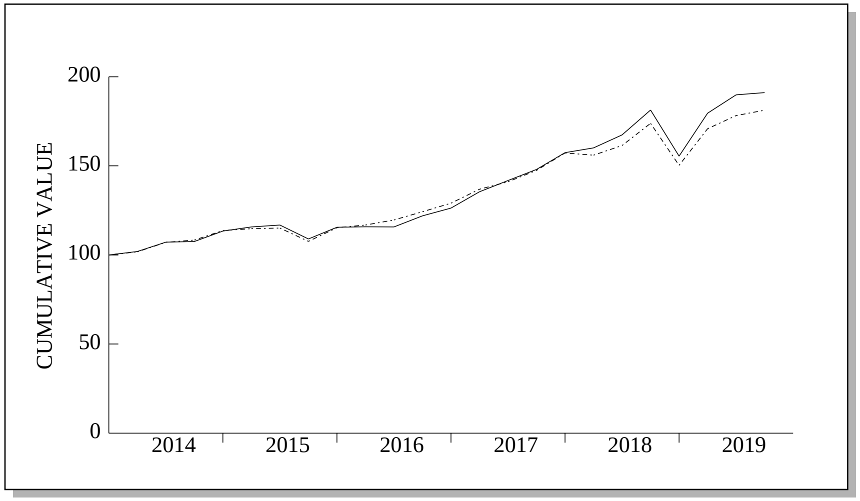
LARGE CAP EQUITY MANAGER SUMMARY

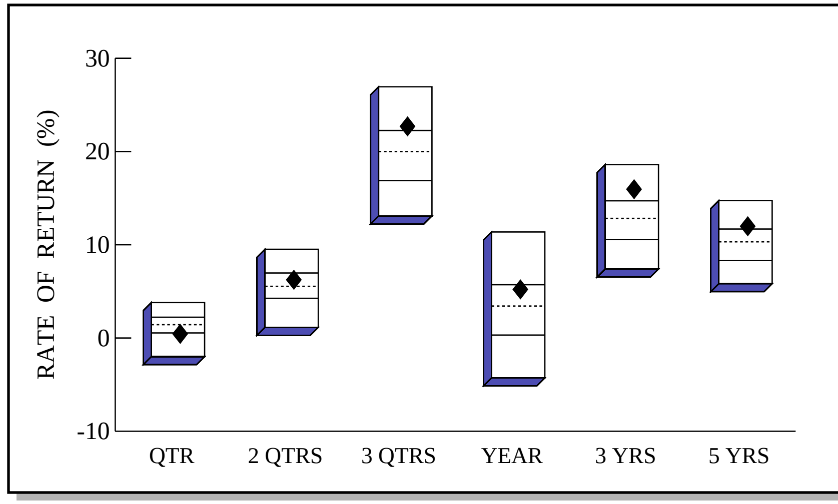


COMPONENT RETURNS AND RANKINGS

MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
SSGA S&P 500	(Large Cap Core)	1.7	(45)	20.5	(43)	4.3	(38)	13.4	(33)	10.8	(35)	$55,618,747
S&P 500		*1.7*	*----*	*20.6*	*----*	*4.3*	*----*	*13.4*	*----*	*10.8*	*----*	*----*
FEDERATED	(Large Cap Growth)	0.4	(56)	28.3	(6)	9.0	(17)	18.2	(25)	----	----	$97,903,797
POLEN	(Large Cap Growth)	1.0	(47)	26.8	(14)	10.4	(12)	21.1	(4)	18.6	(1)	$216,764,724
Russell 1000 Growth		*1.5*	*----*	*23.3*	*----*	*3.7*	*----*	*16.9*	*----*	*13.4*	*----*	*----*
EAGLE	(Large Cap Value)	-0.9	(95)	22.1	(13)	4.3	(33)	15.7	(3)	----	----	$141,717,245
LSV LARGE CAP	(Large Cap Value)	1.4	(58)	15.4	(77)	-2.2	(87)	9.6	(66)	7.0	(76)	$159,257,726
Russell 1000 Value		*1.4*	*----*	*17.8*	*----*	*4.0*	*----*	*9.4*	*----*	*7.8*	*----*	*----*
TOTAL	**(Large Cap)**	**0.6**	**(73)**	**22.9**	**(21)**	**5.4**	**(28)**	**16.2**	**(17)**	**12.2**	**(21)**	**$671,262,239**
S&P 500		*1.7*	*----*	*20.6*	*----*	*4.3*	*----*	*13.4*	*----*	*10.8*	*----*	*----*

LARGE CAP EQUITY RETURN COMPARISONS

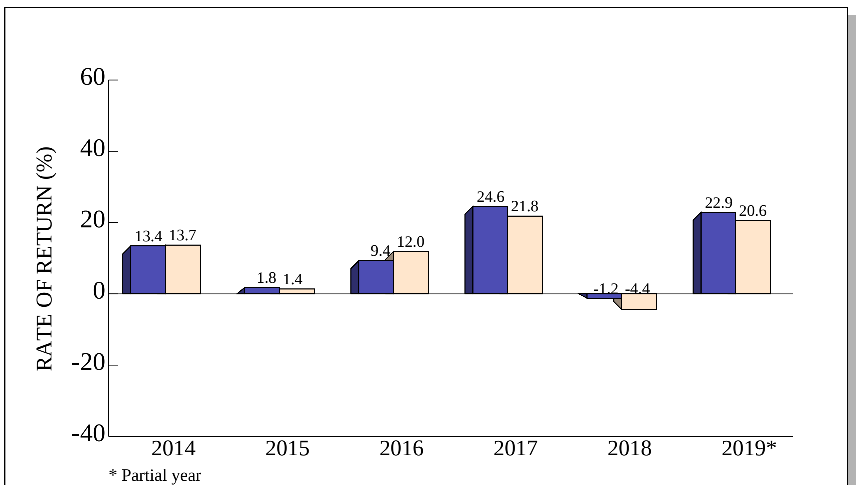




Large Cap Universe

PORTFOLIO

S&P 500



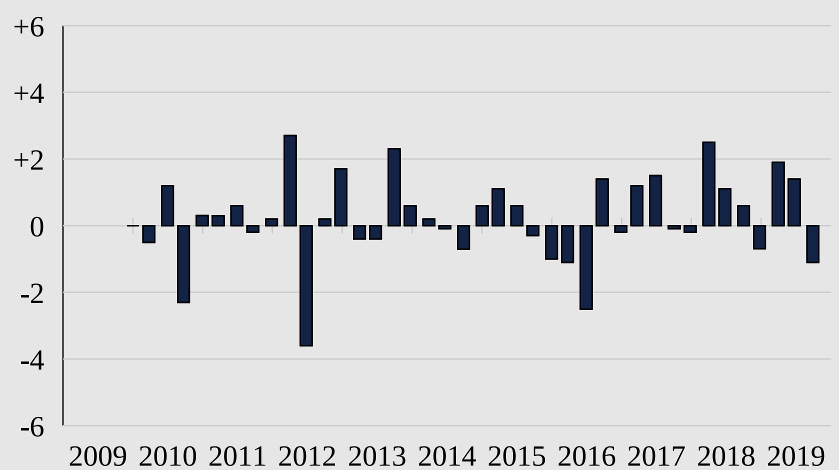
	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	0.6	6.4	22.9	5.4	16.2	12.2
(RANK)	(73)	(33)	(21)	(28)	(17)	(21)
5TH %ILE	3.8	9.5	26.9	11.4	18.6	14.8
25TH %ILE	2.2	7.0	22.3	5.7	14.7	11.7
MEDIAN	1.4	5.6	20.0	3.4	12.8	10.3
75TH %ILE	0.5	4.3	16.9	0.3	10.6	8.3
95TH %ILE	-2.0	1.1	13.1	-4.3	7.4	5.8
S&P 500	***1.7***	***6.1***	***20.6***	***4.3***	***13.4***	***10.8***

Large Cap Universe

LARGE CAP EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: S&P 500

VARIATION FROM BENCHMARK



Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**23**
Quarters Below the Benchmark	**17**
Batting Average	**.575**

RATES OF RETURN

Date	Portfolio	Benchmark	Difference
12/09	6.0	6.0	0.0
3/10	4.8	5.3	-0.5
6/10	-10.2	-11.4	1.2
9/10	9.0	11.3	-2.3
12/10	11.1	10.8	0.3
3/11	6.2	5.9	0.3
6/11	0.7	0.1	0.6
9/11	-14.1	-13.9	-0.2
12/11	12.0	11.8	0.2
3/12	15.3	12.6	2.7
6/12	-6.4	-2.8	-3.6
9/12	6.5	6.3	0.2
12/12	1.3	-0.4	1.7
3/13	10.2	10.6	-0.4
6/13	2.5	2.9	-0.4
9/13	7.5	5.2	2.3
12/13	11.1	10.5	0.6
3/14	2.0	1.8	0.2
6/14	5.1	5.2	-0.1
9/14	0.4	1.1	-0.7
12/14	5.5	4.9	0.6
3/15	2.0	0.9	1.1
6/15	0.9	0.3	0.6
9/15	-6.7	-6.4	-0.3
12/15	6.0	7.0	-1.0
3/16	0.2	1.3	-1.1
6/16	0.0	2.5	-2.5
9/16	5.3	3.9	1.4
12/16	3.6	3.8	-0.2
3/17	7.3	6.1	1.2
6/17	4.6	3.1	1.5
9/17	4.4	4.5	-0.1
12/17	6.4	6.6	-0.2
3/18	1.7	-0.8	2.5
6/18	4.5	3.4	1.1
9/18	8.3	7.7	0.6
12/18	-14.2	-13.5	-0.7
3/19	15.5	13.6	1.9
6/19	5.7	4.3	1.4
9/19	0.6	1.7	-1.1

SMALL CAP EQUITY MANAGERS

Last quarter, the Russell 2000 Growth Index returned -4.2% versus -0.6% for the Russell 2000 Value Index. The portfolio's small cap component (excluding cash) lost 2.7%, while the Russell 2000 index walked back 2.4%. Copeland and Smith, Graham beat their respective indices, but the other small cap managers matched or missed their marks.

SSgA (Core)

The SSgA small cap component performed in line with the Russell 2000 index. At quarter end, this investment was valued at $83,798,332.

AMI (Growth)

AMI's invested portion lost 9.0% last quarter, well behind the Russell 2000 Growth index. The small cap growth market shrank in the third quarter and the AMI portfolio doubled down on the benchmark's losses. Selection was the main factor; only the Materials sector, which made up 4.2% of the portfolio, outperformed its index counterpart. The Financials sector walked back the most, but the heavily weighted Information Technology sector also had a large negative impact.

Copeland (Growth)

The Copeland portfolio's invested equities returned 2.2%, a strong performance for mostly negative market environment. There were a few sectors that nose-dived in the small cap growth market, but the portfolio made gains in most of these sectors, putting significant daylight between its return and that of the index. These flipped sectors included Communication Services, Energy, and Health Care. Positive market returns in the Real Estate and Utilities sectors were improved upon in the Copeland portfolio.

Emerald (Growth)

The Emerald small cap component was down 6.5%. Selection effects were mixed in the third quarter; six sectors failed to beat their index counterparts, including Consumer Discretionary and Health Care, which together made up about half the portfolio. The next two largest sectors, Industrials and Information Technology also fell short on performance and together made up about a third of the portfolio.

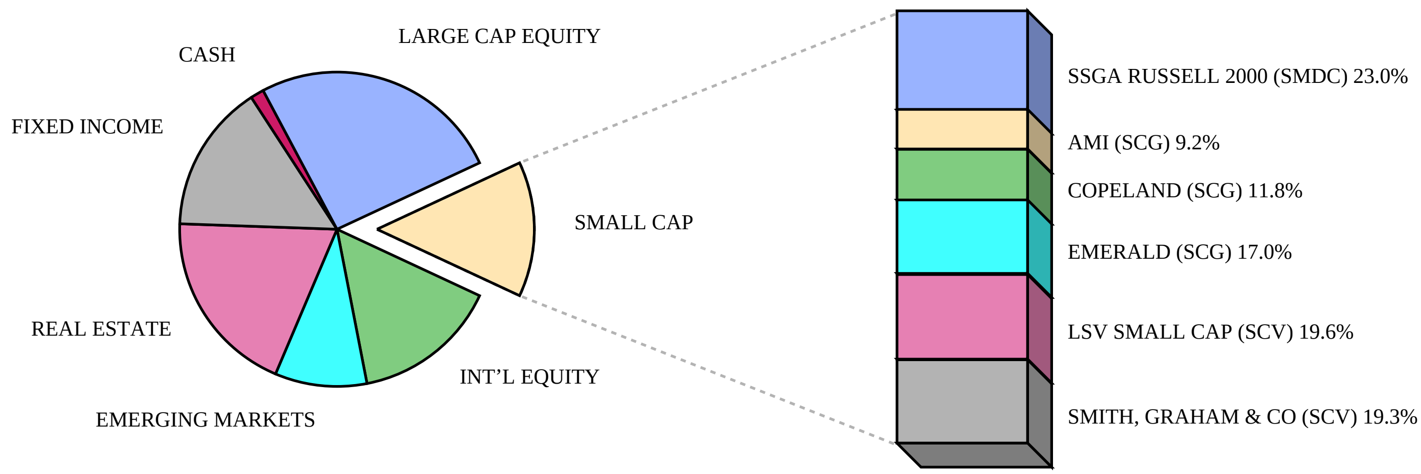
LSV Small Cap (Value)

The LSV small cap value equity segment slipped 0.6%, which was in line with the value index. Detractors to performance included Communication Services, Consumer Staples, Materials, and Utilities, which all posted losses below the index. Positive allocation effects pushed performance in the other direction, in particular through increased weight in the Consumer Discretionary and Information Technology sectors, which had the best returns in the small cap value market.

Smith, Graham & Co (Value)

The invested portion of the Smith, Graham & Co portfolio returned 0.8%. The portfolio's extra weight in the Consumer Discretionary and Information Technology sectors allowed it to take better advantage of positive returns there that were somewhat elusive elsewhere in the small cap value market. Likewise, the reduced positions in Energy and Materials lessened exposure to sectors that contracted.

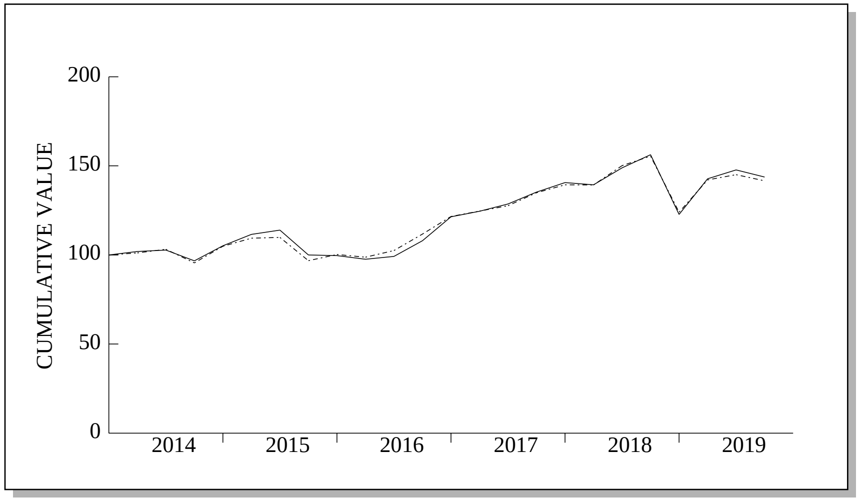
SMALL CAP EQUITY MANAGER SUMMARY

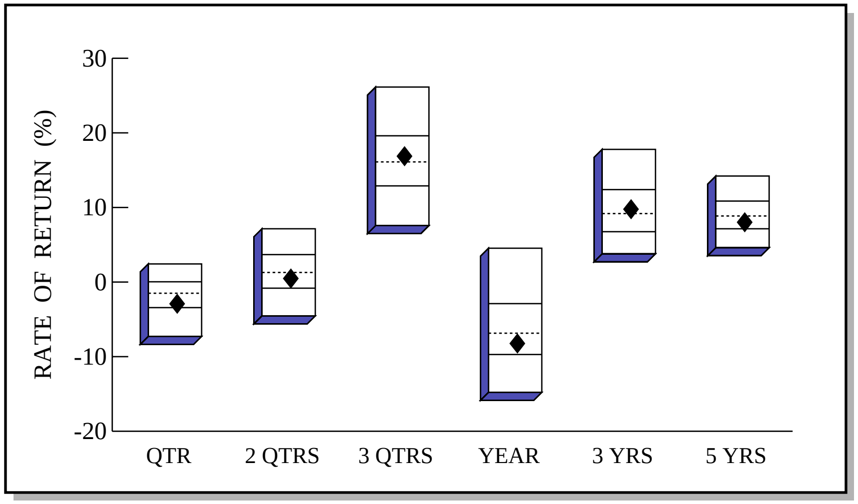


COMPONENT RETURNS AND RANKINGS

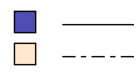
MANAGER	(UNIVERSE)	QTR	YTD	1 YEAR	3 YEARS	5 YEARS	MARKET VALUE
SSGA RUSSELL 2000	(Small Cap)	-2.4 (64)	14.2 (66)	-8.8 (67)	8.3 (60)	8.3 (60)	$83,798,332
Russell 2000		*-2.4 ----*	*14.2 ----*	*-8.9 ----*	*8.2 ----*	*8.2 ----*	*----*
AMI	(Small Cap Growth)	-9.0 (96)	0.5 (99)	-24.9 (99)	---- ----	---- ----	$33,523,089
COPELAND	(Small Cap Growth)	2.2 (3)	24.5 (19)	5.9 (3)	---- ----	---- ----	$42,994,661
EMERALD	(Small Cap Growth)	-6.5 (76)	18.5 (52)	-8.4 (63)	12.5 (59)	12.2 (33)	$61,963,524
Russell 2000 Growth		*-4.2 ----*	*15.3 ----*	*-9.7 ----*	*9.8 ----*	*9.1 ----*	*----*
LSV SMALL CAP	(Small Cap Value)	-0.6 (60)	14.8 (61)	-8.1 (61)	---- ----	---- ----	$71,568,817
SMITH, GRAHAM & CO	(Small Cap Value)	0.8 (35)	20.0 (16)	-6.8 (54)	---- ----	---- ----	$70,434,197
Russell 2000 Value		*-0.6 ----*	*12.8 ----*	*-8.3 ----*	*6.5 ----*	*7.2 ----*	*----*
TOTAL	**(Small Cap)**	**-2.7 (69)**	**17.1 (42)**	**-8.0 (58)**	**10.0 (41)**	**8.3 (60)**	**$364,282,620**
Russell 2000		*-2.4 ----*	*14.2 ----*	*-8.9 ----*	*8.2 ----*	*8.2 ----*	*----*

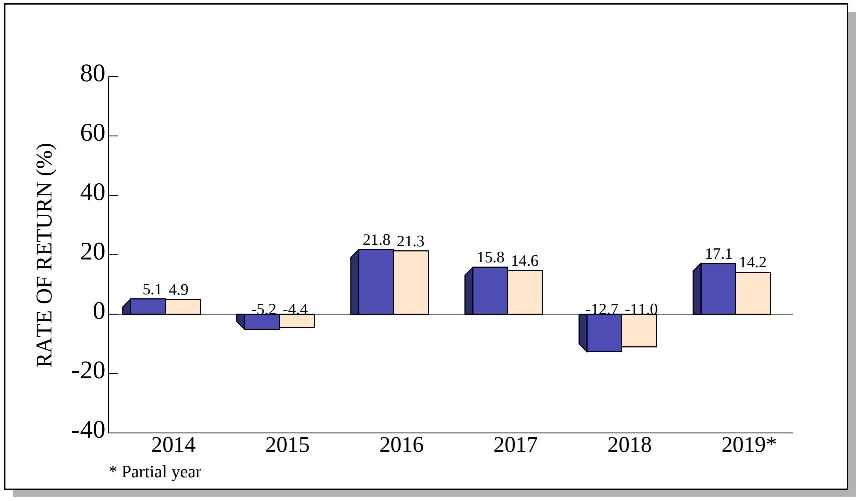
SMALL CAP EQUITY RETURN COMPARISONS





Small Cap Universe





* Partial year

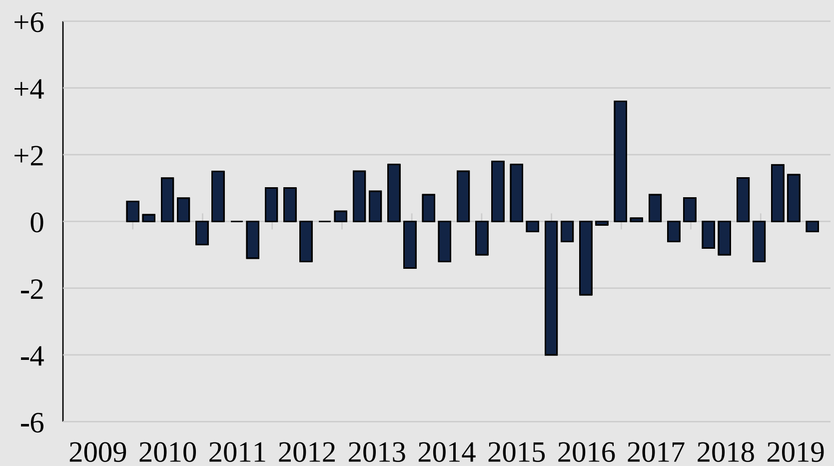
	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	-2.7	0.7	17.1	-8.0	10.0	8.3
(RANK)	(69)	(58)	(42)	(58)	(41)	(60)
5TH %ILE	2.4	7.1	26.2	4.5	17.8	14.2
25TH %ILE	0.0	3.7	19.6	-2.9	12.4	10.8
MEDIAN	-1.5	1.3	16.1	-6.9	9.2	8.9
75TH %ILE	-3.4	-0.8	12.9	-9.7	6.7	7.1
95TH %ILE	-7.3	-4.5	7.6	-14.8	3.8	4.6
Russ 2000	***-2.4***	***-0.4***	***14.2***	***-8.9***	***8.2***	***8.2***

Small Cap Universe

SMALL CAP EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: RUSSELL 2000

VARIATION FROM BENCHMARK



Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**24**
Quarters Below the Benchmark	**16**
Batting Average	**.600**

RATES OF RETURN

Date	Portfolio	Benchmark	Difference
12/09	4.5	3.9	0.6
3/10	9.1	8.9	0.2
6/10	-8.6	-9.9	1.3
9/10	12.0	11.3	0.7
12/10	15.6	16.3	-0.7
3/11	9.4	7.9	1.5
6/11	-1.6	-1.6	0.0
9/11	-23.0	-21.9	-1.1
12/11	16.5	15.5	1.0
3/12	13.4	12.4	1.0
6/12	-4.7	-3.5	-1.2
9/12	5.2	5.2	0.0
12/12	2.1	1.8	0.3
3/13	13.9	12.4	1.5
6/13	4.0	3.1	0.9
9/13	11.9	10.2	1.7
12/13	7.3	8.7	-1.4
3/14	1.9	1.1	0.8
6/14	0.8	2.0	-1.2
9/14	-5.9	-7.4	1.5
12/14	8.7	9.7	-1.0
3/15	6.1	4.3	1.8
6/15	2.1	0.4	1.7
9/15	-12.2	-11.9	-0.3
12/15	-0.4	3.6	-4.0
3/16	-2.1	-1.5	-0.6
6/16	1.6	3.8	-2.2
9/16	8.9	9.0	-0.1
12/16	12.4	8.8	3.6
3/17	2.6	2.5	0.1
6/17	3.3	2.5	0.8
9/17	5.1	5.7	-0.6
12/17	4.0	3.3	0.7
3/18	-0.9	-0.1	-0.8
6/18	6.8	7.8	-1.0
9/18	4.9	3.6	1.3
12/18	-21.4	-20.2	-1.2
3/19	16.3	14.6	1.7
6/19	3.5	2.1	1.4
9/19	-2.7	-2.4	-0.3

INTERNATIONAL & EMERGING MARKETS EQUITY MANAGERS

PMRB's aggregate developed international portfolio (excluding cash) returned -0.6% over the quarter, 0.4% above the MSCI EAFE Index return of -1.0%. The S&P BMI Developed Markets Ex US returned -0.9% vs -0.8% for the MSCI World Ex US. The Emerging Markets portfolio, driven by its only manager, SSgA, gained 0.7%, in line with the MSCI Emerging Markets Index.

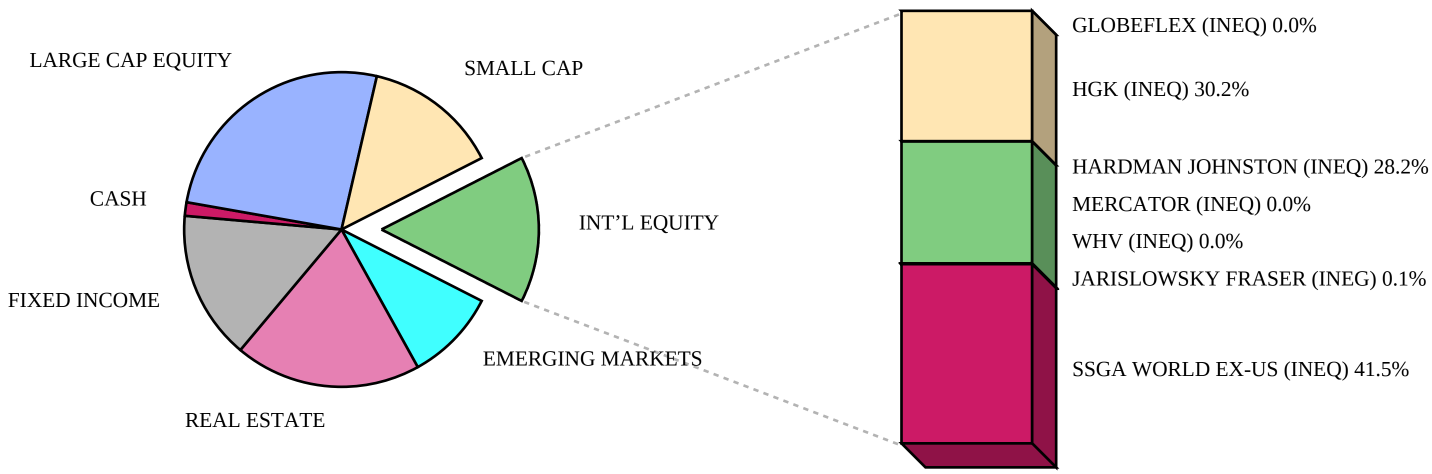
SSgA Developed The SSgA developed markets component returned -0.9% during the quarte. Over the trailing year, this component was down 0.5%. This investment was valued at $161,239,853 at quarter end.

Hardman Johnston The Hardman Johnston international equity component lost 1.5% over the quarter. Over the last four quarters, the component gained 3.4%, while the S&P BMI Developed Ex US lost 2.0%.

HGK HGK's equity component return of 0.6% was 1.5% ahead of the S&P BMI Developed Ex US. Over the trailing year, the HGK international equity component gained 1.5%.

SSgA Emerging The SSgA emerging markets fund lost 4.3% during the quarter. Over the trailing five years, annualized, this component gained 2.3%. At quarter end, this fund was valued at $247,393,031.

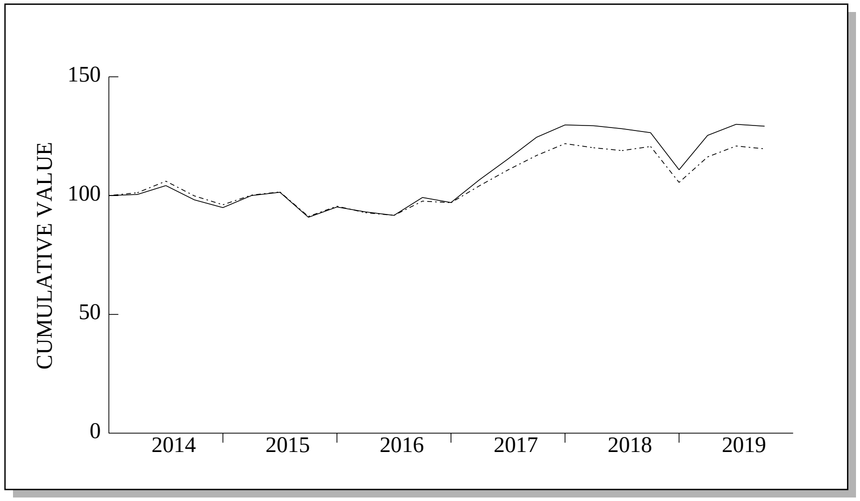
INTERNATIONAL EQUITY MANAGER SUMMARY

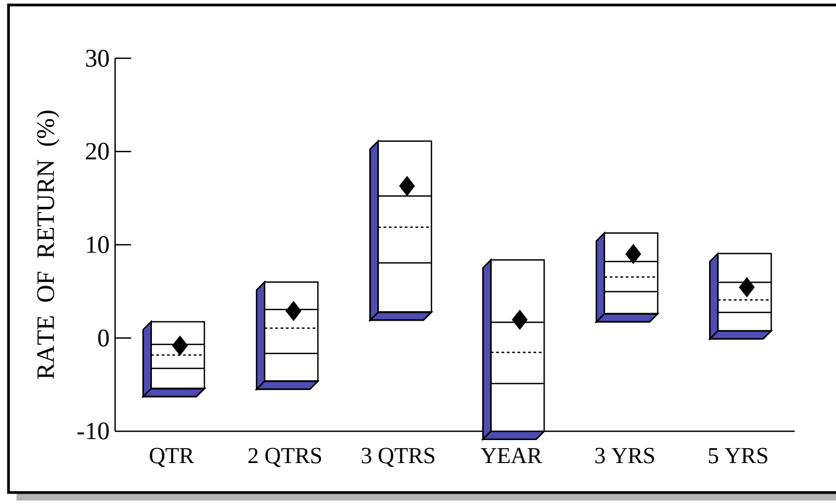


COMPONENT RETURNS AND RANKINGS

MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
GLOBEFLEX	(International Equity)	----	----	----	----	----	----	----	----	----	----	$4,212
HGK	(International Equity)	0.6	(10)	14.8	(27)	1.5	(27)	9.9	(11)	5.9	(26)	$117,447,427
HARDMAN JOHNSTON	(International Equity)	-1.5	(43)	18.9	(9)	3.4	(17)	10.8	(7)	7.6	(11)	$109,725,691
MERCATOR	(International Equity)	----	----	----	----	----	----	----	----	----	----	$17,618
WHV	(International Equity)	----	----	----	----	----	----	----	----	----	----	$2,914
S&P BMI Developed Ex US Index		*-0.9*	*----*	*13.0*	*----*	*-2.0*	*----*	*6.7*	*----*	*3.8*	*----*	*----*
JARISLOWSKY FRASER	(International Equity)	----	----	----	----	----	----	----	----	----	----	$508,332
MSCI EAFE		*-1.0*	*----*	*13.3*	*----*	*-0.8*	*----*	*7.0*	*----*	*3.8*	*----*	*----*
SSGA WORLD EX-US	(International Equity)	-0.9	(28)	14.0	(32)	-0.5	(40)	6.9	(43)	3.5	(62)	$161,533,659
MSCI World Ex US		*-0.8*	*----*	*14.2*	*----*	*-0.4*	*----*	*7.1*	*----*	*3.7*	*----*	*----*
TOTAL	**(International Equity)**	**-0.6**	**(25)**	**16.5**	**(18)**	**2.1**	**(23)**	**9.2**	**(16)**	**5.6**	**(28)**	**$389,239,853**
Blended International Index		*-1.0*	*----*	*13.3*	*----*	*-0.8*	*----*	*7.0*	*----*	*3.7*	*----*	*----*

INTERNATIONAL EQUITY RETURN COMPARISONS

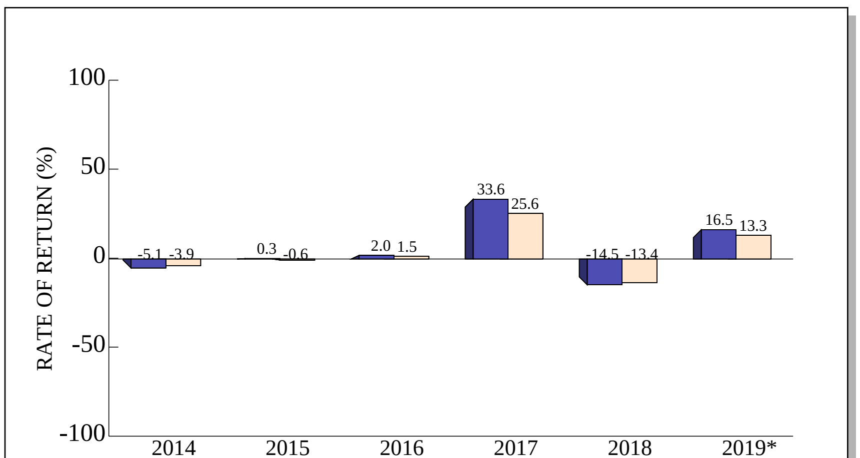




International Equity Universe

PORTFOLIO

INT'L INDEX



* Partial year

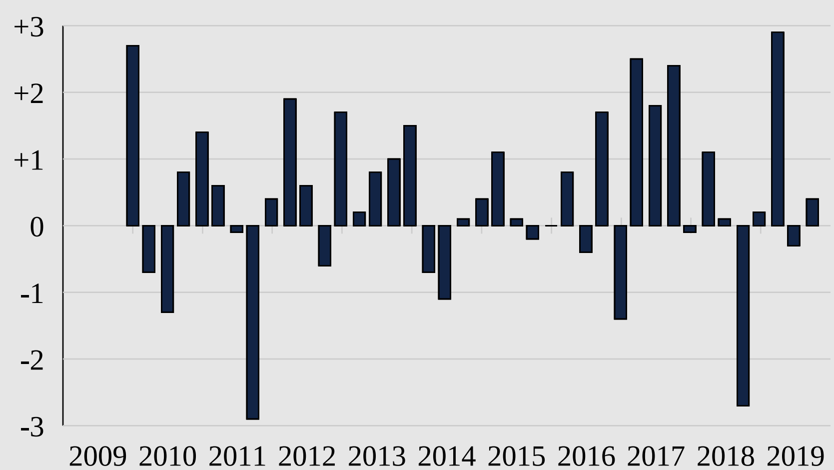
					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	-0.6	3.1	16.5	2.1	9.2	5.6
(RANK)	(25)	(25)	(18)	(23)	(16)	(28)
5TH %ILE	1.7	6.0	21.1	8.4	11.3	9.1
25TH %ILE	-0.7	3.1	15.2	1.7	8.2	6.0
MEDIAN	-1.8	1.1	11.9	-1.6	6.5	4.1
75TH %ILE	-3.3	-1.7	8.1	-4.9	5.0	2.8
95TH %ILE	-5.4	-4.6	2.8	-10.0	2.6	0.8
Intl Index	***-1.0***	***2.9***	***13.3***	***-0.8***	***7.0***	***3.7***

International Equity Universe

INTERNATIONAL EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: BLENDED INTERNATIONAL INDEX

VARIATION FROM BENCHMARK

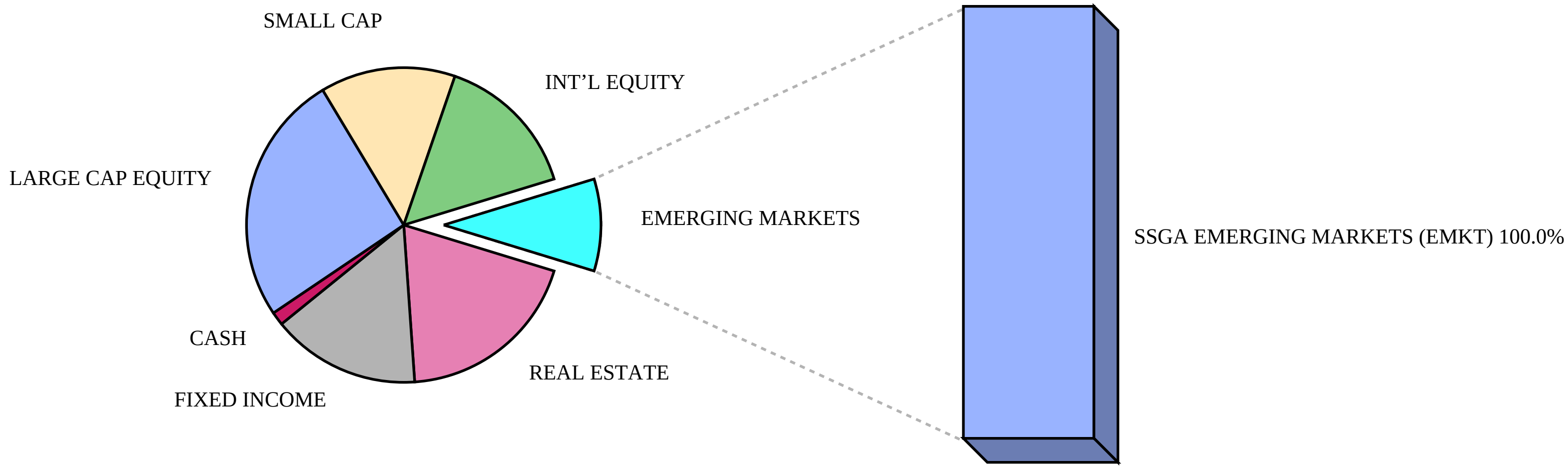


Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**27**
Quarters Below the Benchmark	**13**
Batting Average	**.675**

RATES OF RETURN

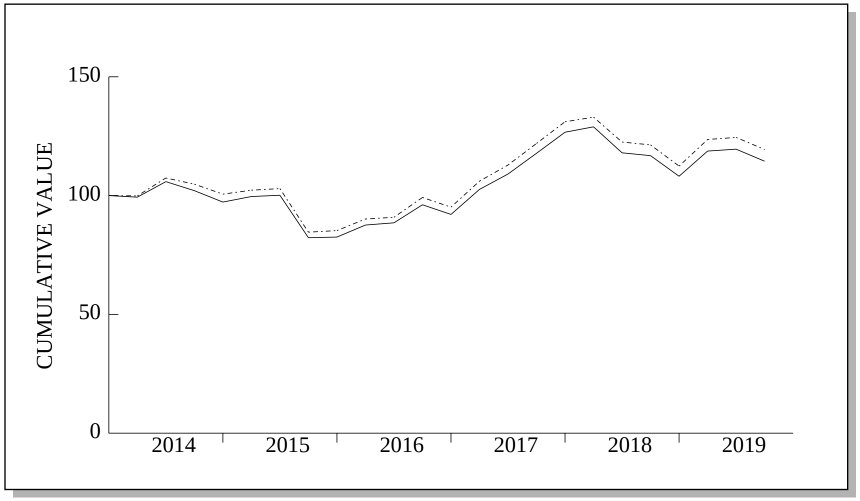
Date	Portfolio	Benchmark	Difference
12/09	5.0	2.3	2.7
3/10	1.4	2.1	-0.7
6/10	-14.0	-12.7	-1.3
9/10	17.3	16.5	0.8
12/10	9.5	8.1	1.4
3/11	4.6	4.0	0.6
6/11	0.5	0.6	-0.1
9/11	-22.2	-19.3	-2.9
12/11	3.7	3.3	0.4
3/12	14.2	12.3	1.9
6/12	-6.6	-7.2	0.6
9/12	7.1	7.7	-0.6
12/12	7.5	5.8	1.7
3/13	5.1	4.9	0.2
6/13	-1.0	-1.8	0.8
9/13	12.9	11.9	1.0
12/13	6.9	5.4	1.5
3/14	0.5	1.2	-0.7
6/14	3.7	4.8	-1.1
9/14	-5.8	-5.9	0.1
12/14	-3.3	-3.7	0.4
3/15	5.3	4.2	1.1
6/15	1.4	1.3	0.1
9/15	-10.4	-10.2	-0.2
12/15	4.7	4.7	0.0
3/16	-2.1	-2.9	0.8
6/16	-1.6	-1.2	-0.4
9/16	8.2	6.5	1.7
12/16	-2.1	-0.7	-1.4
3/17	9.9	7.4	2.5
6/17	8.2	6.4	1.8
9/17	7.9	5.5	2.4
12/17	4.2	4.3	-0.1
3/18	-0.3	-1.4	1.1
6/18	-0.9	-1.0	0.1
9/18	-1.3	1.4	-2.7
12/18	-12.3	-12.5	0.2
3/19	13.0	10.1	2.9
6/19	3.7	4.0	-0.3
9/19	-0.6	-1.0	0.4

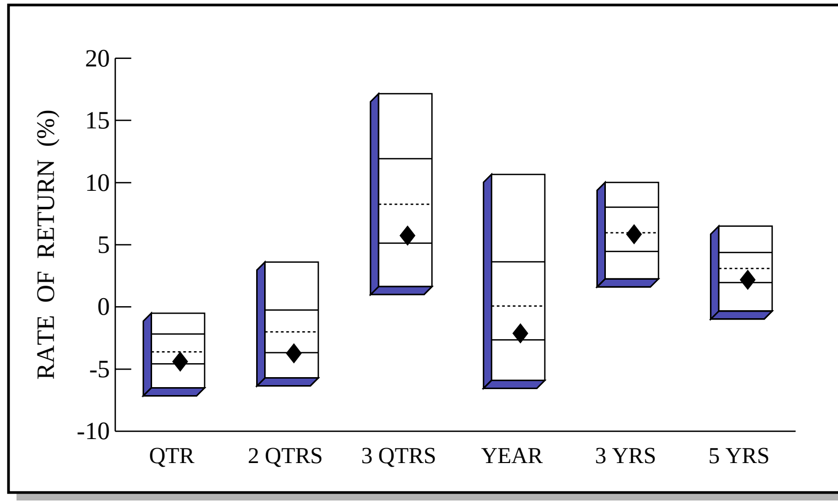
EMERGING MARKETS EQUITY MANAGER SUMMARY



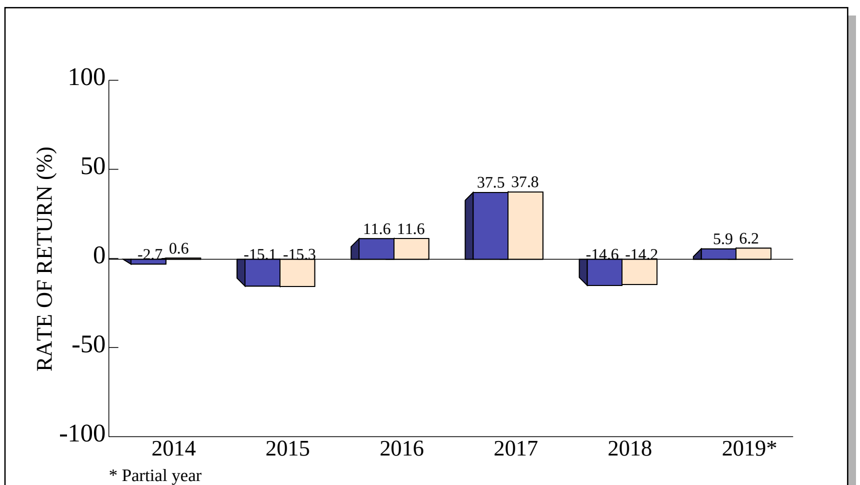
MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
		COMPONENT RETURNS AND RANKINGS										
SSGA EMERGING MARKETS	(Emerging Markets)	-4.3	(67)	5.9	(66)	-2.0	(72)	6.0	(50)	2.3	(67)	$247,393,031
Blended Emerging Markets Index		*-4.1*	*----*	*6.2*	*----*	*-1.6*	*----*	*6.4*	*----*	*2.6*	*----*	*----*
TOTAL	**(Emerging Markets)**	**-4.3**	**(67)**	**5.9**	**(66)**	**-2.0**	**(72)**	**6.0**	**(50)**	**2.3**	**(67)**	**$247,393,031**
Blended Emerging Markets Index		*-4.1*	*----*	*6.2*	*----*	*-1.6*	*----*	*6.4*	*----*	*2.6*	*----*	*----*

EMERGING MARKETS EQUITY RETURN COMPARISONS





Emerging Markets Universe



* Partial year

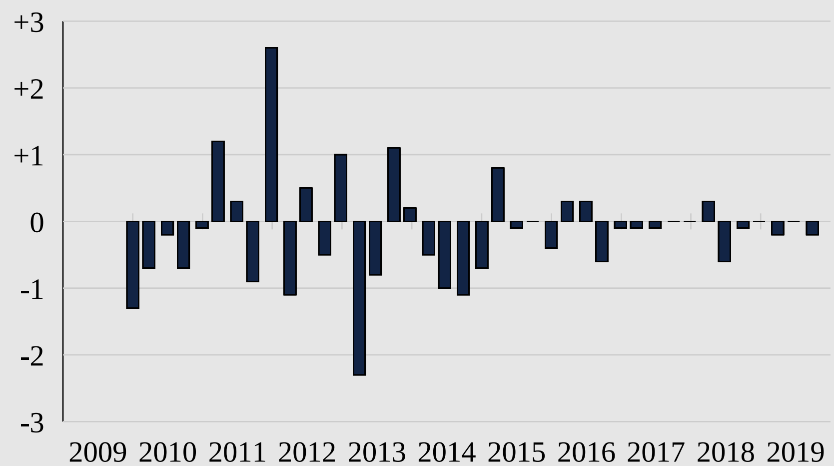
	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	-4.3	-3.6	5.9	-2.0	6.0	2.3
(RANK)	(67)	(71)	(66)	(72)	(50)	(67)
5TH %ILE	-0.5	3.6	17.1	10.7	10.0	6.5
25TH %ILE	-2.2	-0.2	11.9	3.6	8.0	4.4
MEDIAN	-3.6	-2.0	8.3	0.1	6.0	3.1
75TH %ILE	-4.6	-3.7	5.1	-2.7	4.5	2.0
95TH %ILE	-6.5	-5.7	1.6	-5.9	2.3	-0.3
EM Index	***-4.1***	***-3.4***	***6.2***	***-1.6***	***6.4***	***2.6***

Emerging Markets Universe

EMERGING MARKETS EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: BLENDED EMERGING MARKETS INDEX

VARIATION FROM BENCHMARK

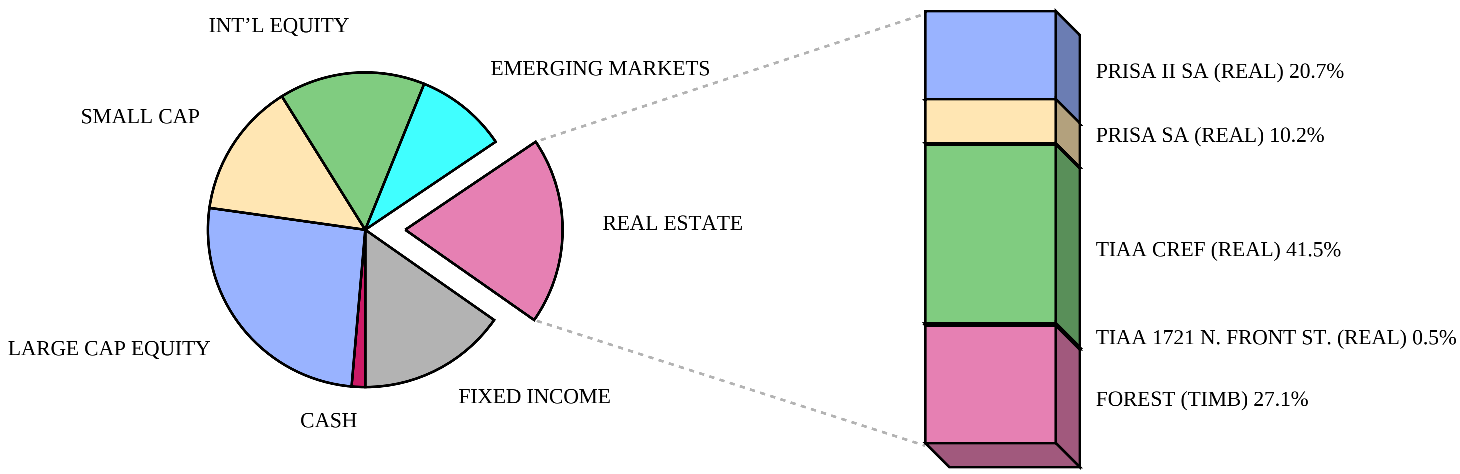


Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**16**
Quarters Below the Benchmark	**24**
Batting Average	**.400**

RATES OF RETURN

Date	Portfolio	Benchmark	Difference
12/09	8.8	10.1	-1.3
3/10	2.1	2.8	-0.7
6/10	-8.4	-8.2	-0.2
9/10	17.9	18.6	-0.7
12/10	7.2	7.3	-0.1
3/11	1.9	0.7	1.2
6/11	-1.2	-1.5	0.3
9/11	-23.4	-22.5	-0.9
12/11	5.7	3.1	2.6
3/12	13.8	14.9	-1.1
6/12	-8.4	-8.9	0.5
9/12	7.0	7.5	-0.5
12/12	6.6	5.6	1.0
3/13	-2.6	-0.3	-2.3
6/13	-8.1	-7.3	-0.8
9/13	5.8	4.7	1.1
12/13	2.2	2.0	0.2
3/14	-0.7	-0.2	-0.5
6/14	6.6	7.6	-1.0
9/14	-3.6	-2.5	-1.1
12/14	-4.7	-4.0	-0.7
3/15	2.4	1.6	0.8
6/15	0.6	0.7	-0.1
9/15	-17.8	-17.8	0.0
12/15	0.3	0.7	-0.4
3/16	6.1	5.8	0.3
6/16	1.1	0.8	0.3
9/16	8.6	9.2	-0.6
12/16	-4.2	-4.1	-0.1
3/17	11.4	11.5	-0.1
6/17	6.3	6.4	-0.1
9/17	8.0	8.0	0.0
12/17	7.5	7.5	0.0
3/18	1.8	1.5	0.3
6/18	-8.5	-7.9	-0.6
9/18	-1.0	-0.9	-0.1
12/18	-7.4	-7.4	0.0
3/19	9.8	10.0	-0.2
6/19	0.7	0.7	0.0
9/19	-4.3	-4.1	-0.2

REAL ESTATE MANAGER SUMMARY



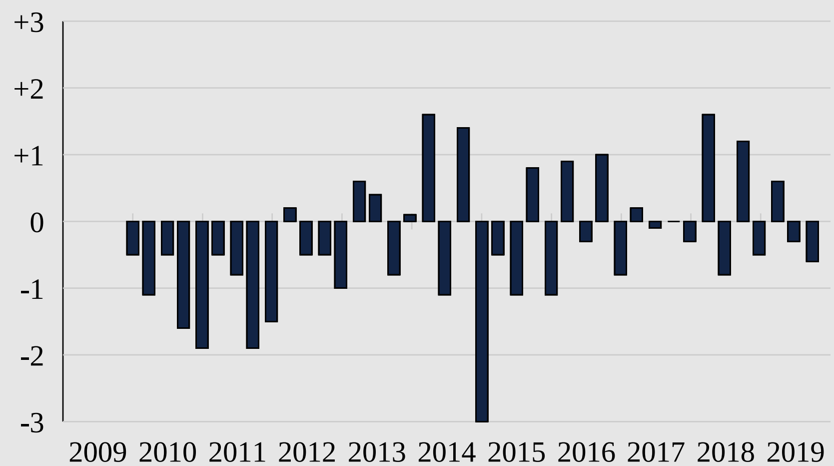
COMPONENT RETURNS AND RANKINGS

MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
PRISA II SA		1.7	----	5.3	----	6.8	----	8.6	----	10.8	----	$103,380,918
PRISA SA		1.5	----	4.9	----	6.9	----	7.9	----	9.8	----	$51,125,042
TIAA CREF		3.6	----	7.7	----	9.7	----	8.2	----	8.7	----	$207,667,082
NCREIF NFI-ODCE Index		*1.3*	*----*	*3.8*	*----*	*5.6*	*----*	*7.3*	*----*	*9.3*	*----*	*----*
TIAA 1721 N. FRONT ST.		1.1	----	2.9	----	-3.5	----	0.0	----	----	----	$2,336,497
NCREIF Property Index		*1.4*	*----*	*4.8*	*----*	*6.2*	*----*	*6.8*	*----*	*8.6*	*----*	*----*
FOREST		-4.1	----	-0.9	----	-1.8	----	3.7	----	4.7	----	$135,802,793
NCREIF Timber Index		*0.2*	*----*	*1.3*	*----*	*2.1*	*----*	*3.1*	*----*	*4.4*	*----*	*----*
TOTAL		**0.8**	----	**4.5**	----	**5.4**	----	**6.8**	----	**7.9**	----	**$500,312,332**
NCREIF Property Index		*1.4*	*----*	*4.8*	*----*	*6.2*	*----*	*6.8*	*----*	*8.6*	*----*	*----*

REAL ESTATE QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: NCREIF PROPERTY INDEX

VARIATION FROM BENCHMARK



Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**14**
Quarters Below the Benchmark	**26**
Batting Average	**.350**

RATES OF RETURN

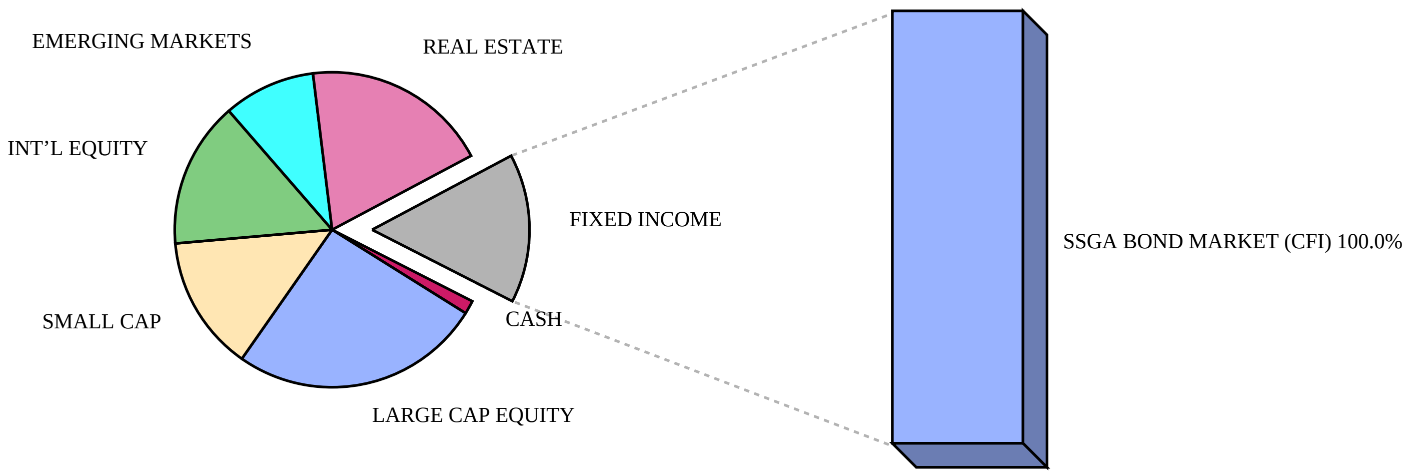
Date	Portfolio	Benchmark	Difference
12/09	-2.6	-2.1	-0.5
3/10	-0.3	0.8	-1.1
6/10	2.8	3.3	-0.5
9/10	2.3	3.9	-1.6
12/10	2.7	4.6	-1.9
3/11	2.9	3.4	-0.5
6/11	3.1	3.9	-0.8
9/11	1.4	3.3	-1.9
12/11	1.5	3.0	-1.5
3/12	2.8	2.6	0.2
6/12	2.2	2.7	-0.5
9/12	1.8	2.3	-0.5
12/12	1.5	2.5	-1.0
3/13	3.2	2.6	0.6
6/13	3.3	2.9	0.4
9/13	1.8	2.6	-0.8
12/13	2.6	2.5	0.1
3/14	4.3	2.7	1.6
6/14	1.8	2.9	-1.1
9/14	4.0	2.6	1.4
12/14	0.0	3.0	-3.0
3/15	3.1	3.6	-0.5
6/15	2.0	3.1	-1.1
9/15	3.9	3.1	0.8
12/15	1.8	2.9	-1.1
3/16	3.1	2.2	0.9
6/16	1.7	2.0	-0.3
9/16	2.8	1.8	1.0
12/16	0.9	1.7	-0.8
3/17	1.7	1.5	0.2
6/17	1.7	1.8	-0.1
9/17	1.7	1.7	0.0
12/17	1.5	1.8	-0.3
3/18	3.3	1.7	1.6
6/18	1.0	1.8	-0.8
9/18	2.9	1.7	1.2
12/18	0.9	1.4	-0.5
3/19	2.4	1.8	0.6
6/19	1.2	1.5	-0.3
9/19	0.8	1.4	-0.6

FIXED INCOME MANAGER

The Bloomberg Barclays US Aggregate Index returned 2.3% last quarter, while the Bloomberg Barclays Gov/Credit index was up 2.6%. For the trailing year they were up 10.3% and 11.3%, respectively.

SSgA (Broad Market)	The SSgA fixed income component returned 2.3% last quarter. Over the trailing five years, the fund rose 3.4% per annum, in line with the Bloomberg Barclays Aggregate Index. At year end, this investment was valued at $402,314,970.

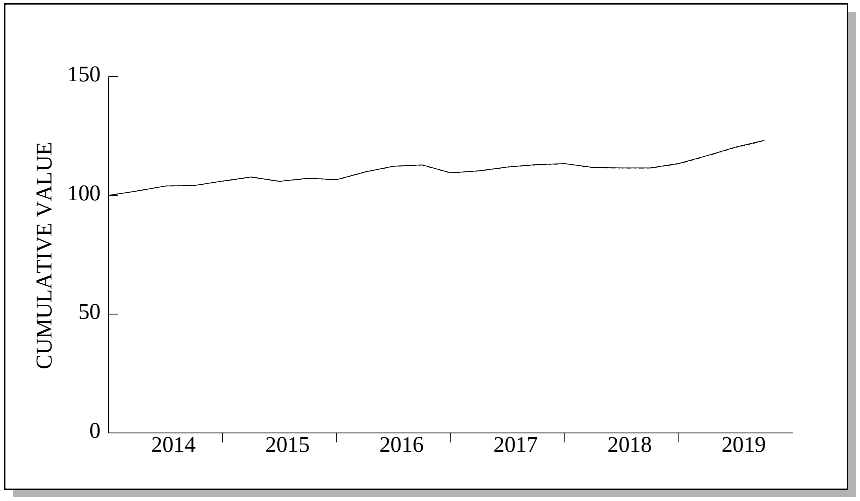
FIXED INCOME MANAGER SUMMARY

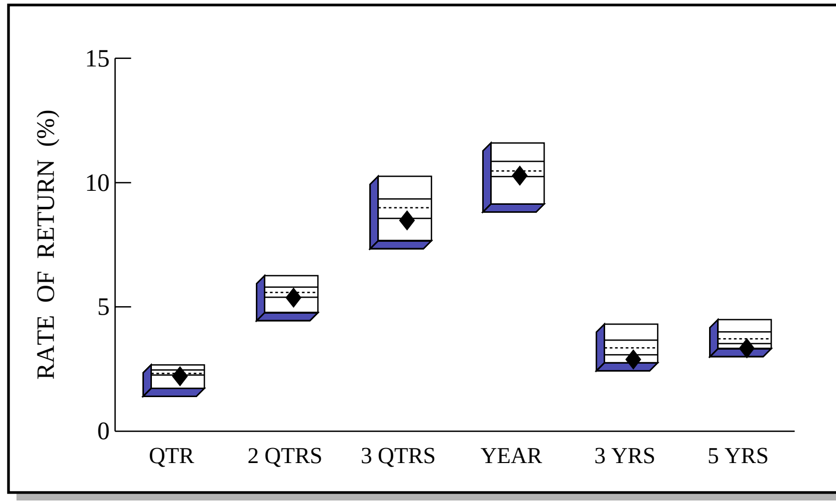


COMPONENT RETURNS AND RANKINGS

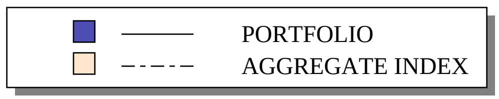
MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
SSGA BOND MARKET	(Core Fixed Income)	2.3	(66)	8.6	(78)	10.3	(66)	3.0	(84)	3.4	(86)	$402,314,970
Bloomberg Barclays Aggregate Index		*2.3*	*----*	*8.5*	*----*	*10.3*	*----*	*2.9*	*----*	*3.4*	*----*	*----*
TOTAL	**(Core Fixed Income)**	**2.3**	**(66)**	**8.6**	**(78)**	**10.3**	**(66)**	**3.0**	**(84)**	**3.4**	**(86)**	**$402,314,970**
Bloomberg Barclays Aggregate Index		*2.3*	*----*	*8.5*	*----*	*10.3*	*----*	*2.9*	*----*	*3.4*	*----*	*----*

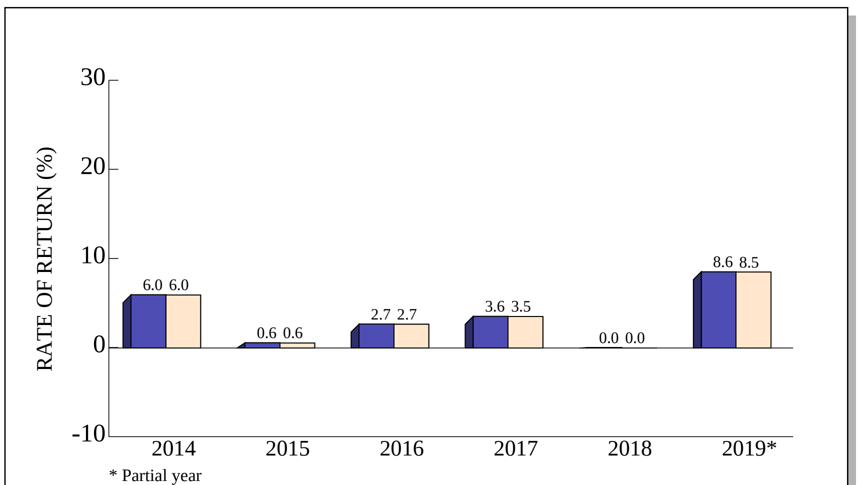
FIXED INCOME RETURN COMPARISONS





Core Fixed Income Universe





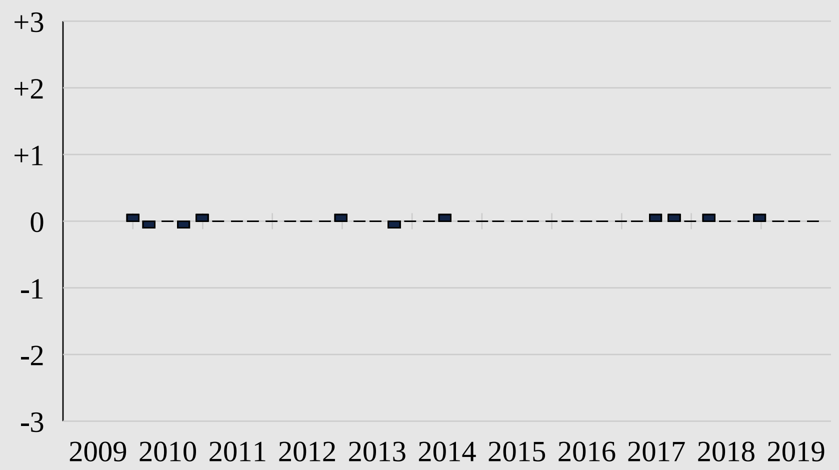
					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	2.3	5.4	8.6	10.3	3.0	3.4
(RANK)	(66)	(66)	(78)	(66)	(84)	(86)
5TH %ILE	2.7	6.3	10.3	11.6	4.3	4.5
25TH %ILE	2.5	5.8	9.3	10.9	3.7	4.0
MEDIAN	2.3	5.6	9.0	10.5	3.4	3.7
75TH %ILE	2.3	5.4	8.6	10.2	3.1	3.5
95TH %ILE	1.7	4.8	7.7	9.1	2.8	3.3
Agg	***2.3***	***5.4***	***8.5***	***10.3***	***2.9***	***3.4***

Core Fixed Income Universe

FIXED INCOME QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: BLOOMBERG BARCLAYS AGGREGATE INDEX

VARIATION FROM BENCHMARK

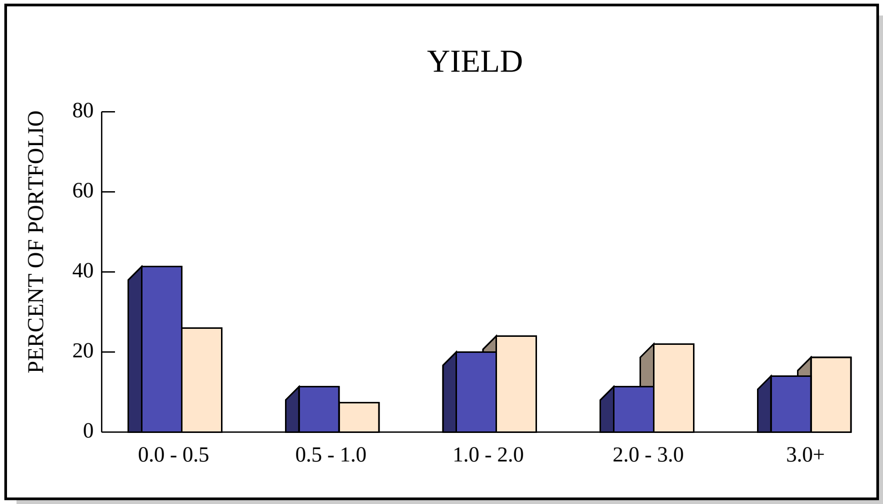


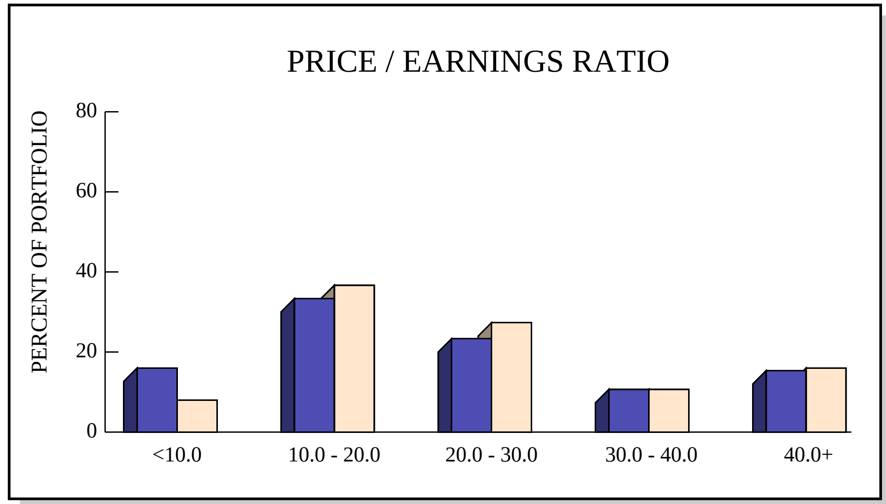
Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**37**
Quarters Below the Benchmark	**3**
Batting Average	**.925**

RATES OF RETURN

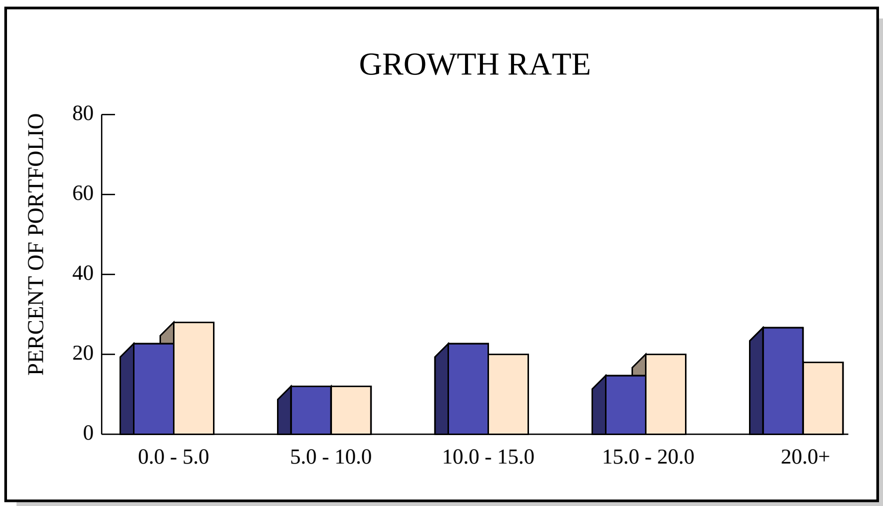
Date	Portfolio	Benchmark	Difference
12/09	0.3	0.2	0.1
3/10	1.7	1.8	-0.1
6/10	3.5	3.5	0.0
9/10	2.4	2.5	-0.1
12/10	-1.2	-1.3	0.1
3/11	0.4	0.4	0.0
6/11	2.3	2.3	0.0
9/11	3.8	3.8	0.0
12/11	1.1	1.1	0.0
3/12	0.3	0.3	0.0
6/12	2.1	2.1	0.0
9/12	1.6	1.6	0.0
12/12	0.3	0.2	0.1
3/13	-0.1	-0.1	0.0
6/13	-2.3	-2.3	0.0
9/13	0.5	0.6	-0.1
12/13	-0.1	-0.1	0.0
3/14	1.8	1.8	0.0
6/14	2.1	2.0	0.1
9/14	0.2	0.2	0.0
12/14	1.8	1.8	0.0
3/15	1.6	1.6	0.0
6/15	-1.7	-1.7	0.0
9/15	1.2	1.2	0.0
12/15	-0.6	-0.6	0.0
3/16	3.0	3.0	0.0
6/16	2.2	2.2	0.0
9/16	0.5	0.5	0.0
12/16	-3.0	-3.0	0.0
3/17	0.8	0.8	0.0
6/17	1.5	1.4	0.1
9/17	0.9	0.8	0.1
12/17	0.4	0.4	0.0
3/18	-1.4	-1.5	0.1
6/18	-0.2	-0.2	0.0
9/18	0.0	0.0	0.0
12/18	1.7	1.6	0.1
3/19	2.9	2.9	0.0
6/19	3.1	3.1	0.0
9/19	2.3	2.3	0.0

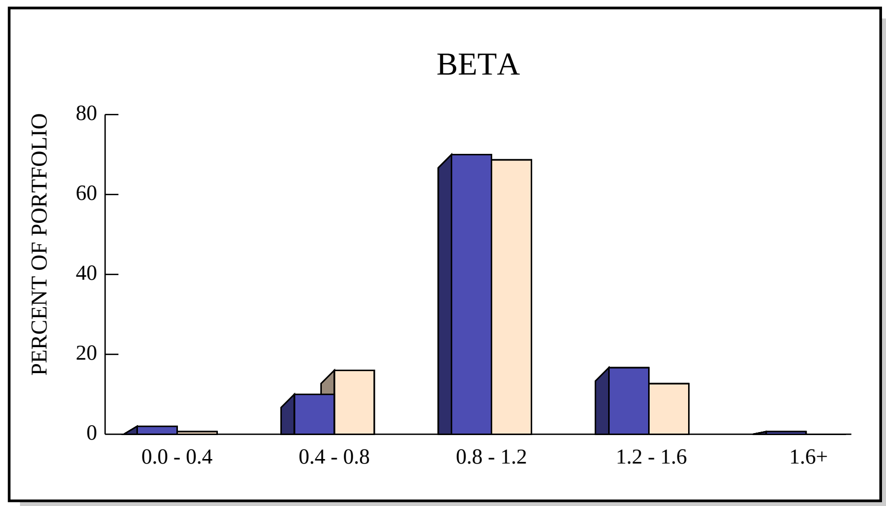
STOCK CHARACTERISTICS



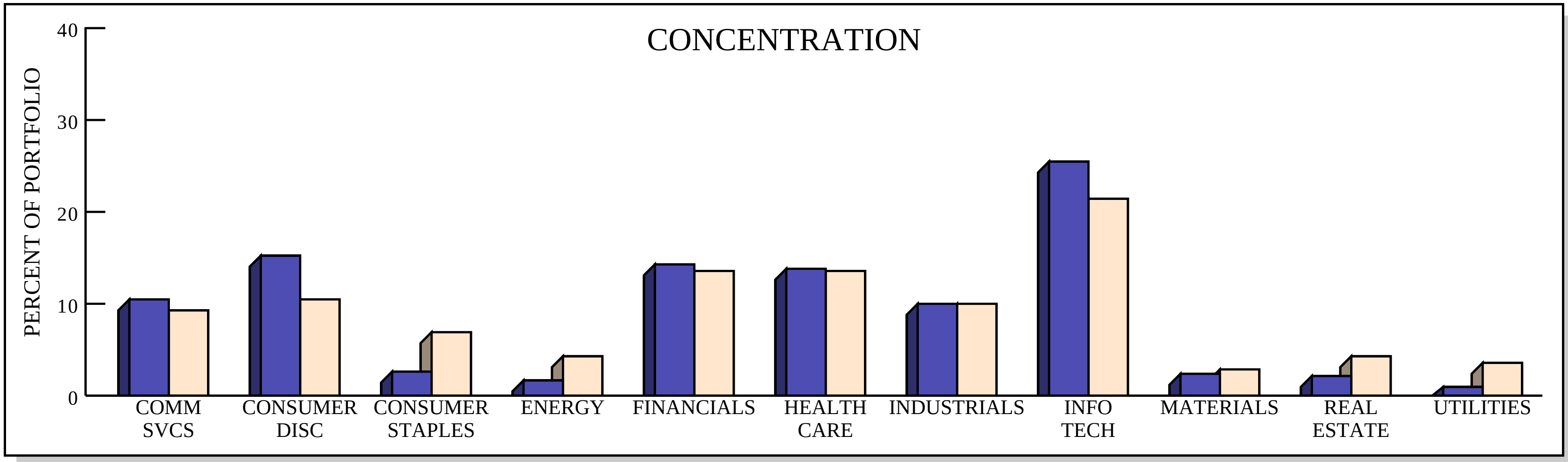


	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	2,637	1.4%	15.1%	23.4	1.01
RUSSELL 3000	3,005	1.8%	12.0%	26.3	0.98

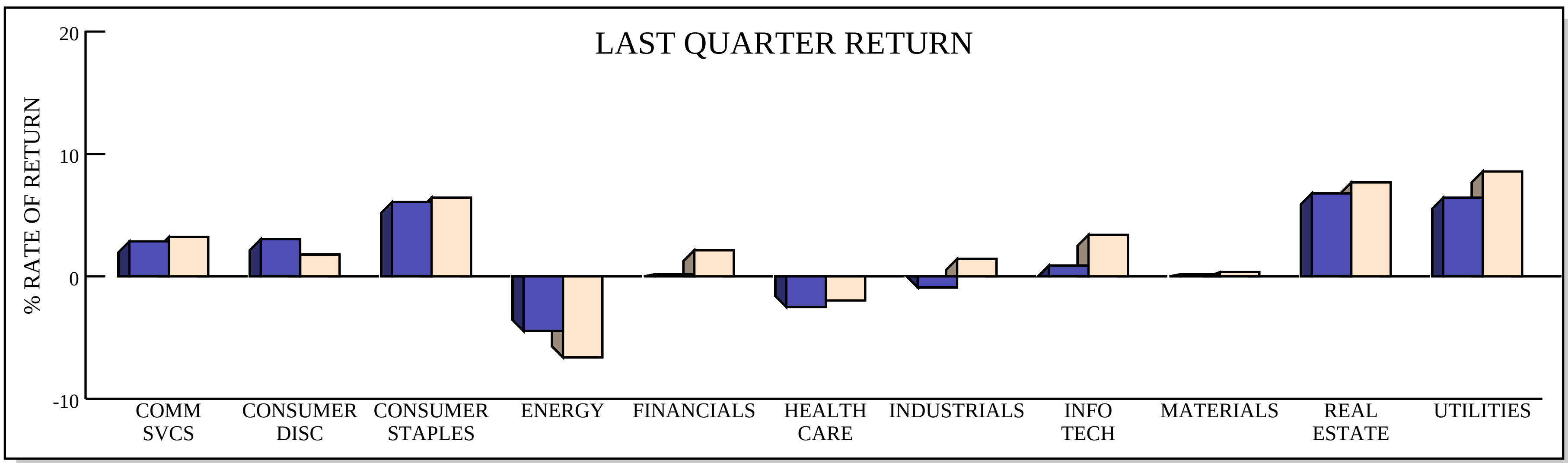




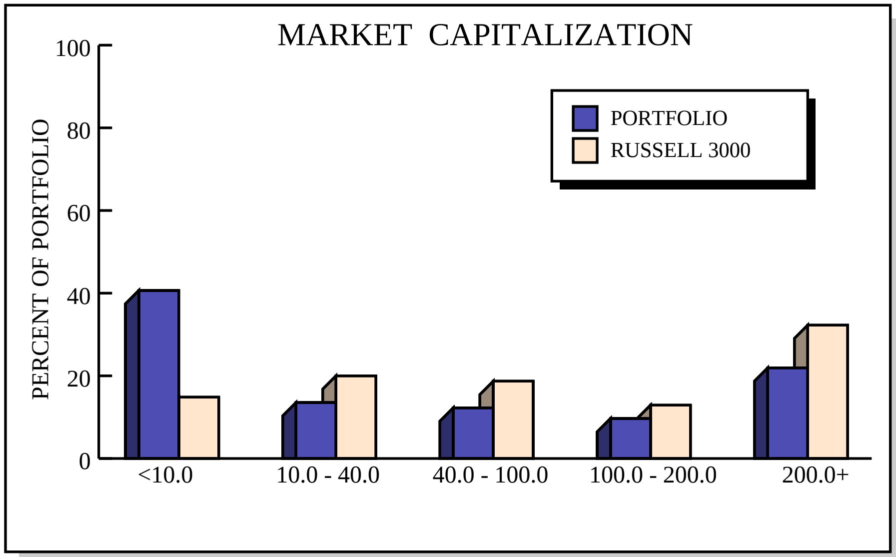
STOCK INDUSTRY ANALYSIS

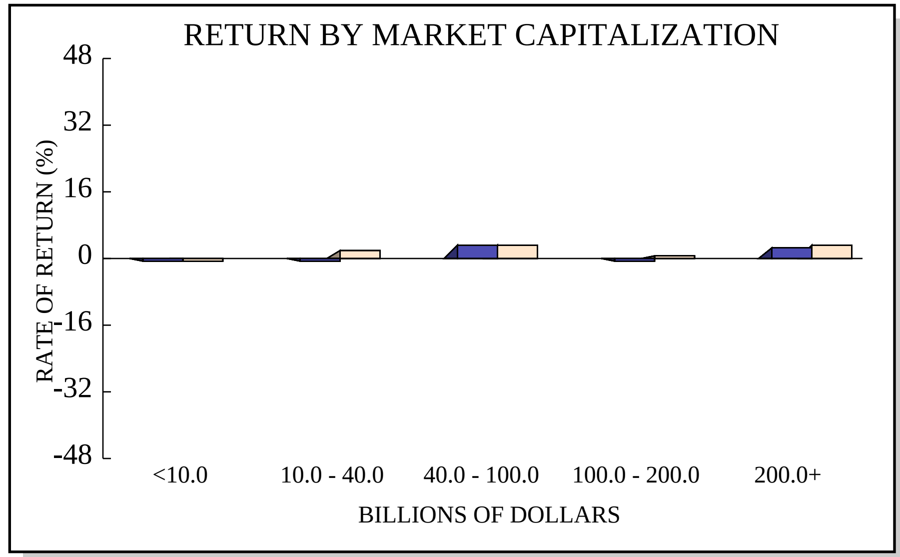


PORTFOLIO RUSSELL 3000



TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	$ 41,988,867	4.05%	4.1%	Information Technology	$ 1061.6 B
2	ALPHABET INC-CL C	29,710,687	2.87%	12.8%	Communication Services	423.4 B
3	FACEBOOK INC-CLASS A	24,215,319	2.34%	-7.7%	Communication Services	428.4 B
4	VISA INC-CLASS A SHARES	20,283,075	1.96%	-0.8%	Information Technology	297.1 B
5	MASTERCARD INC - A	15,688,328	1.51%	2.8%	Information Technology	272.4 B
6	ORACLE CORP	15,492,981	1.50%	-3.0%	Information Technology	180.6 B
7	ZOETIS INC	14,700,623	1.42%	9.9%	Health Care	59.5 B
8	ADOBE INC	13,111,101	1.27%	-6.2%	Information Technology	133.7 B
9	AMAZON.COM INC	12,661,728	1.22%	-8.3%	Consumer Discretionary	858.7 B
10	BERKSHIRE HATHAWAY INC-CL B	12,099,484	1.17%	-2.4%	Financials	288.4 B

Domestic Industry Sector Allocations
(Percent of Invested Equity)
As of September 30, 2019

	Comm Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities
Eagle	28.8	17.3	0.0	0.0	30.5	2.7	7.0	13.8	0.0	0.0	0.0
LSV Large Cap	7.4	11.0	5.7	3.7	17.7	15.0	12.5	19.5	5.0	1.5	1.0
Russell 1000 Value	8.2	6.1	9.2	8.4	23.6	12.4	9.4	6.0	4.3	5.5	7.0
Federated	6.4	13.2	1.1	0.0	4.3	23.8	12.4	32.8	2.8	3.2	0.0
Polen	17.5	21.8	0.0	0.0	2.1	10.2	0.0	48.5	0.0	0.0	0.0
Russell 1000 Growth	11.4	14.4	4.9	0.3	3.2	14.2	10.0	37.6	1.4	2.6	0.0
AMI	0.0	8.3	13.6	1.5	6.0	25.1	13.5	27.7	4.2	0.0	0.0
Copeland	3.9	11.0	6.8	3.9	15.3	13.5	15.7	13.5	3.3	8.3	4.7
Emerald	2.9	20.7	3.9	1.7	8.9	28.2	15.4	16.4	0.6	1.3	0.0
Russell 2000 Growth	2.4	12.2	3.5	0.6	6.0	27.4	19.9	18.1	3.2	4.9	1.8
LSV Small Cap	2.0	12.7	1.1	3.7	23.0	11.1	19.5	12.9	6.6	6.4	0.9
Smith, Graham & Co	0.0	17.2	0.6	1.8	22.0	13.4	14.3	25.9	2.1	1.4	1.3
Russell 2000 Value	2.4	9.9	2.6	6.0	30.5	4.9	13.0	8.3	4.5	11.5	6.5
S&P 500	10.4	10.1	7.6	4.5	12.9	13.7	9.3	21.9	2.7	3.2	3.6

Allocations may not total to 100% due to rounding.

International Industry Sector Allocations

As of September 30, 2019

	Comm Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities	Cash
HGK	2.5	22.2	3.7	2.6	10.9	3.1	29.2	12.8	0.0	5.4	3.9	3.5
Hardman Johnston	4.6	19.9	2.1	0.0	11.8	17.0	26.4	18.2	0.0	0.0	0.0	---
S&P Developed Ex US BMI	5.1	11.1	10.1	5.6	18.2	10.1	15.5	8.7	7.4	4.7	3.5	---

Allocations may not total to 100% due to rounding. Sector weights for international equity portfolios are provided by each respective manager and may differ slightly from custodian accounting.

APPENDIX - MAJOR MARKET INDEX RETURNS

Economic Data	Style	QTR	YTD	1 Year	3 years	5 Years
Consumer Price Index	Economic Data	0.2	2.2	1.7	2.1	1.5

Domestic Equity	Style	QTR	YTD	1 Year	3 years	5 Years
Russell 3000	Broad Equity	1.2	20.1	2.9	12.8	10.4
S&P 500	Large Cap Core	1.7	20.6	4.3	13.4	10.8
Russell 1000	Large Cap	1.4	20.5	3.9	13.2	10.6
Russell 1000 Growth	Large Cap Growth	1.5	23.3	3.7	16.9	13.4
Russell 1000 Value	Large Cap Value	1.4	17.8	4.0	9.4	7.8
Russell Mid Cap	Midcap	0.5	21.9	3.2	10.7	9.1
Russell Mid Cap Growth	Midcap Growth	-0.7	25.2	5.2	14.5	11.1
Russell Mid Cap Value	Midcap Value	1.2	19.5	1.6	7.8	7.5
Russell 2000	Small Cap	-2.4	14.2	-8.9	8.2	8.2
Russell 2000 Growth	Small Cap Growth	-4.2	15.3	-9.7	9.8	9.1
Russell 2000 Value	Small Cap Value	-0.6	12.8	-8.3	6.5	7.2

International Equity	Style	QTR	YTD	1 Year	3 years	5 Years
MSCI All Country World Ex US	Foreign Equity	-1.7	12.1	-0.7	6.8	3.4
MSCI EAFE	Developed Markets Equity	-1.0	13.3	-0.8	7.0	3.8
MSCI EAFE Growth	Developed Markets Growth	-0.4	18.4	2.6	8.2	5.9
MSCI EAFE Value	Developed Markets Value	-1.6	8.3	-4.3	5.7	1.6
MSCI Emerging Markets	Emerging Markets Equity	-4.1	6.2	-1.6	6.4	2.7

Domestic Fixed Income	Style	QTR	YTD	1 Year	3 years	5 Years
Bloomberg Barclays Aggregate Index	Core Fixed Income	2.3	8.5	10.3	2.9	3.4
Bloomberg Barclays Capital Gov't Bond	Treasuries	2.4	7.7	10.4	2.3	2.9
Bloomberg Barclays Capital Credit Bond	Corporate Bonds	3.0	12.6	12.6	4.3	4.5
Intermediate Aggregate	Core Intermediate	1.4	6.2	8.1	2.4	2.7
ML/BoA 1-3 Year Treasury	Short Term Treasuries	0.6	3.0	4.4	1.5	1.3
Bloomberg Barclays Capital High Yield	High Yield Bonds	1.3	11.4	6.4	6.1	5.4

Alternative Assets	Style	QTR	YTD	1 Year	3 years	5 Years
Bloomberg Barclays Global Treasury Ex US	International Treasuries	0.4	5.4	7.5	0.5	1.4
NCREIF NFI-ODCE Index	Real Estate	1.3	3.8	5.6	7.3	9.3
HFRI FOF Composite	Hedge Funds	-0.9	5.8	0.6	3.4	2.1

APPENDIX - DISCLOSURES

* The shadow index is a customized index that matches your portfolio's asset allocation on a monthly basis.
  This index was calculated using the following asset classes and corresponding benchmarks:

Large Cap Equity	S&P 500
Small Cap Equity	Russell 2000
International Equity	Blended International Index
Emerging Markets Equity	Blended Emerging Markets Index
Real Estate	NCREIF Property Index
Fixed Income	Bloomberg Barclays Aggregate Index
Cash & Equivalent	90 Day T Bill

* The Blended International Index utilizes the returns of the S&P Developed BMI through April 30, 2015 and the MSCI EAFE Index thereafter.
* The Blended Emerging Markets Index utizes the returns of the S&P Emerging BMI through April 30, 2015 and the MSCI Emerging Markets Index thereafter.
* Dahab Associates utilizes data provided by a custodian and other vendors it believes are reliable. However, it cannot assume responsibility for errors and omissions therefrom.
* All returns were calculated on a time-weighted basis, and are gross of fees unless otherwise noted.
* All returns for periods greater than one year are annualized.
* Dahab Associates uses the modified duration measure to present average duration.
* All values are in US dollars.

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
AMI ASSET MANAGEMENT - SMALL CAP GROWTH EQUITY
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.
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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's AMI Asset Management Small Cap Growth Equity portfolio was valued at $34,403,203, a decrease of $3,336,031 from the June ending value of $37,739,234. Last quarter, the account recorded total net withdrawals of $73,881 in addition to $3,262,150 in net investment losses. The fund's net investment loss was a result of income receipts totaling $36,000 and realized and unrealized capital losses totaling $3,298,150.

RELATIVE PERFORMANCE

Total Fund

During the third quarter, the AMI Asset Management Small Cap Growth Equity portfolio lost 8.7%, which was 4.5% less than the Russell 2000 Growth Index’s return of -4.2% and ranked in the 94th percentile of the Small Cap Growth universe. Over the trailing year, the portfolio returned -24.0%, which was 14.3% less than the benchmark's -9.7% performance, and ranked in the 99th percentile. Since September 2017, the account returned -2.5% per annum and ranked in the 99th percentile. For comparison, the Russell 2000 Growth returned an annualized 4.6% over the same time frame.

ASSET ALLOCATION

At the end of the third quarter, small cap equities comprised 97.4% of the total portfolio ($33.5 million), while cash & equivalents comprised the remaining 2.6% ($880,114).

EQUITY ANALYSIS

The AMI portfolio was invested last quarter in eight of the eleven industry sectors in our analysis. Allocations in the Consumer Staples and Information Technology sectors were greater than those within the index, while Consumer Discretionary and Industrials were underweight. The Communication Services, Real Estate, and Utilities sectors were vacant.

The small cap growth market shrank in the third quarter and the AMI portfolio doubled down on the benchmark’s losses. Selection was the main factor; only the Materials sector, which made up 4.2% of the portfolio, outperformed its index counterpart. The Financials sector walked back the most, but the heavily weighted Information Technology sector also had a large negative impact.

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	Since 09/17
Total Portfolio - Gross	-8.7	0.5	-24.0	----	----	-2.5
SMALL CAP GROWTH RANK	(94)	(99)	(99)	----	----	(99)
Total Portfolio - Net	-8.9	-0.1	-24.6	----	----	-3.3
Russell 2000G	-4.2	15.3	-9.7	9.8	9.1	4.6
Small Cap Equity - Gross	-9.0	0.5	-24.9	----	----	-2.7
SMALL CAP GROWTH RANK	(96)	(99)	(99)	----	----	(99)
Russell 2000G	-4.2	15.3	-9.7	9.8	9.1	4.6

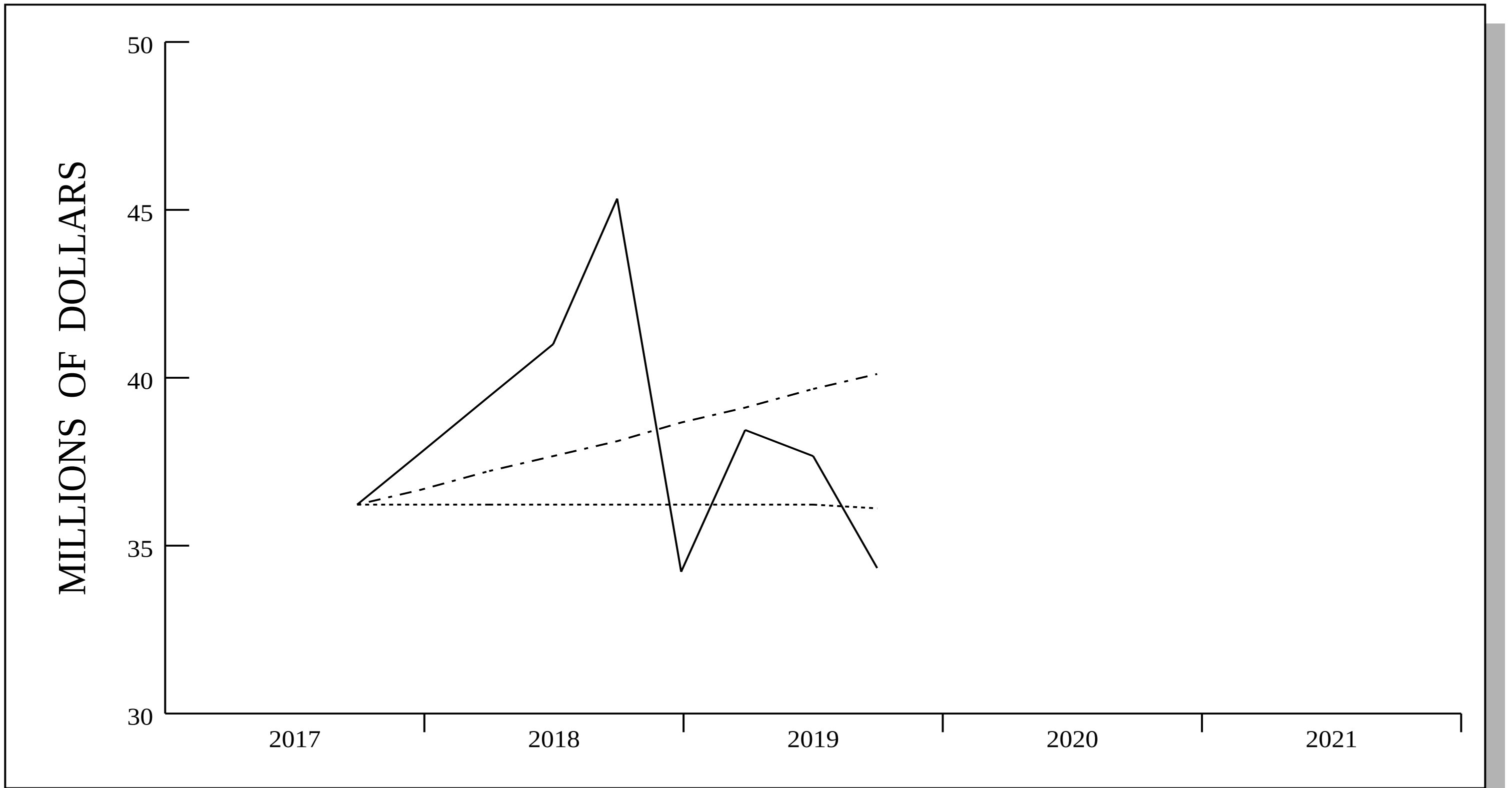
ASSET ALLOCATION

Small Cap	97.4%	$ 33,523,089
Cash	2.6%	880,114
Total Portfolio	100.0%	$ 34,403,203

INVESTMENT RETURN

Market Value 6/2019	$ 37,739,234
Contribs / Withdrawals	- 73,881
Income	36,000
Capital Gains / Losses	- 3,298,150
Market Value 9/2019	$ 34,403,203

INVESTMENT GROWTH

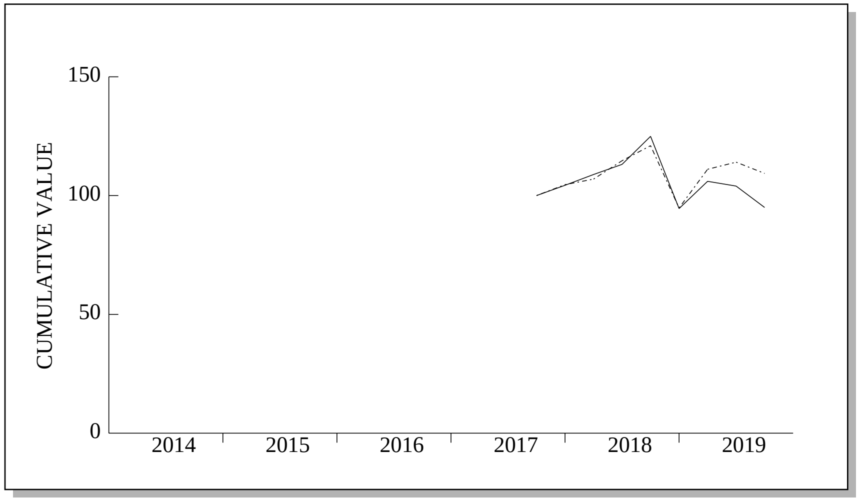


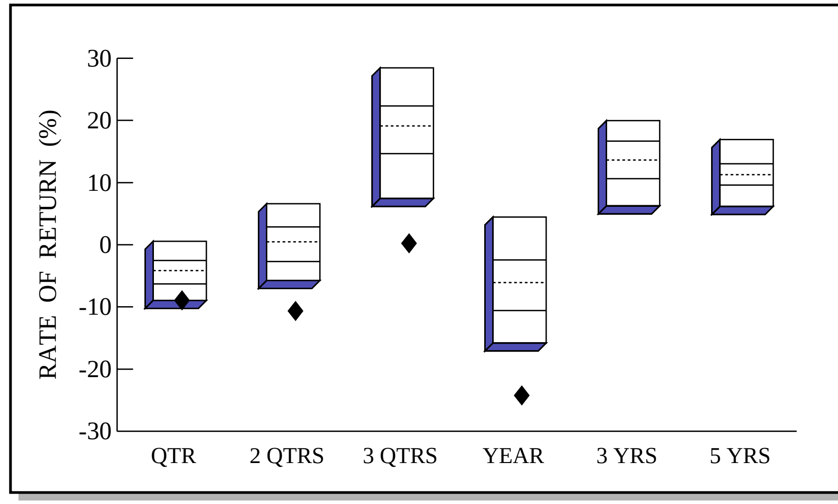
ACTUAL RETURN
5.25%
0.0%

VALUE ASSUMING
5.25% RETURN $ 40,129,871

	LAST QUARTER	PERIOD 9/17 - 9/19
BEGINNING VALUE	$ 37,739,234	$ 36,293,387
NET CONTRIBUTIONS	- 73,881	- 73,881
INVESTMENT RETURN	- 3,262,150	- 1,816,303
ENDING VALUE	$ 34,403,203	$ 34,403,203
INCOME	36,000	319,158
CAPITAL GAINS (LOSSES)	- 3,298,150	- 2,135,461
INVESTMENT RETURN	- 3,262,150	- 1,816,303

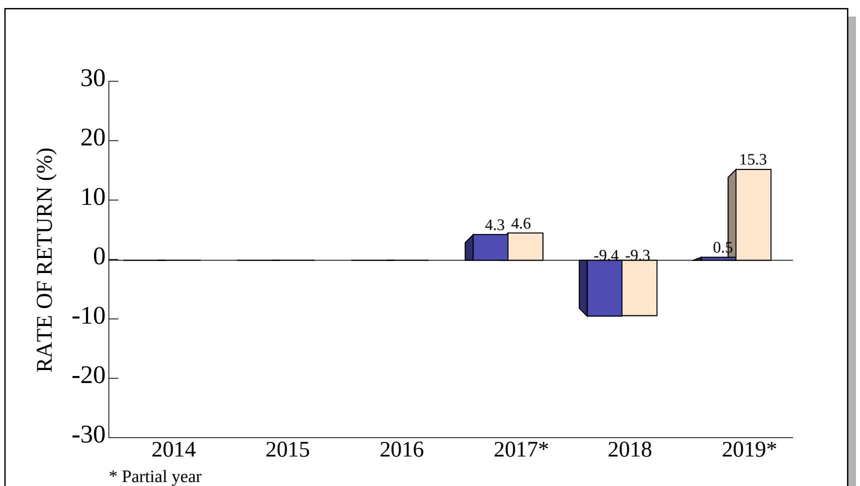
TOTAL RETURN COMPARISONS





Small Cap Growth Universe

PORTFOLIO
RUSSELL 2000G



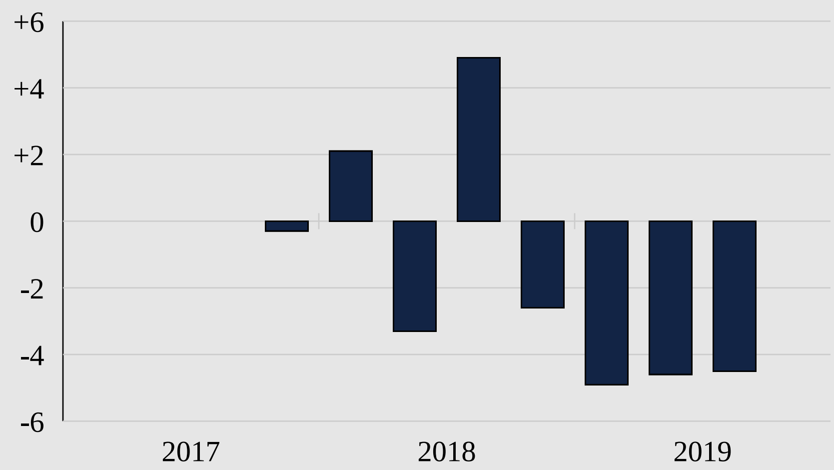
					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	-8.7	-10.4	0.5	-24.0	----	----
(RANK)	(94)	(99)	(99)	(99)	----	----
5TH %ILE	0.5	6.6	28.4	4.5	20.0	16.9
25TH %ILE	-2.5	2.9	22.3	-2.4	16.7	13.0
MEDIAN	-4.2	0.5	19.1	-6.1	13.6	11.3
75TH %ILE	-6.3	-2.7	14.7	-10.6	10.6	9.6
95TH %ILE	-8.9	-5.7	7.5	-15.8	6.3	6.2
Russ 2000G	***-4.2***	***-1.5***	***15.3***	***-9.7***	***9.8***	***9.1***

Small Cap Growth Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

COMPARATIVE BENCHMARK: RUSSELL 2000 GROWTH

VARIATION FROM BENCHMARK

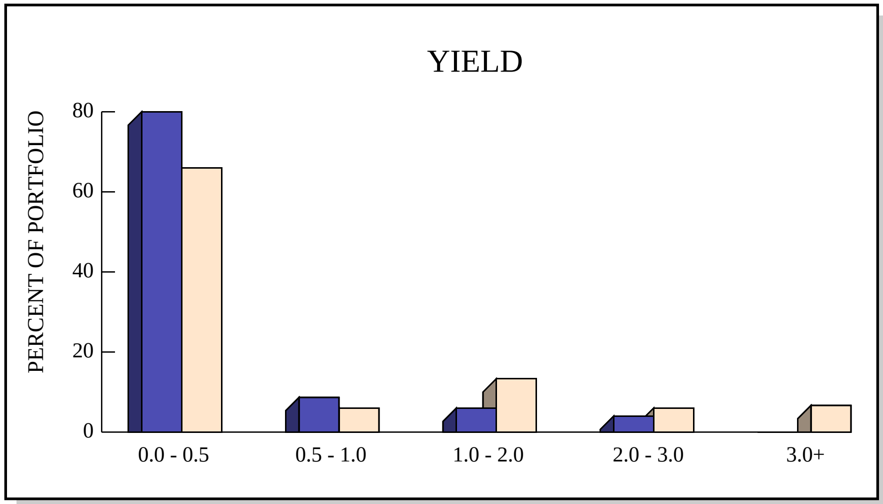


Total Quarters Observed	**8**
Quarters At or Above the Benchmark	**2**
Quarters Below the Benchmark	**6**
Batting Average	**.250**

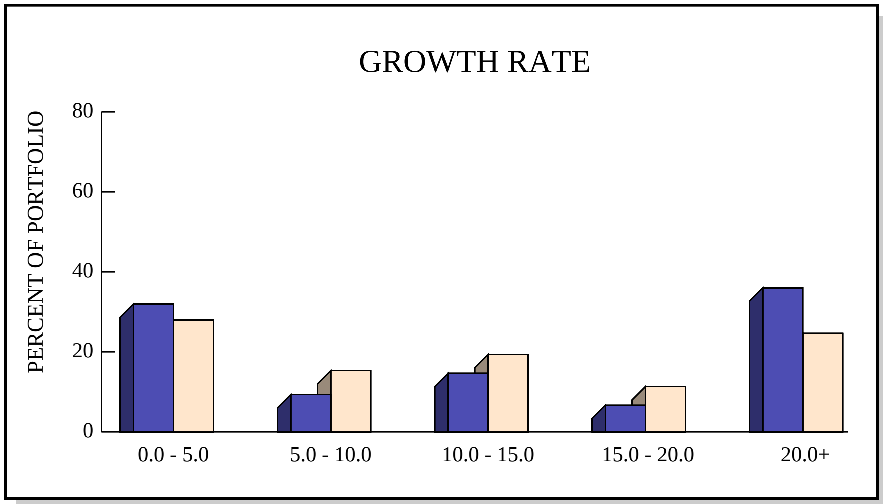
RATES OF RETURN

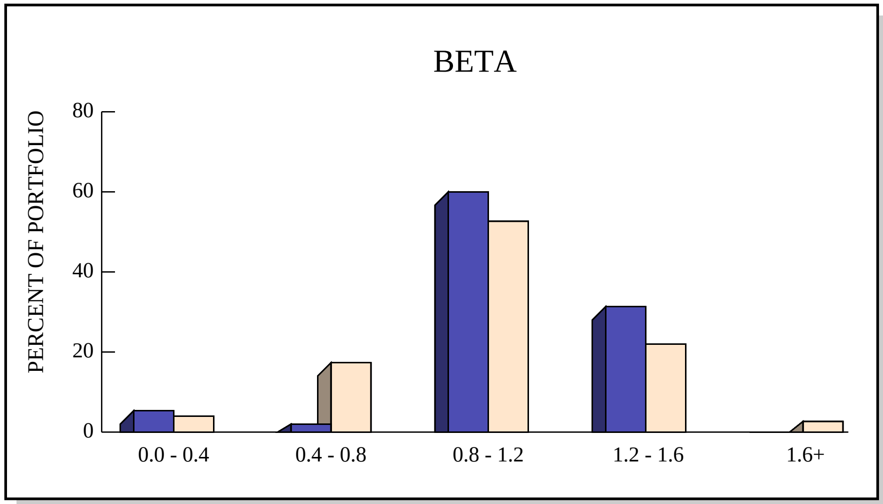
Date	Portfolio	Benchmark	Difference
12/17	4.3	4.6	-0.3
3/18	4.4	2.3	2.1
6/18	3.9	7.2	-3.3
9/18	10.4	5.5	4.9
12/18	-24.3	-21.7	-2.6
3/19	12.2	17.1	-4.9
6/19	-1.9	2.7	-4.6
9/19	-8.7	-4.2	-4.5

STOCK CHARACTERISTICS

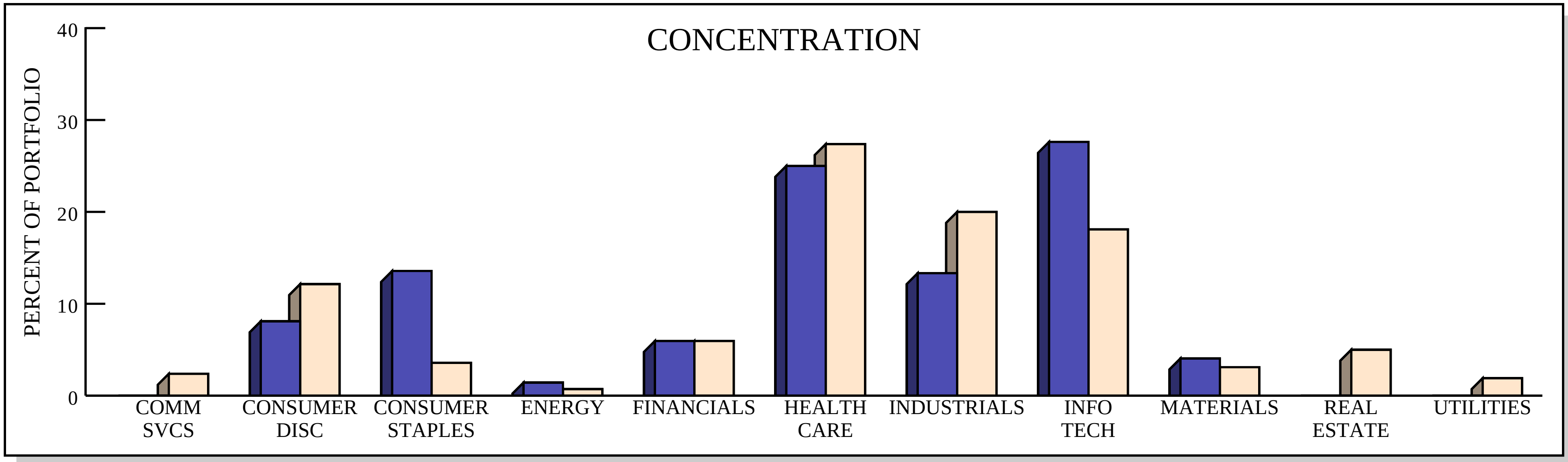


	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	34	0.2%	16.4%	34.5	1.03
RUSSELL 2000G	1,163	0.8%	13.5%	18.7	0.99

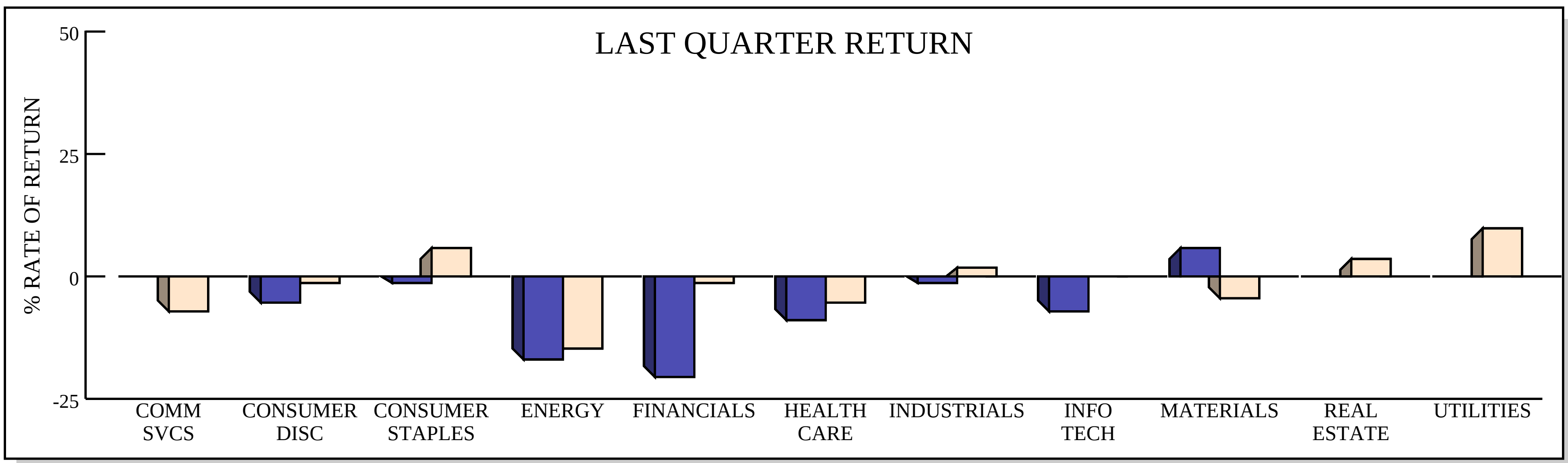




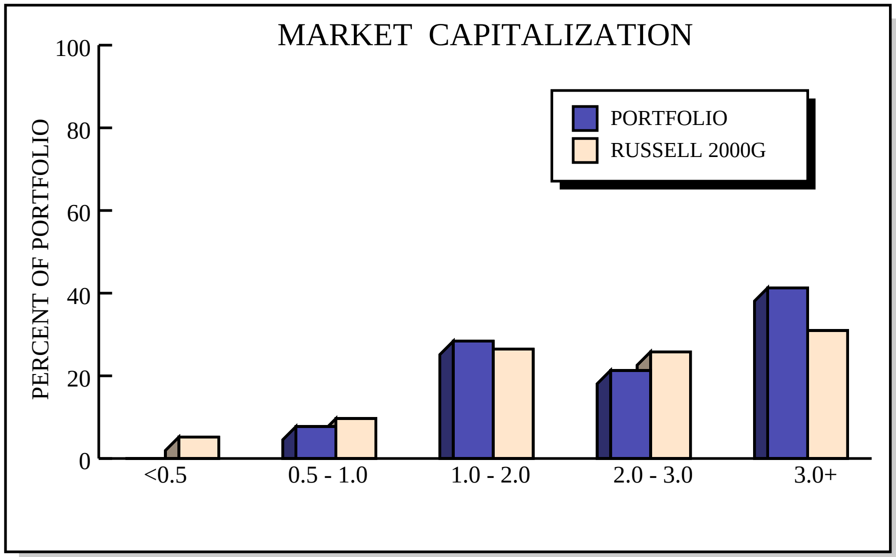
STOCK INDUSTRY ANALYSIS

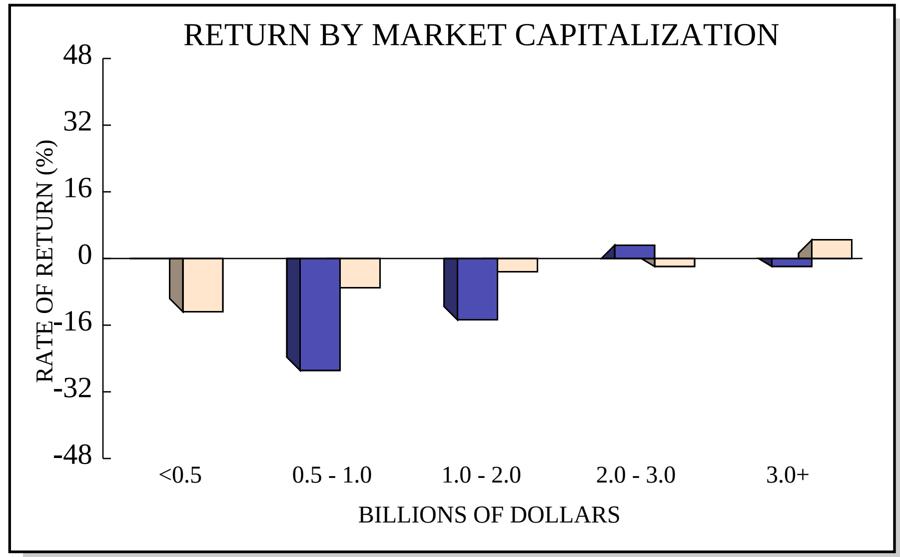


PORTFOLIO RUSSELL 2000G



TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	SYNEOS HEALTH INC	$ 1,421,026	4.24%	4.2%	Health Care	$ 5.5 B
2	GRAPHIC PACKAGING HOLDING CO	1,418,744	4.23%	6.1%	Materials	4.3 B
3	INSPERITY INC	1,345,966	4.02%	-19.0%	Industrials	4.1 B
4	EXLSERVICE HOLDINGS INC	1,271,102	3.79%	1.3%	Information Technology	2.3 B
5	MERIT MEDICAL SYSTEMS INC	1,238,260	3.69%	-48.9%	Health Care	1.7 B
6	ASGN INC	1,230,422	3.67%	3.7%	Industrials	3.3 B
7	MGP INGREDIENTS INC	1,190,382	3.55%	-24.9%	Consumer Staples	0.8 B
8	CORCEPT THERAPEUTICS INC	1,164,599	3.47%	26.8%	Health Care	1.6 B
9	ICU MEDICAL INC	1,108,422	3.31%	-36.6%	Health Care	3.3 B
10	CUBIC CORP	1,101,666	3.29%	9.4%	Industrials	2.2 B

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
COPELAND CAPITAL MANAGEMENT - SMALL CAP DIVIDEND GROWTH
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.
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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's Copeland Capital Management Small Cap Dividend Growth portfolio was valued at $45,429,768, representing an increase of $882,898 from the June quarter's ending value of $44,546,870. Last quarter, the Fund posted withdrawals totaling $54,030, which partially offset the portfolio's net investment return of $936,928. Income receipts totaling $213,870 plus net realized and unrealized capital gains of $723,058 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the third quarter, the Copeland Capital Management Small Cap Dividend Growth portfolio returned 2.1%, which was 6.3% above the Russell 2000 Growth Index’s return of -4.2% and ranked in the 3rd percentile of the Small Cap Growth universe. Over the trailing year, the portfolio returned 5.8%, which was 15.5% above the benchmark's -9.7% return, ranking in the 3rd percentile. Since September 2017, the portfolio returned 11.1% annualized and ranked in the 40th percentile. The Russell 2000 Growth returned an annualized 4.6% over the same period.

ASSET ALLOCATION

At the end of the third quarter, small cap equities comprised 94.6% of the total portfolio ($43.0 million), while cash & equivalents totaled 5.4% ($2.4 million).

EQUITY ANALYSIS

The Copeland portfolio held a more level allocation than its index, the Russell 2000 Growth, with increased weights in the lighter sectors and decreased weights in the heavier sectors. As a result, Consumer Staples, Financials, and Real Estate were overweight, while Health Care, Industrials, and Information Technology were underweight.

There were a few sectors that nose-dived in the small cap growth market, but the portfolio made gains in most of these sectors, putting significant daylight between its return and that of the index. These flipped sectors included Communication Services, Energy, and Health Care. Positive market returns in the Real Estate and Utilities sectors were improved upon in the Copeland portfolio.

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	Since 09/17
Total Portfolio - Gross	2.1	23.3	5.8	----	----	11.1
SMALL CAP GROWTH RANK	(3)	(22)	(3)	----	----	(40)
Total Portfolio - Net	1.9	22.6	4.9	----	----	10.2
Russell 2000G	-4.2	15.3	-9.7	9.8	9.1	4.6
Small Cap Equity - Gross	2.2	24.5	5.9	----	----	11.4
SMALL CAP GROWTH RANK	(3)	(19)	(3)	----	----	(38)
Russell 2000G	-4.2	15.3	-9.7	9.8	9.1	4.6

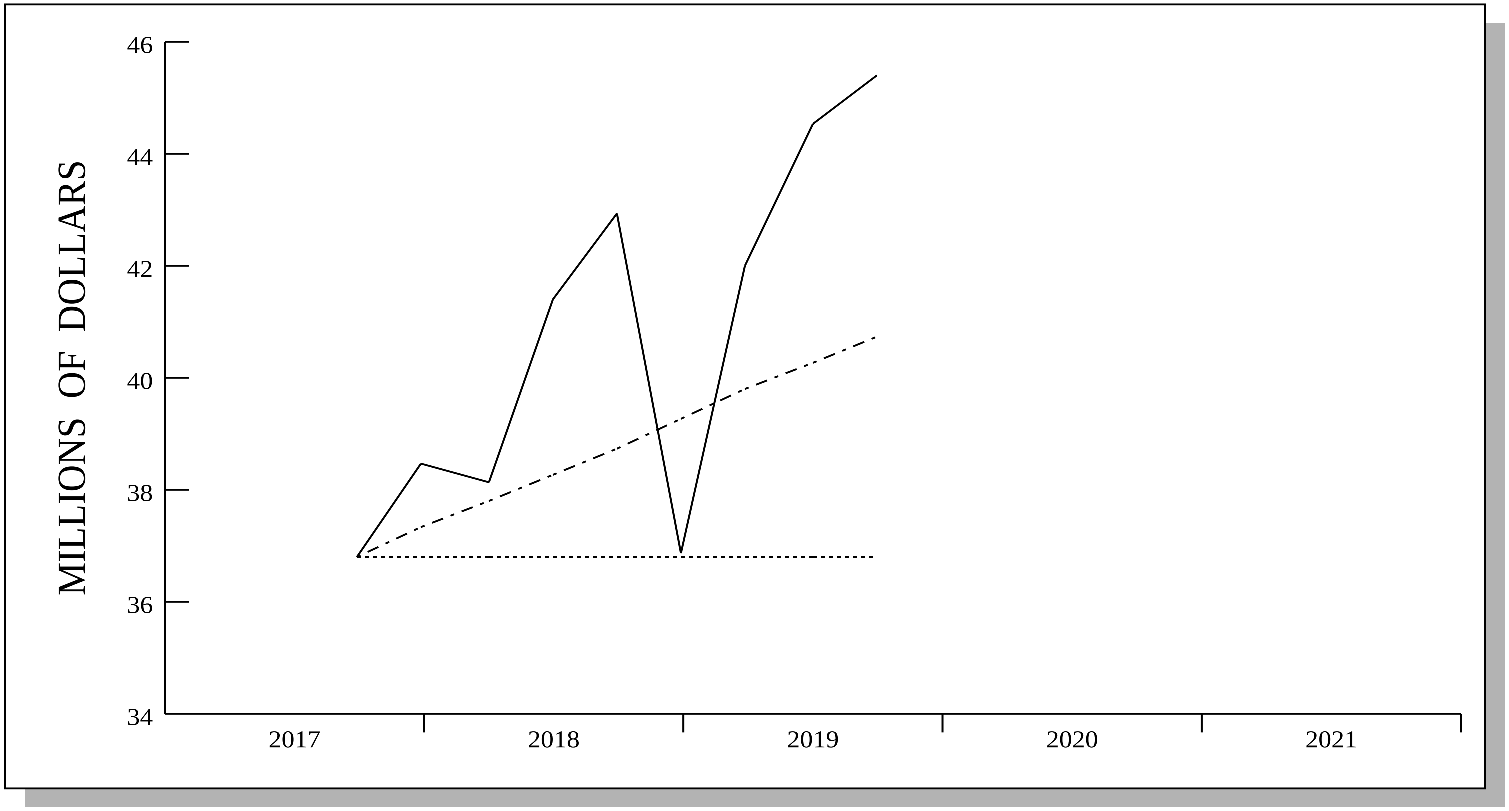
ASSET ALLOCATION

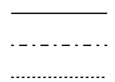
Small Cap	94.6%	$ 42,994,661
Cash	5.4%	2,435,107
Total Portfolio	100.0%	$ 45,429,768

INVESTMENT RETURN

Market Value 6/2019	$ 44,546,870
Contribs / Withdrawals	- 54,030
Income	213,870
Capital Gains / Losses	723,058
Market Value 9/2019	$ 45,429,768

INVESTMENT GROWTH

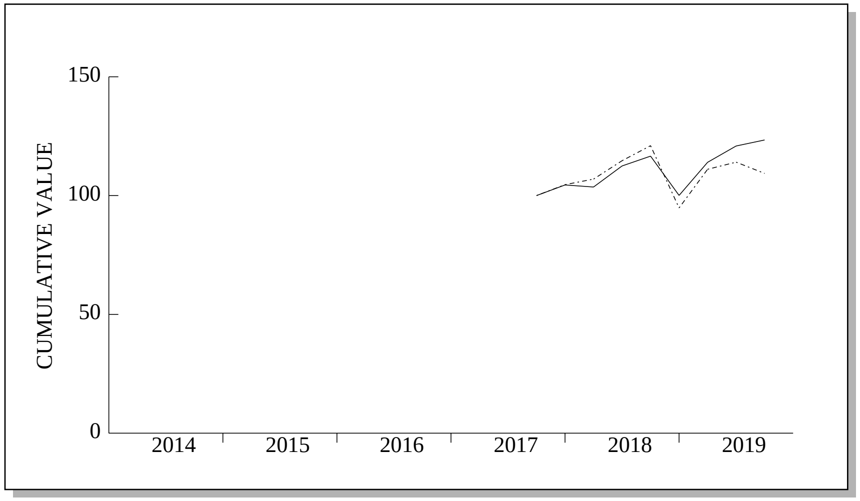


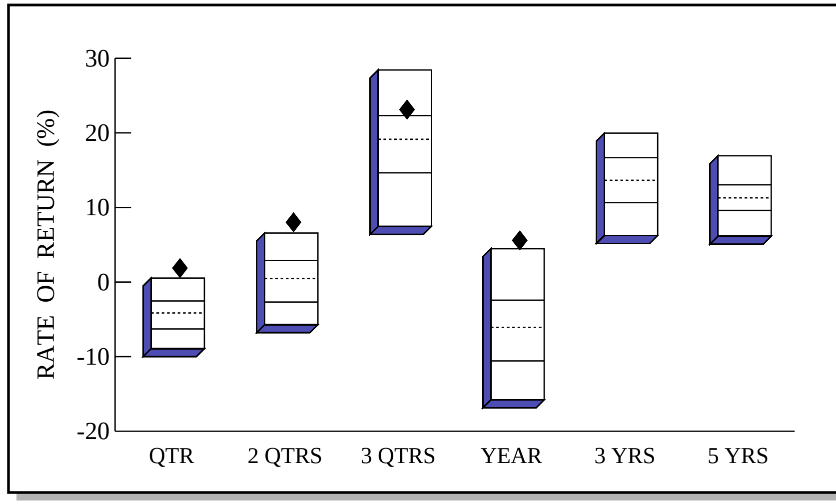


VALUE ASSUMING
5.25% RETURN $ 40,778,200

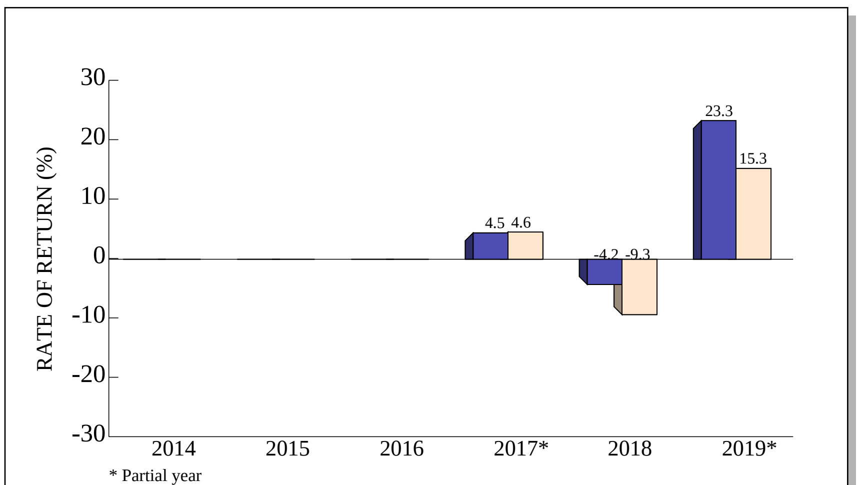
	LAST QUARTER	PERIOD 9/17 - 9/19
BEGINNING VALUE	$ 44,546,870	$ 36,860,615
NET CONTRIBUTIONS	- 54,030	- 54,030
INVESTMENT RETURN	936,928	8,623,183
ENDING VALUE	$ 45,429,768	$ 45,429,768
INCOME	213,870	1,604,915
CAPITAL GAINS (LOSSES)	723,058	7,018,268
INVESTMENT RETURN	936,928	8,623,183

TOTAL RETURN COMPARISONS





Small Cap Growth Universe



* Partial year

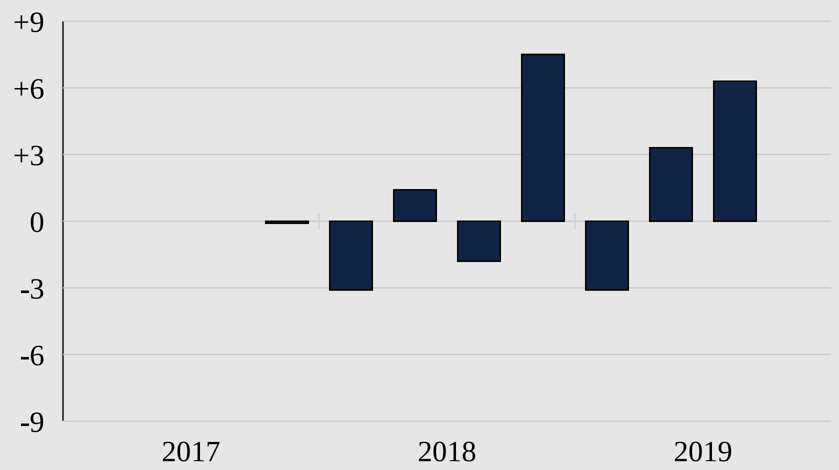
	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	2.1	8.2	23.3	5.8	----	----
(RANK)	(3)	(3)	(22)	(3)	----	----
5TH %ILE	0.5	6.6	28.4	4.5	20.0	16.9
25TH %ILE	-2.5	2.9	22.3	-2.4	16.7	13.0
MEDIAN	-4.2	0.5	19.1	-6.1	13.6	11.3
75TH %ILE	-6.3	-2.7	14.7	-10.6	10.6	9.6
95TH %ILE	-8.9	-5.7	7.5	-15.8	6.3	6.2
Russ 2000G	***-4.2***	***-1.5***	***15.3***	***-9.7***	***9.8***	***9.1***

Small Cap Growth Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

COMPARATIVE BENCHMARK: RUSSELL 2000 GROWTH

VARIATION FROM BENCHMARK

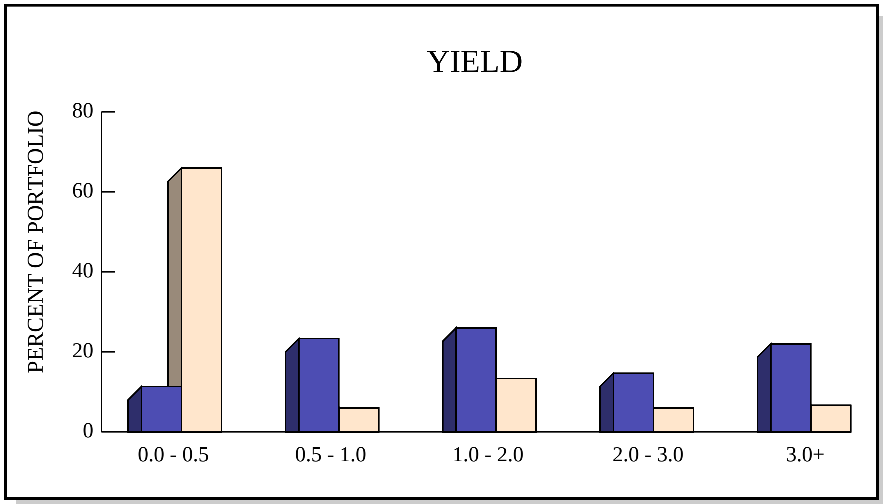


Total Quarters Observed	**8**
Quarters At or Above the Benchmark	**4**
Quarters Below the Benchmark	**4**
Batting Average	**.500**

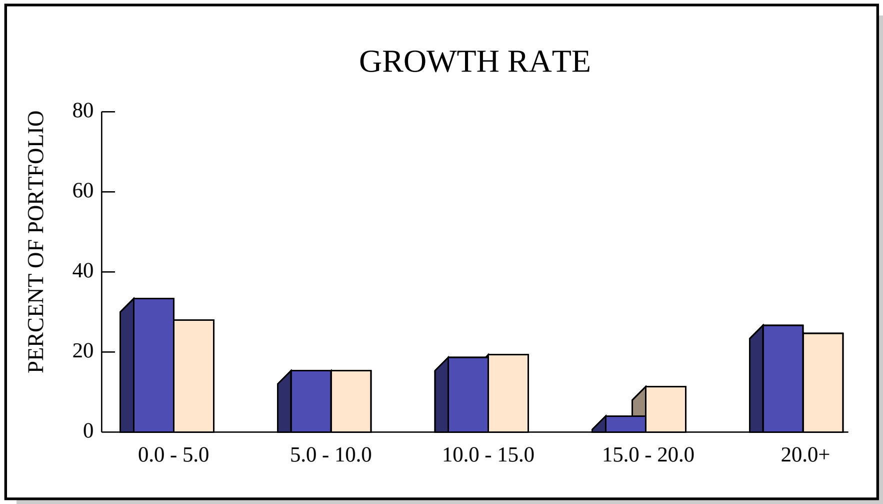
RATES OF RETURN

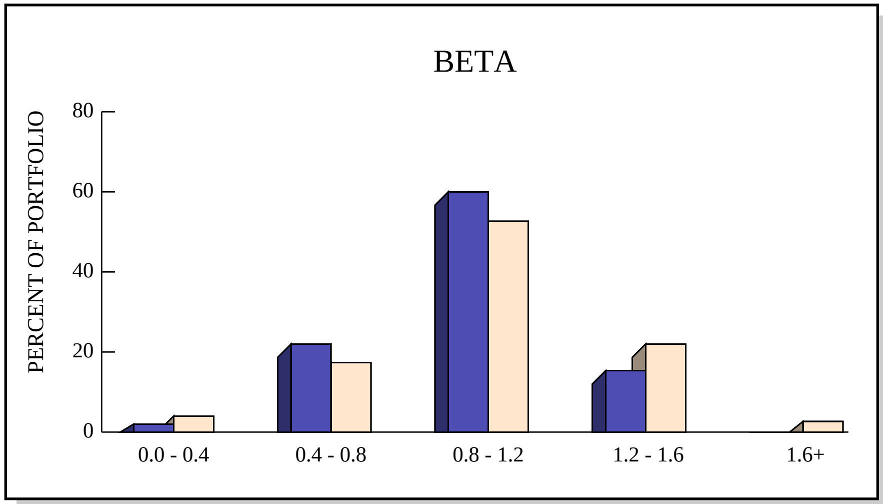
Date	Portfolio	Benchmark	Difference
12/17	4.5	4.6	-0.1
3/18	-0.8	2.3	-3.1
6/18	8.6	7.2	1.4
9/18	3.7	5.5	-1.8
12/18	-14.2	-21.7	7.5
3/19	14.0	17.1	-3.1
6/19	6.0	2.7	3.3
9/19	2.1	-4.2	6.3

STOCK CHARACTERISTICS

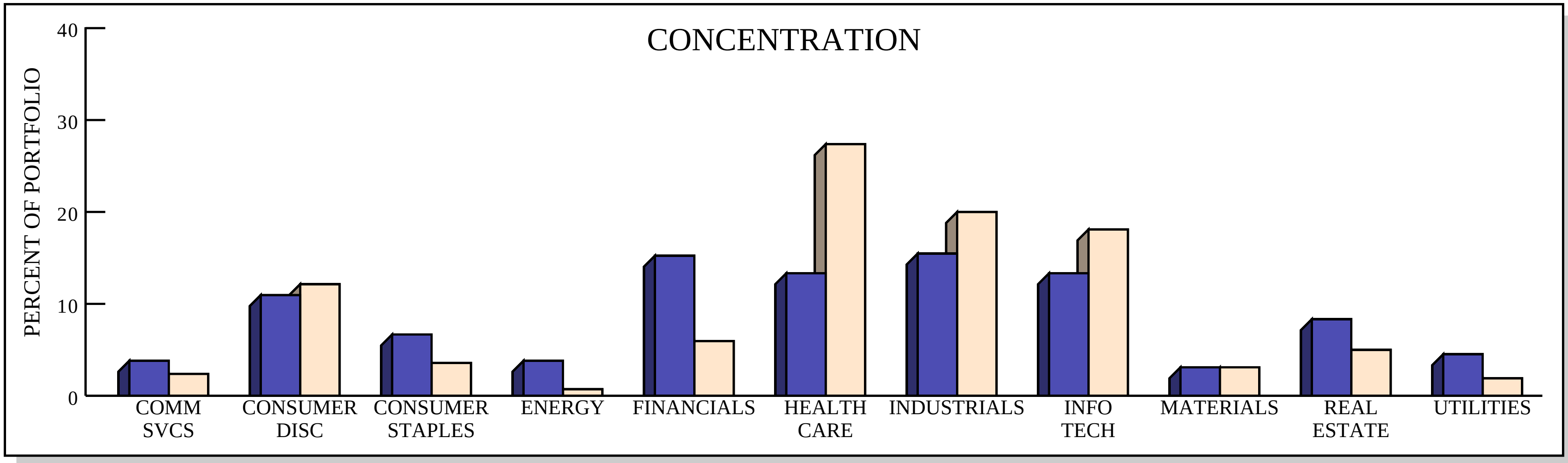


	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	50	1.9%	12.9%	30.2	0.90
RUSSELL 2000G	1,163	0.8%	13.5%	18.7	0.99

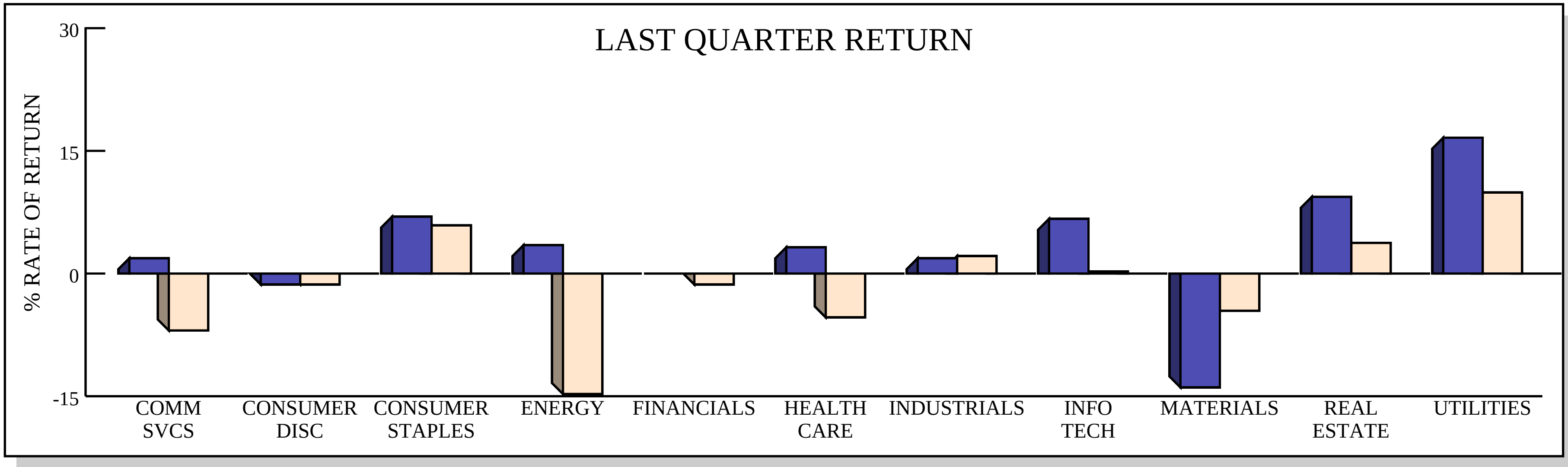




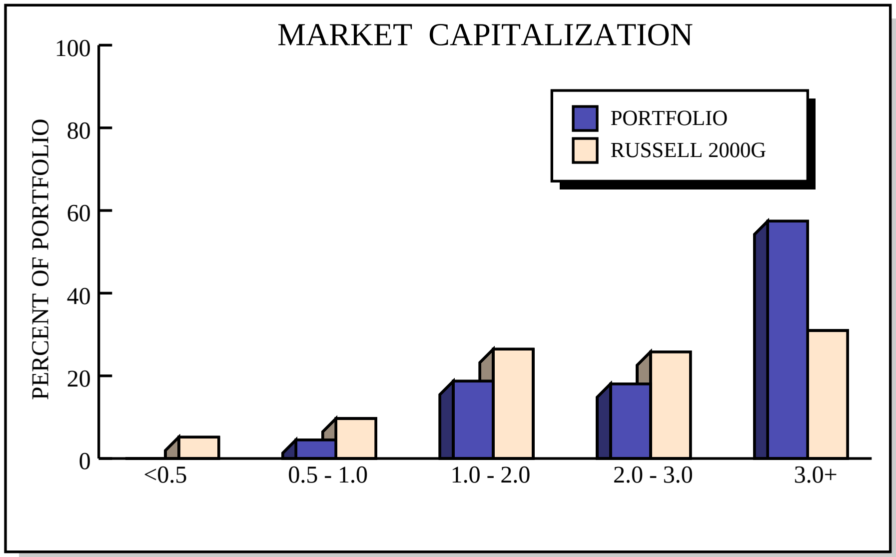
STOCK INDUSTRY ANALYSIS

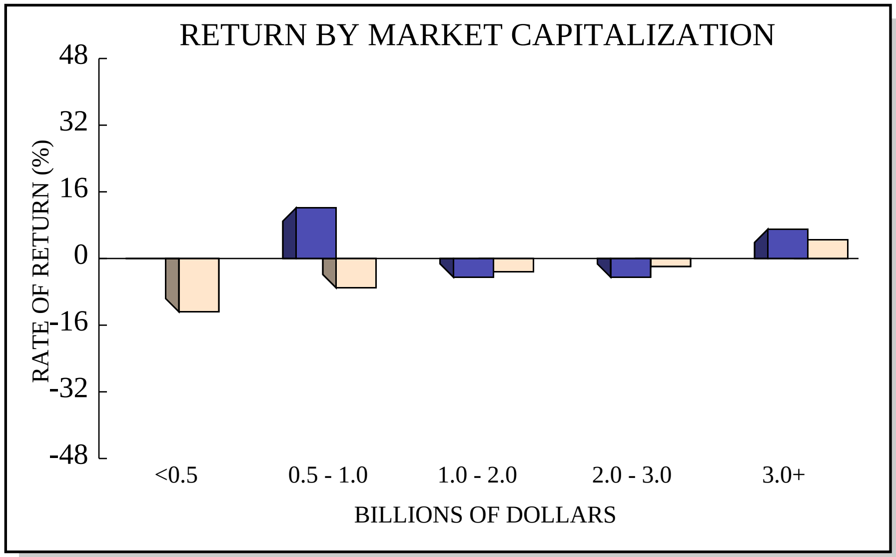


PORTFOLIO RUSSELL 2000G



TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	CHEMED CORP	$ 1,334,971	3.10%	15.8%	Health Care	$ 6.7 B
2	POOL CORP	1,214,839	2.83%	5.9%	Consumer Discretionary	8.1 B
3	TETRA TECH INC	1,136,730	2.64%	10.7%	Industrials	4.7 B
4	ALGONQUIN POWER & UTILITIES	1,128,688	2.63%	14.3%	Utilities	6.8 B
5	SYNNEX CORP	1,092,082	2.54%	15.2%	Information Technology	5.7 B
6	ENSIGN GROUP INC/THE	1,090,795	2.54%	-16.6%	Health Care	2.5 B
7	BWX TECHNOLOGIES INC	1,060,273	2.47%	10.2%	Industrials	5.4 B
8	ENCOMPASS HEALTH CORP	1,052,916	2.45%	0.3%	Health Care	6.2 B
9	CABLE ONE INC	1,023,835	2.38%	7.3%	Communication Services	7.2 B
10	CASEY’S GENERAL STORES INC	982,109	2.28%	3.5%	Consumer Staples	5.9 B

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
EAGLE CAPITAL MANAGEMENT - EQUITY
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.
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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's Eagle Capital Management Equity portfolio was valued at $147,555,253, a decrease of $1,597,404 from the June ending value of $149,152,657. Last quarter, the account recorded total net withdrawals of $282,999 in addition to $1,314,405 in net investment losses. The fund's net investment loss was a result of income receipts totaling $455,681 and realized and unrealized capital losses totaling $1,770,086.

RELATIVE PERFORMANCE

Total Fund

During the third quarter, the Eagle Capital Management Equity portfolio lost 0.9%, which was 2.3% less than the Russell 1000 Value Index's return of 1.4% and ranked in the 95th percentile of the Large Cap Value universe. Over the trailing year, the portfolio returned 4.2%, which was 0.2% greater than the benchmark's 4.0% performance, and ranked in the 34th percentile. Since March 2016, the account returned 15.3% per annum and ranked in the 4th percentile. For comparison, the Russell 1000 Value returned an annualized 10.5% over the same time frame.

ASSET ALLOCATION

At the end of the third quarter, large cap equities comprised 96.0% of the total portfolio ($141.7 million), while cash & equivalents comprised the remaining 4.0% ($5.8 million).

EQUITY ANALYSIS

The Eagle portfolio's concentrated allocation excluded five of the eleven industry sectors in our analysis, favoring only the Communication Services, Consumer Discretionary, Financials, Industrials, and Information Technology sectors. Health Care and Industrials held underweight allocations, while the remaining four sectors held overweight allocations.

Differences in allocation reduced the portfolios exposure to the weakest sectors (Energy and Materials), as well as the strongest (Consumer Staples, Real Estate, and Utilities). Unfortunately, the portfolio underperformed the index in all six invested sectors, leading to its contraction in an otherwise generally positive market environment.

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	Since 03/16
Total Portfolio - Gross	-0.9	21.3	4.2	15.3	----	15.3
LARGE CAP VALUE RANK	(95)	(16)	(34)	(4)	----	(4)
Total Portfolio - Net	-1.1	20.7	3.4	14.4	----	14.5
Russell 1000V	1.4	17.8	4.0	9.4	7.8	10.5
Large Cap Equity - Gross	-0.9	22.1	4.3	15.7	----	15.8
LARGE CAP VALUE RANK	(95)	(13)	(33)	(3)	----	(2)
Russell 1000V	1.4	17.8	4.0	9.4	7.8	10.5

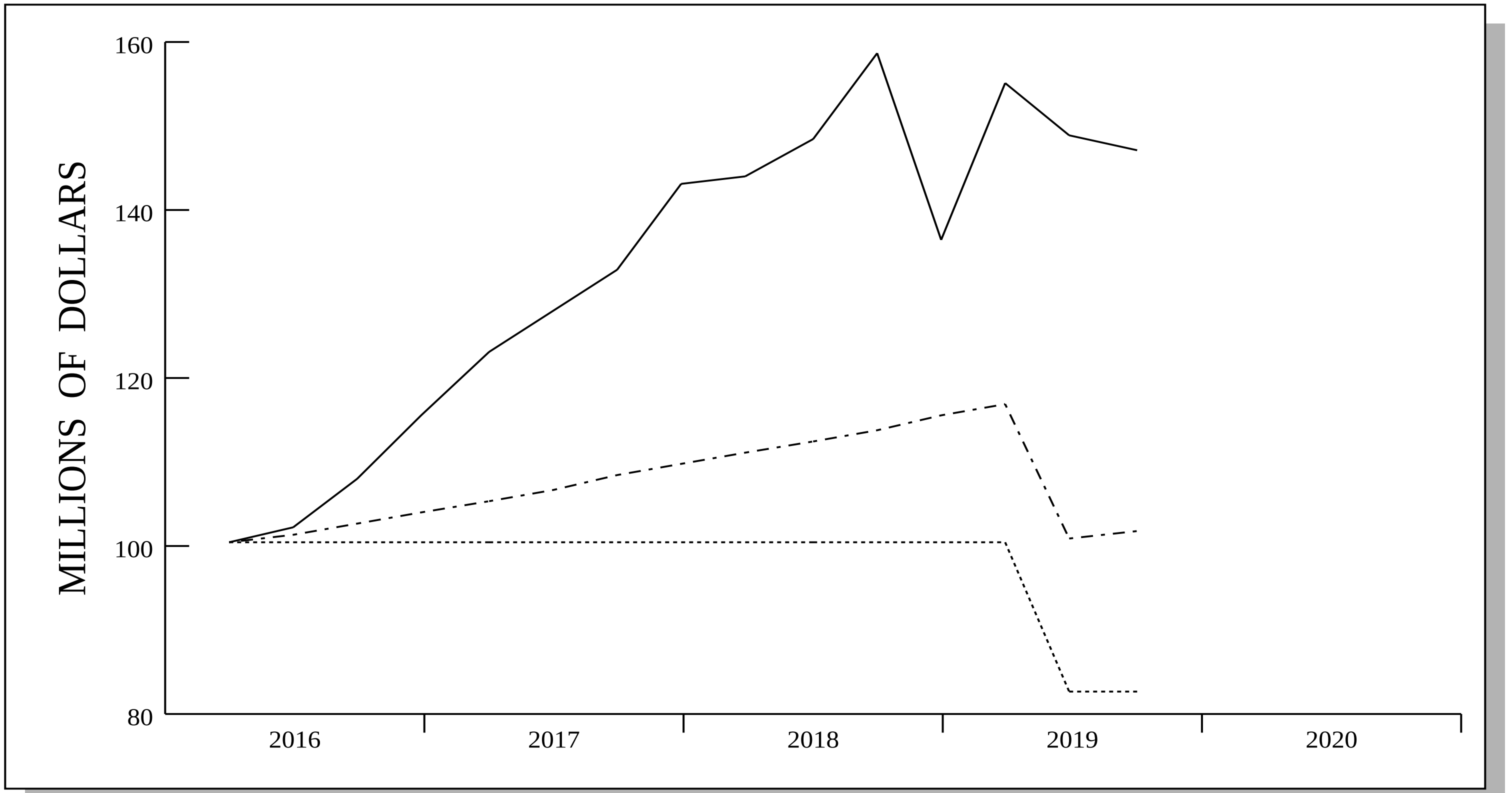
ASSET ALLOCATION

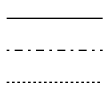
Large Cap Equity	96.0%	$ 141,717,245
Cash	4.0%	5,838,008
Total Portfolio	100.0%	$ 147,555,253

INVESTMENT RETURN

Market Value 6/2019	$ 149,152,657
Contribs / Withdrawals	-282,999
Income	455,681
Capital Gains / Losses	- 1,770,086
Market Value 9/2019	$ 147,555,253

INVESTMENT GROWTH

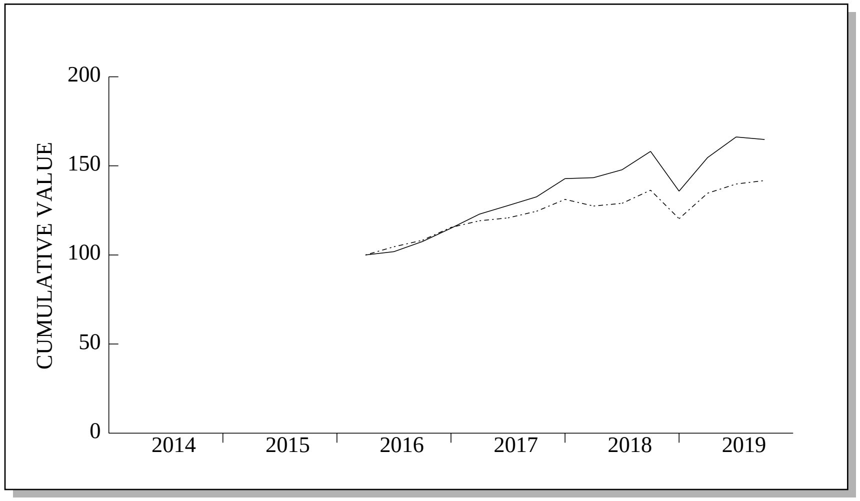


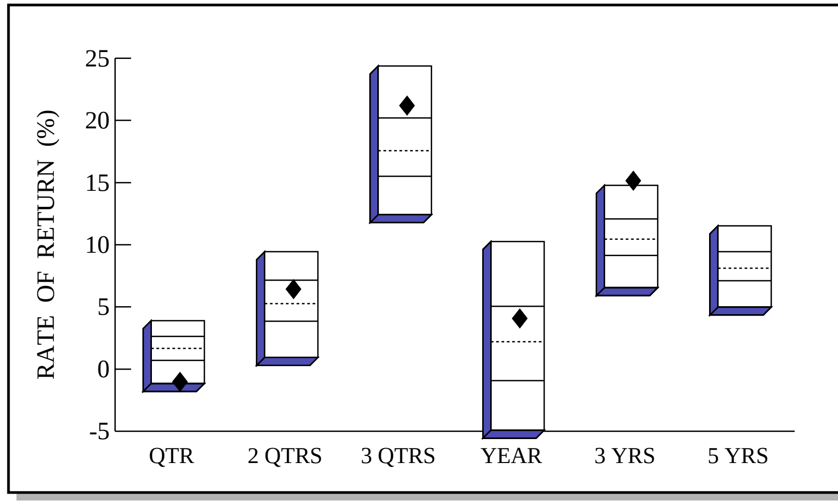


VALUE ASSUMING
5.25% RETURN $ 101,979,055

	LAST QUARTER	PERIOD 3/16 - 9/19
BEGINNING VALUE	$ 149,152,657	$ 100,475,791
NET CONTRIBUTIONS	-282,999	- 17,785,270
INVESTMENT RETURN	- 1,314,405	64,864,732
ENDING VALUE	$ 147,555,253	$ 147,555,253
INCOME	455,681	5,487,128
CAPITAL GAINS (LOSSES)	- 1,770,086	59,377,604
INVESTMENT RETURN	- 1,314,405	64,864,732

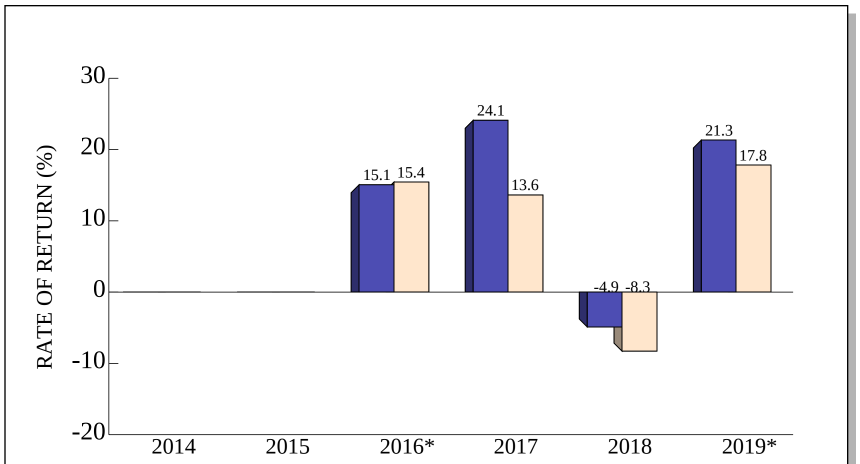
TOTAL RETURN COMPARISONS





Large Cap Value Universe

PORTFOLIO
RUSSELL 1000V



* Partial year

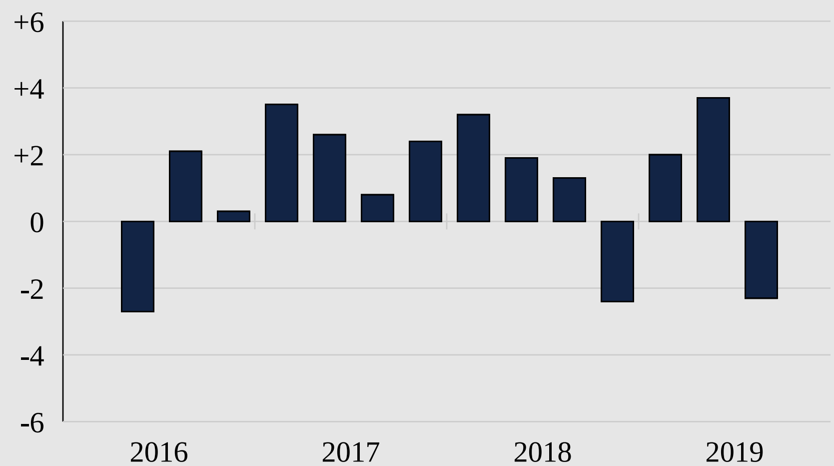
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
				------ANNUALIZED------		
RETURN	-0.9	6.6	21.3	4.2	15.3	----
(RANK)	(95)	(34)	(16)	(34)	(4)	----
5TH %ILE	3.9	9.5	24.4	10.3	14.8	11.5
25TH %ILE	2.6	7.1	20.2	5.1	12.1	9.5
MEDIAN	1.7	5.3	17.6	2.2	10.5	8.1
75TH %ILE	0.7	3.9	15.5	-0.9	9.2	7.1
95TH %ILE	-1.2	0.9	12.4	-4.9	6.5	5.0
Russ 1000V	***1.4***	***5.3***	***17.8***	***4.0***	***9.4***	***7.8***

Large Cap Value Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

COMPARATIVE BENCHMARK: RUSSELL 1000 VALUE

VARIATION FROM BENCHMARK

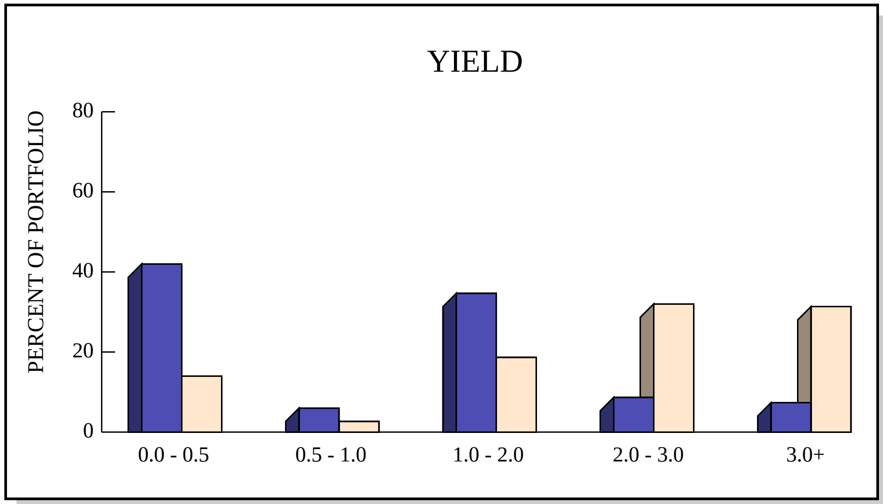


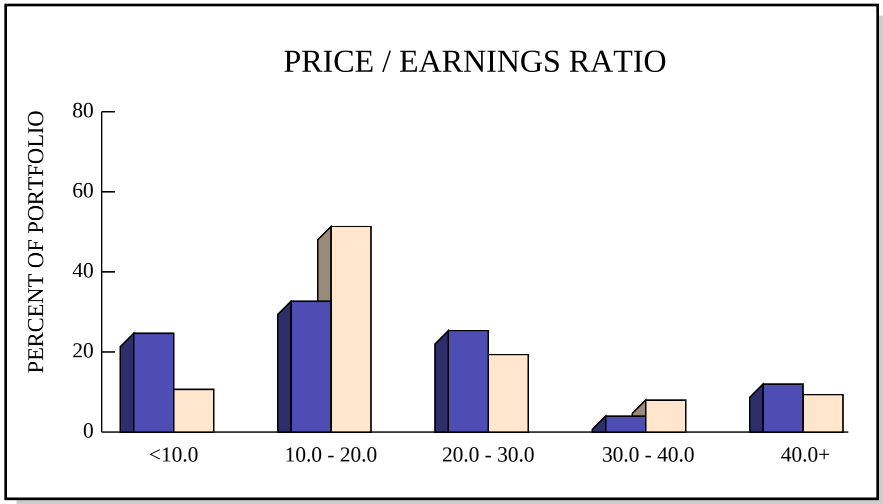
Total Quarters Observed	**14**
Quarters At or Above the Benchmark	**11**
Quarters Below the Benchmark	**3**
Batting Average	**.786**

RATES OF RETURN

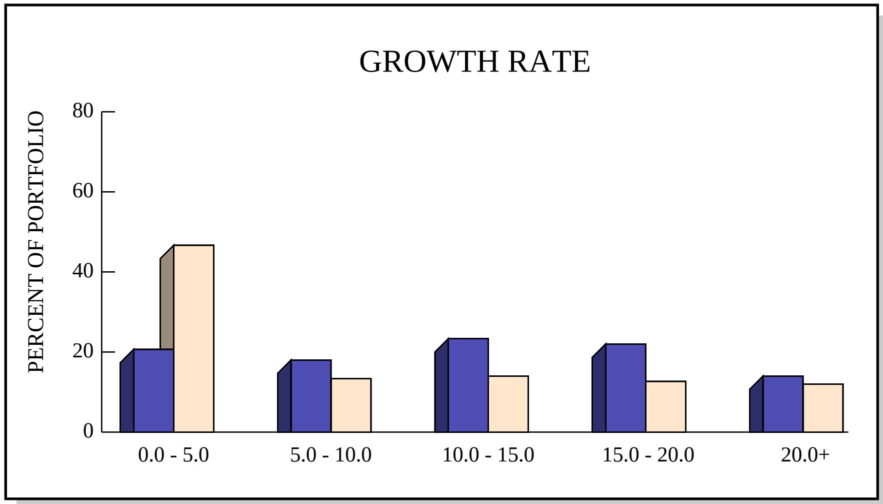
Date	Portfolio	Benchmark	Difference
6/16	1.9	4.6	-2.7
9/16	5.6	3.5	2.1
12/16	7.0	6.7	0.3
3/17	6.8	3.3	3.5
6/17	3.9	1.3	2.6
9/17	3.9	3.1	0.8
12/17	7.7	5.3	2.4
3/18	0.4	-2.8	3.2
6/18	3.1	1.2	1.9
9/18	7.0	5.7	1.3
12/18	-14.1	-11.7	-2.4
3/19	13.9	11.9	2.0
6/19	7.5	3.8	3.7
9/19	-0.9	1.4	-2.3

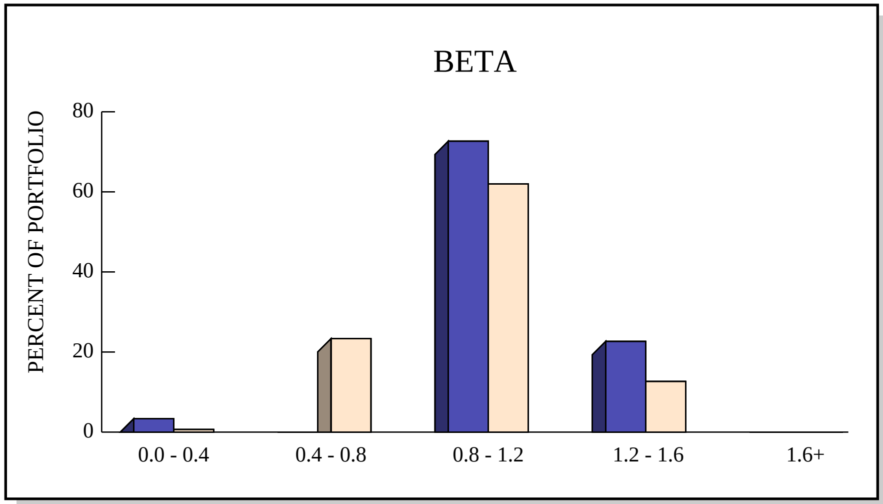
STOCK CHARACTERISTICS



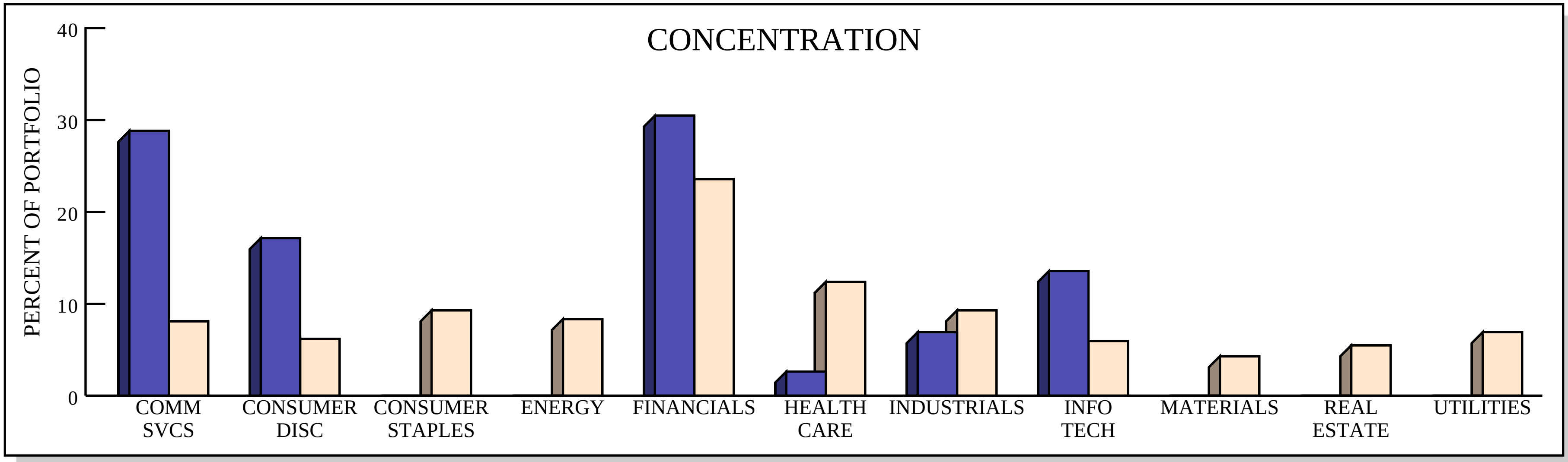


	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	26	1.1%	11.5%	22.0	1.04
RUSSELL 1000V	765	2.5%	5.5%	21.7	0.94

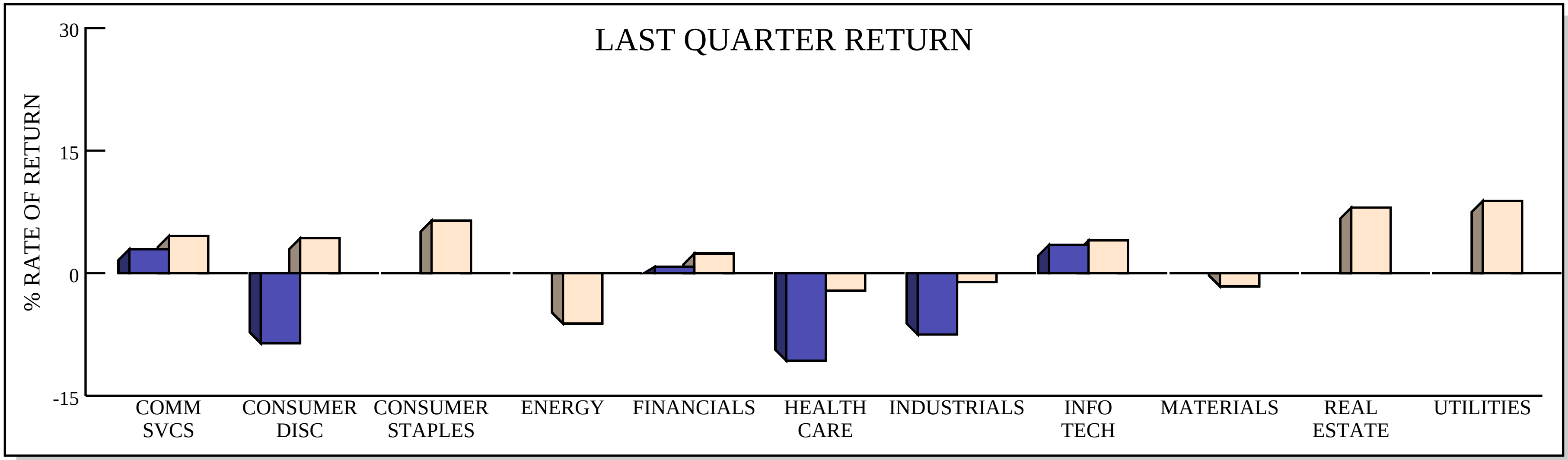




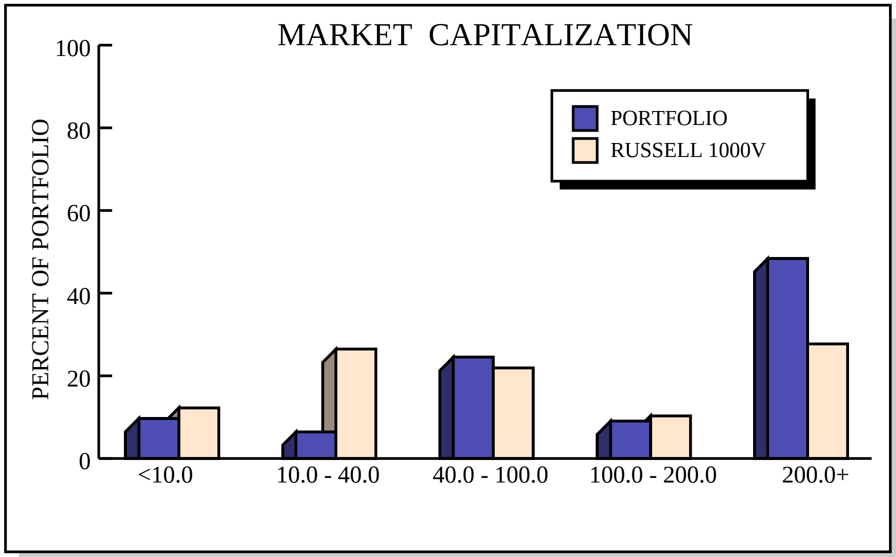
STOCK INDUSTRY ANALYSIS

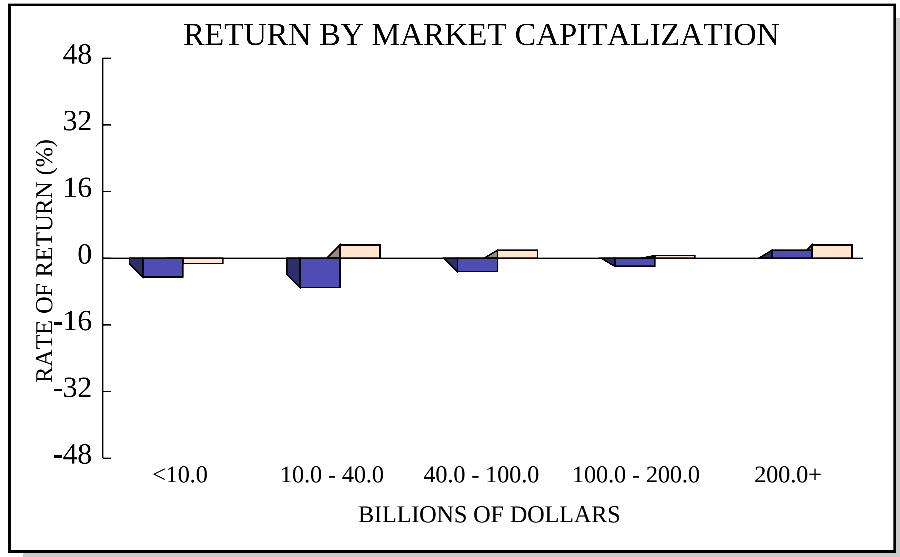


PORTFOLIO RUSSELL 1000V



TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	$ 13,120,261	9.26%	4.1%	Information Technology	$ 1061.6 B
2	ALPHABET INC-CL C	12,876,297	9.09%	12.8%	Communication Services	423.4 B
3	BERKSHIRE HATHAWAY INC-CL B	11,181,283	7.89%	-2.4%	Financials	288.4 B
4	CITIGROUP INC	9,381,064	6.62%	-0.6%	Financials	156.1 B
5	AMAZON.COM INC	8,141,418	5.74%	-8.3%	Consumer Discretionary	858.7 B
6	COMCAST CORP-CLASS A	8,115,392	5.73%	7.1%	Communication Services	204.5 B
7	GOLDMAN SACHS GROUP INC	8,049,435	5.68%	1.9%	Financials	74.5 B
8	WELLS FARGO & CO	7,326,057	5.17%	7.8%	Financials	222.2 B
9	MARRIOTT INTERNATIONAL -CL A	6,056,073	4.27%	-11.0%	Consumer Discretionary	41.0 B
10	GENERAL ELECTRIC CO	5,917,198	4.18%	-14.8%	Industrials	78.0 B

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
EMERALD ADVISORS - DIVERSIFIED SMALL CAP GROWTH
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.
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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's Emerald Advisors Diversified Small Cap Growth portfolio was valued at $62,766,642, a decrease of $78,078,319 from the June ending value of $140,844,961. Last quarter, the account recorded total net withdrawals of $70,175,883 in addition to $7,902,436 in net investment losses. The fund's net investment loss was a result of income receipts totaling $127,721 and realized and unrealized capital losses totaling $8,030,157.

RELATIVE PERFORMANCE

Total Fund

During the third quarter, the Emerald Advisors Diversified Small Cap Growth portfolio lost 6.5%, which was 2.3% less than the Russell 2000 Growth Index's return of -4.2% and ranked in the 76th percentile of the Small Cap Growth universe. Over the trailing year, the portfolio returned -8.1%, which was 1.6% greater than the benchmark's -9.7% performance, and ranked in the 62nd percentile. Since September 1998, the account returned 10.9% per annum. For comparison, the Russell 2000 Growth returned an annualized 7.6% over the same time frame.

ASSET ALLOCATION

At the end of the third quarter, small cap equities comprised 98.7% of the total portfolio ($62.0 million), while cash & equivalents comprised the remaining 1.3% ($803,118).

EQUITY ANALYSIS

The Emerald portfolio was invested across ten of the eleven industry sectors shown in our analysis last quarter. Allocations were similar to those within the Russell 2000 Growth index, with more weight in the Consumer Discretionary and Financials sectors and less in the Industrials, Materials, and Real Estate sectors. The Utilities sector was vacant.

Selection effects were mixed in the third quarter; six sectors failed to beat their index counterparts, including Consumer Discretionary and Health Care, which together made up about half the portfolio. The next two largest sectors, Industrials and Information Technology also fell short on performance and together made up about a third of the portfolio. The favorable selection in the Consumer Staples, Energy, and Real Estate sectors, which amounted to less than 6% of the portfolio was drowned out by the impact of the bigger sectors.

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	10 Year	Since 09/98
Total Portfolio - Gross	-6.5	17.7	-8.1	12.2	11.9	15.2	10.9
SMALL CAP GROWTH RANK	(76)	(54)	(62)	(62)	(38)	(25)	----
Total Portfolio - Net	-6.7	17.3	-8.6	11.7	11.4	14.7	10.4
Russell 2000G	-4.2	15.3	-9.7	9.8	9.1	12.2	7.6
Small Cap Equity - Gross	-6.5	18.5	-8.4	12.5	12.2	15.5	11.2
SMALL CAP GROWTH RANK	(76)	(52)	(63)	(59)	(33)	(19)	----
Russell 2000G	-4.2	15.3	-9.7	9.8	9.1	12.2	7.6
Russell 2000	-2.4	14.2	-8.9	8.2	8.2	11.2	8.5

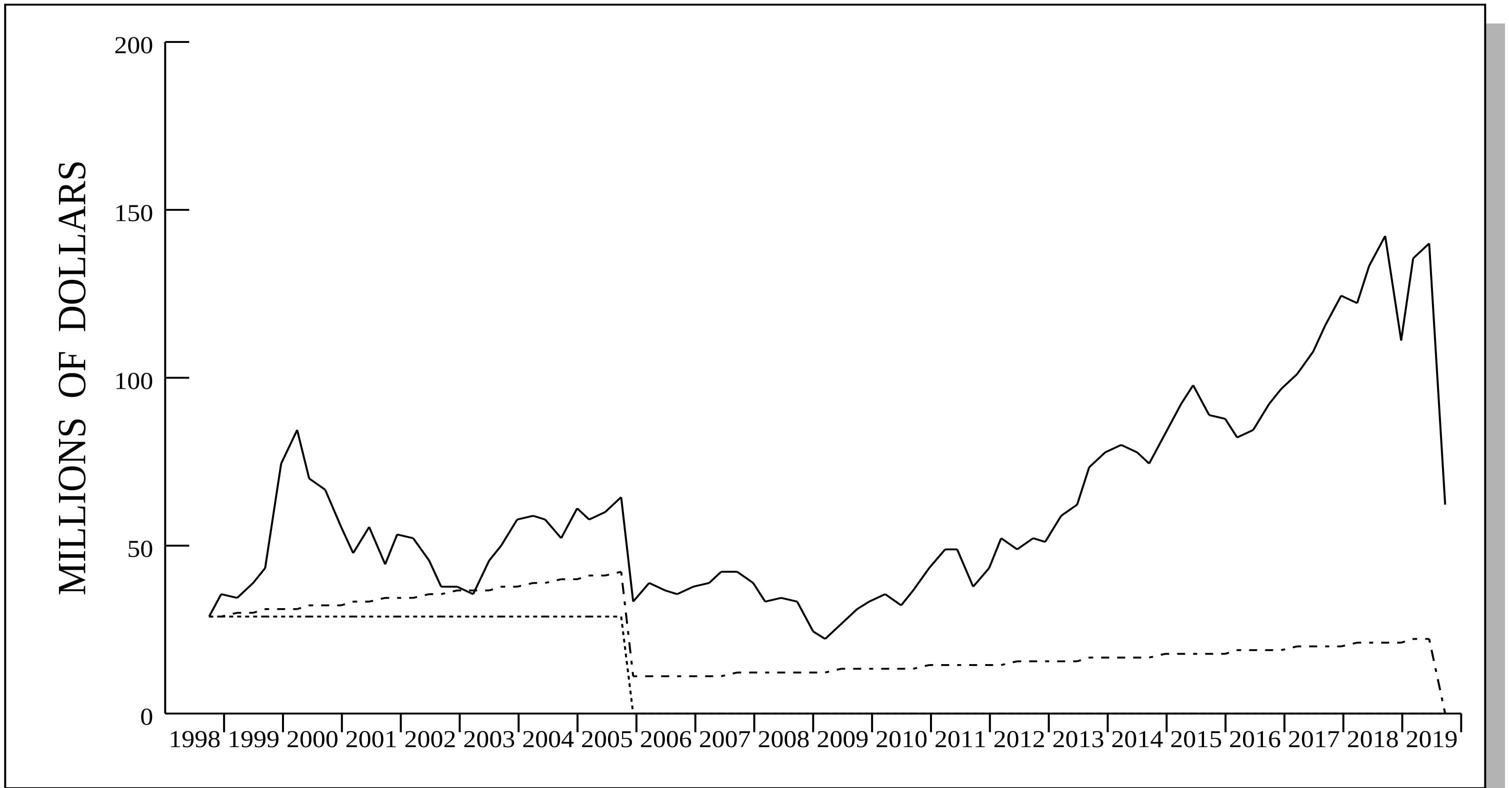
ASSET ALLOCATION

Small Cap	98.7%	$ 61,963,524
Cash	1.3%	803,118
Total Portfolio	100.0%	$ 62,766,642

INVESTMENT RETURN

Market Value 6/2019	$ 140,844,961
Contribs / Withdrawals	- 70,175,883
Income	127,721
Capital Gains / Losses	- 8,030,157
Market Value 9/2019	$ 62,766,642

INVESTMENT GROWTH

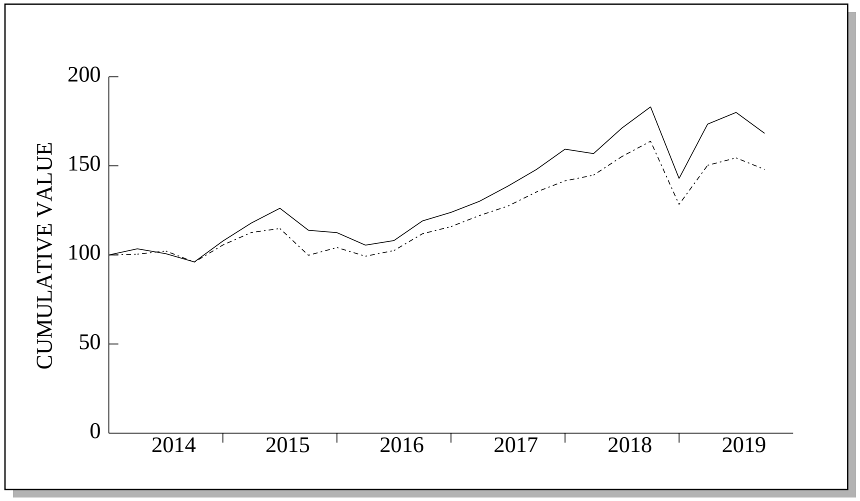


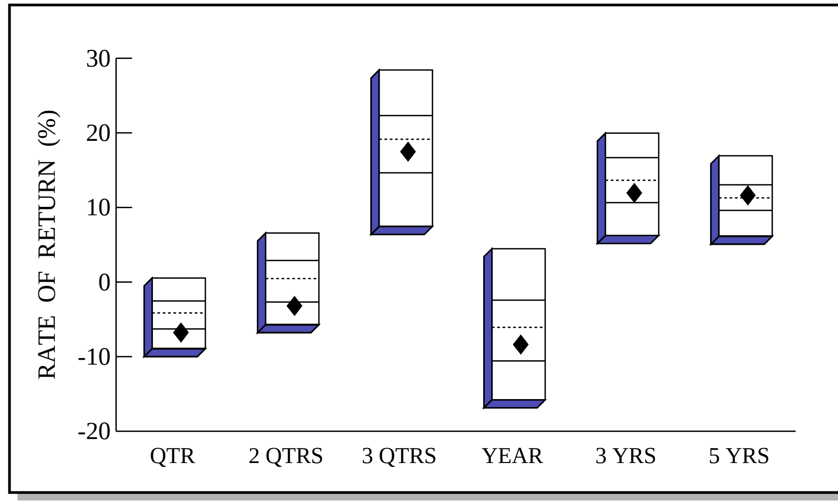
ACTUAL RETURN
5.25%
0.0%

VALUE ASSUMING
5.25% RETURN $ -47,825,094

	LAST QUARTER	PERIOD 9/98 - 9/19
BEGINNING VALUE	$ 140,844,961	$ 29,601,782
NET CONTRIBUTIONS	- 70,175,883	-101,579,784
INVESTMENT RETURN	- 7,902,436	134,744,644
ENDING VALUE	$ 62,766,642	$ 62,766,642
INCOME	127,721	6,205,346
CAPITAL GAINS (LOSSES)	- 8,030,157	128,539,298
INVESTMENT RETURN	- 7,902,436	134,744,644

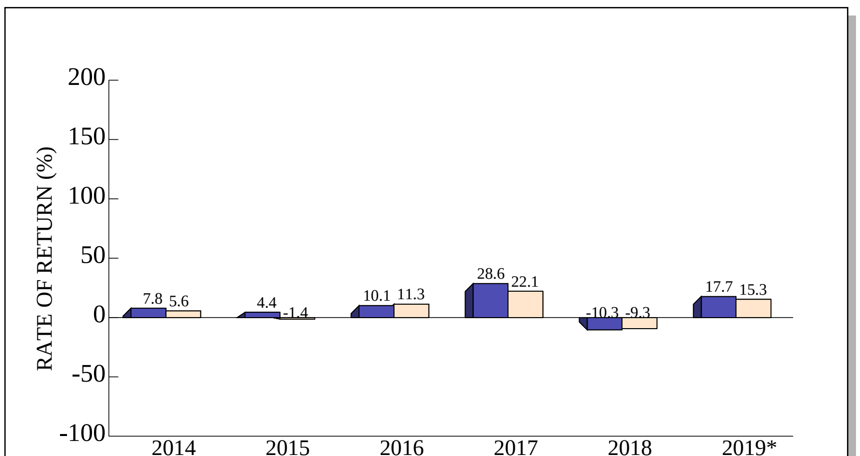
TOTAL RETURN COMPARISONS





Small Cap Growth Universe

PORTFOLIO
RUSSELL 2000G



* Partial year

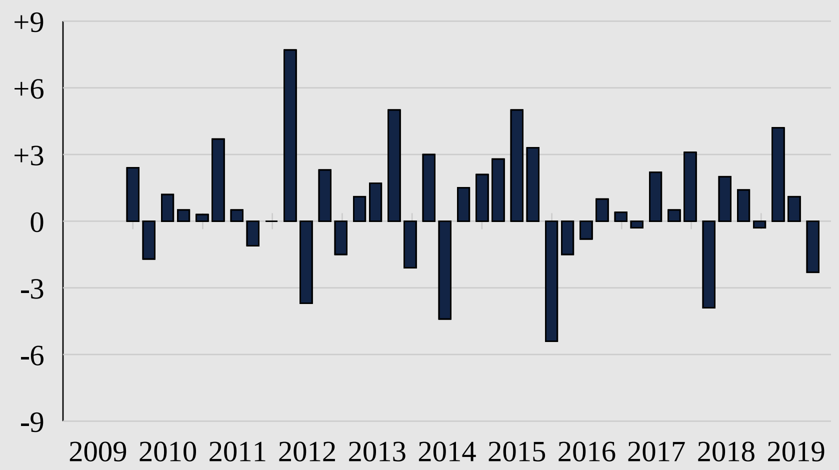
					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	-6.5	-3.0	17.7	-8.1	12.2	11.9
(RANK)	(76)	(80)	(54)	(62)	(62)	(38)
5TH %ILE	0.5	6.6	28.4	4.5	20.0	16.9
25TH %ILE	-2.5	2.9	22.3	-2.4	16.7	13.0
MEDIAN	-4.2	0.5	19.1	-6.1	13.6	11.3
75TH %ILE	-6.3	-2.7	14.7	-10.6	10.6	9.6
95TH %ILE	-8.9	-5.7	7.5	-15.8	6.3	6.2
Russ 2000G	***-4.2***	***-1.5***	***15.3***	***-9.7***	***9.8***	***9.1***

Small Cap Growth Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: RUSSELL 2000 GROWTH

VARIATION FROM BENCHMARK

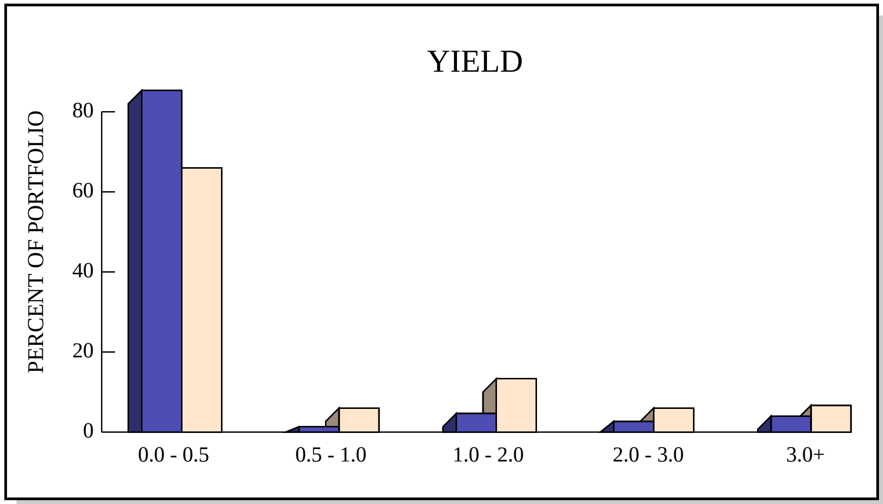


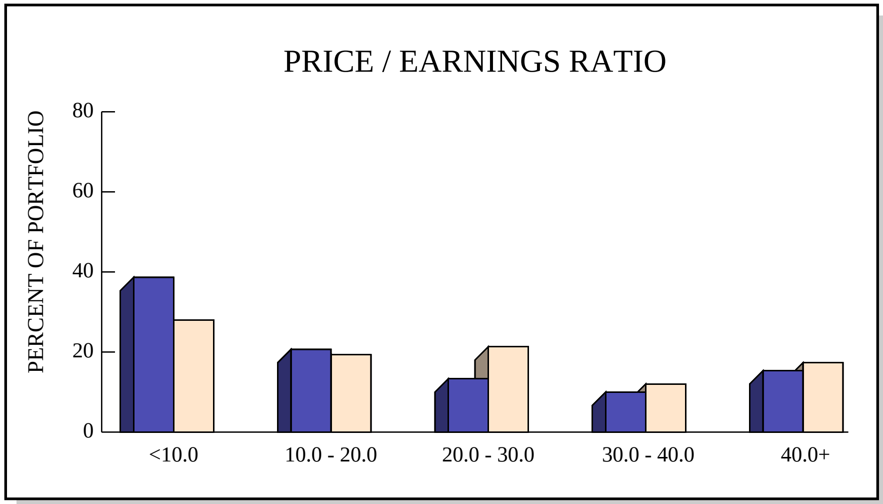
Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**27**
Quarters Below the Benchmark	**13**
Batting Average	**.675**

RATES OF RETURN

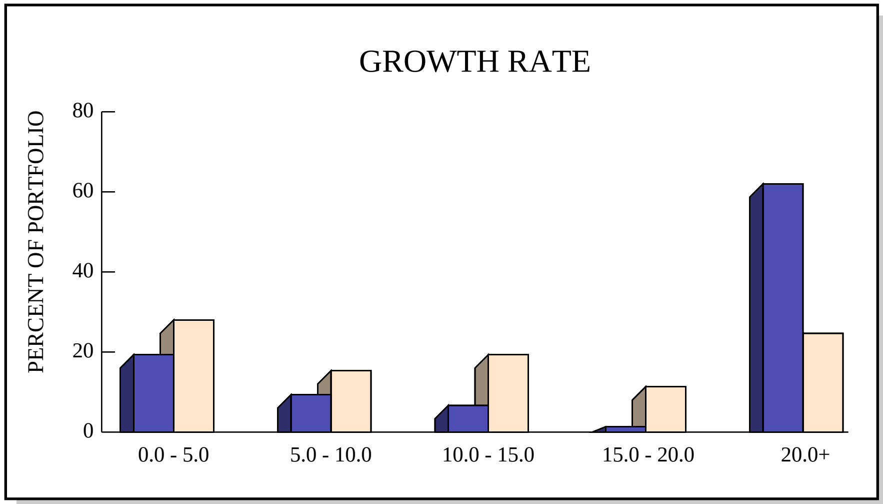
Date	Portfolio	Benchmark	Difference
12/09	6.5	4.1	2.4
3/10	5.9	7.6	-1.7
6/10	-8.0	-9.2	1.2
9/10	13.3	12.8	0.5
12/10	17.4	17.1	0.3
3/11	12.9	9.2	3.7
6/11	-0.1	-0.6	0.5
9/11	-23.4	-22.3	-1.1
12/11	15.0	15.0	0.0
3/12	21.0	13.3	7.7
6/12	-7.6	-3.9	-3.7
9/12	7.1	4.8	2.3
12/12	-1.1	0.4	-1.5
3/13	14.3	13.2	1.1
6/13	5.4	3.7	1.7
9/13	17.8	12.8	5.0
12/13	6.1	8.2	-2.1
3/14	3.5	0.5	3.0
6/14	-2.7	1.7	-4.4
9/14	-4.6	-6.1	1.5
12/14	12.2	10.1	2.1
3/15	9.4	6.6	2.8
6/15	7.0	2.0	5.0
9/15	-9.8	-13.1	3.3
12/15	-1.1	4.3	-5.4
3/16	-6.2	-4.7	-1.5
6/16	2.4	3.2	-0.8
9/16	10.2	9.2	1.0
12/16	4.0	3.6	0.4
3/17	5.0	5.3	-0.3
6/17	6.6	4.4	2.2
9/17	6.7	6.2	0.5
12/17	7.7	4.6	3.1
3/18	-1.6	2.3	-3.9
6/18	9.2	7.2	2.0
9/18	6.9	5.5	1.4
12/18	-22.0	-21.7	-0.3
3/19	21.3	17.1	4.2
6/19	3.8	2.7	1.1
9/19	-6.5	-4.2	-2.3

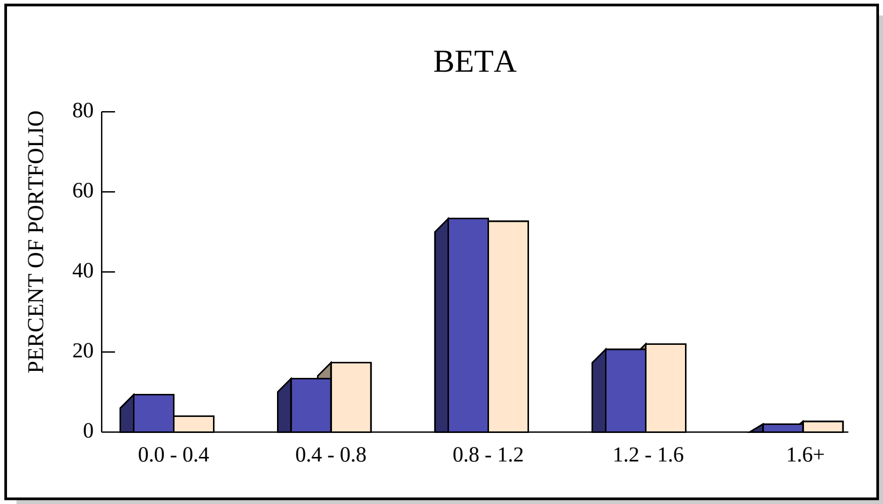
STOCK CHARACTERISTICS



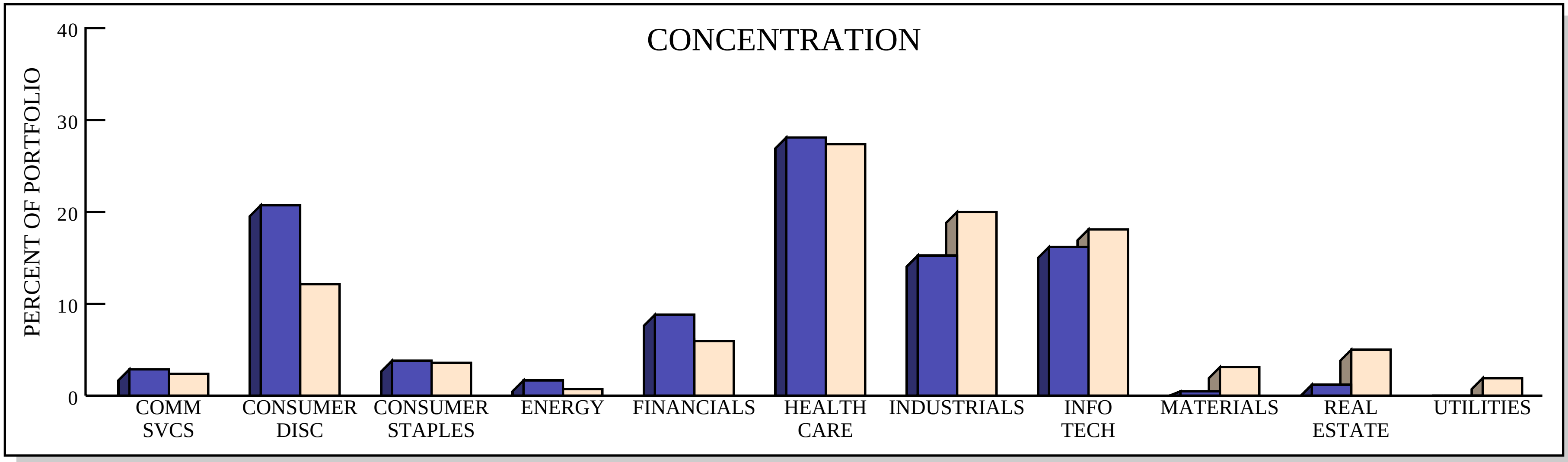


	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	115	0.5%	26.1%	13.1	0.97
RUSSELL 2000G	1,163	0.8%	13.5%	18.7	0.99

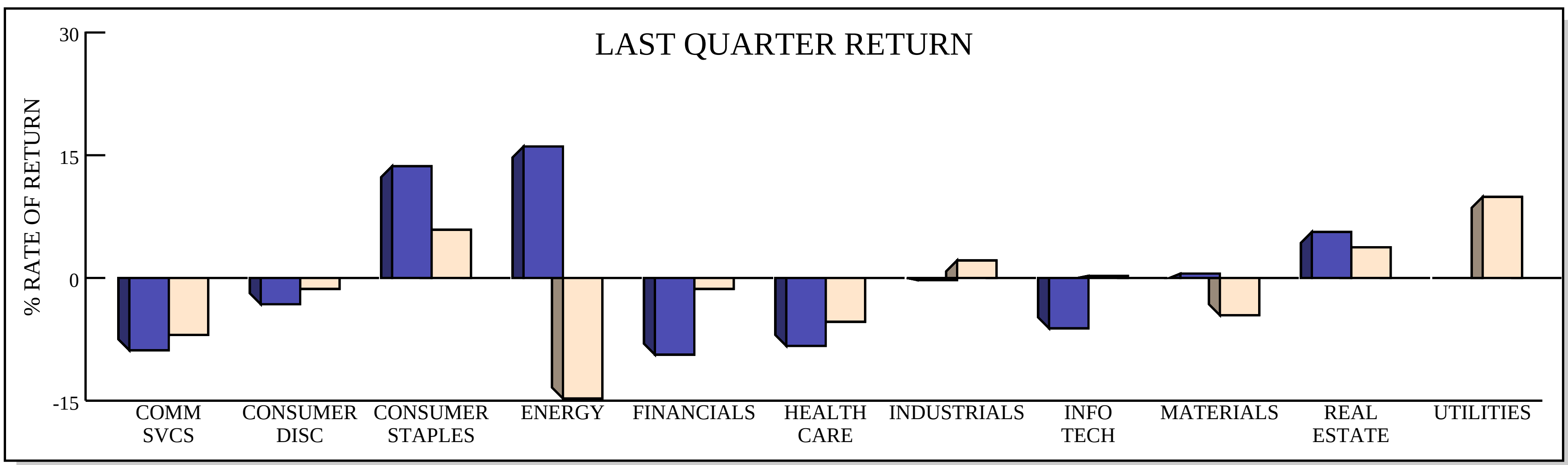




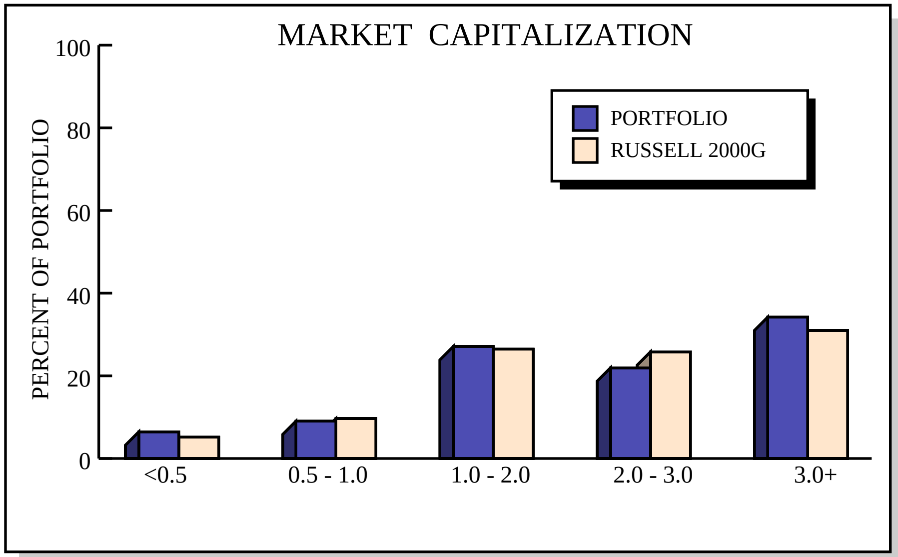
STOCK INDUSTRY ANALYSIS

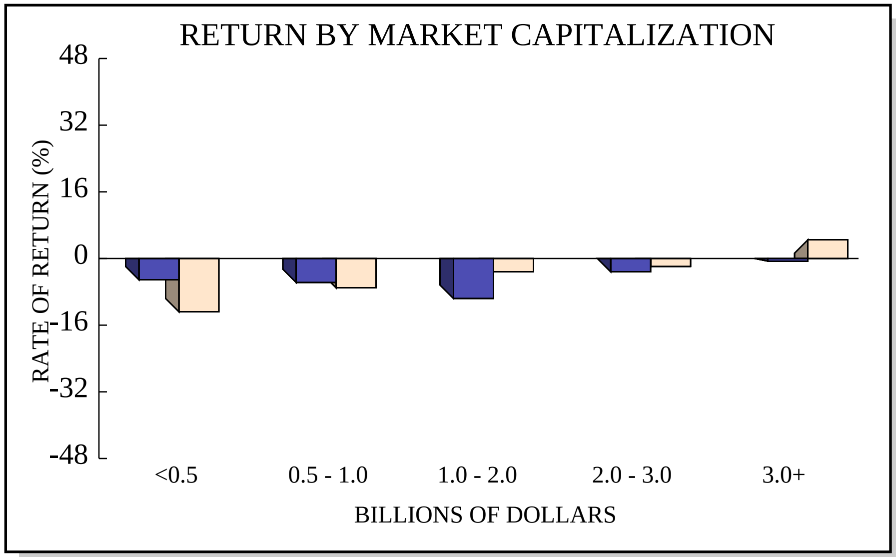


PORTFOLIO RUSSELL 2000G



TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	TREX COMPANY INC	$ 1,740,218	2.81%	26.8%	Industrials	$ 5.3 B
2	CHEGG INC	1,336,878	2.16%	-22.4%	Consumer Discretionary	3.6 B
3	FIVE BELOW	1,329,094	2.14%	5.1%	Consumer Discretionary	7.0 B
4	CHURCHILL DOWNS INC	1,205,463	1.95%	7.3%	Consumer Discretionary	4.9 B
5	FRESHPET INC	1,161,632	1.87%	9.4%	Consumer Staples	1.8 B
6	SIMPLY GOOD FOODS CO/THE	1,146,120	1.85%	20.4%	Consumer Staples	2.4 B
7	KRATOS DEFENSE & SECURITY	1,140,924	1.84%	-18.8%	Industrials	2.0 B
8	TETRA TECH INC	1,097,514	1.77%	10.7%	Industrials	4.7 B
9	FORESCOUT TECHNOLOGIES INC	1,052,280	1.70%	12.0%	Information Technology	1.8 B
10	CIENA CORP	1,040,223	1.68%	-4.6%	Information Technology	6.1 B

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
FEDERATED - LARGE CAP GROWTH EQUITY
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.
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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's Federated Large Cap Growth Equity portfolio was valued at $101,294,244, representing an increase of $265,582 from the June quarter's ending value of $101,028,662. Last quarter, the Fund posted withdrawals totaling $183,669, which offset the portfolio's net investment return of $449,251. Income receipts totaling $199,622 plus net realized and unrealized capital gains of $249,629 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the third quarter, the Federated Large Cap Growth Equity portfolio returned 0.4%, which was 1.1% below the Russell 1000 Growth Index's return of 1.5% and ranked in the 56th percentile of the Large Cap Growth universe. Over the trailing year, the portfolio returned 8.6%, which was 4.9% above the benchmark's 3.7% return, ranking in the 20th percentile. Since June 2015, the portfolio returned 11.6% annualized and ranked in the 65th percentile. The Russell 1000 Growth returned an annualized 13.6% over the same period.

ASSET ALLOCATION

At the end of the third quarter, large cap equities comprised 96.7% of the total portfolio ($97.9 million), while cash & equivalents totaled 3.3% ($3.4 million).

EQUITY ANALYSIS

Last quarter, the Federated portfolio was invested in nine of the industry sectors shown in our analysis. The Energy and Utilities sectors, which had barely any representation in the Russell 1000 Growth index, were not invested. The Health Care sector was notably overweight, while the Communication Services and Consumer Staples sectors were relatively light.

Mixed selection effects resulted in a third quarter return that was relatively flat next to the benchmark's modest growth. The Information Technology sector, which still towered over the other sectors despite being below market weight, did not keep pace with its index counterpart. This effect was countered by better results in the Communication Services, Consumer Discretionary, Health Care, and Materials sectors, but at quarter end, the portfolio was still behind the index.

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	Since 06/15
Total Portfolio - Gross	0.4	27.3	8.6	17.4	----	11.6
LARGE CAP GROWTH RANK	(56)	(10)	(20)	(31)	----	(65)
Total Portfolio - Net	0.3	26.6	7.8	16.5	----	10.8
Russell 1000G	1.5	23.3	3.7	16.9	13.4	13.6
Large Cap Equity - Gross	0.4	28.3	9.0	18.2	----	12.2
LARGE CAP GROWTH RANK	(56)	(6)	(17)	(25)	----	(55)
Russell 1000G	1.5	23.3	3.7	16.9	13.4	13.6

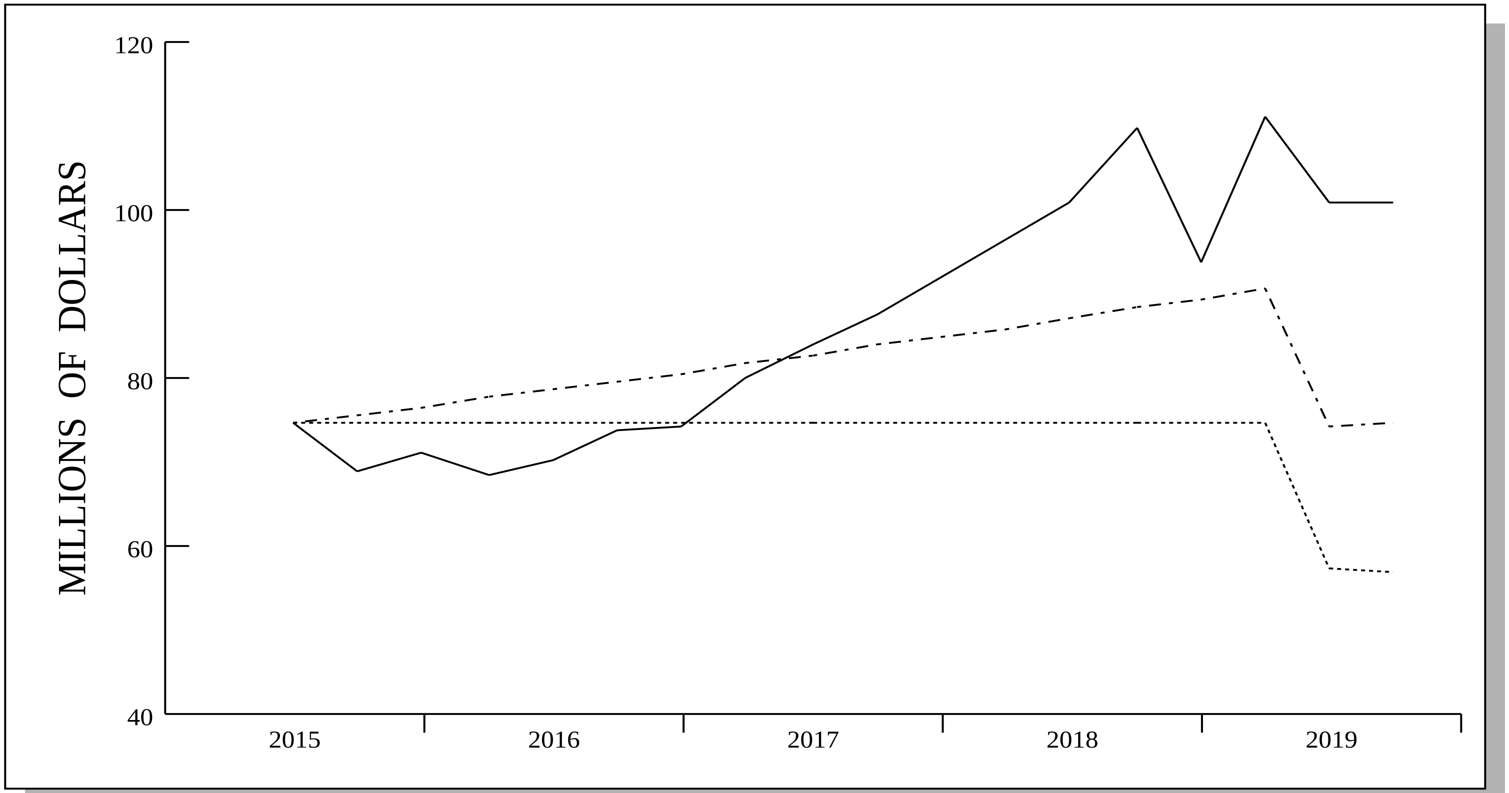
ASSET ALLOCATION

Large Cap Equity	96.7%	$ 97,903,797
Cash	3.3%	3,390,447
Total Portfolio	100.0%	$ 101,294,244

INVESTMENT RETURN

Market Value 6/2019	$ 101,028,662
Contribs / Withdrawals	-183,669
Income	199,622
Capital Gains / Losses	249,629
Market Value 9/2019	$ 101,294,244

INVESTMENT GROWTH

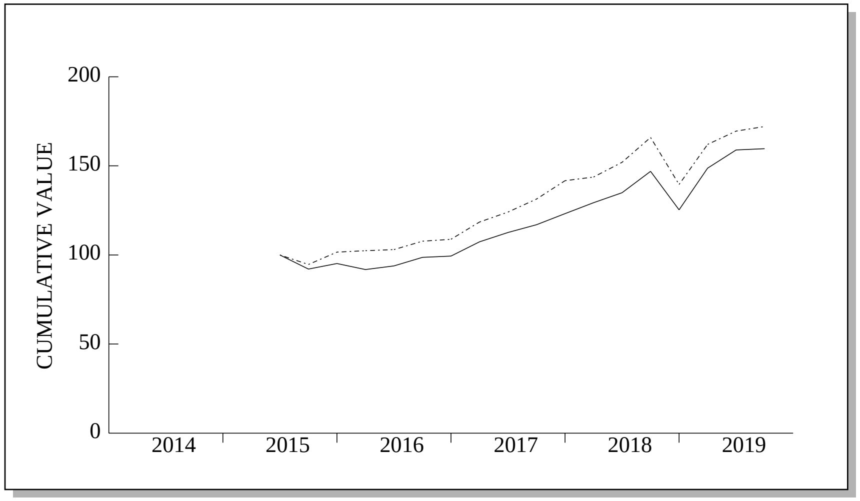


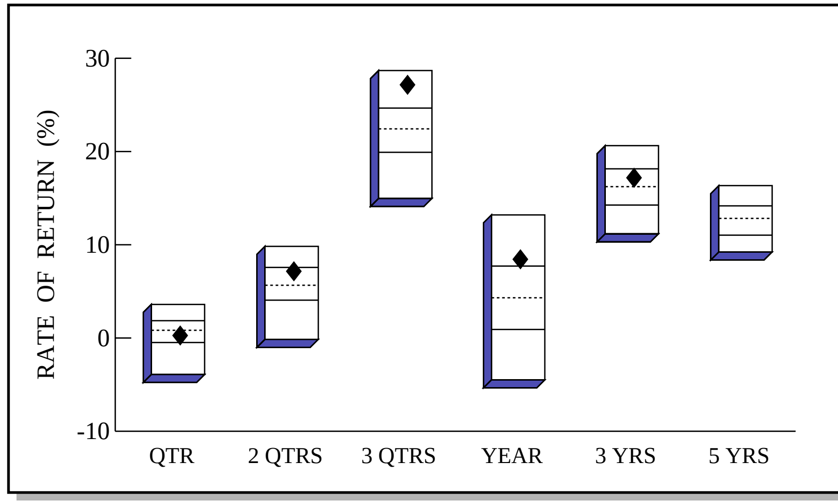
———	ACTUAL RETURN
-·-·-·-	5.25%
········	0.0%

VALUE ASSUMING
5.25% RETURN $ 74,998,596

	LAST QUARTER	PERIOD 6/15 - 9/19
BEGINNING VALUE	$ 101,028,662	$ 74,904,546
NET CONTRIBUTIONS	-183,669	- 17,685,189
INVESTMENT RETURN	449,251	44,074,887
ENDING VALUE	$ 101,294,244	$ 101,294,244
INCOME	199,622	3,353,973
CAPITAL GAINS (LOSSES)	249,629	40,720,914
INVESTMENT RETURN	449,251	44,074,887

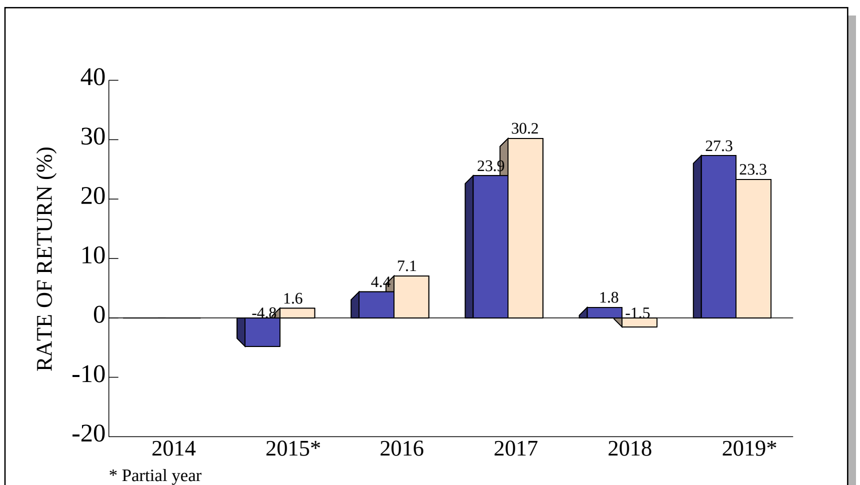
TOTAL RETURN COMPARISONS





Large Cap Growth Universe

PORTFOLIO
RUSSELL 1000G



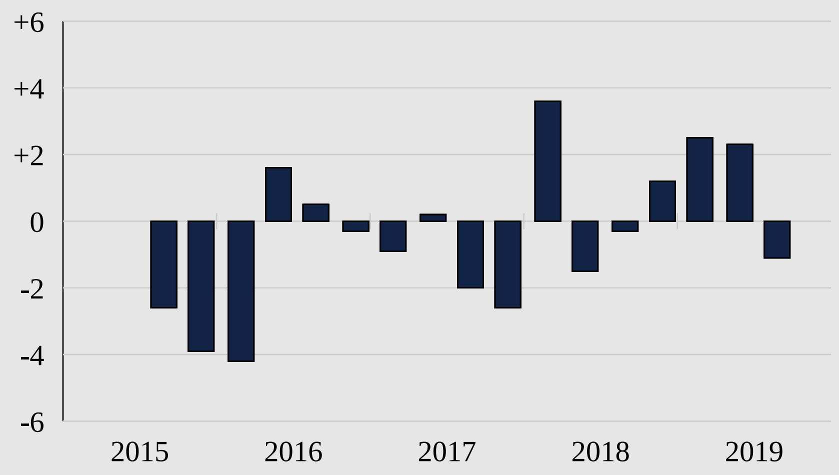
	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	0.4	7.3	27.3	8.6	17.4	----
(RANK)	(56)	(27)	(10)	(20)	(31)	----
5TH %ILE	3.6	9.8	28.7	13.2	20.6	16.3
25TH %ILE	1.9	7.6	24.7	7.7	18.2	14.2
MEDIAN	0.8	5.7	22.4	4.3	16.2	12.8
75TH %ILE	-0.5	4.1	19.9	0.9	14.3	11.0
95TH %ILE	-3.9	-0.1	15.0	-4.5	11.2	9.2
Russ 1000G	***1.5***	***6.2***	***23.3***	***3.7***	***16.9***	***13.4***

Large Cap Growth Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

COMPARATIVE BENCHMARK: RUSSELL 1000 GROWTH

VARIATION FROM BENCHMARK

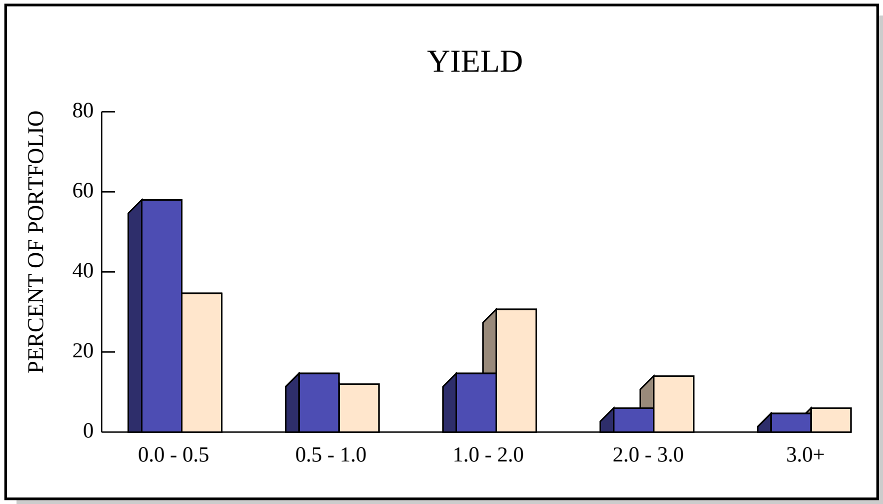


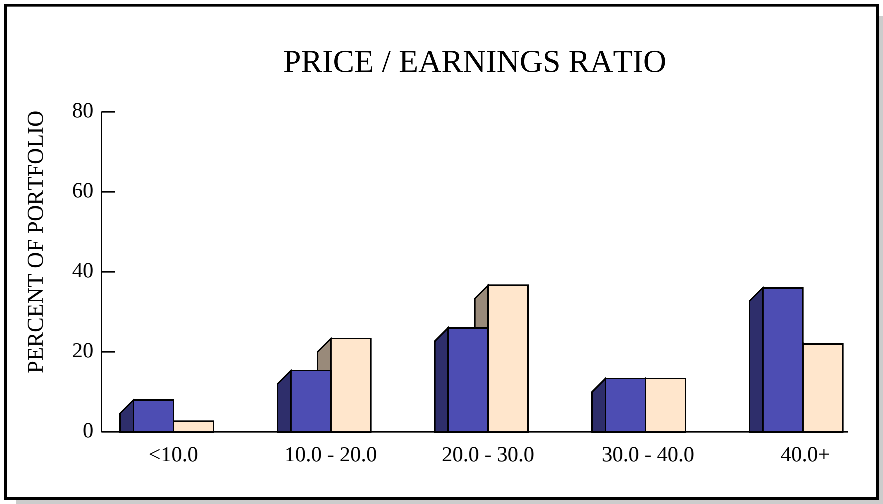
Total Quarters Observed	**17**
Quarters At or Above the Benchmark	**7**
Quarters Below the Benchmark	**10**
Batting Average	**.412**

RATES OF RETURN

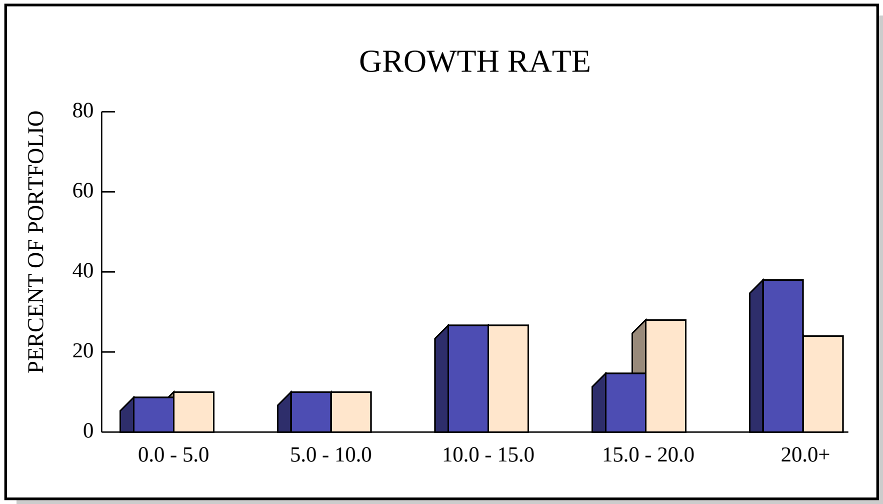
Date	Portfolio	Benchmark	Difference
9/15	-7.9	-5.3	-2.6
12/15	3.4	7.3	-3.9
3/16	-3.5	0.7	-4.2
6/16	2.2	0.6	1.6
9/16	5.1	4.6	0.5
12/16	0.7	1.0	-0.3
3/17	8.0	8.9	-0.9
6/17	4.9	4.7	0.2
9/17	3.9	5.9	-2.0
12/17	5.3	7.9	-2.6
3/18	5.0	1.4	3.6
6/18	4.3	5.8	-1.5
9/18	8.9	9.2	-0.3
12/18	-14.7	-15.9	1.2
3/19	18.6	16.1	2.5
6/19	6.9	4.6	2.3
9/19	0.4	1.5	-1.1

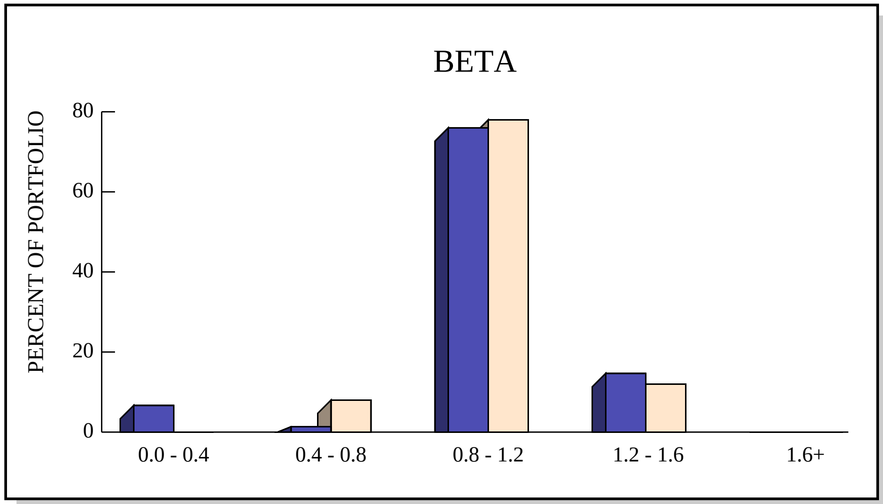
STOCK CHARACTERISTICS



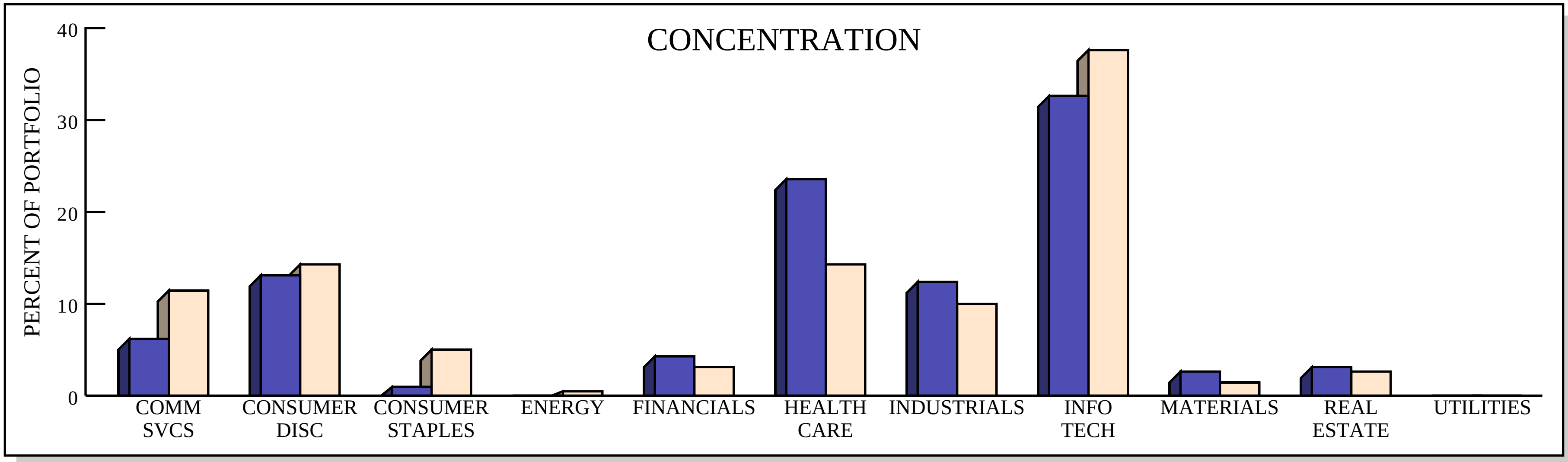


	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	56	0.7%	20.2%	36.7	0.98
RUSSELL 1000G	531	1.2%	18.4%	31.8	1.03

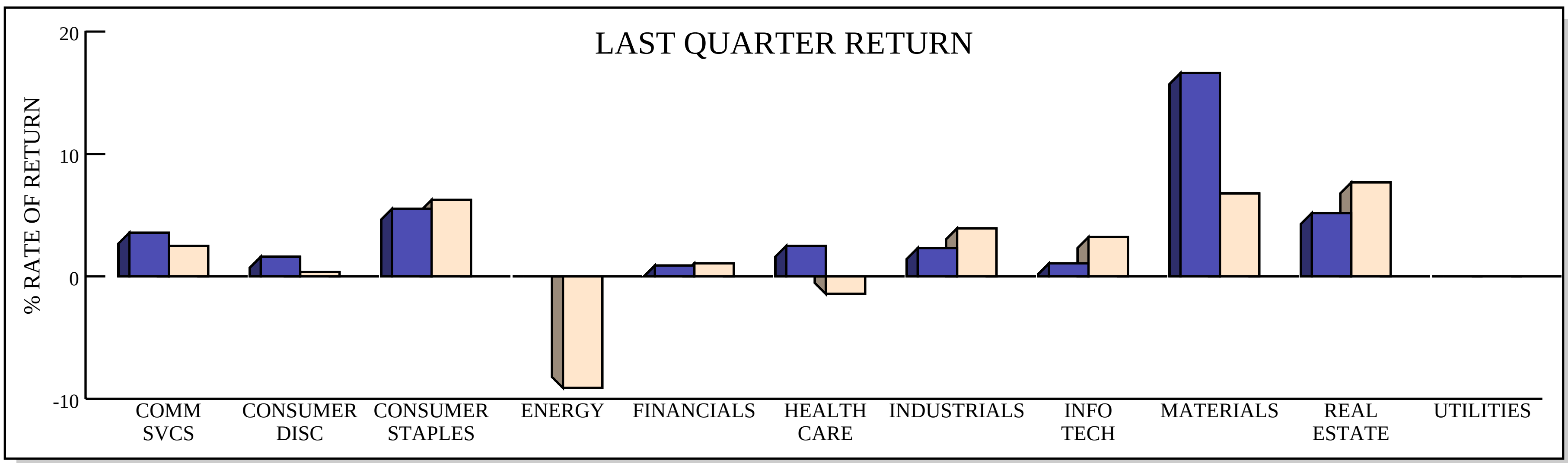




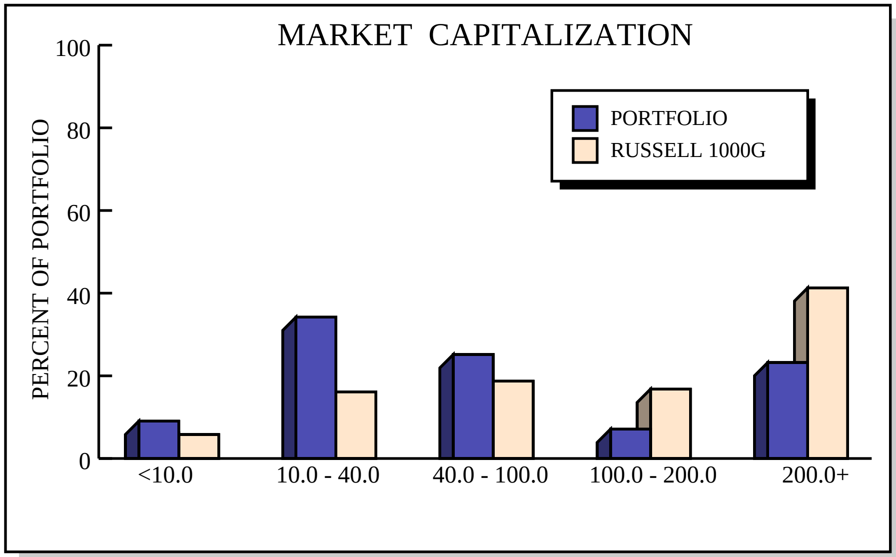
STOCK INDUSTRY ANALYSIS

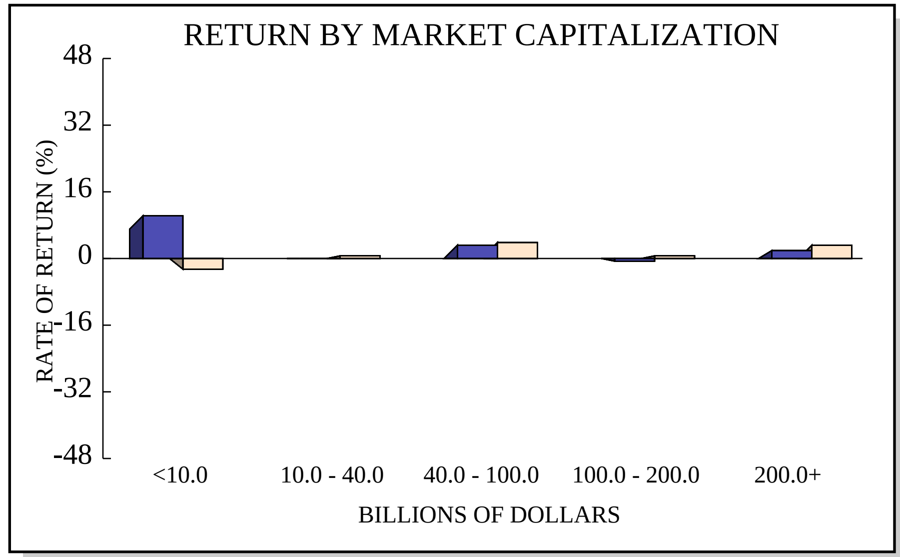


PORTFOLIO RUSSELL 1000G



TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	$ 4,490,669	4.59%	4.1%	Information Technology	$ 1061.6 B
2	FIDELITY NATIONAL INFO SERV	3,205,623	3.27%	8.5%	Information Technology	81.4 B
3	VISA INC-CLASS A SHARES	3,147,783	3.22%	-0.8%	Information Technology	297.1 B
4	MASTERCARD INC - A	2,987,270	3.05%	2.8%	Information Technology	272.4 B
5	SERVICENOW INC	2,976,391	3.04%	-7.6%	Information Technology	47.6 B
6	AMAZON.COM INC	2,897,234	2.96%	-8.3%	Consumer Discretionary	858.7 B
7	VEEVA SYSTEMS INC-CLASS A	2,763,689	2.82%	-5.8%	Health Care	20.1 B
8	PAGSEGURO DIGITAL LTD-CL A	2,746,183	2.80%	18.8%	Information Technology	7.5 B
9	SALESFORCE.COM INC	2,746,140	2.80%	-2.2%	Information Technology	130.2 B
10	ROPER TECHNOLOGIES INC	2,657,027	2.71%	-2.5%	Industrials	37.1 B

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
HARDMAN JOHNSTON GLOBAL ADVISORS - INTERNATIONAL EQUITY FULLY DISCRETIONARY
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.
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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's Hardman Johnston Global Advisors International Equity Fully Discretionary portfolio was valued at $111,942,612, a decrease of $1,846,173 from the June ending value of $113,788,785. Last quarter, the account recorded total net withdrawals of $175,228 in addition to $1,670,945 in net investment losses. The fund's net investment loss was a result of income receipts totaling $188,773 and realized and unrealized capital losses totaling $1,859,718.

RELATIVE PERFORMANCE

Total Fund

During the third quarter, the Hardman Johnston Global Advisors International Equity Fully Discretionary portfolio lost 1.5%, which was 0.6% less than the S&P BMI Developed Ex US Index's return of -0.9% and ranked in the 43rd percentile of the International Equity universe. Over the trailing year, the portfolio returned 4.4%, which was 6.4% greater than the benchmark's -2.0% performance, and ranked in the 14th percentile. Since March 2012, the account returned 8.7% per annum and ranked in the 14th percentile. For comparison, the S&P BMI Developed Ex US Index returned an annualized 6.0% over the same time frame.

ASSET ALLOCATION

At the end of the third quarter, international equities comprised 98.0% of the total portfolio ($109.7 million), while cash & equivalents comprised the remaining 2.0% ($2.2 million).

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	Since 03/12
Total Portfolio - Gross	-1.5	17.9	4.4	10.8	7.6	8.7
INTERNATIONAL EQUITY RANK	(43)	(12)	(14)	(7)	(11)	(14)
Total Portfolio - Net	-1.6	17.4	3.8	10.1	6.9	8.0
S&P BMI Ex US	-0.9	13.0	-2.0	6.7	3.8	6.0
International Equity - Gross	-1.5	18.9	3.4	10.8	7.6	8.8
INTERNATIONAL EQUITY RANK	(43)	(9)	(17)	(7)	(11)	(14)
S&P BMI Ex US	-0.9	13.0	-2.0	6.7	3.8	6.0

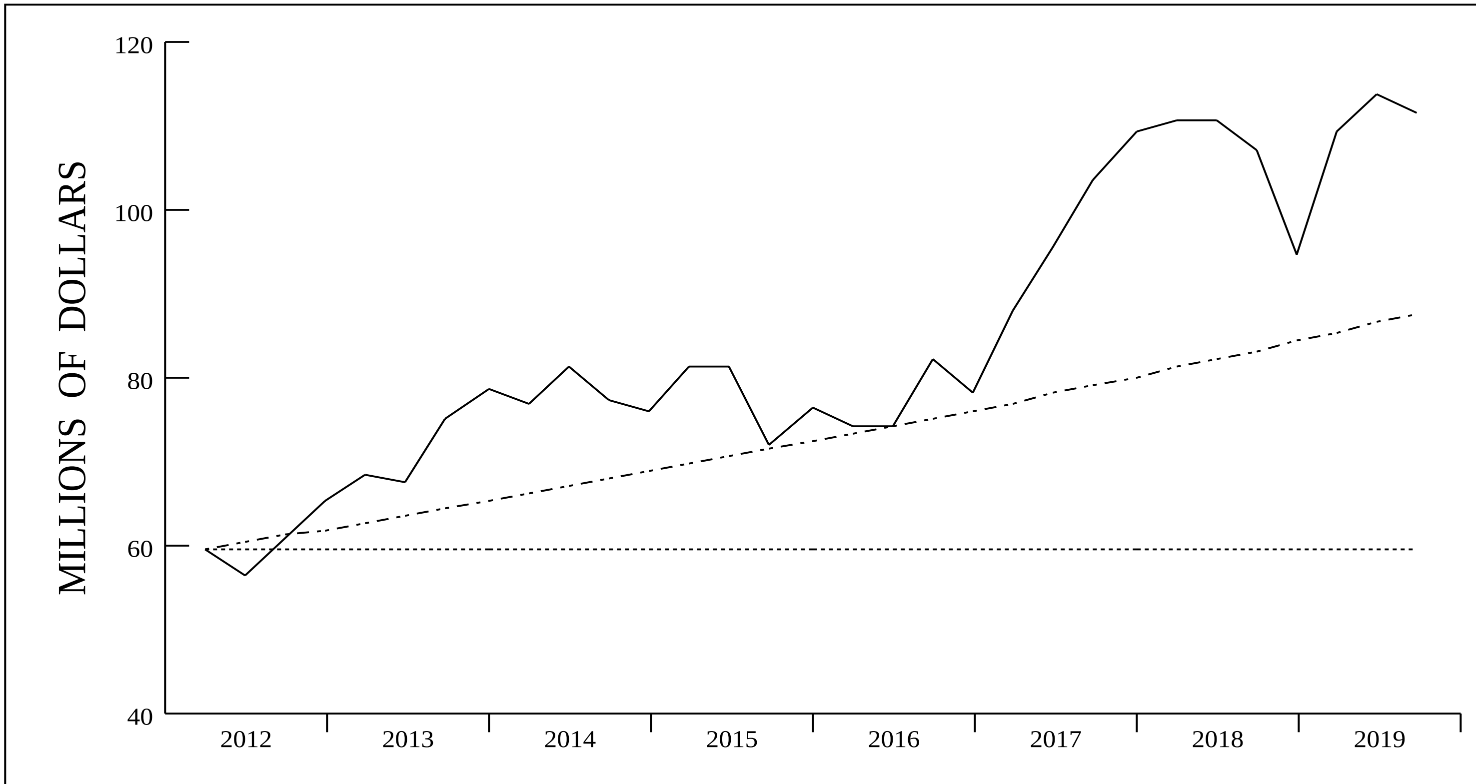
ASSET ALLOCATION

Int'l Equity	98.0%	$ 109,725,691
Cash	2.0%	2,216,921
Total Portfolio	100.0%	$ 111,942,612

INVESTMENT RETURN

Market Value 6/2019	$ 113,788,785
Contribs / Withdrawals	-175,228
Income	188,773
Capital Gains / Losses	- 1,859,718
Market Value 9/2019	$ 111,942,612

INVESTMENT GROWTH

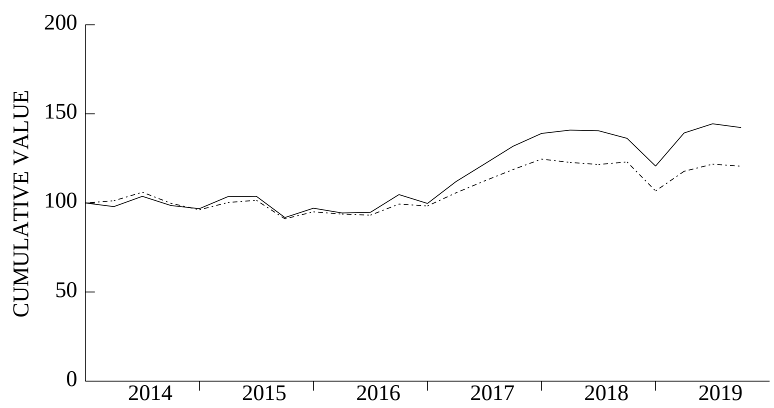


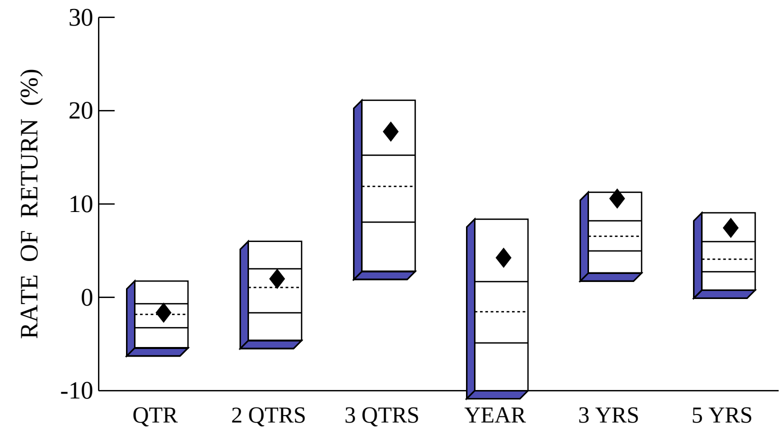
ACTUAL RETURN
5.25%
0.0%

VALUE ASSUMING
5.25% RETURN $ 87,673,275

	LAST QUARTER	PERIOD 3/12 - 9/19
BEGINNING VALUE	$ 113,788,785	$ 59,853,568
NET CONTRIBUTIONS	-175,228	-177,980
INVESTMENT RETURN	- 1,670,945	52,267,024
ENDING VALUE	$ 111,942,612	$ 111,942,612
INCOME	188,773	10,017,365
CAPITAL GAINS (LOSSES)	- 1,859,718	42,249,659
INVESTMENT RETURN	- 1,670,945	52,267,024

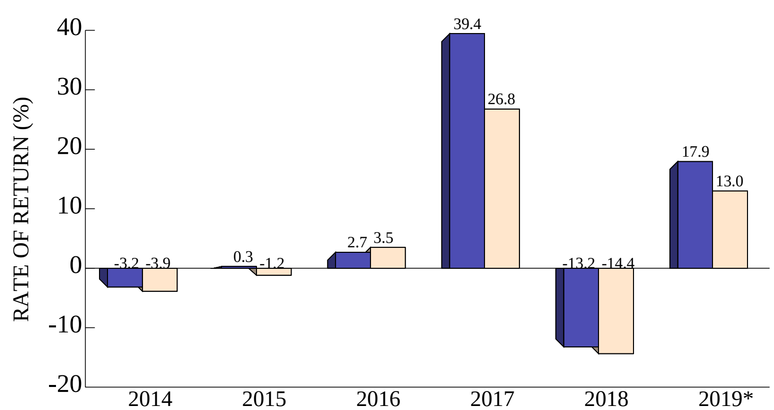
TOTAL RETURN COMPARISONS





International Equity Universe

PORTFOLIO
S&P BMI EX US



* Partial year

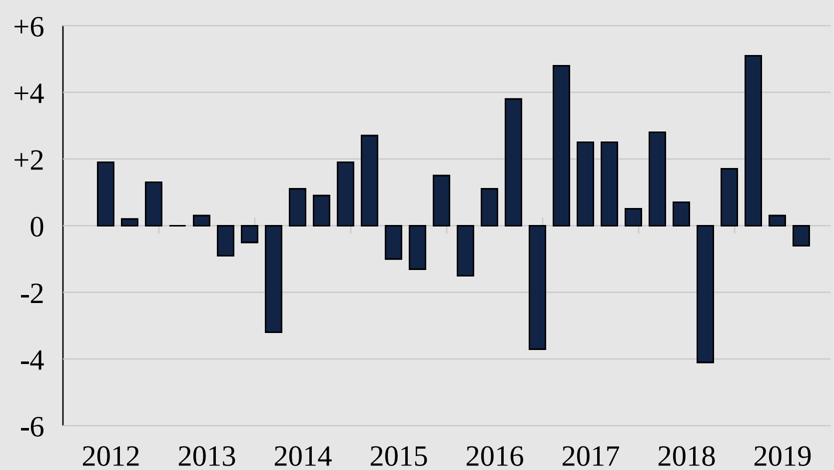
	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	-1.5	2.2	17.9	4.4	10.8	7.6
(RANK)	(43)	(37)	(12)	(14)	(7)	(11)
5TH %ILE	1.7	6.0	21.1	8.4	11.3	9.1
25TH %ILE	-0.7	3.1	15.2	1.7	8.2	6.0
MEDIAN	-1.8	1.1	11.9	-1.6	6.5	4.1
75TH %ILE	-3.3	-1.7	8.1	-4.9	5.0	2.8
95TH %ILE	-5.4	-4.6	2.8	-10.0	2.6	0.8
BMI Ex US	***-0.9***	***2.4***	***13.0***	***-2.0***	***6.7***	***3.8***

International Equity Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

COMPARATIVE BENCHMARK: S&P BMI DEVELOPED EX US INDEX

VARIATION FROM BENCHMARK



Total Quarters Observed	**30**
Quarters At or Above the Benchmark	**21**
Quarters Below the Benchmark	**9**
Batting Average	**.700**

RATES OF RETURN

Date	Portfolio	Benchmark	Difference
6/12	-5.3	-7.2	1.9
9/12	7.9	7.7	0.2
12/12	7.1	5.8	1.3
3/13	4.9	4.9	0.0
6/13	-1.5	-1.8	0.3
9/13	11.0	11.9	-0.9
12/13	4.9	5.4	-0.5
3/14	-2.0	1.2	-3.2
6/14	5.9	4.8	1.1
9/14	-5.0	-5.9	0.9
12/14	-1.8	-3.7	1.9
3/15	6.9	4.2	2.7
6/15	0.2	1.2	-1.0
9/15	-11.5	-10.2	-1.3
12/15	5.8	4.3	1.5
3/16	-2.8	-1.3	-1.5
6/16	0.4	-0.7	1.1
9/16	10.5	6.7	3.8
12/16	-4.8	-1.1	-3.7
3/17	12.3	7.5	4.8
6/17	8.8	6.3	2.5
9/17	8.2	5.7	2.5
12/17	5.5	5.0	0.5
3/18	1.3	-1.5	2.8
6/18	-0.2	-0.9	0.7
9/18	-3.0	1.1	-4.1
12/18	-11.5	-13.2	1.7
3/19	15.4	10.3	5.1
6/19	3.7	3.4	0.3
9/19	-1.5	-0.9	-0.6

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
HGK ASSET MANAGEMENT - HGK INTERNATIONAL EQUITY
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.

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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's HGK Asset Management HGK International Equity portfolio was valued at $121,152,901, representing an increase of $501,807 from the June quarter's ending value of $120,651,094. Last quarter, the Fund posted withdrawals totaling $198,384, which offset the portfolio's net investment return of $700,191. Income receipts totaling $360,722 plus net realized and unrealized capital gains of $339,469 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the third quarter, the HGK Asset Management HGK International Equity portfolio returned 0.6%, which was 1.5% above the S&P BMI Developed Ex US Index's return of -0.9% and ranked in the 10th percentile of the International Equity universe. Over the trailing year, the portfolio returned 1.5%, which was 3.5% above the benchmark's -2.0% return, ranking in the 27th percentile. Since March 2012, the portfolio returned 9.3% annualized and ranked in the 10th percentile. The S&P BMI Developed Ex US Index returned an annualized 6.0% over the same period.

ASSET ALLOCATION

At the end of the third quarter, international equities comprised 96.9% of the total portfolio ($117.4 million), while cash & equivalents totaled 3.1% ($3.7 million).

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	Since 03/12
Total Portfolio - Gross	0.6	14.4	1.5	9.5	5.7	9.3
INTERNATIONAL EQUITY RANK	(10)	(30)	(27)	(14)	(28)	(10)
Total Portfolio - Net	0.4	13.8	0.8	8.8	4.9	8.6
S&P BMI Ex US	-0.9	13.0	-2.0	6.7	3.8	6.0
International Equity - Gross	0.6	14.8	1.5	9.9	5.9	9.7
INTERNATIONAL EQUITY RANK	(10)	(27)	(27)	(11)	(26)	(8)
S&P BMI Ex US	-0.9	13.0	-2.0	6.7	3.8	6.0

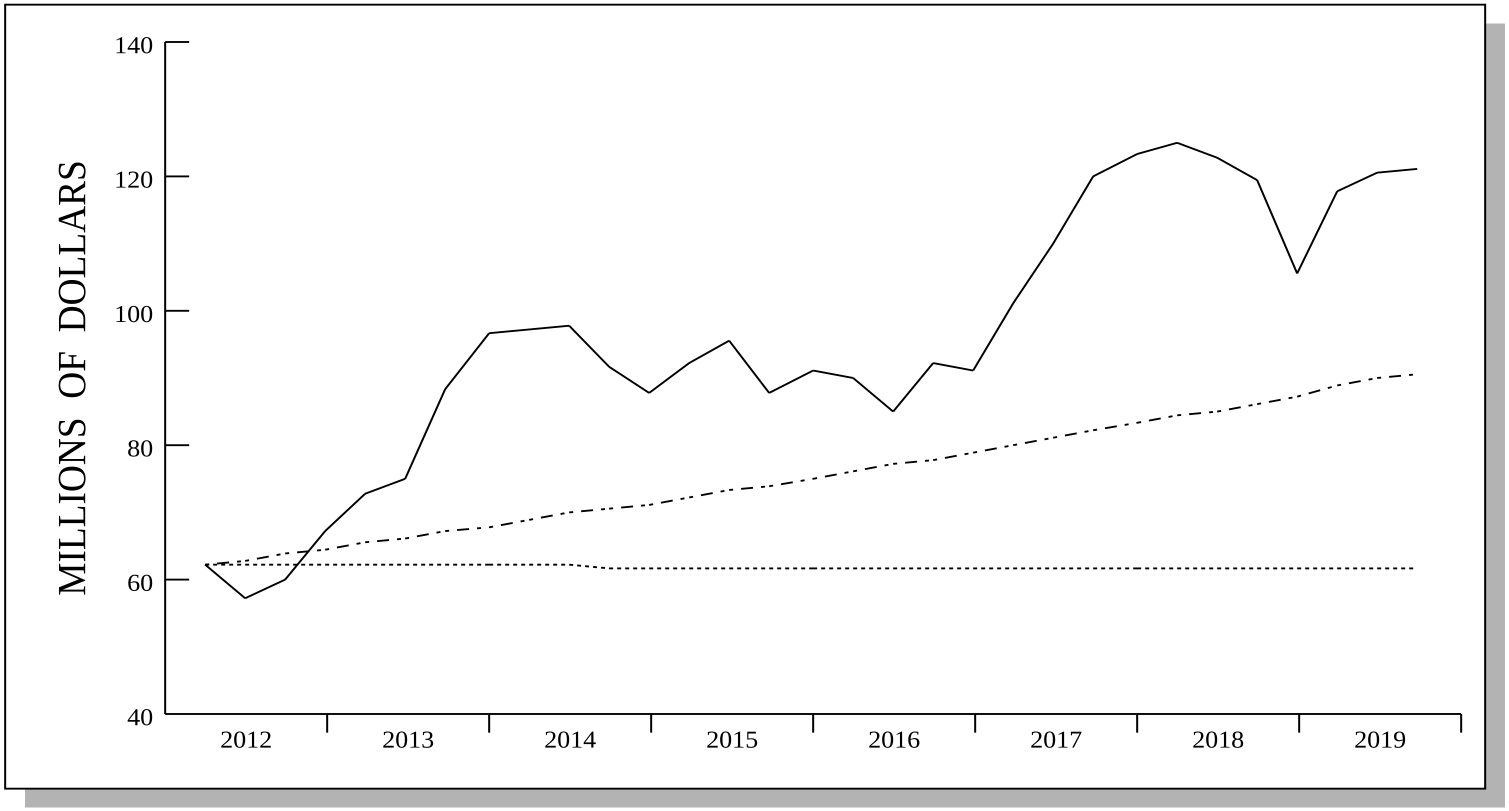
ASSET ALLOCATION

Int'l Equity	96.9%	$ 117,447,427
Cash	3.1%	3,705,474
Total Portfolio	100.0%	$ 121,152,901

INVESTMENT RETURN

Market Value 6/2019	$ 120,651,094
Contribs / Withdrawals	-198,384
Income	360,722
Capital Gains / Losses	339,469
Market Value 9/2019	$ 121,152,901

INVESTMENT GROWTH

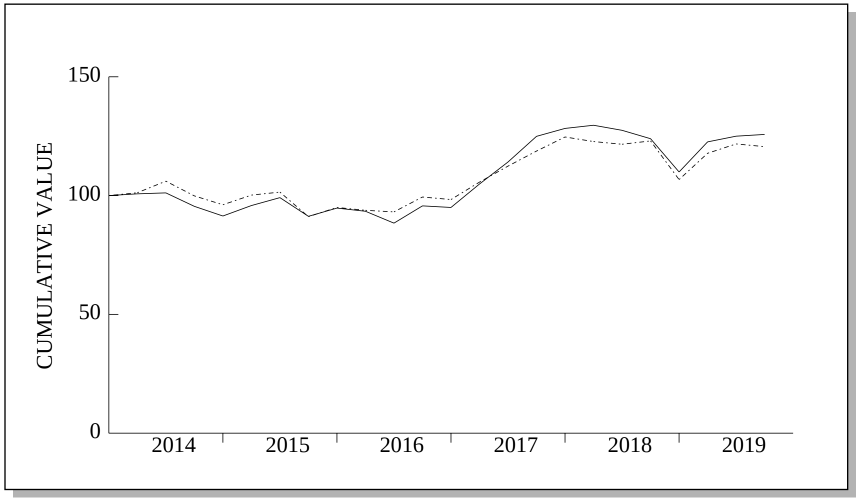


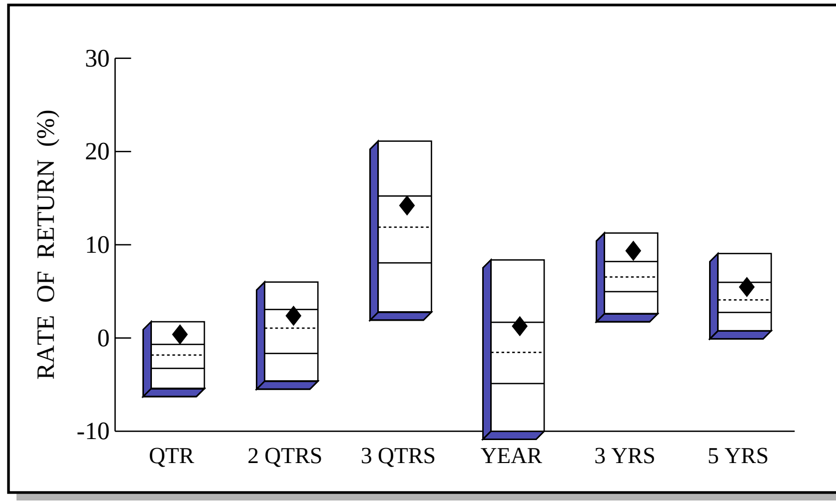
ACTUAL RETURN
5.25%
0.0%

VALUE ASSUMING	
5.25% RETURN	$ 91,002,112

	LAST QUARTER	PERIOD 3/12 - 9/19
BEGINNING VALUE	$ 120,651,094	$ 62,430,922
NET CONTRIBUTIONS	-198,384	-534,164
INVESTMENT RETURN	700,191	59,256,143
ENDING VALUE	$ 121,152,901	$ 121,152,901
INCOME	360,722	16,265,367
CAPITAL GAINS (LOSSES)	339,469	42,990,776
INVESTMENT RETURN	700,191	59,256,143

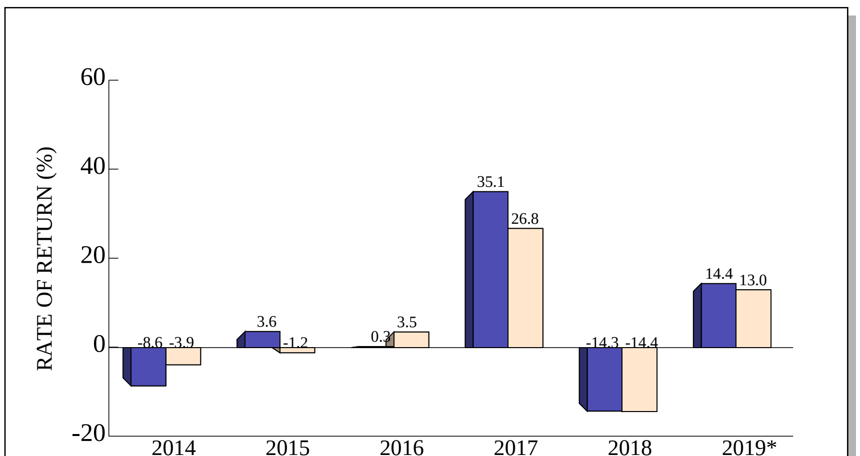
TOTAL RETURN COMPARISONS





International Equity Universe

PORTFOLIO
S&P BMI EX US



* Partial year

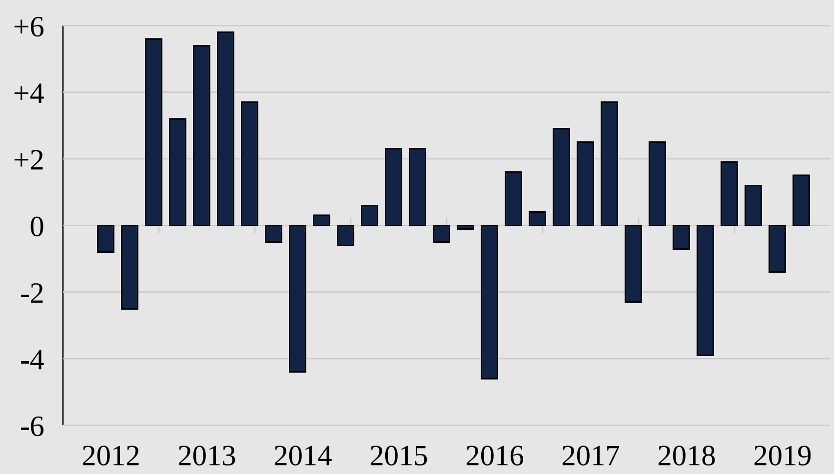
	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	0.6	2.6	14.4	1.5	9.5	5.7
(RANK)	(10)	(32)	(30)	(27)	(14)	(28)
5TH %ILE	1.7	6.0	21.1	8.4	11.3	9.1
25TH %ILE	-0.7	3.1	15.2	1.7	8.2	6.0
MEDIAN	-1.8	1.1	11.9	-1.6	6.5	4.1
75TH %ILE	-3.3	-1.7	8.1	-4.9	5.0	2.8
95TH %ILE	-5.4	-4.6	2.8	-10.0	2.6	0.8
BMI Ex US	***-0.9***	***2.4***	***13.0***	***-2.0***	***6.7***	***3.8***

International Equity Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

COMPARATIVE BENCHMARK: S&P BMI DEVELOPED EX US INDEX

VARIATION FROM BENCHMARK



Total Quarters Observed	**30**
Quarters At or Above the Benchmark	**18**
Quarters Below the Benchmark	**12**
Batting Average	**.600**

RATES OF RETURN

Date	Portfolio	Benchmark	Difference
6/12	-8.0	-7.2	-0.8
9/12	5.2	7.7	-2.5
12/12	11.4	5.8	5.6
3/13	8.1	4.9	3.2
6/13	3.6	-1.8	5.4
9/13	17.7	11.9	5.8
12/13	9.1	5.4	3.7
3/14	0.7	1.2	-0.5
6/14	0.4	4.8	-4.4
9/14	-5.6	-5.9	0.3
12/14	-4.3	-3.7	-0.6
3/15	4.8	4.2	0.6
6/15	3.5	1.2	2.3
9/15	-7.9	-10.2	2.3
12/15	3.8	4.3	-0.5
3/16	-1.4	-1.3	-0.1
6/16	-5.3	-0.7	-4.6
9/16	8.3	6.7	1.6
12/16	-0.7	-1.1	0.4
3/17	10.4	7.5	2.9
6/17	8.8	6.3	2.5
9/17	9.4	5.7	3.7
12/17	2.7	5.0	-2.3
3/18	1.0	-1.5	2.5
6/18	-1.6	-0.9	-0.7
9/18	-2.8	1.1	-3.9
12/18	-11.3	-13.2	1.9
3/19	11.5	10.3	1.2
6/19	2.0	3.4	-1.4
9/19	0.6	-0.9	1.5

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
LSV ASSET MANAGEMENT - US LARGE CAP VALUE
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.
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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's LSV Asset Management US Large Cap Value portfolio was valued at $160,176,552, representing an increase of $2,003,649 from the June quarter's ending value of $158,172,903. Last quarter, the Fund posted withdrawals totaling $151,289, which partially offset the portfolio's net investment return of $2,154,938. Income receipts totaling $1,122,113 plus net realized and unrealized capital gains of $1,032,825 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the third quarter, the LSV Asset Management US Large Cap Value portfolio returned 1.4%, which was equal to the Russell 1000 Value Index's return of 1.4% and ranked in the 58th percentile of the Large Cap Value universe. Over the trailing year, the portfolio returned -2.3%, which was 6.3% below the benchmark's 4.0% return, ranking in the 88th percentile. Since March 2004, the portfolio returned 8.5% annualized. The Russell 1000 Value returned an annualized 7.7% over the same period.

ASSET ALLOCATION

At the end of the third quarter, large cap equities comprised 99.4% of the total portfolio ($159.3 million), while cash & equivalents totaled 0.6% ($918,826).

EQUITY ANALYSIS

The LSV Large Cap portfolio was diversified across all eleven industry sectors last quarter. Compared to the Russell 1000 Value index, the portfolio placed greater emphasis on the Consumer Discretionary, Industrials, and Information Technology sectors. The Consumer Staples, Energy, Financials, Real Estate, and Utilities sectors were relatively light. The portfolio showed a slight bias toward smaller capitalization sizes within the large cap space.

While the LSV Large Cap portfolio did not benefit from the market performance of the Utilities sector, nor did it keep pace in the Real Estate sector, it did outperform in the Materials sector and significantly controlled losses in the Energy sector. These factors washed out to produce a quarterly return in line with the Russell 1000 Value index.

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	10 Year	Since 03/04
Total Portfolio - Gross	1.4	15.2	-2.3	9.5	7.0	11.9	8.5
LARGE CAP VALUE RANK	(58)	(81)	(88)	(68)	(77)	(53)	----
Total Portfolio - Net	1.3	14.9	-2.6	9.1	6.6	11.4	8.0
Russell 1000V	1.4	17.8	4.0	9.4	7.8	11.5	7.7
Large Cap Equity - Gross	1.4	15.4	-2.2	9.6	7.0	11.9	8.5
LARGE CAP VALUE RANK	(58)	(77)	(87)	(66)	(76)	(50)	----
Russell 1000V	1.4	17.8	4.0	9.4	7.8	11.5	7.7
S&P 500	1.7	20.6	4.3	13.4	10.8	13.2	8.7
Russell 1000G	1.5	23.3	3.7	16.9	13.4	14.9	9.8

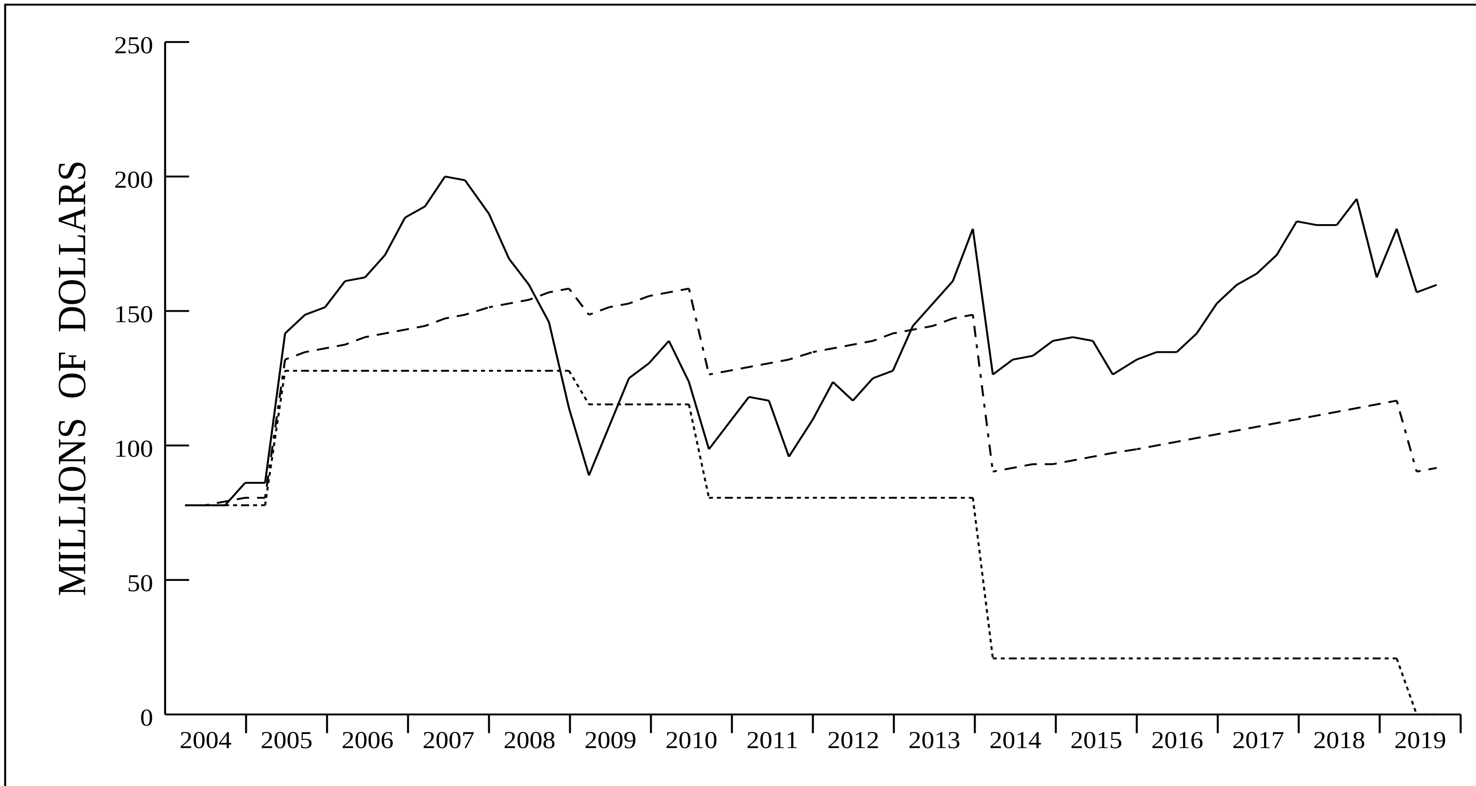
ASSET ALLOCATION

Large Cap Equity	99.4%	$ 159,257,726
Cash	0.6%	918,826
Total Portfolio	100.0%	$ 160,176,552

INVESTMENT RETURN

Market Value 6/2019	$ 158,172,903
Contribs / Withdrawals	-151,289
Income	1,122,113
Capital Gains / Losses	1,032,825
Market Value 9/2019	$ 160,176,552

INVESTMENT GROWTH

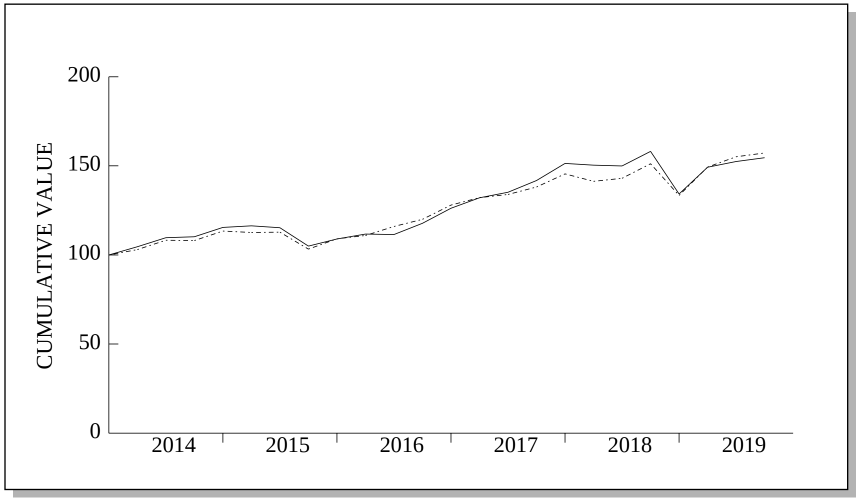


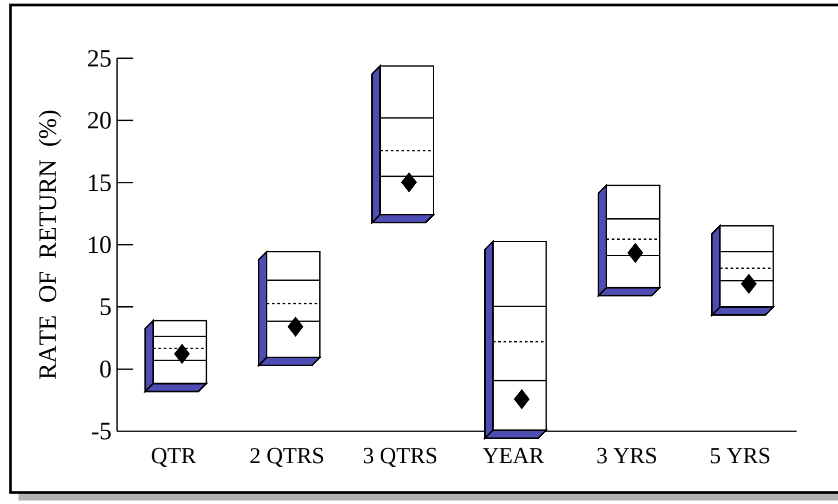
ACTUAL RETURN
5.25%
0.0%

VALUE ASSUMING
5.25% RETURN $ 91,947,662

	LAST QUARTER	PERIOD 3/04 - 9/19
BEGINNING VALUE	$ 158,172,903	$ 77,834,544
NET CONTRIBUTIONS	-151,289	- 84,412,331
INVESTMENT RETURN	2,154,938	166,754,339
ENDING VALUE	$ 160,176,552	$ 160,176,552
INCOME	1,122,113	54,766,955
CAPITAL GAINS (LOSSES)	1,032,825	111,987,384
INVESTMENT RETURN	2,154,938	166,754,339

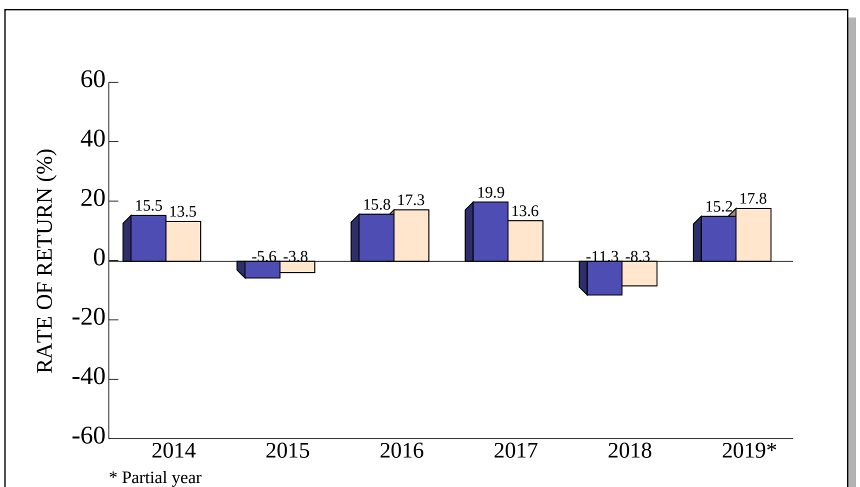
TOTAL RETURN COMPARISONS





Large Cap Value Universe

PORTFOLIO
RUSSELL 1000V



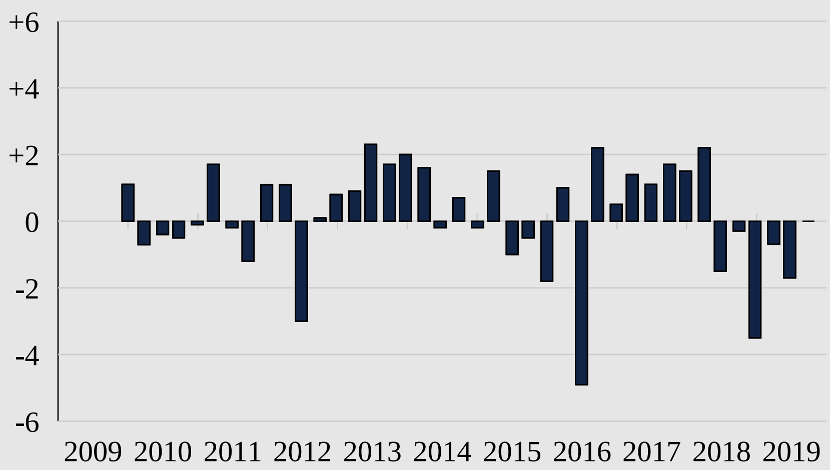
				------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	1.4	3.5	15.2	-2.3	9.5	7.0
(RANK)	(58)	(82)	(81)	(88)	(68)	(77)
5TH %ILE	3.9	9.5	24.4	10.3	14.8	11.5
25TH %ILE	2.6	7.1	20.2	5.1	12.1	9.5
MEDIAN	1.7	5.3	17.6	2.2	10.5	8.1
75TH %ILE	0.7	3.9	15.5	-0.9	9.2	7.1
95TH %ILE	-1.2	0.9	12.4	-4.9	6.5	5.0
Russ 1000V	***1.4***	***5.3***	***17.8***	***4.0***	***9.4***	***7.8***

Large Cap Value Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: RUSSELL 1000 VALUE

VARIATION FROM BENCHMARK

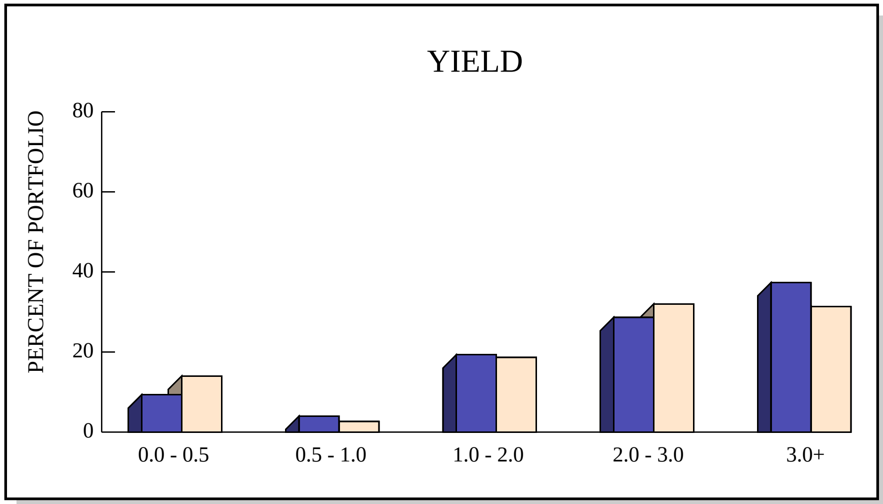


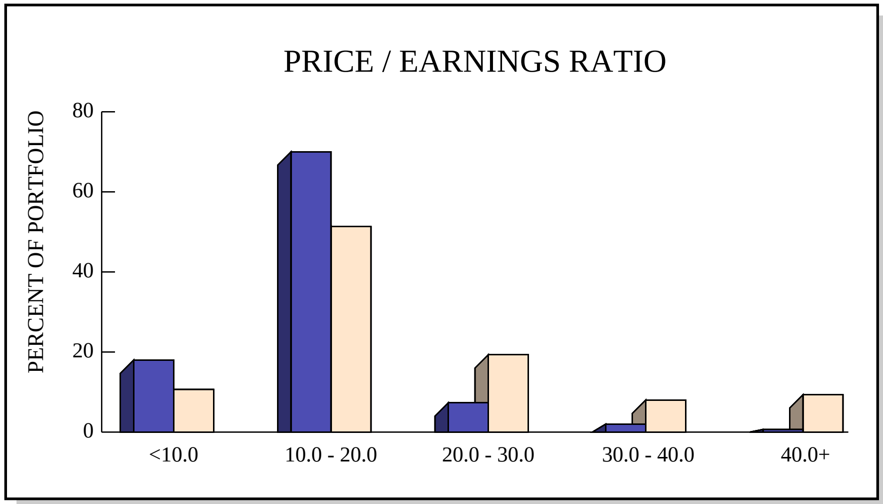
Total Quarters Observed	**40**
Quarters At or Above the Benchmark	**22**
Quarters Below the Benchmark	**18**
Batting Average	**.550**

RATES OF RETURN

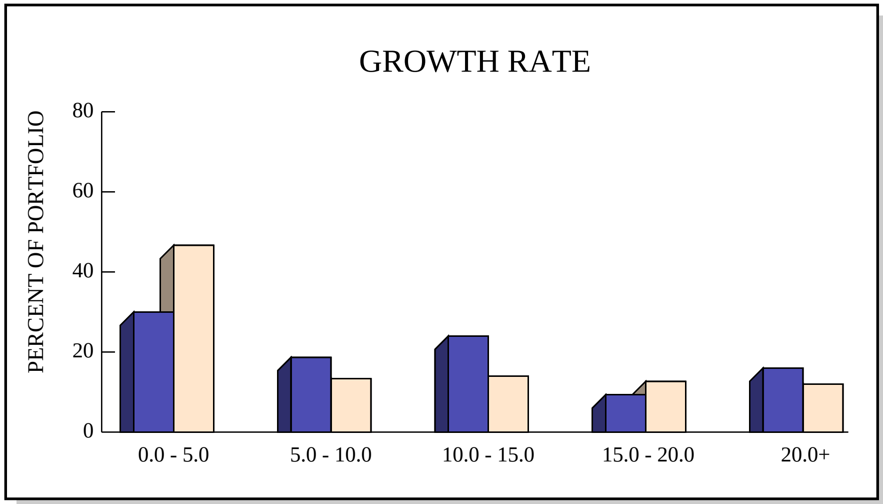
Date	Portfolio	Benchmark	Difference
12/09	5.3	4.2	1.1
3/10	6.1	6.8	-0.7
6/10	-11.6	-11.2	-0.4
9/10	9.6	10.1	-0.5
12/10	10.4	10.5	-0.1
3/11	8.2	6.5	1.7
6/11	-0.7	-0.5	-0.2
9/11	-17.4	-16.2	-1.2
12/11	14.2	13.1	1.1
3/12	12.2	11.1	1.1
6/12	-5.2	-2.2	-3.0
9/12	6.6	6.5	0.1
12/12	2.3	1.5	0.8
3/13	13.2	12.3	0.9
6/13	5.5	3.2	2.3
9/13	5.6	3.9	1.7
12/13	12.0	10.0	2.0
3/14	4.6	3.0	1.6
6/14	4.9	5.1	-0.2
9/14	0.5	-0.2	0.7
12/14	4.8	5.0	-0.2
3/15	0.8	-0.7	1.5
6/15	-0.9	0.1	-1.0
9/15	-8.9	-8.4	-0.5
12/15	3.8	5.6	-1.8
3/16	2.6	1.6	1.0
6/16	-0.3	4.6	-4.9
9/16	5.7	3.5	2.2
12/16	7.2	6.7	0.5
3/17	4.7	3.3	1.4
6/17	2.4	1.3	1.1
9/17	4.8	3.1	1.7
12/17	6.8	5.3	1.5
3/18	-0.6	-2.8	2.2
6/18	-0.3	1.2	-1.5
9/18	5.4	5.7	-0.3
12/18	-15.2	-11.7	-3.5
3/19	11.2	11.9	-0.7
6/19	2.1	3.8	-1.7
9/19	1.4	1.4	0.0

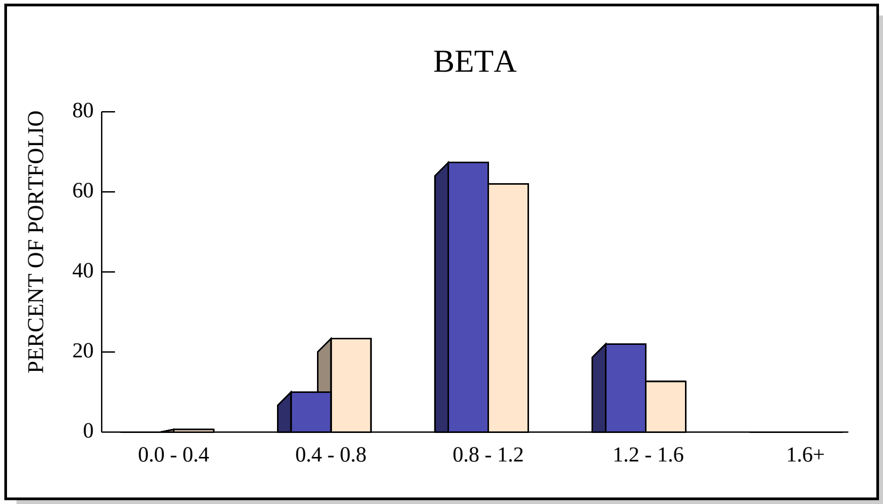
STOCK CHARACTERISTICS



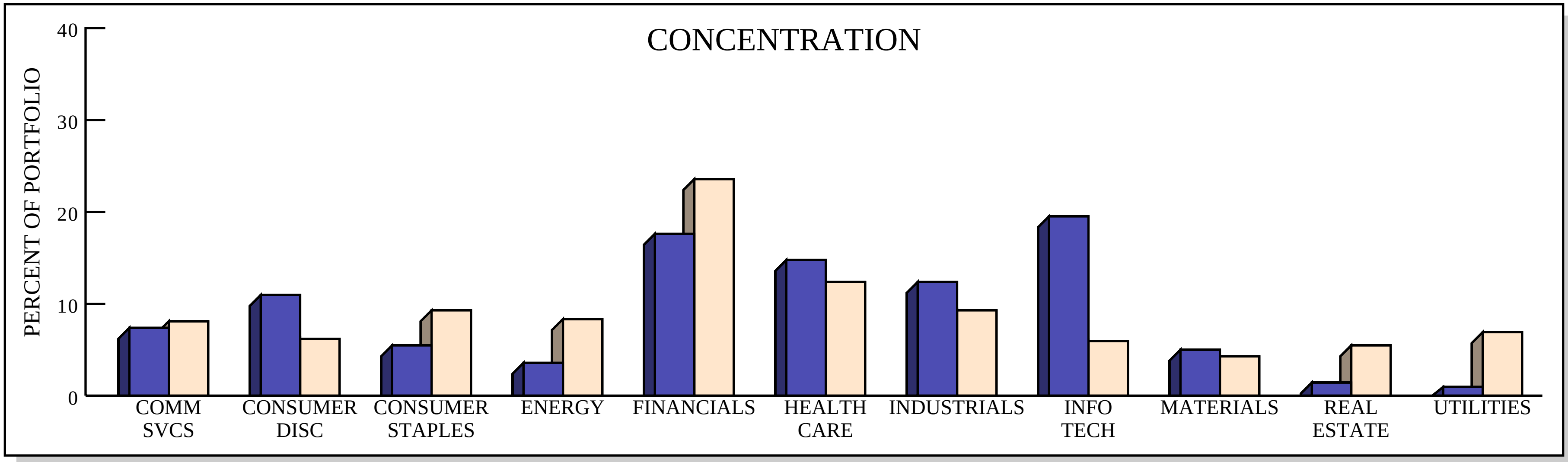


	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	142	2.7%	10.9%	14.3	1.05
RUSSELL 1000V	765	2.5%	5.5%	21.7	0.94

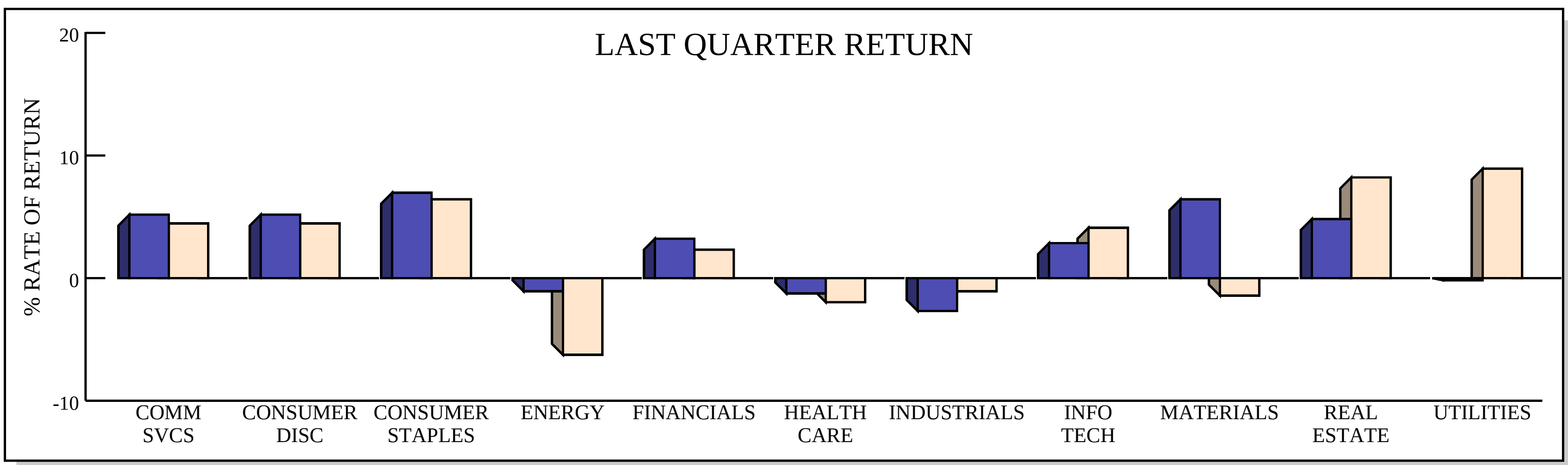




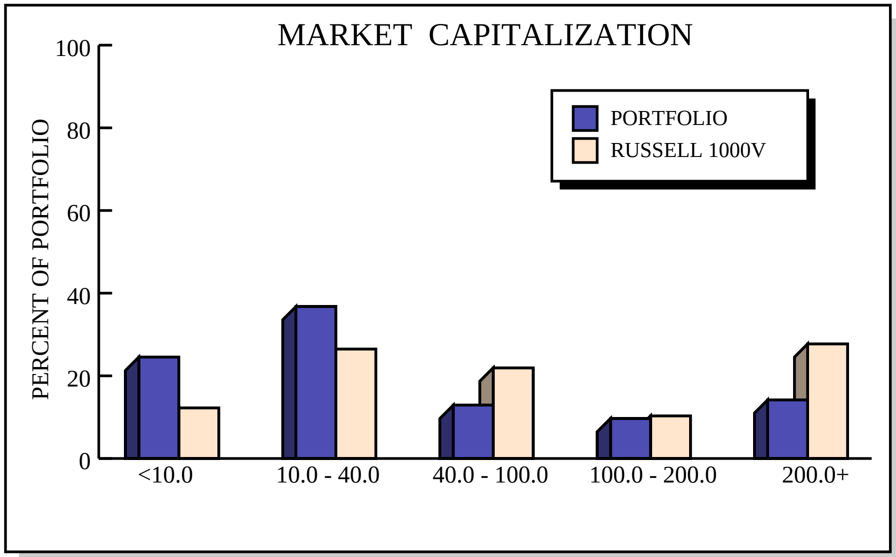
STOCK INDUSTRY ANALYSIS

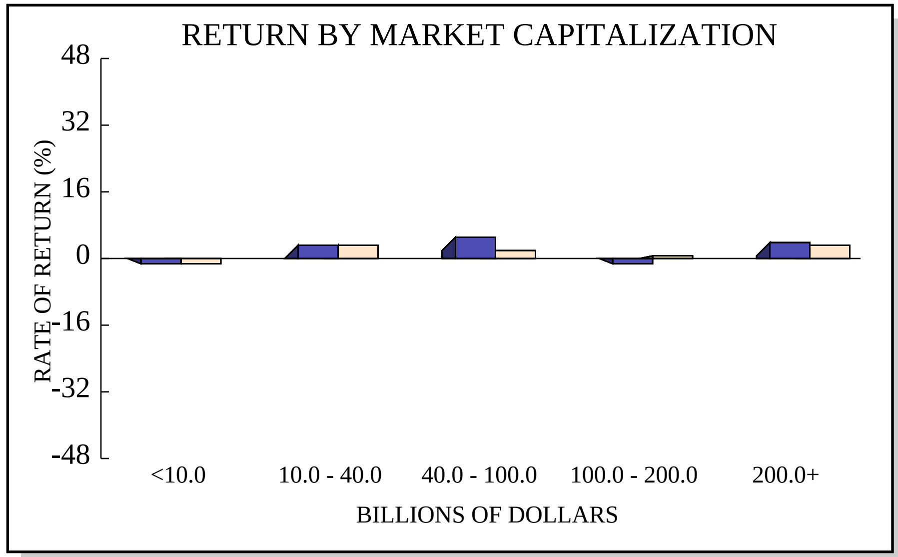


PORTFOLIO RUSSELL 1000V



TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	VERIZON COMMUNICATIONS INC	$ 3,615,564	2.27%	6.8%	Communication Services	$ 249.6 B
2	AT&T INC	3,371,544	2.12%	14.6%	Communication Services	276.5 B
3	JPMORGAN CHASE & CO	3,295,320	2.07%	6.0%	Financials	376.3 B
4	MERCK & CO. INC.	3,274,602	2.06%	1.1%	Health Care	215.5 B
5	CISCO SYSTEMS INC	3,102,948	1.95%	-9.2%	Information Technology	209.8 B
6	PFIZER INC	3,072,015	1.93%	-16.3%	Health Care	198.7 B
7	INTEL CORP	2,916,598	1.83%	8.4%	Information Technology	228.3 B
8	AMGEN INC	2,883,299	1.81%	5.8%	Health Care	116.0 B
9	ORACLE CORP	2,856,057	1.79%	-3.0%	Information Technology	180.6 B
10	INTL BUSINESS MACHINES CORP	2,428,514	1.52%	6.7%	Information Technology	128.8 B

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
LSV ASSET MANAGEMENT - US SMALL CAP VALUE EQUITY
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.
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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's LSV Asset Management US Small Cap Value Equity portfolio was valued at $72,033,258, a decrease of $548,938 from the June ending value of $72,582,196. Last quarter, the account recorded total net withdrawals of $103,156 in addition to $445,782 in net investment losses. The fund's net investment loss was a result of income receipts totaling $434,795 and realized and unrealized capital losses totaling $880,577.

RELATIVE PERFORMANCE

Total Fund

During the third quarter, the LSV Asset Management US Small Cap Value Equity portfolio lost 0.6%, which was equal to the Russell 2000 Value Index's return of -0.6% and ranked in the 60th percentile of the Small Cap Value universe. Over the trailing year, the portfolio returned -8.0%, which was 0.3% greater than the benchmark's -8.3% performance, and ranked in the 61st percentile. Since December 2016, the account returned 1.5% per annum and ranked in the 78th percentile. For comparison, the Russell 2000 Value returned an annualized 2.1% over the same time frame.

ASSET ALLOCATION

At the end of the third quarter, small cap equities comprised 99.4% of the total portfolio ($71.6 million), while cash & equivalents comprised the remaining 0.6% ($464,441).

EQUITY ANALYSIS

The small cap LSV portfolio was diversified across all eleven industry sectors last quarter. Compared to the Russell 2000 Value index, the portfolio placed greater weight in the Consumer Discretionary, Health Care, Industrials, Information Technology, and Materials sectors. Allocations in the Financials, Real Estate, and Utilities sectors were below index levels.

Although the LSV Small Cap portfolio diverged from its benchmark in sector allocation and selection, with very different results in most sectors, the divergent paths met at the end for the same quarterly return. Detractors to performance included Communication Services, Consumer Staples, Materials, and Utilities, which all posted losses below the index. Positive allocation effects pushed performance in the other direction, in particular through increased weight in the Consumer Discretionary and Information Technology sectors, which had the best returns in the small cap value market.

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	Since 12/16
Total Portfolio - Gross	-0.6	14.6	-8.0	----	----	1.5
SMALL CAP VALUE RANK	(60)	(64)	(61)	----	----	(78)
Total Portfolio - Net	-0.8	14.1	-8.5	----	----	1.0
Russell 2000V	-0.6	12.8	-8.3	6.5	7.2	2.1
Small Cap Equity - Gross	-0.6	14.8	-8.1	----	----	1.5
SMALL CAP VALUE RANK	(60)	(61)	(61)	----	----	(78)
Russell 2000V	-0.6	12.8	-8.3	6.5	7.2	2.1

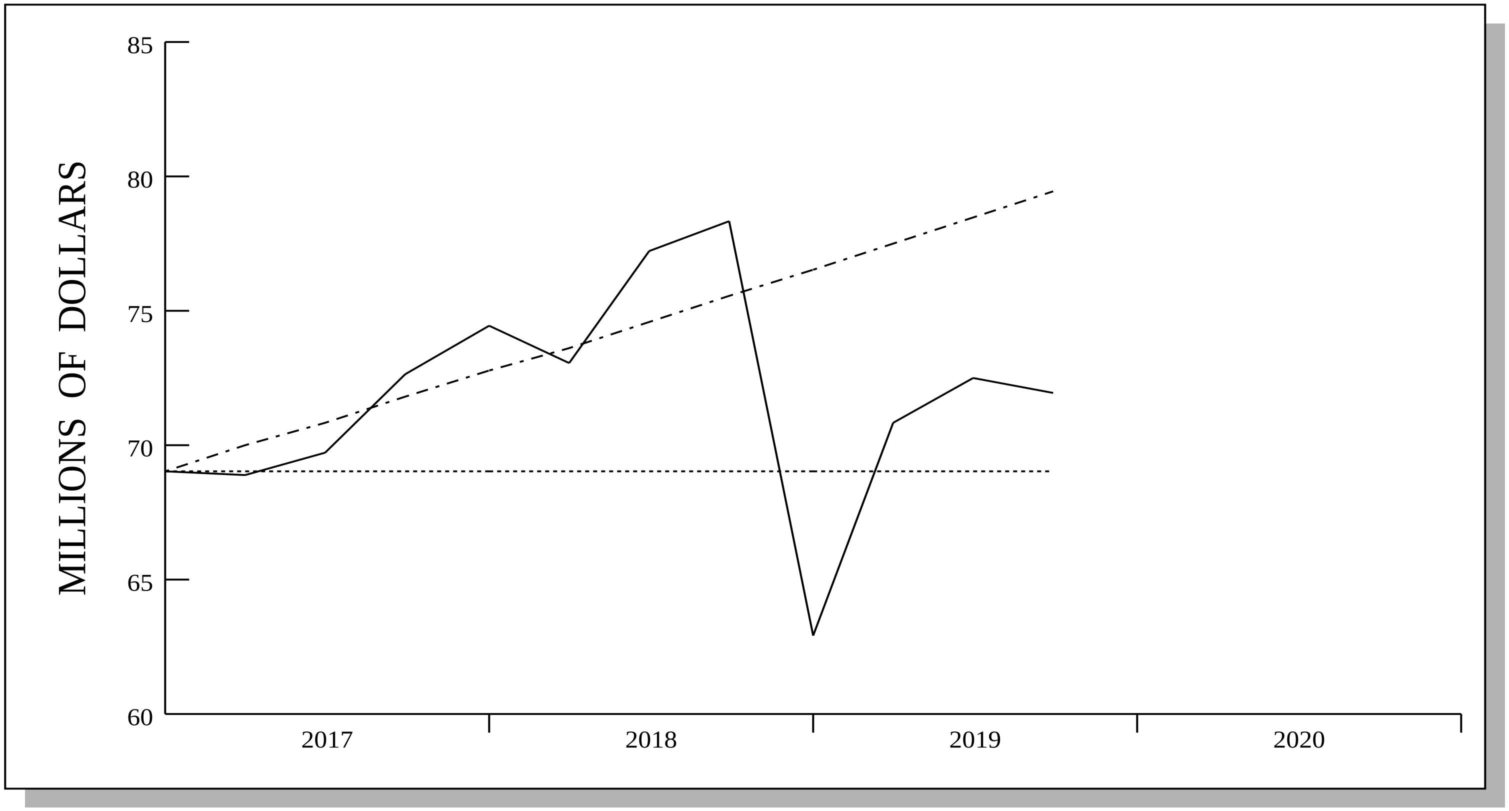
ASSET ALLOCATION

Small Cap	99.4%	$ 71,568,817
Cash	0.6%	464,441
Total Portfolio	100.0%	$ 72,033,258

INVESTMENT RETURN

Market Value 6/2019	$ 72,582,196
Contribs / Withdrawals	-103,156
Income	434,795
Capital Gains / Losses	-880,577
Market Value 9/2019	$ 72,033,258

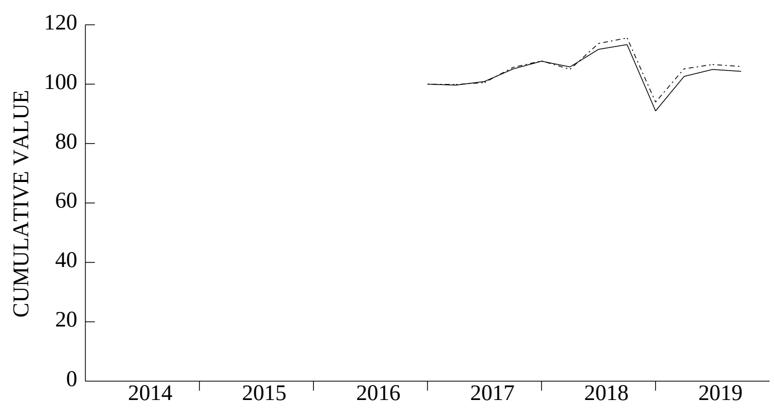
INVESTMENT GROWTH

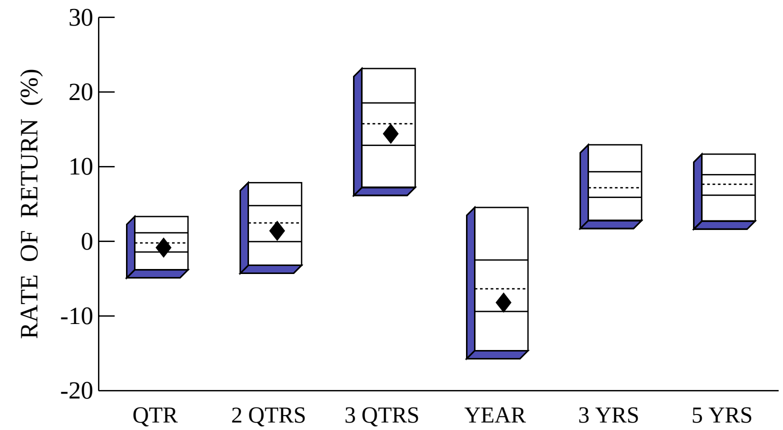


VALUE ASSUMING
5.25% RETURN $ 79,509,860

	LAST QUARTER	PERIOD 12/16 - 9/19
BEGINNING VALUE	$ 72,582,196	$ 69,163,490
NET CONTRIBUTIONS	-103,156	-103,156
INVESTMENT RETURN	-445,782	2,972,924
ENDING VALUE	$ 72,033,258	$ 72,033,258
INCOME	434,795	4,487,516
CAPITAL GAINS (LOSSES)	-880,577	- 1,514,592
INVESTMENT RETURN	-445,782	2,972,924

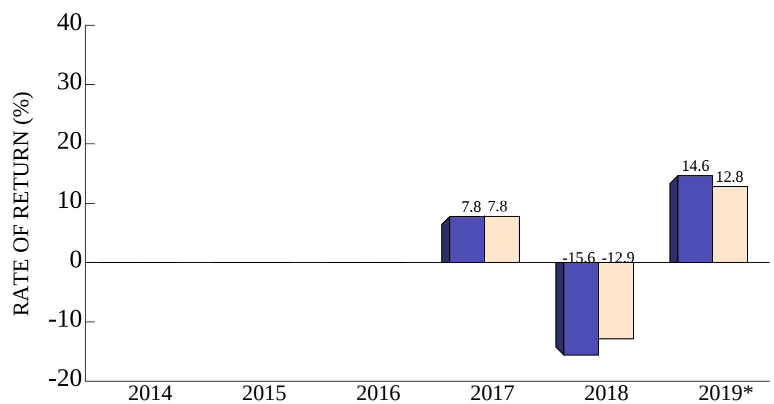
TOTAL RETURN COMPARISONS





Small Cap Value Universe

PORTFOLIO
RUSSELL 2000V



* Partial year

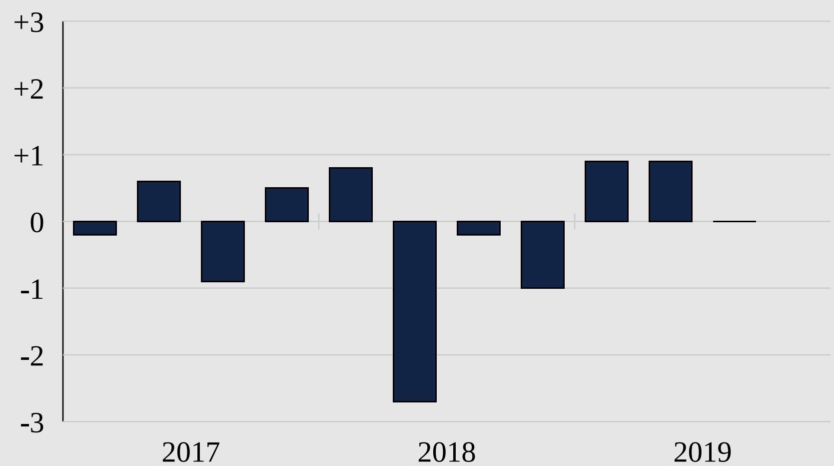
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
					------ANNUALIZED------	
RETURN	-0.6	1.6	14.6	-8.0	----	----
(RANK)	(60)	(60)	(64)	(61)	----	----
5TH %ILE	3.3	7.9	23.1	4.5	12.9	11.7
25TH %ILE	1.2	4.8	18.5	-2.5	9.3	8.9
MEDIAN	-0.2	2.5	15.7	-6.3	7.2	7.6
75TH %ILE	-1.4	0.0	12.9	-9.4	5.9	6.2
95TH %ILE	-3.8	-3.2	7.2	-14.7	2.8	2.7
Russ 2000V	***-0.6***	***0.8***	***12.8***	***-8.3***	***6.5***	***7.2***

Small Cap Value Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

COMPARATIVE BENCHMARK: RUSSELL 2000 VALUE

VARIATION FROM BENCHMARK

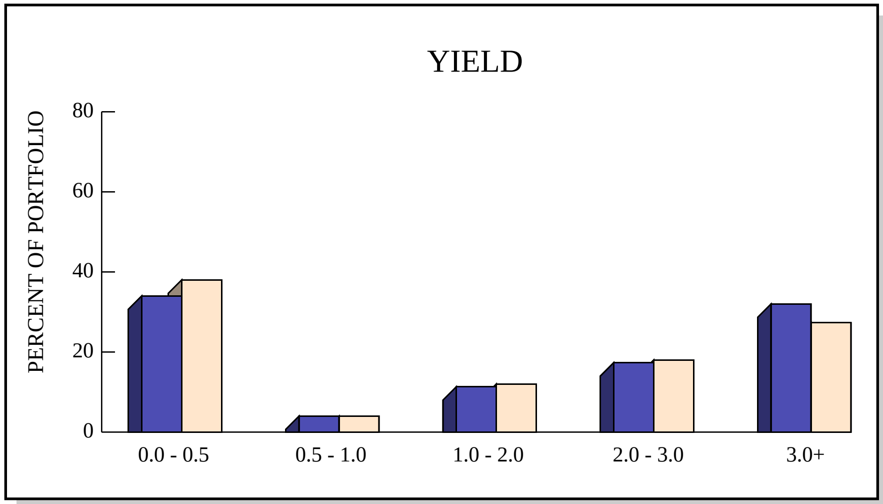


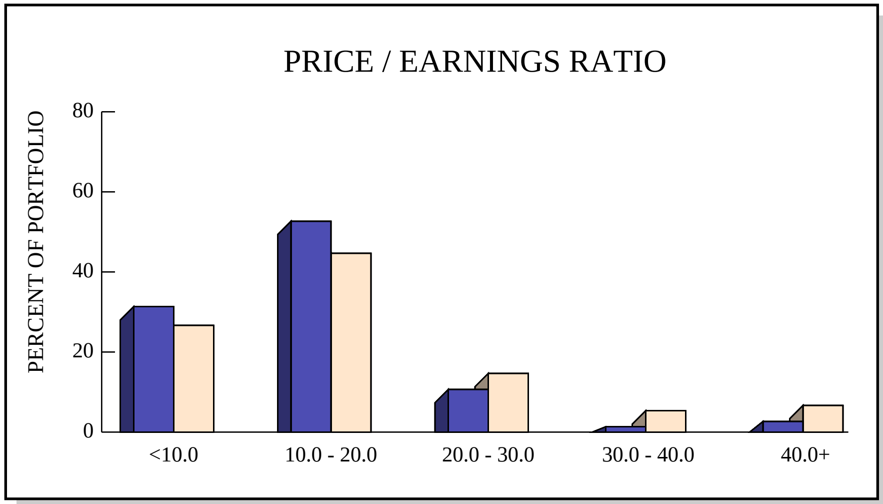
Total Quarters Observed	**11**
Quarters At or Above the Benchmark	**6**
Quarters Below the Benchmark	**5**
Batting Average	**.545**

RATES OF RETURN

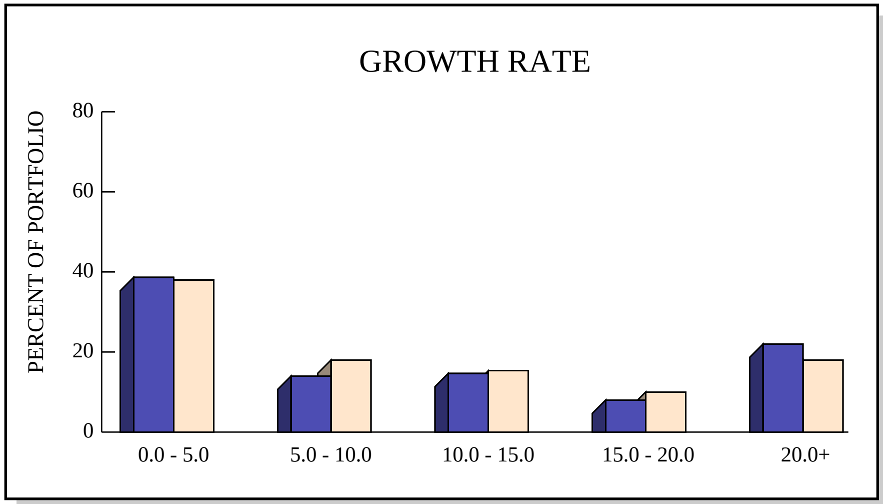
Date	Portfolio	Benchmark	Difference
3/17	-0.3	-0.1	-0.2
6/17	1.3	0.7	0.6
9/17	4.2	5.1	-0.9
12/17	2.5	2.0	0.5
3/18	-1.8	-2.6	0.8
6/18	5.6	8.3	-2.7
9/18	1.4	1.6	-0.2
12/18	-19.7	-18.7	-1.0
3/19	12.8	11.9	0.9
6/19	2.3	1.4	0.9
9/19	-0.6	-0.6	0.0

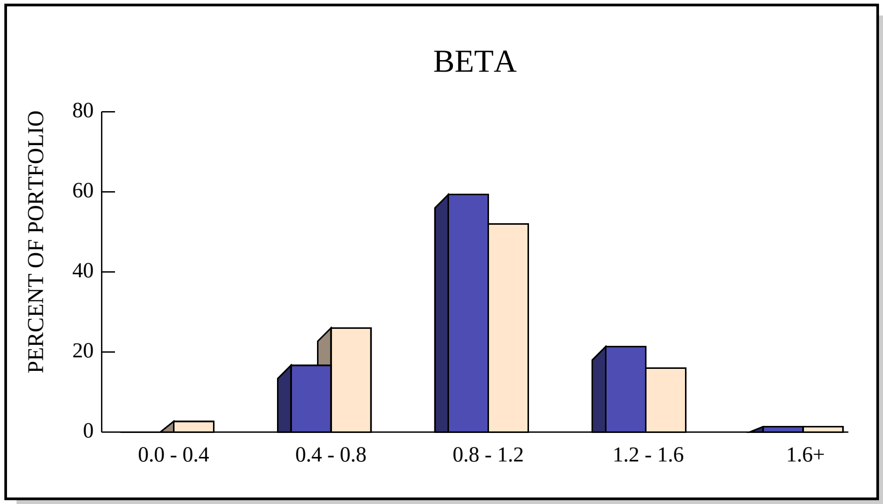
STOCK CHARACTERISTICS



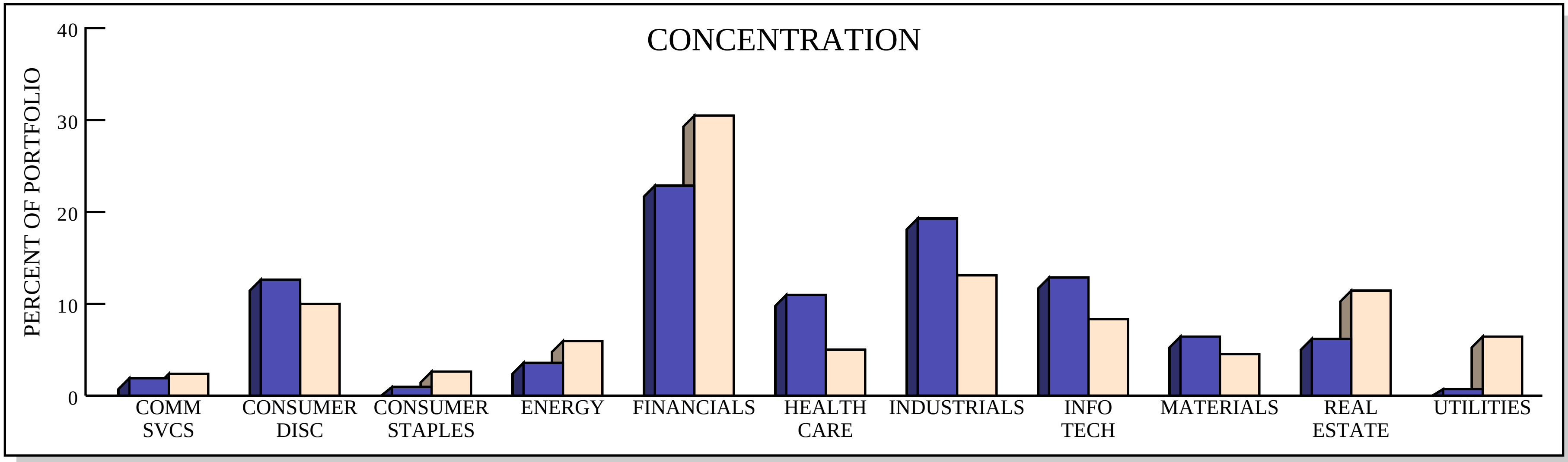


	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	198	2.6%	9.8%	12.6	1.03
RUSSELL 2000V	1,403	2.2%	8.2%	15.9	0.94

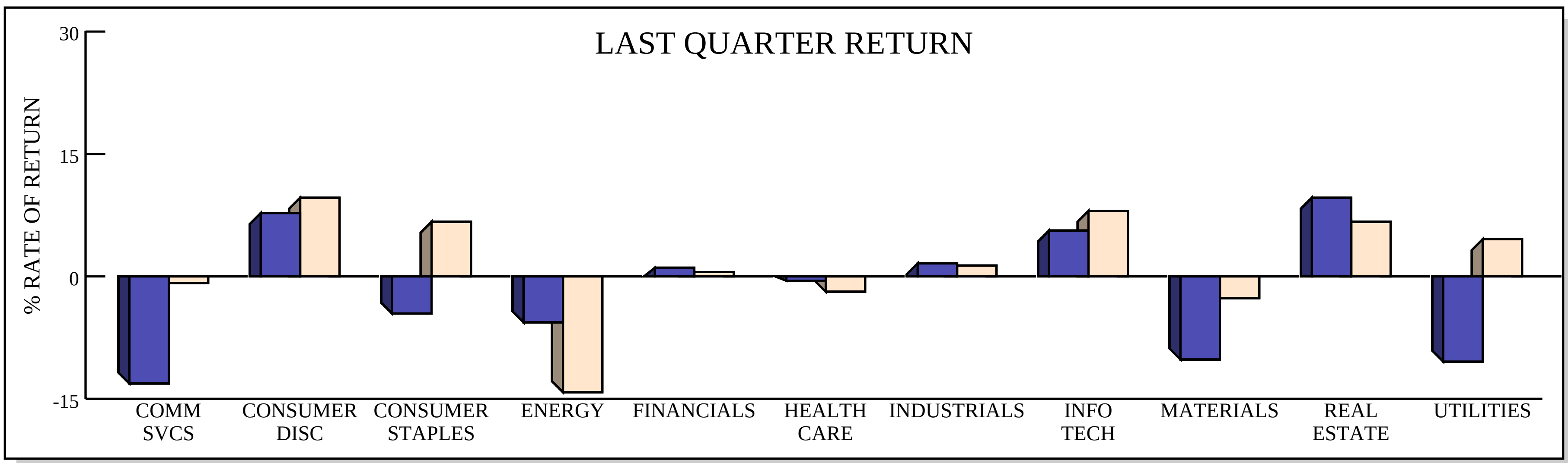




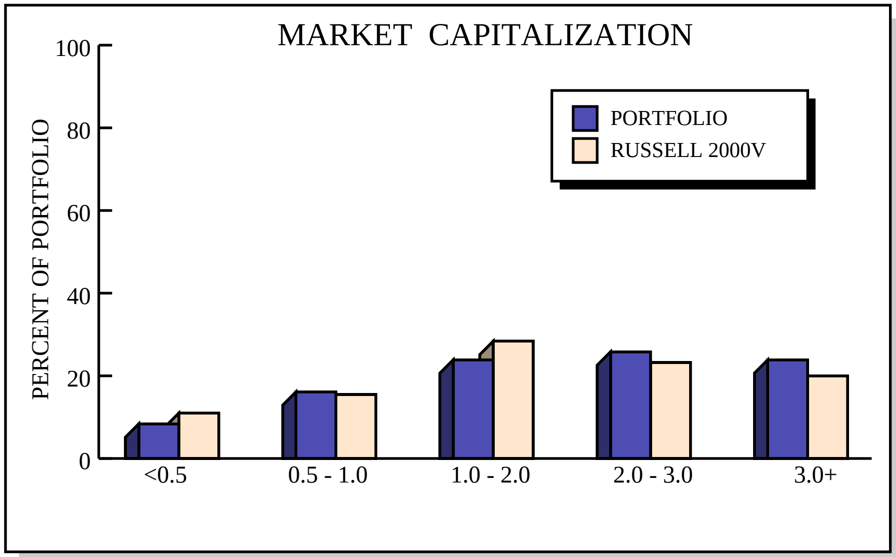
STOCK INDUSTRY ANALYSIS

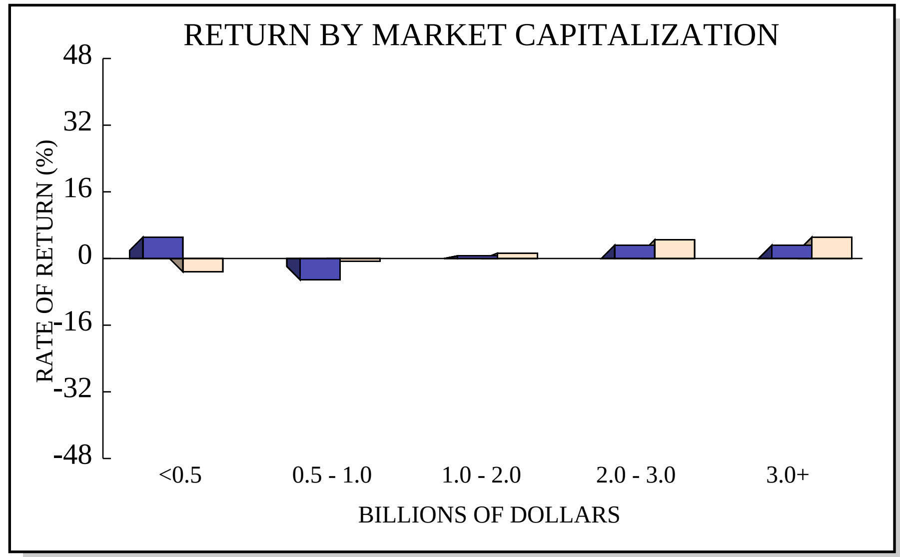


PORTFOLIO RUSSELL 2000V



TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	SABRA HEALTH CARE REIT INC	$ 1,026,174	1.43%	19.0%	Real Estate	$ 4.4 B
2	CSG SYSTEMS INTL INC	966,416	1.35%	6.3%	Information Technology	1.7 B
3	TECH DATA CORP	959,008	1.34%	-0.3%	Information Technology	3.7 B
4	TCF FINANCIAL CORP	928,451	1.30%	-6.5%	Financials	5.9 B
5	KB HOME	884,000	1.24%	32.6%	Consumer Discretionary	3.0 B
6	EAGLE PHARMACEUTICALS INC	848,550	1.19%	1.6%	Health Care	0.8 B
7	SKYWEST INC	843,780	1.18%	-5.2%	Industrials	2.9 B
8	XENIA HOTELS & RESORTS INC	825,792	1.15%	2.6%	Real Estate	2.4 B
9	BUILDERS FIRSTSOURCE INC	728,532	1.02%	22.0%	Industrials	2.4 B
10	SUPERNUS PHARMACEUTICALS INC	722,724	1.01%	-17.0%	Health Care	1.4 B

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
POLEN CAPITAL MANAGEMENT - FOCUS GROWTH
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.
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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's Polen Capital Management Focus Growth portfolio was valued at $226,511,135, representing an increase of $1,892,123 from the June quarter's ending value of $224,619,012. Last quarter, the Fund posted withdrawals totaling $219,804, which partially offset the portfolio's net investment return of $2,111,927. Income receipts totaling $370,931 plus net realized and unrealized capital gains of $1,740,996 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the third quarter, the Polen Capital Management Focus Growth portfolio returned 0.9%, which was 0.6% below the Russell 1000 Growth Index’s return of 1.5% and ranked in the 47th percentile of the Large Cap Growth universe. Over the trailing year, the portfolio returned 9.9%, which was 6.2% above the benchmark's 3.7% return, ranking in the 13th percentile. Since September 2010, the portfolio returned 16.9% annualized and ranked in the 8th percentile. The Russell 1000 Growth returned an annualized 15.2% over the same period.

ASSET ALLOCATION

At the end of the third quarter, large cap equities comprised 95.7% of the total portfolio ($216.8 million), while cash & equivalents totaled 4.3% ($9.7 million).

EQUITY ANALYSIS

At the end of the quarter, the Polen Capital portfolio was concentrated in five of the eleven sectors in our industry analysis. With respect to the Russell 1000 Growth index, the portfolio was overweight in the Communication Services, Consumer Discretionary, and Information Technology sectors, while underweight in Health Care. The Consumer Staples, Energy, Industrials, Materials, Real Estate, and Utilities sectors were vacant.

The Polen portfolio’s concentration in Information Technology put it at a disadvantage in the third quarter. This sector produced middling returns in the broader market and unfavorable selection in the portfolio resulted in a contraction during the quarter. The Financials and Health Care sectors also lost ground. Strong returns in the second most heavily weighted sector, Consumer Discretionary partially offset the negative effects from the above mentioned sectors.

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	Since 09/10
Total Portfolio - Gross	0.9	25.7	9.9	20.2	17.8	16.9
LARGE CAP GROWTH RANK	(47)	(21)	(13)	(7)	(2)	(8)
Total Portfolio - Net	0.8	25.3	9.4	19.8	17.4	16.4
Russell 1000G	1.5	23.3	3.7	16.9	13.4	15.2
Large Cap Equity - Gross	1.0	26.8	10.4	21.1	18.6	17.7
LARGE CAP GROWTH RANK	(47)	(14)	(12)	(4)	(1)	(3)
Russell 1000G	1.5	23.3	3.7	16.9	13.4	15.2

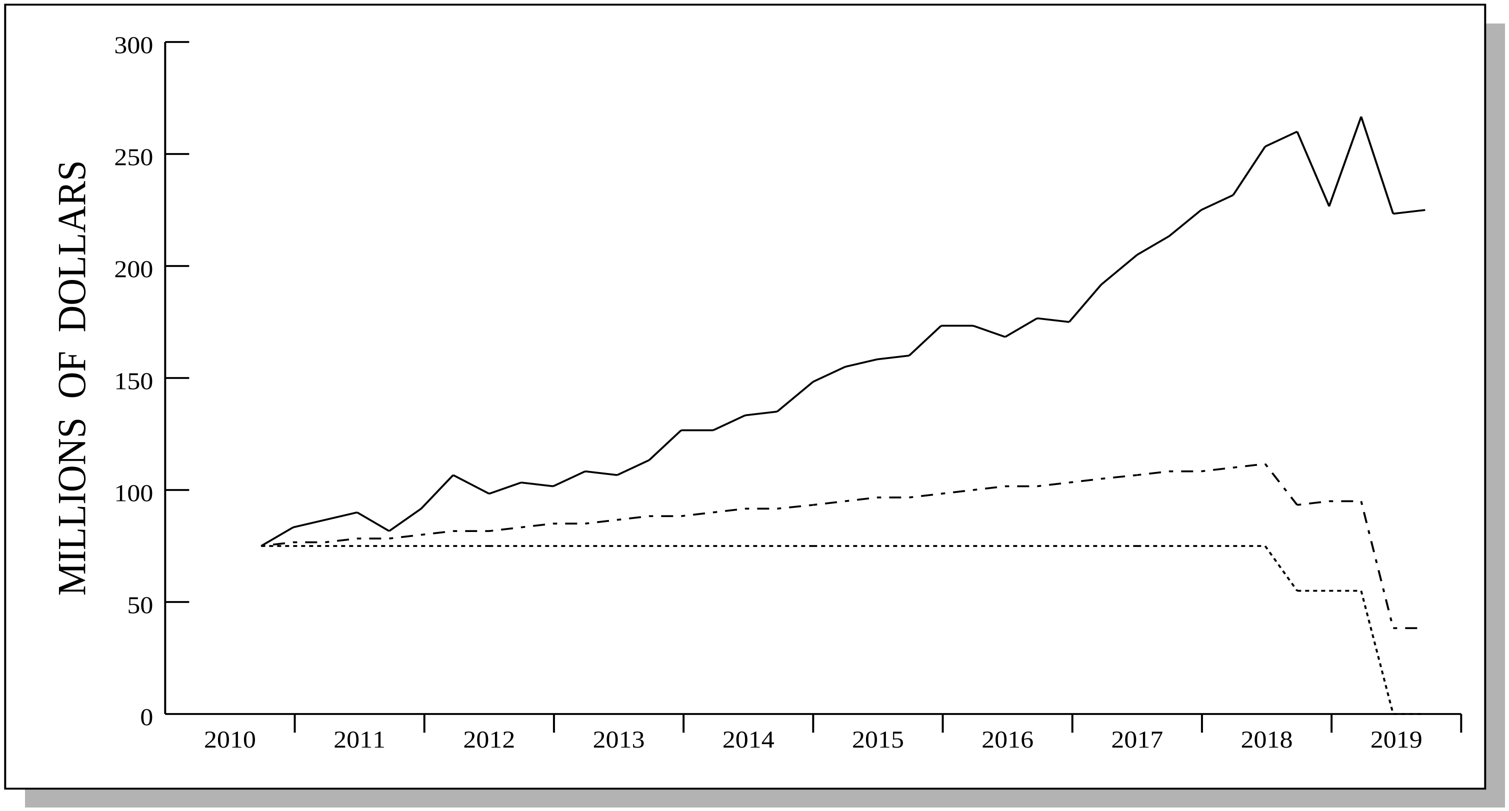
ASSET ALLOCATION

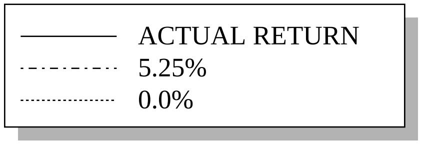
Large Cap Equity	95.7%	$ 216,764,724
Cash	4.3%	9,746,411
Total Portfolio	100.0%	$ 226,511,135

INVESTMENT RETURN

Market Value 6/2019	$ 224,619,012
Contribs / Withdrawals	-219,804
Income	370,931
Capital Gains / Losses	1,740,996
Market Value 9/2019	$ 226,511,135

INVESTMENT GROWTH

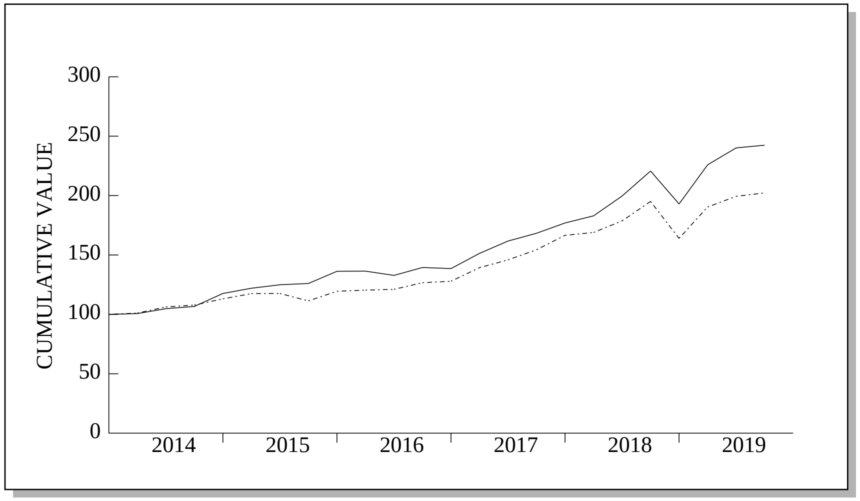


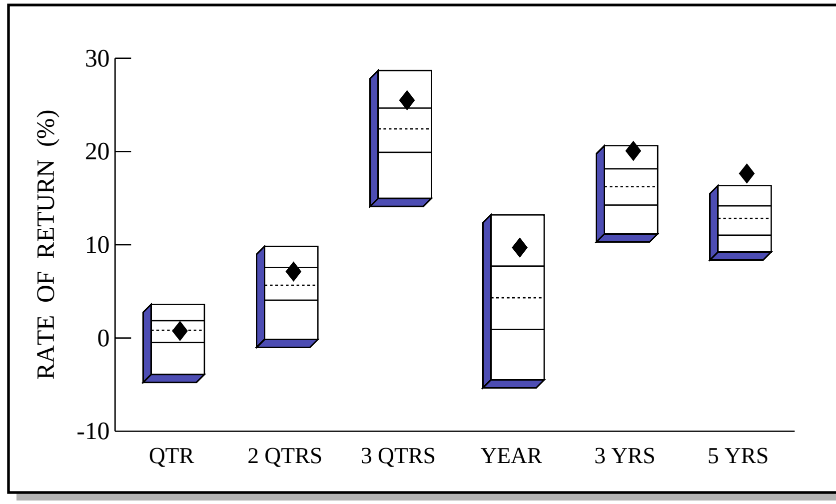


VALUE ASSUMING
5.25% RETURN $ 39,996,799

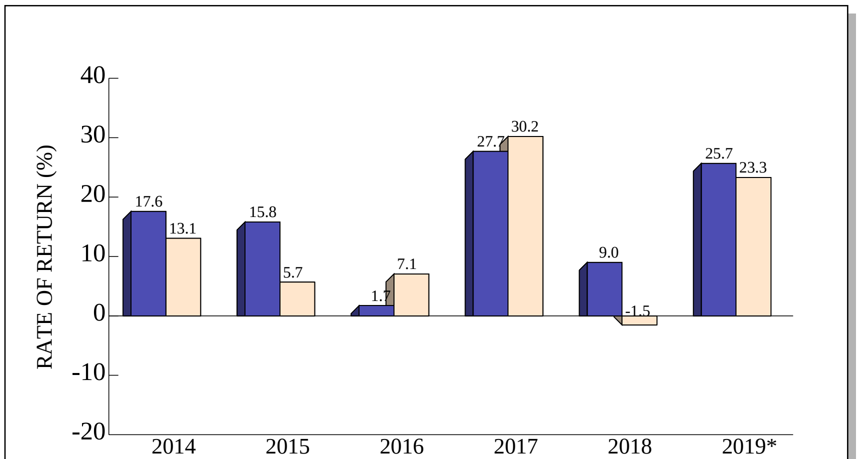
	LAST QUARTER	PERIOD 9/10 - 9/19
BEGINNING VALUE	$ 224,619,012	$ 75,827,096
NET CONTRIBUTIONS	-219,804	- 77,719,804
INVESTMENT RETURN	2,111,927	228,403,843
ENDING VALUE	$ 226,511,135	$ 226,511,135
INCOME	370,931	13,280,452
CAPITAL GAINS (LOSSES)	1,740,996	215,123,391
INVESTMENT RETURN	2,111,927	228,403,843

TOTAL RETURN COMPARISONS





Large Cap Growth Universe



* Partial year

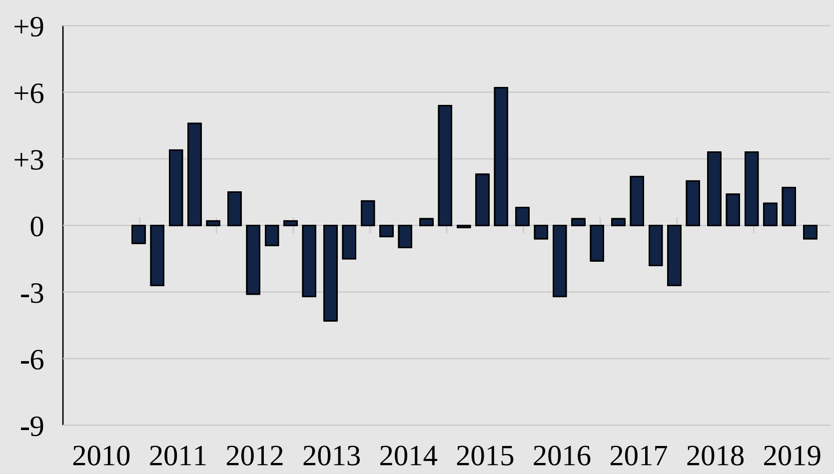
					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	0.9	7.3	25.7	9.9	20.2	17.8
(RANK)	(47)	(27)	(21)	(13)	(7)	(2)
5TH %ILE	3.6	9.8	28.7	13.2	20.6	16.3
25TH %ILE	1.9	7.6	24.7	7.7	18.2	14.2
MEDIAN	0.8	5.7	22.4	4.3	16.2	12.8
75TH %ILE	-0.5	4.1	19.9	0.9	14.3	11.0
95TH %ILE	-3.9	-0.1	15.0	-4.5	11.2	9.2
Russ 1000G	***1.5***	***6.2***	***23.3***	***3.7***	***16.9***	***13.4***

Large Cap Growth Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

COMPARATIVE BENCHMARK: RUSSELL 1000 GROWTH

VARIATION FROM BENCHMARK

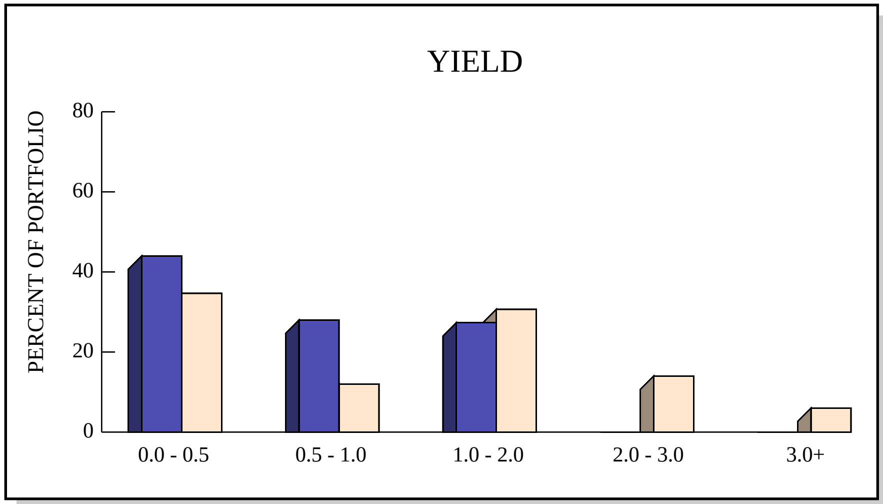


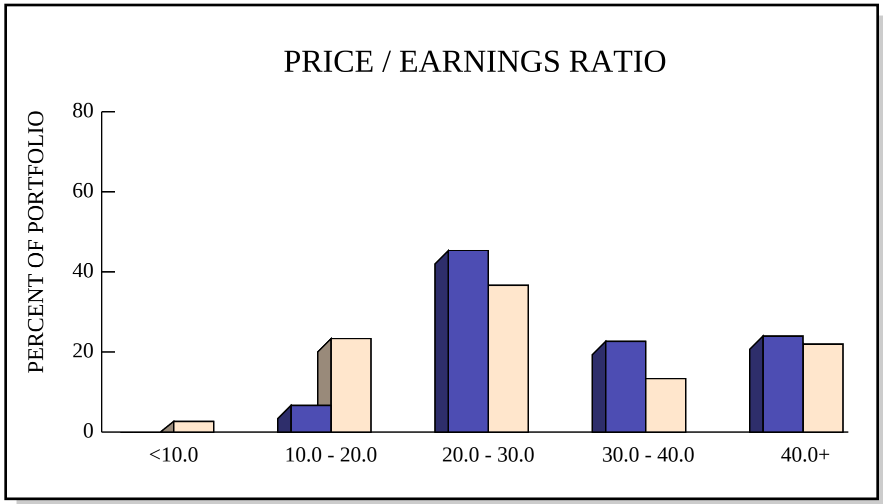
Total Quarters Observed	**36**
Quarters At or Above the Benchmark	**20**
Quarters Below the Benchmark	**16**
Batting Average	**.556**

RATES OF RETURN

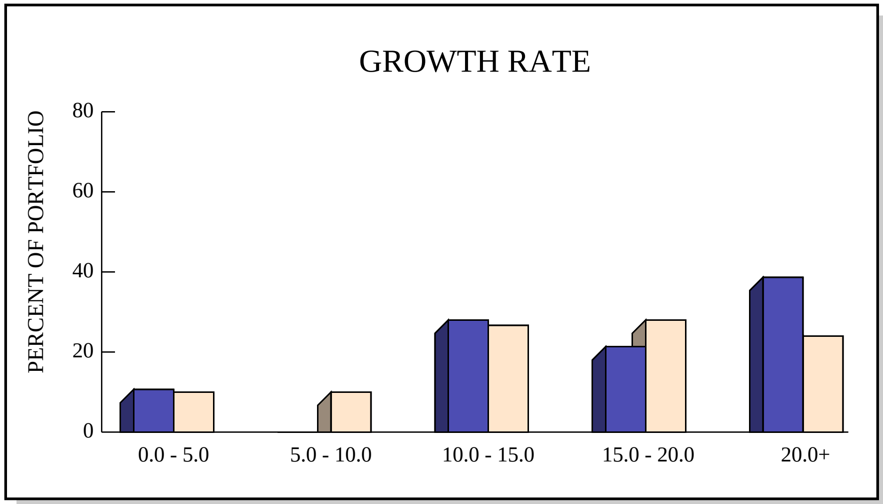
Date	Portfolio	Benchmark	Difference
12/10	11.0	11.8	-0.8
3/11	3.3	6.0	-2.7
6/11	4.2	0.8	3.4
9/11	-8.5	-13.1	4.6
12/11	10.8	10.6	0.2
3/12	16.2	14.7	1.5
6/12	-7.1	-4.0	-3.1
9/12	5.2	6.1	-0.9
12/12	-1.1	-1.3	0.2
3/13	6.3	9.5	-3.2
6/13	-2.2	2.1	-4.3
9/13	6.6	8.1	-1.5
12/13	11.5	10.4	1.1
3/14	0.6	1.1	-0.5
6/14	4.1	5.1	-1.0
9/14	1.8	1.5	0.3
12/14	10.2	4.8	5.4
3/15	3.7	3.8	-0.1
6/15	2.4	0.1	2.3
9/15	0.9	-5.3	6.2
12/15	8.1	7.3	0.8
3/16	0.1	0.7	-0.6
6/16	-2.6	0.6	-3.2
9/16	4.9	4.6	0.3
12/16	-0.6	1.0	-1.6
3/17	9.2	8.9	0.3
6/17	6.9	4.7	2.2
9/17	4.1	5.9	-1.8
12/17	5.2	7.9	-2.7
3/18	3.4	1.4	2.0
6/18	9.1	5.8	3.3
9/18	10.6	9.2	1.4
12/18	-12.6	-15.9	3.3
3/19	17.1	16.1	1.0
6/19	6.3	4.6	1.7
9/19	0.9	1.5	-0.6

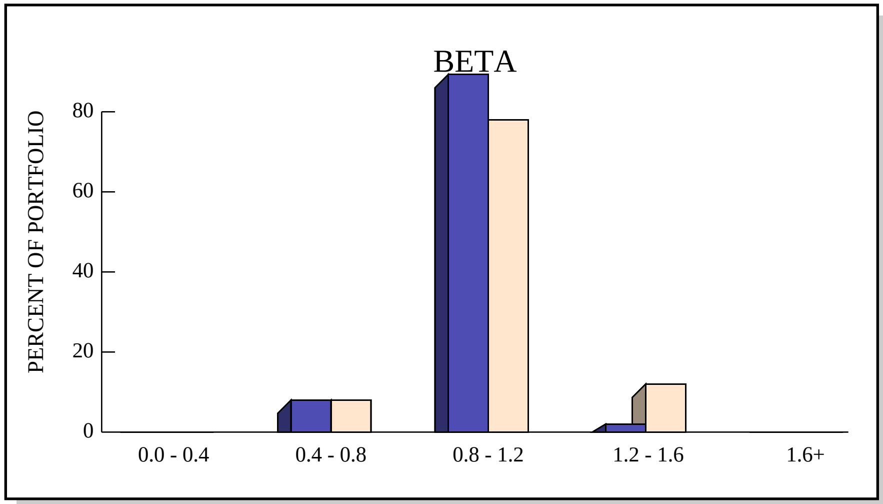
STOCK CHARACTERISTICS



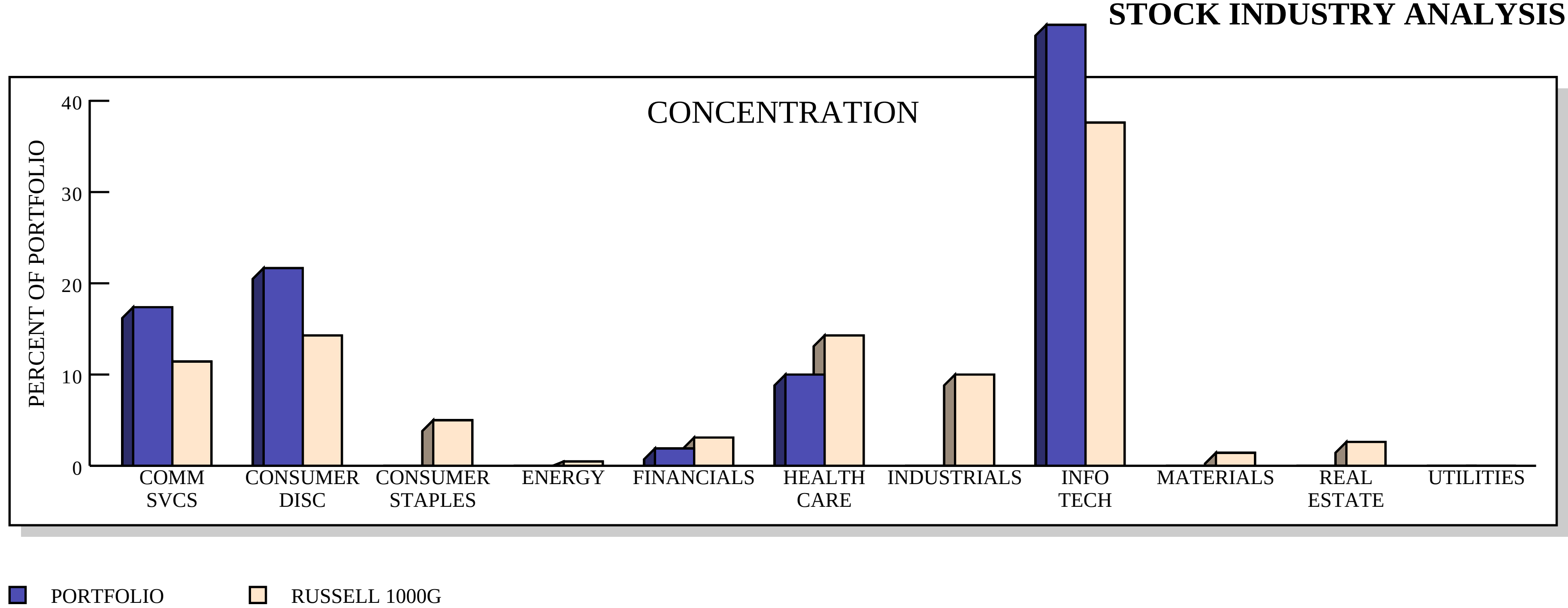


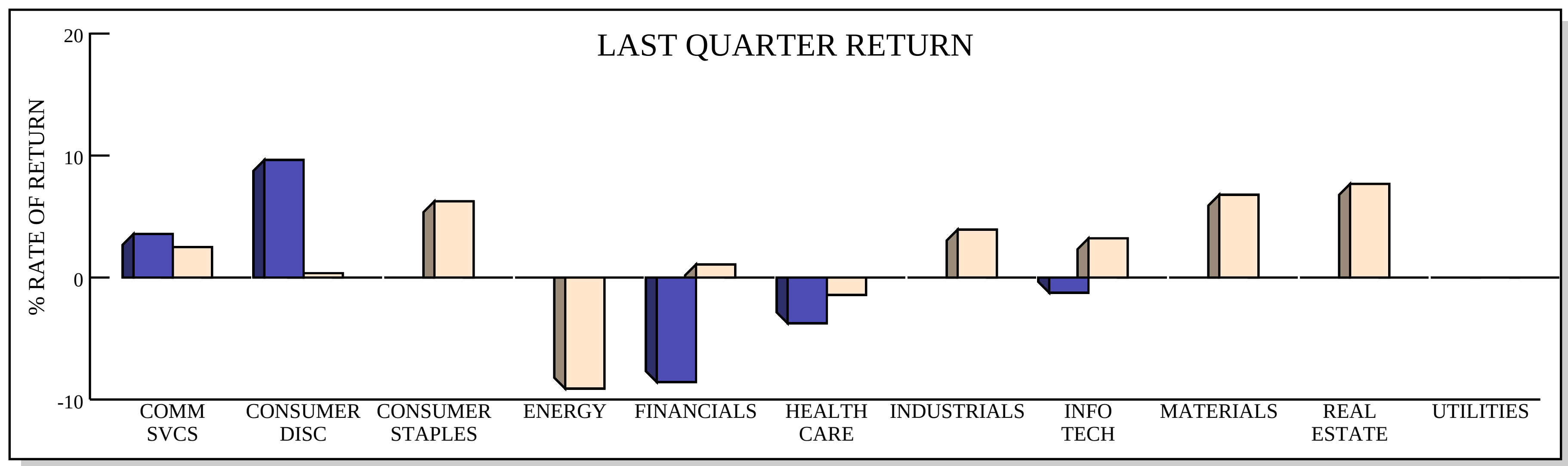
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	22	0.6%	22.3%	32.9	1.02
RUSSELL 1000G	531	1.2%	18.4%	31.8	1.03



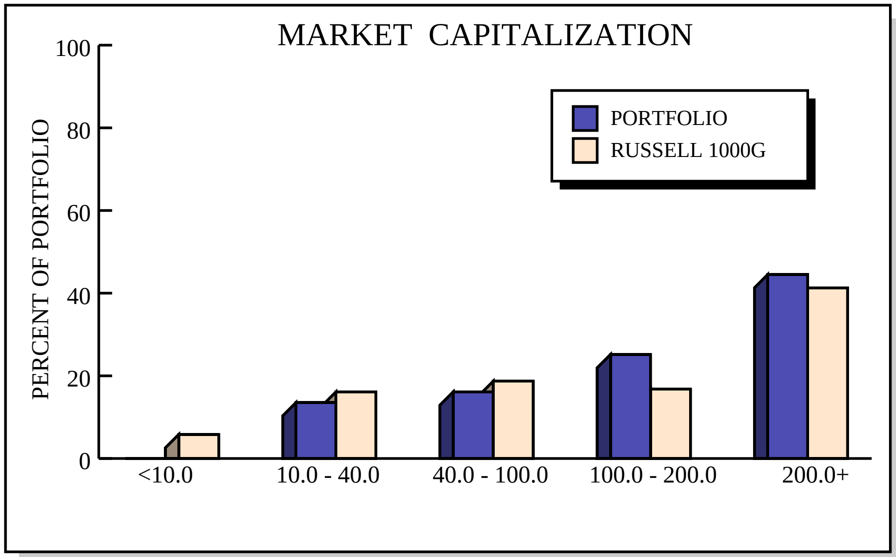


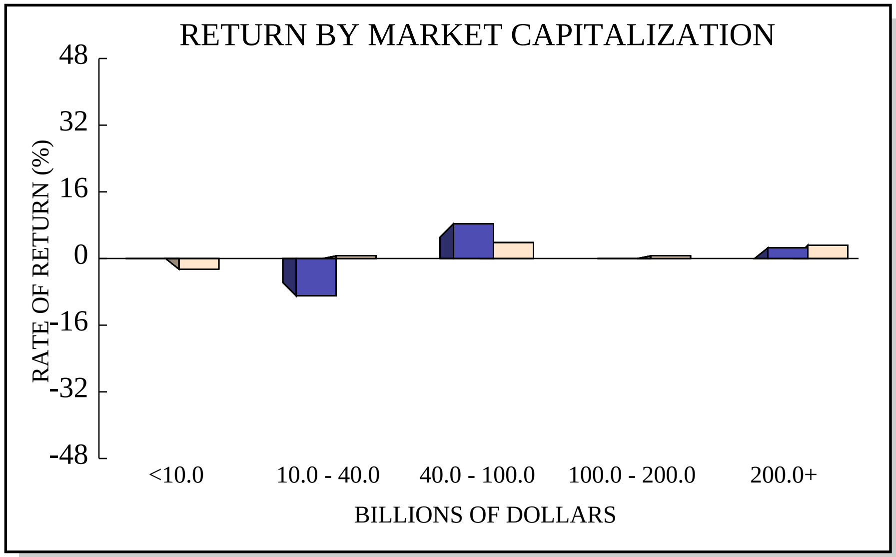
STOCK INDUSTRY ANALYSIS





TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	$ 21,988,289	10.14%	4.1%	Information Technology	$ 1061.6 B
2	FACEBOOK INC-CLASS A	16,934,874	7.81%	-7.7%	Communication Services	428.4 B
3	VISA INC-CLASS A SHARES	16,466,517	7.60%	-0.8%	Information Technology	297.1 B
4	ALPHABET INC-CL C	16,005,470	7.38%	12.8%	Communication Services	423.4 B
5	ZOETIS INC	12,909,642	5.96%	9.9%	Health Care	59.5 B
6	ADOBE INC	12,809,160	5.91%	-6.2%	Information Technology	133.7 B
7	MASTERCARD INC - A	12,155,202	5.61%	2.8%	Information Technology	272.4 B
8	ACCENTURE PLC-CL A	11,112,637	5.13%	4.1%	Information Technology	122.6 B
9	DOLLAR GENERAL CORP	9,951,710	4.59%	17.9%	Consumer Discretionary	40.9 B
10	NIKE INC -CL B	9,616,093	4.44%	12.2%	Consumer Discretionary	117.6 B

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
SMITH, GRAHAM & COMPANY - SMALL CAP VALUE
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.

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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's Smith, Graham & Company Small Cap Value portfolio was valued at $71,255,310, representing an increase of $410,062 from the June quarter's ending value of $70,845,248. Last quarter, the Fund posted withdrawals totaling $121,957, which offset the portfolio's net investment return of $532,019. Income receipts totaling $209,929 plus net realized and unrealized capital gains of $322,090 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

During the third quarter, the Smith, Graham & Company Small Cap Value portfolio gained 0.8%, which was 1.4% above the Russell 2000 Value Index's return of -0.6% and ranked in the 35th percentile of the Small Cap Value universe. Over the trailing year, the portfolio returned -6.7%, which was 1.6% greater than the benchmark's -8.3% performance, and ranked in the 53rd percentile. Since December 2016, the portfolio returned 1.7% on an annualized basis and ranked in the 76th percentile. For comparison, the Russell 2000 Value returned an annualized 2.1% over the same period.

ASSET ALLOCATION

At the end of the third quarter, small cap equities comprised 98.8% of the total portfolio ($70.4 million), while cash & equivalents totaled 1.2% ($821,113).

EQUITY ANALYSIS

Last quarter the Smith Graham portfolio was invested in ten of the eleven sectors shown in our analysis. Relative to the Russell 2000 Value index, the portfolio was more heavily weighted in the Consumer Discretionary, Health Care, and Information Technology sectors. The Consumer Staples, Energy, Materials, Real Estate, and Utilities sectors were underweight, while the Communication Services sector was vacant.

The portfolio's extra weight in the Consumer Discretionary and Information Technology sectors allowed it to take better advantage of positive returns there that were somewhat elusive elsewhere in the small cap value market. Likewise, the reduced positions in Energy and Materials lessened exposure to sectors that contracted.

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	Since 12/16
Total Portfolio - Gross	0.8	19.8	-6.7	----	----	1.7
SMALL CAP VALUE RANK	(35)	(17)	(53)	----	----	(76)
Total Portfolio - Net	0.6	19.1	-7.4	----	----	1.0
Russell 2000V	-0.6	12.8	-8.3	6.5	7.2	2.1
Small Cap Equity - Gross	0.8	20.0	-6.8	----	----	1.8
SMALL CAP VALUE RANK	(35)	(16)	(54)	----	----	(76)
Russell 2000V	-0.6	12.8	-8.3	6.5	7.2	2.1

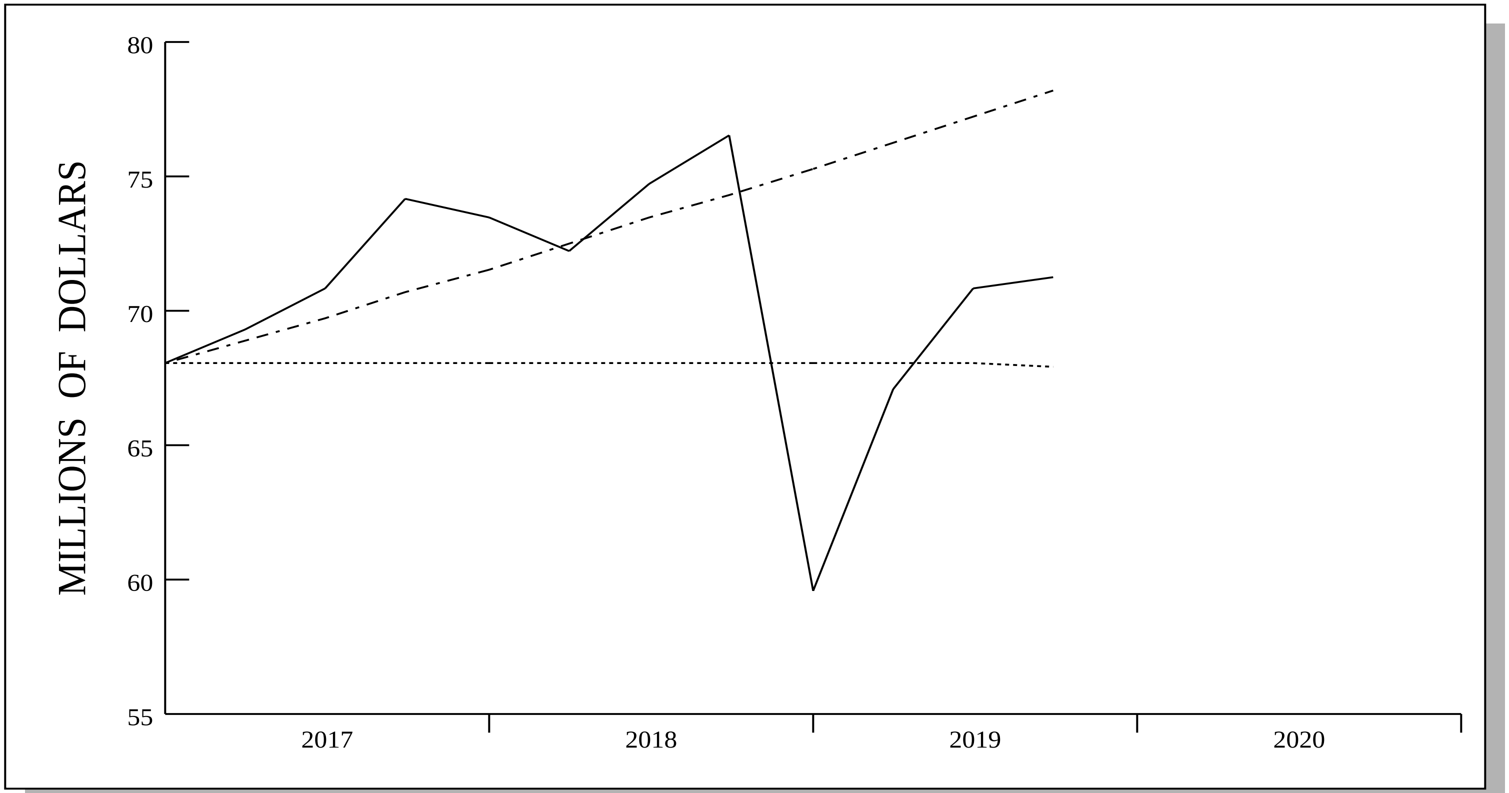
ASSET ALLOCATION

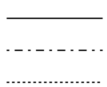
Small Cap	98.8%	$ 70,434,197
Cash	1.2%	821,113
Total Portfolio	100.0%	$ 71,255,310

INVESTMENT RETURN

Market Value 6/2019	$ 70,845,248
Contribs / Withdrawals	-121,957
Income	209,929
Capital Gains / Losses	322,090
Market Value 9/2019	$ 71,255,310

INVESTMENT GROWTH

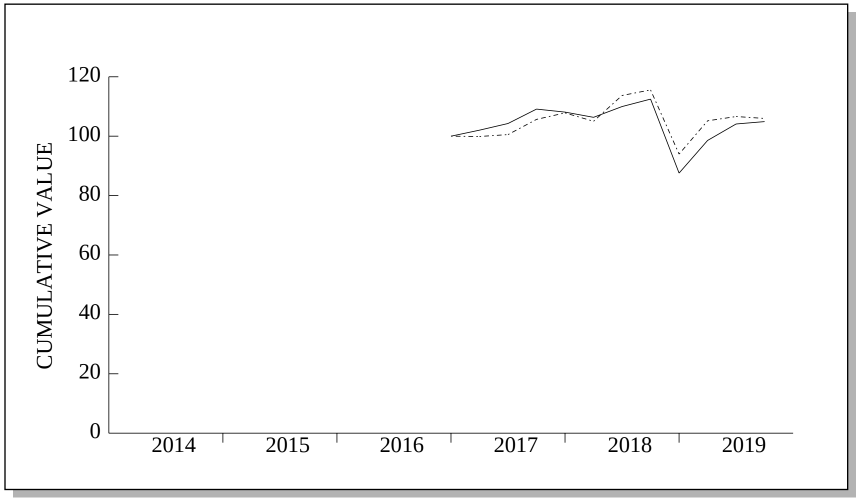


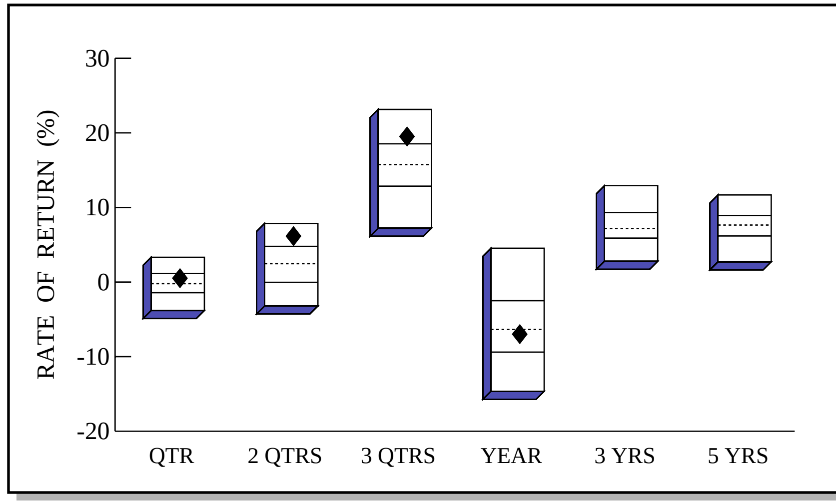


VALUE ASSUMING		
5.25% RETURN	$	78,216,565

	LAST QUARTER	PERIOD 12/16 - 9/19
BEGINNING VALUE	$ 70,845,248	$ 68,056,392
NET CONTRIBUTIONS	-121,957	-121,957
INVESTMENT RETURN	532,019	3,320,875
ENDING VALUE	$ 71,255,310	$ 71,255,310
INCOME	209,929	2,908,930
CAPITAL GAINS (LOSSES)	322,090	411,945
INVESTMENT RETURN	532,019	3,320,875

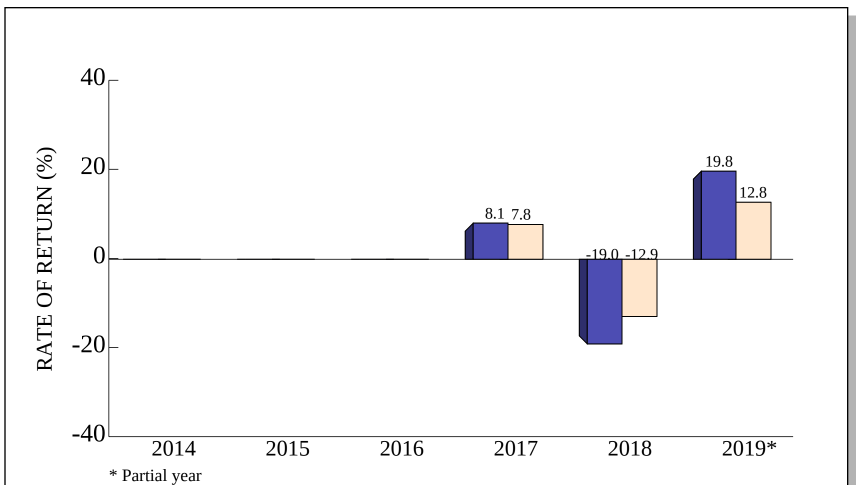
TOTAL RETURN COMPARISONS





Small Cap Value Universe

PORTFOLIO
RUSSELL 2000V



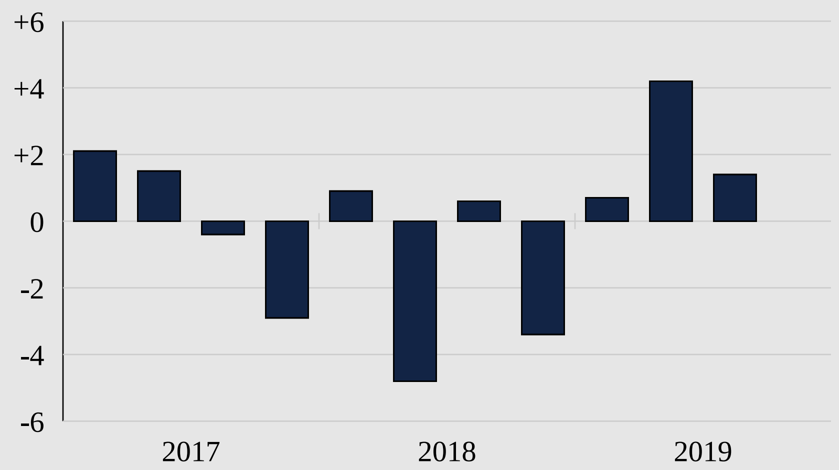
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
					------ANNUALIZED------	
RETURN	0.8	6.4	19.8	-6.7	----	----
(RANK)	(35)	(12)	(17)	(53)	----	----
5TH %ILE	3.3	7.9	23.1	4.5	12.9	11.7
25TH %ILE	1.2	4.8	18.5	-2.5	9.3	8.9
MEDIAN	-0.2	2.5	15.7	-6.3	7.2	7.6
75TH %ILE	-1.4	0.0	12.9	-9.4	5.9	6.2
95TH %ILE	-3.8	-3.2	7.2	-14.7	2.8	2.7
Russ 2000V	***-0.6***	***0.8***	***12.8***	***-8.3***	***6.5***	***7.2***

Small Cap Value Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

COMPARATIVE BENCHMARK: RUSSELL 2000 VALUE

VARIATION FROM BENCHMARK

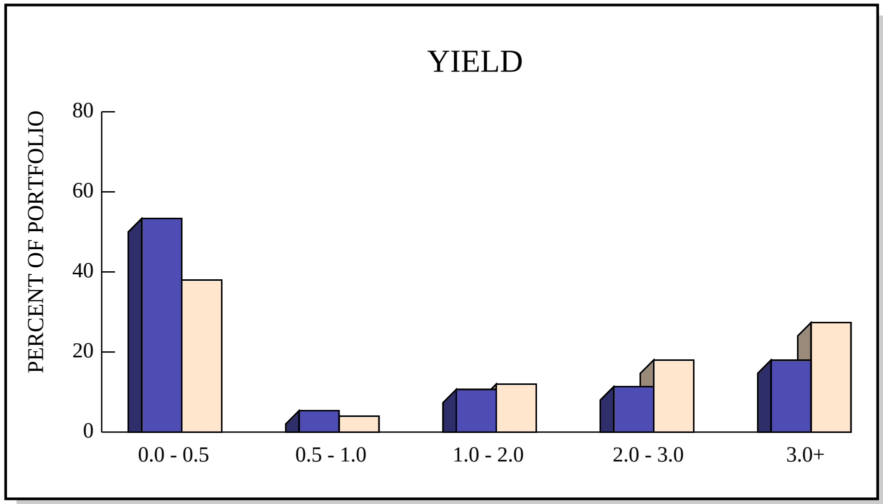


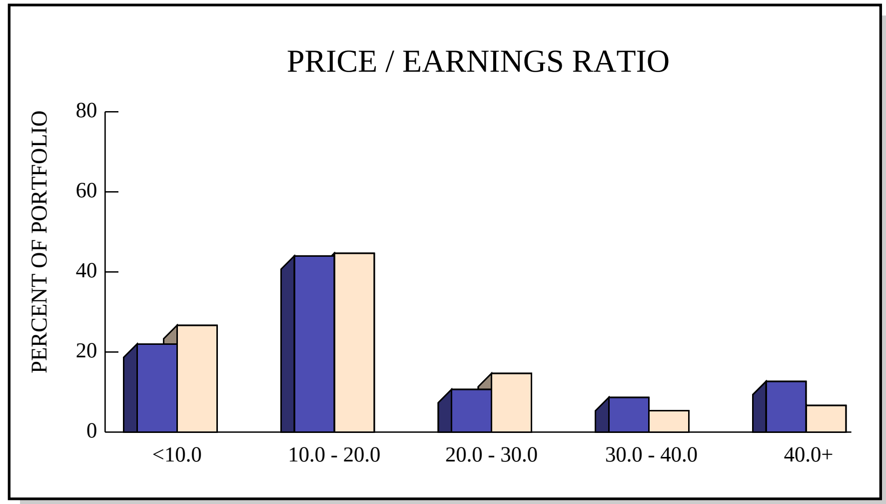
Total Quarters Observed	**11**
Quarters At or Above the Benchmark	**7**
Quarters Below the Benchmark	**4**
Batting Average	**.636**

RATES OF RETURN

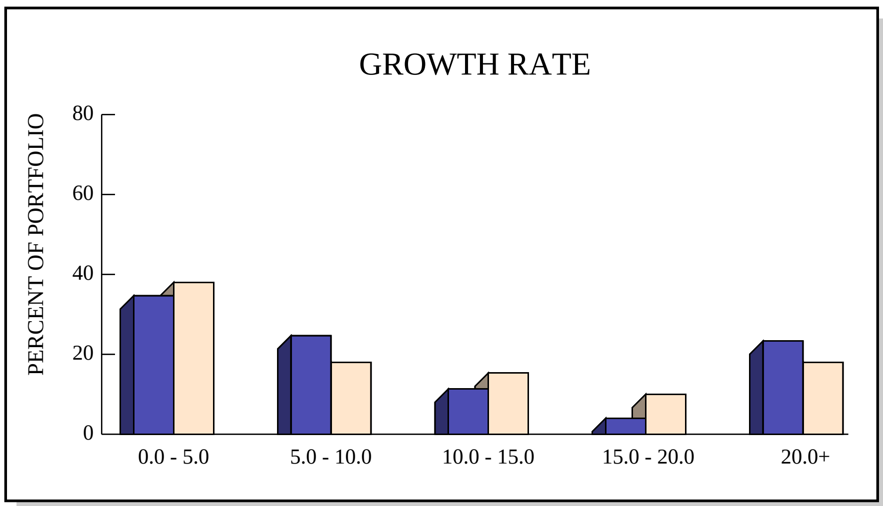
Date	Portfolio	Benchmark	Difference
3/17	2.0	-0.1	2.1
6/17	2.2	0.7	1.5
9/17	4.7	5.1	-0.4
12/17	-0.9	2.0	-2.9
3/18	-1.7	-2.6	0.9
6/18	3.5	8.3	-4.8
9/18	2.2	1.6	0.6
12/18	-22.1	-18.7	-3.4
3/19	12.6	11.9	0.7
6/19	5.6	1.4	4.2
9/19	0.8	-0.6	1.4

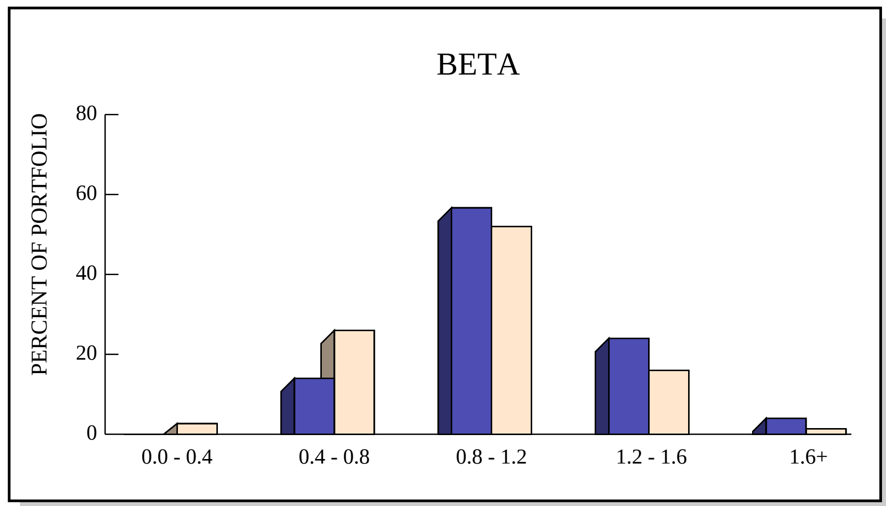
STOCK CHARACTERISTICS



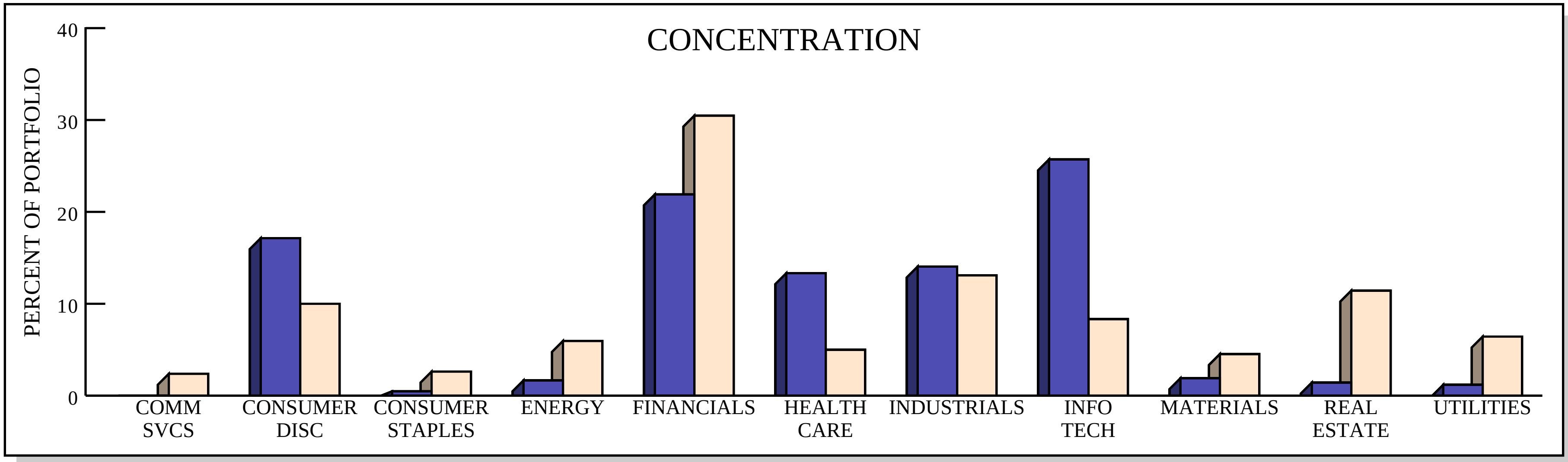


	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	64	1.5%	8.0%	18.8	1.06
RUSSELL 2000V	1,403	2.2%	8.2%	15.9	0.94

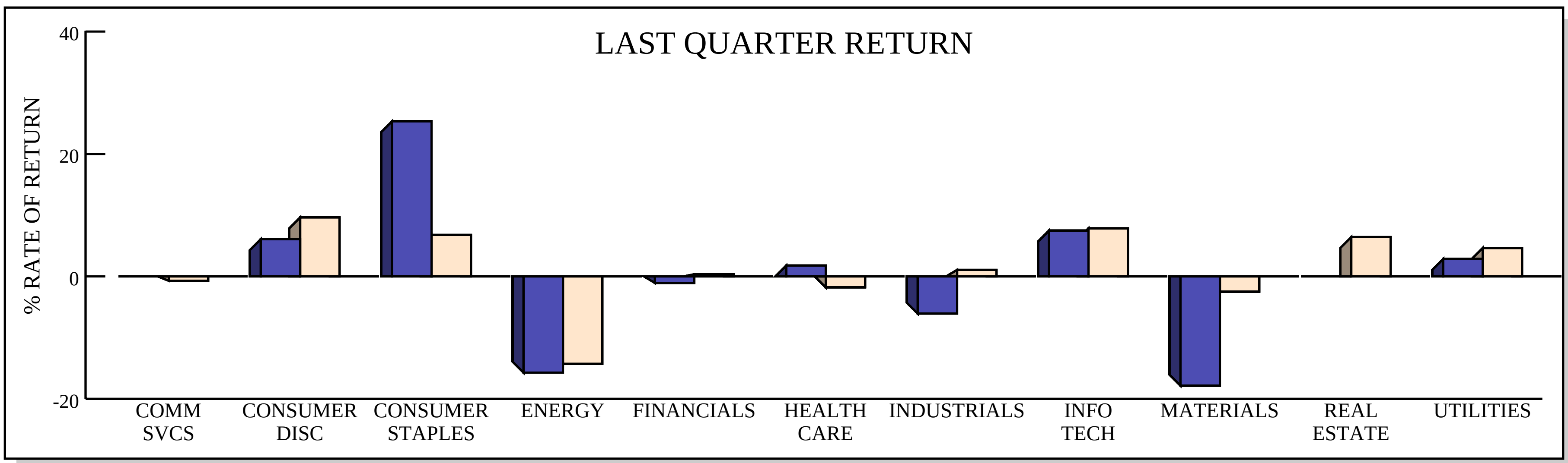




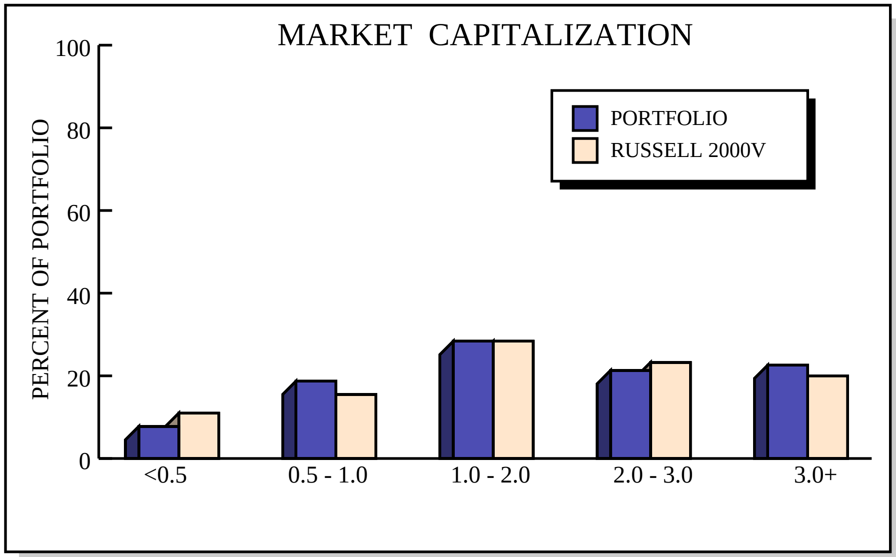
STOCK INDUSTRY ANALYSIS

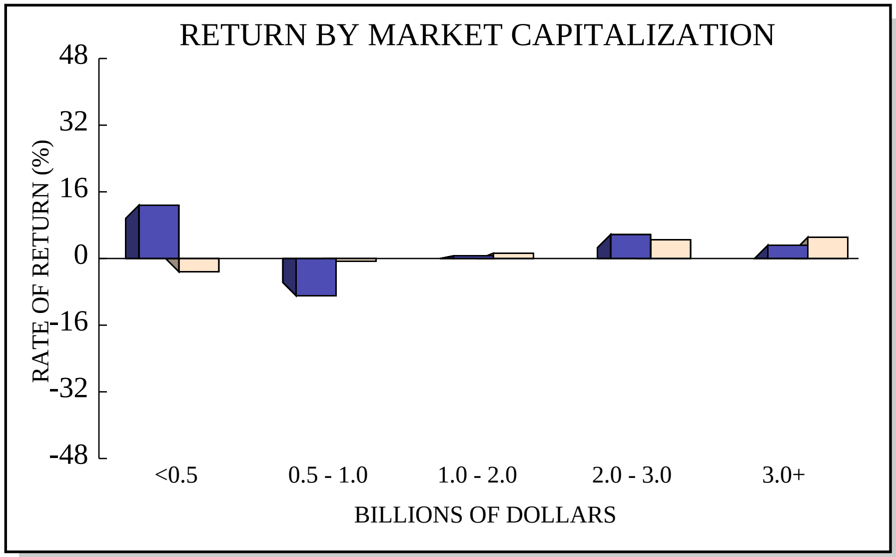


PORTFOLIO RUSSELL 2000V



TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	SELECTIVE INSURANCE GROUP	$ 1,786,514	2.54%	0.7%	Financials	$ 4.5 B
2	MDC HOLDINGS INC	1,691,675	2.40%	32.6%	Consumer Discretionary	2.7 B
3	DIEBOLD NIXDORF INC	1,586,581	2.25%	22.3%	Information Technology	0.9 B
4	HIBBETT SPORTS INC	1,537,964	2.18%	25.8%	Consumer Discretionary	0.4 B
5	ULTRA CLEAN HOLDINGS INC	1,498,111	2.13%	5.1%	Information Technology	0.6 B
6	TETRA TECH INC	1,461,906	2.08%	10.7%	Industrials	4.7 B
7	LITHIA MOTORS INC-CL A	1,460,151	2.07%	11.7%	Consumer Discretionary	3.0 B
8	SELECT MEDICAL HOLDINGS CORP	1,454,713	2.07%	4.4%	Health Care	2.2 B
9	INTEGER HOLDINGS CORP	1,441,836	2.05%	-10.0%	Health Care	2.5 B
10	ENCORE CAPITAL GROUP INC	1,430,857	2.03%	-1.6%	Financials	1.0 B

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
STATE STREET GLOBAL ADVISORS
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.

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INVESTMENT RETURN

On September 30th, 2019, the Pennsylvania Municipal Retirement System's State Street Global Advisors portfolio was valued at $950,658,739, representing an increase of $49,627,924 from the June quarter's ending value of $901,030,815. Last quarter, the Fund posted net contributions totaling $51,800,000, which overshadowed the account's $2,172,076 net investment loss that was sustained during the quarter. Because there were no income receipts during the third quarter, the portfolio's net investment losses were entirely made up of capital losses (realized and unrealized).

RELATIVE PERFORMANCE

Total Portfolio

During the third quarter, the State Street Global Advisors portfolio lost 0.2%, which was equal to the shadow index's return of -0.2% and ranked in the 90th percentile of the Balanced Fund universe. Over the trailing twelve-month period, the portfolio returned 4.1%, which was 0.3% less than the benchmark's 4.4% performance, and ranked in the 55th percentile. Since March 1997, the portfolio returned 6.4% on an annualized basis. For comparison, the shadow index returned an annualized 7.1% over the same time frame.

Large Cap Equity

The large cap equity portion of the portfolio gained 1.7% in the third quarter; that return was equal to the S&P 500 Index's return of 1.7% and ranked in the 45th percentile of the Large Cap Core universe. Over the trailing twelve months, this segment returned 4.3%; that return was equal to the benchmark's 4.3% return, ranking in the 38th percentile. Since March 1997, this component returned 8.3% per annum. For comparison, the S&P 500 returned an annualized 8.3% over the same time frame.

Small Cap Equity

In the third quarter, the small cap equity segment returned -2.4%, which was equal to the Russell 2000 Index's return of -2.4% and ranked in the 64th percentile of the Small Cap universe. Over the trailing twelve months, the small cap equity portfolio returned -8.8%, which was 0.1% greater than the benchmark's -8.9% performance, and ranked in the 67th percentile. Since March 1997, this component returned 8.2% annualized, while the Russell 2000 returned an annualized 8.3%.

International Equity

The international equity portfolio lost 0.9% in the third quarter, 0.1% below the MSCI World Ex US Index's return of -0.8% and ranked in the 28th percentile of the International Equity universe. Over the trailing year, this segment returned -0.5%, 0.1% below the benchmark's -0.4% performance, and ranked in the 40th percentile.

Emerging Markets Equity

The emerging markets equity segment returned -4.3% during the third quarter; that return was 0.2% below the Blended Emerging Markets Index's return of -4.1% and ranked in the 67th percentile of the Emerging Markets universe. Over the trailing twelve months, the emerging markets equity portfolio returned -2.0%, 0.4% less than the benchmark's -1.6% performance, ranking in the 72nd percentile.

Fixed Income

During the third quarter, the fixed income segment returned 2.3%, which was equal to the Bloomberg Barclays Aggregate Index's return of 2.3% and ranked in the 66th percentile of the Core Fixed Income universe. Over the trailing twelve months, the fixed income portfolio returned 10.3%, which was equal to the benchmark's 10.3% return, and ranked in the 66th percentile. Since March 1997, this component returned 5.3% annualized. The Bloomberg Barclays Aggregate Index returned an annualized 5.3% over the same period.

ASSET ALLOCATION

On September 30th, 2019, large cap equities comprised 5.9% of the total portfolio ($55.6 million), while small cap equities totaled 8.8% ($83.8 million). The account's international equity segment was valued at $161.5 million, representing 17.0% of the portfolio, while the emerging markets equity component's $247.4 million totaled 26.0%. The remaining 42.3% was comprised of fixed income ($402.3 million).

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD	1 Year	3 Year	5 Year	10 Year	Since 03/97
Total Portfolio - Gross	-0.2	8.5	4.1	5.1	3.8	5.0	6.4
BALANCED FUND RANK	(90)	(97)	(55)	(95)	(96)	(98)	----
Total Portfolio - Net	-0.2	8.5	4.0	5.1	3.8	4.9	6.4
Shadow Index	-0.2	8.8	4.4	5.2	3.9	5.2	7.1
Large Cap Equity - Gross	1.7	20.5	4.3	13.4	10.8	13.2	8.3
LARGE CAP CORE RANK	(45)	(43)	(38)	(33)	(35)	(44)	----
S&P 500	1.7	20.6	4.3	13.4	10.8	13.2	8.3
Russell 3000	1.2	20.1	2.9	12.8	10.4	13.1	8.4
Russell 1000G	1.5	23.3	3.7	16.9	13.4	14.9	8.2
Russell 1000V	1.4	17.8	4.0	9.4	7.8	11.5	8.2
Small Cap Equity - Gross	-2.4	14.2	-8.8	8.3	8.3	11.3	8.2
SMALL CAP RANK	(64)	(66)	(67)	(60)	(60)	(82)	----
Russell 2000	-2.4	14.2	-8.9	8.2	8.2	11.2	8.3
Russell 2000G	-4.2	15.3	-9.7	9.8	9.1	12.2	7.3
Russell 2000V	-0.6	12.8	-8.3	6.5	7.2	10.1	8.9
International Equity - Gross	-0.9	14.0	-0.5	6.9	3.5	----	----
INTERNATIONAL EQUITY RANK	(28)	(32)	(40)	(43)	(62)	----	----
MSCI World Ex US	-0.8	14.2	-0.4	7.1	3.7	5.4	5.4
S&P BMI Ex US	-0.9	13.0	-2.0	6.7	3.8	5.7	5.8
MSCI EAFE	-1.0	13.3	-0.8	7.0	3.8	5.4	5.1
Emerging Markets Equity - Gross	-4.3	5.9	-2.0	6.0	2.3	3.3	----
EMERGING MARKETS RANK	(67)	(66)	(72)	(50)	(67)	(91)	----
S&P BMI EMGM	-3.7	7.9	1.5	6.8	3.2	4.2	----
MSCI Emg Mkts	-4.1	6.2	-1.6	6.4	2.7	3.7	5.8
Fixed Income - Gross	2.3	8.6	10.3	3.0	3.4	3.8	5.3
CORE FIXED INCOME RANK	(66)	(78)	(66)	(84)	(86)	(91)	----
Aggregate Index	2.3	8.5	10.3	2.9	3.4	3.8	5.3
Gov/Credit	2.6	9.7	11.3	3.2	3.6	3.9	5.4

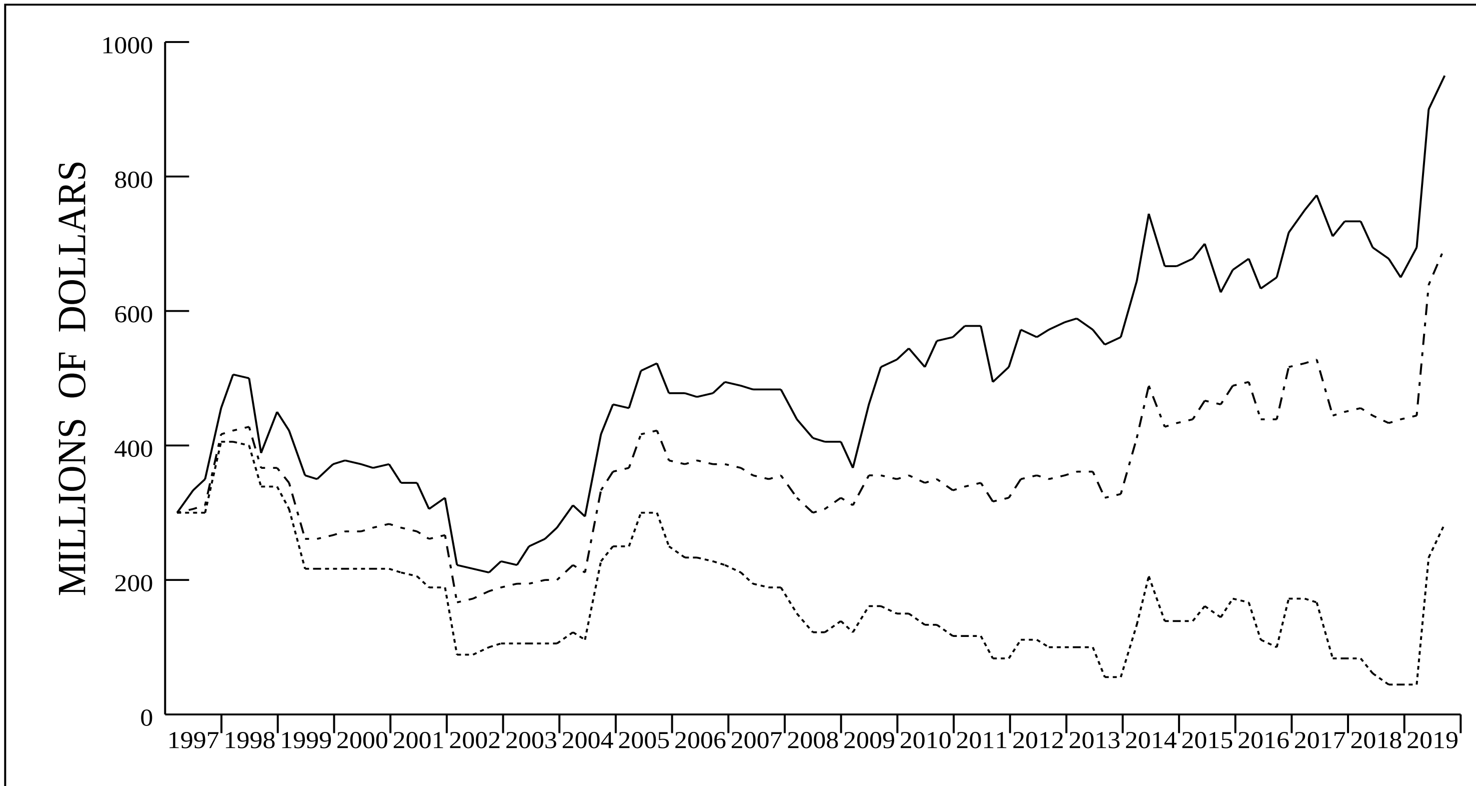
ASSET ALLOCATION

Large Cap Equity	5.9%	$ 55,618,747
Small Cap	8.8%	83,798,332
Int'l Equity	17.0%	161,533,659
Emerging Markets	26.0%	247,393,031
Fixed Income	42.3%	402,314,970
Total Portfolio	100.0%	$ 950,658,739

INVESTMENT RETURN

Market Value 6/2019	$ 901,030,815
Contribs / Withdrawals	51,800,000
Income	0
Capital Gains / Losses	- 2,172,076
Market Value 9/2019	$ 950,658,739

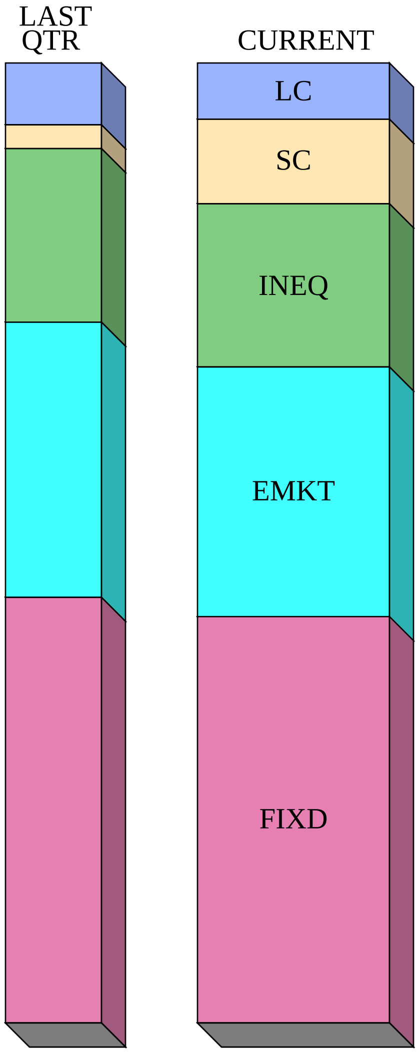
INVESTMENT GROWTH



ACTUAL RETURN
5.25%
0.0%

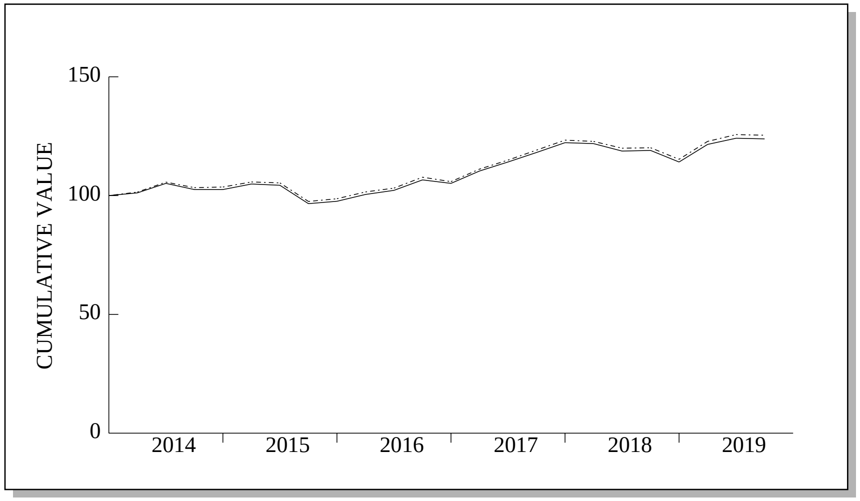
VALUE ASSUMING
5.25% RETURN $ 699,980,371

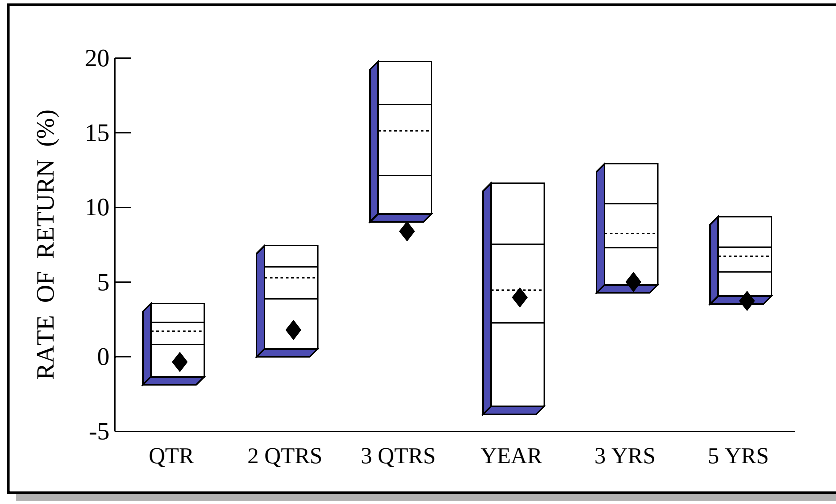
	LAST QUARTER	PERIOD 3/97 - 9/19
BEGINNING VALUE	$ 901,030,815	$ 304,615,360
NET CONTRIBUTIONS	51,800,000	- 17,209,710
INVESTMENT RETURN	- 2,172,076	663,253,089
ENDING VALUE	$ 950,658,739	$ 950,658,739
INCOME	0	7,438
CAPITAL GAINS (LOSSES)	- 2,172,076	663,245,651
INVESTMENT RETURN	- 2,172,076	663,253,089



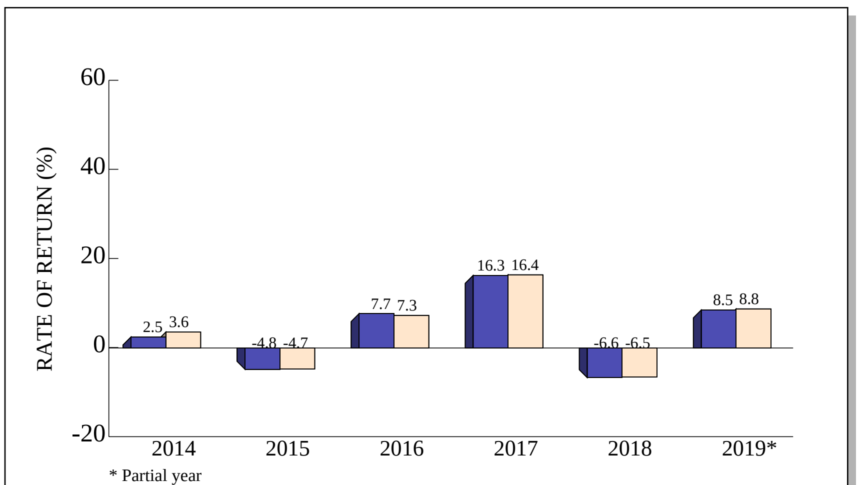
	VALUE	PERCENT
LARGE CAP EQUITY	$ 55, 618, 747	5.9%
SMALL CAP EQUITY	83, 798, 332	8.8%
INTERNATIONAL EQUITY	161, 533, 659	17.0%
EMERGING MARKETS EQUITY	247, 393, 031	26.0%
FIXED INCOME	402, 314, 970	42.3%
TOTAL FUND	$ 950, 658, 739	100.0%

TOTAL RETURN COMPARISONS





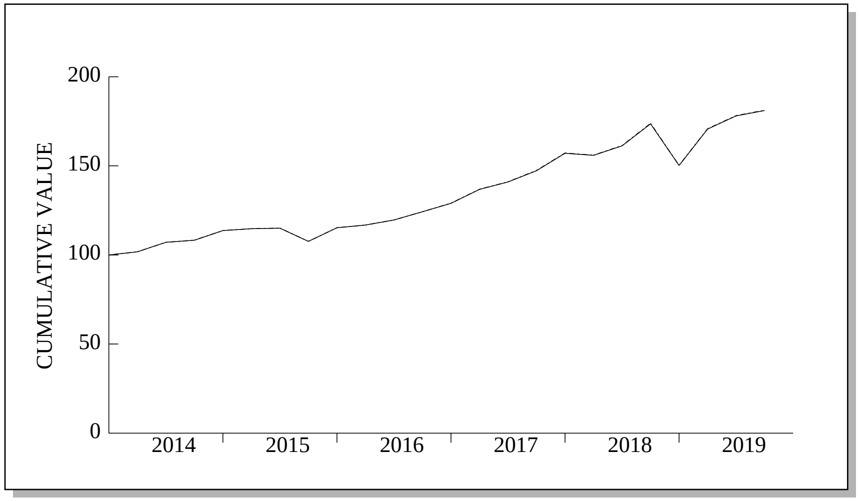
Balanced Fund Universe

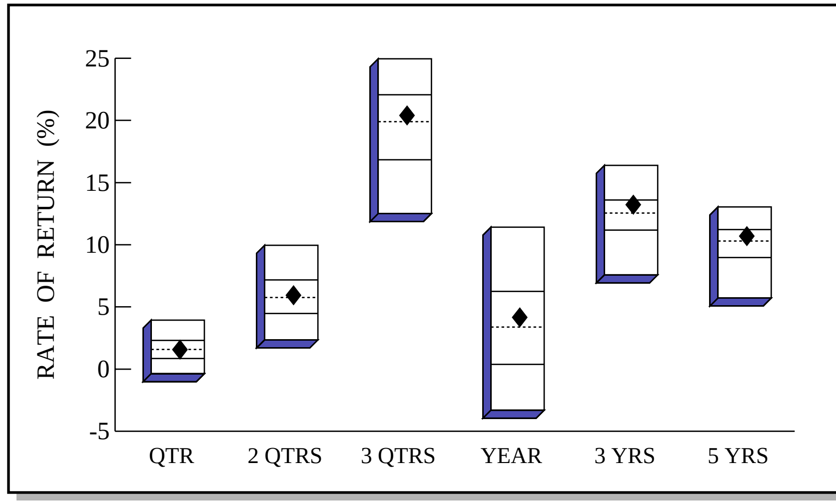


	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	-0.2	1.9	8.5	4.1	5.1	3.8
(RANK)	(90)	(90)	(97)	(55)	(95)	(96)
5TH %ILE	3.6	7.4	19.8	11.6	12.9	9.4
25TH %ILE	2.3	6.0	16.9	7.5	10.3	7.3
MEDIAN	1.7	5.3	15.1	4.5	8.3	6.7
75TH %ILE	0.8	3.9	12.1	2.3	7.3	5.7
95TH %ILE	-1.3	0.5	9.6	-3.3	4.8	4.1
Shadow Idx	***-0.2***	***2.1***	***8.8***	***4.4***	***5.2***	***3.9***

Balanced Fund Universe

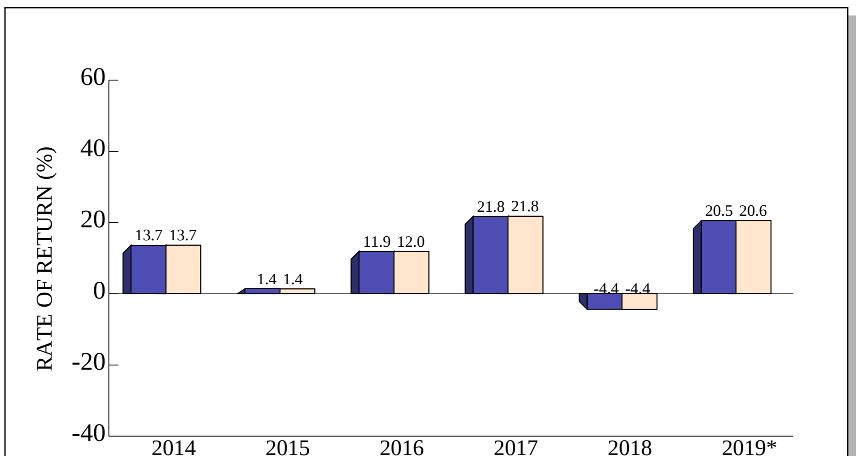
LARGE CAP EQUITY RETURN COMPARISONS





Large Cap Core Universe

■ ———	PORTFOLIO
□ -·-·-	S&P 500

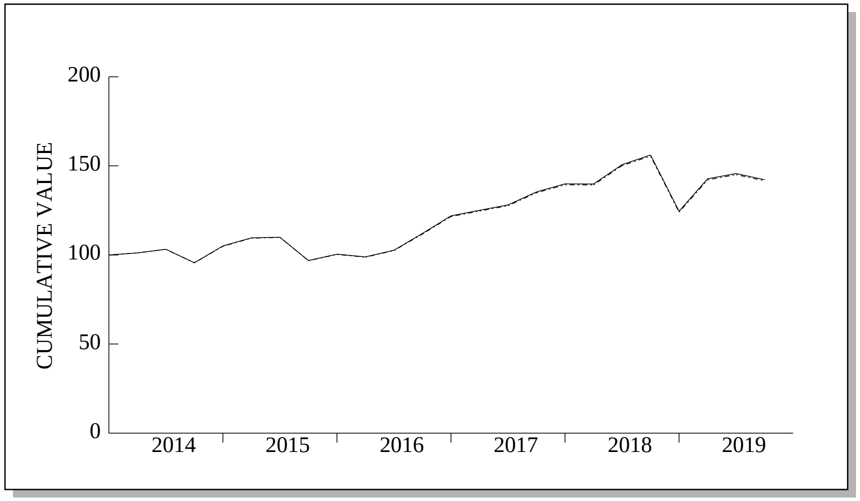


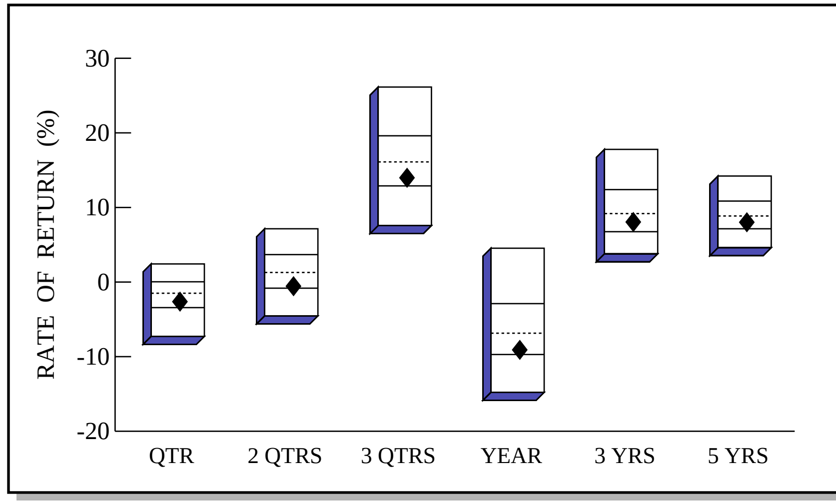
* Partial year

	QTR	2 QTRS	3 QTRS	YEAR	3 YRS (ANNUALIZED)	5 YRS (ANNUALIZED)
RETURN	1.7	6.1	20.5	4.3	13.4	10.8
(RANK)	(45)	(42)	(43)	(38)	(33)	(35)
5TH %ILE	3.9	10.0	25.0	11.4	16.4	13.0
25TH %ILE	2.3	7.2	22.1	6.3	13.6	11.2
MEDIAN	1.6	5.8	19.9	3.4	12.6	10.3
75TH %ILE	0.9	4.5	16.8	0.4	11.2	9.0
95TH %ILE	-0.4	2.4	12.5	-3.3	7.6	5.7
S&P 500	***1.7***	***6.1***	***20.6***	***4.3***	***13.4***	***10.8***

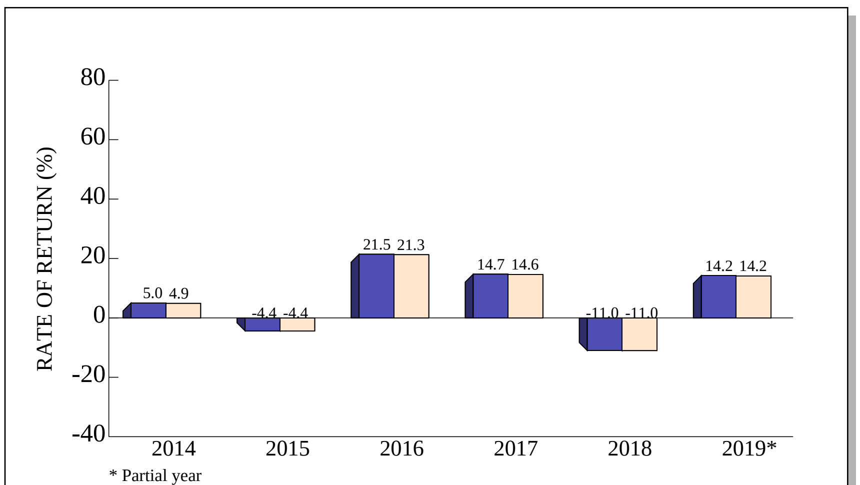
Large Cap Core Universe

SMALL CAP EQUITY RETURN COMPARISONS





Small Cap Universe

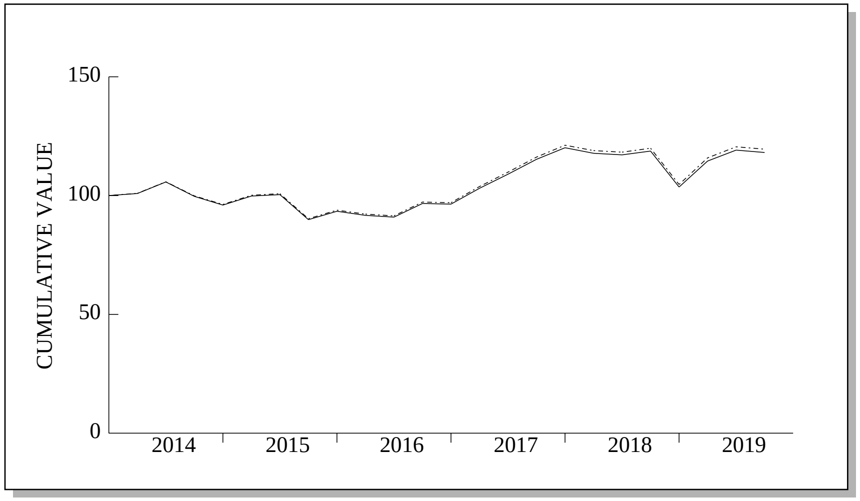


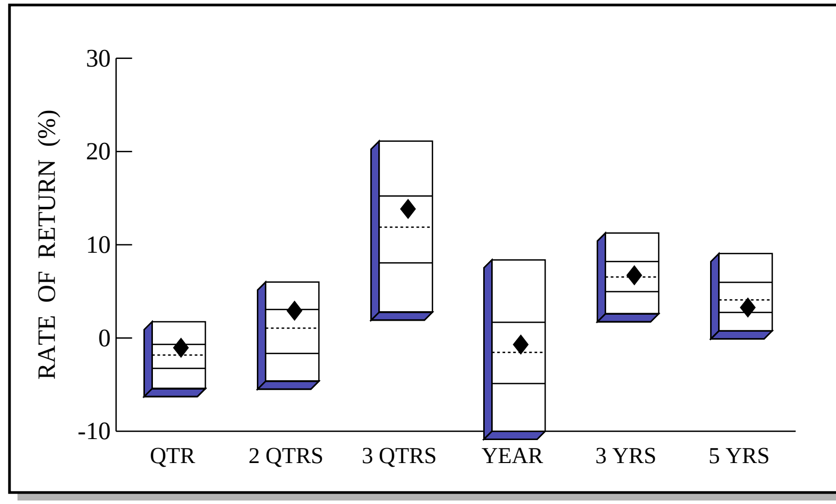
* Partial year

					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	-2.4	-0.3	14.2	-8.8	8.3	8.3
(RANK)	(64)	(70)	(66)	(67)	(60)	(60)
5TH %ILE	2.4	7.1	26.2	4.5	17.8	14.2
25TH %ILE	0.0	3.7	19.6	-2.9	12.4	10.8
MEDIAN	-1.5	1.3	16.1	-6.9	9.2	8.9
75TH %ILE	-3.4	-0.8	12.9	-9.7	6.7	7.1
95TH %ILE	-7.3	-4.5	7.6	-14.8	3.8	4.6
Russ 2000	***-2.4***	***-0.4***	***14.2***	***-8.9***	***8.2***	***8.2***

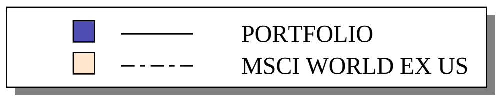
Small Cap Universe

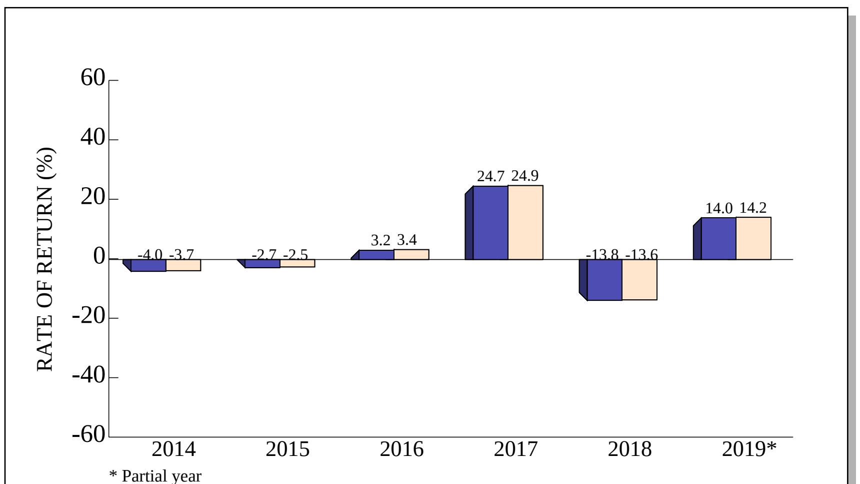
INTERNATIONAL EQUITY RETURN COMPARISONS





International Equity Universe

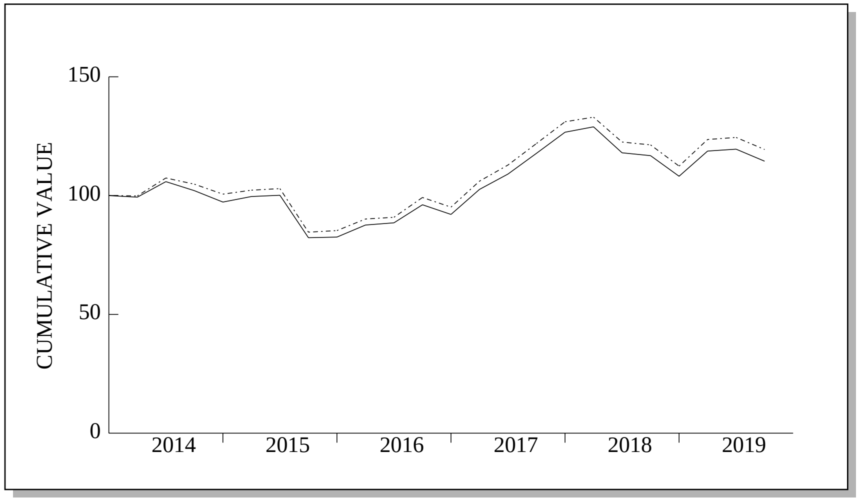


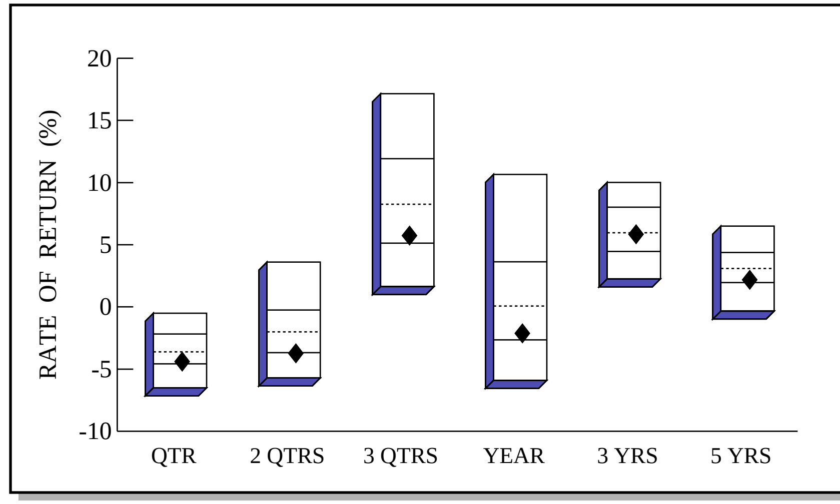


					------ANNUALIZED------	
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	-0.9	3.1	14.0	-0.5	6.9	3.5
(RANK)	(28)	(25)	(32)	(40)	(43)	(62)
5TH %ILE	1.7	6.0	21.1	8.4	11.3	9.1
25TH %ILE	-0.7	3.1	15.2	1.7	8.2	6.0
MEDIAN	-1.8	1.1	11.9	-1.6	6.5	4.1
75TH %ILE	-3.3	-1.7	8.1	-4.9	5.0	2.8
95TH %ILE	-5.4	-4.6	2.8	-10.0	2.6	0.8
World Ex Us	***-0.8***	***3.2***	***14.2***	***-0.4***	***7.1***	***3.7***

International Equity Universe

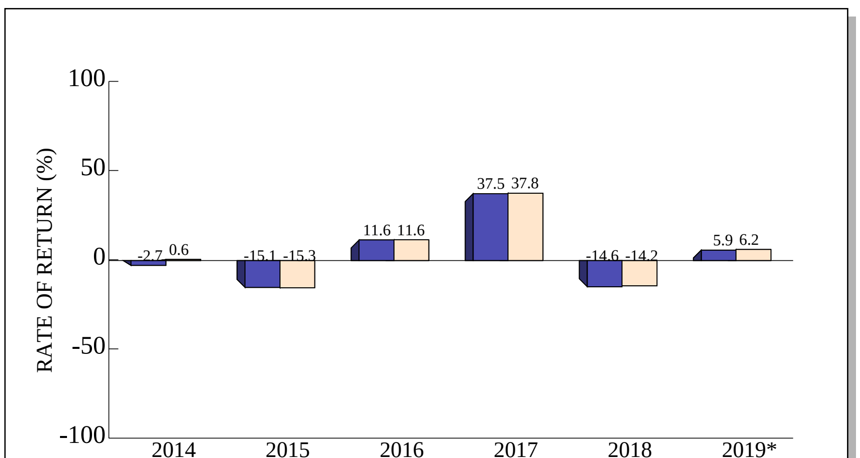
EMERGING MARKETS EQUITY RETURN COMPARISONS





Emerging Markets Universe

PORTFOLIO
EM INDEX

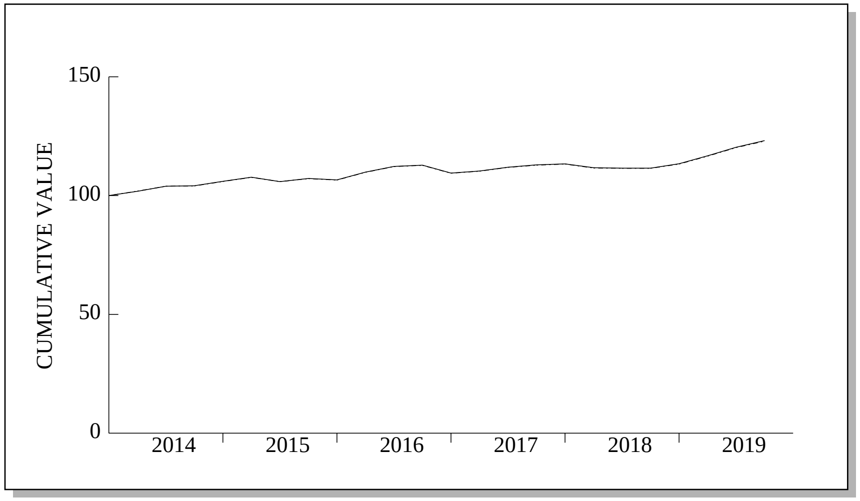


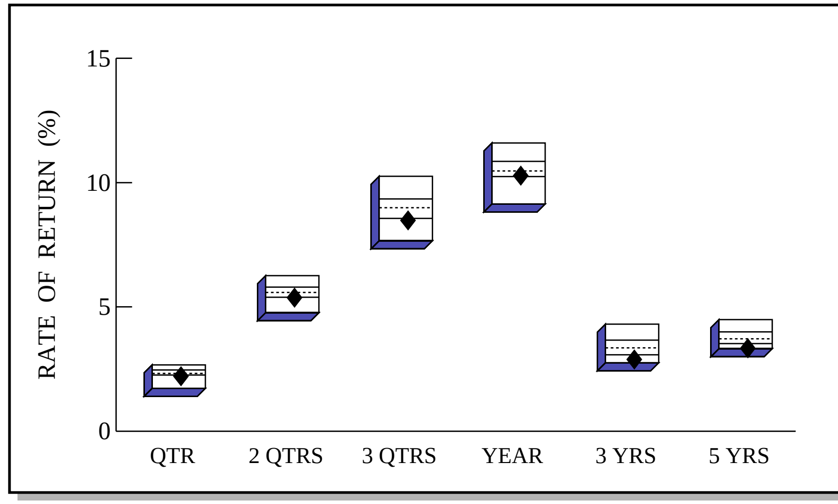
* Partial year

	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	-4.3	-3.6	5.9	-2.0	6.0	2.3
(RANK)	(67)	(71)	(66)	(72)	(50)	(67)
5TH %ILE	-0.5	3.6	17.1	10.7	10.0	6.5
25TH %ILE	-2.2	-0.2	11.9	3.6	8.0	4.4
MEDIAN	-3.6	-2.0	8.3	0.1	6.0	3.1
75TH %ILE	-4.6	-3.7	5.1	-2.7	4.5	2.0
95TH %ILE	-6.5	-5.7	1.6	-5.9	2.3	-0.3
EM Index	***-4.1***	***-3.4***	***6.2***	***-1.6***	***6.4***	***2.6***

Emerging Markets Universe

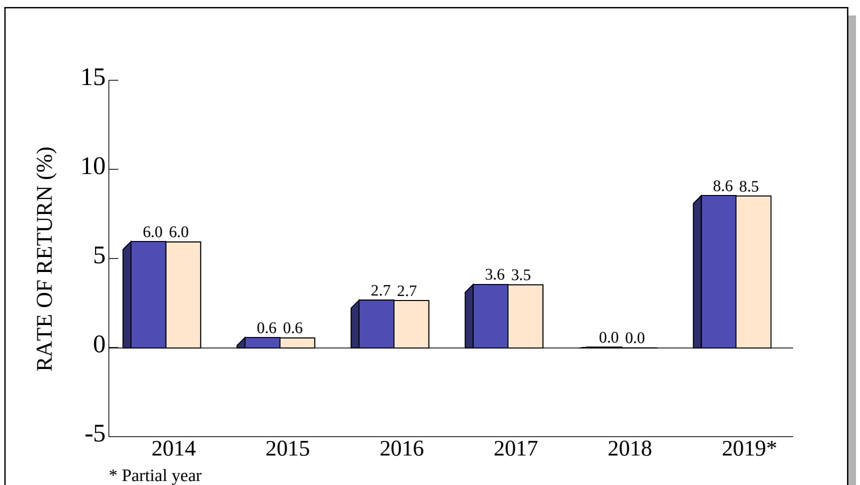
FIXED INCOME RETURN COMPARISONS





Core Fixed Income Universe

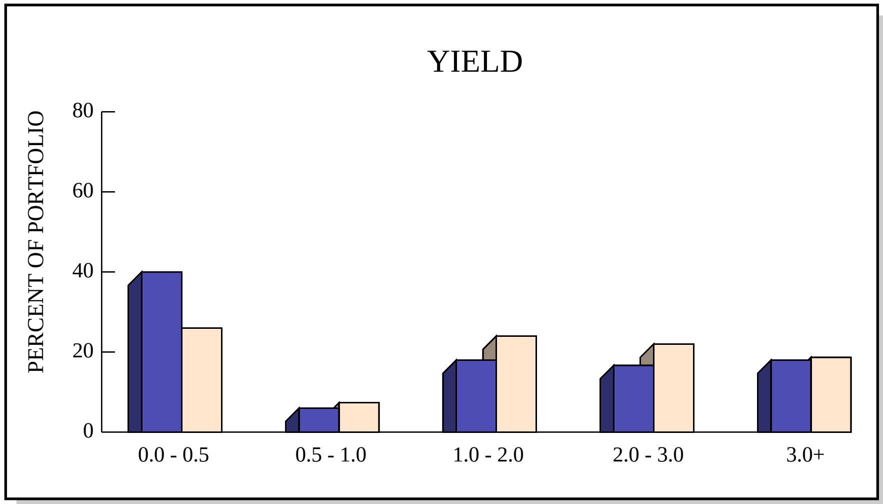
PORTFOLIO
AGGREGATE INDEX

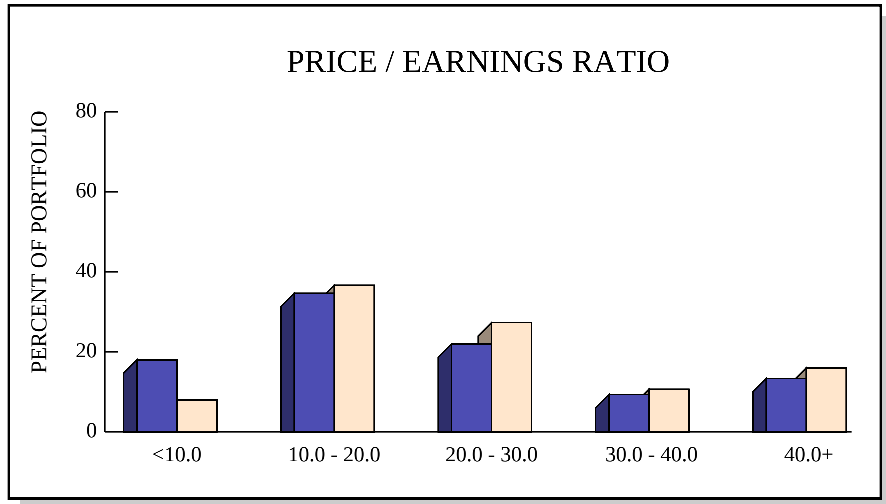


	QTR	2 QTRS	3 QTRS	YEAR	------ANNUALIZED------ 3 YRS	5 YRS
RETURN	2.3	5.4	8.6	10.3	3.0	3.4
(RANK)	(66)	(66)	(78)	(66)	(84)	(86)
5TH %ILE	2.7	6.3	10.3	11.6	4.3	4.5
25TH %ILE	2.5	5.8	9.3	10.9	3.7	4.0
MEDIAN	2.3	5.6	9.0	10.5	3.4	3.7
75TH %ILE	2.3	5.4	8.6	10.2	3.1	3.5
95TH %ILE	1.7	4.8	7.7	9.1	2.8	3.3
Agg	***2.3***	***5.4***	***8.5***	***10.3***	***2.9***	***3.4***

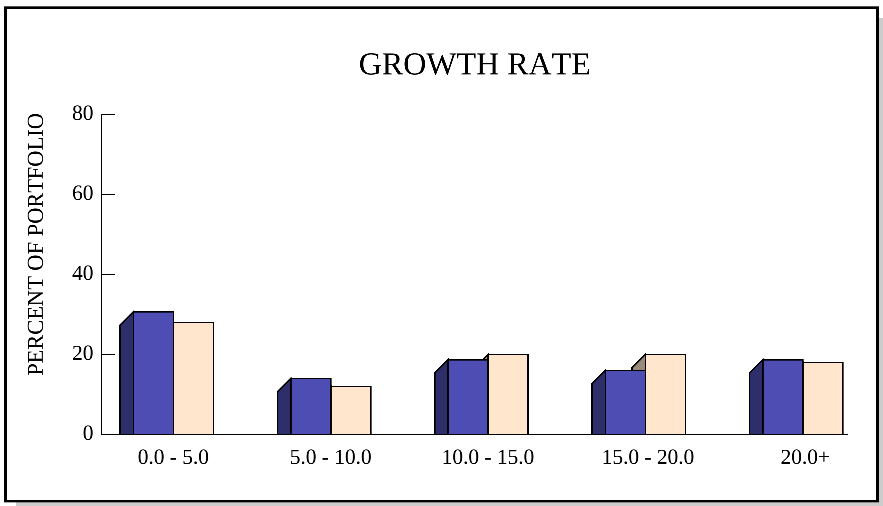
Core Fixed Income Universe

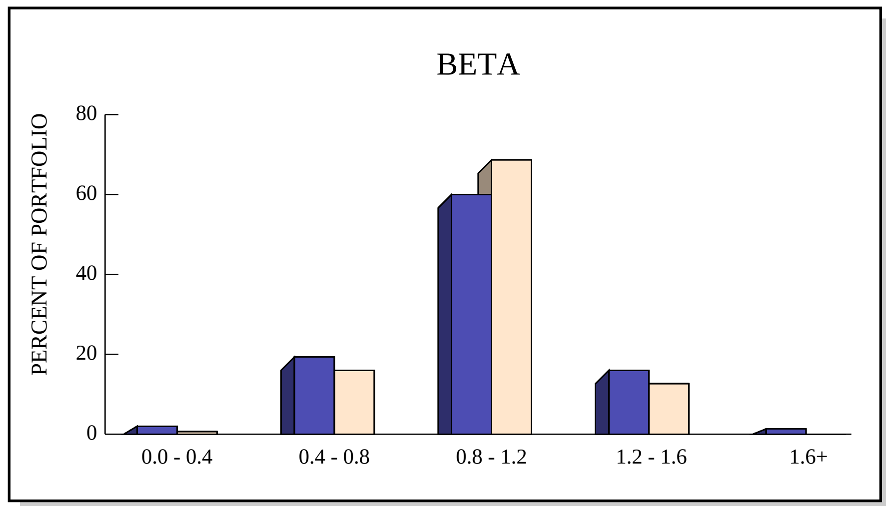
STOCK CHARACTERISTICS



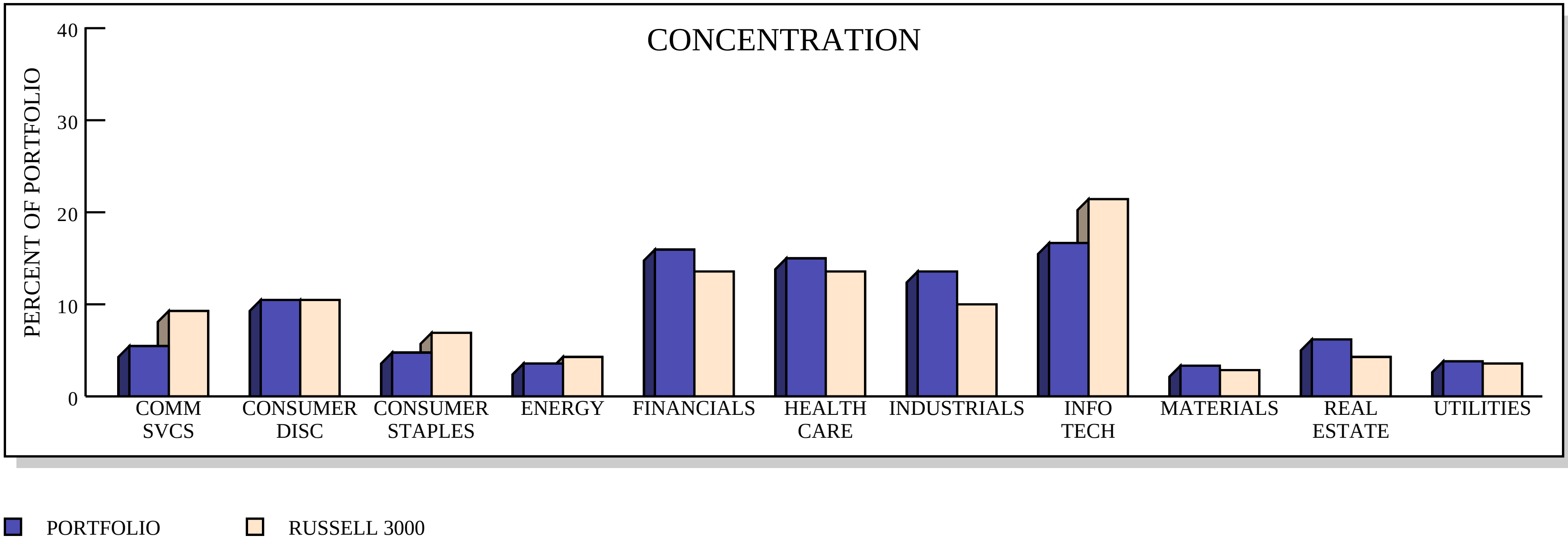


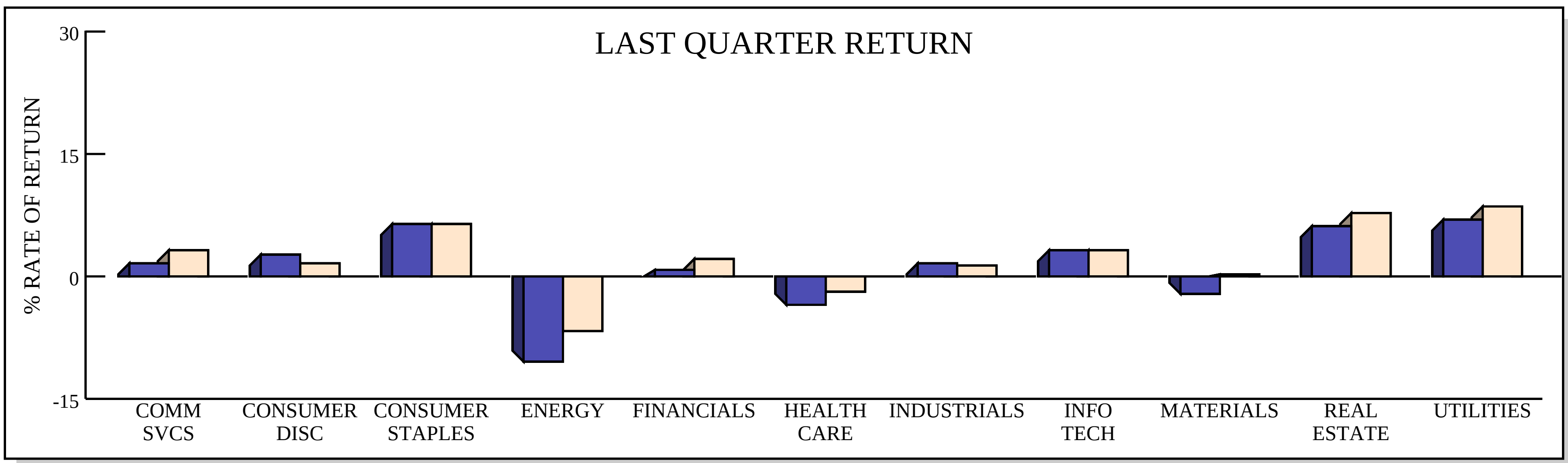
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	2,508	1.7%	11.2%	21.4	0.97
RUSSELL 3000	3,005	1.8%	12.0%	26.3	0.98



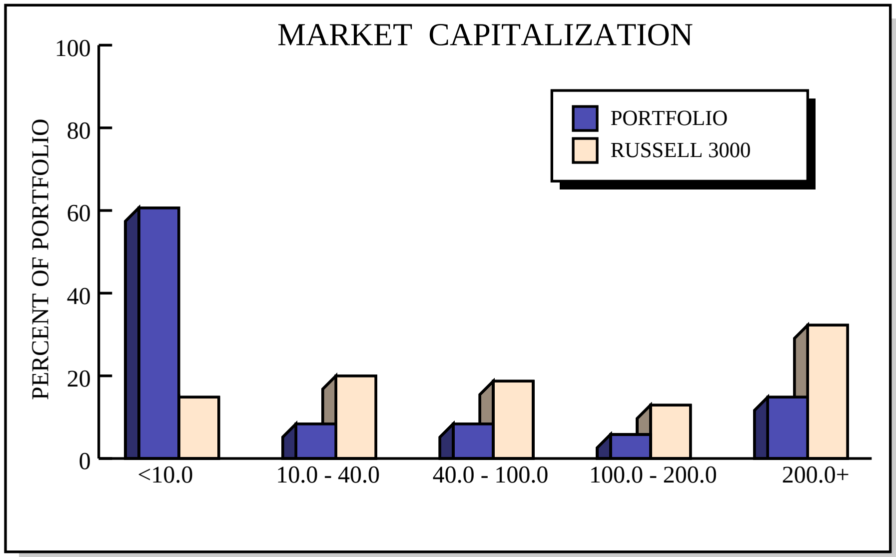


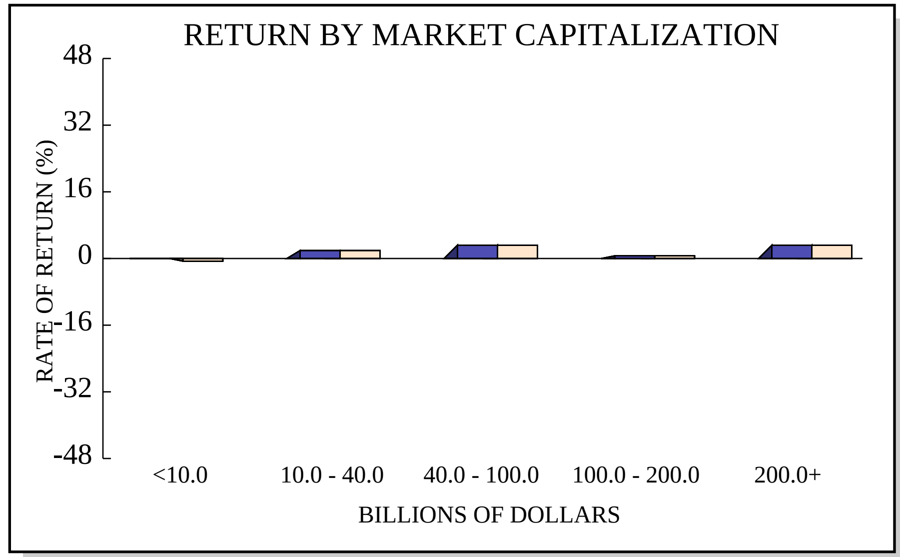
STOCK INDUSTRY ANALYSIS





TOP TEN HOLDINGS





TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	$ 2,389,648	1.71%	4.1%	Information Technology	$ 1061.6 B
2	APPLE INC	2,141,825	1.54%	13.6%	Information Technology	1012.2 B
3	AMAZON.COM INC	1,623,076	1.16%	-8.3%	Consumer Discretionary	858.7 B
4	FACEBOOK INC-CLASS A	964,481	.69%	-7.7%	Communication Services	428.4 B
5	BERKSHIRE HATHAWAY INC-CL B	918,200	.66%	-2.4%	Financials	288.4 B
6	JPMORGAN CHASE & CO	847,133	.61%	6.0%	Financials	376.3 B
7	ALPHABET INC-CL C	828,920	.59%	12.8%	Communication Services	423.4 B
8	ALPHABET INC-CL A	823,048	.59%	12.8%	Communication Services	365.8 B
9	JOHNSON & JOHNSON	768,647	.55%	-6.4%	Health Care	341.5 B
10	PROCTER & GAMBLE CO/THE	700,757	.50%	14.2%	Consumer Staples	311.3 B

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
REAL ESTATE
PERFORMANCE REVIEW
SEPTEMBER 2019

DAHAB Associates, Inc.

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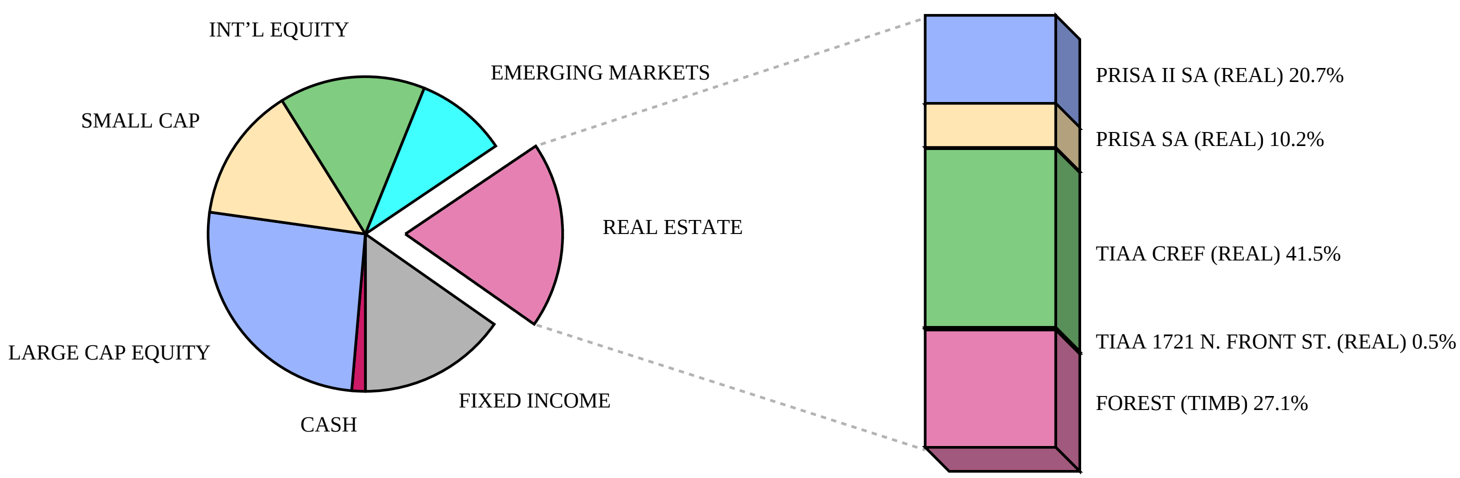
REAL ESTATE MANAGER SUMMARY



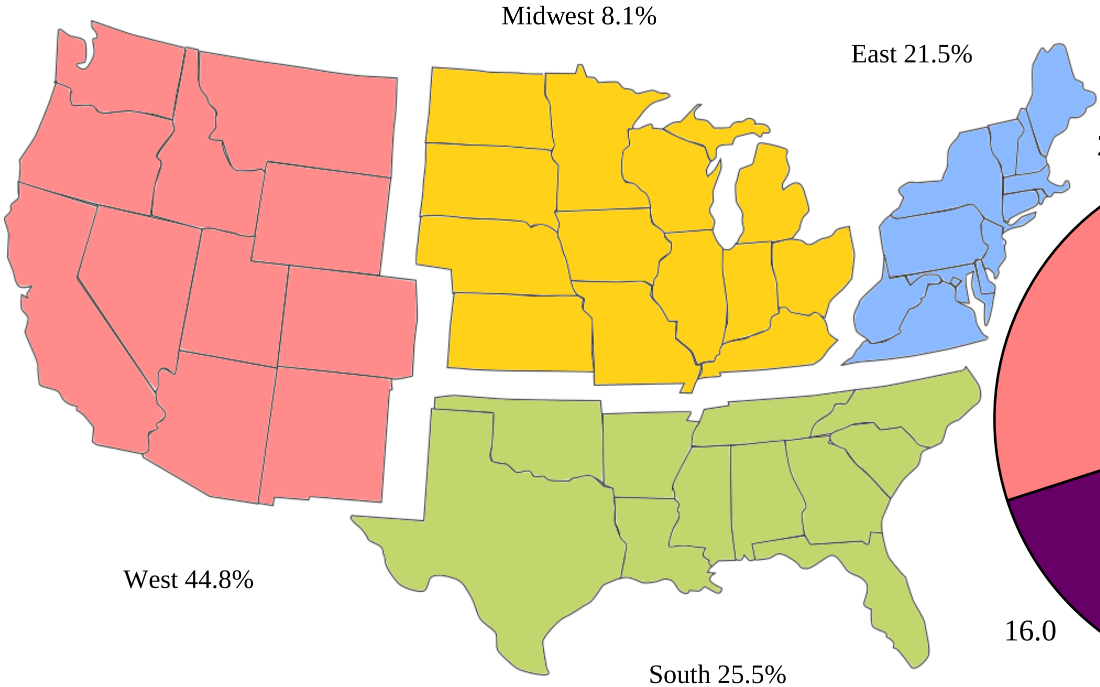
COMPONENT RETURNS AND RANKINGS

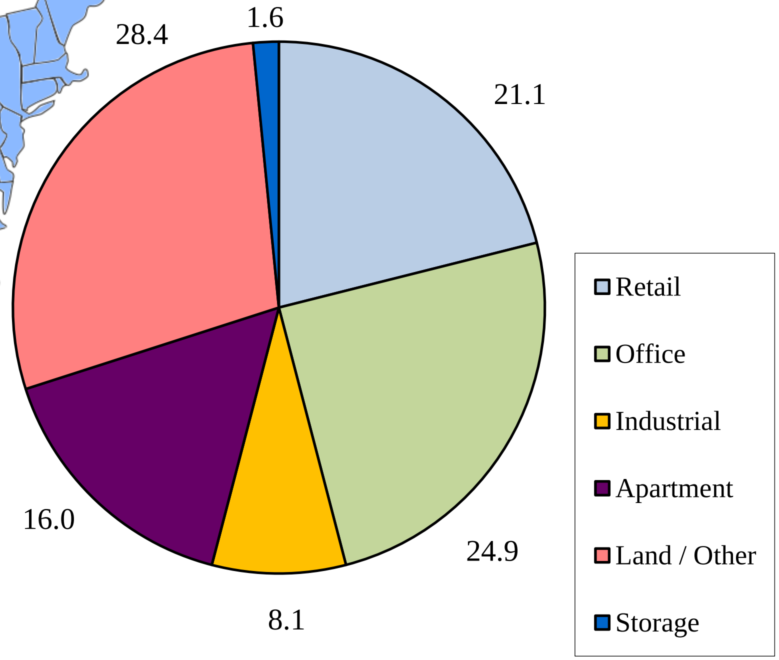
MANAGER	(UNIVERSE)	QTR		YTD		1 YEAR		3 YEARS		5 YEARS		MARKET VALUE
PRISA II SA		1.7	----	5.3	----	6.8	----	8.6	----	10.8	----	$103,380,918
PRISA SA		1.5	----	4.9	----	6.9	----	7.9	----	9.8	----	$51,125,042
TIAA CREF		3.6	----	7.7	----	9.7	----	8.2	----	8.7	----	$207,667,082
NCREIF NFI-ODCE Index		*1.3*	*----*	*3.8*	*----*	*5.6*	*----*	*7.3*	*----*	*9.3*	*----*	*----*
TIAA 1721 N. FRONT ST.		1.1	----	2.9	----	-3.5	----	0.0	----	----	----	$2,336,497
NCREIF Property Index		*1.4*	*----*	*4.8*	*----*	*6.2*	*----*	*6.8*	*----*	*8.6*	*----*	*----*
FOREST		-4.1	----	-0.9	----	-1.8	----	3.7	----	4.7	----	$135,802,793
NCREIF Timber Index		*0.2*	*----*	*1.3*	*----*	*2.1*	*----*	*3.1*	*----*	*4.4*	*----*	*----*
TOTAL		**0.8**	----	**4.5**	----	**5.4**	----	**6.8**	----	**7.9**	----	**$500,312,332**
NCREIF Property Index		*1.4*	*----*	*4.8*	*----*	*6.2*	*----*	*6.8*	*----*	*8.6*	*----*	*----*

PMRS Real Estate Commitment

As of September 30th, the Pennsylvania Municipal Retirement System's aggregate real estate portfolio was valued at $500,312,332, representing 19.2% of the total System's assets. TIAA distributed $2.5 million in July. For reference, the NCREIF Property Index returned 1.4% in the third quarter. Over the trailing year, that index returned 6.2%, and an annualized 8.6% for the last five years. Over the same time frames, the Bloomberg Barclays Aggregate Index returned 2.3%, 10.3%, and an annualized 3.4%, respectively.

Property Type/Geographical Distribution





PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM REAL ESTATE MANAGERS

PRISA SA

PRISA is an open-end, commingled, broadly diversified, core real estate equity fund invested in completed, income producing and well-leased properties.

Investment Return

On September 30th, 2019, the Pennsylvania Municipal Retirement System's Prudential PRISA SA portfolio was valued at $51,125,042, representing an increase of $656,736 from the June quarter's ending value of $50,468,306. Last quarter, the Fund posted withdrawals totaling $122,870, which partially offset the portfolio's net investment return of $779,606. Since there were no income receipts for the third quarter, the portfolio's net investment return figure was the product of net realized and unrealized capital gains totaling $779,606.

Property Type/Geographical Distribution

The office sector made up 35.8% of the PRISA SA portfolio. Industrial and retail properties made up 16.3% and 15.1% respectively. Apartments comprised 25.0% of the portfolio’s value, storage was 6.0%, and the remaining 1.8% was in other sectors or vacant land.

Geographically, PRISA’s portfolio was mostly situated in the East and West, whose percentages were 38.7% and 35.7%. Another 18.0% of the portfolio was situated in the South, while the remaining 7.6% resided in the Midwest.

Account Performance

During the third quarter, the Prudential PRISA SA account returned 1.5%, which was 0.2% above the NCREIF NFI-ODCE Index's return of 1.3%. Over the trailing year, the portfolio returned 6.9%, which was 1.3% above the benchmark's 5.6% return. Since December 1990, the Prudential PRISA SA portfolio returned 7.9% per annum, while the NCREIF NFI-ODCE Index returned an annualized 7.6% over the same time frame.

PRISA II

Investment Return

As of September 30th, 2019, the Pennsylvania Municipal Retirement System's Prudential PRISA II SA portfolio was valued at $103,380,918, which represented an increase of $1,465,022 from the June quarter's ending value of $101,915,896. Last quarter, the portfolio recorded a net withdrawal of $282,675, which only partially offset the fund's net investment return of $1,747,697. In the absence of income receipts for the quarter, the portfolio's net investment return was the product of $1,747,697 in realized and unrealized capital gains.

Property Type/Geographical Distribution

PRISA II, like PRISA, situates the largest component of its portfolio in office properties: 36.1% in this case. Retail and apartments also comprised significant portions, with the former at 19.0%, and the latter at 33.6%. Storage made up 4.6%. Investment in land was 5.1%, and industrial properties represented 1.6%.

Geographically, 32.4% of this portfolio was situated in the West, 42.9% resided in the East, while 22.5% was in the South. The remaining 2.2% was located in the Midwest.

Account Performance

In the third quarter, the Prudential PRISA II SA account gained 1.7%, which was 0.4% greater than the NCREIF NFI-ODCE Index's return of 1.3%. Over the trailing twelve-month period, the account returned 6.8%, which was 1.2% greater than the benchmark's 5.6% performance. Since June 2007, the Prudential PRISA II SA portfolio returned 4.8% annualized, while the NCREIF NFI-ODCE Index returned an annualized 5.6% over the same time frame.

FOREST INVESTMENT ADVISORS

The Forest Investment Advisors account is a discretionary account invested in land holdings mostly in the South, with lesser representation in the East and West.

Investment Return

As of September 30th, 2019, the Pennsylvania Municipal Retirement System's Forest Investment Associates Keystone Forest Investments portfolio was valued at $135,802,793, a decrease of $5,802,163 relative to the June quarter's ending value of $141,604,956. Last quarter, the Fund recorded no net contributions or withdrawals and posted a net investment loss for the period of $5,802,163. Since there were no income receipts during the third quarter, the portfolio's net investment losses were solely the result of capital losses (realized and unrealized).

Property Type/Geographical Distribution

The Forest fund held 48.1% of its assets in the South, 22.5% in the East, and 29.9% in the West. The Forest Investment Advisors account was solely invested in Timberland.

Forest held investments in Bear Island (Virginia), Fitz-Weller (New York), Carter-Pasture (Texas), Dupont (Georgia), Bennetts Creek (North Carolina), Black River (South Carolina), Coquille (Oregon), Bucktails (Pennsylvania), and North River (Washington).

Account Performance

During the third quarter, the Forest Investment Associates Keystone Forest Investments portfolio lost 4.1%, which was 4.3% less than the NCREIF Timber Index's return of 0.2%. Over the trailing year, the account returned -1.8%, which was 3.9% less than the benchmark's 2.1% return. Since March 1999, the portfolio returned 5.0% per annum, while the NCREIF Timber Index returned an annualized 6.2% over the same period.

TIAA-CREF

TIAA CREF is a discretionary account with investments in office, retail, industrial, and multi-family properties. The account holds eight properties: The Shoppes at Monarch Lakes is a retail shopping center in Miramar, Florida, and Des Peres Corner, another retail shopping center, is located in Des Peres, Missouri. The SR Ranch Shopping Center and Copley Corporate Center are located in San Diego, California. Industrial properties include Republic Distribution Center in Pasadena, Texas and the 526 Rt. 46 property is located in Teterboro, New Jersey. Stream Uptown is an apartment building in Seattle, Washington. The portfolio's most recent acquisition, the Fairway Center, is located in Connecticut.

TIAA CREF is a non-leveraged investment, whereas portfolios in the NCREIF NFD-ODCE index do utilize leverage.

Investment Return

On September 30th, 2019, the Pennsylvania Municipal Retirement System's TIAA CREF portfolio was valued at $207,667,082, representing an increase of $4,293,665 from the June quarter's ending value of $203,373,417. Last quarter, the Fund posted withdrawals totaling $2,499,627, which offset the portfolio's net investment return of $6,793,292. Income receipts totaling $2,840,273 plus net realized and unrealized capital gains of $3,953,019 combined to produce the portfolio's net investment return.

Property Type/Geographical Distribution

As of the quarter end, the TIAA CREF portfolio was situated mostly in the West, which comprised 63.5%. The Midwest represented 16.6%, while the South made up 14.4% and the remaining 5.4% was in the East.

Retail space was the largest sector, making up 37.6%. Offices comprised 32.0%, while 15.6% was in apartments and 14.8% was industrial.

Account Performance

For the third quarter, the TIAA CREF account gained 3.6%, which was 2.3% greater than the NCREIF NFI-ODCE Index's return of 1.3%. Over the trailing twelve-month period, the account returned 9.7%, which was 4.1% above the benchmark's 5.6% performance. Since June 2008, the portfolio returned 3.9% per annum, while the NCREIF NFI-ODCE Index returned an annualized 5.4% over the same period.

TIAA NORTH FRONT STREET

The office building at 1721 N. Front St. in Harrisburg, PA was purchased in 2016.

Investment Return

On September 30th, 2019, the Pennsylvania Municipal Retirement System's TIAA CREF 1721 North Front Street portfolio was valued at $2,336,497, representing a decrease of $101,205 relative to the June ending value of $2,437,702. Over the last three months, the portfolio recorded $114,207 in net withdrawals, which overshadowed the fund's net investment return of $13,002. In the absence of income receipts during the quarter, the portfolio's net investment return figure was the result of $13,002 in realized and unrealized capital gains.

Account Performance

For the third quarter, the TIAA CREF 1721 North Front Street portfolio returned 1.1%, which was 0.3% less than the NCREIF Property Index's return of 1.4%. Over the trailing twelve-month period, the account returned -3.5%, which was 9.7% below the benchmark's 6.2% return. Since June 2016, the portfolio returned 0.0% on an annualized basis, while the NCREIF Property Index returned an annualized 6.8% over the same period.

Real Estate Investor Report
TIAA CREF (Excluding N. Front Street)

Net IRR Since Inception		**7.02%**	**As of**
Market Value	**$**	**207,667,082**	**9/30/2019**

Year		Capital Calls		Distributions		Fees
2008	$	34,330,250	$	-	$	244,006
2009	$	-	$	1,168,000	$	319,220
2010	$	50,300,736	$	-	$	422,549
2011	$	23,903,720	$	406,336	$	690,494
2012	$	-	$	3,600,000	$	892,330
2013	$	15,642,440	$	6,240,000	$	972,519
2014	$	47,594,800	$	28,000,000	$	1,210,923
2015	$	-	$	24,000,000	$	1,493,589
2016	$	26,333,676	$	6,308,805	$	1,604,408
2017	$	-	$	8,062,624	$	1,709,860
2018	$	-	$	7,721,531	$	1,756,438
2019	$	-	$	5,158,785	$	1,347,039
Total	**$**	**198,105,622**	**$**	**90,666,081**	**$**	**12,663,375**

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM

PRELIMINARY PERFORMANCE SUMMARY AS OF NOVEMBER 2019

Portfolio	QTD	YTD	Market Value	%
Total Portfolio	**4.3**	**18.1**	**$2,733,891,482**	**100%**
Total Portfolio Shadow Index	***3.6***	***15.9***	----	
State Street Global Advisors	2.9	11.7	$978,125,975	35.8%
SSgA Shadow Index	***2.9***	***11.9***	----	
State Street Global Advisors S&P Conservative Index	5.9	27.6	$58,884,216	2.2%
S&P 500	***5.9***	***27.6***	----	
Federated Large Cap Growth Equity	6.8	36.0	$108,008,631	4.0%
Polen Capital Management Focus Growth	7.7	35.3	$243,625,552	8.9%
Russell 1000 Growth	***7.4***	***32.4***	----	
Eagle Capital Management Equity	8.4	31.5	$159,630,077	5.8%
LSV Asset Management US Large Cap Value	6.5	22.7	$170,444,539	6.2%
Russell 1000 Value	***4.5***	***23.2***	----	
State Street Global Advisors Russell 2000 Index Fund	6.9	22.1	$89,569,606	3.3%
Russell 2000	***6.8***	***22.0***	----	
AMI Asset Management Small Cap Growth Equity	5.6	6.1	$36,258,782	1.3%
Copeland Capital Management Small Cap Dividend Growth	3.9	28.1	$47,130,380	1.7%
Emerald Advisors Diversified Small Cap Growth	9.1	28.4	$68,353,077	2.5%
Russell 2000 Growth	***8.9***	***25.6***	----	
LSV Asset Management US Small Cap Value Equity	5.7	21.1	$76,015,810	2.8%
Smith, Graham & Company Small Cap Value	7.9	29.2	$76,722,983	2.8%
Russell 2000 Value	***4.8***	***18.2***	----	
GlobeFlex Capital	----	----	$4,242	0.0%
HGK Asset Management HGK International Equity	7.0	22.4	$129,377,285	4.7%
Hardman Johnston Global Advisors International Equity	9.6	29.2	$122,489,328	4.5%
Jarislowsky Fraser JFL International Equity	----	----	$508,941	0.0%
Loop Capital Transition	----	----	$59	0.0%
Mercator	----	----	$17,819	0.0%
WHV Investment Management	----	----	$2,947	0.0%
S&P BMI Developed Ex US Index	***4.8***	***18.4***	----	
State Street Global Advisors World Ex-US	4.6	19.2	$168,891,694	6.2%
MSCI World Ex US	***4.6***	***19.4***	----	
State Street Global Advisors Emerging Markets Index	4.1	10.2	$257,419,844	9.4%
MSCI Emerging Markets	***4.1***	***10.6***	----	
Prudential PRISA SA	----	4.9	$51,125,042	1.9%
Prudential PRISA II SA	----	5.3	$103,380,918	3.8%
TIAA CREF	----	7.7	$205,616,605	7.5%
NCREIF NFI-ODCE Index	----	***3.8***	----	
TIAA CREF 1721 North Front Street	----	2.9	$2,336,497	0.1%
NCREIF Property Index	----	***4.8***	----	
Forest Investment Associates Keystone Forest Investments	----	-0.9	$135,802,793	5.0%
NCREIF Timber Index	----	***1.3***	----	
State Street Global Advisors Bond Market	0.3	8.8	$403,360,615	14.8%
Bloomberg Barclays Aggregate Index	***0.2***	***8.8***	----	
BNY Cash	----	----	$2,395,199	0.1%
Treasury Pool STIP	----	----	$16,518,001	0.6%

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PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ALLOCATIONS & TARGETS AS OF NOVEMBER 2019

Manager	Target	Market Value	%	+ / -	Market Value Ex-cash	%	+ / -
Total Portfolio	**-**	**$2,733,891,482**	**100%**		**$2,733,891,482**	**100%**	
Large Cap	**25**	**740,593,015**	**27.1**	**2.1**	**729,503,330**	**26.7**	**1.7**
Eagle		159,630,077	5.8		158,113,214	5.8	
Federated		108,008,631	4.0		104,532,938	3.8	
LSV Large Cap		170,444,539	6.2		169,057,691	6.2	
Polen		243,625,552	8.9		238,915,271	8.7	
SSgA S&P 500		58,884,216	2.2		58,884,216	2.2	
Small Cap	**15**	**394,050,638**	**14.4**	**-0.6**	**387,988,643**	**14.2**	**-0.8**
AMI		36,258,782	1.3		34,365,779	1.3	
Copeland		47,130,380	1.7		45,913,486	1.7	
Emerald		68,353,077	2.5		67,558,669	2.5	
LSV Small Cap		76,015,810	2.8		75,871,196	2.8	
Smith, Graham & Co		76,722,983	2.8		74,709,907	2.7	
SSgA Russell 2000		89,569,606	3.3		89,569,606	3.3	
International Equity	**15**	**421,292,315**	**15.4**	**0.4**	**417,193,792**	**15.3**	**0.3**
GlobeFlex		4,242	0.0		4,242	0.0	
HGK		129,377,285	4.7		125,959,598	4.6	
Jarislowsky Fraser		508,941	0.0		508,847	0.0	
Johnston		122,489,328	4.5		121,808,645	4.5	
Loop (transitional)		59	0.0		0	0.0	
Mercator		17,819	0.0		17,819	0.0	
SSgA International		168,891,694	6.2		168,891,694	6.2	
WHV		2,947	0.0		2,947	0.0	
Emerging Markets	**10**	**257,419,844**	**9.4**	**-0.6**	**257,419,844**	**9.4**	**-0.6**
SSgA Emerging Mkts		257,419,844	9.4		257,419,844	9.4	
Real Assets	**20**	**498,261,855**	**18.2**	**-1.8**	**498,261,855**	**18.2**	**-1.8**
Forest		135,802,793	5.0		135,802,793	5.0	
PRISA I		51,125,042	1.9		51,125,042	1.9	
PRISA II		103,380,918	3.8		103,380,918	3.8	
TIAA N. Front St.		2,336,497	0.1		2,336,497	0.1	
TIAA CREF		205,616,605	7.5		205,616,605	7.5	
Fixed Income	**15**	**403,360,615**	**14.8**	**-0.2**	**403,360,615**	**14.8**	**-0.2**
SSgA BC Aggregate		403,360,615	14.8		403,360,615	14.8	
Cash & Equivalents	**0**	**18,913,200**	**0.7**	**0.7**	**40,163,403**	**1.5**	**1.5**
BNY Cash		2,395,199	0.1		2,395,199	0.1	
STIP Cash		16,518,001	0.6		16,518,001	0.6	
Manager Cash		*n/a*	-		21,250,203	0.8	

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PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ALLOCATIONS & TARGETS AS OF DECEMBER 2019

Manager	Target	Market Value	%	+ / -	Market Value Ex-cash	%	+ / -
Total Portfolio	**-**	**$2,797,568,023**	**100%**		**$2,797,568,023**	**100%**	
Large Cap	**25**	**759,050,103**	**27.1**	**2.1**	**747,838,883**	**26.7**	**1.7**
Eagle		163,486,666	5.8		160,756,637	5.7	
Federated		109,912,186	3.9		106,786,010	3.8	
LSV Large Cap		174,824,518	6.2		174,308,467	6.2	
Polen		250,171,677	8.9		245,332,713	8.8	
SSgA S&P 500		60,655,056	2.2		60,655,056	2.2	
Small Cap	**15**	**405,428,747**	**14.5**	**-0.5**	**399,879,666**	**14.3**	**-0.7**
AMI		37,513,048	1.3		36,377,775	1.3	
Copeland		47,878,090	1.7		46,364,440	1.7	
Emerald		70,152,540	2.5		68,834,967	2.5	
LSV Small Cap		78,265,826	2.8		77,425,349	2.8	
Smith, Graham & Co		79,486,947	2.8		78,744,839	2.8	
SSgA Russell 2000		92,132,296	3.3		92,132,296	3.3	
International Equity	**15**	**437,741,073**	**15.6**	**0.6**	**433,719,931**	**15.5**	**0.5**
GlobeFlex		4,291	0.0		4,291	0.0	
HGK		135,684,705	4.9		133,847,770	4.8	
Jarislowsky Fraser		522,816	0.0		522,816	0.0	
Johnston		127,212,909	4.5		125,029,422	4.5	
Mercator		18,141	0.0		18,141	0.0	
SSgA International		174,294,490	6.2		174,294,490	6.2	
WHV		3,721	0.0		3,001	0.0	
Emerging Markets	**10**	**276,636,099**	**9.9**	**-0.1**	**276,636,099**	**9.9**	**-0.1**
SSgA Emerging Mkts		276,636,099	9.9		276,636,099	9.9	
Real Assets	**20**	**498,200,923**	**17.8**	**-2.2**	**498,200,923**	**17.8**	**-2.2**
Forest		135,802,793	4.9		135,802,793	4.9	
PRISA I		51,125,042	1.8		51,125,042	1.8	
PRISA II		103,380,918	3.7		103,380,918	3.7	
TIAA N. Front St.		2,275,565	0.1		2,275,565	0.1	
TIAA CREF		205,616,605	7.3		205,616,605	7.3	
Fixed Income	**15**	**403,053,072**	**14.4**	**-0.6**	**403,053,072**	**14.4**	**-0.6**
SSgA BC Aggregate		403,053,072	14.4		403,053,072	14.4	
Cash & Equivalents	**0**	**17,458,006**	**0.6**	**0.6**	**38,239,449**	**1.4**	**1.4**
BNY Cash		2,459,919	0.1		2,459,919	0.1	
STIP Cash		14,998,087	0.5		14,998,087	0.5	
Manager Cash		*n/a*	-		20,781,443	0.7	

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EXECUTIVE SUMMARY - GROSS OF FEES

PERFORMANCE SUMMARY

	Quarter	YTD /1Y	3 Year	5 Year	10 Year	Since 12/85
Total Portfolio	6.8	20.9	11.1	8.4	9.1	8.9
SHADOW INDEX	6.1	18.7	9.6	7.6	8.8	8.7
Domestic Equity	10.1	33.1	15.2	11.4	13.3	----
Russell 3000	9.1	31.0	14.6	11.2	13.4	10.7
Large Cap Equity	10.1	35.4	18.6	13.2	14.5	11.2
S&P 500	9.1	31.5	15.3	11.7	13.5	10.8
Small Cap Equity	9.9	28.7	9.2	8.5	12.5	----
Russell 2000	9.9	25.5	8.6	8.2	11.8	9.4
International Equity	11.0	29.3	13.9	8.6	7.7	----
Int’l Index	8.2	22.7	10.1	6.1	6.2	----
S&P BMI Ex US	8.7	22.8	10.1	6.4	6.4	----
MSCI World Ex US	7.9	23.2	10.0	6.0	5.9	7.4
MSCI EAFE	8.2	22.7	10.1	6.2	6.0	7.8
Emerging Markets Equity	11.8	18.4	11.6	5.6	3.5	----
EM Index	11.9	18.9	12.0	5.8	4.1	----
S&P BMI EMGM	11.1	19.9	12.0	6.2	4.3	----
MSCI Emg Mkts	11.9	18.9	12.0	6.0	4.0	----
Real Estate	0.0	4.5	6.5	7.9	8.6	6.9
NCREIF NPI	0.0	4.8	6.2	7.9	10.0	7.7
Aggregate Index	0.2	8.7	4.0	3.1	3.8	6.4
Fixed Income	0.2	8.8	4.1	3.1	3.8	6.4
Aggregate Index	0.2	8.7	4.0	3.1	3.8	6.4

ASSET ALLOCATION

Large Cap Equity	26.7%	$ 747,838,883
Small Cap	14.3%	399,879,666
Int’l Equity	15.5%	433,719,931
Emerging Markets	9.9%	276,636,099
Real Estate	17.8%	498,200,923
Fixed Income	14.4%	403,053,072
Cash	1.4%	38,239,449
Total Portfolio	100.0%	2,797,568,023

INVESTMENT RETURN

Market Value 9/2019	$ 2,611,855,597
Contribs / Withdrawals	7,672,615
Income	3,882,009
Capital Gains / Losses	174,157,802
Market Value 12/2019	$ 2,797,568,023

EXECUTIVE SUMMARY - NET OF FEES

PERFORMANCE SUMMARY

	Quarter	YTD /1Y	3 Year	5 Year	10 Year
Total Portfolio - Net	6.7	20.4	10.6	7.9	8.6
SHADOW INDEX	6.1	18.7	9.6	7.6	8.8
Domestic Equity - Net	9.9	32.5	14.6	10.9	12.9
Russell 3000	9.1	31.0	14.6	11.2	13.4
Large Cap Equity - Net	10.0	34.7	18.0	12.6	14.1
S&P 500	9.1	31.5	15.3	11.7	13.5
Small Cap Equity - Net	9.8	28.0	8.6	8.0	12.1
Russell 2000	9.9	25.5	8.6	8.2	11.8
International Equity - Net	10.9	28.7	13.3	8.1	7.1
Int'l Index	8.2	22.7	10.1	6.1	6.2
S&P BMI Ex US	8.7	22.8	10.1	6.4	6.4
MSCI World Ex US	7.9	23.2	10.0	6.0	5.9
MSCI EAFE	8.2	22.7	10.1	6.2	6.0
Emerging Markets Equity - Net	11.8	18.3	11.5	5.6	3.5
EM Index	11.9	18.9	12.0	5.8	4.1
S&P BMI EMGM	11.1	19.9	12.0	6.2	4.3
MSCI Emg Mkts	11.9	18.9	12.0	6.0	4.0
Real Estate - Net	0.0	3.8	5.6	7.0	7.7
NCREIF NPI	0.0	4.8	6.2	7.9	10.0
Aggregate Index	0.2	8.7	4.0	3.1	3.8
Fixed Income - Net	0.2	8.7	4.0	3.0	3.7
Aggregate Index	0.2	8.7	4.0	3.1	3.8

ASSET ALLOCATION

Large Cap Equity	26.7%	$ 747,838,883
Small Cap	14.3%	399,879,666
Int'l Equity	15.5%	433,719,931
Emerging Markets	9.9%	276,636,099
Real Estate	17.8%	498,200,923
Fixed Income	14.4%	403,053,072
Cash	1.4%	38,239,449
Total Portfolio	100.0%	2,797,568,023

INVESTMENT RETURN

Market Value 9/2019	$ 2,611,855,597
Contribs / Withdrawals	7,672,615
Income	3,882,009
Capital Gains / Losses	174,157,802
Market Value 12/2019	$ 2,797,568,023

PRELIMINARY MANAGER PERFORMANCE SUMMARY - GROSS OF FEES

Portfolio	QTR	CYTD	1 Year	3 Years	5 Years	10 Years	Inception	
Composite	6.8	20.9	20.9	11.1	8.4	9.1	8.9	12/85
Shadow Index	*6.1*	*18.7*	*18.7*	*9.6*	*7.6*	*8.8*	*8.7*	*12/85*
SSgA	5.9	14.9	14.9	7.7	5.1	5.2	6.6	03/97
Shadow Index	*5.9*	*15.3*	*15.3*	*7.9*	*5.1*	*5.4*	*7.3*	*03/97*
Federated	8.7	38.4	38.4	20.4	----	----	13.0	06/15
Russell 1000G	*10.6*	*36.4*	*36.4*	*20.5*	*14.6*	*15.2*	*15.4*	*06/15*
Polen	10.6	38.9	38.9	24.6	17.9	----	17.7	09/10
Russell 1000G	*10.6*	*36.4*	*36.4*	*20.5*	*14.6*	*15.2*	*16.0*	*09/10*
Eagle	11.0	34.7	34.7	16.7	----	----	17.5	03/16
Russell 1000V	*7.4*	*26.5*	*26.5*	*9.7*	*8.3*	*11.8*	*11.9*	*03/16*
LSV Large Cap	9.2	25.8	25.8	10.2	7.9	12.3	8.9	03/04
Russell 1000V	*7.4*	*26.5*	*26.5*	*9.7*	*8.3*	*11.8*	*8.1*	*03/04*
AMI	9.3	9.8	9.8	----	----	----	1.7	09/17
Russell 2000G	*11.4*	*28.4*	*28.4*	*12.5*	*9.3*	*13.0*	*9.1*	*09/17*
Copeland	5.5	30.1	30.1	----	----	----	12.4	09/17
Russell 2000G	*11.4*	*28.4*	*28.4*	*12.5*	*9.3*	*13.0*	*9.1*	*09/17*
Emerald	12.0	31.8	31.8	15.0	11.8	15.8	11.4	09/98
Russell 2000G	*11.4*	*28.4*	*28.4*	*12.5*	*9.3*	*13.0*	*8.1*	*09/98*
LSV Small Cap	8.8	24.7	24.7	4.3	----	----	4.3	12/16
Russell 2000V	*8.5*	*22.4*	*22.4*	*4.8*	*7.0*	*10.6*	*4.8*	*12/16*
Smith, Graham & Co	11.7	33.8	33.8	5.4	----	----	5.4	12/16
Russell 2000V	*8.5*	*22.4*	*22.4*	*4.8*	*7.0*	*10.6*	*4.8*	*12/16*
HGK	12.2	28.3	28.3	14.1	9.1	----	10.6	03/12
S&P BMI Ex US	*8.7*	*22.8*	*22.8*	*10.1*	*6.4*	*6.4*	*6.9*	*03/12*
Hardman Johnston	13.8	34.2	34.2	17.5	10.8	----	10.3	03/12
S&P BMI Ex US	*8.7*	*22.8*	*22.8*	*10.1*	*6.4*	*6.4*	*6.9*	*03/12*
PRISA II SA	0.0	5.3	5.3	7.6	10.1	13.9	4.7	06/07
NCREIF ODCE	*0.0*	*3.8*	*3.8*	*6.6*	*8.6*	*11.3*	*5.5*	*06/07*
PRISA SA	0.0	4.9	4.9	7.0	9.0	12.0	7.8	12/90
NCREIF ODCE	*0.0*	*3.8*	*3.8*	*6.6*	*8.6*	*11.3*	*7.5*	*12/90*
TIAA CREF	0.0	7.7	7.7	8.0	8.9	8.3	3.9	06/08
NCREIF ODCE	*0.0*	*3.8*	*3.8*	*6.6*	*8.6*	*11.3*	*5.3*	*06/08*
TIAA 1721 N. Front St.	0.0	2.9	2.9	2.4	----	----	0.0	06/16
NCREIF NPI	*0.0*	*4.8*	*4.8*	*6.2*	*7.9*	*10.0*	*6.3*	*06/16*
Forest	0.0	-0.9	-0.9	3.5	5.0	4.5	4.9	03/99
NCREIF Timber	*0.0*	*1.3*	*1.3*	*2.7*	*3.1*	*4.5*	*6.1*	*03/99*

PRELIMINARY MANAGER PERFORMANCE SUMMARY - NET OF FEES

Portfolio	QTR	CYTD	1 Year	3 Years	5 Years	10 Years	Inception	
Composite	6.7	20.4	20.4	10.6	7.9	8.6	----	12/85
Shadow Index	*6.1*	*18.7*	*18.7*	*9.6*	*7.6*	*8.8*	*8.7*	*12/85*
SSgA	5.9	14.9	14.9	7.6	5.0	5.1	6.5	03/97
Shadow Index	*5.9*	*15.3*	*15.3*	*7.9*	*5.1*	*5.4*	*7.3*	*03/97*
Federated	8.5	37.4	37.4	19.5	----	----	12.2	06/15
Russell 1000G	*10.6*	*36.4*	*36.4*	*20.5*	*14.6*	*15.2*	*15.4*	*06/15*
Polen	10.5	38.4	38.4	24.1	17.4	----	17.1	09/10
Russell 1000G	*10.6*	*36.4*	*36.4*	*20.5*	*14.6*	*15.2*	*16.0*	*09/10*
Eagle	10.8	33.7	33.7	15.8	----	----	16.6	03/16
Russell 1000V	*7.4*	*26.5*	*26.5*	*9.7*	*8.3*	*11.8*	*11.9*	*03/16*
LSV Large Cap	9.1	25.4	25.4	9.8	7.5	11.8	8.5	03/04
Russell 1000V	*7.4*	*26.5*	*26.5*	*9.7*	*8.3*	*11.8*	*8.1*	*03/04*
AMI	9.1	9.0	9.0	----	----	----	0.9	09/17
Russell 2000G	*11.4*	*28.4*	*28.4*	*12.5*	*9.3*	*13.0*	*9.1*	*09/17*
Copeland	5.3	29.1	29.1	----	----	----	11.5	09/17
Russell 2000G	*11.4*	*28.4*	*28.4*	*12.5*	*9.3*	*13.0*	*9.1*	*09/17*
Emerald	11.8	31.2	31.2	14.5	11.3	15.3	10.9	09/98
Russell 2000G	*11.4*	*28.4*	*28.4*	*12.5*	*9.3*	*13.0*	*8.1*	*09/98*
LSV Small Cap	8.7	24.0	24.0	3.7	----	----	3.7	12/16
Russell 2000V	*8.5*	*22.4*	*22.4*	*4.8*	*7.0*	*10.6*	*4.8*	*12/16*
Smith, Graham & Co	11.6	32.9	32.9	4.7	----	----	4.7	12/16
Russell 2000V	*8.5*	*22.4*	*22.4*	*4.8*	*7.0*	*10.6*	*4.8*	*12/16*
HGK	12.0	27.5	27.5	13.3	8.3	----	9.9	03/12
S&P BMI Ex US	*8.7*	*22.8*	*22.8*	*10.1*	*6.4*	*6.4*	*6.9*	*03/12*
Hardman Johnston	13.6	33.4	33.4	16.8	10.1	----	9.6	03/12
S&P BMI Ex US	*8.7*	*22.8*	*22.8*	*10.1*	*6.4*	*6.4*	*6.9*	*03/12*
PRISA II SA	0.0	4.4	4.4	6.5	9.1	12.7	3.7	06/07
NCREIF ODCE	*0.0*	*3.8*	*3.8*	*6.6*	*8.6*	*11.3*	*5.5*	*06/07*
PRISA SA	0.0	4.2	4.2	6.1	8.1	10.9	----	12/90
NCREIF ODCE	*0.0*	*3.8*	*3.8*	*6.6*	*8.6*	*11.3*	*7.5*	*12/90*
TIAA CREF	0.0	7.0	7.0	7.1	8.0	7.4	2.9	06/08
NCREIF ODCE	*0.0*	*3.8*	*3.8*	*6.6*	*8.6*	*11.3*	*5.3*	*06/08*
TIAA 1721 N. Front St.	-0.5	0.7	0.7	0.0	----	----	-2.4	06/16
NCREIF NPI	*0.0*	*4.8*	*4.8*	*6.2*	*7.9*	*10.0*	*6.3*	*06/16*
Forest	0.0	-1.4	-1.4	2.7	4.2	3.7	4.4	03/99
NCREIF Timber	*0.0*	*1.3*	*1.3*	*2.7*	*3.1*	*4.5*	*6.1*	*03/99*