



Pennsylvania Municipal Retirement System

Executive Summary (Finalized)
December 2019

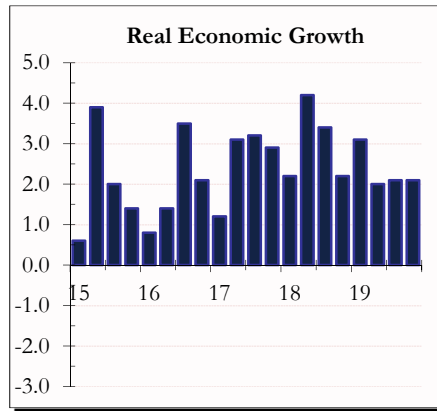


DAHAB ASSOCIATES
New York Massachusetts Pennsylvania Texas Florida

ECONOMIC ENVIRONMENT

Contradicting Signals

In a stunning contradiction, the Federal Reserve cut rates in 2019, despite continued strength from the US economy. However, in



notes following the most recent meeting, the Fed indicated that “the current stance of monetary policy is appropriate.” Its new, acquiescent stance is unsurprising when taking into account stable economic data and the continued rise of asset prices. As of December 31, the

Fed Funds Rate was targeted at 1.50-1.75%.

Payroll growth was better than expected in the quarter and was firmer in the second half of 2019, relative to the first half. The labor force participation rate, unemployment rate, and employment-to-population rate were all unchanged. While continuing improvement in these statistics would be welcome, they are already at acceptable levels.

Housing activity indicators demonstrated improvement again this quarter. The decline of mortgage interest rates throughout the year has boosted both new and existing home sales due to their enhanced affordability across the nation. There is one spot of unease: while home-builder sentiment is near pre-crisis highs, single-family permits have lagged.

GDP grew at a seasonably and inflation adjusted annual rate of 2.1% in the fourth quarter. The economy’s expansion reflected a

boost from net trade, as imports dropped and exports increased sharply.

The ISM Manufacturing PMI decreased to 47.2, the lowest PMI in 10 years. Regional Fed surveys also point to sluggish manufacturing growth in most districts throughout the country.

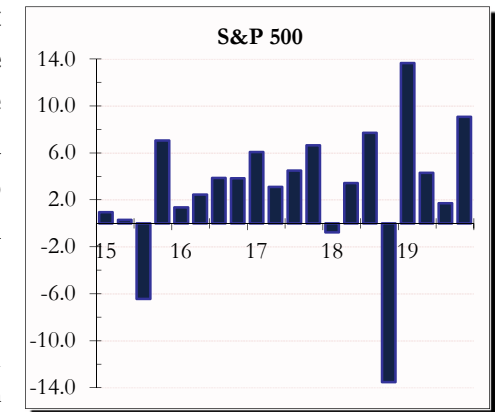
The 10-year breakeven inflation rate represents a measure of expected inflation, derived from 10-year constant maturity securities and the 10-year TIPS. That rate rose from 1.48% to 1.77%, still below the Fed’s target of 2%.

DOMESTIC EQUITIES

Incredible Year

Domestic equity markets ended a strong 2019 with robust gains as trade uncertainty faded. The large-cap S&P 500 Index rose 9%,

helping it solidify the best yearly gain (31%) since 2013. However, it should be noted that this was from a low established from steep declines suffered in December 2018. The small-cap section of the market, as measured by the Russell 2000, saw even larger 4th quarter gains (9.9%) than their large-cap counterparts.



Big gains in domestic stocks were led by the Technology and Health Care sectors, which saw gains of 14.0% and 14.9%, respectively. The Technology sector got a boost from easing trade tensions;

further, the tech sector would be among the principal beneficiaries, should trade talks continue to move forward. The Healthcare sector was strong across the board, with 75% of companies included in the Russell 3000 seeing positive returns.

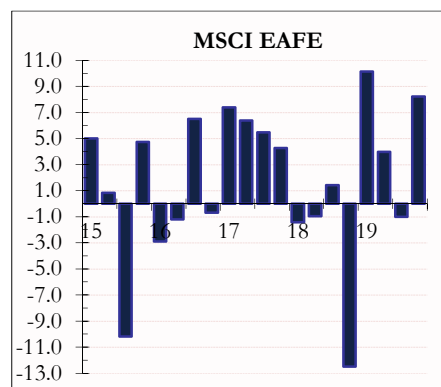
Growth stocks continued to outpace their value counterparts across all capitalization sizes. Among large-cap equities, growth outpaced value by 2.8% in the fourth quarter, and 9.9% for the year. The spread was a bit narrower within the small-cap universe, where growth outperformed value by 1.9% for the quarter and 6.0% for the year.

U.S. REITs were the lone soft spot in the quarter, losing 2.2%.

INTERNATIONAL EQUITIES

Strong Finish

International stocks, as measured by the MSCI EAFE, made strong gains during the quarter (8.2%). These gains were not led by any



single country, but through broad support. The top 14 weighted countries in the index all registered gains.

Notably, the U.K. market was up 10.5%, led by surges in Utilities and Real Estate stocks, which saw gains of over 20%. These domestically-

focused areas performed well amid the reduced political uncertainty that followed the general election victory of the Conservative party.

The Japanese market, the largest weighting in the index, rose in every month of the quarter to record a total return of 8.6%. Sentiment for Japanese equities has ebbed and flowed with geopolitical tensions throughout the year. However, sentiment grew stronger due to signs of easing tension between the U.S. and China, and the expectation that a phase one trade agreement would take place in January.

German equities gained 9.9%, led by better than expected economic data. The Ifo Business Climate Index, a highly-regarded early indicator of economic developments, improved to 96.3 from 94.6 in September.

France, the index's 3rd largest weighting, saw gains slightly above the index (8.3%). These returns are wholly attributable to the three largest sectors: Industrials, Consumer Discretionary, and Financials. Financials were led by BNP Paribas and Societe Generale, which saw gains of 21.8% and 27.0%, respectively. The Consumer Discretionary sector rose 12.7% and also saw a spike in M&A; one notable deal was luxury goods producer LVMH's purchase of U.S. jeweler Tiffany & Co. for \$16.6 billion.

Emerging Markets (EM) equities had an even stronger quarter than developed international equities, gaining 11.7% as measured by the MSCI EM Index. Nine out of the top 10 EM countries by weight saw positive returns, with Thailand being the lone outlier. All 11 sectors had positive gains.

Chinese equities, which make up nearly 30% of the EM Index, rose 15.5%. These gains were led by tech giants Alibaba, Baidu, and JD.com, which rose by 26.8%, 23.0%, and 24.9%, respectively. Decreasing trade tensions, as well as U.S. dollar weakness, provided support.

Tech heavy countries, South Korea and Taiwan, also saw large gains. Stocks of their largest companies, Samsung and Taiwan Semiconductor, appreciated 17.7%, and 26.9%, respectively, after earnings expectations were revised upwards following solid Q3 sales figures.

Russia, the index's 7th largest country by weighting, delivered stronger than expected performance (17.2%). The country, with its heavy dependence on energy companies, benefited from a rise in crude oil prices. These prices rose due to many oil-producing nations announcing further production cuts through the first quarter of 2020. By repeatedly slashing interest rates to jump-start growth, the Russian government provided another boost to assets.

Chilean equities (-9.3%) was the largest detractor to emerging market performance. Investors were rattled by mass protests that erupted in that country amid concerns over inequality.

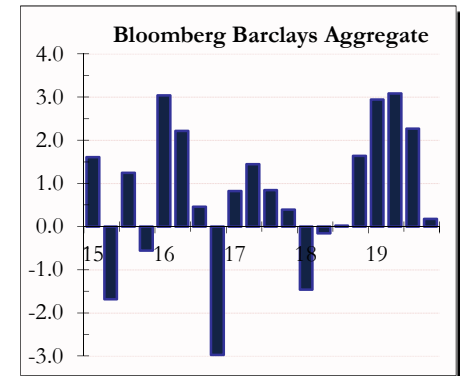
BOND MARKET

Slow and Steady

The broad fixed income market generated strong total returns in 2019. The Bloomberg Barclays US Aggregate, which acts as a bellwether for domestic investors, returned 8.7% for full-year 2019. This was an amazing result in a year where yields started at almost historic lows.

Q4 returns, however, were quite mixed. The market saw returns as high as 3.5% for Global High Yield and as low as -4.2% for Long-Dated Treasuries.

A slight sell-off in longer-dated Treasuries caused yields to rise, as progress from trade talks, accommodative monetary policy, and mostly positive economic news eased fears of a looming recession. There was a decline in shorter-term Treasury yields, instruments that are highly correlated to monetary policy expectations.



The closely watched 3-month/10-year yield spread, which had been inverted since May, returned to a more normal upwardly sloping curve.

Global bonds, while weak, still returned a positive 0.5% for the quarter, bringing the year-to-date return to 6.8%. Emerging market fixed income, converted to the U.S. dollar, saw solid returns of 2.1% in the quarter and 13.1% for 2019. Local currency bonds did even better, rising 16.1% for the year, as EM currencies rebounded.

CASH EQUIVALENTS

Higher but Still Low Yield

The three-month T-Bill returned 0.4% for the third quarter and 2.1% for full year 2019. Treasuries with maturities longer than one-year achieved a latest 12-month return of at least 3.5%. Expected future returns for cash equivalents remain dim, with the 30-year Treasury yield sitting near 2.4%. However, the yield was greater than what had been seen last quarter (2.1%).

Economic Statistics

	Current Quarter	Previous Quarter
GDP	2.1%	2.1%
Unemployment	3.5%	3.7%
CPI All Items Year/Year	2.3%	1.7%
Fed Funds Rate	1.75%	2.00%
Industrial Capacity	77.1%	77.6%
US Dollars per Euro	1.12	1.09

Major Index Returns

Index	Quarter	12 Months
Russell 3000	9.1%	31.0%
S&P 500	9.1%	31.5%
Russell Midcap	7.1%	30.5%
Russell 2000	9.9%	25.5%
MSCI EAFE	8.2%	22.7%
MSCI Emg Markets	11.9%	18.9%
NCREIF ODCE	1.5%	5.4%
U.S. Aggregate	0.2%	10.4%
90 Day T-bills	0.4%	2.3%

Domestic Equity Return Distributions

Quarter	Trailing Year		
	VAL	COR	GRO
LC	7.4	9.0	10.6
MC	6.3	7.1	8.2
SC	8.5	9.9	11.4

Market Summary

- All asset classes saw positive gains in 2019.
- Global equity markets continued their rise.
- The unemployment rate fell to 3.5%.
- Inflation remains subdued.
- Growth continues to outpace Value in the stock market.

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System was valued at \$2,800,814,336, representing an increase of \$188,958,739 from the September quarter's ending value of \$2,611,855,597. Last quarter, the Fund posted net contributions equaling \$7,262,194 plus a net investment gain equaling \$181,696,545. Total net investment return was the result of income receipts, which totaled \$6,514,411 and net realized and unrealized capital gains of \$175,182,134.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the total portfolio gained 7.0%, which ranked in the 4th percentile of the Public Fund universe. Over the trailing twelve-month period, this portfolio returned 21.1%, ranking in the 15th percentile. Since December 1985, the portfolio returned 8.9% on an annualized basis.

Large Cap Equity

Last quarter, the large cap equity portion of the portfolio gained 10.1%, which was 1.0% greater than the S&P 500 Index's return of 9.1% and ranked in the 19th percentile of the Large Cap universe. Over the trailing year, the large cap equity portfolio returned 35.4%, which was 3.9% above the benchmark's 31.5% return, ranking in the 14th percentile. Since December 1985, this component returned 11.2% per annum. For comparison, the S&P 500 returned an annualized 10.8% over the same time frame.

Small Cap Equity

For the fourth quarter, the small cap equity segment returned 9.9%, which was equal to the Russell 2000 Index's return of 9.9% and ranked in the 24th percentile of the Small Cap universe. Over the trailing year, this segment returned 28.7%, which was 3.2% greater than the benchmark's 25.5% return, and ranked in the 26th percentile.

International Equity

In the fourth quarter, the international equity segment gained 11.0%, which was 2.8% above the Blended International Index's return of 8.2% and ranked in the 36th percentile of the International Equity universe. Over the trailing twelve-month period, this segment returned 29.3%, which was 6.6% greater than the benchmark's 22.7% performance, and ranked in the 16th percentile.

Emerging Markets Equity

Last quarter, the emerging markets equity segment gained 11.8%, which was 0.1% below the Blended Emerging Markets Index's return of 11.9% and ranked in the 42nd percentile of the Emerging Markets universe. Over the trailing twelve-month period, this segment returned 18.4%, which was 0.5% below the benchmark's 18.9% performance, ranking in the 63rd percentile.

Real Estate

For the fourth quarter, the real estate portion of the portfolio gained 0.8%, which was 0.7% below the NCREIF Property Index's return of 1.5%. Over the trailing year, this component returned 5.3%, which was 1.1% less than the benchmark's 6.4% return. Since December 1985, this component returned 6.9% annualized, while the NCREIF Property Index returned an annualized 7.8% over the same time frame.

Fixed Income

During the fourth quarter, the fixed income segment returned 0.2%, which was equal to the Bloomberg Barclays Aggregate Index's return of 0.2% and ranked in the 59th percentile of the Core Fixed Income universe. Over the trailing year, this segment's return was 8.8%, which was 0.1% above the benchmark's 8.7% return, and ranked in the 75th percentile. Since December 1985, this component returned 6.4% annualized. The Bloomberg Barclays Aggregate Index returned an annualized 6.4% over the same period.

ASSET ALLOCATION

On December 31, 2019, the allocation of assets was as follows*:

TOTAL PORTFOLIO	100.0%	\$2,800,814,336
Domestic Large Cap	26.7%	\$747,838,883
Domestic Small Cap	14.3%	\$399,879,666
Total Domestic Equity	41.0%	\$1,147,718,549
International Developed Markets	15.5%	\$433,719,931
International Emerging Markets	9.9%	\$276,636,099
Total International Equity	25.4%	\$710,356,030
Total Equity	66.3%	\$1,858,074,579
Real Estate	17.9%	\$501,447,236
Fixed Income	14.4%	\$403,053,072
Cash and Equivalents	1.4%	\$38,239,449

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

EXECUTIVE SUMMARY - GROSS OF FEES

PERFORMANCE SUMMARY

	Quarter	YTD /1Y	3 Year	5 Year	10 Year	Since 12/85
Total Portfolio	7.0	21.1	11.2	8.4	9.1	8.9
<i>PUBLIC FUND RANK</i>	(4)	(15)	(5)	(5)	(15)	----
Shadow Index	6.4	19.0	9.7	7.7	8.8	8.7
Domestic Equity	10.1	33.1	15.2	11.4	13.3	----
<i>DOMESTIC EQUITY RANK</i>	(19)	(20)	(31)	(31)	(44)	----
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
<i>LARGE CAP RANK</i>	(19)	(14)	(20)	(21)	(23)	----
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	----
<i>SMALL CAP RANK</i>	(24)	(26)	(44)	(54)	(59)	----
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	----
<i>INTERNATIONAL EQUITY RANK</i>	(36)	(16)	(23)	(25)	(37)	----
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	7.8	23.1	9.9	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	----
<i>EMERGING MARKETS RANK</i>	(42)	(63)	(45)	(57)	(91)	----
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	0.8	5.3	6.8	8.0	8.7	6.9
NCREIF NPI	1.5	6.4	6.7	8.3	10.2	7.8
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
<i>CORE FIXED INCOME RANK</i>	(59)	(75)	(83)	(86)	(90)	----
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	17.9%	501,447,236
Fixed Income	14.4%	403,053,072
Cash	1.4%	38,239,449
Total Portfolio	100.0%	2,800,814,336

INVESTMENT RETURN

Market Value 9/2019	\$ 2,611,855,597
Contribs / Withdrawals	7,262,194
Income	6,514,411
Capital Gains / Losses	175,182,134
Market Value 12/2019	\$ 2,800,814,336

EXECUTIVE SUMMARY - NET OF FEES**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year	10 Year
Total Portfolio - Net	6.8	20.5	10.7	7.9	8.6
Shadow Index	6.4	19.0	9.7	7.7	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	7.8	23.1	9.9	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	0.6	4.4	5.8	7.1	7.7
NCREIF NPI	1.5	6.4	6.7	8.3	10.2
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

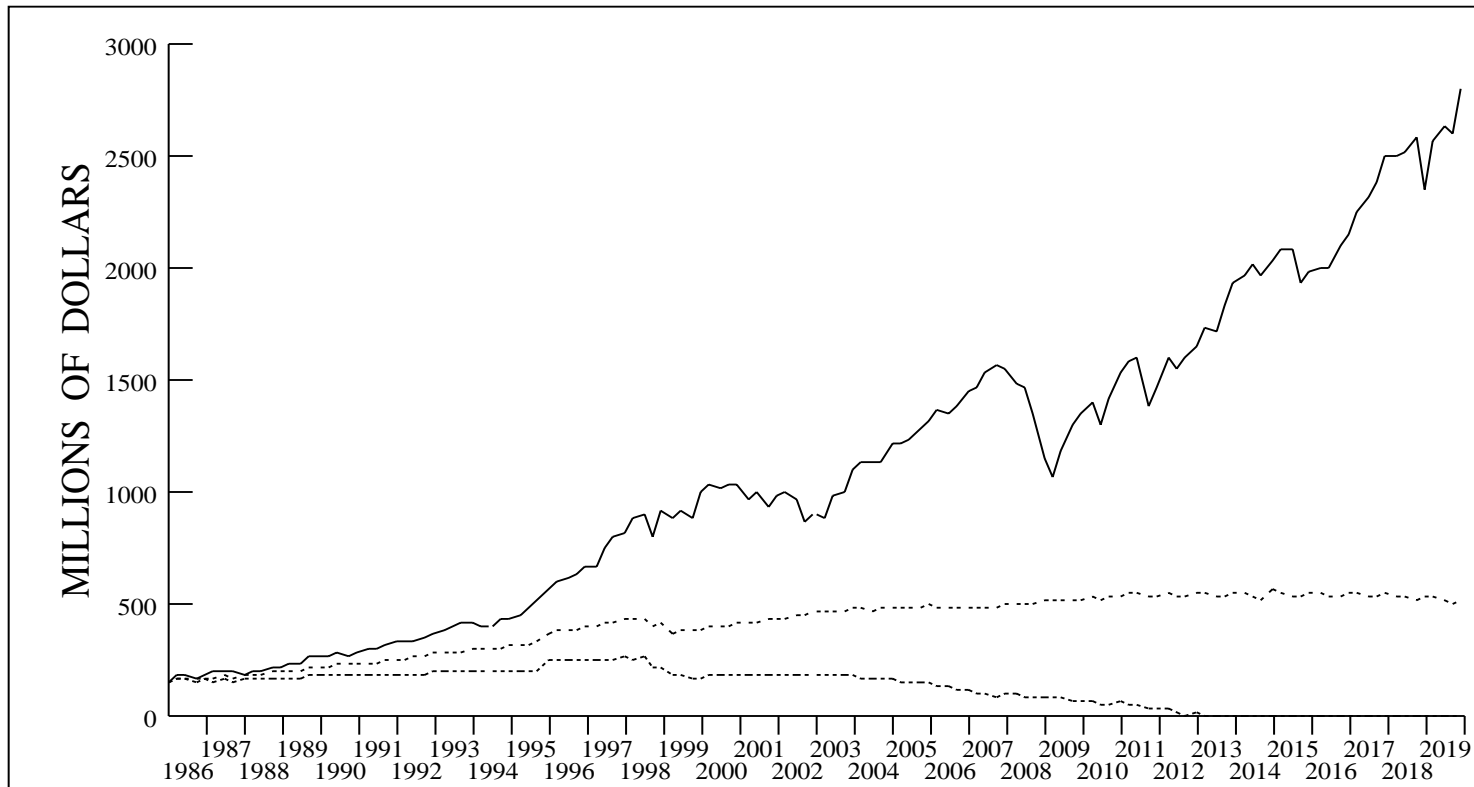
ASSET ALLOCATION

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	17.9%	501,447,236
Fixed Income	14.4%	403,053,072
Cash	1.4%	38,239,449
Total Portfolio	100.0%	2,800,814,336

INVESTMENT RETURN

Market Value 9/2019	\$ 2,611,855,597
Contribs / Withdrawals	7,262,194
Income	6,514,411
Capital Gains / Losses	175,182,134
Market Value 12/2019	\$ 2,800,814,336

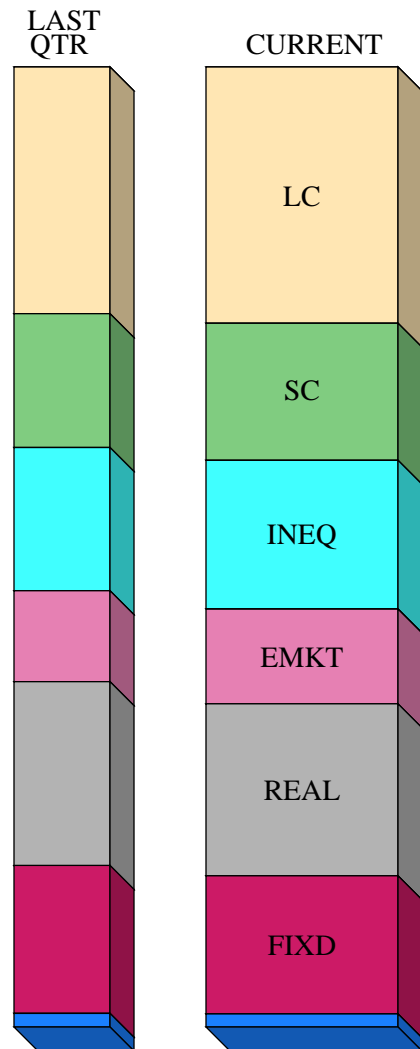
INVESTMENT GROWTH



— ACTUAL RETURN
 - - - 5.25%
 . . . 0.0%

VALUE ASSUMING
 5.25% RETURN \$ 517,452,917

	LAST QUARTER	PERIOD 12/85 - 12/19
BEGINNING VALUE	\$ 2,611,855,597	\$ 162,395,431
NET CONTRIBUTIONS	7,262,194	-377,417,550
<u>INVESTMENT RETURN</u>	<u>181,696,545</u>	<u>3,015,836,455</u>
ENDING VALUE	\$ 2,800,814,336	\$ 2,800,814,336
INCOME	6,514,411	567,737,058
<u>CAPITAL GAINS (LOSSES)</u>	<u>175,182,134</u>	<u>2,448,099,397</u>
INVESTMENT RETURN	181,696,545	3,015,836,455



	<u>VALUE</u>	<u>PERCENT</u>	<u>TARGET</u>	<u>DIFFERENCE</u> <u>+ / -</u>
■ LARGE CAP EQUITY ■ SMALL CAP EQUITY ■ INTERNATIONAL EQUITY ■ EMERGING MARKETS EQUITY ■ REAL ESTATE ■ FIXED INCOME ■ CASH & EQUIVALENT	\$ 747, 838, 883 399, 879, 666 433, 719, 931 276, 636, 099 501, 447, 236 403, 053, 072 38, 239, 449	26.7% 14.3% 15.5% 9.9% 17.9% 14.4% 1.4%	25.0% 15.0% 15.0% 10.0% 20.0% 15.0% 0.0%	1.7% -0.7% 0.5% -0.1% -2.1% -0.6% 1.4%
TOTAL FUND	\$ 2, 800, 814, 336	100.0%		

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ALLOCATIONS & TARGETS AS OF DECEMBER 2019**

Manager	Target	Market Value	%	+ / -	Market Value Ex-cash	%	+ / -
Total Portfolio	-	\$2,800,814,336	100%		\$2,800,814,336	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	4.8		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	501,447,236	17.9	-2.1	501,447,236	17.9	-2.1
Forest		133,807,118	4.8		133,807,118	4.8	
PRISA I		51,683,670	1.8		51,683,670	1.8	
PRISA II		105,315,951	3.8		105,315,951	3.8	
TIAA N. Front St.		2,312,412	0.1		2,312,412	0.1	
TIAA CREF		208,328,085	7.4		208,328,085	7.4	
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	

MANAGER QUARTERLY FEE SUMMARY

ALL FEES ARE ESTIMATED / ACCRUED

PORTFOLIO	TOTAL RETURN (GROSS OF FEES)	FEE	% FEE
AMI	9.3%	\$68,955	0.20%
COPELAND	5.5%	\$94,611	0.21%
EAGLE	11.0%	\$300,730	0.20%
EMERALD	12.0%	\$86,591	0.14%
FEDERATED	8.7%	\$200,874	0.20%
FOREST	-1.5%	\$248,226	0.18%
HARDMAN JOHNSTON	13.8%	\$193,044	0.17%
HGK	12.2%	\$219,746	0.18%
LSV LARGE CAP	9.2%	\$157,606	0.10%
LSV SMALL CAP	8.8%	\$110,334	0.15%
POLEN	10.6%	\$226,512	0.10%
PRISA SA	1.3%	\$124,266	0.24%
PRISA II	2.1%	\$286,155	0.28%
SMITH, GRAHAM & CO	11.7%	\$133,158	0.19%
SSgA	5.9%	\$124,624	0.01%
CONSERVATIVE S&P 500	9.1%	\$5,159	0.01%
RUSSELL 2000	9.9%	\$10,174	0.01%
DEVELOPED INTERNATIONAL	7.9%	\$25,498	0.02%
EMERGING MARKETS	11.8%	\$52,794	0.02%
BOND MARKET INDEX	0.2%	\$30,999	0.01%
TIAA CREF	1.5%	\$466,310	0.22%
TIAA N. FRONT STREET	2.1%	\$12,500	0.53%

MANAGER PERFORMANCE SUMMARY - GROSS OF FEES

Portfolio	(Universe)	QTR	CYTD	1 Year	3 Years	5 Years	10 Years	Inception	
Composite	(Public Fund)	7.0 (4)	21.1 (15)	21.1 (15)	11.2 (5)	8.4 (5)	9.1 (15)	8.9 ----	12/85
<i>Shadow Index</i>		<i>6.4 ----</i>	<i>19.0 ----</i>	<i>19.0 ----</i>	<i>9.7 ----</i>	<i>7.7 ----</i>	<i>8.8 ----</i>	<i>8.7 ----</i>	<i>12/85</i>
SSgA	(Balanced)	5.9 (39)	14.9 (92)	14.9 (92)	7.7 (74)	5.1 (92)	5.2 (95)	6.6 ----	03/97
<i>Shadow Index</i>		<i>5.9 ----</i>	<i>15.2 ----</i>	<i>15.2 ----</i>	<i>7.8 ----</i>	<i>5.1 ----</i>	<i>5.4 ----</i>	<i>7.3 ----</i>	<i>03/97</i>
Federated	(LC Growth)	8.7 (69)	38.4 (16)	38.4 (16)	20.4 (45)	---- ----	---- ----	13.0 (68)	06/15
<i>Russell 1000G</i>		<i>10.6 ----</i>	<i>36.4 ----</i>	<i>36.4 ----</i>	<i>20.5 ----</i>	<i>14.6 ----</i>	<i>15.2 ----</i>	<i>15.4 ----</i>	<i>06/15</i>
Polen	(LC Growth)	10.6 (25)	38.9 (13)	38.9 (13)	24.6 (7)	17.9 (3)	---- ----	17.7 (5)	09/10
<i>Russell 1000G</i>		<i>10.6 ----</i>	<i>36.4 ----</i>	<i>36.4 ----</i>	<i>20.5 ----</i>	<i>14.6 ----</i>	<i>15.2 ----</i>	<i>16.0 ----</i>	<i>09/10</i>
Eagle	(LC Value)	11.0 (8)	34.7 (6)	34.7 (6)	16.7 (4)	---- ----	---- ----	17.5 (4)	03/16
<i>Russell 1000V</i>		<i>7.4 ----</i>	<i>26.5 ----</i>	<i>26.5 ----</i>	<i>9.7 ----</i>	<i>8.3 ----</i>	<i>11.8 ----</i>	<i>11.9 ----</i>	<i>03/16</i>
LSV Large Cap	(LC Value)	9.2 (23)	25.8 (62)	25.8 (62)	10.2 (56)	7.9 (73)	12.3 (44)	8.9 ----	03/04
<i>Russell 1000V</i>		<i>7.4 ----</i>	<i>26.5 ----</i>	<i>26.5 ----</i>	<i>9.7 ----</i>	<i>8.3 ----</i>	<i>11.8 ----</i>	<i>8.1 ----</i>	<i>03/04</i>
AMI	(SC Growth)	9.3 (48)	9.8 (99)	9.8 (99)	---- ----	---- ----	---- ----	1.7 (99)	09/17
<i>Russell 2000G</i>		<i>11.4 ----</i>	<i>28.4 ----</i>	<i>28.4 ----</i>	<i>12.5 ----</i>	<i>9.3 ----</i>	<i>13.0 ----</i>	<i>9.1 ----</i>	<i>09/17</i>
Copeland	(SC Growth)	5.5 (93)	30.1 (42)	30.1 (42)	---- ----	---- ----	---- ----	12.4 (52)	09/17
<i>Russell 2000G</i>		<i>11.4 ----</i>	<i>28.4 ----</i>	<i>28.4 ----</i>	<i>12.5 ----</i>	<i>9.3 ----</i>	<i>13.0 ----</i>	<i>9.1 ----</i>	<i>09/17</i>
Emerald	(SC Growth)	12.0 (18)	31.8 (33)	31.8 (33)	15.0 (56)	11.8 (40)	15.8 (23)	11.4 ----	09/98
<i>Russell 2000G</i>		<i>11.4 ----</i>	<i>28.4 ----</i>	<i>28.4 ----</i>	<i>12.5 ----</i>	<i>9.3 ----</i>	<i>13.0 ----</i>	<i>8.1 ----</i>	<i>09/98</i>
LSV Small Cap	(SC Value)	8.8 (32)	24.7 (54)	24.7 (54)	4.3 (77)	---- ----	---- ----	4.3 (77)	12/16
<i>Russell 2000V</i>		<i>8.5 ----</i>	<i>22.4 ----</i>	<i>22.4 ----</i>	<i>4.8 ----</i>	<i>7.0 ----</i>	<i>10.6 ----</i>	<i>4.8 ----</i>	<i>12/16</i>
Smith, Graham & Co	(SC Value)	11.7 (6)	33.8 (6)	33.8 (6)	5.4 (55)	---- ----	---- ----	5.4 (55)	12/16
<i>Russell 2000V</i>		<i>8.5 ----</i>	<i>22.4 ----</i>	<i>22.4 ----</i>	<i>4.8 ----</i>	<i>7.0 ----</i>	<i>10.6 ----</i>	<i>4.8 ----</i>	<i>12/16</i>
HGK	(Intl Eq)	12.2 (22)	28.3 (20)	28.3 (20)	14.1 (20)	9.1 (17)	---- ----	10.6 (9)	03/12
<i>S&P BMI Ex US</i>		<i>8.7 ----</i>	<i>22.8 ----</i>	<i>22.8 ----</i>	<i>10.1 ----</i>	<i>6.4 ----</i>	<i>6.4 ----</i>	<i>6.9 ----</i>	<i>03/12</i>
Hardman Johnston	(Intl Eq)	13.8 (7)	34.2 (4)	34.2 (4)	17.5 (4)	10.8 (7)	---- ----	10.3 (12)	03/12
<i>S&P BMI Ex US</i>		<i>8.7 ----</i>	<i>22.8 ----</i>	<i>22.8 ----</i>	<i>10.1 ----</i>	<i>6.4 ----</i>	<i>6.4 ----</i>	<i>6.9 ----</i>	<i>03/12</i>
PRISA II SA		2.1 ----	7.5 ----	7.5 ----	8.3 ----	10.6 ----	14.1 ----	4.9 ----	06/07
<i>NCREIF ODCE</i>		<i>1.5 ----</i>	<i>5.3 ----</i>	<i>5.3 ----</i>	<i>7.1 ----</i>	<i>9.0 ----</i>	<i>11.4 ----</i>	<i>5.6 ----</i>	<i>06/07</i>
PRISA SA		1.3 ----	6.3 ----	6.3 ----	7.5 ----	9.3 ----	12.1 ----	7.9 ----	12/90
<i>NCREIF ODCE</i>		<i>1.5 ----</i>	<i>5.3 ----</i>	<i>5.3 ----</i>	<i>7.1 ----</i>	<i>9.0 ----</i>	<i>11.4 ----</i>	<i>7.5 ----</i>	<i>12/90</i>
TIAA CREF		1.5 ----	9.4 ----	9.4 ----	8.5 ----	9.3 ----	8.5 ----	4.0 ----	06/08
<i>NCREIF ODCE</i>		<i>1.5 ----</i>	<i>5.3 ----</i>	<i>5.3 ----</i>	<i>7.1 ----</i>	<i>9.0 ----</i>	<i>11.4 ----</i>	<i>5.4 ----</i>	<i>06/08</i>
TIAA 1721 N. Front St.		2.1 ----	5.0 ----	5.0 ----	3.1 ----	---- ----	---- ----	0.6 ----	06/16
<i>NCREIF NPI</i>		<i>1.5 ----</i>	<i>6.4 ----</i>	<i>6.4 ----</i>	<i>6.7 ----</i>	<i>8.3 ----</i>	<i>10.2 ----</i>	<i>6.8 ----</i>	<i>06/16</i>
Forest		-1.5 ----	-2.3 ----	-2.3 ----	3.0 ----	4.7 ----	4.4 ----	4.8 ----	03/99
<i>NCREIF Timber</i>		<i>0.0 ----</i>	<i>1.3 ----</i>	<i>1.3 ----</i>	<i>2.7 ----</i>	<i>3.1 ----</i>	<i>4.4 ----</i>	<i>6.1 ----</i>	<i>03/99</i>

MANAGER PERFORMANCE SUMMARY - NET OF FEES

Portfolio	QTR	CYTD	1 Year	3 Years	5 Years	10 Years	Inception	
Composite	6.8	20.5	20.5	10.7	7.9	8.6	----	12/85
<i>Shadow Index</i>	<i>6.4</i>	<i>19.0</i>	<i>19.0</i>	<i>9.7</i>	<i>7.7</i>	<i>8.8</i>	<i>8.7</i>	<i>12/85</i>
SSgA	5.9	14.9	14.9	7.6	5.0	5.1	6.5	03/97
<i>Shadow Index</i>	<i>5.9</i>	<i>15.2</i>	<i>15.2</i>	<i>7.8</i>	<i>5.1</i>	<i>5.4</i>	<i>7.3</i>	<i>03/97</i>
Federated	8.5	37.4	37.4	19.5	----	----	12.2	06/15
<i>Russell 1000G</i>	<i>10.6</i>	<i>36.4</i>	<i>36.4</i>	<i>20.5</i>	<i>14.6</i>	<i>15.2</i>	<i>15.4</i>	<i>06/15</i>
Polen	10.5	38.4	38.4	24.1	17.4	----	17.1	09/10
<i>Russell 1000G</i>	<i>10.6</i>	<i>36.4</i>	<i>36.4</i>	<i>20.5</i>	<i>14.6</i>	<i>15.2</i>	<i>16.0</i>	<i>09/10</i>
Eagle	10.8	33.7	33.7	15.8	----	----	16.6	03/16
<i>Russell 1000V</i>	<i>7.4</i>	<i>26.5</i>	<i>26.5</i>	<i>9.7</i>	<i>8.3</i>	<i>11.8</i>	<i>11.9</i>	<i>03/16</i>
LSV Large Cap	9.1	25.4	25.4	9.8	7.5	11.8	8.5	03/04
<i>Russell 1000V</i>	<i>7.4</i>	<i>26.5</i>	<i>26.5</i>	<i>9.7</i>	<i>8.3</i>	<i>11.8</i>	<i>8.1</i>	<i>03/04</i>
AMI	9.1	9.0	9.0	----	----	----	0.9	09/17
<i>Russell 2000G</i>	<i>11.4</i>	<i>28.4</i>	<i>28.4</i>	<i>12.5</i>	<i>9.3</i>	<i>13.0</i>	<i>9.1</i>	<i>09/17</i>
Copeland	5.3	29.1	29.1	----	----	----	11.5	09/17
<i>Russell 2000G</i>	<i>11.4</i>	<i>28.4</i>	<i>28.4</i>	<i>12.5</i>	<i>9.3</i>	<i>13.0</i>	<i>9.1</i>	<i>09/17</i>
Emerald	11.8	31.2	31.2	14.5	11.3	15.3	10.9	09/98
<i>Russell 2000G</i>	<i>11.4</i>	<i>28.4</i>	<i>28.4</i>	<i>12.5</i>	<i>9.3</i>	<i>13.0</i>	<i>8.1</i>	<i>09/98</i>
LSV Small Cap	8.7	24.0	24.0	3.7	----	----	3.7	12/16
<i>Russell 2000V</i>	<i>8.5</i>	<i>22.4</i>	<i>22.4</i>	<i>4.8</i>	<i>7.0</i>	<i>10.6</i>	<i>4.8</i>	<i>12/16</i>
Smith, Graham & Co	11.6	32.9	32.9	4.7	----	----	4.7	12/16
<i>Russell 2000V</i>	<i>8.5</i>	<i>22.4</i>	<i>22.4</i>	<i>4.8</i>	<i>7.0</i>	<i>10.6</i>	<i>4.8</i>	<i>12/16</i>
HGK	12.0	27.5	27.5	13.3	8.3	----	9.9	03/12
<i>S&P BMI Ex US</i>	<i>8.7</i>	<i>22.8</i>	<i>22.8</i>	<i>10.1</i>	<i>6.4</i>	<i>6.4</i>	<i>6.9</i>	<i>03/12</i>
Hardman Johnston	13.6	33.4	33.4	16.8	10.1	----	9.6	03/12
<i>S&P BMI Ex US</i>	<i>8.7</i>	<i>22.8</i>	<i>22.8</i>	<i>10.1</i>	<i>6.4</i>	<i>6.4</i>	<i>6.9</i>	<i>03/12</i>
PRISA II SA	1.9	6.4	6.4	7.2	9.5	12.9	3.8	06/07
<i>NCREIF ODCE</i>	<i>1.5</i>	<i>5.3</i>	<i>5.3</i>	<i>7.1</i>	<i>9.0</i>	<i>11.4</i>	<i>5.6</i>	<i>06/07</i>
PRISA SA	1.1	5.3	5.3	6.5	8.3	11.0	----	12/90
<i>NCREIF ODCE</i>	<i>1.5</i>	<i>5.3</i>	<i>5.3</i>	<i>7.1</i>	<i>9.0</i>	<i>11.4</i>	<i>7.5</i>	<i>12/90</i>
TIAA CREF	1.3	8.4	8.4	7.6	8.3	7.5	3.0	06/08
<i>NCREIF ODCE</i>	<i>1.5</i>	<i>5.3</i>	<i>5.3</i>	<i>7.1</i>	<i>9.0</i>	<i>11.4</i>	<i>5.4</i>	<i>06/08</i>
TIAA 1721 N. Front St.	1.6	2.9	2.9	0.7	----	----	-1.9	06/16
<i>NCREIF NPI</i>	<i>1.5</i>	<i>6.4</i>	<i>6.4</i>	<i>6.7</i>	<i>8.3</i>	<i>10.2</i>	<i>6.8</i>	<i>06/16</i>
Forest	-1.7	-3.0	-3.0	2.2	3.8	3.5	4.3	03/99
<i>NCREIF Timber</i>	<i>0.0</i>	<i>1.3</i>	<i>1.3</i>	<i>2.7</i>	<i>3.1</i>	<i>4.4</i>	<i>6.1</i>	<i>03/99</i>

MANAGER VALUE ADDED

Portfolio	Benchmark	1 Quarter	1 Year	3 Years	5 Years
SSgA	Shadow Index	0.0	-0.3	-0.1	0.0
Federated	Russell 1000G	-1.9	2.0	-0.1	N/A
Polen	Russell 1000G	0.0	2.5	4.1	3.3
Eagle	Russell 1000V	3.6	8.2	7.0	N/A
LSV Large Cap	Russell 1000V	1.8	-0.7	0.5	-0.4
AMI	Russell 2000G	-2.1	-18.6	N/A	N/A
Copeland	Russell 2000G	-5.9	1.7	N/A	N/A
Emerald	Russell 2000G	0.6	3.4	2.5	2.5
LSV Small Cap	Russell 2000V	0.3	2.3	-0.5	N/A
Smith, Graham & Co	Russell 2000V	3.2	11.4	0.6	N/A
HGK	S&P BMI Ex US	3.5	5.5	4.0	2.7
Hardman Johnston	S&P BMI Ex US	5.1	11.4	7.4	4.4
PRISA II SA	NCREIF ODCE	0.6	2.2	1.2	1.6
PRISA SA	NCREIF ODCE	-0.2	1.0	0.4	0.3
TIAA CREF	NCREIF ODCE	0.0	4.1	1.4	0.3
TIAA 1721 N. Front St.	NCREIF NPI	0.6	-1.4	-3.6	N/A
Forest	NCREIF Timber	-1.5	-3.6	0.3	1.6
Total Portfolio	Shadow Index	0.6 	2.1 	1.5 	0.7

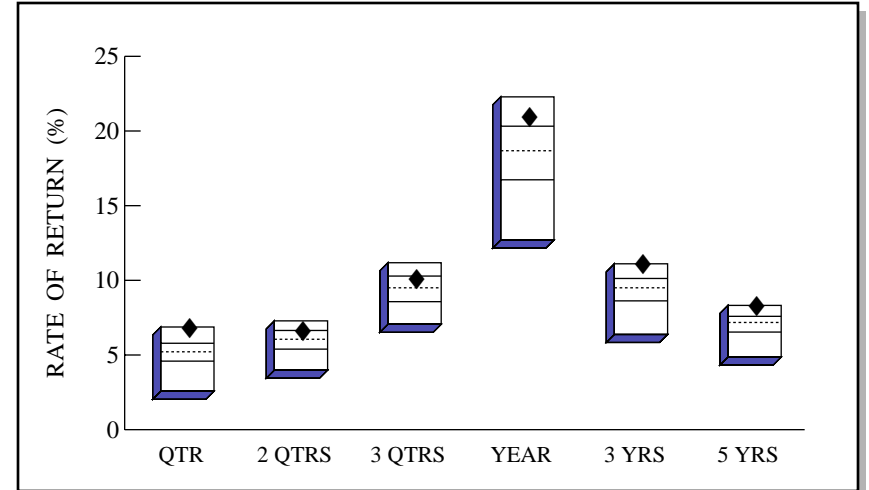
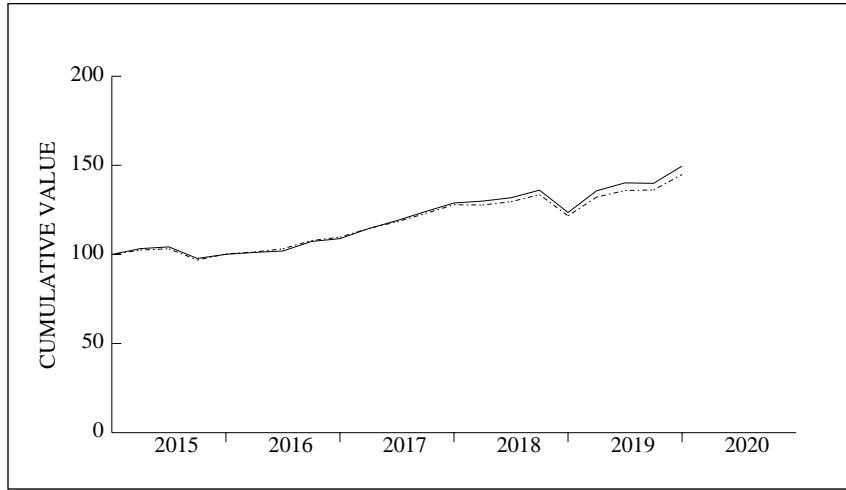
INVESTMENT RETURN SUMMARY - ONE QUARTER

Name	Quarter Total Return	Market Value September 30th, 2019	Net Cashflow	Net Investment Return	Market Value December 31st, 2019
SSgA S&P 500 (LCC)	9.1	55,618,747	0	5,036,309	60,655,056
Federated (LCG)	8.7	101,294,244	-192,038	8,809,980	109,912,186
Polen (LCG)	10.6	226,511,135	-227,628	23,888,170	250,171,677
Eagle (LCV)	11.0	147,555,253	-282,910	16,214,323	163,486,666
LSV Large Cap (LCV)	9.2	160,176,552	-149,498	14,797,464	174,824,518
SSgA Russell 2000 (SMDC)	9.9	83,798,332	0	8,333,964	92,132,296
AMI (SCG)	9.3	34,403,203	-70,872	3,180,717	37,513,048
Copeland (SCG)	5.5	45,429,768	-56,276	2,504,598	47,878,090
Emerald (SCG)	12.0	62,766,642	-116,162	7,502,060	70,152,540
LSV Small Cap (SCV)	8.8	72,033,258	-103,972	6,336,540	78,265,826
Smith, Graham & Co (SCV)	11.7	71,255,310	-124,441	8,356,078	79,486,947
Loop Transition (INEQ)	---	104,935	-104,872	-63	0
GlobeFlex (INEQ)	---	4,212	0	79	4,291
HGK (INEQ)	12.2	121,152,901	-201,444	14,733,248	135,684,705
Hardman Johnston (INEQ)	13.8	111,942,612	-179,331	15,449,628	127,212,909
Mercator (INEQ)	---	17,618	0	523	18,141
WHV (INEQ)	---	2,914	0	807	3,721
Jarislowsky Fraser (INEQ)	---	674,450	-166,732	15,098	522,816
SSgA World Ex-US (INEQ)	7.9	161,533,659	0	12,760,831	174,294,490
SSgA Emerging Markets (EMKT)	11.8	247,393,031	0	29,243,068	276,636,099
PRISA II SA (REAL)	2.1	103,380,918	-286,155	2,221,188	105,315,951
PRISA SA (REAL)	1.3	51,125,042	-124,266	682,894	51,683,670
TIAA CREF (REAL)	1.5	207,667,082	-2,050,477	2,711,480	208,328,085
TIAA 1721 N. Front St. (REAL)	2.1	2,336,497	-60,932	36,847	2,312,412
Forest (TIMB)	-1.5	135,802,793	0	-1,995,675	133,807,118
SSgA Bond Market (CFI)	0.2	402,314,970	0	738,102	403,053,072
BNY Cash (CASH)	---	426,502	1,960,189	73,228	2,459,919
Treasury STIP (CASH)	---	5,133,017	9,800,011	65,059	14,998,087
Total Portfolio	7.0	2,611,855,597	7,262,194	181,696,545	2,800,814,336

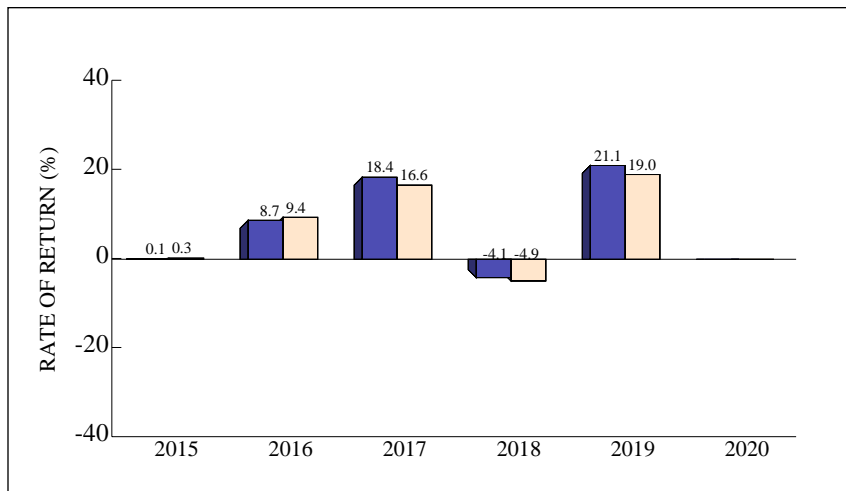
MANAGER RISK STATISTICS SUMMARY - FIVE-YEAR HISTORY

Name	Alpha	Batting Average	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
SSgA <i>Shadow Index</i>	-0.03	0.650	0.63	-0.17	99.5	100.0
SSgA S&P 500 <i>S&P 500</i>	0.01	0.900	1.02	-0.49	99.8	99.7
Polen <i>Russell 1000G</i>	5.01	0.650	1.47	0.72	104.7	57.8
LSV Large Cap <i>Russell 1000V</i>	-0.78	0.550	0.65	-0.06	98.4	102.8
SSgA Russell 2000 <i>Russell 2000</i>	0.08	0.950	0.57	1.48	100.3	99.7
Emerald <i>Russell 2000G</i>	2.16	0.650	0.70	0.55	115.0	101.4
HGK <i>S&P BMI Ex US</i>	2.58	0.650	0.70	0.62	116.1	89.7
Hardman Johnston <i>S&P BMI Ex US</i>	3.24	0.700	0.74	0.95	138.9	102.1
SSgA World Ex-US <i>MSCI World Ex US</i>	-0.17	0.500	0.48	-2.03	99.2	101.1
SSgA Emerging Markets <i>EM Index</i>	-0.20	0.450	0.39	-0.29	100.4	102.2
PRISA II SA <i>NCREIF ODCE</i>	0.76	0.800	5.03	1.82	118.1	----
PRISA SA <i>NCREIF ODCE</i>	0.66	0.500	4.98	0.44	103.6	----
TIAA CREF <i>NCREIF ODCE</i>	6.35	0.600	4.40	0.14	103.2	----
Forest <i>NCREIF Timber</i>	4.18	0.450	0.79	0.35	121.7	----
SSgA Bond Market <i>Aggregate Index</i>	0.02	1.000	0.64	1.31	100.4	99.6

TOTAL RETURN COMPARISONS



Public Fund Universe

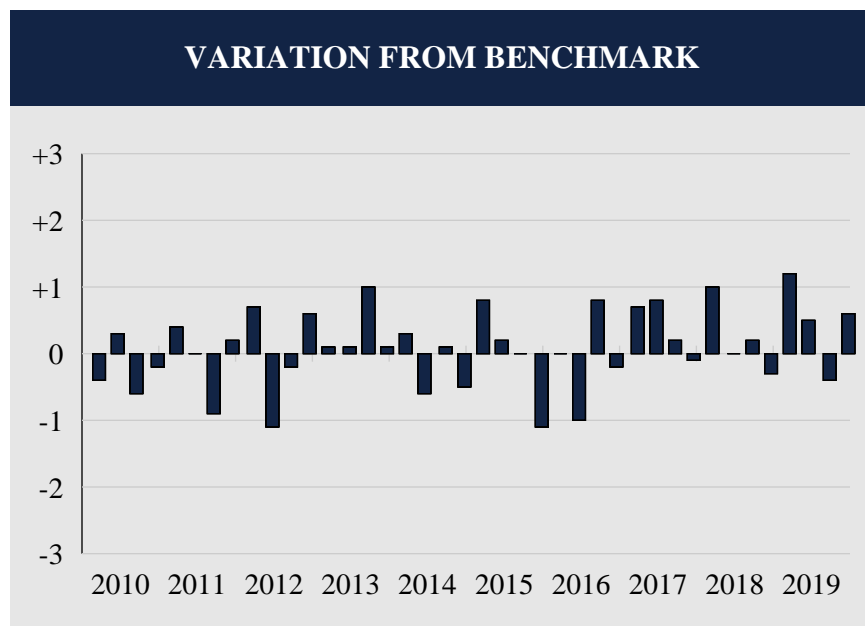


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	7.0	6.7	10.2	21.1	11.2	8.4
(RANK)	(4)	(22)	(28)	(15)	(5)	(5)
5TH %ILE	6.9	7.3	11.2	22.3	11.1	8.3
25TH %ILE	5.8	6.7	10.3	20.3	10.1	7.6
MEDIAN	5.2	6.1	9.5	18.7	9.5	7.2
75TH %ILE	4.6	5.4	8.6	16.7	8.6	6.5
95TH %ILE	2.6	4.0	7.1	12.7	6.4	4.9
<i>Shadow Idx</i>	<i>6.4</i>	<i>6.6</i>	<i>9.6</i>	<i>19.0</i>	<i>9.7</i>	<i>7.7</i>

Public Fund Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

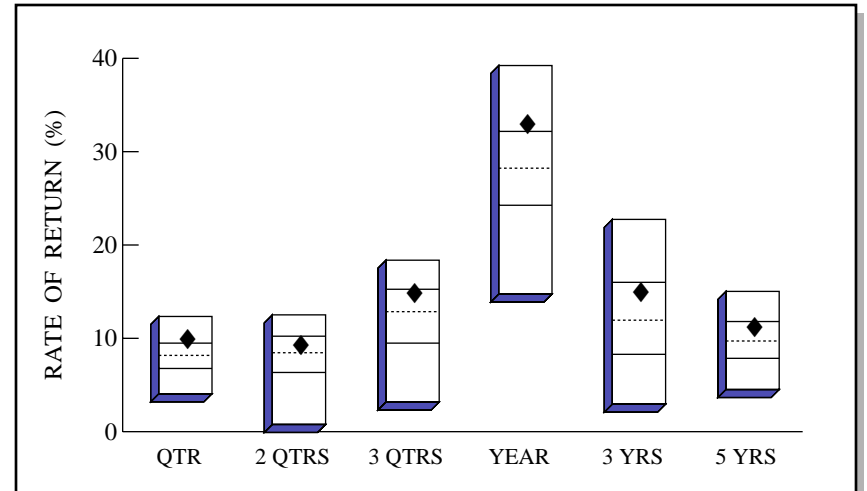
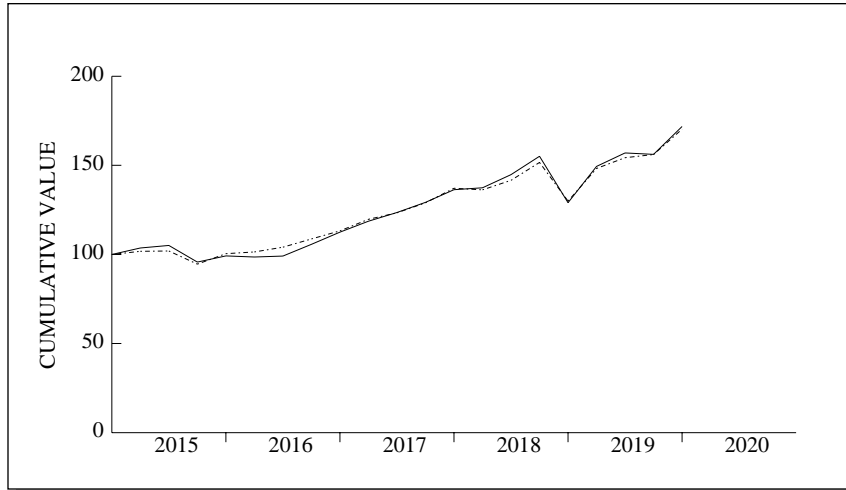
COMPARATIVE BENCHMARK: SHADOW INDEX



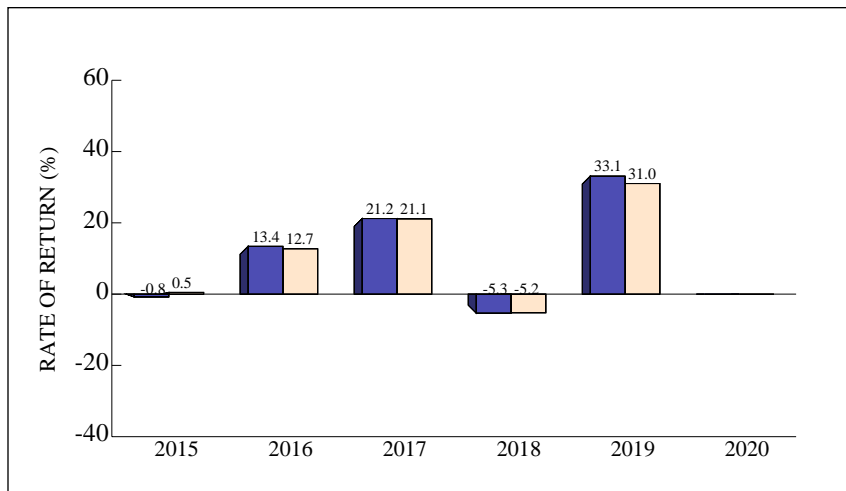
Total Quarters Observed	40
Quarters At or Above the Benchmark	26
Quarters Below the Benchmark	14
Batting Average	.650

RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
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
12/19	7.0	6.4	0.6

DOMESTIC EQUITY RETURN COMPARISONS



Domestic Equity Universe

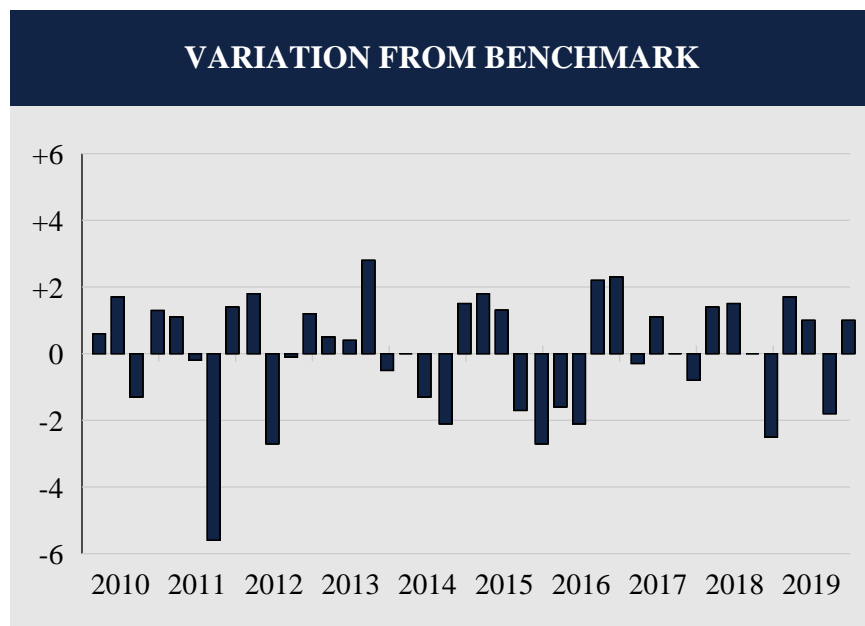


	<u>QTR</u>	<u>2 QTRS</u>	<u>3 QTRS</u>	<u>YEAR</u>	<u>3 YRS</u>	<u>5 YRS</u>
RETURN	10.1	9.5	15.0	33.1	15.2	11.4
(RANK)	(19)	(36)	(27)	(20)	(31)	(31)
5TH %ILE	12.4	12.5	18.4	39.2	22.8	15.0
25TH %ILE	9.5	10.2	15.3	32.2	16.0	11.8
MEDIAN	8.2	8.5	12.9	28.2	11.9	9.7
75TH %ILE	6.8	6.3	9.5	24.3	8.3	7.9
95TH %ILE	4.1	0.8	3.2	14.8	3.0	4.5
<i>Russ 3000</i>	<i>9.1</i>	<i>10.4</i>	<i>14.9</i>	<i>31.0</i>	<i>14.6</i>	<i>11.2</i>

Domestic Equity Universe

DOMESTIC EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: RUSSELL 3000



RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
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
12/19	10.1	9.1	1.0

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

LARGE CAP EQUITY MANAGERS

PMRB's aggregate large cap portfolio (excluding cash) returned 10.1%, which was 1% above the S&P 500. The large cap value managers handily beat their benchmark, but the large cap growth managers did not have as much success clearing their higher bogey.

**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 \$60,655,056.

**Federated
(Growth)**

The Federated portfolio's underperformance was partly the result unfavorable selection in two sectors (Health Care and Information Technology) that combined represented about half the portfolio. Some ground was reclaimed through good stock picks in the Consumer Discretionary sector.

**Polen
(Growth)**

The very tall Information Technology sector stumbled during the quarter, underperforming against its index counterpart, landing closer to the benchmark's total return. Favorable results in the Health Care sector added value, but it was walked back by weak returns in the portfolio's second largest sector, Consumer Discretionary.

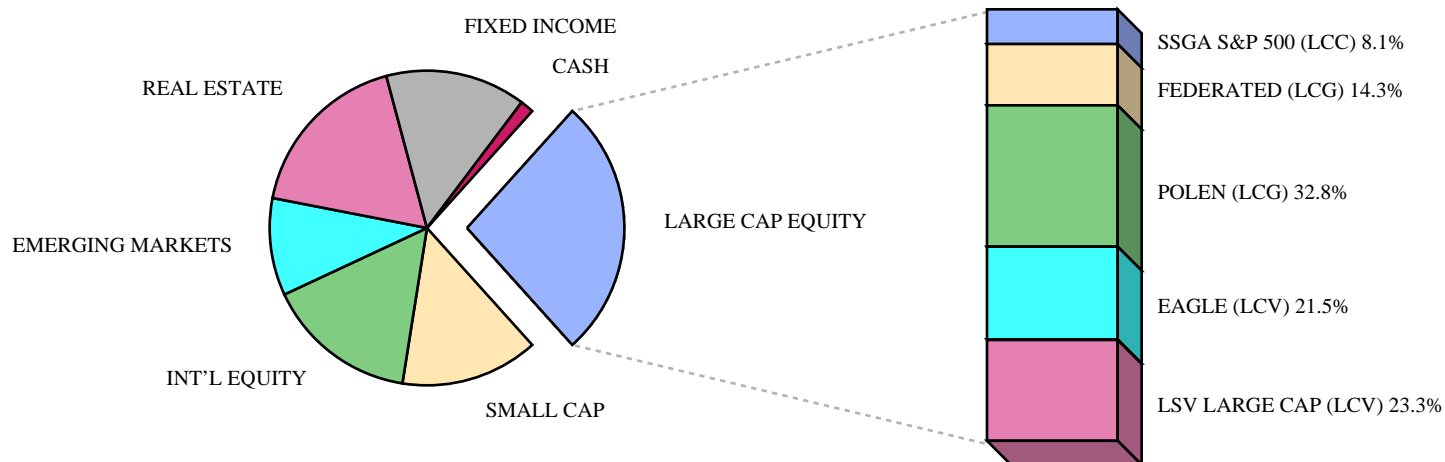
**Eagle
(Value)**

The Eagle portfolio stayed away from the Consumer Staples, Real Estate, and Utilities sectors, avoiding the weakest sectors in the large cap value market in the fourth quarter. The portfolio also enjoyed favorable selection effects in most sectors.

**LSV Large Cap
(Value)**

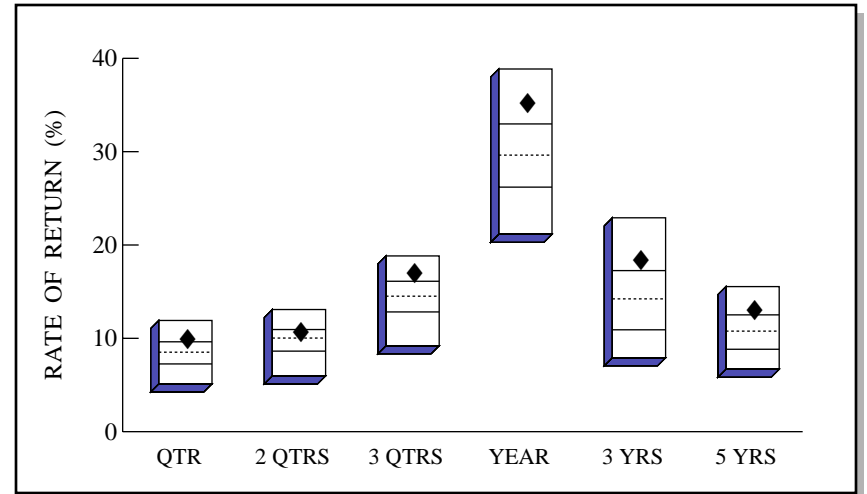
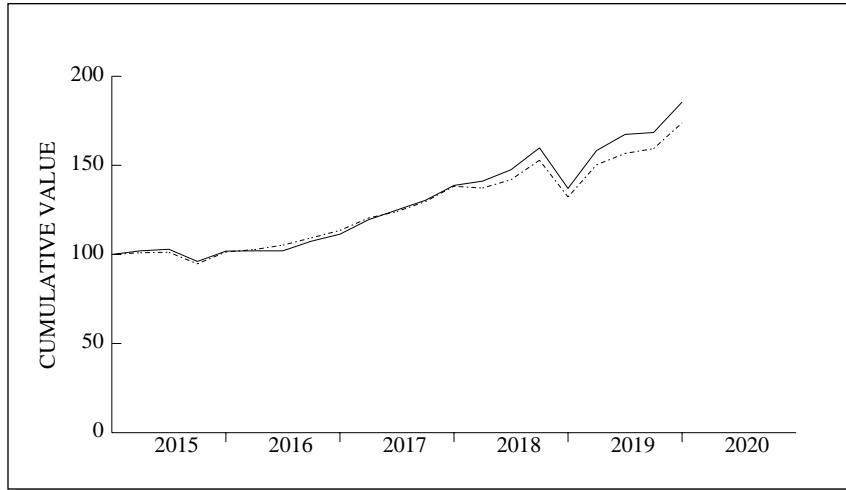
The LSV large cap portfolio's robust stance in Information Technology paid off last quarter, as that sector was the best earner in the large cap value market. The portfolio also added value through positive selection effects in several sectors.

LARGE CAP EQUITY MANAGER SUMMARY

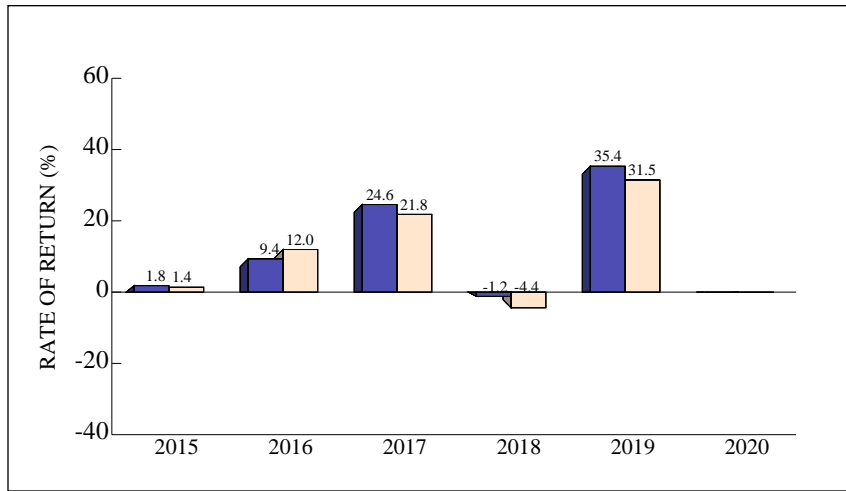


		COMPONENT RETURNS AND RANKINGS					
MANAGER	(UNIVERSE)	QTR	YTD	1 YEAR	3 YEARS	5 YEARS	MARKET VALUE
SSGA S&P 500	(Large Cap Core)	9.1 (30)	31.5 (30)	31.5 (30)	15.2 (35)	11.7 (32)	\$60,655,056
<i>S&P 500</i>		<i>9.1 ---</i>	<i>31.5 ---</i>	<i>31.5 ---</i>	<i>15.3 ---</i>	<i>11.7 ---</i>	---
FEDERATED	(Large Cap Growth)	9.0 (61)	39.9 (11)	39.9 (11)	21.4 (34)	---	\$106,786,010
POLEN	(Large Cap Growth)	10.8 (21)	40.5 (10)	40.5 (10)	25.6 (3)	18.6 (2)	\$245,332,713
<i>Russell 1000 Growth</i>		<i>10.6 ---</i>	<i>36.4 ---</i>	<i>36.4 ---</i>	<i>20.5 ---</i>	<i>14.6 ---</i>	---
EAGLE	(Large Cap Value)	11.2 (8)	35.7 (5)	35.7 (5)	17.1 (3)	---	\$160,756,637
LSV LARGE CAP	(Large Cap Value)	9.3 (23)	26.1 (58)	26.1 (58)	10.2 (55)	7.9 (73)	\$174,308,467
<i>Russell 1000 Value</i>		<i>7.4 ---</i>	<i>26.5 ---</i>	<i>26.5 ---</i>	<i>9.7 ---</i>	<i>8.3 ---</i>	---
TOTAL	(Large Cap)	10.1 (19)	35.4 (14)	35.4 (14)	18.6 (20)	13.2 (21)	\$747,838,883
<i>S&P 500</i>		<i>9.1 ---</i>	<i>31.5 ---</i>	<i>31.5 ---</i>	<i>15.3 ---</i>	<i>11.7 ---</i>	---

LARGE CAP EQUITY RETURN COMPARISONS



Large Cap Universe

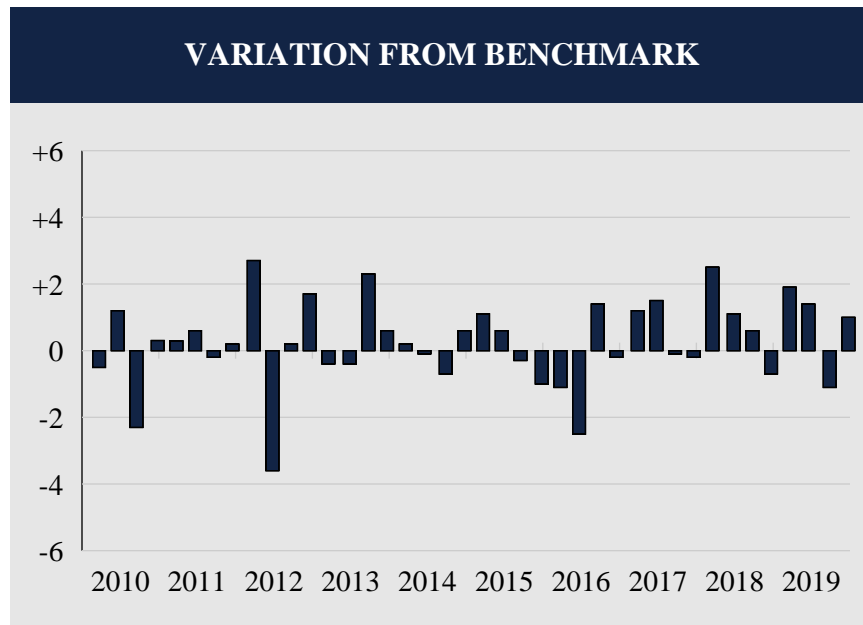


	<u>QTR</u>	<u>2 QTRS</u>	<u>3 QTRS</u>	<u>YEAR</u>	<u>-----ANNUALIZED-----</u> <u>3 YRS</u>	<u>5 YRS</u>
RETURN	10.1	10.8	17.2	35.4	18.6	13.2
(RANK)	(19)	(29)	(15)	(14)	(20)	(21)
5TH %ILE	11.9	13.1	18.8	38.9	22.9	15.5
25TH %ILE	9.6	10.9	16.1	33.0	17.3	12.5
MEDIAN	8.5	10.0	14.5	29.6	14.2	10.8
75TH %ILE	7.3	8.6	12.8	26.2	10.9	8.8
95TH %ILE	5.1	6.0	9.2	21.2	7.9	6.7
S&P 500	9.1	10.9	15.7	31.5	15.3	11.7

Large Cap Universe

LARGE CAP EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: S&P 500



RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
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
12/19	10.1	9.1	1.0

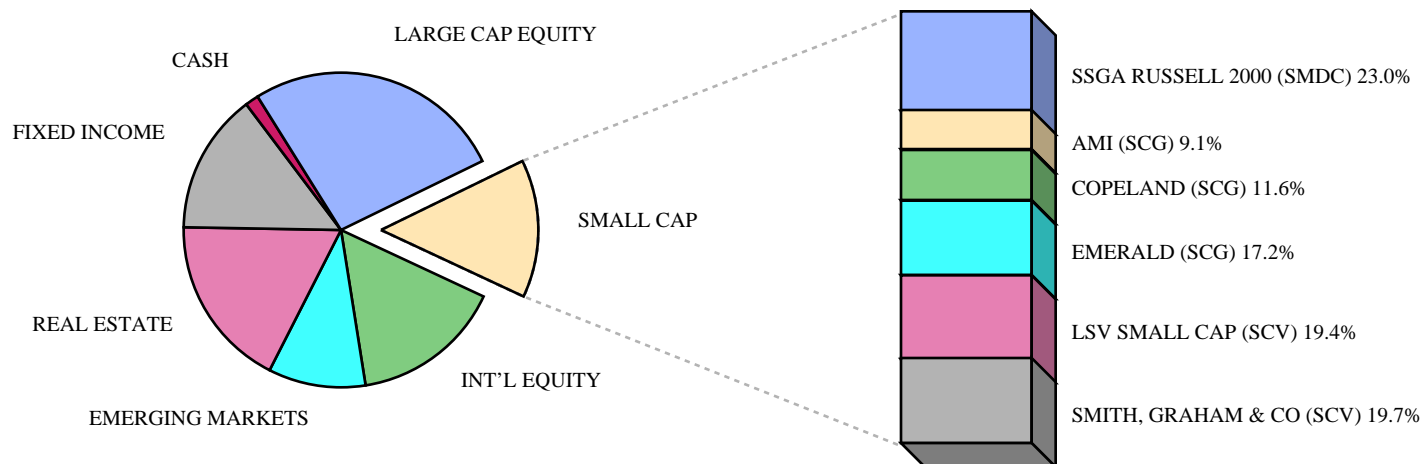
Total Quarters Observed	40
Quarters At or Above the Benchmark	23
Quarters Below the Benchmark	17
Batting Average	.575

SMALL CAP EQUITY MANAGERS

Last quarter, the Russell 2000 Growth Index returned 11.4% versus 8.5% for the Russell 2000 Value Index. The portfolio's small cap component (excluding cash) gained 9.9%, in line with the Russell 2000 index. Emerald, LSV, and Smith, Graham beat their respective indices, while AMI and Copeland undershot the Russell 2000 Growth.

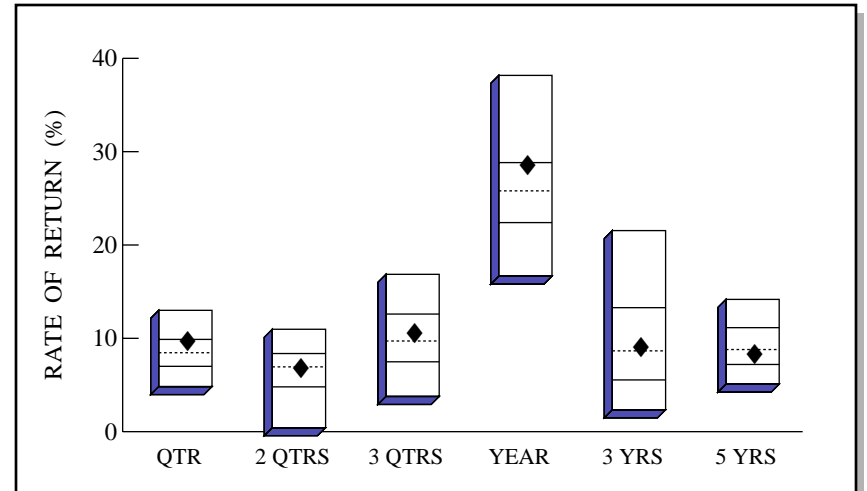
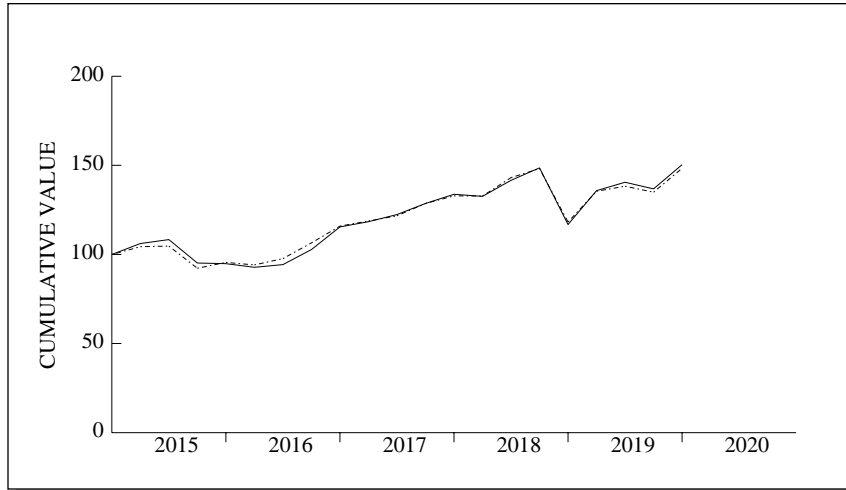
SSgA (Core)	The SSgA small cap component performed in line with the Russell 2000 index. At quarter end, this investment was valued at \$92,132,296.
AMI (Growth)	Significant underperformance in the Health Care sector, which expanded rapidly for the Russell 2000 Growth Index, put a damper on the portfolio. While this sector was not as dominant in the portfolio's allocation as in the benchmark's, it still represented a large portion and weighed heavily on the total return.
Copeland (Growth)	Selection effects across most sectors were negative; only the Communication Services, Information Technology, and Utilities sectors outperformed. The most notable difference occurred in the Health Care sector, where the portfolio was unable to keep pace with the skyrocketing returns of pharmaceutical and other Health Care stocks that were present in the index.
Emerald (Growth)	The Emerald portfolio slipped slightly in the Health Care sector, which represented a significant allocation. While the sector's weight gave it a high impact, the difference in return was not too large to overcome through excess returns in other sectors. Strength in the Information Technology sector kept the total return above the benchmark.
LSV Small Cap (Value)	Although selection effects were generally unfavorable, the LSV small cap portfolio slightly exceeded the index. The weakest sectors—Utilities, Real Estate, and Financials—had reduced positions, while more weight was given to Materials, Information Technology, and Health Care, which were the best performing sectors for small cap value. Unfortunately, the portfolio did not keep pace with the market in most sectors, curbing the total return.
Smith, Graham & Co (Value)	The Smith, Graham portfolio was able to add value over the index by emphasizing the Information Technology sector over the Financials and Real Estate Sectors. Information Technology stocks produced strong returns in the small cap value space last quarter, while Financials and Real Estate moved at a slower pace. Despite having an expanded footprint in the Health Care sector, the portfolio was unable to capture all the upside that came from a handful of stocks that had stellar returns in the index.

SMALL CAP EQUITY MANAGER SUMMARY

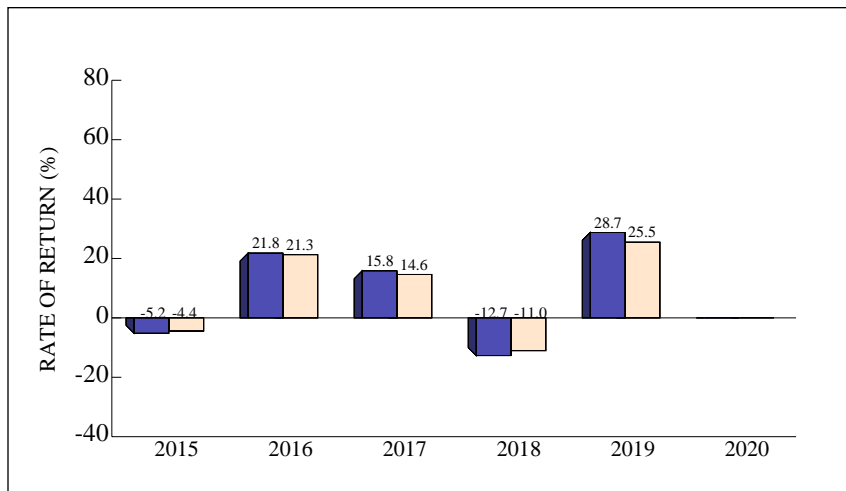


		COMPONENT RETURNS AND RANKINGS					
MANAGER	(UNIVERSE)	QTR	YTD	1 YEAR	3 YEARS	5 YEARS	MARKET VALUE
SSGA RUSSELL 2000	(Small Cap)	9.9 (24)	25.6 (53)	25.6 (53)	8.6 (51)	8.3 (59)	\$92,132,296
<i>Russell 2000</i>		<i>9.9 ---</i>	<i>25.5 ---</i>	<i>25.5 ---</i>	<i>8.6 ---</i>	<i>8.2 ---</i>	<i>---</i>
AMI	(Small Cap Growth)	9.6 (42)	10.2 (99)	10.2 (99)	---	---	\$36,377,775
COPELAND	(Small Cap Growth)	5.7 (92)	31.5 (34)	31.5 (34)	---	---	\$46,364,440
EMERALD	(Small Cap Growth)	12.1 (16)	32.9 (30)	32.9 (30)	15.3 (53)	12.1 (37)	\$68,834,967
<i>Russell 2000 Growth</i>		<i>11.4 ---</i>	<i>28.4 ---</i>	<i>28.4 ---</i>	<i>12.5 ---</i>	<i>9.3 ---</i>	<i>---</i>
LSV SMALL CAP	(Small Cap Value)	8.8 (32)	24.9 (53)	24.9 (53)	4.3 (77)	---	\$77,425,349
SMITH, GRAHAM & CO	(Small Cap Value)	12.0 (5)	34.3 (5)	34.3 (5)	5.5 (52)	---	\$78,744,839
<i>Russell 2000 Value</i>		<i>8.5 ---</i>	<i>22.4 ---</i>	<i>22.4 ---</i>	<i>4.8 ---</i>	<i>7.0 ---</i>	<i>---</i>
TOTAL	(Small Cap)	9.9 (24)	28.7 (26)	28.7 (26)	9.2 (44)	8.5 (54)	\$399,879,666
<i>Russell 2000</i>		<i>9.9 ---</i>	<i>25.5 ---</i>	<i>25.5 ---</i>	<i>8.6 ---</i>	<i>8.2 ---</i>	<i>---</i>

SMALL CAP EQUITY RETURN COMPARISONS



Small Cap Universe

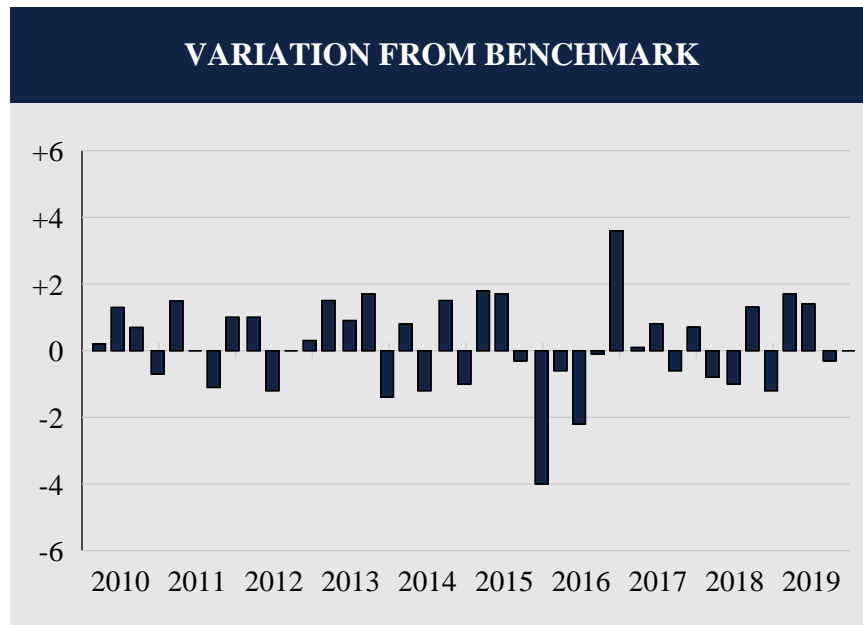


	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	9.9	7.0	10.7	28.7	9.2	8.5
(RANK)	(24)	(49)	(41)	(26)	(44)	(54)
5TH %ILE	13.0	11.0	16.9	38.2	21.5	14.2
25TH %ILE	9.9	8.4	12.6	28.8	13.3	11.2
MEDIAN	8.5	6.9	9.7	25.8	8.7	8.8
75TH %ILE	7.0	4.8	7.5	22.4	5.6	7.2
95TH %ILE	4.8	0.4	3.8	16.7	2.3	5.1
<i>Russ 2000</i>	<i>9.9</i>	<i>7.3</i>	<i>9.5</i>	<i>25.5</i>	<i>8.6</i>	<i>8.2</i>

Small Cap Universe

SMALL CAP EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: RUSSELL 2000



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

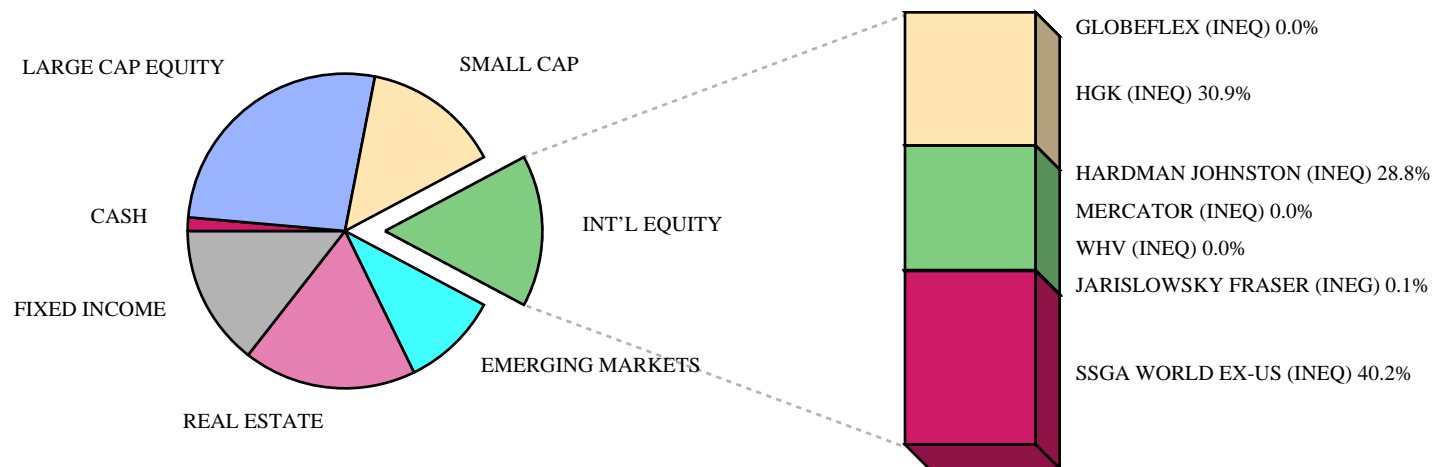
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
3/10	9.1	8.9	0.2
6/10	-8.6	-9.9	1.3
9/10	12.0	11.3	0.7
12/10	15.6	16.3	-0.7
3/11	9.4	7.9	1.5
6/11	-1.6	-1.6	0.0
9/11	-23.0	-21.9	-1.1
12/11	16.5	15.5	1.0
3/12	13.4	12.4	1.0
6/12	-4.7	-3.5	-1.2
9/12	5.2	5.2	0.0
12/12	2.1	1.8	0.3
3/13	13.9	12.4	1.5
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
12/19	9.9	9.9	0.0

INTERNATIONAL & EMERGING MARKETS EQUITY MANAGERS

PMRB's aggregate developed international portfolio (excluding cash) returned 11% over the quarter, 2.8% above the MSCI EAFE Index return of 8.2%. The S&P BMI Developed Markets Ex US returned 8.7% vs 7.8% for the MSCI World Ex US. The Emerging Markets portfolio, driven by its only manager, SSgA, gained 11.8%, tracking closely with the MSCI Emerging Markets Index return of 11.9%.

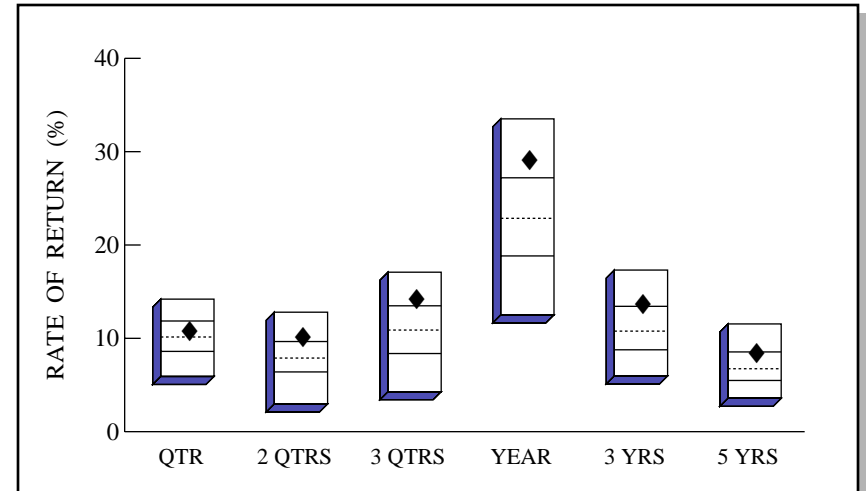
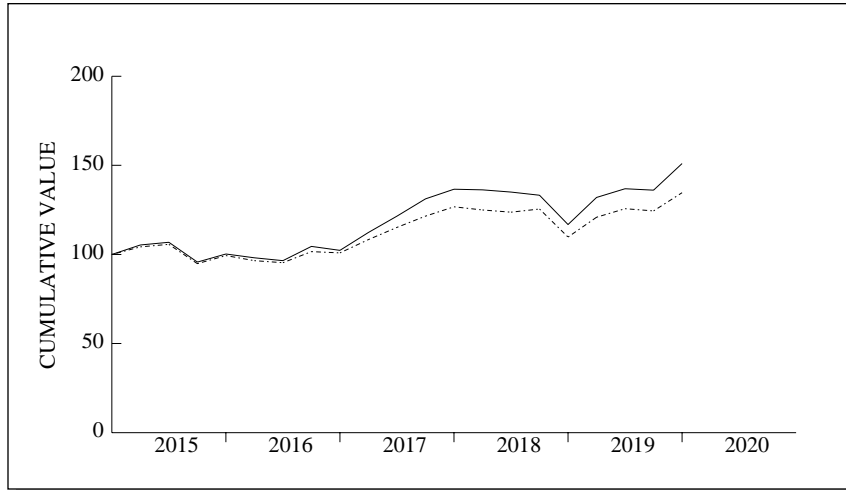
SSgA Developed	The SSgA developed markets component returned 7.9% during the quarter. Over the trailing year, this component was up 23%. This investment was valued at \$174,294,490 at quarter end.
Hardman Johnston	The Hardman Johnston international equity component gained 13.9% over the quarter. Over the last four quarters, the component gained 35.5%, while the S&P BMI Developed Ex US gained 22.8%.
HGK	HGK's equity component returned 12.5% last quarter. Over the trailing year, the HGK international equity component gained 29.2%.
SSgA Emerging	The SSgA emerging markets fund gained 11.8% during the quarter. Over the trailing five years, annualized, this component gained 5.6%. At quarter end, this fund was valued at \$276,636,099.

INTERNATIONAL EQUITY MANAGER SUMMARY

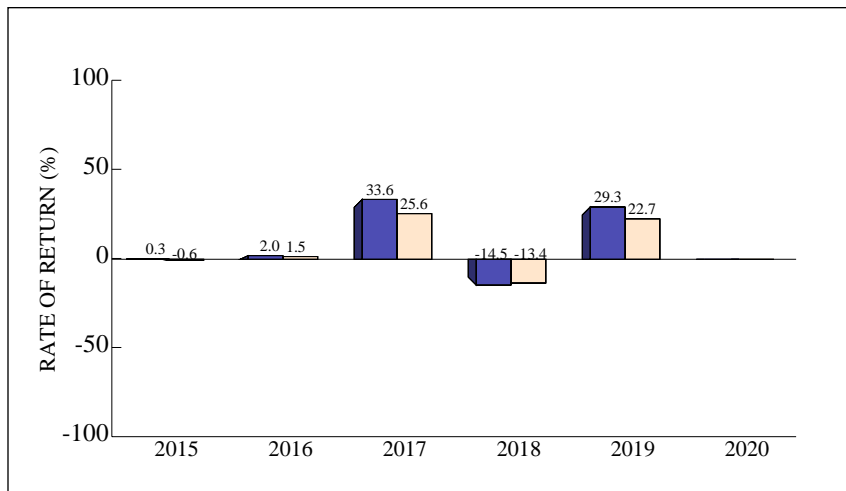
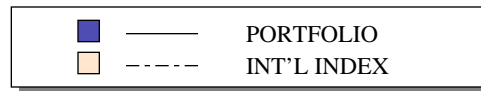


		COMPONENT RETURNS AND RANKINGS					
MANAGER	(UNIVERSE)	QTR	YTD	1 YEAR	3 YEARS	5 YEARS	MARKET VALUE
GLOBEFLEX	(International Equity)	----	----	----	----	----	\$4,291
HGK	(International Equity)	12.5 (18)	29.2 (16)	29.2 (16)	14.7 (17)	9.4 (15)	\$133,847,770
HARDMAN JOHNSTON	(International Equity)	13.9 (6)	35.5 (4)	35.5 (4)	17.7 (4)	10.9 (7)	\$125,029,422
MERCATOR	(International Equity)	-----	----	----	----	----	\$18,141
WHV	(International Equity)	----	----	----	----	----	\$3,001
<i>S&P BMI Developed Ex US Index</i>		8.7 ---	22.8 ---	22.8 ---	10.1 ---	6.4 ---	----
JARISLOWSKY FRASER	(International Equity)	----	----	----	----	----	\$522,816
<i>MSCI EAFE</i>		8.2 ---	22.7 ---	22.7 ---	10.1 ---	6.2 ---	----
SSGA WORLD EX-US	(International Equity)	7.9 (84)	23.0 (49)	23.0 (49)	9.8 (64)	5.8 (67)	\$174,294,490
<i>MSCI World Ex US</i>		7.8 ---	23.1 ---	23.1 ---	9.9 ---	6.0 ---	----
TOTAL	(International Equity)	11.0 (36)	29.3 (16)	29.3 (16)	13.9 (23)	8.6 (25)	\$433,719,931
<i>Blended International Index</i>		8.2 ---	22.7 ---	22.7 ---	10.1 ---	6.1 ---	----

INTERNATIONAL EQUITY RETURN COMPARISONS



International Equity Universe

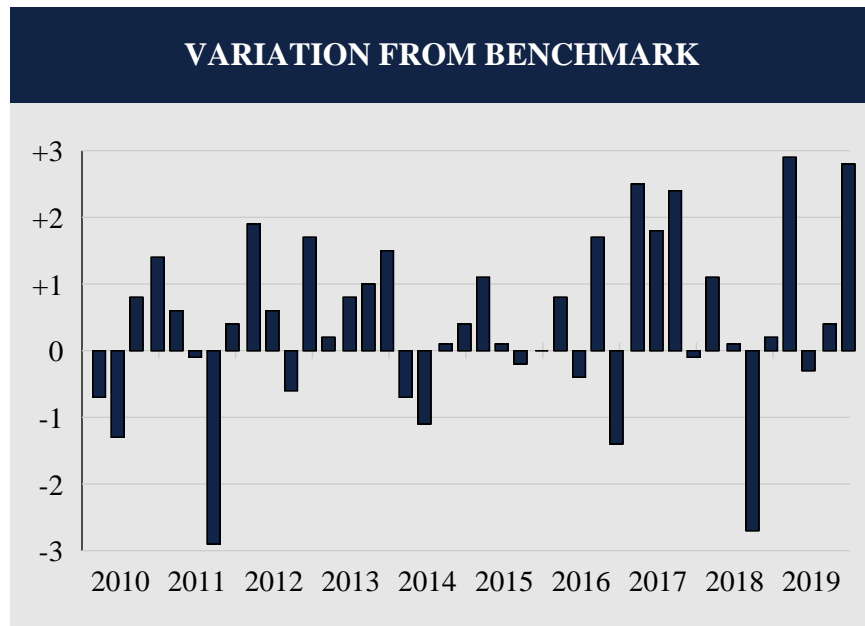


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	11.0	10.3	14.4	29.3	13.9	8.6
(RANK)	(36)	(20)	(18)	(16)	(23)	(25)
5TH %ILE	14.2	12.8	17.1	33.5	17.3	11.6
25TH %ILE	11.9	9.7	13.5	27.2	13.4	8.5
MEDIAN	10.1	7.9	10.9	22.9	10.8	6.7
75TH %ILE	8.6	6.4	8.4	18.8	8.8	5.5
95TH %ILE	5.9	3.0	4.3	12.5	6.0	3.6
Intl Index	8.2	7.1	11.4	22.7	10.1	6.1

International Equity Universe

INTERNATIONAL EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

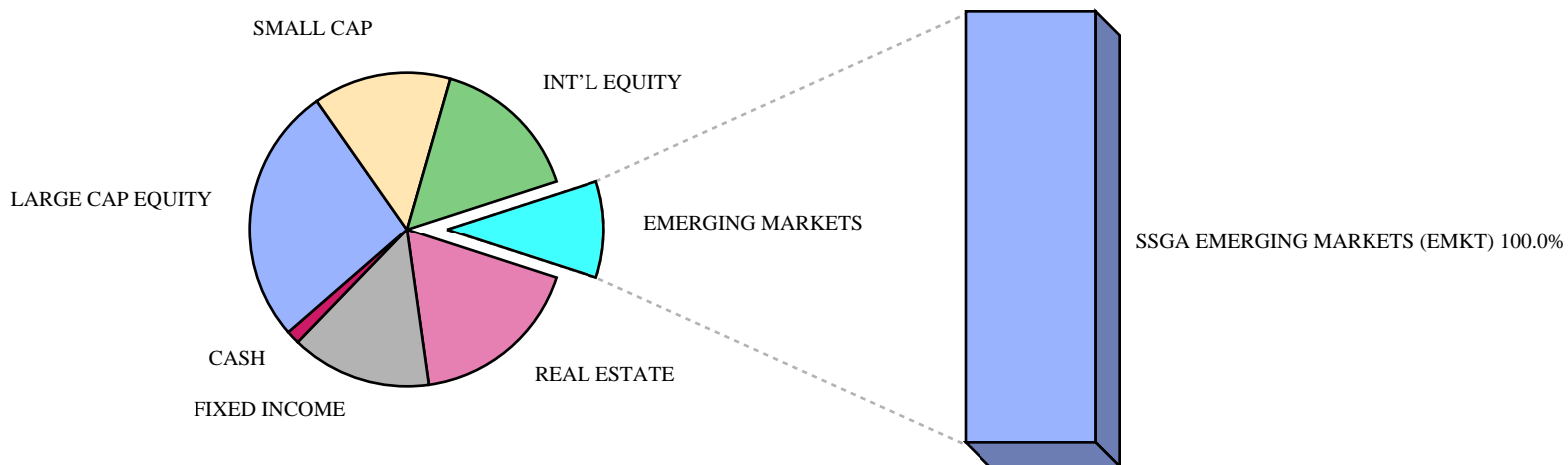
COMPARATIVE BENCHMARK: BLENDED INTERNATIONAL INDEX



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

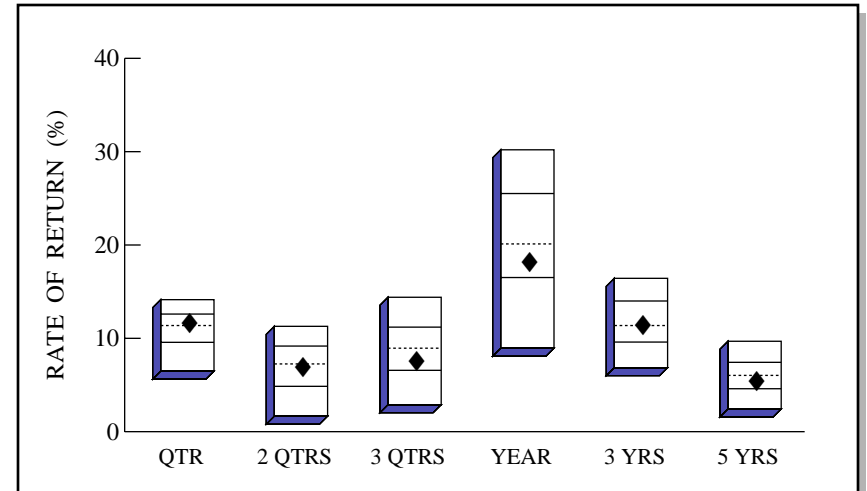
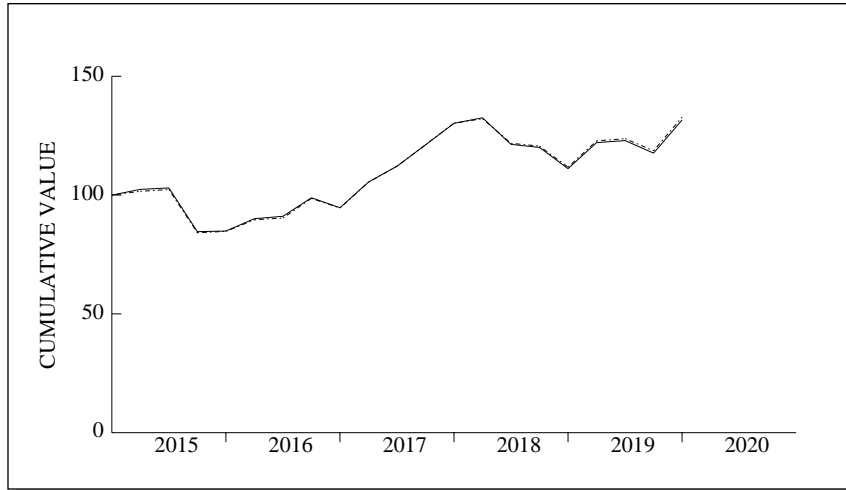
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
3/10	1.4	2.1	-0.7
6/10	-14.0	-12.7	-1.3
9/10	17.3	16.5	0.8
12/10	9.5	8.1	1.4
3/11	4.6	4.0	0.6
6/11	0.5	0.6	-0.1
9/11	-22.2	-19.3	-2.9
12/11	3.7	3.3	0.4
3/12	14.2	12.3	1.9
6/12	-6.6	-7.2	0.6
9/12	7.1	7.7	-0.6
12/12	7.5	5.8	1.7
3/13	5.1	4.9	0.2
6/13	-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
12/19	11.0	8.2	2.8

EMERGING MARKETS EQUITY MANAGER SUMMARY

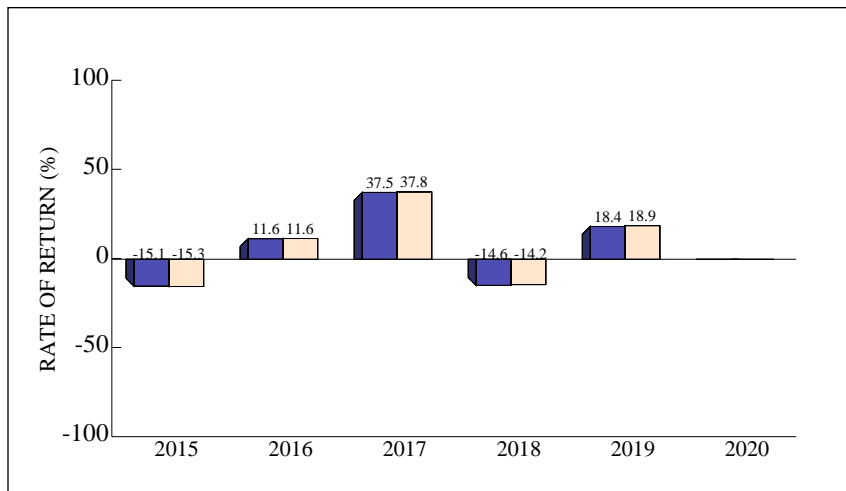
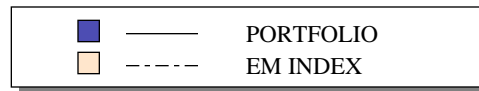


MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	YTD	1 YEAR	3 YEARS	5 YEARS	
SSGA EMERGING MARKETS	(Emerging Markets)	11.8 (42)	18.4 (63)	18.4 (63)	11.6 (45)	5.6 (57)	\$276,636,099
<i>Blended Emerging Markets Index</i>		<i>11.9 ---</i>	<i>18.9 ---</i>	<i>18.9 ---</i>	<i>12.0 ---</i>	<i>5.8 ---</i>	<i>---</i>
TOTAL	(Emerging Markets)	11.8 (42)	18.4 (63)	18.4 (63)	11.6 (45)	5.6 (57)	\$276,636,099
<i>Blended Emerging Markets Index</i>		<i>11.9 ---</i>	<i>18.9 ---</i>	<i>18.9 ---</i>	<i>12.0 ---</i>	<i>5.8 ---</i>	<i>---</i>

EMERGING MARKETS EQUITY RETURN COMPARISONS



Emerging Markets Universe

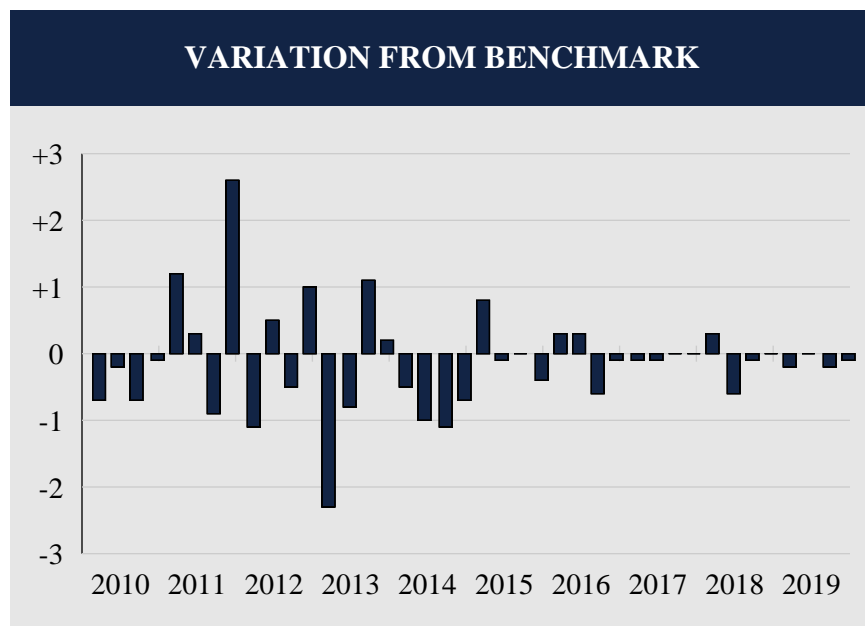


	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	11.8	7.1	7.8	18.4	11.6	5.6
(RANK)	(42)	(55)	(67)	(63)	(45)	(57)
5TH %ILE	14.2	11.3	14.4	30.2	16.4	9.7
25TH %ILE	12.6	9.2	11.2	25.5	14.0	7.4
MEDIAN	11.4	7.3	9.0	20.1	11.4	6.0
75TH %ILE	9.6	4.9	6.6	16.5	9.6	4.6
95TH %ILE	6.5	1.7	2.9	8.9	6.9	2.4
EM Index	11.9	7.3	8.1	18.9	12.0	5.8

Emerging Markets Universe

EMERGING MARKETS EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: BLENDED EMERGING MARKETS INDEX

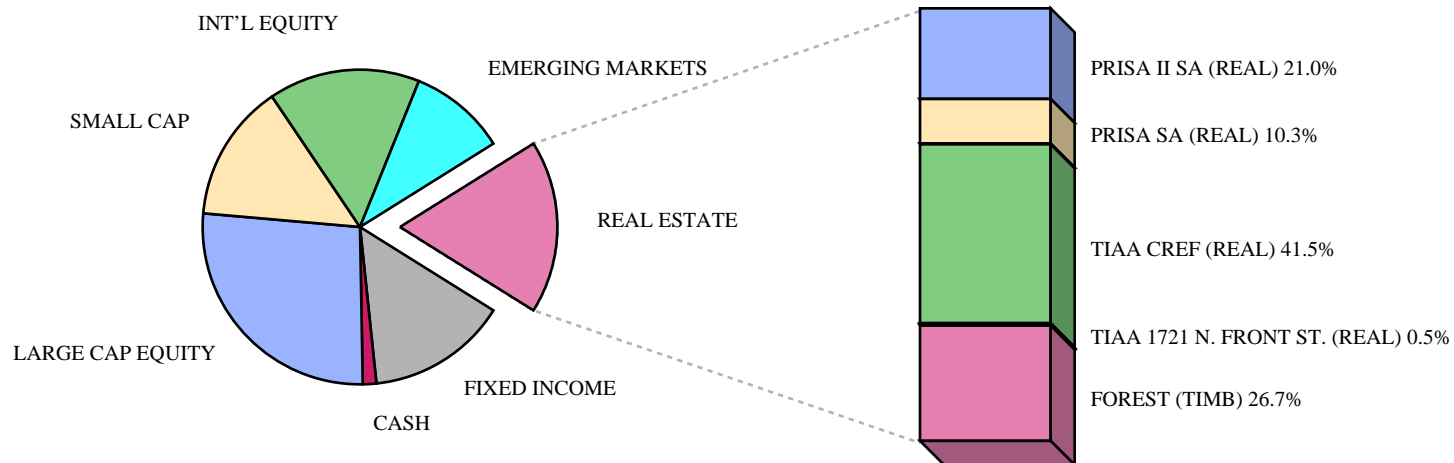


Total Quarters Observed	40
Quarters At or Above the Benchmark	16
Quarters Below the Benchmark	24
Batting Average	.400

RATES OF RETURN

Date	Portfolio	Benchmark	Difference
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
12/19	11.8	11.9	-0.1

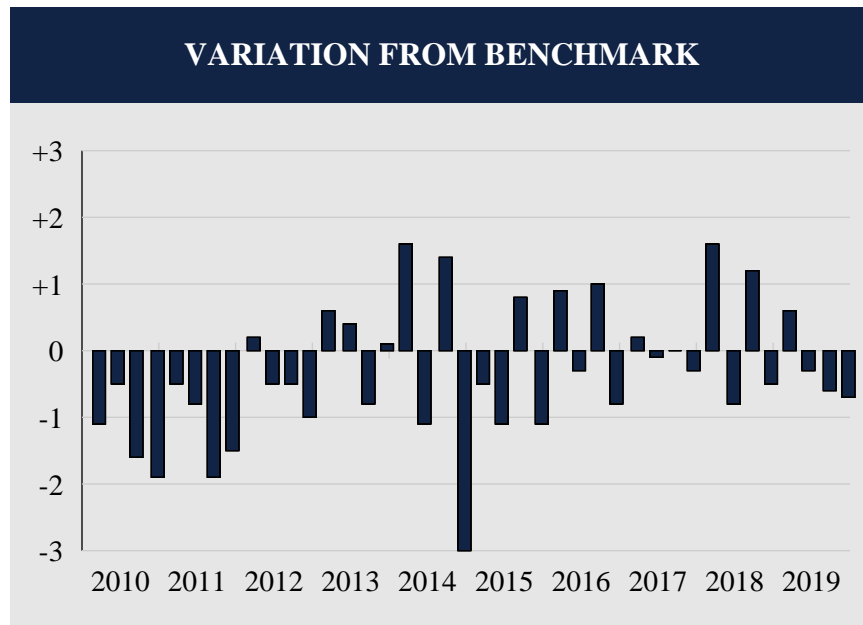
REAL ESTATE MANAGER SUMMARY



MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	YTD	1 YEAR	3 YEARS	5 YEARS	
PRISA II SA		2.1 ---	7.5 ---	7.5 ---	8.3 ---	10.6 ---	\$105,315,951
PRISA SA		1.3 ---	6.3 ---	6.3 ---	7.5 ---	9.3 ---	\$51,683,670
TIAA CREF		1.5 ---	9.4 ---	9.4 ---	8.5 ---	9.3 ---	\$208,328,085
<i>NCREIF NFI-ODCE Index</i>		<i>1.5 ---</i>	<i>5.3 ---</i>	<i>5.3 ---</i>	<i>7.1 ---</i>	<i>9.0 ---</i>	---
TIAA 1721 N. FRONT ST.		2.1 ---	5.0 ---	5.0 ---	3.1 ---	---	\$2,312,412
<i>NCREIF Property Index</i>		<i>1.5 ---</i>	<i>6.4 ---</i>	<i>6.4 ---</i>	<i>6.7 ---</i>	<i>8.3 ---</i>	---
FOREST		-1.5 ---	-2.3 ---	-2.3 ---	3.0 ---	4.7 ---	\$133,807,118
<i>NCREIF Timber Index</i>		<i>0.0 ---</i>	<i>1.3 ---</i>	<i>1.3 ---</i>	<i>2.7 ---</i>	<i>3.1 ---</i>	---
TOTAL		0.8 ---	5.3 ---	5.3 ---	6.8 ---	8.0 ---	\$501,447,236
<i>NCREIF Property Index</i>		<i>1.5 ---</i>	<i>6.4 ---</i>	<i>6.4 ---</i>	<i>6.7 ---</i>	<i>8.3 ---</i>	---

REAL ESTATE QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: NCREIF PROPERTY INDEX



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
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
12/19	0.8	1.5	-0.7

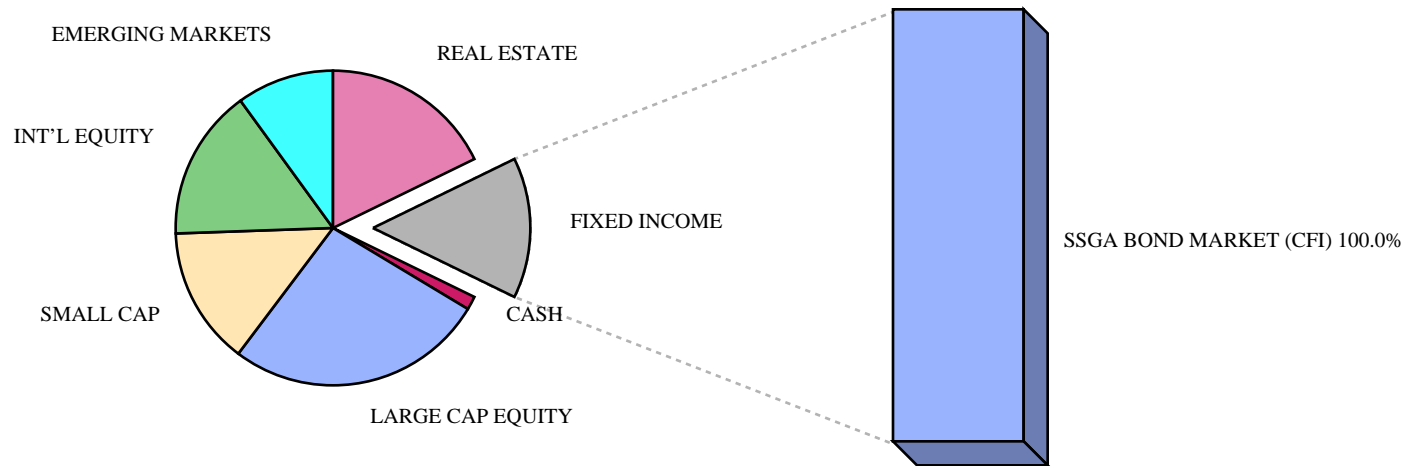
FIXED INCOME MANAGER

The Bloomberg Barclays US Aggregate Index returned 0.2% last quarter, while the Bloomberg Barclays Gov/Credit index was flat. For the trailing year they were up 8.7% and 9.7%, respectively.

**SSgA
(Broad Market)**

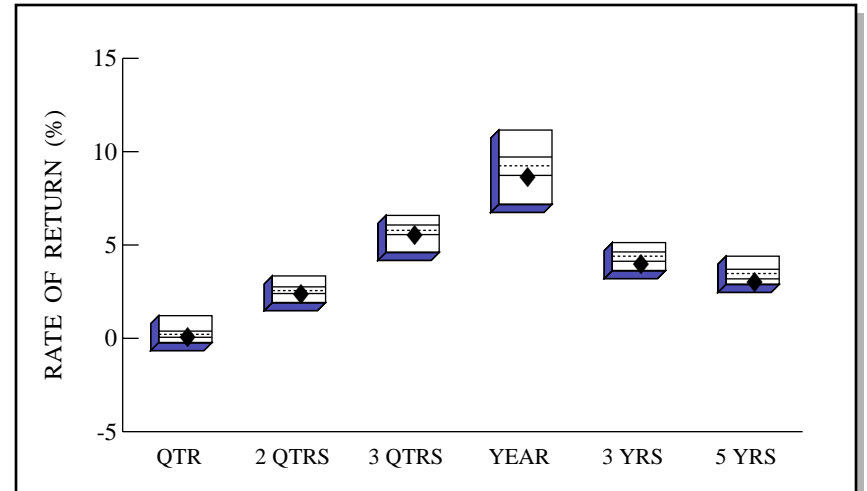
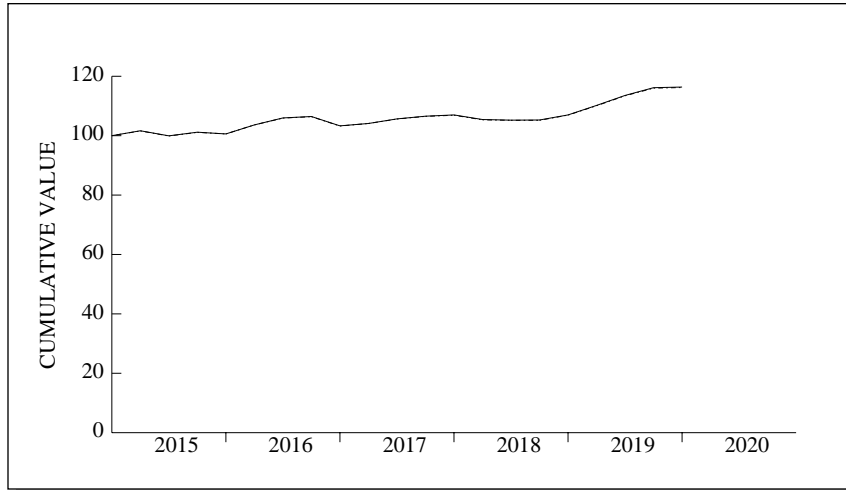
The SSgA fixed income component returned 0.2% last quarter. Over the trailing five years, the fund rose 3.1% per annum, in line with the Bloomberg Barclays Aggregate Index. At year end, this investment was valued at \$403,053,072.

FIXED INCOME MANAGER SUMMARY

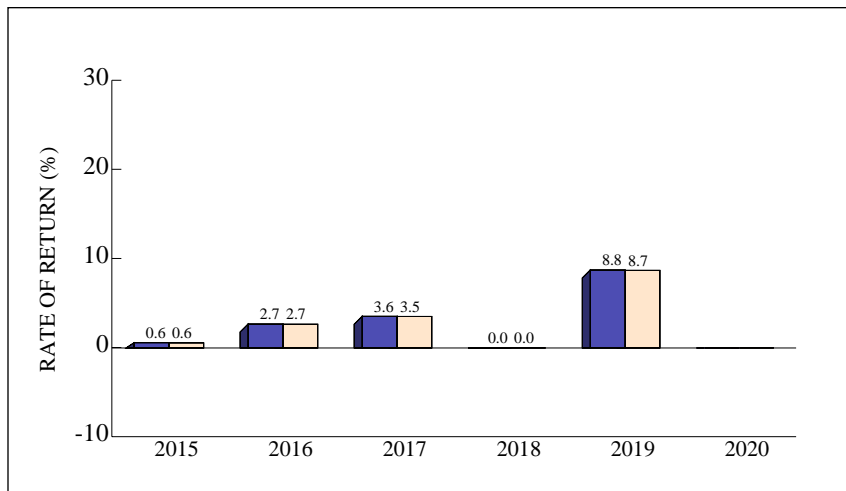


MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	YTD	1 YEAR	3 YEARS	5 YEARS	
SSGA BOND MARKET	(Core Fixed Income)	0.2 (59)	8.8 (75)	8.8 (75)	4.1 (83)	3.1 (86)	\$403,053,072
<i>Bloomberg Barclays Aggregate Index</i>		0.2 ----	8.7 ----	8.7 ----	4.0 ----	3.1 ----	----
TOTAL	(Core Fixed Income)	0.2 (59)	8.8 (75)	8.8 (75)	4.1 (83)	3.1 (86)	\$403,053,072
<i>Bloomberg Barclays Aggregate Index</i>		0.2 ----	8.7 ----	8.7 ----	4.0 ----	3.1 ----	----

FIXED INCOME RETURN COMPARISONS



Core Fixed Income Universe

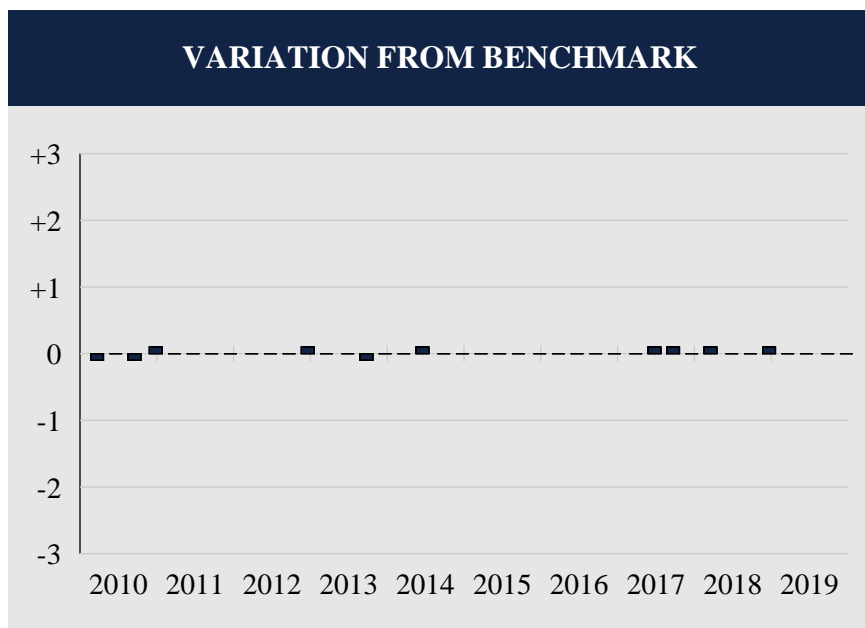


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	0.2	2.5	5.6	8.8	4.1	3.1
(RANK)	(59)	(64)	(67)	(75)	(83)	(86)
5TH %ILE	1.2	3.3	6.6	11.2	5.1	4.4
25TH %ILE	0.4	2.8	6.1	9.7	4.6	3.7
MEDIAN	0.2	2.6	5.8	9.2	4.4	3.5
75TH %ILE	0.1	2.4	5.6	8.7	4.1	3.2
95TH %ILE	-0.2	1.9	4.6	7.2	3.6	2.9
Agg	0.2	2.5	5.6	8.7	4.0	3.1

Core Fixed Income Universe

FIXED INCOME QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

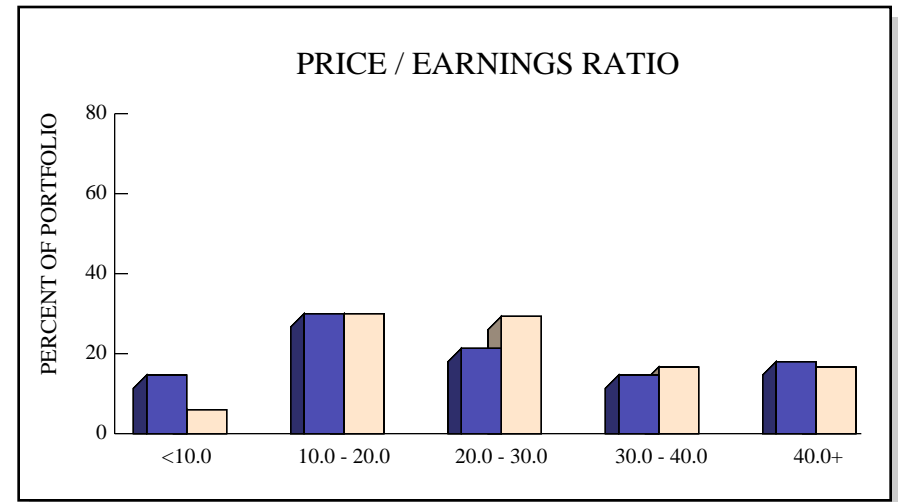
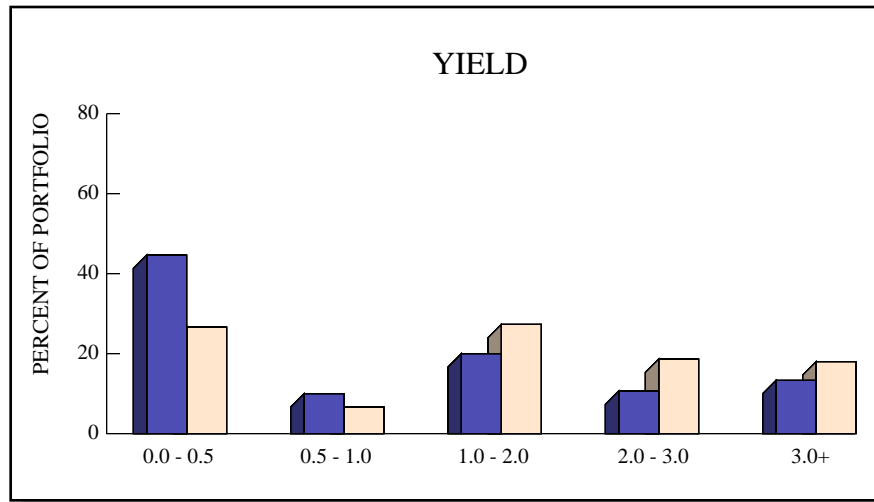
COMPARATIVE BENCHMARK: BLOOMBERG BARCLAYS AGGREGATE INDEX



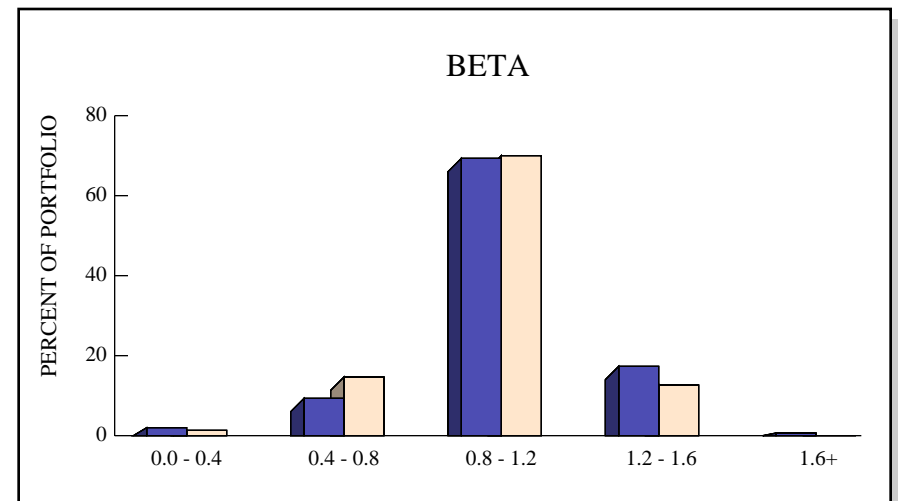
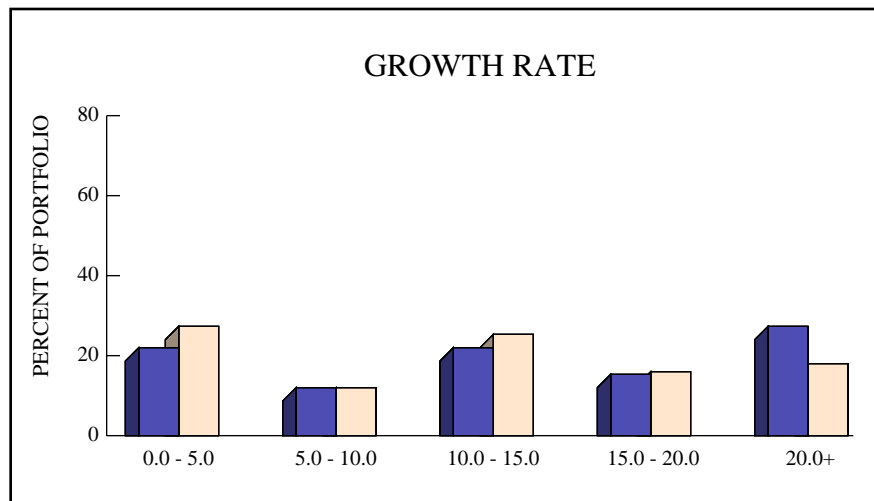
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
3/10	1.7	1.8	-0.1
6/10	3.5	3.5	0.0
9/10	2.4	2.5	-0.1
12/10	-1.2	-1.3	0.1
3/11	0.4	0.4	0.0
6/11	2.3	2.3	0.0
9/11	3.8	3.8	0.0
12/11	1.1	1.1	0.0
3/12	0.3	0.3	0.0
6/12	2.1	2.1	0.0
9/12	1.6	1.6	0.0
12/12	0.3	0.2	0.1
3/13	-0.1	-0.1	0.0
6/13	-2.3	-2.3	0.0
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
12/19	0.2	0.2	0.0

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

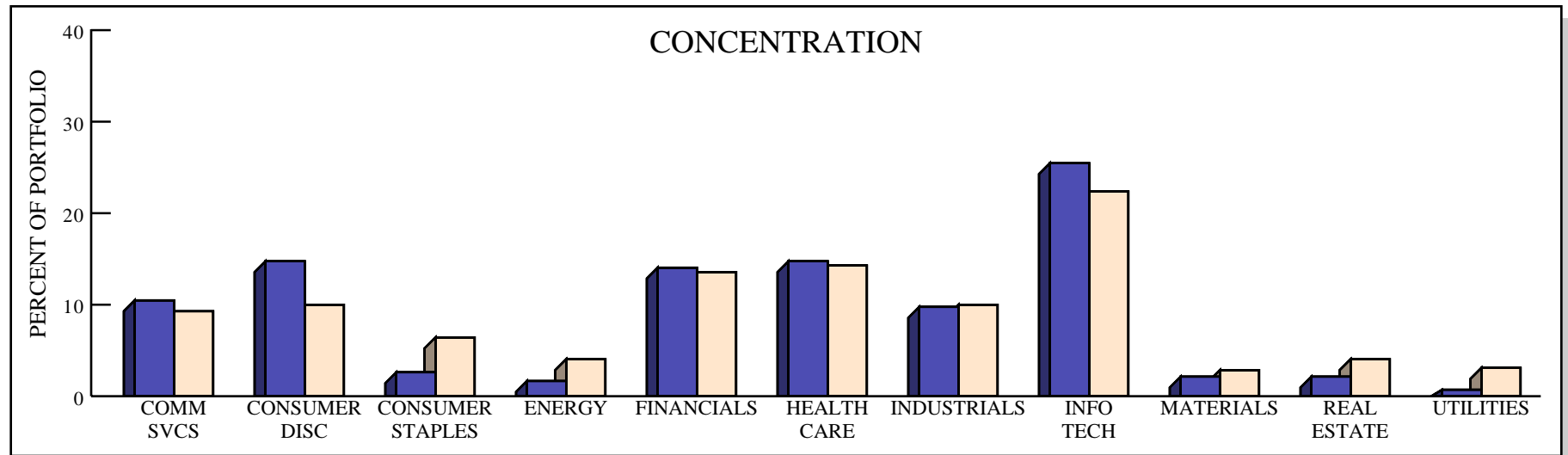
STOCK CHARACTERISTICS



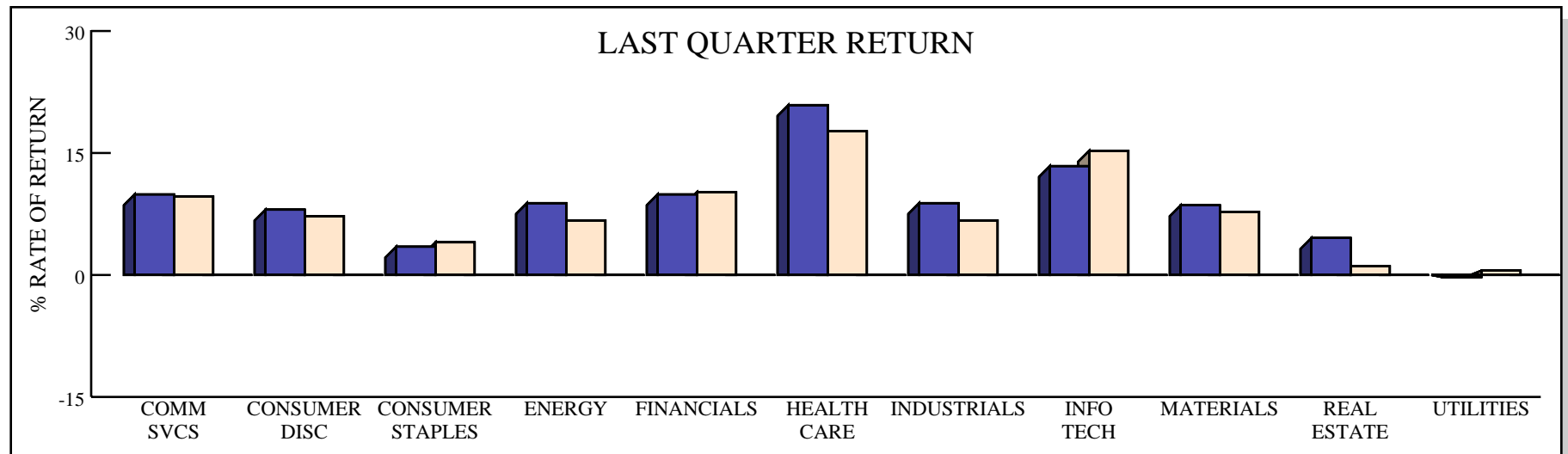
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	2,631	1.3%	15.5%	25.4	1.03
RUSSELL 3000	2,990	1.8%	12.0%	28.0	0.98



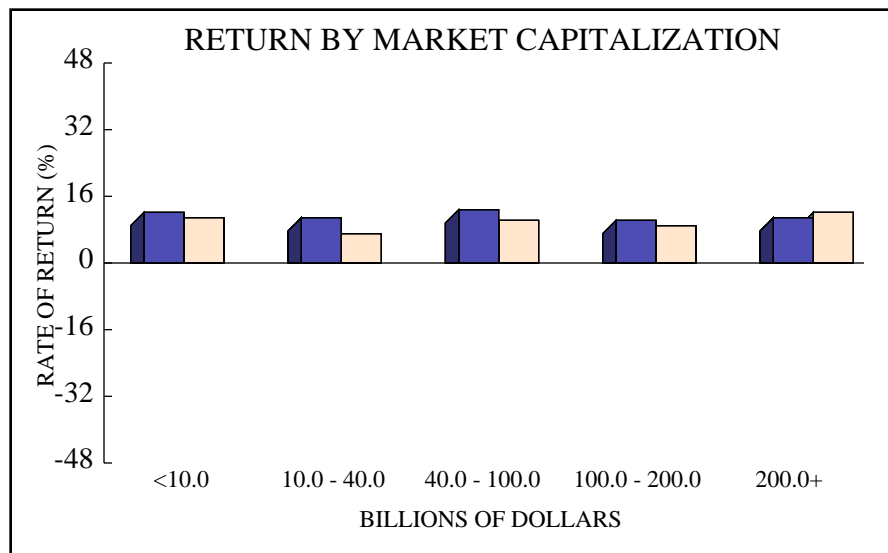
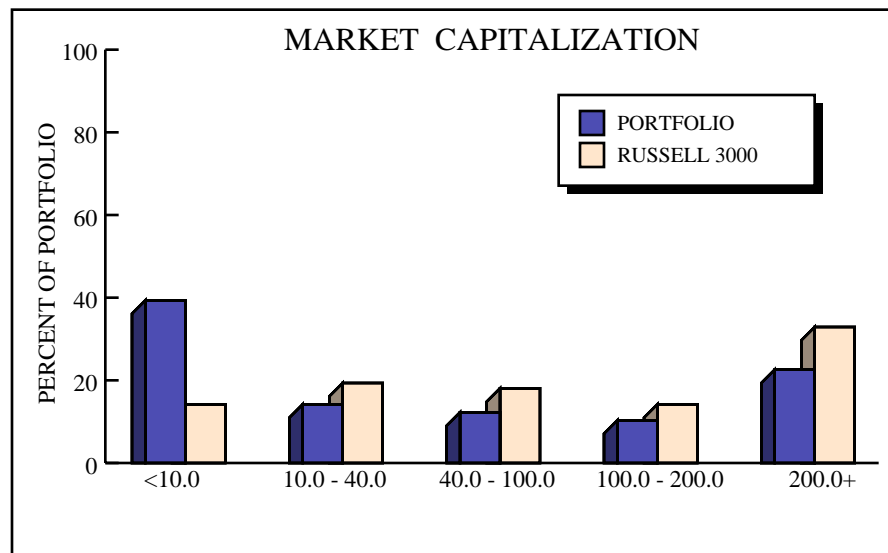
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 3000



TOP TEN HOLDINGS



TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	\$ 46,144,754	4.02%	13.8%	Information Technology	\$ 1203.1 B
2	ALPHABET INC-CL C	32,583,178	2.84%	9.7%	Communication Services	459.3 B
3	FACEBOOK INC-CLASS A	27,713,881	2.41%	15.3%	Communication Services	493.9 B
4	VISA INC-CLASS A SHARES	22,174,078	1.93%	9.4%	Information Technology	321.7 B
5	MASTERCARD INC - A	17,279,702	1.51%	10.1%	Information Technology	297.8 B
6	ZOETIS INC	16,212,479	1.41%	6.4%	Health Care	63.0 B
7	ADOBE INC	15,654,432	1.36%	19.4%	Information Technology	159.7 B
8	CITIGROUP INC	13,904,775	1.21%	16.5%	Financials	174.4 B
9	AMAZON.COM INC	13,494,775	1.18%	6.5%	Consumer Discretionary	916.2 B
10	BERKSHIRE HATHAWAY INC-CL B	13,178,903	1.15%	8.9%	Financials	313.3 B

Domestic Industry Sector Allocations
(Percent of Invested Equity)
As of December 31, 2019

	Comm Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities
Eagle	29.4	16.9	0.0	0.0	29.9	3.2	7.3	13.3	0.0	0.0	0.0
LSV Large Cap	7.4	10.6	5.3	3.6	18.1	16.7	11.9	20.0	4.8	1.0	0.5
Russell 1000 Value	8.2	5.9	8.9	8.2	23.9	13.0	9.7	6.3	4.3	5.2	6.6
Federated	6.3	14.3	0.9	0.0	4.6	23.3	11.2	32.7	3.1	3.6	0.0
Polen	16.5	19.9	0.0	0.0	2.2	14.0	0.0	47.4	0.0	0.0	0.0
Russell 1000 Growth	11.5	13.9	4.6	0.3	3.1	14.7	9.3	38.9	1.3	2.4	0.0
AMI	0.0	6.6	13.9	1.5	7.5	23.8	14.5	29.1	3.2	0.0	0.0
Copeland	5.5	11.7	6.6	3.4	14.9	12.9	14.6	14.4	3.7	7.9	4.4
Emerald	2.6	19.0	5.9	1.1	9.3	26.3	14.6	17.6	0.5	2.9	0.0
Russell 2000 Growth	2.4	11.9	3.3	0.6	5.7	30.4	19.1	17.3	3.1	4.6	1.5
LSV Small Cap	1.8	12.7	1.1	3.3	21.6	11.3	19.6	15.0	6.8	5.9	0.9
Smith, Graham & Co	0.0	17.5	1.2	3.2	20.7	13.5	14.1	24.8	2.3	1.4	1.2
Russell 2000 Value	2.2	9.7	2.7	5.8	30.2	5.4	13.1	9.3	4.7	11.1	5.9
S&P 500	10.4	9.7	7.2	4.3	13.0	14.2	9.1	23.2	2.7	2.9	3.3

Allocations may not total to 100% due to rounding.

International Industry Sector Allocations

As of December 31, 2019

	Comm Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities	Cash
HGK	2.4	20.1	3.2	2.8	14.2	3.1	26.0	17.2	0.0	5.6	3.6	1.9
Hardman Johnston	4.5	20.9	2.3	0.0	11.6	13.5	24.2	23.1	0.0	0.0	0.0	---
S&P Developed Ex US BMI	4.9	11.2	9.5	5.4	18.0	10.5	15.7	9.2	7.6	4.5	3.4	---

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	0.1	2.3	2.3	2.1	1.8
Domestic Equity	Style	QTR	YTD	1 Year	3 years	5 Years
Russell 3000	Broad Equity	9.1	31.0	31.0	14.6	11.2
S&P 500	Large Cap Core	9.1	31.5	31.5	15.3	11.7
Russell 1000	Large Cap	9.0	31.4	31.4	15.0	11.5
Russell 1000 Growth	Large Cap Growth	10.6	36.4	36.4	20.5	14.6
Russell 1000 Value	Large Cap Value	7.4	26.5	26.5	9.7	8.3
Russell Mid Cap	Midcap	7.1	30.5	30.5	12.0	9.3
Russell Mid Cap Growth	Midcap Growth	8.2	35.5	35.5	17.4	11.6
Russell Mid Cap Value	Midcap Value	6.3	27.0	27.0	8.1	7.6
Russell 2000	Small Cap	9.9	25.5	25.5	8.6	8.2
Russell 2000 Growth	Small Cap Growth	11.4	28.4	28.4	12.5	9.3
Russell 2000 Value	Small Cap Value	8.5	22.4	22.4	4.8	7.0
International Equity	Style	QTR	YTD	1 Year	3 years	5 Years
MSCI All Country World Ex US	Foreign Equity	9.0	22.1	22.1	10.4	6.0
MSCI EAFE	Developed Markets Equity	8.2	22.7	22.7	10.1	6.2
MSCI EAFE Growth	Developed Markets Growth	8.5	28.4	28.4	13.3	8.1
MSCI EAFE Value	Developed Markets Value	7.9	16.8	16.8	6.9	4.2
MSCI Emerging Markets	Emerging Markets Equity	11.9	18.9	18.9	12.0	6.0
Domestic Fixed Income	Style	QTR	YTD	1 Year	3 years	5 Years
Bloomberg Barclays Aggregate Index	Core Fixed Income	0.2	8.7	8.7	4.0	3.1
Bloomberg Barclays Capital Gov't Bond	Treasuries	-0.8	6.8	6.8	3.3	2.4
Bloomberg Barclays Capital Credit Bond	Corporate Bonds	1.1	13.8	13.8	5.8	4.4
Intermediate Aggregate	Core Intermediate	0.5	6.7	6.7	3.3	2.6
ML/BoA 1-3 Year Treasury	Short Term Treasuries	0.5	3.6	3.6	1.8	1.4
Bloomberg Barclays Capital High Yield	High Yield Bonds	2.6	14.3	14.3	6.4	6.1
Alternative Assets	Style	QTR	YTD	1 Year	3 years	5 Years
Bloomberg Barclays Global Treasury Ex US	International Treasuries	-0.2	5.2	5.2	4.5	2.0
NCREIF NFI-ODCE Index	Real Estate	1.5	5.3	5.3	7.1	9.0
HFRI FOF Composite	Hedge Funds	2.3	7.6	7.6	3.6	2.2

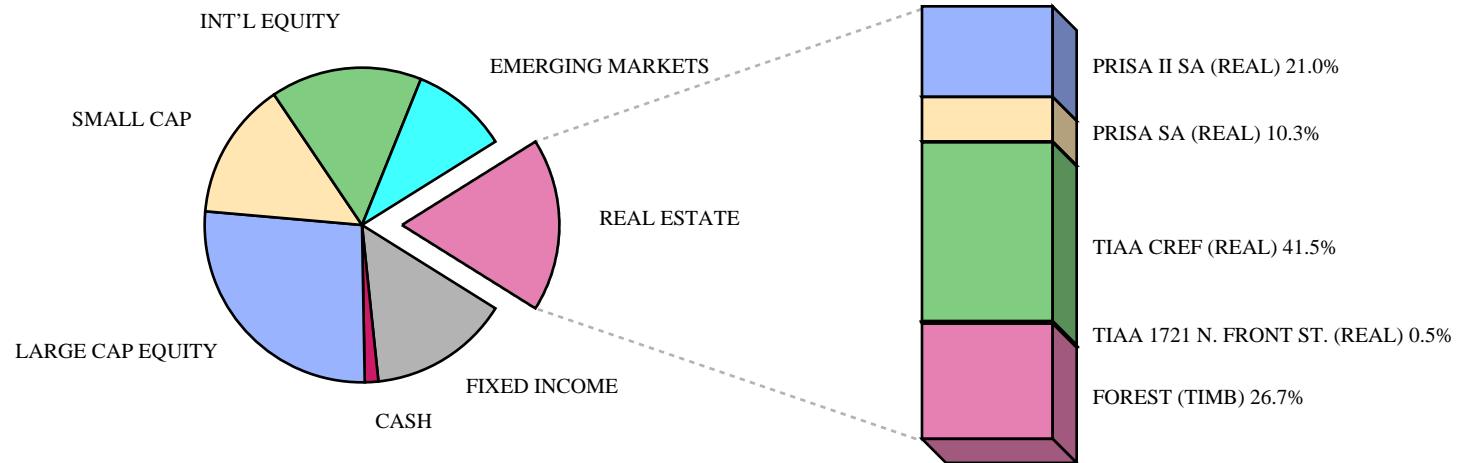
APPENDIX - DISCLOSURES

- * 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 utilizes 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
DECEMBER 2019

REAL ESTATE MANAGER SUMMARY

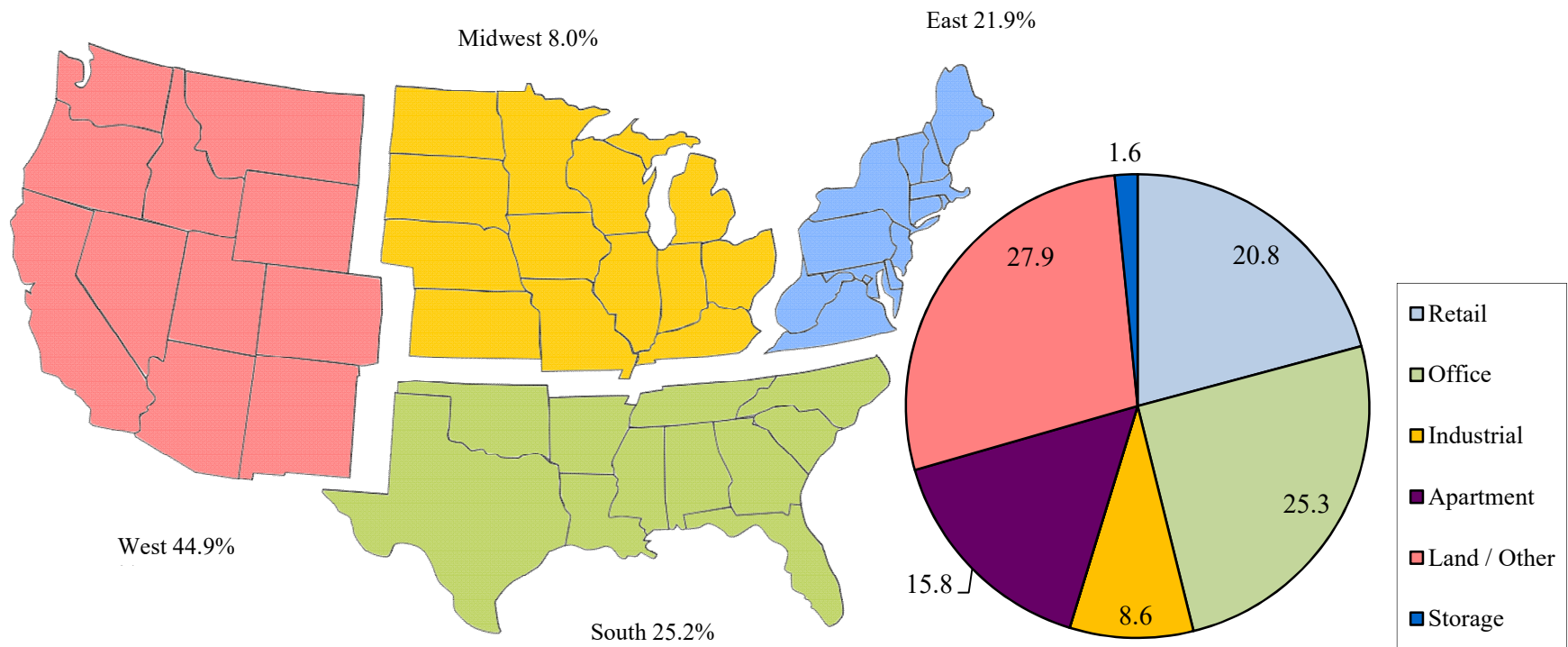


MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	YTD	1 YEAR	3 YEARS	5 YEARS	
PRISA II SA		2.1 ---	7.5 ---	7.5 ---	8.3 ---	10.6 ---	\$105,315,951
PRISA SA		1.3 ---	6.3 ---	6.3 ---	7.5 ---	9.3 ---	\$51,683,670
TIAA CREF		1.5 ---	9.4 ---	9.4 ---	8.5 ---	9.3 ---	\$208,328,085
<i>NCREIF NFI-ODCE Index</i>		<i>1.5 ---</i>	<i>5.3 ---</i>	<i>5.3 ---</i>	<i>7.1 ---</i>	<i>9.0 ---</i>	---
TIAA 1721 N. FRONT ST.		2.1 ---	5.0 ---	5.0 ---	3.1 ---	---	\$2,312,412
<i>NCREIF Property Index</i>		<i>1.5 ---</i>	<i>6.4 ---</i>	<i>6.4 ---</i>	<i>6.7 ---</i>	<i>8.3 ---</i>	---
FOREST		-1.5 ---	-2.3 ---	-2.3 ---	3.0 ---	4.7 ---	\$133,807,118
<i>NCREIF Timber Index</i>		<i>0.0 ---</i>	<i>1.3 ---</i>	<i>1.3 ---</i>	<i>2.7 ---</i>	<i>3.1 ---</i>	---
TOTAL		0.8 ---	5.3 ---	5.3 ---	6.8 ---	8.0 ---	\$501,447,236
<i>NCREIF Property Index</i>		<i>1.5 ---</i>	<i>6.4 ---</i>	<i>6.4 ---</i>	<i>6.7 ---</i>	<i>8.3 ---</i>	---

PMRS Real Estate Commitment

As of December 31st, the Pennsylvania Municipal Retirement System's aggregate real estate portfolio was valued at \$501,447,236, representing 17.9% of the total System's assets. TIAA distributed \$2,050,477 in October and the North Front Street property distributed \$60,932 in December. For reference, the NCREIF Property Index returned 1.5% in the fourth quarter. Over the trailing year, that index returned 6.4%, and an annualized 8.3% for the last five years. Over the same time frames, the Bloomberg Barclays Aggregate Index returned 0.2%, 8.7%, and an annualized 3.1%, 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 December 31st, 2019, the Pennsylvania Municipal Retirement System's Prudential PRISA SA portfolio was valued at \$51,683,670, representing an increase of \$558,628 from the September quarter's ending value of \$51,125,042. Last quarter, the Fund posted withdrawals totaling \$124,266, which partially offset the portfolio's net investment return of \$682,894. Since there were no income receipts for the fourth quarter, the portfolio's net investment return figure was the product of net realized and unrealized capital gains totaling \$682,894.

Property Type/Geographical Distribution

The office sector made up 36% of the PRISA SA portfolio. Industrial and retail properties made up 16.6% and 14.5% respectively. Apartments comprised 25.3% of the portfolio's value, storage was 6.1%, and the remaining 1.6% was in other sectors or vacant land.

Geographically, PRISA's portfolio was mostly situated in the East and West, whose percentages were 38.9% and 35.4%. Another 14.5% of the portfolio was situated in the South, while the remaining 7.6% resided in the Midwest.

Account Performance

During the fourth quarter, the Prudential PRISA SA account returned 1.3%, which was 0.2% below the NCREIF NFI-ODCE Index's return of 1.5%. Over the trailing year, the portfolio returned 6.3%, which was 1.0% above the benchmark's 5.3% return. Since December 1990, the Prudential PRISA SA portfolio returned 7.9% per annum, while the NCREIF NFI-ODCE Index returned an annualized 7.5% over the same time frame.

PRISA II

Investment Return

As of December 31st, 2019, the Pennsylvania Municipal Retirement System's Prudential PRISA II SA portfolio was valued at \$105,315,951, which represented an increase of \$1,935,033 from the September quarter's ending value of \$103,380,918. Last quarter, the portfolio recorded a net withdrawal of \$286,155, which only partially offset the fund's net investment return of \$2,221,188. In the absence of income receipts for the quarter, the portfolio's net investment return was the product of \$2,221,188 in realized and unrealized capital gains.

Property Type/Geographical Distribution

PRISA II, like PRISA, situates the largest component of its portfolio in office properties: 36.3% in this case. Retail and apartments also comprised significant portions, with the former at 18.8%, and the latter at 32.1%. Storage made up 4.5%. Investment in land was 4.9%, and industrial properties represented 3.4%.

Geographically, 32.5% of this portfolio was situated in the West, 41.9% resided in the East, while 23.1% was in the South. The remaining 2.4% was located in the Midwest.

Account Performance

In the fourth quarter, the Prudential PRISA II SA account gained 2.1%, which was 0.6% greater than the NCREIF NFI-ODCE Index's return of 1.5%. Over the trailing twelve-month period, the account returned 7.5%, which was 2.2% greater than the benchmark's 5.3% performance. Since June 2007, the Prudential PRISA II SA portfolio returned 4.9% 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 December 31st, 2019, the Pennsylvania Municipal Retirement System's Forest Investment Associates Keystone Forest Investments portfolio was valued at \$133,807,118, a decrease of \$1,995,675 relative to the September quarter's ending value of \$135,802,793. Last quarter, the Fund recorded no net contributions or withdrawals and posted a net investment loss for the period of \$1,995,675. Since there were no income receipts during the fourth 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 46.8% of its assets in the South, 23.8% in the East, and 29.5% 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 fourth quarter, the Forest Investment Associates Keystone Forest Investments portfolio lost 1.5%, which was 1.5% less than the NCREIF Timber Index's return of 0.0%. Over the trailing year, the account returned -2.3%, which was 3.6% less than the benchmark's 1.3% return. Since March 1999, the portfolio returned 4.8% per annum, while the NCREIF Timber Index returned an annualized 6.1% 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 December 31st, 2019, the Pennsylvania Municipal Retirement System's TIAA CREF portfolio was valued at \$208,328,085, representing an increase of \$661,003 from the September quarter's ending value of \$207,667,082. Last quarter, the Fund posted withdrawals totaling \$2,050,477, which offset the portfolio's net investment return of \$2,711,480. Income receipts totaling \$2,632,402 plus net realized and unrealized capital gains of \$79,078 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 63.9%. The Midwest represented 16.1%, while the South made up 14.5% and the remaining 5.5% was in the East.

Retail space was the largest sector, making up 37.1%. Offices comprised 32.5%, while 15.6% was in apartments and 14.9% was industrial.

Account Performance

For the fourth quarter, the TIAA CREF account gained 1.5%, which was equal to the NCREIF NFI-ODCE Index's return of 1.5%. Over the trailing twelve-month period, the account returned 9.4%, which was 4.1% above the benchmark's 5.3% performance. Since June 2008, the portfolio returned 4.0% 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 December 31st, 2019, the Pennsylvania Municipal Retirement System's TIAA CREF 1721 North Front Street portfolio was valued at \$2,312,412, representing a decrease of \$24,085 relative to the September ending value of \$2,336,497. Over the last three months, the portfolio recorded \$60,932 in net withdrawals, which overshadowed the fund's net investment return of \$36,847. In the absence of income receipts during the quarter, the portfolio's net investment return figure was the result of \$36,847 in realized and unrealized capital gains.

Account Performance

For the fourth quarter, the TIAA CREF 1721 North Front Street portfolio returned 2.1%, which was 0.6% greater than the NCREIF Property Index's return of 1.5%. Over the trailing twelve-month period, the account returned 5.0%, which was 1.4% below the benchmark's 6.4% return. Since June 2016, the portfolio returned 0.6% 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 **6.98%** **As of**
Market Value **\$** **208,328,085** **12/31/2019**

<u>Year</u>	<u>Capital Calls</u>	<u>Distributions</u>	<u>Fees</u>
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	\$ -	\$ 7,209,262	\$ 1,813,349
Total	\$ 198,105,622	\$ 92,716,558	\$ 13,129,685



Pennsylvania Municipal Retirement System

Performance Report (Finalized)
December 2019

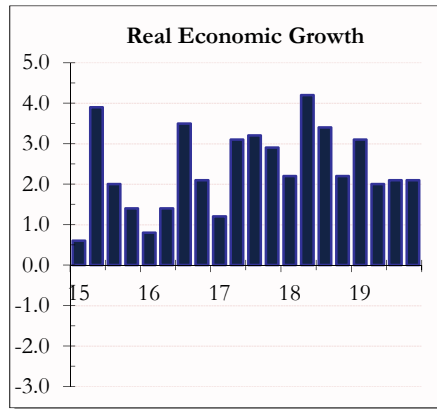


DAHAB ASSOCIATES
New York Massachusetts Pennsylvania Texas Florida

ECONOMIC ENVIRONMENT

Contradicting Signals

In a stunning contradiction, the Federal Reserve cut rates in 2019, despite continued strength from the US economy. However, in



notes following the most recent meeting, the Fed indicated that “the current stance of monetary policy is appropriate.” Its new, acquiescent stance is unsurprising when taking into account stable economic data and the continued rise of asset prices. As of December 31, the

Fed Funds Rate was targeted at 1.50-1.75%.

Payroll growth was better than expected in the quarter and was firmer in the second half of 2019, relative to the first half. The labor force participation rate, unemployment rate, and employment-to-population rate were all unchanged. While continuing improvement in these statistics would be welcome, they are already at acceptable levels.

Housing activity indicators demonstrated improvement again this quarter. The decline of mortgage interest rates throughout the year has boosted both new and existing home sales due to their enhanced affordability across the nation. There is one spot of unease: while home-builder sentiment is near pre-crisis highs, single-family permits have lagged.

GDP grew at a seasonably and inflation adjusted annual rate of 2.1% in the fourth quarter. The economy’s expansion reflected a

boost from net trade, as imports dropped and exports increased sharply.

The ISM Manufacturing PMI decreased to 47.2, the lowest PMI in 10 years. Regional Fed surveys also point to sluggish manufacturing growth in most districts throughout the country.

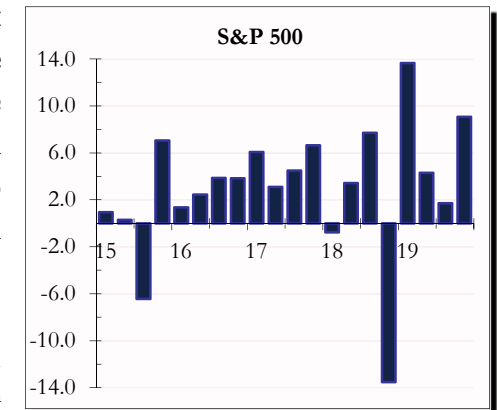
The 10-year breakeven inflation rate represents a measure of expected inflation, derived from 10-year constant maturity securities and the 10-year TIPS. That rate rose from 1.48% to 1.77%, still below the Fed’s target of 2%.

DOMESTIC EQUITIES

Incredible Year

Domestic equity markets ended a strong 2019 with robust gains as trade uncertainty faded. The large-cap S&P 500 Index rose 9%,

helping it solidify the best yearly gain (31%) since 2013. However, it should be noted that this was from a low established from steep declines suffered in December 2018. The small-cap section of the market, as measured by the Russell 2000, saw even larger 4th quarter gains (9.9%) than their large-cap counterparts.



Big gains in domestic stocks were led by the Technology and Health Care sectors, which saw gains of 14.0% and 14.9%, respectively. The Technology sector got a boost from easing trade tensions;

further, the tech sector would be among the principal beneficiaries, should trade talks continue to move forward. The Healthcare sector was strong across the board, with 75% of companies included in the Russell 3000 seeing positive returns.

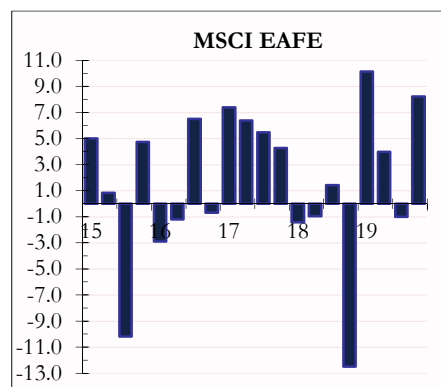
Growth stocks continued to outpace their value counterparts across all capitalization sizes. Among large-cap equities, growth outpaced value by 2.8% in the fourth quarter, and 9.9% for the year. The spread was a bit narrower within the small-cap universe, where growth outperformed value by 1.9% for the quarter and 6.0% for the year.

U.S. REITs were the lone soft spot in the quarter, losing 2.2%.

INTERNATIONAL EQUITIES

Strong Finish

International stocks, as measured by the MSCI EAFE, made strong gains during the quarter (8.2%). These gains were not led by any



single country, but through broad support. The top 14 weighted countries in the index all registered gains.

Notably, the U.K. market was up 10.5%, led by surges in Utilities and Real Estate stocks, which saw gains of over 20%. These domestically-

focused areas performed well amid the reduced political uncertainty that followed the general election victory of the Conservative party.

The Japanese market, the largest weighting in the index, rose in every month of the quarter to record a total return of 8.6%. Sentiment for Japanese equities has ebbed and flowed with geopolitical tensions throughout the year. However, sentiment grew stronger due to signs of easing tension between the U.S. and China, and the expectation that a phase one trade agreement would take place in January.

German equities gained 9.9%, led by better than expected economic data. The Ifo Business Climate Index, a highly-regarded early indicator of economic developments, improved to 96.3 from 94.6 in September.

France, the index's 3rd largest weighting, saw gains slightly above the index (8.3%). These returns are wholly attributable to the three largest sectors: Industrials, Consumer Discretionary, and Financials. Financials were led by BNP Paribas and Societe Generale, which saw gains of 21.8% and 27.0%, respectively. The Consumer Discretionary sector rose 12.7% and also saw a spike in M&A; one notable deal was luxury goods producer LVMH's purchase of U.S. jeweler Tiffany & Co. for \$16.6 billion.

Emerging Markets (EM) equities had an even stronger quarter than developed international equities, gaining 11.7% as measured by the MSCI EM Index. Nine out of the top 10 EM countries by weight saw positive returns, with Thailand being the lone outlier. All 11 sectors had positive gains.

Chinese equities, which make up nearly 30% of the EM Index, rose 15.5%. These gains were led by tech giants Alibaba, Baidu, and JD.com, which rose by 26.8%, 23.0%, and 24.9%, respectively. Decreasing trade tensions, as well as U.S. dollar weakness, provided support.

Tech heavy countries, South Korea and Taiwan, also saw large gains. Stocks of their largest companies, Samsung and Taiwan Semiconductor, appreciated 17.7%, and 26.9%, respectively, after earnings expectations were revised upwards following solid Q3 sales figures.

Russia, the index's 7th largest country by weighting, delivered stronger than expected performance (17.2%). The country, with its heavy dependence on energy companies, benefited from a rise in crude oil prices. These prices rose due to many oil-producing nations announcing further production cuts through the first quarter of 2020. By repeatedly slashing interest rates to jump-start growth, the Russian government provided another boost to assets.

Chilean equities (-9.3%) was the largest detractor to emerging market performance. Investors were rattled by mass protests that erupted in that country amid concerns over inequality.

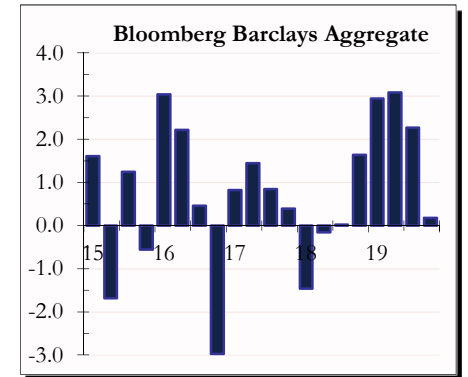
BOND MARKET

Slow and Steady

The broad fixed income market generated strong total returns in 2019. The Bloomberg Barclays US Aggregate, which acts as a bellwether for domestic investors, returned 8.7% for full-year 2019. This was an amazing result in a year where yields started at almost historic lows.

Q4 returns, however, were quite mixed. The market saw returns as high as 3.5% for Global High Yield and as low as -4.2% for Long-Dated Treasuries.

A slight sell-off in longer-dated Treasuries caused yields to rise, as progress from trade talks, accommodative monetary policy, and mostly positive economic news eased fears of a looming recession. There was a decline in shorter-term Treasury yields, instruments that are highly correlated to monetary policy expectations.



The closely watched 3-month/10-year yield spread, which had been inverted since May, returned to a more normal upwardly sloping curve.

Global bonds, while weak, still returned a positive 0.5% for the quarter, bringing the year-to-date return to 6.8%. Emerging market fixed income, converted to the U.S. dollar, saw solid returns of 2.1% in the quarter and 13.1% for 2019. Local currency bonds did even better, rising 16.1% for the year, as EM currencies rebounded.

CASH EQUIVALENTS

Higher but Still Low Yield

The three-month T-Bill returned 0.4% for the third quarter and 2.1% for full year 2019. Treasuries with maturities longer than one-year achieved a latest 12-month return of at least 3.5%. Expected future returns for cash equivalents remain dim, with the 30-year Treasury yield sitting near 2.4%. However, the yield was greater than what had been seen last quarter (2.1%).

Economic Statistics

	Current Quarter	Previous Quarter
GDP	2.1%	2.1%
Unemployment	3.5%	3.7%
CPI All Items Year/Year	2.3%	1.7%
Fed Funds Rate	1.75%	2.00%
Industrial Capacity	77.1%	77.6%
US Dollars per Euro	1.12	1.09

Major Index Returns

Index	Quarter	12 Months
Russell 3000	9.1%	31.0%
S&P 500	9.1%	31.5%
Russell Midcap	7.1%	30.5%
Russell 2000	9.9%	25.5%
MSCI EAFE	8.2%	22.7%
MSCI Emg Markets	11.9%	18.9%
NCREIF ODCE	1.5%	5.4%
U.S. Aggregate	0.2%	10.4%
90 Day T-bills	0.4%	2.3%

Domestic Equity Return Distributions

Quarter	Trailing Year		
	VAL	COR	GRO
LC	7.4	9.0	10.6
MC	6.3	7.1	8.2
SC	8.5	9.9	11.4

Market Summary

- All asset classes saw positive gains in 2019.
- Global equity markets continued their rise.
- The unemployment rate fell to 3.5%.
- Inflation remains subdued.
- Growth continues to outpace Value in the stock market.

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System was valued at \$2,800,814,336, representing an increase of \$188,958,739 from the September quarter's ending value of \$2,611,855,597. Last quarter, the Fund posted net contributions equaling \$7,262,194 plus a net investment gain equaling \$181,696,545. Total net investment return was the result of income receipts, which totaled \$6,514,411 and net realized and unrealized capital gains of \$175,182,134.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the total portfolio gained 7.0%, which ranked in the 4th percentile of the Public Fund universe. Over the trailing twelve-month period, this portfolio returned 21.1%, ranking in the 15th percentile. Since December 1985, the portfolio returned 8.9% on an annualized basis.

Large Cap Equity

Last quarter, the large cap equity portion of the portfolio gained 10.1%, which was 1.0% greater than the S&P 500 Index's return of 9.1% and ranked in the 19th percentile of the Large Cap universe. Over the trailing year, the large cap equity portfolio returned 35.4%, which was 3.9% above the benchmark's 31.5% return, ranking in the 14th percentile. Since December 1985, this component returned 11.2% per annum. For comparison, the S&P 500 returned an annualized 10.8% over the same time frame.

Small Cap Equity

For the fourth quarter, the small cap equity segment returned 9.9%, which was equal to the Russell 2000 Index's return of 9.9% and ranked in the 24th percentile of the Small Cap universe. Over the trailing year, this segment returned 28.7%, which was 3.2% greater than the benchmark's 25.5% return, and ranked in the 26th percentile.

International Equity

In the fourth quarter, the international equity segment gained 11.0%, which was 2.8% above the Blended International Index's return of 8.2% and ranked in the 36th percentile of the International Equity universe. Over the trailing twelve-month period, this segment returned 29.3%, which was 6.6% greater than the benchmark's 22.7% performance, and ranked in the 16th percentile.

Emerging Markets Equity

Last quarter, the emerging markets equity segment gained 11.8%, which was 0.1% below the Blended Emerging Markets Index's return of 11.9% and ranked in the 42nd percentile of the Emerging Markets universe. Over the trailing twelve-month period, this segment returned 18.4%, which was 0.5% below the benchmark's 18.9% performance, ranking in the 63rd percentile.

Real Estate

For the fourth quarter, the real estate portion of the portfolio gained 0.8%, which was 0.7% below the NCREIF Property Index's return of 1.5%. Over the trailing year, this component returned 5.3%, which was 1.1% less than the benchmark's 6.4% return. Since December 1985, this component returned 6.9% annualized, while the NCREIF Property Index returned an annualized 7.8% over the same time frame.

Fixed Income

During the fourth quarter, the fixed income segment returned 0.2%, which was equal to the Bloomberg Barclays Aggregate Index's return of 0.2% and ranked in the 59th percentile of the Core Fixed Income universe. Over the trailing year, this segment's return was 8.8%, which was 0.1% above the benchmark's 8.7% return, and ranked in the 75th percentile. Since December 1985, this component returned 6.4% annualized. The Bloomberg Barclays Aggregate Index returned an annualized 6.4% over the same period.

ASSET ALLOCATION

On December 31, 2019, the allocation of assets was as follows*:

TOTAL PORTFOLIO	100.0%	\$2,800,814,336
Domestic Large Cap	26.7%	\$747,838,883
Domestic Small Cap	14.3%	\$399,879,666
Total Domestic Equity	41.0%	\$1,147,718,549
International Developed Markets	15.5%	\$433,719,931
International Emerging Markets	9.9%	\$276,636,099
Total International Equity	25.4%	\$710,356,030
Total Equity	66.3%	\$1,858,074,579
Real Estate	17.9%	\$501,447,236
Fixed Income	14.4%	\$403,053,072
Cash and Equivalents	1.4%	\$38,239,449

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

EXECUTIVE SUMMARY - GROSS OF FEES

PERFORMANCE SUMMARY

	Quarter	YTD /1Y	3 Year	5 Year	10 Year	Since 12/85
Total Portfolio	7.0	21.1	11.2	8.4	9.1	8.9
<i>PUBLIC FUND RANK</i>	(4)	(15)	(5)	(5)	(15)	----
Shadow Index	6.4	19.0	9.7	7.7	8.8	8.7
Domestic Equity	10.1	33.1	15.2	11.4	13.3	----
<i>DOMESTIC EQUITY RANK</i>	(19)	(20)	(31)	(31)	(44)	----
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
<i>LARGE CAP RANK</i>	(19)	(14)	(20)	(21)	(23)	----
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	----
<i>SMALL CAP RANK</i>	(24)	(26)	(44)	(54)	(59)	----
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	----
<i>INTERNATIONAL EQUITY RANK</i>	(36)	(16)	(23)	(25)	(37)	----
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	7.8	23.1	9.9	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	----
<i>EMERGING MARKETS RANK</i>	(42)	(63)	(45)	(57)	(91)	----
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	0.8	5.3	6.8	8.0	8.7	6.9
NCREIF NPI	1.5	6.4	6.7	8.3	10.2	7.8
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
<i>CORE FIXED INCOME RANK</i>	(59)	(75)	(83)	(86)	(90)	----
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	17.9%	501,447,236
Fixed Income	14.4%	403,053,072
Cash	1.4%	38,239,449
Total Portfolio	100.0%	2,800,814,336

INVESTMENT RETURN

Market Value 9/2019	\$ 2,611,855,597
Contribs / Withdrawals	7,262,194
Income	6,514,411
Capital Gains / Losses	175,182,134
Market Value 12/2019	\$ 2,800,814,336

EXECUTIVE SUMMARY - NET OF FEES**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year	10 Year
Total Portfolio - Net	6.8	20.5	10.7	7.9	8.6
Shadow Index	6.4	19.0	9.7	7.7	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	7.8	23.1	9.9	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	0.6	4.4	5.8	7.1	7.7
NCREIF NPI	1.5	6.4	6.7	8.3	10.2
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

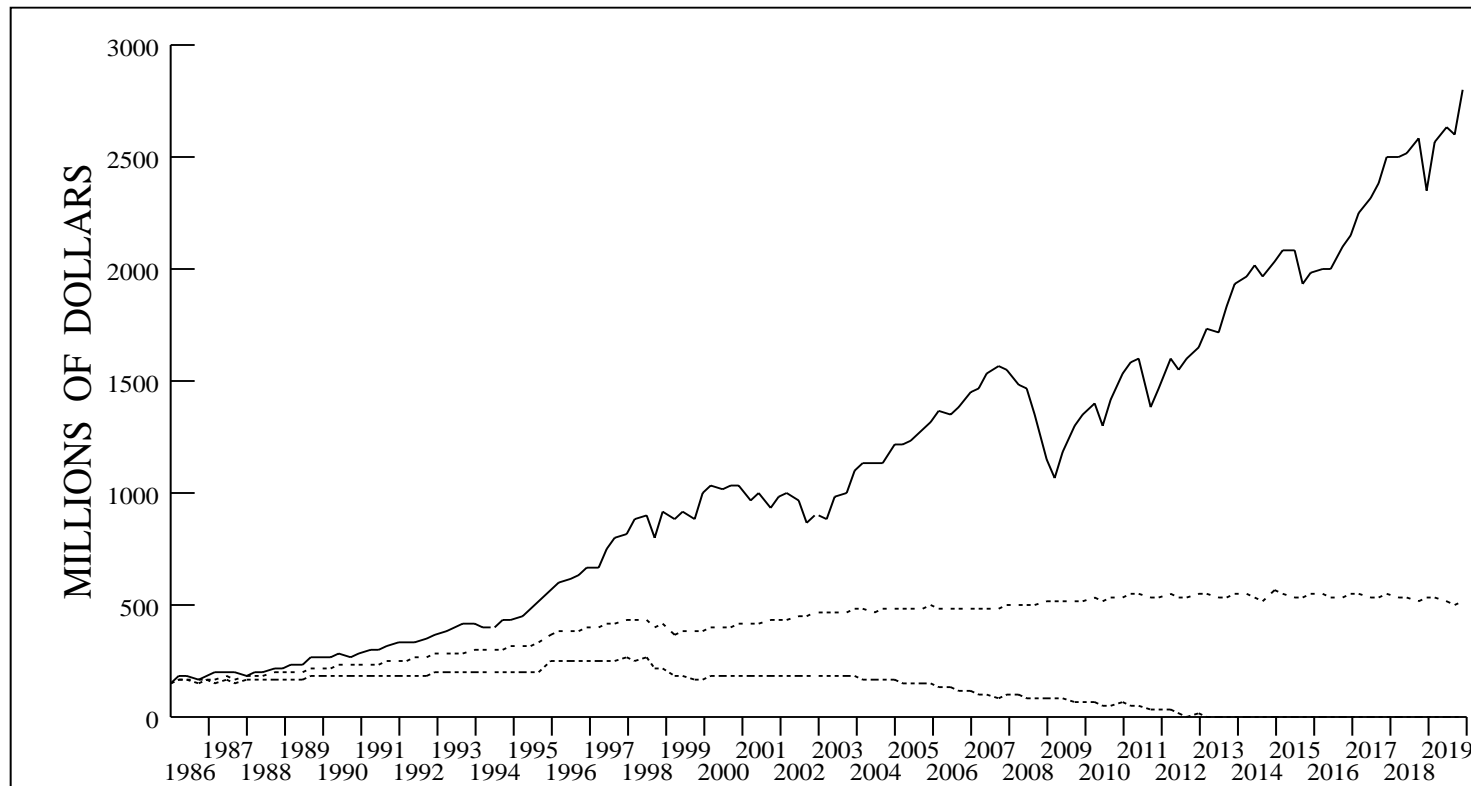
ASSET ALLOCATION

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	17.9%	501,447,236
Fixed Income	14.4%	403,053,072
Cash	1.4%	38,239,449
Total Portfolio	100.0%	2,800,814,336

INVESTMENT RETURN

Market Value 9/2019	\$ 2,611,855,597
Contribs / Withdrawals	7,262,194
Income	6,514,411
Capital Gains / Losses	175,182,134
Market Value 12/2019	\$ 2,800,814,336

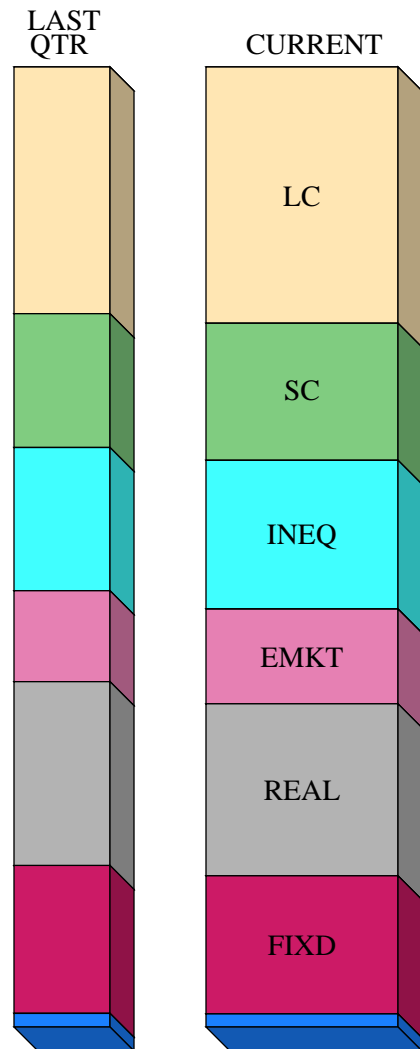
INVESTMENT GROWTH



— ACTUAL RETURN
 - - - 5.25%
 0.0%

VALUE ASSUMING
 5.25% RETURN \$ 517,452,917

	LAST QUARTER	PERIOD 12/85 - 12/19
BEGINNING VALUE	\$ 2,611,855,597	\$ 162,395,431
NET CONTRIBUTIONS	7,262,194	-377,417,550
<u>INVESTMENT RETURN</u>	<u>181,696,545</u>	<u>3,015,836,455</u>
ENDING VALUE	\$ 2,800,814,336	\$ 2,800,814,336
INCOME	6,514,411	567,737,058
<u>CAPITAL GAINS (LOSSES)</u>	<u>175,182,134</u>	<u>2,448,099,397</u>
INVESTMENT RETURN	181,696,545	3,015,836,455



	<u>VALUE</u>	<u>PERCENT</u>	<u>TARGET</u>	<u>DIFFERENCE</u> <u>+ / -</u>
■ LARGE CAP EQUITY ■ SMALL CAP EQUITY ■ INTERNATIONAL EQUITY ■ EMERGING MARKETS EQUITY ■ REAL ESTATE ■ FIXED INCOME ■ CASH & EQUIVALENT	\$ 747, 838, 883 399, 879, 666 433, 719, 931 276, 636, 099 501, 447, 236 403, 053, 072 38, 239, 449	26.7% 14.3% 15.5% 9.9% 17.9% 14.4% 1.4%	25.0% 15.0% 15.0% 10.0% 20.0% 15.0% 0.0%	1.7% -0.7% 0.5% -0.1% -2.1% -0.6% 1.4%
TOTAL FUND	\$ 2, 800, 814, 336	100.0%		

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ALLOCATIONS & TARGETS AS OF DECEMBER 2019**

Manager	Target	Market Value	%	+ / -	Market Value Ex-cash	%	+ / -
Total Portfolio	-	\$2,800,814,336	100%		\$2,800,814,336	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	4.8		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	501,447,236	17.9	-2.1	501,447,236	17.9	-2.1
Forest		133,807,118	4.8		133,807,118	4.8	
PRISA I		51,683,670	1.8		51,683,670	1.8	
PRISA II		105,315,951	3.8		105,315,951	3.8	
TIAA N. Front St.		2,312,412	0.1		2,312,412	0.1	
TIAA CREF		208,328,085	7.4		208,328,085	7.4	
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	

MANAGER QUARTERLY FEE SUMMARY

ALL FEES ARE ESTIMATED / ACCRUED

PORTFOLIO	TOTAL RETURN (GROSS OF FEES)	FEE	% FEE
AMI	9.3%	\$68,955	0.20%
COPELAND	5.5%	\$94,611	0.21%
EAGLE	11.0%	\$300,730	0.20%
EMERALD	12.0%	\$86,591	0.14%
FEDERATED	8.7%	\$200,874	0.20%
FOREST	-1.5%	\$248,226	0.18%
HARDMAN JOHNSTON	13.8%	\$193,044	0.17%
HGK	12.2%	\$219,746	0.18%
LSV LARGE CAP	9.2%	\$157,606	0.10%
LSV SMALL CAP	8.8%	\$110,334	0.15%
POLEN	10.6%	\$226,512	0.10%
PRISA SA	1.3%	\$124,266	0.24%
PRISA II	2.1%	\$286,155	0.28%
SMITH, GRAHAM & CO	11.7%	\$133,158	0.19%
SSgA	5.9%	\$124,624	0.01%
CONSERVATIVE S&P 500	9.1%	\$5,159	0.01%
RUSSELL 2000	9.9%	\$10,174	0.01%
DEVELOPED INTERNATIONAL	7.9%	\$25,498	0.02%
EMERGING MARKETS	11.8%	\$52,794	0.02%
BOND MARKET INDEX	0.2%	\$30,999	0.01%
TIAA CREF	1.5%	\$466,310	0.22%
TIAA N. FRONT STREET	2.1%	\$12,500	0.53%

MANAGER PERFORMANCE SUMMARY - GROSS OF FEES

Portfolio	(Universe)	QTR	CYTD	1 Year	3 Years	5 Years	10 Years	Inception	
Composite	(Public Fund)	7.0 (4)	21.1 (15)	21.1 (15)	11.2 (5)	8.4 (5)	9.1 (15)	8.9 ----	12/85
<i>Shadow Index</i>		<i>6.4 ----</i>	<i>19.0 ----</i>	<i>19.0 ----</i>	<i>9.7 ----</i>	<i>7.7 ----</i>	<i>8.8 ----</i>	<i>8.7 ----</i>	<i>12/85</i>
SSgA	(Balanced)	5.9 (39)	14.9 (92)	14.9 (92)	7.7 (74)	5.1 (92)	5.2 (95)	6.6 ----	03/97
<i>Shadow Index</i>		<i>5.9 ----</i>	<i>15.2 ----</i>	<i>15.2 ----</i>	<i>7.8 ----</i>	<i>5.1 ----</i>	<i>5.4 ----</i>	<i>7.3 ----</i>	<i>03/97</i>
Federated	(LC Growth)	8.7 (69)	38.4 (16)	38.4 (16)	20.4 (45)	---- ----	---- ----	13.0 (68)	06/15
<i>Russell 1000G</i>		<i>10.6 ----</i>	<i>36.4 ----</i>	<i>36.4 ----</i>	<i>20.5 ----</i>	<i>14.6 ----</i>	<i>15.2 ----</i>	<i>15.4 ----</i>	<i>06/15</i>
Polen	(LC Growth)	10.6 (25)	38.9 (13)	38.9 (13)	24.6 (7)	17.9 (3)	---- ----	17.7 (5)	09/10
<i>Russell 1000G</i>		<i>10.6 ----</i>	<i>36.4 ----</i>	<i>36.4 ----</i>	<i>20.5 ----</i>	<i>14.6 ----</i>	<i>15.2 ----</i>	<i>16.0 ----</i>	<i>09/10</i>
Eagle	(LC Value)	11.0 (8)	34.7 (6)	34.7 (6)	16.7 (4)	---- ----	---- ----	17.5 (4)	03/16
<i>Russell 1000V</i>		<i>7.4 ----</i>	<i>26.5 ----</i>	<i>26.5 ----</i>	<i>9.7 ----</i>	<i>8.3 ----</i>	<i>11.8 ----</i>	<i>11.9 ----</i>	<i>03/16</i>
LSV Large Cap	(LC Value)	9.2 (23)	25.8 (62)	25.8 (62)	10.2 (56)	7.9 (73)	12.3 (44)	8.9 ----	03/04
<i>Russell 1000V</i>		<i>7.4 ----</i>	<i>26.5 ----</i>	<i>26.5 ----</i>	<i>9.7 ----</i>	<i>8.3 ----</i>	<i>11.8 ----</i>	<i>8.1 ----</i>	<i>03/04</i>
AMI	(SC Growth)	9.3 (48)	9.8 (99)	9.8 (99)	---- ----	---- ----	---- ----	1.7 (99)	09/17
<i>Russell 2000G</i>		<i>11.4 ----</i>	<i>28.4 ----</i>	<i>28.4 ----</i>	<i>12.5 ----</i>	<i>9.3 ----</i>	<i>13.0 ----</i>	<i>9.1 ----</i>	<i>09/17</i>
Copeland	(SC Growth)	5.5 (93)	30.1 (42)	30.1 (42)	---- ----	---- ----	---- ----	12.4 (52)	09/17
<i>Russell 2000G</i>		<i>11.4 ----</i>	<i>28.4 ----</i>	<i>28.4 ----</i>	<i>12.5 ----</i>	<i>9.3 ----</i>	<i>13.0 ----</i>	<i>9.1 ----</i>	<i>09/17</i>
Emerald	(SC Growth)	12.0 (18)	31.8 (33)	31.8 (33)	15.0 (56)	11.8 (40)	15.8 (23)	11.4 ----	09/98
<i>Russell 2000G</i>		<i>11.4 ----</i>	<i>28.4 ----</i>	<i>28.4 ----</i>	<i>12.5 ----</i>	<i>9.3 ----</i>	<i>13.0 ----</i>	<i>8.1 ----</i>	<i>09/98</i>
LSV Small Cap	(SC Value)	8.8 (32)	24.7 (54)	24.7 (54)	4.3 (77)	---- ----	---- ----	4.3 (77)	12/16
<i>Russell 2000V</i>		<i>8.5 ----</i>	<i>22.4 ----</i>	<i>22.4 ----</i>	<i>4.8 ----</i>	<i>7.0 ----</i>	<i>10.6 ----</i>	<i>4.8 ----</i>	<i>12/16</i>
Smith, Graham & Co	(SC Value)	11.7 (6)	33.8 (6)	33.8 (6)	5.4 (55)	---- ----	---- ----	5.4 (55)	12/16
<i>Russell 2000V</i>		<i>8.5 ----</i>	<i>22.4 ----</i>	<i>22.4 ----</i>	<i>4.8 ----</i>	<i>7.0 ----</i>	<i>10.6 ----</i>	<i>4.8 ----</i>	<i>12/16</i>
HGK	(Intl Eq)	12.2 (22)	28.3 (20)	28.3 (20)	14.1 (20)	9.1 (17)	---- ----	10.6 (9)	03/12
<i>S&P BMI Ex US</i>		<i>8.7 ----</i>	<i>22.8 ----</i>	<i>22.8 ----</i>	<i>10.1 ----</i>	<i>6.4 ----</i>	<i>6.4 ----</i>	<i>6.9 ----</i>	<i>03/12</i>
Hardman Johnston	(Intl Eq)	13.8 (7)	34.2 (4)	34.2 (4)	17.5 (4)	10.8 (7)	---- ----	10.3 (12)	03/12
<i>S&P BMI Ex US</i>		<i>8.7 ----</i>	<i>22.8 ----</i>	<i>22.8 ----</i>	<i>10.1 ----</i>	<i>6.4 ----</i>	<i>6.4 ----</i>	<i>6.9 ----</i>	<i>03/12</i>
PRISA II SA		2.1 ----	7.5 ----	7.5 ----	8.3 ----	10.6 ----	14.1 ----	4.9 ----	06/07
<i>NCREIF ODCE</i>		<i>1.5 ----</i>	<i>5.3 ----</i>	<i>5.3 ----</i>	<i>7.1 ----</i>	<i>9.0 ----</i>	<i>11.4 ----</i>	<i>5.6 ----</i>	<i>06/07</i>
PRISA SA		1.3 ----	6.3 ----	6.3 ----	7.5 ----	9.3 ----	12.1 ----	7.9 ----	12/90
<i>NCREIF ODCE</i>		<i>1.5 ----</i>	<i>5.3 ----</i>	<i>5.3 ----</i>	<i>7.1 ----</i>	<i>9.0 ----</i>	<i>11.4 ----</i>	<i>7.5 ----</i>	<i>12/90</i>
TIAA CREF		1.5 ----	9.4 ----	9.4 ----	8.5 ----	9.3 ----	8.5 ----	4.0 ----	06/08
<i>NCREIF ODCE</i>		<i>1.5 ----</i>	<i>5.3 ----</i>	<i>5.3 ----</i>	<i>7.1 ----</i>	<i>9.0 ----</i>	<i>11.4 ----</i>	<i>5.4 ----</i>	<i>06/08</i>
TIAA 1721 N. Front St.		2.1 ----	5.0 ----	5.0 ----	3.1 ----	---- ----	---- ----	0.6 ----	06/16
<i>NCREIF NPI</i>		<i>1.5 ----</i>	<i>6.4 ----</i>	<i>6.4 ----</i>	<i>6.7 ----</i>	<i>8.3 ----</i>	<i>10.2 ----</i>	<i>6.8 ----</i>	<i>06/16</i>
Forest		-1.5 ----	-2.3 ----	-2.3 ----	3.0 ----	4.7 ----	4.4 ----	4.8 ----	03/99
<i>NCREIF Timber</i>		<i>0.0 ----</i>	<i>1.3 ----</i>	<i>1.3 ----</i>	<i>2.7 ----</i>	<i>3.1 ----</i>	<i>4.4 ----</i>	<i>6.1 ----</i>	<i>03/99</i>

MANAGER PERFORMANCE SUMMARY - NET OF FEES

Portfolio	QTR	CYTD	1 Year	3 Years	5 Years	10 Years	Inception	
Composite	6.8	20.5	20.5	10.7	7.9	8.6	----	12/85
<i>Shadow Index</i>	<i>6.4</i>	<i>19.0</i>	<i>19.0</i>	<i>9.7</i>	<i>7.7</i>	<i>8.8</i>	<i>8.7</i>	<i>12/85</i>
SSgA	5.9	14.9	14.9	7.6	5.0	5.1	6.5	03/97
<i>Shadow Index</i>	<i>5.9</i>	<i>15.2</i>	<i>15.2</i>	<i>7.8</i>	<i>5.1</i>	<i>5.4</i>	<i>7.3</i>	<i>03/97</i>
Federated	8.5	37.4	37.4	19.5	----	----	12.2	06/15
<i>Russell 1000G</i>	<i>10.6</i>	<i>36.4</i>	<i>36.4</i>	<i>20.5</i>	<i>14.6</i>	<i>15.2</i>	<i>15.4</i>	<i>06/15</i>
Polen	10.5	38.4	38.4	24.1	17.4	----	17.1	09/10
<i>Russell 1000G</i>	<i>10.6</i>	<i>36.4</i>	<i>36.4</i>	<i>20.5</i>	<i>14.6</i>	<i>15.2</i>	<i>16.0</i>	<i>09/10</i>
Eagle	10.8	33.7	33.7	15.8	----	----	16.6	03/16
<i>Russell 1000V</i>	<i>7.4</i>	<i>26.5</i>	<i>26.5</i>	<i>9.7</i>	<i>8.3</i>	<i>11.8</i>	<i>11.9</i>	<i>03/16</i>
LSV Large Cap	9.1	25.4	25.4	9.8	7.5	11.8	8.5	03/04
<i>Russell 1000V</i>	<i>7.4</i>	<i>26.5</i>	<i>26.5</i>	<i>9.7</i>	<i>8.3</i>	<i>11.8</i>	<i>8.1</i>	<i>03/04</i>
AMI	9.1	9.0	9.0	----	----	----	0.9	09/17
<i>Russell 2000G</i>	<i>11.4</i>	<i>28.4</i>	<i>28.4</i>	<i>12.5</i>	<i>9.3</i>	<i>13.0</i>	<i>9.1</i>	<i>09/17</i>
Copeland	5.3	29.1	29.1	----	----	----	11.5	09/17
<i>Russell 2000G</i>	<i>11.4</i>	<i>28.4</i>	<i>28.4</i>	<i>12.5</i>	<i>9.3</i>	<i>13.0</i>	<i>9.1</i>	<i>09/17</i>
Emerald	11.8	31.2	31.2	14.5	11.3	15.3	10.9	09/98
<i>Russell 2000G</i>	<i>11.4</i>	<i>28.4</i>	<i>28.4</i>	<i>12.5</i>	<i>9.3</i>	<i>13.0</i>	<i>8.1</i>	<i>09/98</i>
LSV Small Cap	8.7	24.0	24.0	3.7	----	----	3.7	12/16
<i>Russell 2000V</i>	<i>8.5</i>	<i>22.4</i>	<i>22.4</i>	<i>4.8</i>	<i>7.0</i>	<i>10.6</i>	<i>4.8</i>	<i>12/16</i>
Smith, Graham & Co	11.6	32.9	32.9	4.7	----	----	4.7	12/16
<i>Russell 2000V</i>	<i>8.5</i>	<i>22.4</i>	<i>22.4</i>	<i>4.8</i>	<i>7.0</i>	<i>10.6</i>	<i>4.8</i>	<i>12/16</i>
HGK	12.0	27.5	27.5	13.3	8.3	----	9.9	03/12
<i>S&P BMI Ex US</i>	<i>8.7</i>	<i>22.8</i>	<i>22.8</i>	<i>10.1</i>	<i>6.4</i>	<i>6.4</i>	<i>6.9</i>	<i>03/12</i>
Hardman Johnston	13.6	33.4	33.4	16.8	10.1	----	9.6	03/12
<i>S&P BMI Ex US</i>	<i>8.7</i>	<i>22.8</i>	<i>22.8</i>	<i>10.1</i>	<i>6.4</i>	<i>6.4</i>	<i>6.9</i>	<i>03/12</i>
PRISA II SA	1.9	6.4	6.4	7.2	9.5	12.9	3.8	06/07
<i>NCREIF ODCE</i>	<i>1.5</i>	<i>5.3</i>	<i>5.3</i>	<i>7.1</i>	<i>9.0</i>	<i>11.4</i>	<i>5.6</i>	<i>06/07</i>
PRISA SA	1.1	5.3	5.3	6.5	8.3	11.0	----	12/90
<i>NCREIF ODCE</i>	<i>1.5</i>	<i>5.3</i>	<i>5.3</i>	<i>7.1</i>	<i>9.0</i>	<i>11.4</i>	<i>7.5</i>	<i>12/90</i>
TIAA CREF	1.3	8.4	8.4	7.6	8.3	7.5	3.0	06/08
<i>NCREIF ODCE</i>	<i>1.5</i>	<i>5.3</i>	<i>5.3</i>	<i>7.1</i>	<i>9.0</i>	<i>11.4</i>	<i>5.4</i>	<i>06/08</i>
TIAA 1721 N. Front St.	1.6	2.9	2.9	0.7	----	----	-1.9	06/16
<i>NCREIF NPI</i>	<i>1.5</i>	<i>6.4</i>	<i>6.4</i>	<i>6.7</i>	<i>8.3</i>	<i>10.2</i>	<i>6.8</i>	<i>06/16</i>
Forest	-1.7	-3.0	-3.0	2.2	3.8	3.5	4.3	03/99
<i>NCREIF Timber</i>	<i>0.0</i>	<i>1.3</i>	<i>1.3</i>	<i>2.7</i>	<i>3.1</i>	<i>4.4</i>	<i>6.1</i>	<i>03/99</i>

MANAGER VALUE ADDED

Portfolio	Benchmark	1 Quarter	1 Year	3 Years	5 Years
SSgA	Shadow Index	0.0	-0.3	-0.1	0.0
Federated	Russell 1000G	-1.9	2.0	-0.1	N/A
Polen	Russell 1000G	0.0	2.5	4.1	3.3
Eagle	Russell 1000V	3.6	8.2	7.0	N/A
LSV Large Cap	Russell 1000V	1.8	-0.7	0.5	-0.4
AMI	Russell 2000G	-2.1	-18.6	N/A	N/A
Copeland	Russell 2000G	-5.9	1.7	N/A	N/A
Emerald	Russell 2000G	0.6	3.4	2.5	2.5
LSV Small Cap	Russell 2000V	0.3	2.3	-0.5	N/A
Smith, Graham & Co	Russell 2000V	3.2	11.4	0.6	N/A
HGK	S&P BMI Ex US	3.5	5.5	4.0	2.7
Hardman Johnston	S&P BMI Ex US	5.1	11.4	7.4	4.4
PRISA II SA	NCREIF ODCE	0.6	2.2	1.2	1.6
PRISA SA	NCREIF ODCE	-0.2	1.0	0.4	0.3
TIAA CREF	NCREIF ODCE	0.0	4.1	1.4	0.3
TIAA 1721 N. Front St.	NCREIF NPI	0.6	-1.4	-3.6	N/A
Forest	NCREIF Timber	-1.5	-3.6	0.3	1.6
Total Portfolio	Shadow Index	0.6 	2.1 	1.5 	0.7

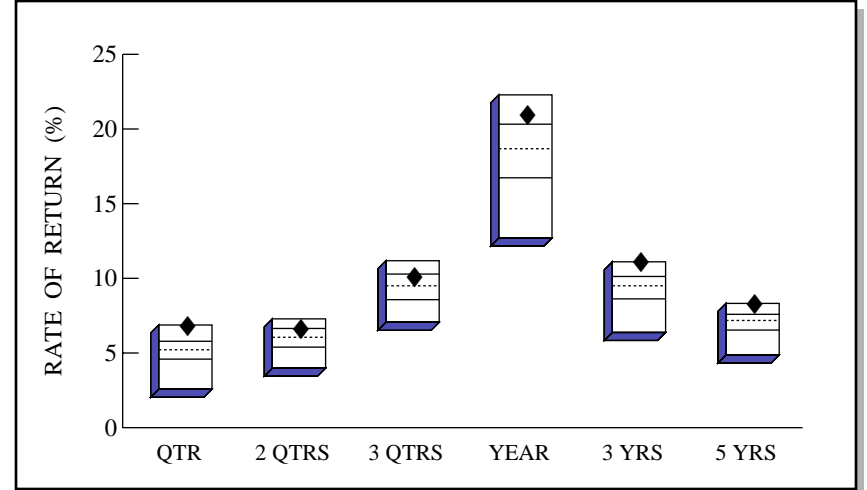
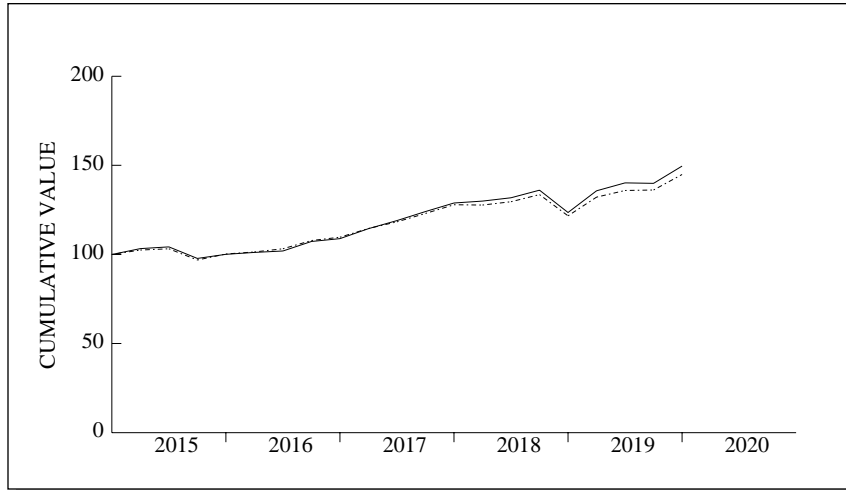
INVESTMENT RETURN SUMMARY - ONE QUARTER

Name	Quarter Total Return	Market Value September 30th, 2019	Net Cashflow	Net Investment Return	Market Value December 31st, 2019
SSgA S&P 500 (LCC)	9.1	55,618,747	0	5,036,309	60,655,056
Federated (LCG)	8.7	101,294,244	-192,038	8,809,980	109,912,186
Polen (LCG)	10.6	226,511,135	-227,628	23,888,170	250,171,677
Eagle (LCV)	11.0	147,555,253	-282,910	16,214,323	163,486,666
LSV Large Cap (LCV)	9.2	160,176,552	-149,498	14,797,464	174,824,518
SSgA Russell 2000 (SMDC)	9.9	83,798,332	0	8,333,964	92,132,296
AMI (SCG)	9.3	34,403,203	-70,872	3,180,717	37,513,048
Copeland (SCG)	5.5	45,429,768	-56,276	2,504,598	47,878,090
Emerald (SCG)	12.0	62,766,642	-116,162	7,502,060	70,152,540
LSV Small Cap (SCV)	8.8	72,033,258	-103,972	6,336,540	78,265,826
Smith, Graham & Co (SCV)	11.7	71,255,310	-124,441	8,356,078	79,486,947
Loop Transition (INEQ)	---	104,935	-104,872	-63	0
GlobeFlex (INEQ)	---	4,212	0	79	4,291
HGK (INEQ)	12.2	121,152,901	-201,444	14,733,248	135,684,705
Hardman Johnston (INEQ)	13.8	111,942,612	-179,331	15,449,628	127,212,909
Mercator (INEQ)	---	17,618	0	523	18,141
WHV (INEQ)	---	2,914	0	807	3,721
Jarislowsky Fraser (INEG)	---	674,450	-166,732	15,098	522,816
SSgA World Ex-US (INEQ)	7.9	161,533,659	0	12,760,831	174,294,490
SSgA Emerging Markets (EMKT)	11.8	247,393,031	0	29,243,068	276,636,099
PRISA II SA (REAL)	2.1	103,380,918	-286,155	2,221,188	105,315,951
PRISA SA (REAL)	1.3	51,125,042	-124,266	682,894	51,683,670
TIAA CREF (REAL)	1.5	207,667,082	-2,050,477	2,711,480	208,328,085
TIAA 1721 N. Front St. (REAL)	2.1	2,336,497	-60,932	36,847	2,312,412
Forest (TIMB)	-1.5	135,802,793	0	-1,995,675	133,807,118
SSgA Bond Market (CFI)	0.2	402,314,970	0	738,102	403,053,072
BNY Cash (CASH)	---	426,502	1,960,189	73,228	2,459,919
Treasury STIP (CASH)	---	5,133,017	9,800,011	65,059	14,998,087
Total Portfolio	7.0	2,611,855,597	7,262,194	181,696,545	2,800,814,336

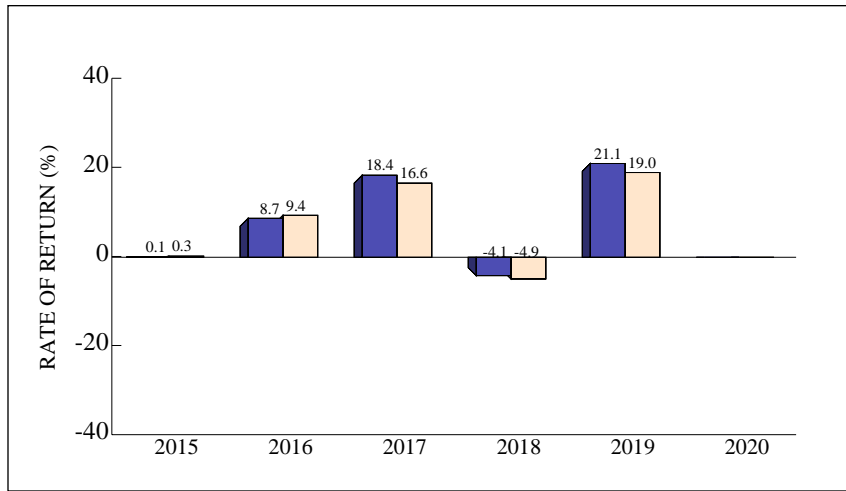
MANAGER RISK STATISTICS SUMMARY - FIVE-YEAR HISTORY

Name	Alpha	Batting Average	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
SSgA <i>Shadow Index</i>	-0.03	0.650	0.63	-0.17	99.5	100.0
SSgA S&P 500 <i>S&P 500</i>	0.01	0.900	1.02	-0.49	99.8	99.7
Polen <i>Russell 1000G</i>	5.01	0.650	1.47	0.72	104.7	57.8
LSV Large Cap <i>Russell 1000V</i>	-0.78	0.550	0.65	-0.06	98.4	102.8
SSgA Russell 2000 <i>Russell 2000</i>	0.08	0.950	0.57	1.48	100.3	99.7
Emerald <i>Russell 2000G</i>	2.16	0.650	0.70	0.55	115.0	101.4
HGK <i>S&P BMI Ex US</i>	2.58	0.650	0.70	0.62	116.1	89.7
Hardman Johnston <i>S&P BMI Ex US</i>	3.24	0.700	0.74	0.95	138.9	102.1
SSgA World Ex-US <i>MSCI World Ex US</i>	-0.17	0.500	0.48	-2.03	99.2	101.1
SSgA Emerging Markets <i>EM Index</i>	-0.20	0.450	0.39	-0.29	100.4	102.2
PRISA II SA <i>NCREIF ODCE</i>	0.76	0.800	5.03	1.82	118.1	----
PRISA SA <i>NCREIF ODCE</i>	0.66	0.500	4.98	0.44	103.6	----
TIAA CREF <i>NCREIF ODCE</i>	6.35	0.600	4.40	0.14	103.2	----
Forest <i>NCREIF Timber</i>	4.18	0.450	0.79	0.35	121.7	----
SSgA Bond Market <i>Aggregate Index</i>	0.02	1.000	0.64	1.31	100.4	99.6

TOTAL RETURN COMPARISONS



Public Fund Universe

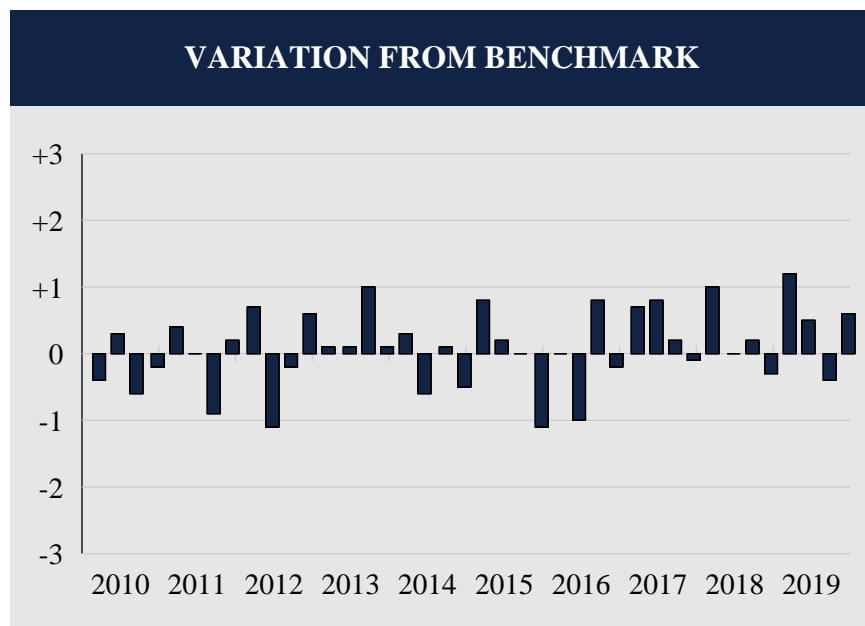


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	7.0	6.7	10.2	21.1	11.2	8.4
(RANK)	(4)	(22)	(28)	(15)	(5)	(5)
5TH %ILE	6.9	7.3	11.2	22.3	11.1	8.3
25TH %ILE	5.8	6.7	10.3	20.3	10.1	7.6
MEDIAN	5.2	6.1	9.5	18.7	9.5	7.2
75TH %ILE	4.6	5.4	8.6	16.7	8.6	6.5
95TH %ILE	2.6	4.0	7.1	12.7	6.4	4.9
<i>Shadow Idx</i>	<i>6.4</i>	<i>6.6</i>	<i>9.6</i>	<i>19.0</i>	<i>9.7</i>	<i>7.7</i>

Public Fund Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

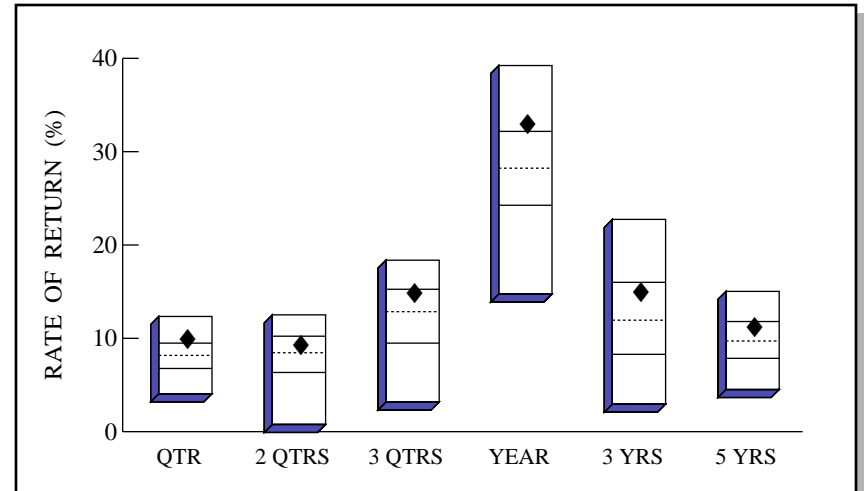
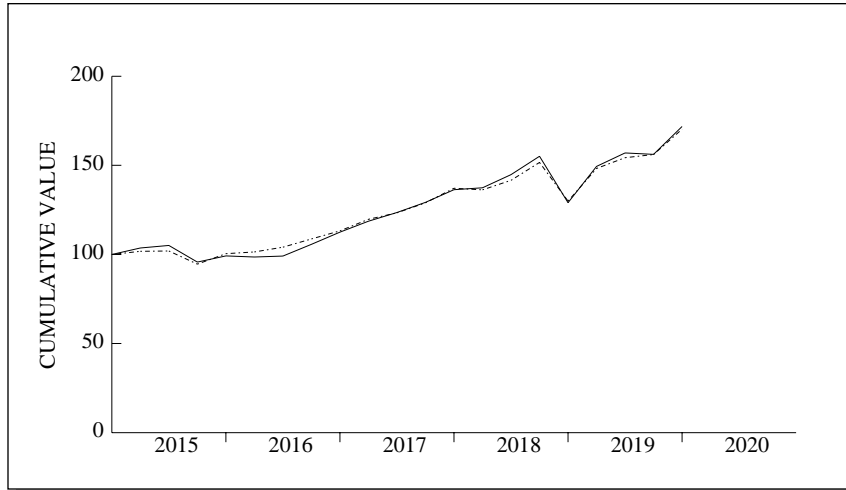
COMPARATIVE BENCHMARK: SHADOW INDEX



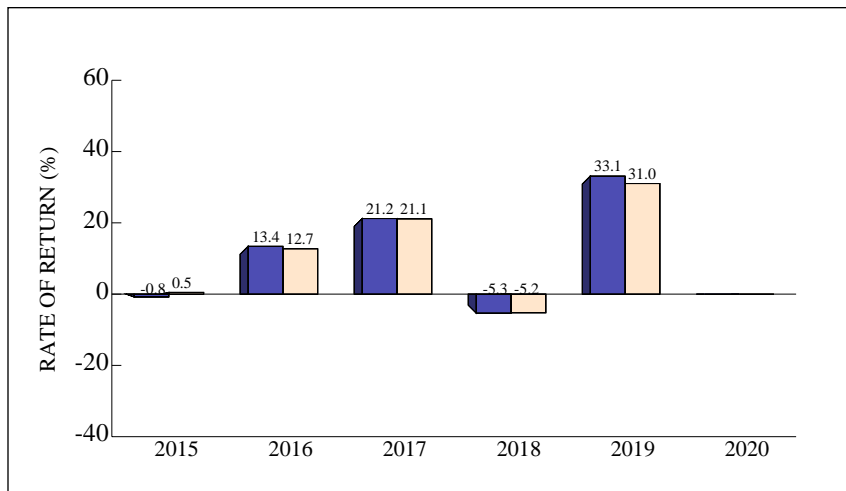
Total Quarters Observed	40
Quarters At or Above the Benchmark	26
Quarters Below the Benchmark	14
Batting Average	.650

RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
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
12/19	7.0	6.4	0.6

DOMESTIC EQUITY RETURN COMPARISONS



Domestic Equity Universe

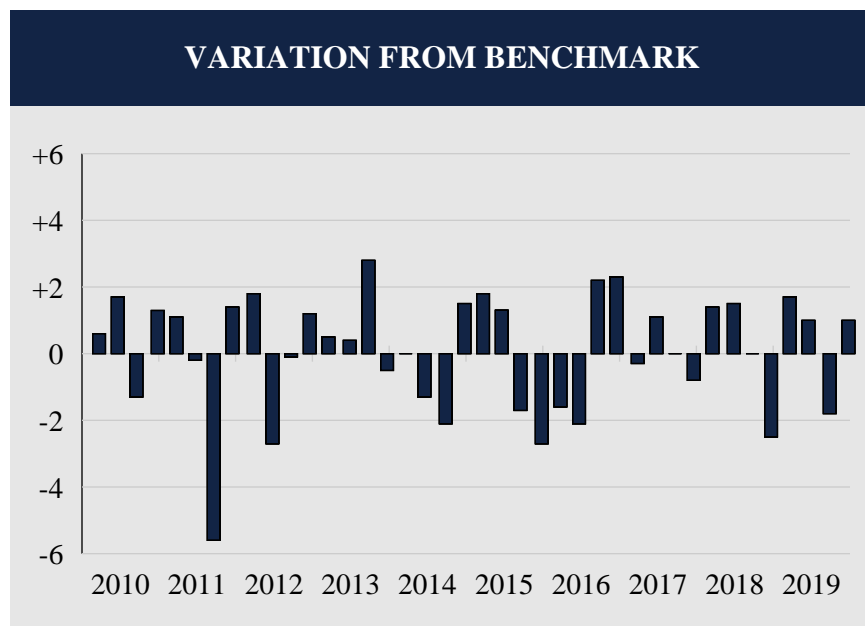


	<u>QTR</u>	<u>2 QTRS</u>	<u>3 QTRS</u>	<u>YEAR</u>	<u>3 YRS</u>	<u>5 YRS</u>
RETURN	10.1	9.5	15.0	33.1	15.2	11.4
(RANK)	(19)	(36)	(27)	(20)	(31)	(31)
5TH %ILE	12.4	12.5	18.4	39.2	22.8	15.0
25TH %ILE	9.5	10.2	15.3	32.2	16.0	11.8
MEDIAN	8.2	8.5	12.9	28.2	11.9	9.7
75TH %ILE	6.8	6.3	9.5	24.3	8.3	7.9
95TH %ILE	4.1	0.8	3.2	14.8	3.0	4.5
<i>Russ 3000</i>	<i>9.1</i>	<i>10.4</i>	<i>14.9</i>	<i>31.0</i>	<i>14.6</i>	<i>11.2</i>

Domestic Equity Universe

DOMESTIC EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: RUSSELL 3000



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
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
12/19	10.1	9.1	1.0

LARGE CAP EQUITY MANAGERS

PMRB's aggregate large cap portfolio (excluding cash) returned 10.1%, which was 1% above the S&P 500. The large cap value managers handily beat their benchmark, but the large cap growth managers did not have as much success clearing their higher bogey.

**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 \$60,655,056.

**Federated
(Growth)**

The Federated portfolio's underperformance was partly the result unfavorable selection in two sectors (Health Care and Information Technology) that combined represented about half the portfolio. Some ground was reclaimed through good stock picks in the Consumer Discretionary sector.

**Polen
(Growth)**

The very tall Information Technology sector stumbled during the quarter, underperforming against its index counterpart, landing closer to the benchmark's total return. Favorable results in the Health Care sector added value, but it was walked back by weak returns in the portfolio's second largest sector, Consumer Discretionary.

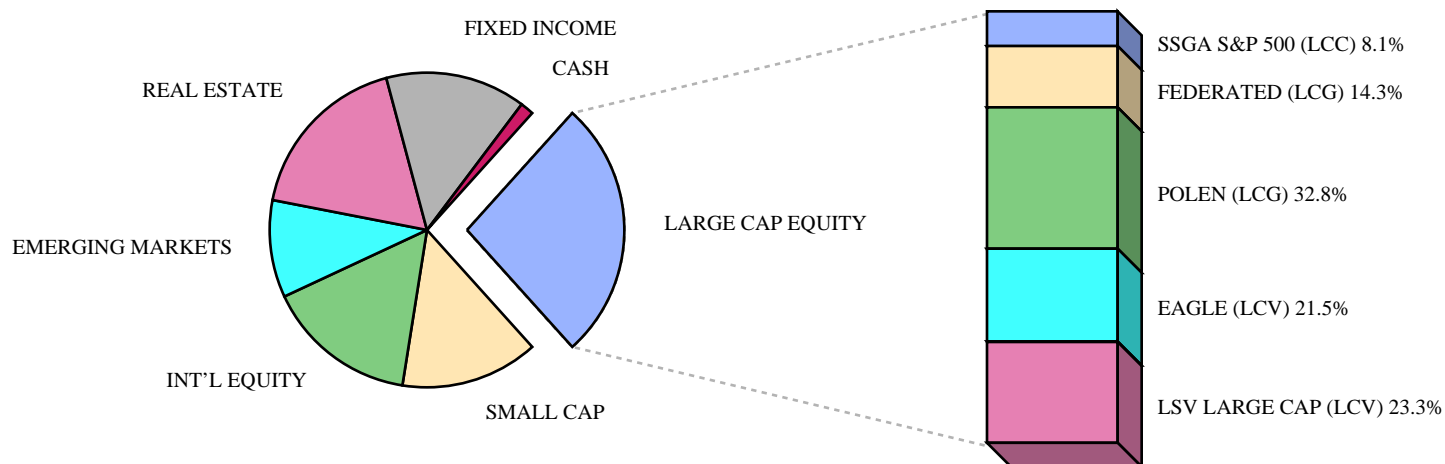
**Eagle
(Value)**

The Eagle portfolio stayed away from the Consumer Staples, Real Estate, and Utilities sectors, avoiding the weakest sectors in the large cap value market in the fourth quarter. The portfolio also enjoyed favorable selection effects in most sectors.

**LSV Large Cap
(Value)**

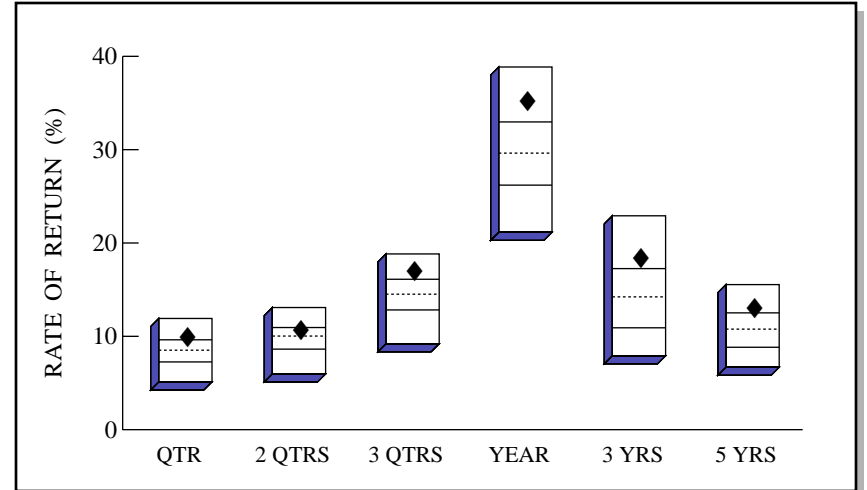
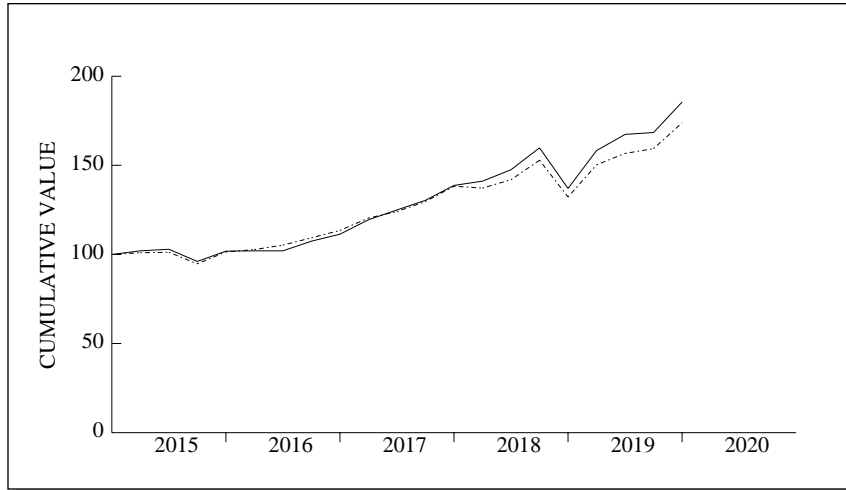
The LSV large cap portfolio's robust stance in Information Technology paid off last quarter, as that sector was the best earner in the large cap value market. The portfolio also added value through positive selection effects in several sectors.

LARGE CAP EQUITY MANAGER SUMMARY

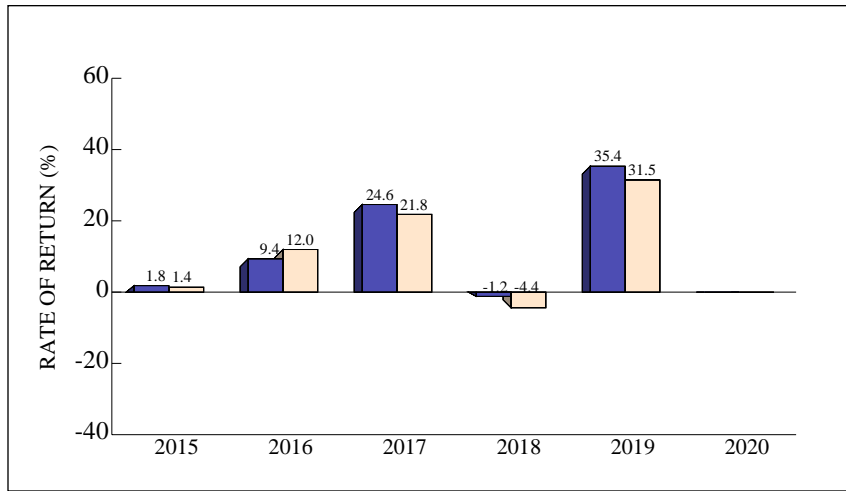


MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	YTD	1 YEAR	3 YEARS	5 YEARS	
SSGA S&P 500	(Large Cap Core)	9.1 (30)	31.5 (30)	31.5 (30)	15.2 (35)	11.7 (32)	\$60,655,056
<i>S&P 500</i>		<i>9.1 ---</i>	<i>31.5 ---</i>	<i>31.5 ---</i>	<i>15.3 ---</i>	<i>11.7 ---</i>	---
FEDERATED	(Large Cap Growth)	9.0 (61)	39.9 (11)	39.9 (11)	21.4 (34)	---	\$106,786,010
POLEN	(Large Cap Growth)	10.8 (21)	40.5 (10)	40.5 (10)	25.6 (3)	18.6 (2)	\$245,332,713
<i>Russell 1000 Growth</i>		<i>10.6 ---</i>	<i>36.4 ---</i>	<i>36.4 ---</i>	<i>20.5 ---</i>	<i>14.6 ---</i>	---
EAGLE	(Large Cap Value)	11.2 (8)	35.7 (5)	35.7 (5)	17.1 (3)	---	\$160,756,637
LSV LARGE CAP	(Large Cap Value)	9.3 (23)	26.1 (58)	26.1 (58)	10.2 (55)	7.9 (73)	\$174,308,467
<i>Russell 1000 Value</i>		<i>7.4 ---</i>	<i>26.5 ---</i>	<i>26.5 ---</i>	<i>9.7 ---</i>	<i>8.3 ---</i>	---
TOTAL	(Large Cap)	10.1 (19)	35.4 (14)	35.4 (14)	18.6 (20)	13.2 (21)	\$747,838,883
<i>S&P 500</i>		<i>9.1 ---</i>	<i>31.5 ---</i>	<i>31.5 ---</i>	<i>15.3 ---</i>	<i>11.7 ---</i>	---

LARGE CAP EQUITY RETURN COMPARISONS



Large Cap Universe

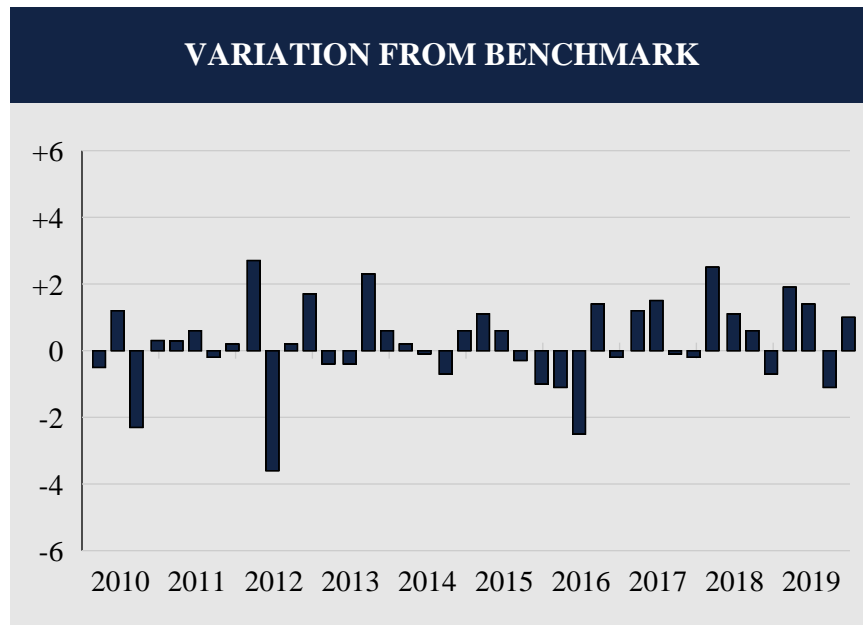


	<u>QTR</u>	<u>2 QTRS</u>	<u>3 QTRS</u>	<u>YEAR</u>	<u>3 YRS</u>	<u>5 YRS</u>
RETURN	10.1	10.8	17.2	35.4	18.6	13.2
(RANK)	(19)	(29)	(15)	(14)	(20)	(21)
5TH %ILE	11.9	13.1	18.8	38.9	22.9	15.5
25TH %ILE	9.6	10.9	16.1	33.0	17.3	12.5
MEDIAN	8.5	10.0	14.5	29.6	14.2	10.8
75TH %ILE	7.3	8.6	12.8	26.2	10.9	8.8
95TH %ILE	5.1	6.0	9.2	21.2	7.9	6.7
S&P 500	9.1	10.9	15.7	31.5	15.3	11.7

Large Cap Universe

LARGE CAP EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: S&P 500



RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
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
12/19	10.1	9.1	1.0

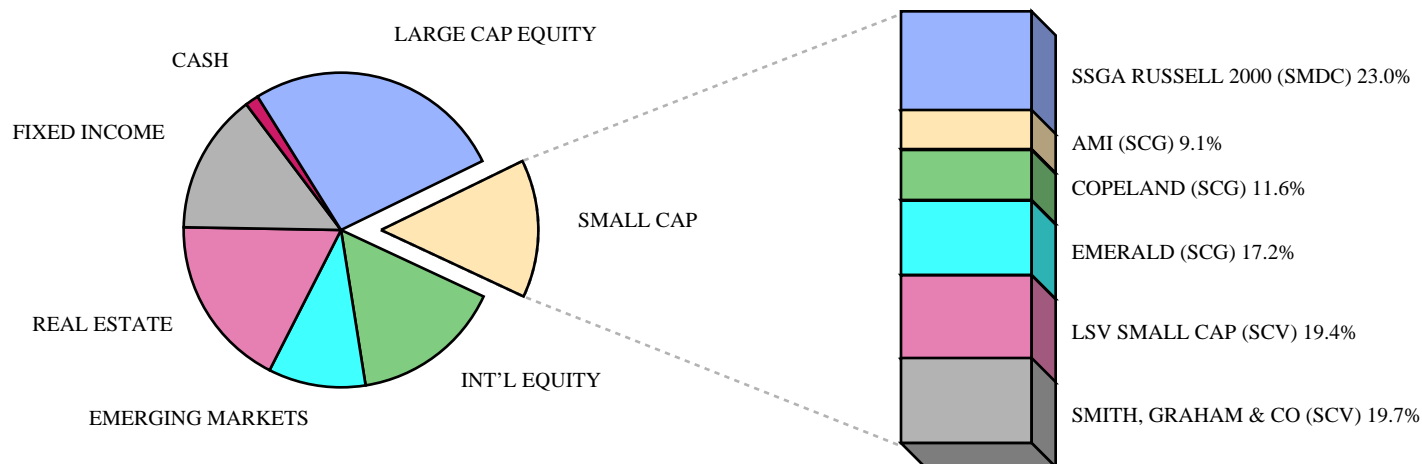
Total Quarters Observed	40
Quarters At or Above the Benchmark	23
Quarters Below the Benchmark	17
Batting Average	.575

SMALL CAP EQUITY MANAGERS

Last quarter, the Russell 2000 Growth Index returned 11.4% versus 8.5% for the Russell 2000 Value Index. The portfolio's small cap component (excluding cash) gained 9.9%, in line with the Russell 2000 index. Emerald, LSV, and Smith, Graham beat their respective indices, while AMI and Copeland undershot the Russell 2000 Growth.

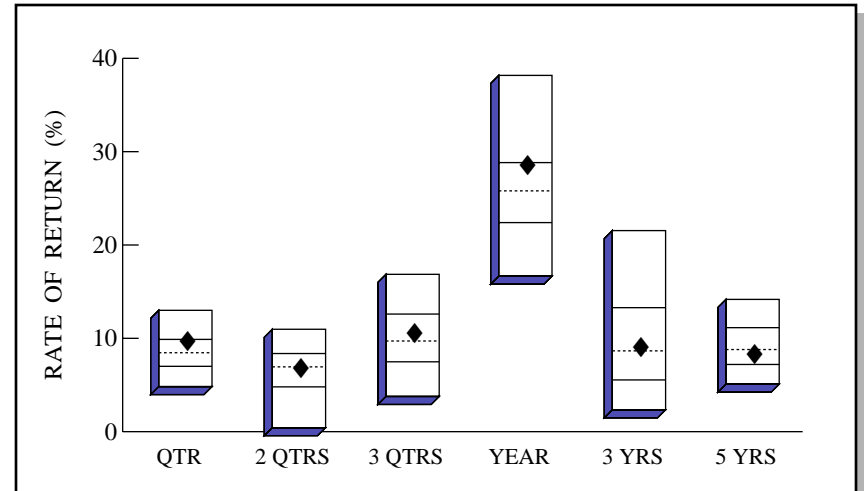
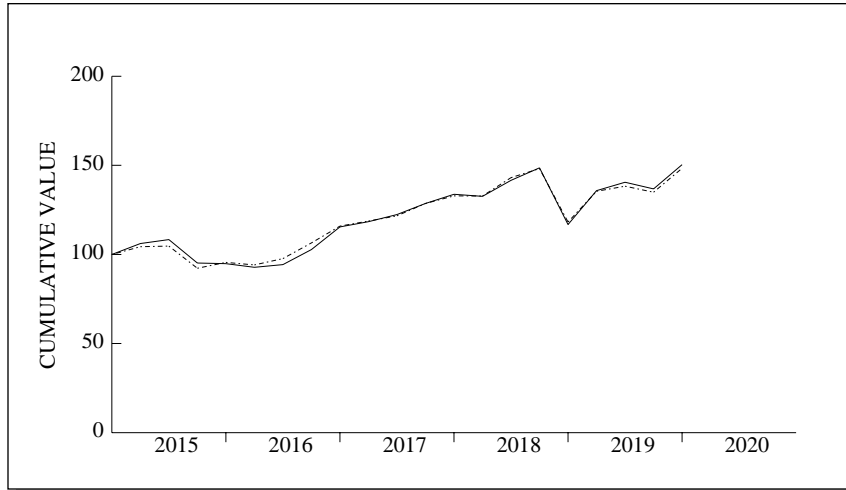
SSgA (Core)	The SSgA small cap component performed in line with the Russell 2000 index. At quarter end, this investment was valued at \$92,132,296.
AMI (Growth)	Significant underperformance in the Health Care sector, which expanded rapidly for the Russell 2000 Growth Index, put a damper on the portfolio. While this sector was not as dominant in the portfolio's allocation as in the benchmark's, it still represented a large portion and weighed heavily on the total return.
Copeland (Growth)	Selection effects across most sectors were negative; only the Communication Services, Information Technology, and Utilities sectors outperformed. The most notable difference occurred in the Health Care sector, where the portfolio was unable to keep pace with the skyrocketing returns of pharmaceutical and other Health Care stocks that were present in the index.
Emerald (Growth)	The Emerald portfolio slipped slightly in the Health Care sector, which represented a significant allocation. While the sector's weight gave it a high impact, the difference in return was not too large to overcome through excess returns in other sectors. Strength in the Information Technology sector kept the total return above the benchmark.
LSV Small Cap (Value)	Although selection effects were generally unfavorable, the LSV small cap portfolio slightly exceeded the index. The weakest sectors—Utilities, Real Estate, and Financials—had reduced positions, while more weight was given to Materials, Information Technology, and Health Care, which were the best performing sectors for small cap value. Unfortunately, the portfolio did not keep pace with the market in most sectors, curbing the total return.
Smith, Graham & Co (Value)	The Smith, Graham portfolio was able to add value over the index by emphasizing the Information Technology sector over the Financials and Real Estate Sectors. Information Technology stocks produced strong returns in the small cap value space last quarter, while Financials and Real Estate moved at a slower pace. Despite having an expanded footprint in the Health Care sector, the portfolio was unable to capture all the upside that came from a handful of stocks that had stellar returns in the index.

SMALL CAP EQUITY MANAGER SUMMARY

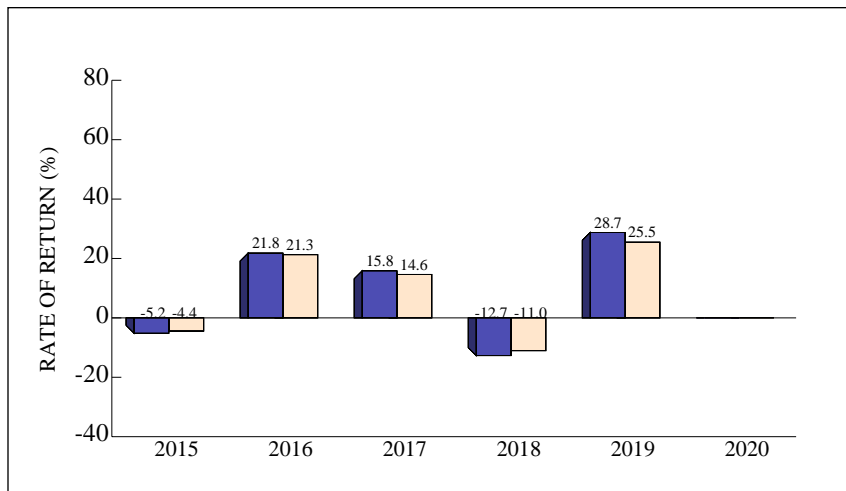


		COMPONENT RETURNS AND RANKINGS					
MANAGER	(UNIVERSE)	QTR	YTD	1 YEAR	3 YEARS	5 YEARS	MARKET VALUE
SSGA RUSSELL 2000	(Small Cap)	9.9 (24)	25.6 (53)	25.6 (53)	8.6 (51)	8.3 (59)	\$92,132,296
<i>Russell 2000</i>		<i>9.9 ---</i>	<i>25.5 ---</i>	<i>25.5 ---</i>	<i>8.6 ---</i>	<i>8.2 ---</i>	<i>---</i>
AMI	(Small Cap Growth)	9.6 (42)	10.2 (99)	10.2 (99)	---	---	\$36,377,775
COPELAND	(Small Cap Growth)	5.7 (92)	31.5 (34)	31.5 (34)	---	---	\$46,364,440
EMERALD	(Small Cap Growth)	12.1 (16)	32.9 (30)	32.9 (30)	15.3 (53)	12.1 (37)	\$68,834,967
<i>Russell 2000 Growth</i>		<i>11.4 ---</i>	<i>28.4 ---</i>	<i>28.4 ---</i>	<i>12.5 ---</i>	<i>9.3 ---</i>	<i>---</i>
LSV SMALL CAP	(Small Cap Value)	8.8 (32)	24.9 (53)	24.9 (53)	4.3 (77)	---	\$77,425,349
SMITH, GRAHAM & CO	(Small Cap Value)	12.0 (5)	34.3 (5)	34.3 (5)	5.5 (52)	---	\$78,744,839
<i>Russell 2000 Value</i>		<i>8.5 ---</i>	<i>22.4 ---</i>	<i>22.4 ---</i>	<i>4.8 ---</i>	<i>7.0 ---</i>	<i>---</i>
TOTAL	(Small Cap)	9.9 (24)	28.7 (26)	28.7 (26)	9.2 (44)	8.5 (54)	\$399,879,666
<i>Russell 2000</i>		<i>9.9 ---</i>	<i>25.5 ---</i>	<i>25.5 ---</i>	<i>8.6 ---</i>	<i>8.2 ---</i>	<i>---</i>

SMALL CAP EQUITY RETURN COMPARISONS



Small Cap Universe

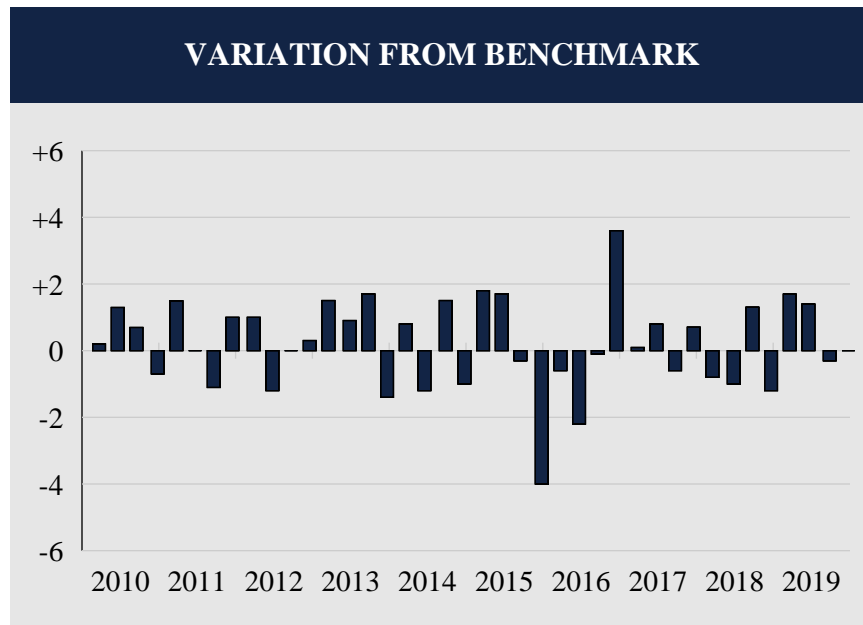


	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	9.9	7.0	10.7	28.7	9.2	8.5
(RANK)	(24)	(49)	(41)	(26)	(44)	(54)
5TH %ILE	13.0	11.0	16.9	38.2	21.5	14.2
25TH %ILE	9.9	8.4	12.6	28.8	13.3	11.2
MEDIAN	8.5	6.9	9.7	25.8	8.7	8.8
75TH %ILE	7.0	4.8	7.5	22.4	5.6	7.2
95TH %ILE	4.8	0.4	3.8	16.7	2.3	5.1
<i>Russ 2000</i>	<i>9.9</i>	<i>7.3</i>	<i>9.5</i>	<i>25.5</i>	<i>8.6</i>	<i>8.2</i>

Small Cap Universe

SMALL CAP EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: RUSSELL 2000



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

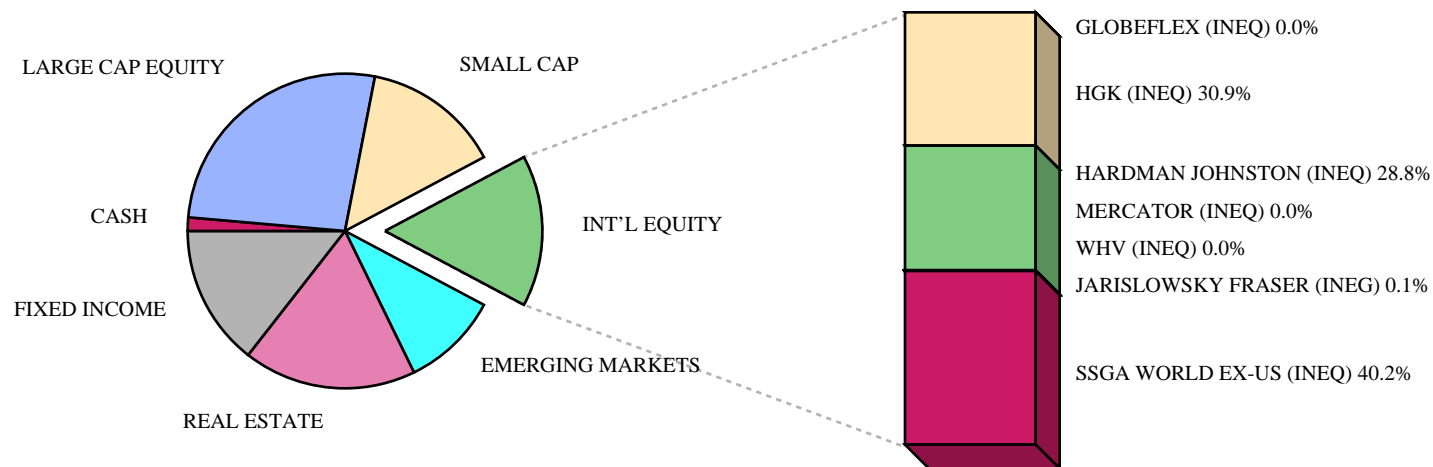
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
3/10	9.1	8.9	0.2
6/10	-8.6	-9.9	1.3
9/10	12.0	11.3	0.7
12/10	15.6	16.3	-0.7
3/11	9.4	7.9	1.5
6/11	-1.6	-1.6	0.0
9/11	-23.0	-21.9	-1.1
12/11	16.5	15.5	1.0
3/12	13.4	12.4	1.0
6/12	-4.7	-3.5	-1.2
9/12	5.2	5.2	0.0
12/12	2.1	1.8	0.3
3/13	13.9	12.4	1.5
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
12/19	9.9	9.9	0.0

INTERNATIONAL & EMERGING MARKETS EQUITY MANAGERS

PMRB's aggregate developed international portfolio (excluding cash) returned 11% over the quarter, 2.8% above the MSCI EAFE Index return of 8.2%. The S&P BMI Developed Markets Ex US returned 8.7% vs 7.8% for the MSCI World Ex US. The Emerging Markets portfolio, driven by its only manager, SSgA, gained 11.8%, tracking closely with the MSCI Emerging Markets Index return of 11.9%.

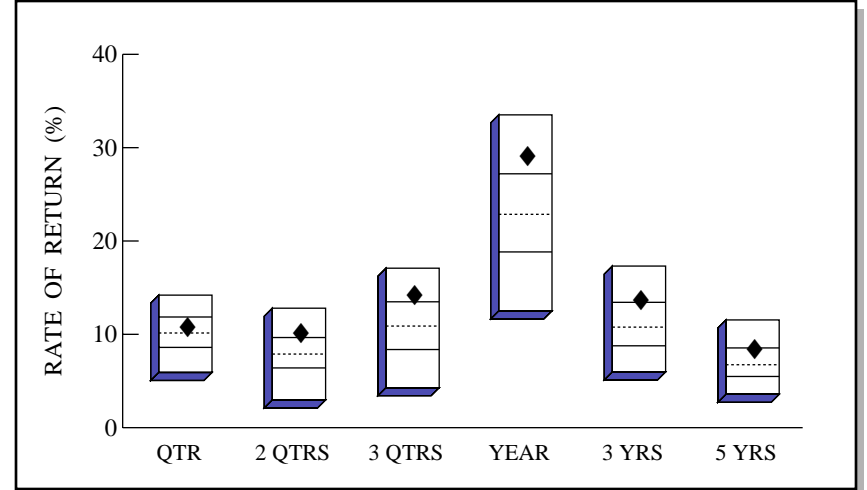
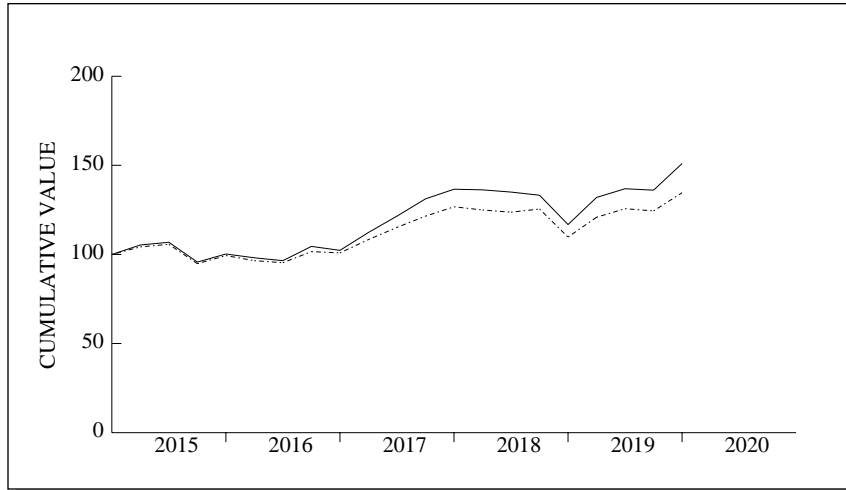
SSgA Developed	The SSgA developed markets component returned 7.9% during the quarter. Over the trailing year, this component was up 23%. This investment was valued at \$174,294,490 at quarter end.
Hardman Johnston	The Hardman Johnston international equity component gained 13.9% over the quarter. Over the last four quarters, the component gained 35.5%, while the S&P BMI Developed Ex US gained 22.8%.
HGK	HGK's equity component returned 12.5% last quarter. Over the trailing year, the HGK international equity component gained 29.2%.
SSgA Emerging	The SSgA emerging markets fund gained 11.8% during the quarter. Over the trailing five years, annualized, this component gained 5.6%. At quarter end, this fund was valued at \$276,636,099.

INTERNATIONAL EQUITY MANAGER SUMMARY

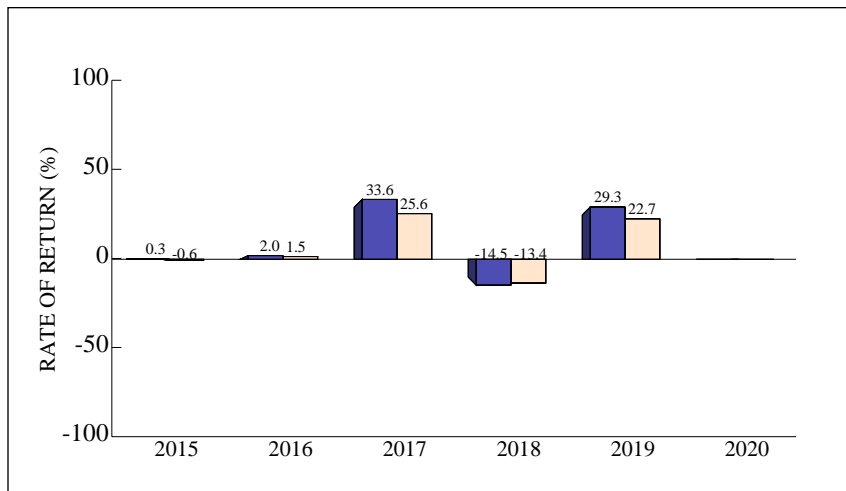


		COMPONENT RETURNS AND RANKINGS					
MANAGER	(UNIVERSE)	QTR	YTD	1 YEAR	3 YEARS	5 YEARS	MARKET VALUE
GLOBEFLEX	(International Equity)	----	----	----	----	----	\$4,291
HGK	(International Equity)	12.5 (18)	29.2 (16)	29.2 (16)	14.7 (17)	9.4 (15)	\$133,847,770
HARDMAN JOHNSTON	(International Equity)	13.9 (6)	35.5 (4)	35.5 (4)	17.7 (4)	10.9 (7)	\$125,029,422
MERCATOR	(International Equity)	-----	----	----	----	----	\$18,141
WHV	(International Equity)	----	----	----	----	----	\$3,001
<i>S&P BMI Developed Ex US Index</i>		8.7 ---	22.8 ---	22.8 ---	10.1 ---	6.4 ---	----
JARISLOWSKY FRASER	(International Equity)	----	----	----	----	----	\$522,816
<i>MSCI EAFE</i>		8.2 ---	22.7 ---	22.7 ---	10.1 ---	6.2 ---	----
SSGA WORLD EX-US	(International Equity)	7.9 (84)	23.0 (49)	23.0 (49)	9.8 (64)	5.8 (67)	\$174,294,490
<i>MSCI World Ex US</i>		7.8 ---	23.1 ---	23.1 ---	9.9 ---	6.0 ---	----
TOTAL	(International Equity)	11.0 (36)	29.3 (16)	29.3 (16)	13.9 (23)	8.6 (25)	\$433,719,931
<i>Blended International Index</i>		8.2 ---	22.7 ---	22.7 ---	10.1 ---	6.1 ---	----

INTERNATIONAL EQUITY RETURN COMPARISONS



International Equity Universe

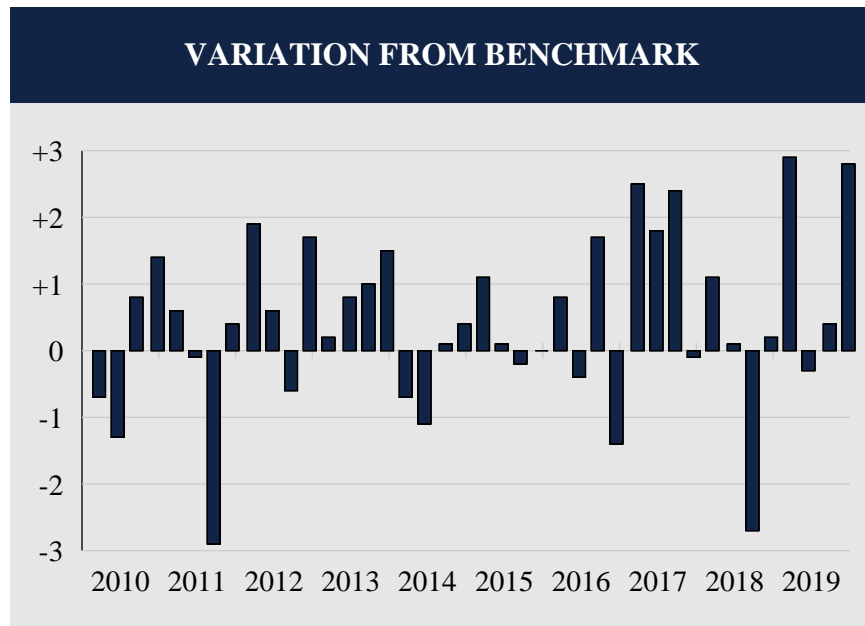


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	11.0	10.3	14.4	29.3	13.9	8.6
(RANK)	(36)	(20)	(18)	(16)	(23)	(25)
5TH %ILE	14.2	12.8	17.1	33.5	17.3	11.6
25TH %ILE	11.9	9.7	13.5	27.2	13.4	8.5
MEDIAN	10.1	7.9	10.9	22.9	10.8	6.7
75TH %ILE	8.6	6.4	8.4	18.8	8.8	5.5
95TH %ILE	5.9	3.0	4.3	12.5	6.0	3.6
Intl Index	8.2	7.1	11.4	22.7	10.1	6.1

International Equity Universe

INTERNATIONAL EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

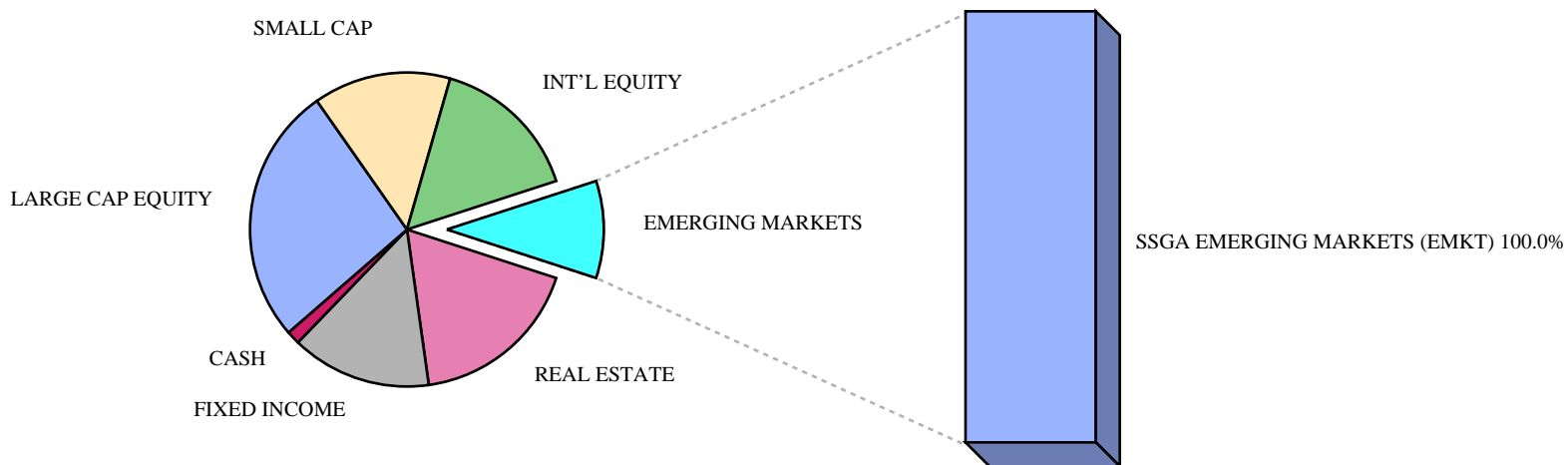
COMPARATIVE BENCHMARK: BLENDED INTERNATIONAL INDEX



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

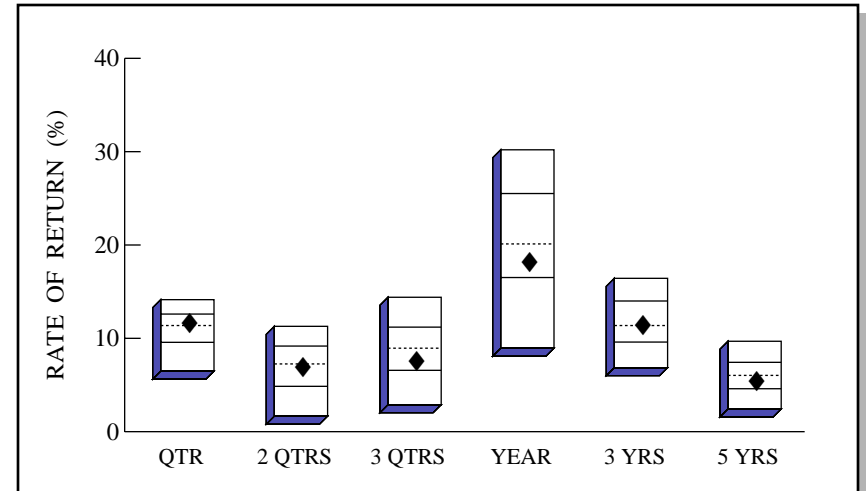
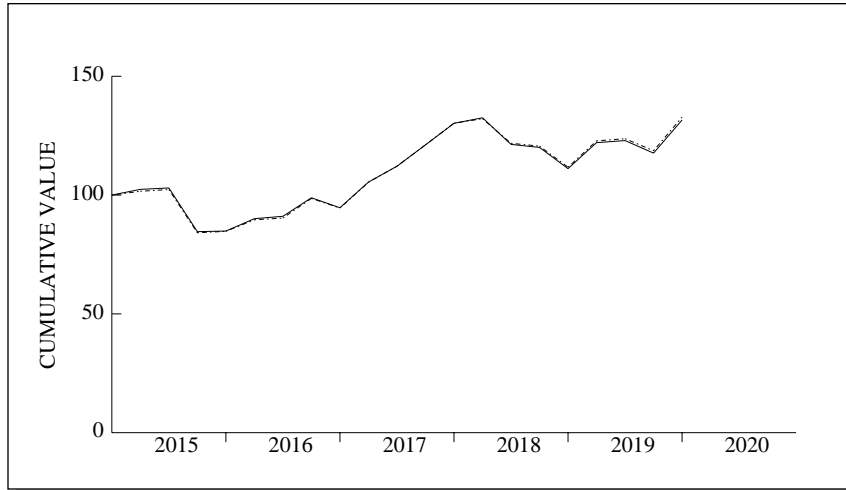
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
3/10	1.4	2.1	-0.7
6/10	-14.0	-12.7	-1.3
9/10	17.3	16.5	0.8
12/10	9.5	8.1	1.4
3/11	4.6	4.0	0.6
6/11	0.5	0.6	-0.1
9/11	-22.2	-19.3	-2.9
12/11	3.7	3.3	0.4
3/12	14.2	12.3	1.9
6/12	-6.6	-7.2	0.6
9/12	7.1	7.7	-0.6
12/12	7.5	5.8	1.7
3/13	5.1	4.9	0.2
6/13	-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
12/19	11.0	8.2	2.8

EMERGING MARKETS EQUITY MANAGER SUMMARY

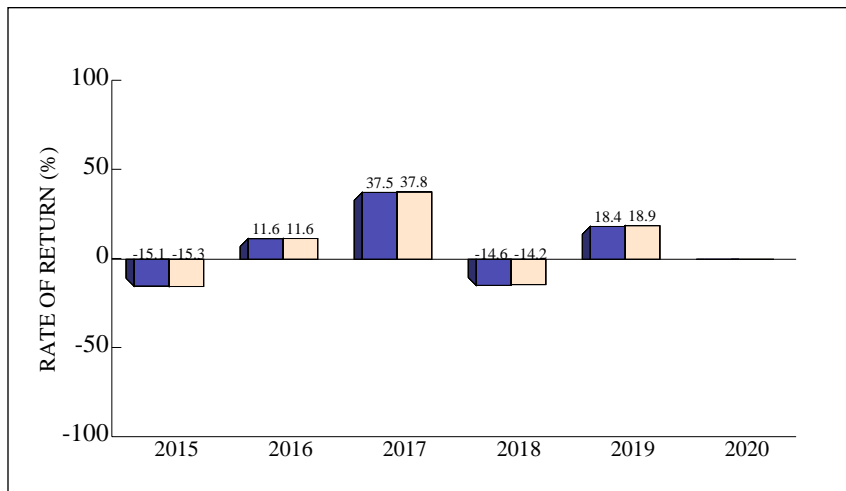
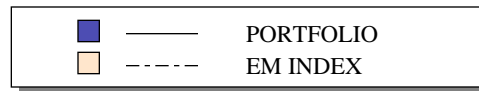


MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	YTD	1 YEAR	3 YEARS	5 YEARS	
SSGA EMERGING MARKETS	(Emerging Markets)	11.8 (42)	18.4 (63)	18.4 (63)	11.6 (45)	5.6 (57)	\$276,636,099
<i>Blended Emerging Markets Index</i>		<i>11.9 ---</i>	<i>18.9 ---</i>	<i>18.9 ---</i>	<i>12.0 ---</i>	<i>5.8 ---</i>	<i>---</i>
TOTAL	(Emerging Markets)	11.8 (42)	18.4 (63)	18.4 (63)	11.6 (45)	5.6 (57)	\$276,636,099
<i>Blended Emerging Markets Index</i>		<i>11.9 ---</i>	<i>18.9 ---</i>	<i>18.9 ---</i>	<i>12.0 ---</i>	<i>5.8 ---</i>	<i>---</i>

EMERGING MARKETS EQUITY RETURN COMPARISONS



Emerging Markets Universe

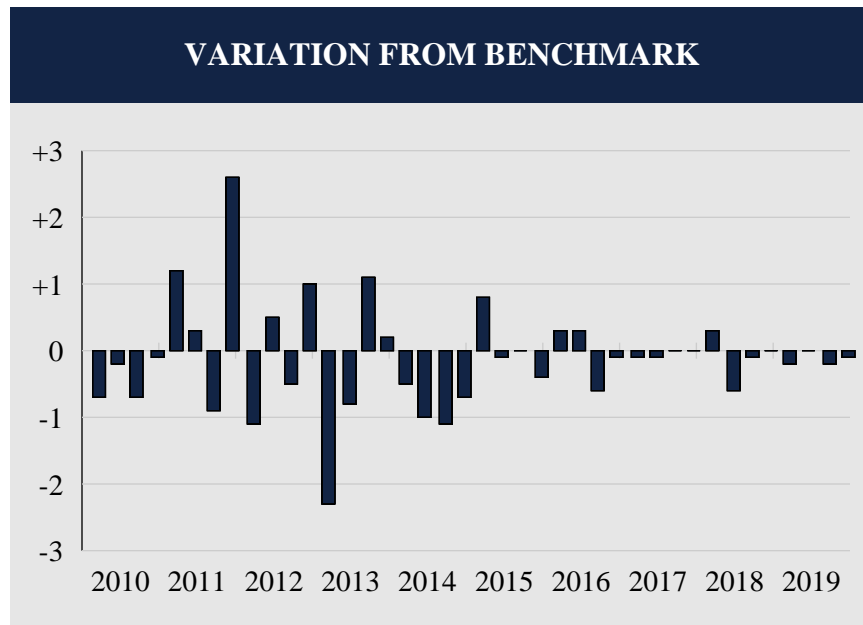


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	11.8	7.1	7.8	18.4	11.6	5.6
(RANK)	(42)	(55)	(67)	(63)	(45)	(57)
5TH %ILE	14.2	11.3	14.4	30.2	16.4	9.7
25TH %ILE	12.6	9.2	11.2	25.5	14.0	7.4
MEDIAN	11.4	7.3	9.0	20.1	11.4	6.0
75TH %ILE	9.6	4.9	6.6	16.5	9.6	4.6
95TH %ILE	6.5	1.7	2.9	8.9	6.9	2.4
EM Index	11.9	7.3	8.1	18.9	12.0	5.8

Emerging Markets Universe

EMERGING MARKETS EQUITY QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: BLENDED EMERGING MARKETS INDEX

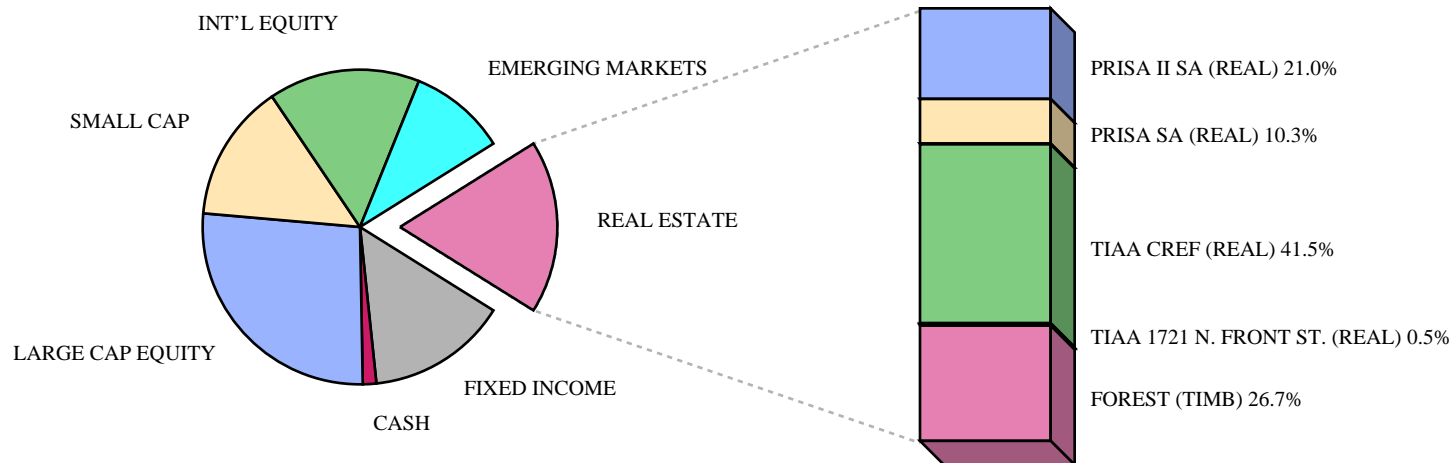


RATES OF RETURN

Date	Portfolio	Benchmark	Difference
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
12/19	11.8	11.9	-0.1

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

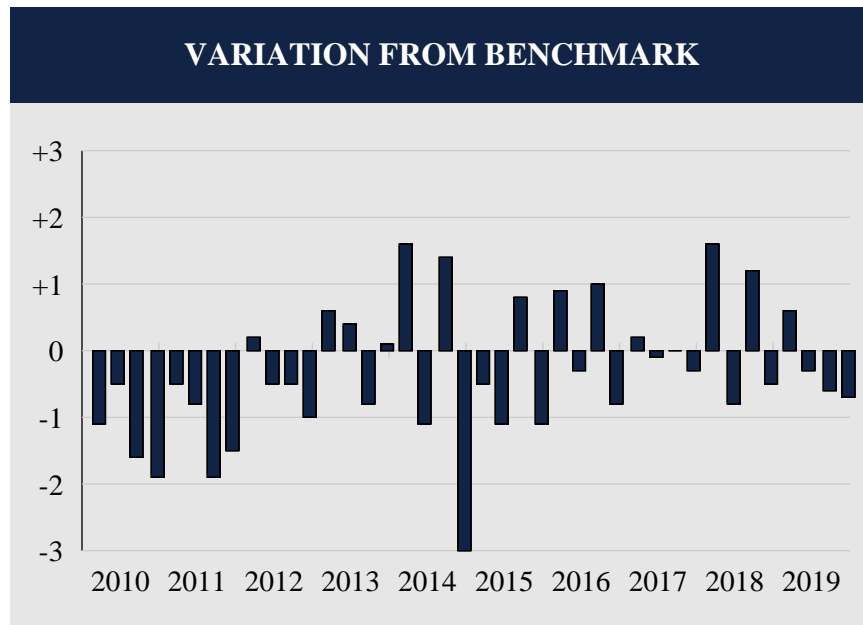
REAL ESTATE MANAGER SUMMARY



MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	YTD	1 YEAR	3 YEARS	5 YEARS	
PRISA II SA		2.1 ---	7.5 ---	7.5 ---	8.3 ---	10.6 ---	\$105,315,951
PRISA SA		1.3 ---	6.3 ---	6.3 ---	7.5 ---	9.3 ---	\$51,683,670
TIAA CREF		1.5 ---	9.4 ---	9.4 ---	8.5 ---	9.3 ---	\$208,328,085
<i>NCREIF NFI-ODCE Index</i>		<i>1.5 ---</i>	<i>5.3 ---</i>	<i>5.3 ---</i>	<i>7.1 ---</i>	<i>9.0 ---</i>	---
TIAA 1721 N. FRONT ST.		2.1 ---	5.0 ---	5.0 ---	3.1 ---	---	\$2,312,412
<i>NCREIF Property Index</i>		<i>1.5 ---</i>	<i>6.4 ---</i>	<i>6.4 ---</i>	<i>6.7 ---</i>	<i>8.3 ---</i>	---
FOREST		-1.5 ---	-2.3 ---	-2.3 ---	3.0 ---	4.7 ---	\$133,807,118
<i>NCREIF Timber Index</i>		<i>0.0 ---</i>	<i>1.3 ---</i>	<i>1.3 ---</i>	<i>2.7 ---</i>	<i>3.1 ---</i>	---
TOTAL		0.8 ---	5.3 ---	5.3 ---	6.8 ---	8.0 ---	\$501,447,236
<i>NCREIF Property Index</i>		<i>1.5 ---</i>	<i>6.4 ---</i>	<i>6.4 ---</i>	<i>6.7 ---</i>	<i>8.3 ---</i>	---

REAL ESTATE QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: NCREIF PROPERTY INDEX



RATES OF RETURN

Date	Portfolio	Benchmark	Difference
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
12/19	0.8	1.5	-0.7

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

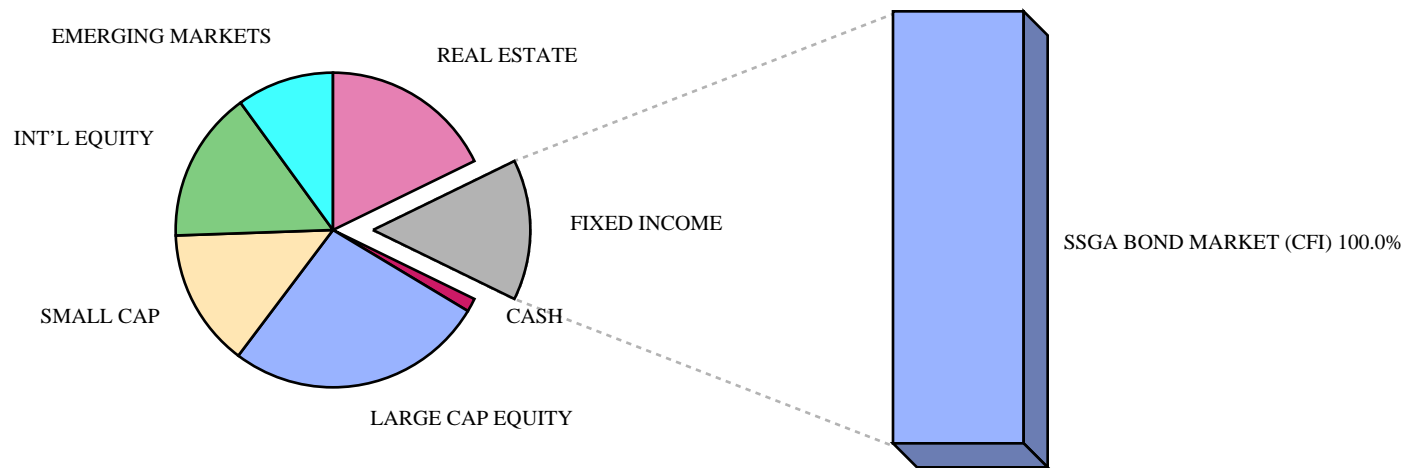
FIXED INCOME MANAGER

The Bloomberg Barclays US Aggregate Index returned 0.2% last quarter, while the Bloomberg Barclays Gov/Credit index was flat. For the trailing year they were up 8.7% and 9.7%, respectively.

**SSgA
(Broad Market)**

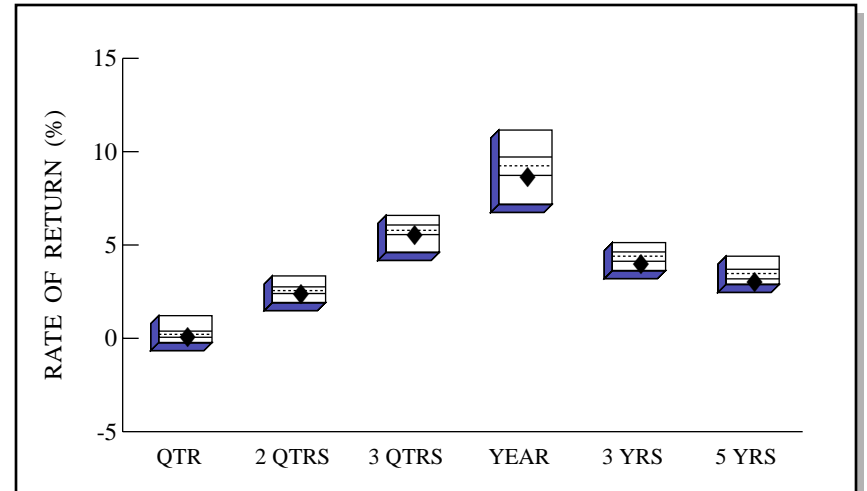
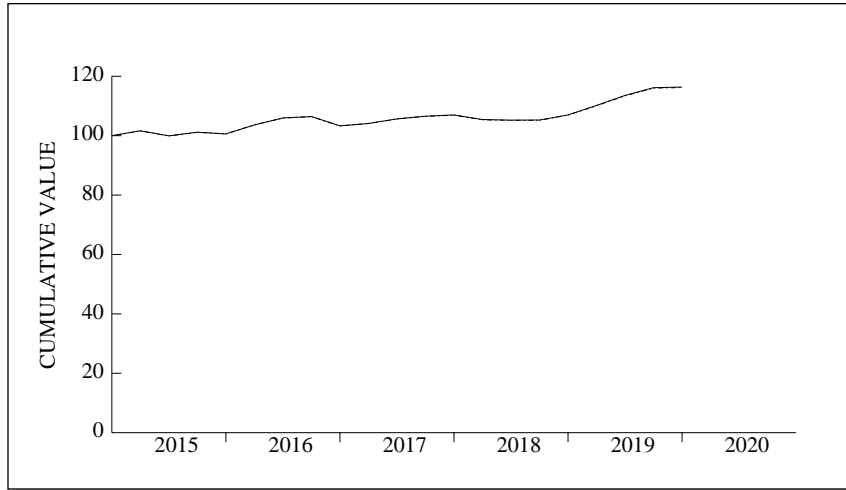
The SSgA fixed income component returned 0.2% last quarter. Over the trailing five years, the fund rose 3.1% per annum, in line with the Bloomberg Barclays Aggregate Index. At year end, this investment was valued at \$403,053,072.

FIXED INCOME MANAGER SUMMARY

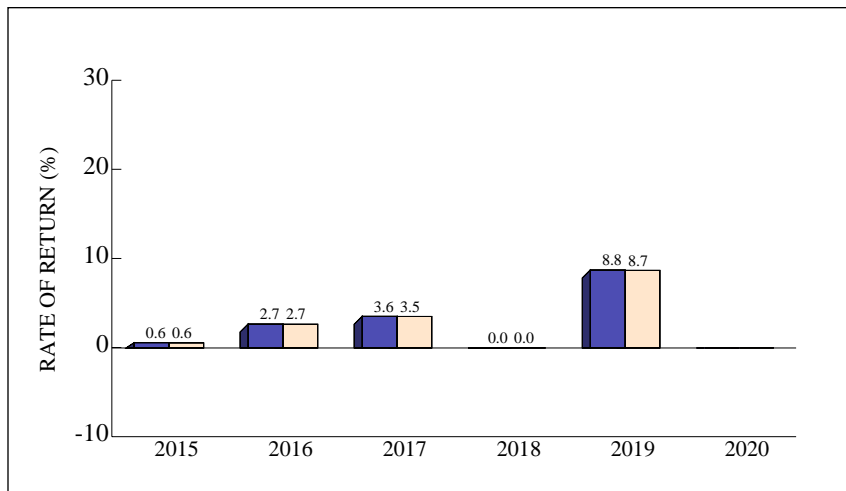


MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	YTD	1 YEAR	3 YEARS	5 YEARS	
SSGA BOND MARKET	(Core Fixed Income)	0.2 (59)	8.8 (75)	8.8 (75)	4.1 (83)	3.1 (86)	\$403,053,072
<i>Bloomberg Barclays Aggregate Index</i>		0.2 ----	8.7 ----	8.7 ----	4.0 ----	3.1 ----	----
TOTAL	(Core Fixed Income)	0.2 (59)	8.8 (75)	8.8 (75)	4.1 (83)	3.1 (86)	\$403,053,072
<i>Bloomberg Barclays Aggregate Index</i>		0.2 ----	8.7 ----	8.7 ----	4.0 ----	3.1 ----	----

FIXED INCOME RETURN COMPARISONS



Core Fixed Income Universe

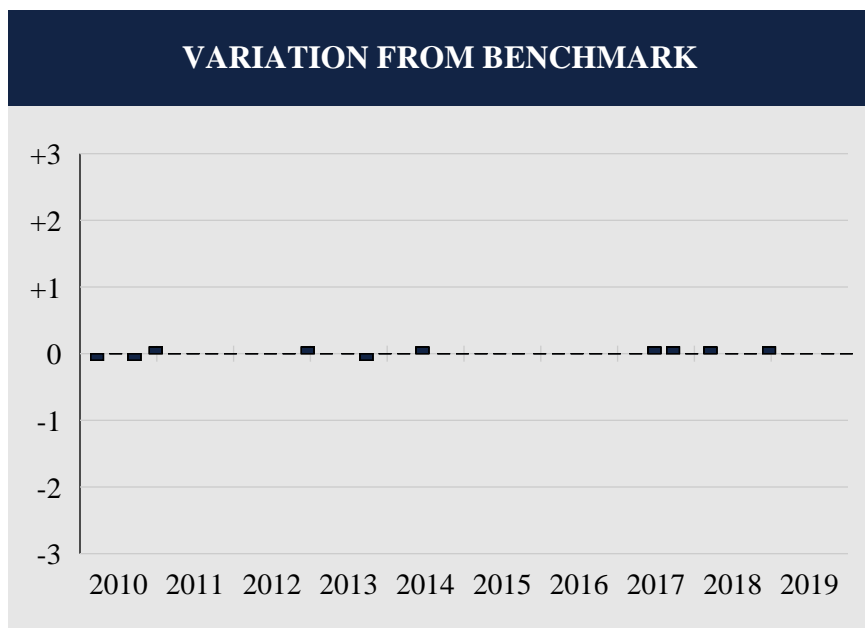


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	0.2	2.5	5.6	8.8	4.1	3.1
(RANK)	(59)	(64)	(67)	(75)	(83)	(86)
5TH %ILE	1.2	3.3	6.6	11.2	5.1	4.4
25TH %ILE	0.4	2.8	6.1	9.7	4.6	3.7
MEDIAN	0.2	2.6	5.8	9.2	4.4	3.5
75TH %ILE	0.1	2.4	5.6	8.7	4.1	3.2
95TH %ILE	-0.2	1.9	4.6	7.2	3.6	2.9
Agg	0.2	2.5	5.6	8.7	4.0	3.1

Core Fixed Income Universe

FIXED INCOME QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

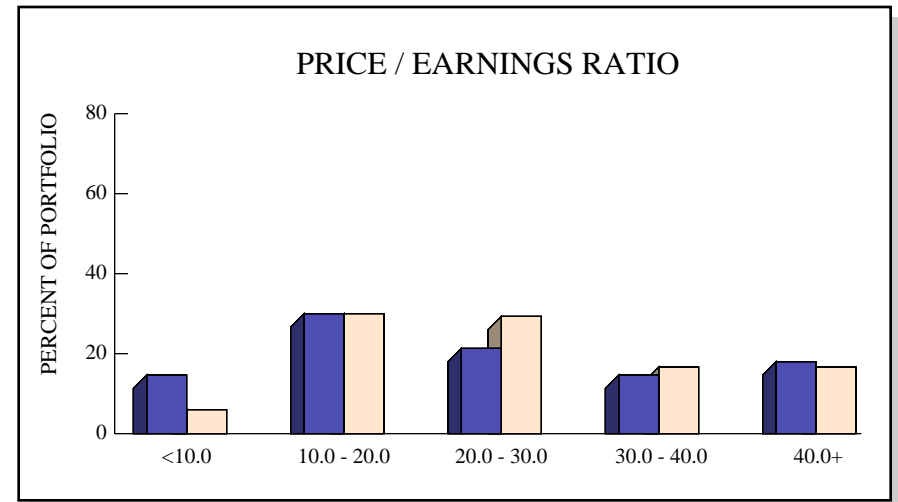
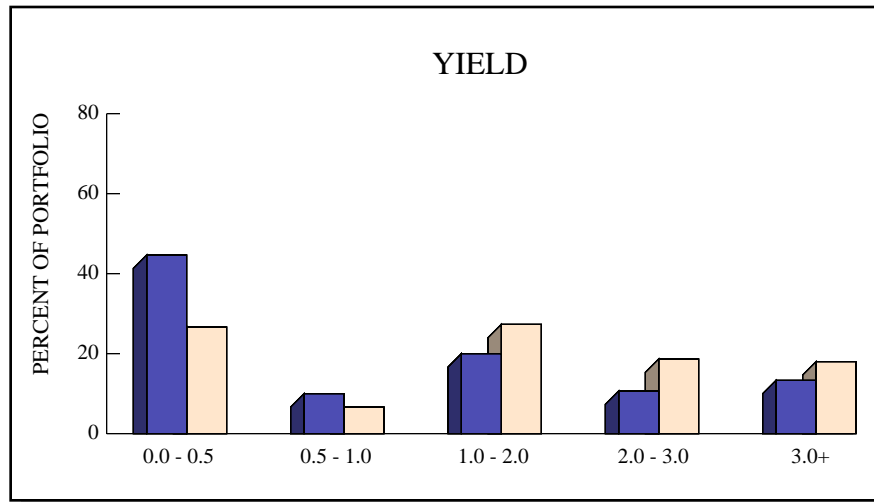
COMPARATIVE BENCHMARK: BLOOMBERG BARCLAYS AGGREGATE INDEX



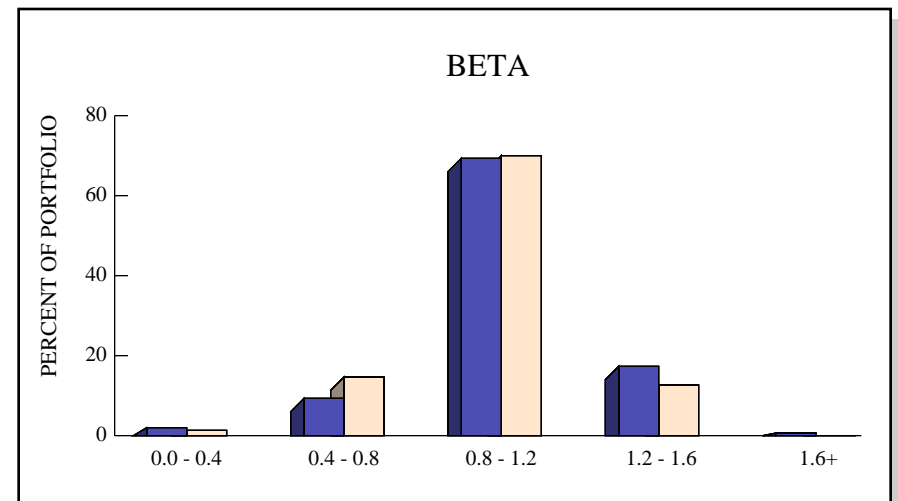
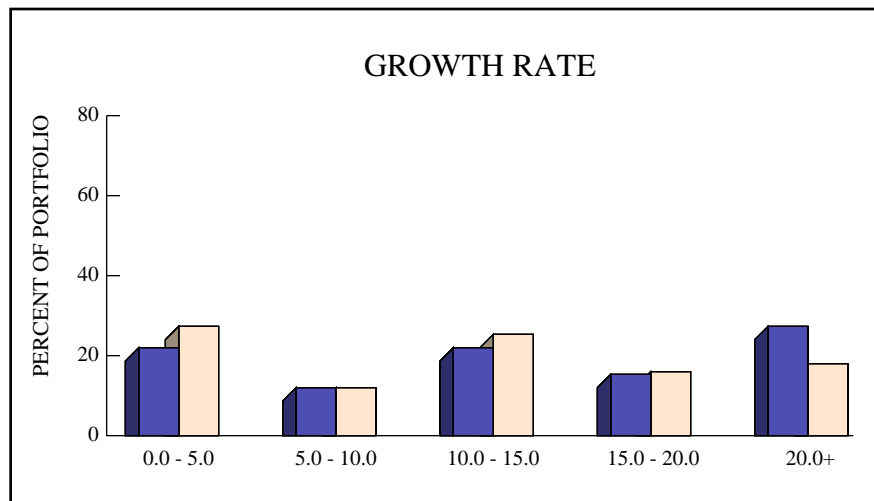
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
3/10	1.7	1.8	-0.1
6/10	3.5	3.5	0.0
9/10	2.4	2.5	-0.1
12/10	-1.2	-1.3	0.1
3/11	0.4	0.4	0.0
6/11	2.3	2.3	0.0
9/11	3.8	3.8	0.0
12/11	1.1	1.1	0.0
3/12	0.3	0.3	0.0
6/12	2.1	2.1	0.0
9/12	1.6	1.6	0.0
12/12	0.3	0.2	0.1
3/13	-0.1	-0.1	0.0
6/13	-2.3	-2.3	0.0
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
12/19	0.2	0.2	0.0

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

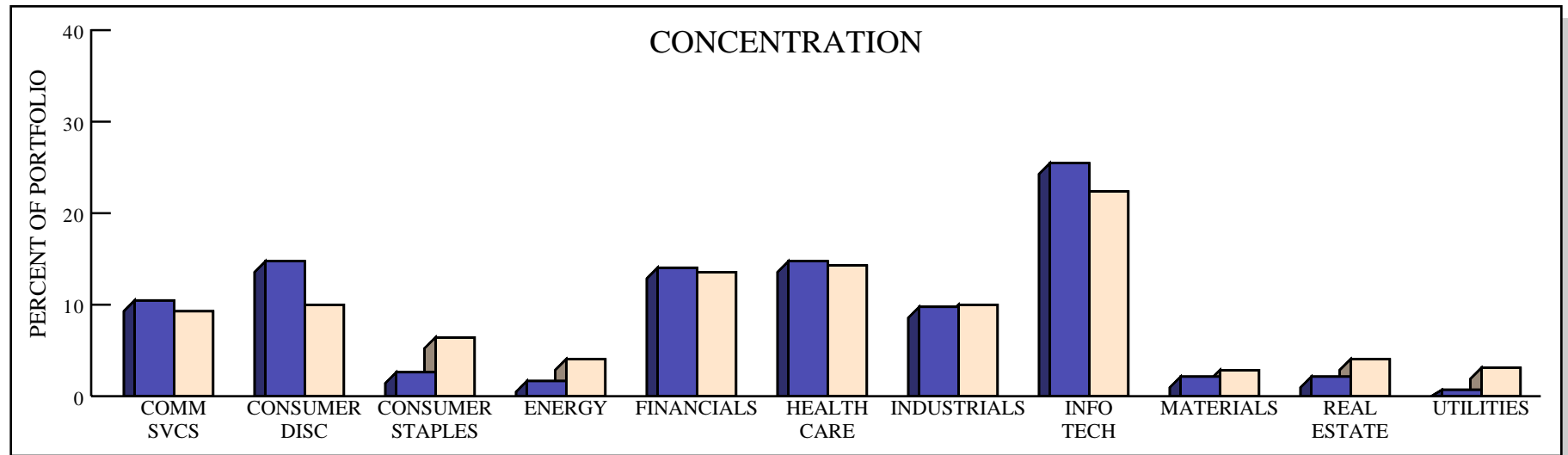
STOCK CHARACTERISTICS



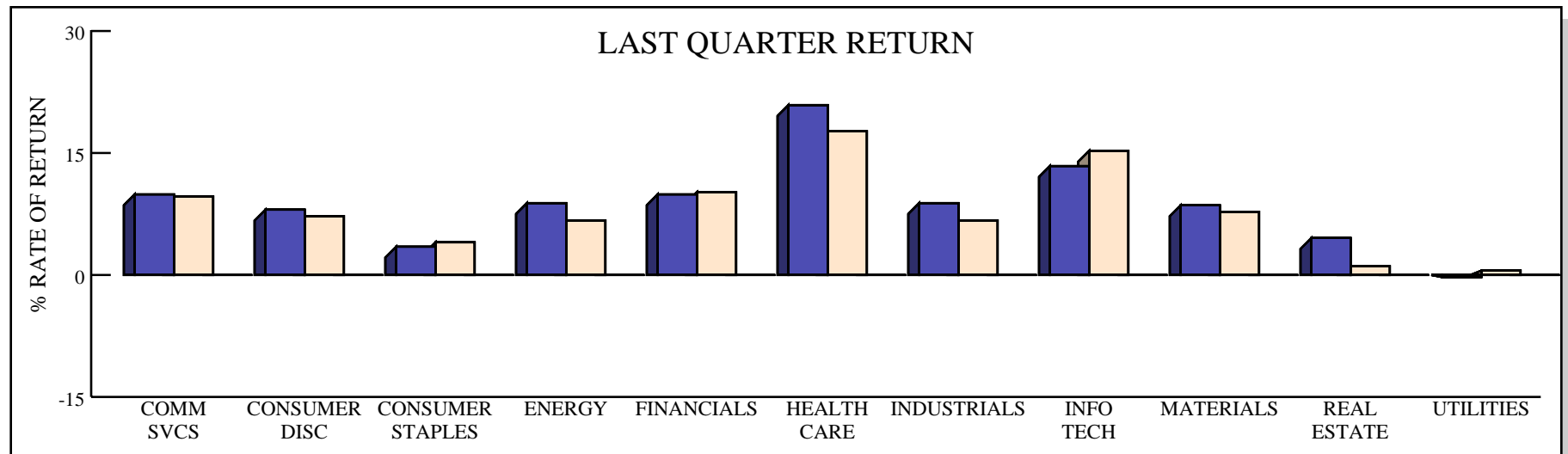
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	2,631	1.3%	15.5%	25.4	1.03
RUSSELL 3000	2,990	1.8%	12.0%	28.0	0.98



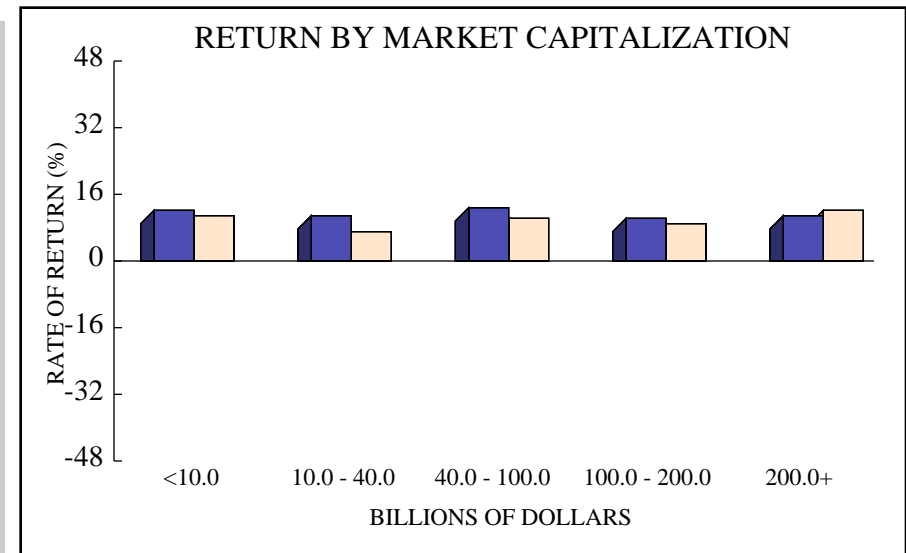
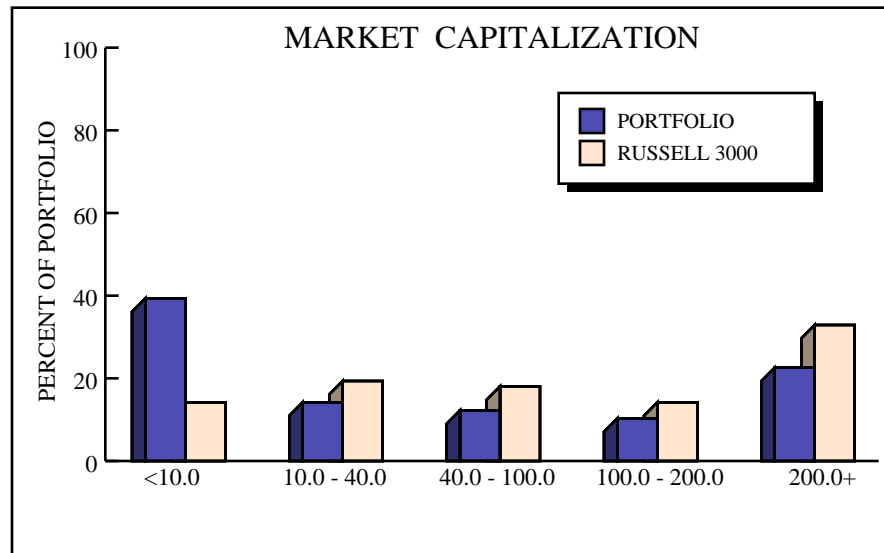
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 3000



TOP TEN HOLDINGS



TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	\$ 46,144,754	4.02%	13.8%	Information Technology	\$ 1203.1 B
2	ALPHABET INC-CL C	32,583,178	2.84%	9.7%	Communication Services	459.3 B
3	FACEBOOK INC-CLASS A	27,713,881	2.41%	15.3%	Communication Services	493.9 B
4	VISA INC-CLASS A SHARES	22,174,078	1.93%	9.4%	Information Technology	321.7 B
5	MASTERCARD INC - A	17,279,702	1.51%	10.1%	Information Technology	297.8 B
6	ZOETIS INC	16,212,479	1.41%	6.4%	Health Care	63.0 B
7	ADOBE INC	15,654,432	1.36%	19.4%	Information Technology	159.7 B
8	CITIGROUP INC	13,904,775	1.21%	16.5%	Financials	174.4 B
9	AMAZON.COM INC	13,494,775	1.18%	6.5%	Consumer Discretionary	916.2 B
10	BERKSHIRE HATHAWAY INC-CL B	13,178,903	1.15%	8.9%	Financials	313.3 B

Domestic Industry Sector Allocations
(Percent of Invested Equity)
As of December 31, 2019

	Comm Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities
Eagle	29.4	16.9	0.0	0.0	29.9	3.2	7.3	13.3	0.0	0.0	0.0
LSV Large Cap	7.4	10.6	5.3	3.6	18.1	16.7	11.9	20.0	4.8	1.0	0.5
Russell 1000 Value	8.2	5.9	8.9	8.2	23.9	13.0	9.7	6.3	4.3	5.2	6.6
Federated	6.3	14.3	0.9	0.0	4.6	23.3	11.2	32.7	3.1	3.6	0.0
Polen	16.5	19.9	0.0	0.0	2.2	14.0	0.0	47.4	0.0	0.0	0.0
Russell 1000 Growth	11.5	13.9	4.6	0.3	3.1	14.7	9.3	38.9	1.3	2.4	0.0
AMI	0.0	6.6	13.9	1.5	7.5	23.8	14.5	29.1	3.2	0.0	0.0
Copeland	5.5	11.7	6.6	3.4	14.9	12.9	14.6	14.4	3.7	7.9	4.4
Emerald	2.6	19.0	5.9	1.1	9.3	26.3	14.6	17.6	0.5	2.9	0.0
Russell 2000 Growth	2.4	11.9	3.3	0.6	5.7	30.4	19.1	17.3	3.1	4.6	1.5
LSV Small Cap	1.8	12.7	1.1	3.3	21.6	11.3	19.6	15.0	6.8	5.9	0.9
Smith, Graham & Co	0.0	17.5	1.2	3.2	20.7	13.5	14.1	24.8	2.3	1.4	1.2
Russell 2000 Value	2.2	9.7	2.7	5.8	30.2	5.4	13.1	9.3	4.7	11.1	5.9
S&P 500	10.4	9.7	7.2	4.3	13.0	14.2	9.1	23.2	2.7	2.9	3.3

Allocations may not total to 100% due to rounding.

International Industry Sector Allocations

As of December 31, 2019

	Comm Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities	Cash
HGK	2.4	20.1	3.2	2.8	14.2	3.1	26.0	17.2	0.0	5.6	3.6	1.9
Hardman Johnston	4.5	20.9	2.3	0.0	11.6	13.5	24.2	23.1	0.0	0.0	0.0	---
S&P Developed Ex US BMI	4.9	11.2	9.5	5.4	18.0	10.5	15.7	9.2	7.6	4.5	3.4	---

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	0.1	2.3	2.3	2.1	1.8
Domestic Equity	Style	QTR	YTD	1 Year	3 years	5 Years
Russell 3000	Broad Equity	9.1	31.0	31.0	14.6	11.2
S&P 500	Large Cap Core	9.1	31.5	31.5	15.3	11.7
Russell 1000	Large Cap	9.0	31.4	31.4	15.0	11.5
Russell 1000 Growth	Large Cap Growth	10.6	36.4	36.4	20.5	14.6
Russell 1000 Value	Large Cap Value	7.4	26.5	26.5	9.7	8.3
Russell Mid Cap	Midcap	7.1	30.5	30.5	12.0	9.3
Russell Mid Cap Growth	Midcap Growth	8.2	35.5	35.5	17.4	11.6
Russell Mid Cap Value	Midcap Value	6.3	27.0	27.0	8.1	7.6
Russell 2000	Small Cap	9.9	25.5	25.5	8.6	8.2
Russell 2000 Growth	Small Cap Growth	11.4	28.4	28.4	12.5	9.3
Russell 2000 Value	Small Cap Value	8.5	22.4	22.4	4.8	7.0
International Equity	Style	QTR	YTD	1 Year	3 years	5 Years
MSCI All Country World Ex US	Foreign Equity	9.0	22.1	22.1	10.4	6.0
MSCI EAFE	Developed Markets Equity	8.2	22.7	22.7	10.1	6.2
MSCI EAFE Growth	Developed Markets Growth	8.5	28.4	28.4	13.3	8.1
MSCI EAFE Value	Developed Markets Value	7.9	16.8	16.8	6.9	4.2
MSCI Emerging Markets	Emerging Markets Equity	11.9	18.9	18.9	12.0	6.0
Domestic Fixed Income	Style	QTR	YTD	1 Year	3 years	5 Years
Bloomberg Barclays Aggregate Index	Core Fixed Income	0.2	8.7	8.7	4.0	3.1
Bloomberg Barclays Capital Gov't Bond	Treasuries	-0.8	6.8	6.8	3.3	2.4
Bloomberg Barclays Capital Credit Bond	Corporate Bonds	1.1	13.8	13.8	5.8	4.4
Intermediate Aggregate	Core Intermediate	0.5	6.7	6.7	3.3	2.6
ML/BoA 1-3 Year Treasury	Short Term Treasuries	0.5	3.6	3.6	1.8	1.4
Bloomberg Barclays Capital High Yield	High Yield Bonds	2.6	14.3	14.3	6.4	6.1
Alternative Assets	Style	QTR	YTD	1 Year	3 years	5 Years
Bloomberg Barclays Global Treasury Ex US	International Treasuries	-0.2	5.2	5.2	4.5	2.0
NCREIF NFI-ODCE Index	Real Estate	1.5	5.3	5.3	7.1	9.0
HFRI FOF Composite	Hedge Funds	2.3	7.6	7.6	3.6	2.2

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 utilizes 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
DECEMBER 2019

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's AMI Asset Management Small Cap Growth Equity portfolio was valued at \$37,513,048, representing an increase of \$3,109,845 from the September quarter's ending value of \$34,403,203. Last quarter, the Fund posted withdrawals totaling \$70,872, which partially offset the portfolio's net investment return of \$3,180,717. Income receipts totaling \$29,191 plus net realized and unrealized capital gains of \$3,151,526 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the AMI Asset Management Small Cap Growth Equity portfolio returned 9.3%, which was 2.1% below the Russell 2000 Growth Index's return of 11.4% and ranked in the 48th percentile of the Small Cap Growth universe. Over the trailing year, the portfolio returned 9.8%, which was 18.6% below the benchmark's 28.4% return, ranking in the 99th percentile. Since September 2017, the portfolio returned 1.7% annualized and ranked in the 99th percentile. The Russell 2000 Growth returned an annualized 9.1% over the same period.

ASSET ALLOCATION

At the end of the fourth quarter, small cap equities comprised 97.0% of the total portfolio (\$36.4 million), while cash & equivalents totaled 3.0% (\$1.1 million).

EQUITY ANALYSIS

Last quarter, the AMI portfolio was invested in eight of the eleven industry sectors shown in our analysis. Relative to the Russell 2000 Growth index, the portfolio was overweight in the Information Technology and Consumer Staples sectors, while underweight in the Consumer Discretionary, Health Care, and Industrials sectors. Communication Services, Real Estate, and Utilities were vacant.

Sector returns were mixed last quarter, with some better and some worse, but the main reason for AMI's shortfall was significant underperformance in the Health Care sector, which expanded rapidly for the Russell 2000 Growth Index. While this sector was not as dominant in the portfolio's allocation as in the benchmark's, it still represented a large portion and weighed heavily on the total return.

EXECUTIVE SUMMARY**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year	Since 09/17
Total Portfolio - Gross	9.3	9.8	----	----	1.7
<i>SMALL CAP GROWTH RANK</i>	(48)	(99)	----	----	(99)
Total Portfolio - Net	9.1	9.0	----	----	0.9
Russell 2000G	11.4	28.4	12.5	9.3	9.1
Small Cap Equity - Gross	9.6	10.2	----	----	1.6
<i>SMALL CAP GROWTH RANK</i>	(42)	(99)	----	----	(99)
Russell 2000G	11.4	28.4	12.5	9.3	9.1

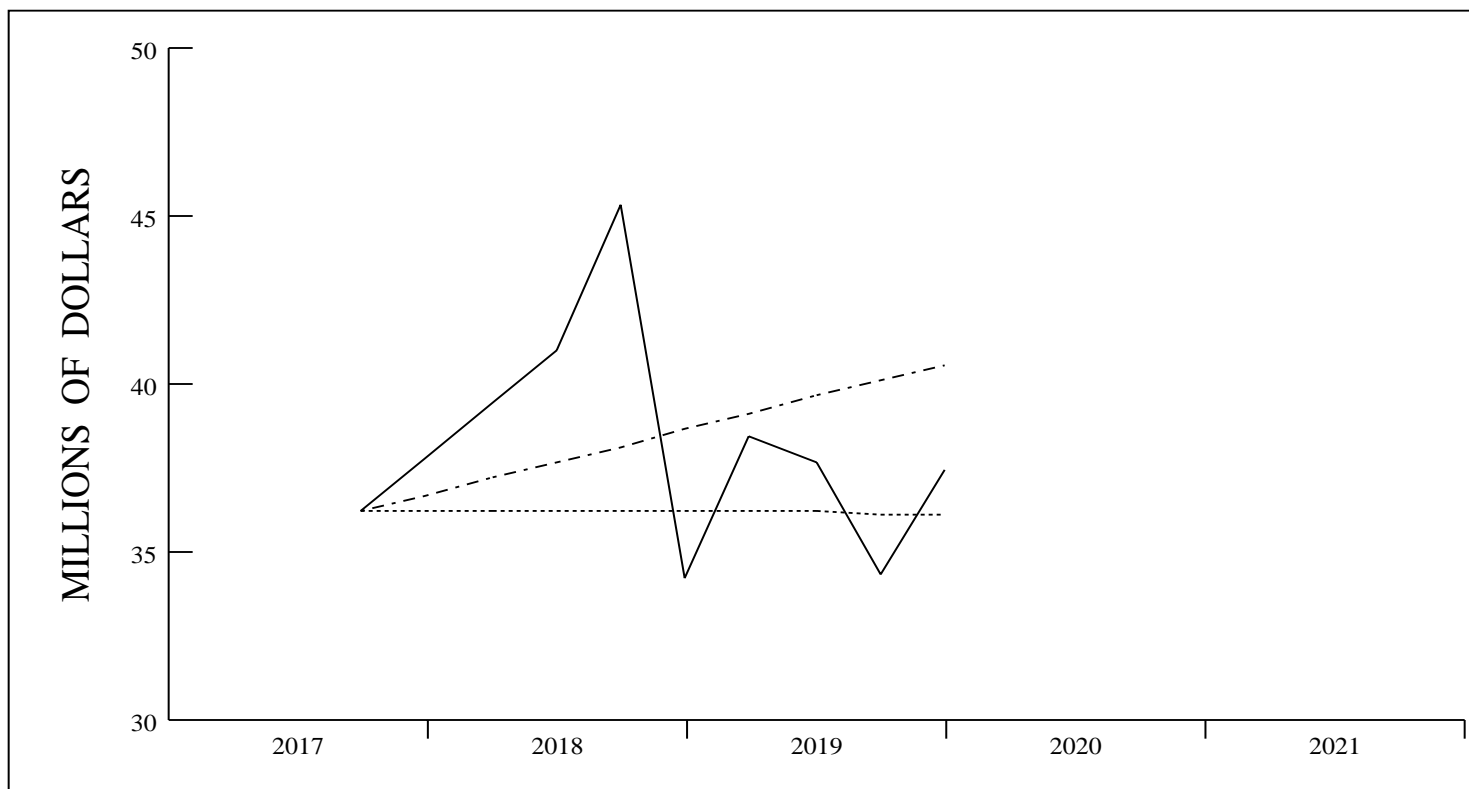
ASSET ALLOCATION

Small Cap	97.0%	\$ 36,377,775
Cash	3.0%	1,135,273
Total Portfolio	100.0%	\$ 37,513,048

INVESTMENT RETURN

Market Value 9/2019	\$ 34,403,203
Contribs / Withdrawals	- 70,872
Income	29,191
Capital Gains / Losses	3,151,526
Market Value 12/2019	\$ 37,513,048

INVESTMENT GROWTH

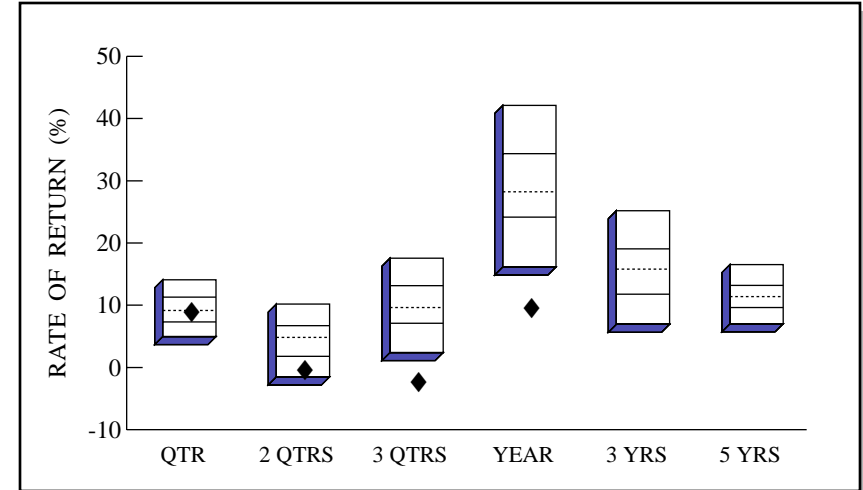
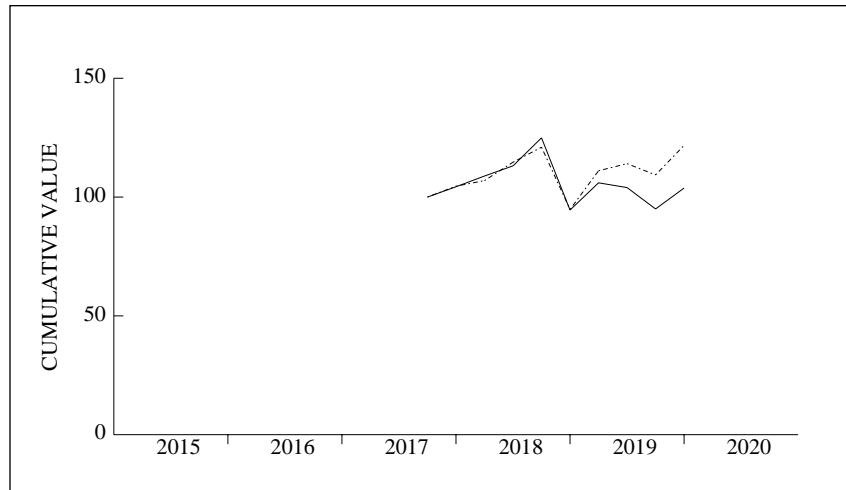


— ACTUAL RETURN
 - - - 5.25%
 . . . 0.0%

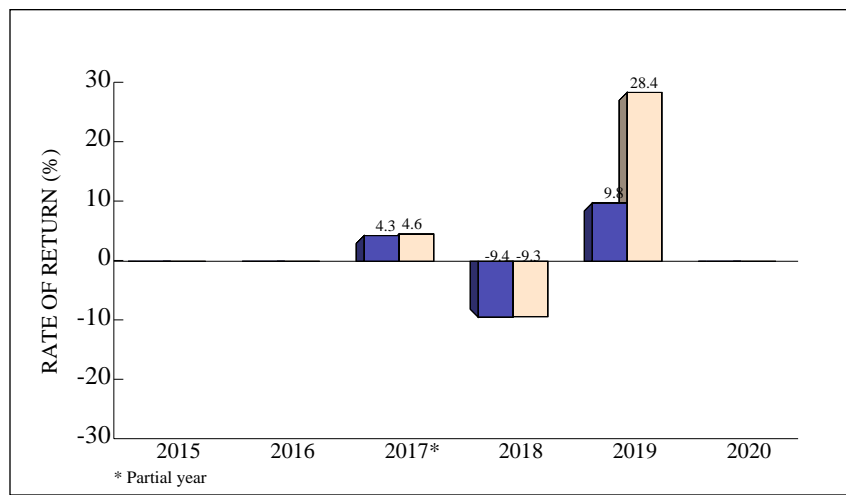
VALUE ASSUMING
 5.25% RETURN \$ 40,574,881

	LAST QUARTER	PERIOD 9/17 - 12/19
BEGINNING VALUE	\$ 34,403,203	\$ 36,293,387
NET CONTRIBUTIONS	- 70,872	-144,753
<u>INVESTMENT RETURN</u>	<u>3,180,717</u>	<u>1,364,414</u>
ENDING VALUE	\$ 37,513,048	\$ 37,513,048
INCOME	29,191	348,349
<u>CAPITAL GAINS (LOSSES)</u>	<u>3,151,526</u>	<u>1,016,065</u>
INVESTMENT RETURN	3,180,717	1,364,414

TOTAL RETURN COMPARISONS



Small Cap Growth Universe

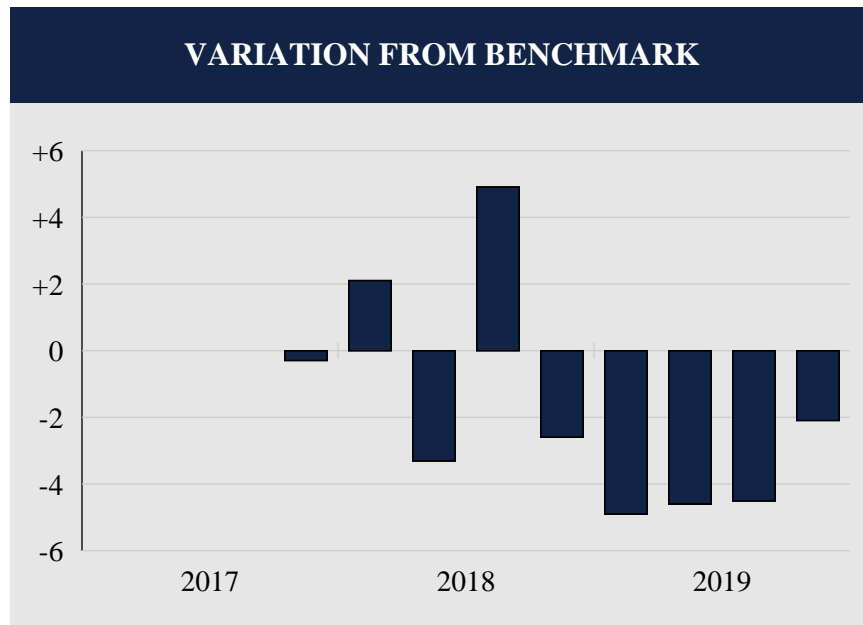


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	9.3	-0.2	-2.1	9.8	----	----
(RANK)	(48)	(94)	(99)	(99)	----	----
5TH %ILE	14.1	10.2	17.5	42.1	25.2	16.5
25TH %ILE	11.3	6.7	13.1	34.3	19.0	13.2
MEDIAN	9.2	4.8	9.6	28.2	15.8	11.4
75TH %ILE	7.3	1.8	7.1	24.2	11.8	9.6
95TH %ILE	4.9	-1.5	2.4	16.2	6.9	7.0
Russ 2000G	11.4	6.7	9.7	28.4	12.5	9.3

Small Cap Growth Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

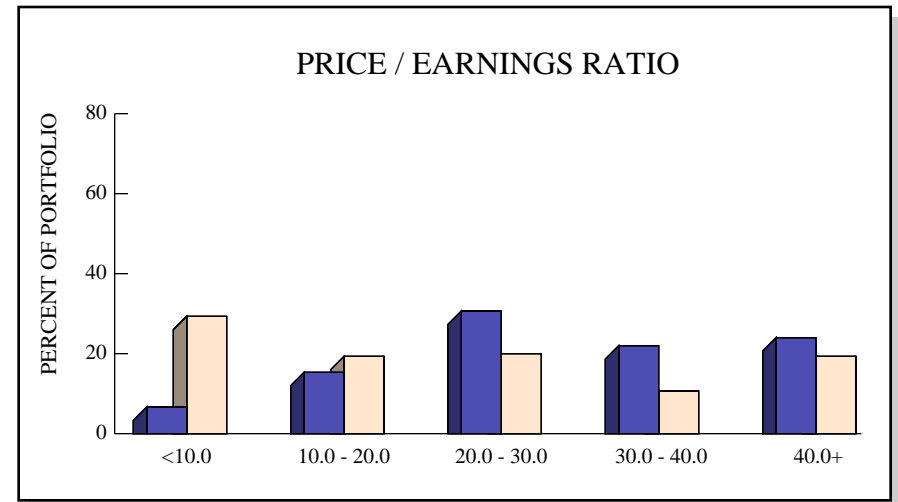
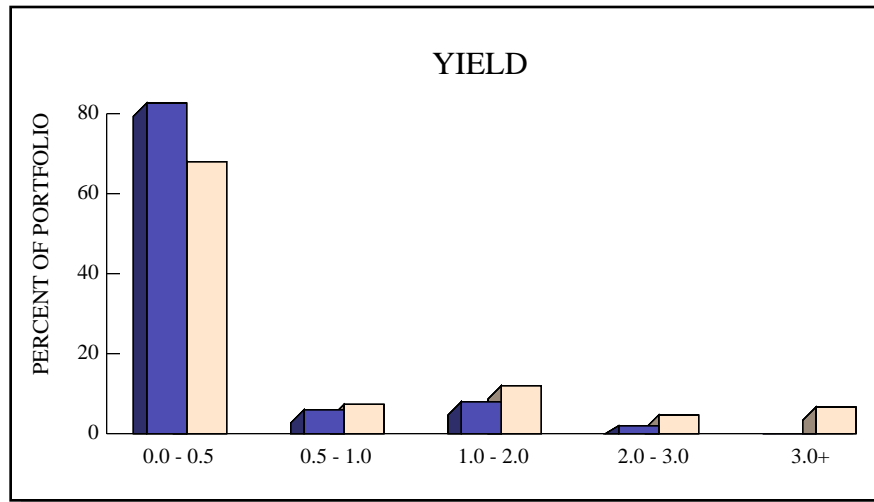
COMPARATIVE BENCHMARK: RUSSELL 2000 GROWTH



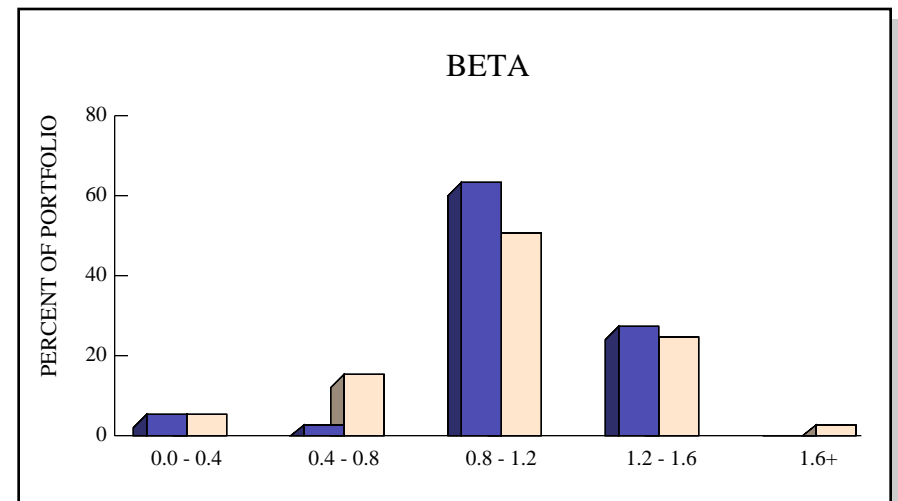
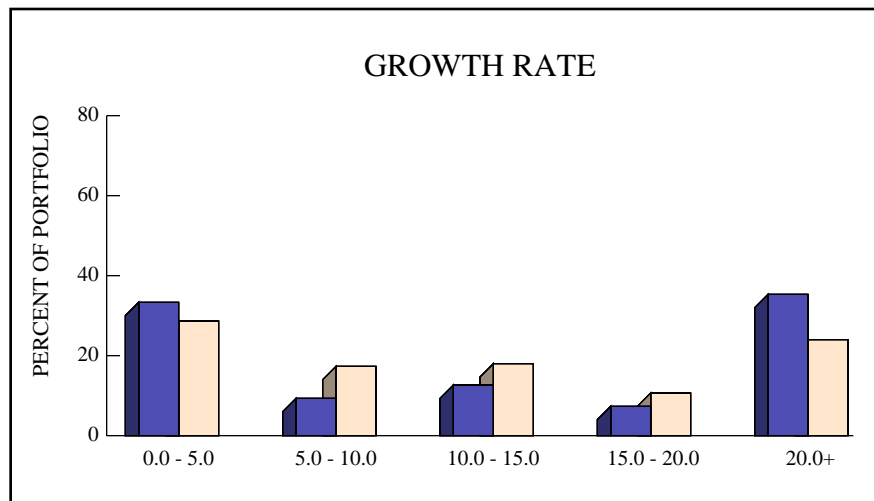
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
12/17	4.3	4.6	-0.3
3/18	4.4	2.3	2.1
6/18	3.9	7.2	-3.3
9/18	10.4	5.5	4.9
12/18	-24.3	-21.7	-2.6
3/19	12.2	17.1	-4.9
6/19	-1.9	2.7	-4.6
9/19	-8.7	-4.2	-4.5
12/19	9.3	11.4	-2.1

Total Quarters Observed	9
Quarters At or Above the Benchmark	2
Quarters Below the Benchmark	7
Batting Average	.222

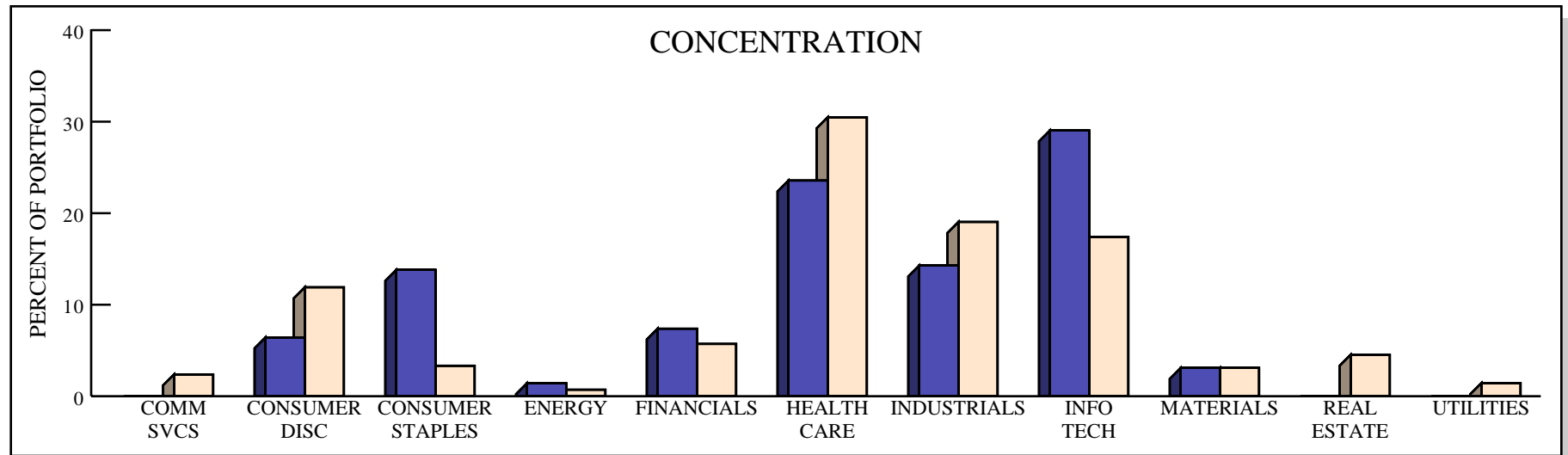
STOCK CHARACTERISTICS



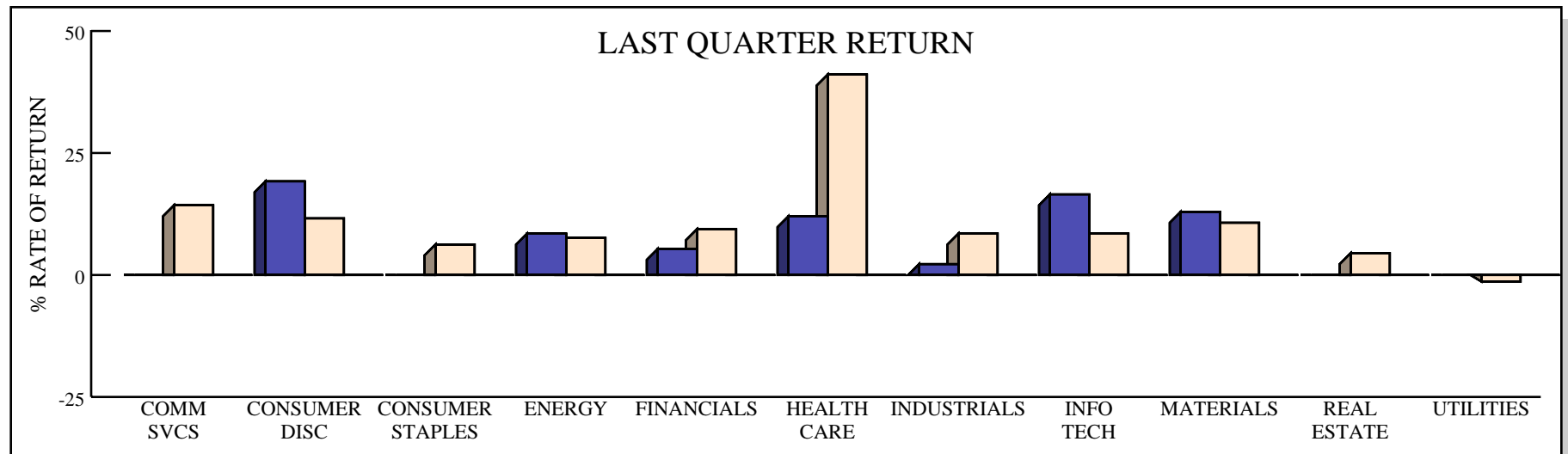
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	33	0.3%	15.2%	30.4	1.01
RUSSELL 2000G	1,169	0.7%	13.3%	18.9	0.99



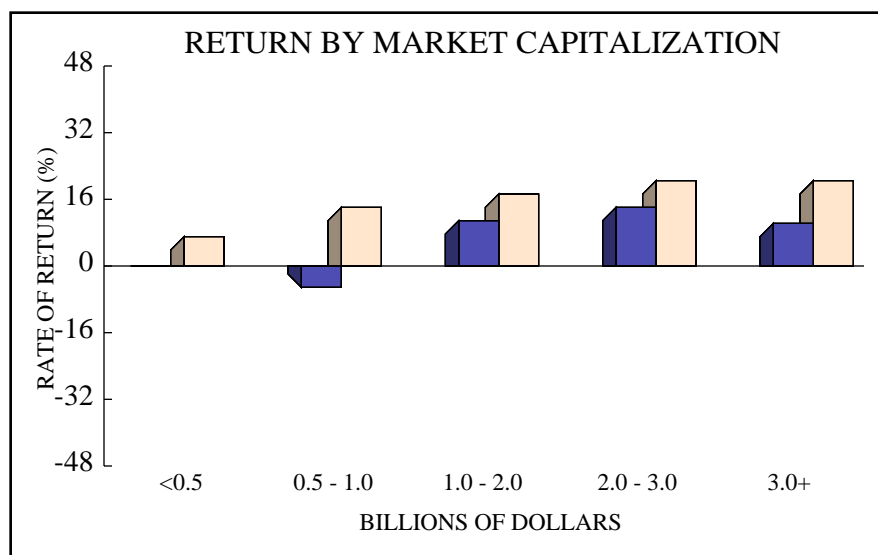
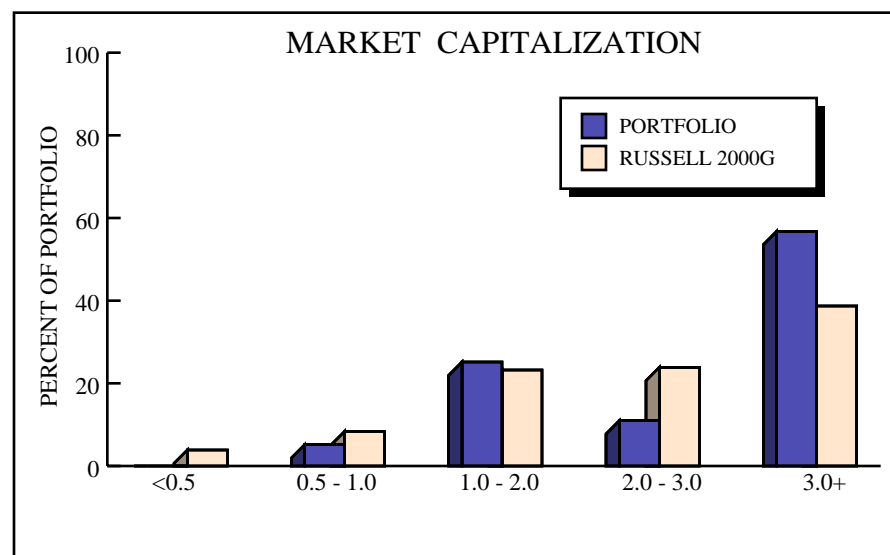
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 2000G



TOP TEN HOLDINGS



TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	SYNEOS HEALTH INC	\$ 1,588,473	4.37%	11.8%	Health Care	\$ 6.2 B
2	CARDTRONICS PLC - A	1,471,084	4.04%	47.7%	Information Technology	2.0 B
3	MERIT MEDICAL SYSTEMS INC	1,460,222	4.01%	2.5%	Health Care	1.7 B
4	NATIONAL VISION HOLDINGS INC	1,415,602	3.89%	34.7%	Consumer Discretionary	2.6 B
5	ASGN INC	1,389,167	3.82%	12.9%	Industrials	3.7 B
6	VIRTUSA CORP	1,368,241	3.76%	25.9%	Information Technology	1.4 B
7	EXLSERVICE HOLDINGS INC	1,318,559	3.62%	3.7%	Information Technology	2.4 B
8	VERINT SYSTEMS INC	1,302,898	3.58%	29.4%	Information Technology	3.7 B
9	ICU MEDICAL INC	1,299,548	3.57%	17.2%	Health Care	3.9 B
10	HORIZON PHARMA PLC	1,271,851	3.50%	32.9%	Health Care	6.8 B

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

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's Copeland Capital Management Small Cap Dividend Growth portfolio was valued at \$47,878,090, representing an increase of \$2,448,322 from the September quarter's ending value of \$45,429,768. Last quarter, the Fund posted withdrawals totaling \$56,276, which partially offset the portfolio's net investment return of \$2,504,598. Income receipts totaling \$285,985 plus net realized and unrealized capital gains of \$2,218,613 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the Copeland Capital Management Small Cap Dividend Growth portfolio returned 5.5%, which was 5.9% below the Russell 2000 Growth Index's return of 11.4% and ranked in the 93rd percentile of the Small Cap Growth universe. Over the trailing year, the portfolio returned 30.1%, which was 1.7% above the benchmark's 28.4% return, ranking in the 42nd percentile. Since September 2017, the portfolio returned 12.4% annualized and ranked in the 52nd percentile. The Russell 2000 Growth returned an annualized 9.1% over the same period.

ASSET ALLOCATION

At the end of the fourth quarter, small cap equities comprised 96.8% of the total portfolio (\$46.4 million), while cash & equivalents totaled 3.2% (\$1.5 million).

EQUITY ANALYSIS

Last quarter, the Copeland portfolio was invested across all eleven industry sectors in our analysis. Relative to the Russell 2000 Growth Index, the portfolio was overweight in the Financials sector, while underweight in the Health Care sector.

Selection effects across most sectors were negative; only the Communication Services, Information Technology, and Utilities sectors outperformed. The most notable difference occurred in the Health Care sector, where the portfolio was unable to keep pace with the skyrocketing returns of pharmaceutical and other Health Care stocks that were present in the index.

EXECUTIVE SUMMARY**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year	Since 09/17
Total Portfolio - Gross	5.5	30.1	----	----	12.4
<i>SMALL CAP GROWTH RANK</i>	(93)	(42)	----	----	(52)
Total Portfolio - Net	5.3	29.1	----	----	11.5
Russell 2000G	11.4	28.4	12.5	9.3	9.1
Small Cap Equity - Gross	5.7	31.5	----	----	12.8
<i>SMALL CAP GROWTH RANK</i>	(92)	(34)	----	----	(48)
Russell 2000G	11.4	28.4	12.5	9.3	9.1

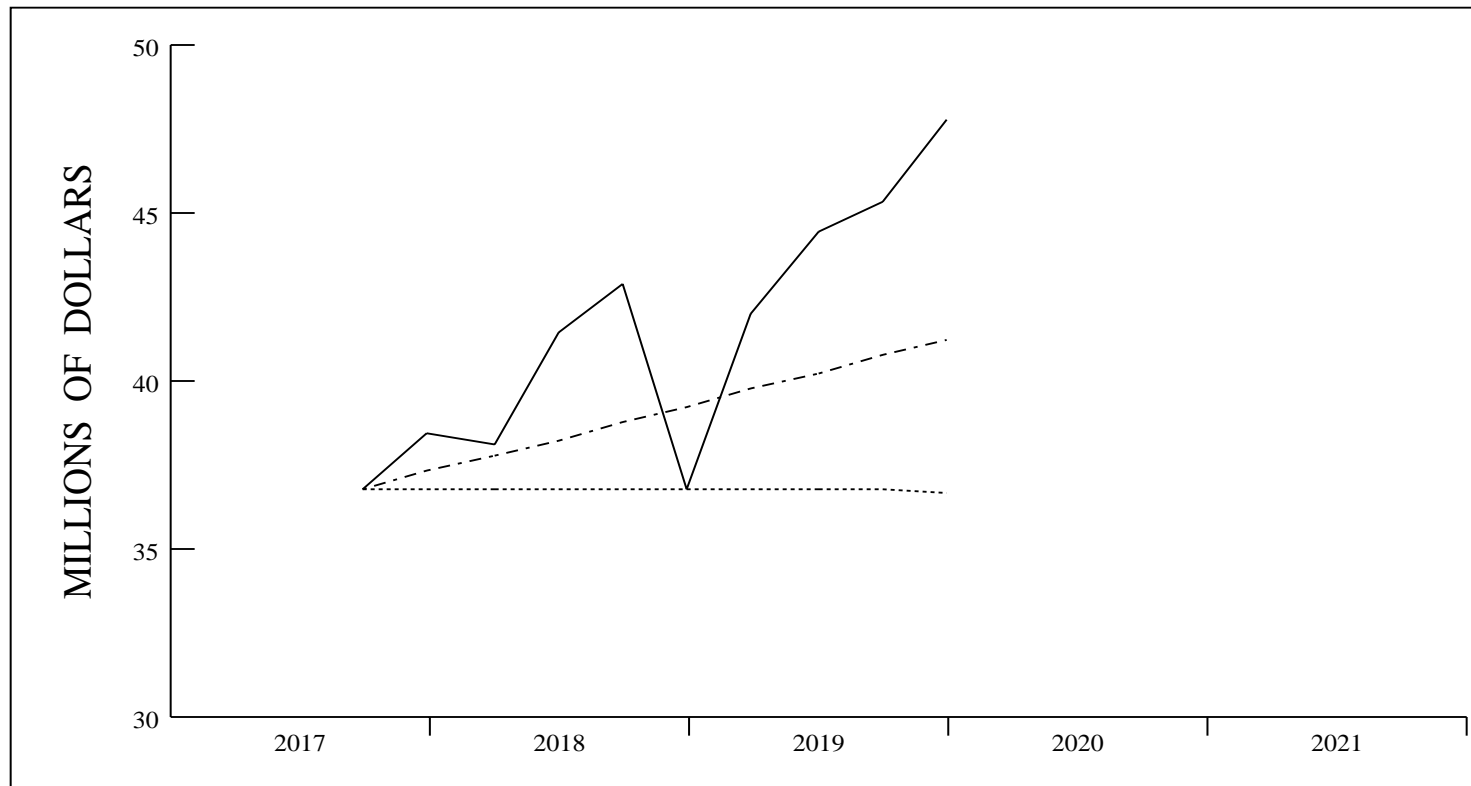
ASSET ALLOCATION

Small Cap	96.8%	\$ 46,364,440
Cash	3.2%	1,513,650
Total Portfolio	100.0%	\$ 47,878,090

INVESTMENT RETURN

Market Value 9/2019	\$ 45,429,768
Contribs / Withdrawals	- 56,276
Income	285,985
Capital Gains / Losses	2,218,613
Market Value 12/2019	\$ 47,878,090

INVESTMENT GROWTH

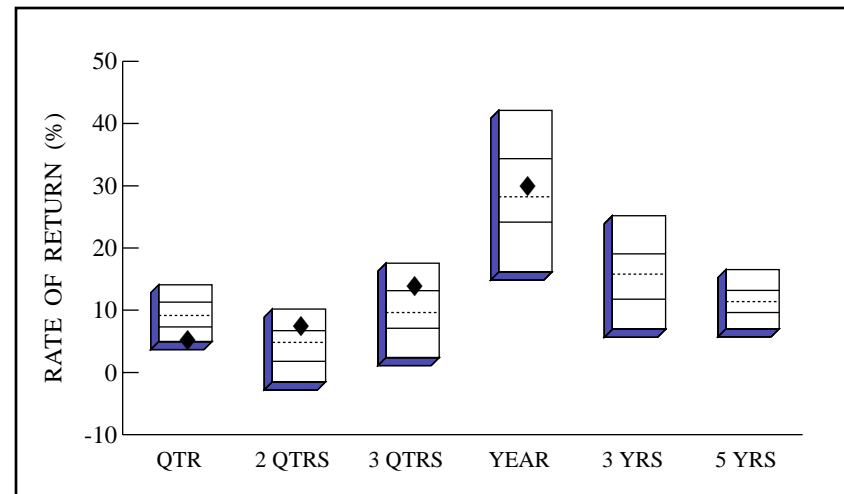
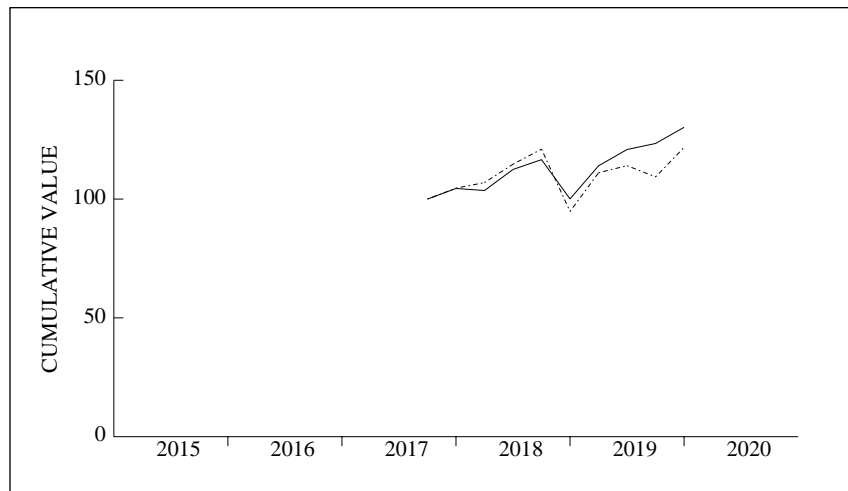


—	ACTUAL RETURN
- - - - -	5.25%
.....	0.0%

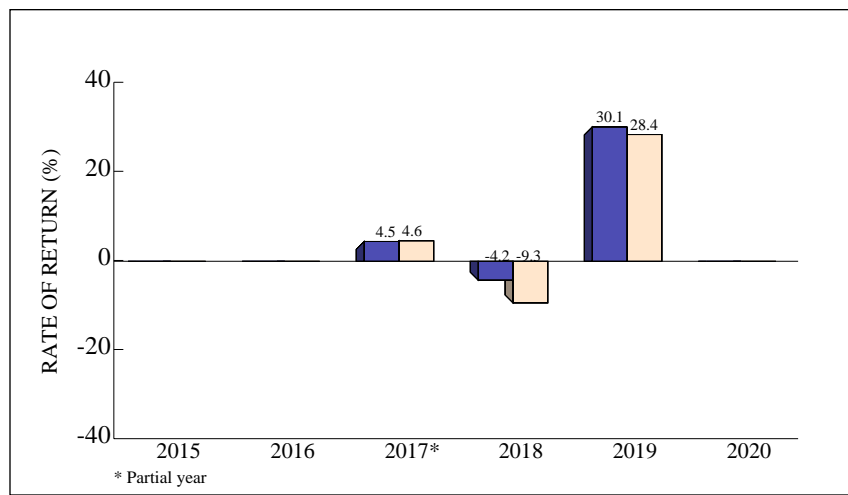
VALUE ASSUMING	
5.25% RETURN	\$ 41,246,551

	LAST QUARTER	PERIOD 9/17 - 12/19
BEGINNING VALUE	\$ 45,429,768	\$ 36,860,615
NET CONTRIBUTIONS	- 56,276	-110,306
<u>INVESTMENT RETURN</u>	<u>2,504,598</u>	<u>11,127,781</u>
ENDING VALUE	\$ 47,878,090	\$ 47,878,090
INCOME	285,985	1,890,900
<u>CAPITAL GAINS (LOSSES)</u>	<u>2,218,613</u>	<u>9,236,881</u>
INVESTMENT RETURN	2,504,598	11,127,781

TOTAL RETURN COMPARISONS



Small Cap Growth Universe

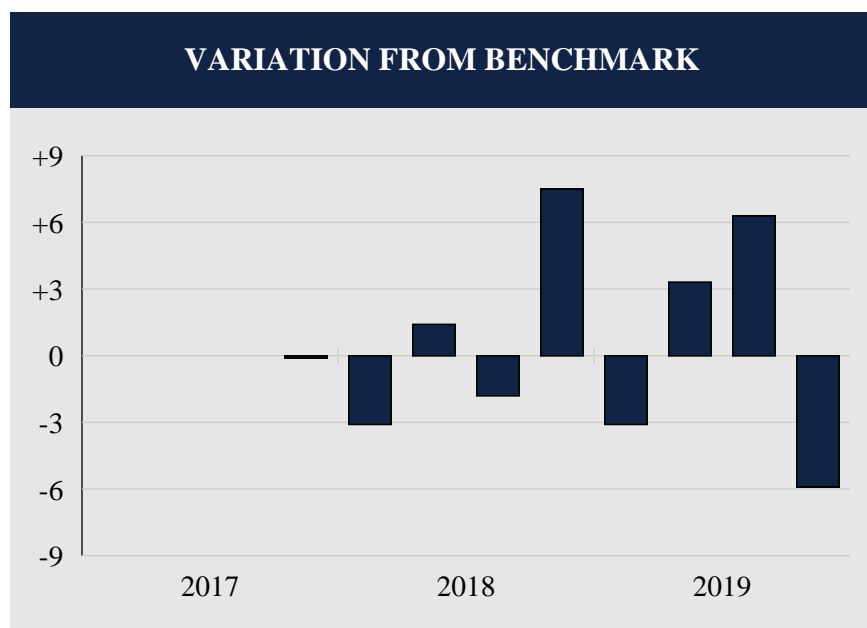


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	5.5	7.7	14.2	30.1	----	----
(RANK)	(93)	(15)	(16)	(42)	----	----
5TH %ILE	14.1	10.2	17.5	42.1	25.2	16.5
25TH %ILE	11.3	6.7	13.1	34.3	19.0	13.2
MEDIAN	9.2	4.8	9.6	28.2	15.8	11.4
75TH %ILE	7.3	1.8	7.1	24.2	11.8	9.6
95TH %ILE	4.9	-1.5	2.4	16.2	6.9	7.0
Russ 2000G	11.4	6.7	9.7	28.4	12.5	9.3

Small Cap Growth Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

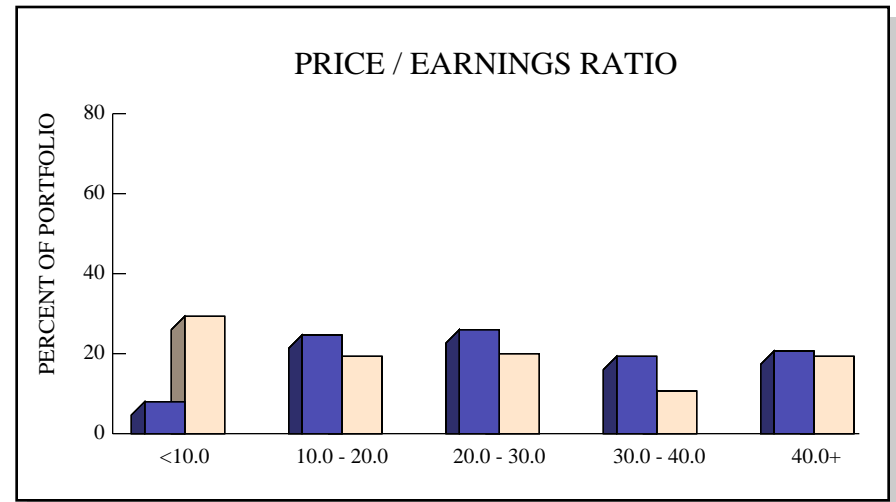
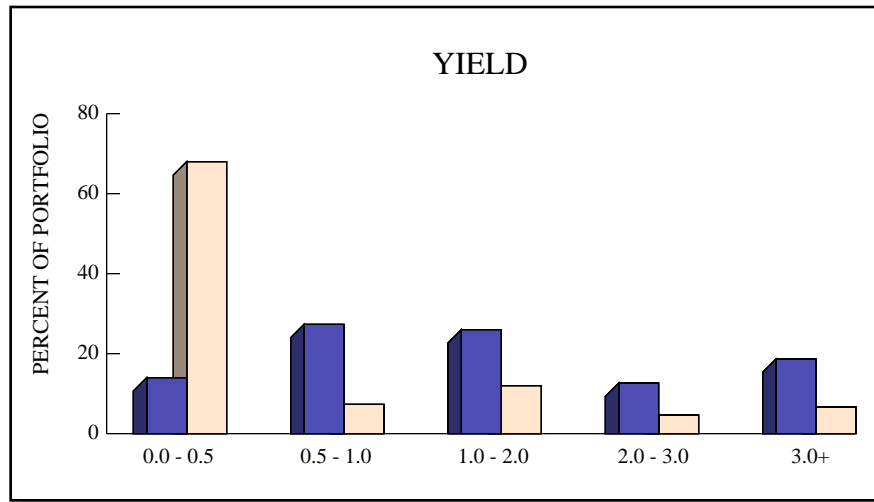
COMPARATIVE BENCHMARK: RUSSELL 2000 GROWTH



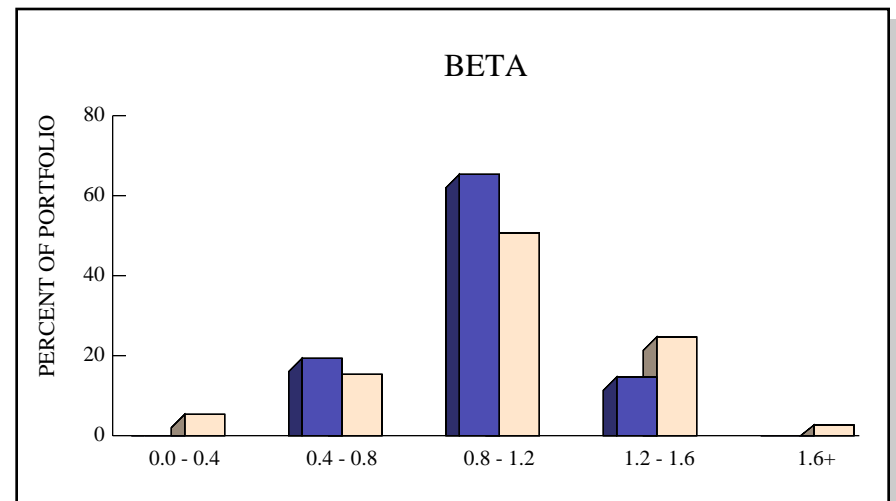
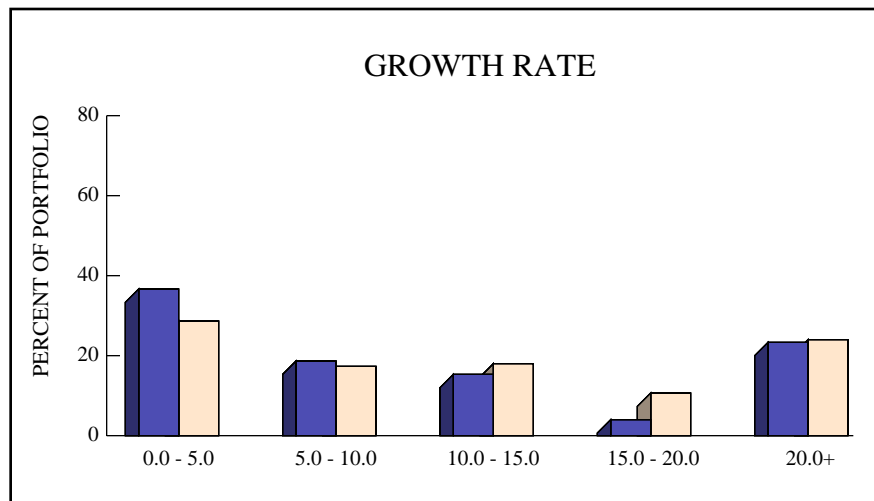
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
12/17	4.5	4.6	-0.1
3/18	-0.8	2.3	-3.1
6/18	8.6	7.2	1.4
9/18	3.7	5.5	-1.8
12/18	-14.2	-21.7	7.5
3/19	14.0	17.1	-3.1
6/19	6.0	2.7	3.3
9/19	2.1	-4.2	6.3
12/19	5.5	11.4	-5.9

Total Quarters Observed	9
Quarters At or Above the Benchmark	4
Quarters Below the Benchmark	5
Batting Average	.444

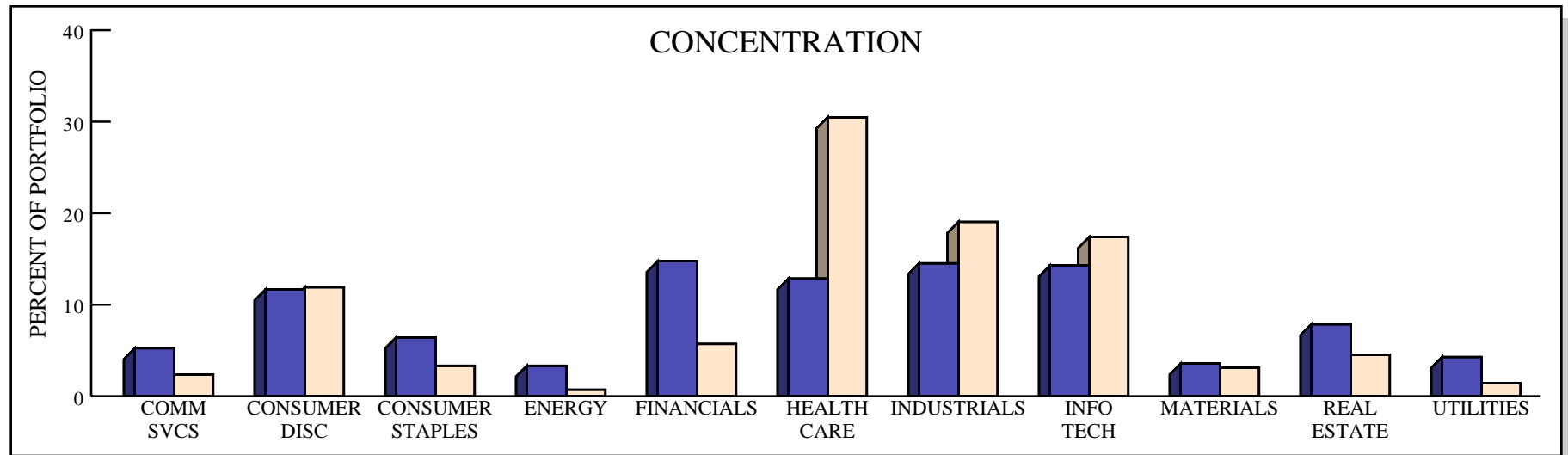
STOCK CHARACTERISTICS



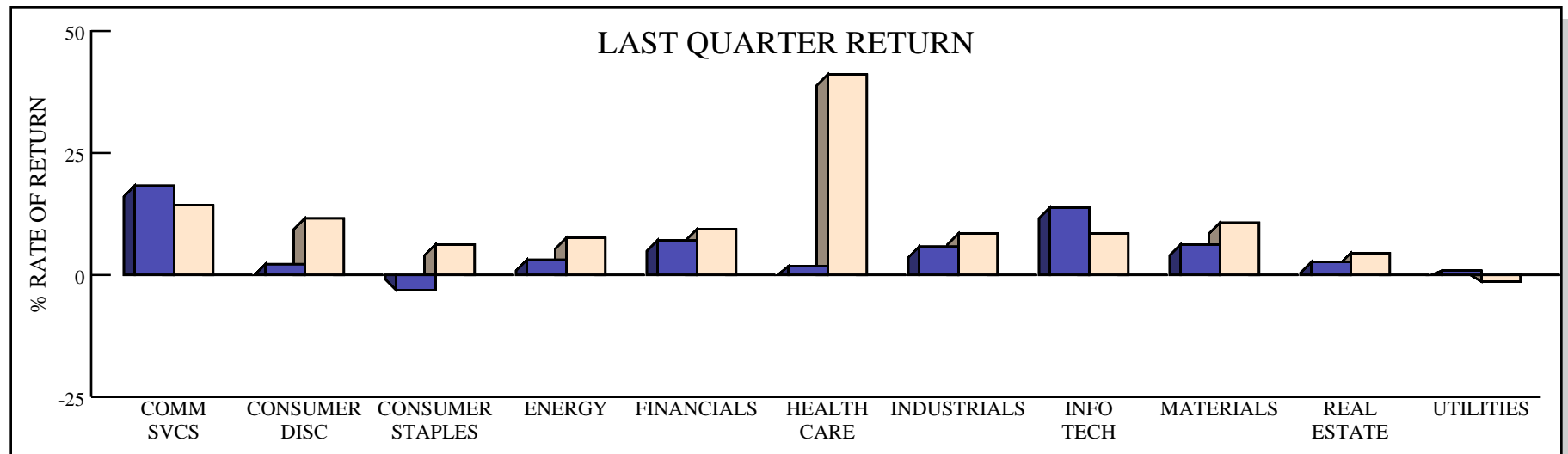
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	51	1.7%	10.7%	29.7	0.93
RUSSELL 2000G	1,169	0.7%	13.3%	18.9	0.99



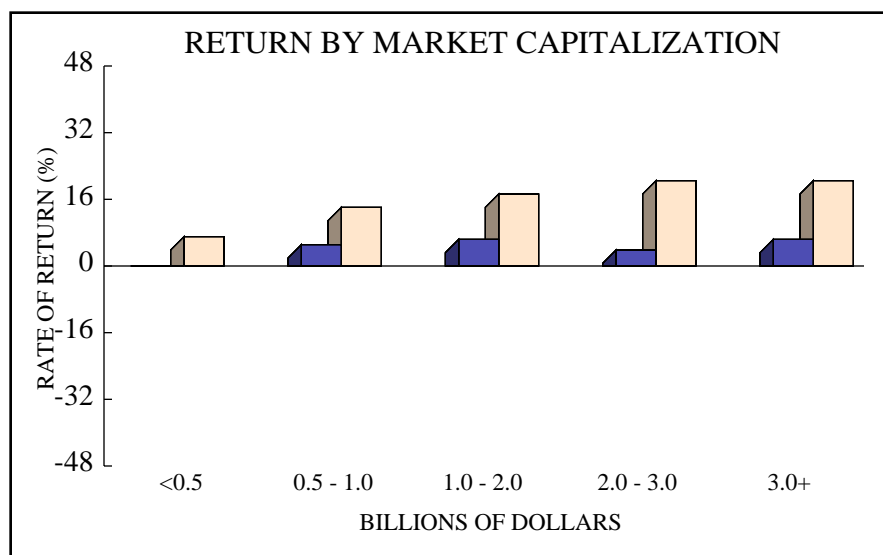
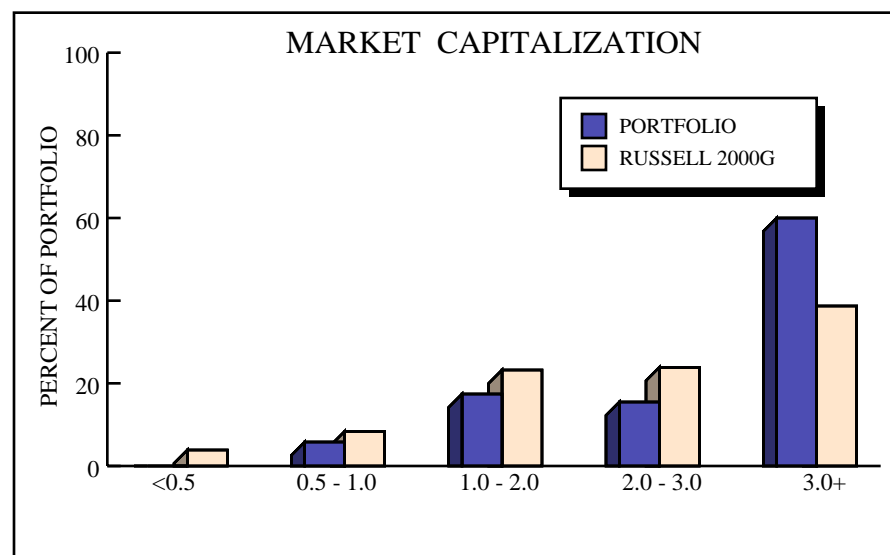
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 2000G



TOP TEN HOLDINGS



TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	CHEMED CORP	\$ 1,404,314	3.03%	5.3%	Health Care	\$ 7.0 B
2	POOL CORP	1,279,165	2.76%	5.6%	Consumer Discretionary	8.5 B
3	SYNNEX CORP	1,245,882	2.69%	14.5%	Information Technology	6.6 B
4	CABLE ONE INC	1,214,591	2.62%	18.8%	Communication Services	8.5 B
5	ALGONQUIN POWER & UTILITIES	1,165,762	2.51%	4.3%	Utilities	7.4 B
6	ENCOMPASS HEALTH CORP	1,152,583	2.49%	9.9%	Health Care	6.8 B
7	BWX TECHNOLOGIES INC	1,150,529	2.48%	8.8%	Industrials	5.9 B
8	TETRA TECH INC	1,128,868	2.43%	-0.5%	Industrials	4.7 B
9	COHEN & STEERS INC	1,044,013	2.25%	18.4%	Financials	3.0 B
10	ENSIGN GROUP INC/THE	1,043,419	2.25%	2.5%	Health Care	2.4 B

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

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's Eagle Capital Management Equity portfolio was valued at \$163,486,666, representing an increase of \$15,931,413 from the September quarter's ending value of \$147,555,253. Last quarter, the Fund posted withdrawals totaling \$282,910, which partially offset the portfolio's net investment return of \$16,214,323. Income receipts totaling \$449,019 plus net realized and unrealized capital gains of \$15,765,304 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the Eagle Capital Management Equity portfolio returned 11.0%, which was 3.6% above the Russell 1000 Value Index's return of 7.4% and ranked in the 8th percentile of the Large Cap Value universe. Over the trailing year, the portfolio returned 34.7%, which was 8.2% above the benchmark's 26.5% return, ranking in the 6th percentile. Since March 2016, the portfolio returned 17.5% annualized and ranked in the 4th percentile. The Russell 1000 Value returned an annualized 11.9% over the same period.

ASSET ALLOCATION

At the end of the fourth quarter, large cap equities comprised 98.3% of the total portfolio (\$160.8 million), while cash & equivalents totaled 1.7% (\$2.7 million).

EQUITY ANALYSIS

The Eagle portfolio was concentrated in six of the eleven industry sectors shown in our analysis, last quarter. The Communication Services, Consumer Discretionary, Financials, and Information Technology were overweight, relative to the Russell 1000 Value Index. Health Care and Industrials had relatively lighter positions.

By staying away from Consumer Staples, Real Estate, and Utilities, the portfolio avoided the weakest sectors in the large cap value market during the fourth quarter. That advantageous allocation combined with strong selection in all but one of the invested sectors (Information Technology) to help the portfolio surpass the index.

EXECUTIVE SUMMARY**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year	Since 03/16
Total Portfolio - Gross	11.0	34.7	16.7	----	17.5
<i>LARGE CAP VALUE RANK</i>	(8)	(6)	(4)	----	(4)
Total Portfolio - Net	10.8	33.7	15.8	----	16.6
Russell 1000V	7.4	26.5	9.7	8.3	11.9
Large Cap Equity - Gross	11.2	35.7	17.1	----	18.0
<i>LARGE CAP VALUE RANK</i>	(8)	(5)	(3)	----	(2)
Russell 1000V	7.4	26.5	9.7	8.3	11.9

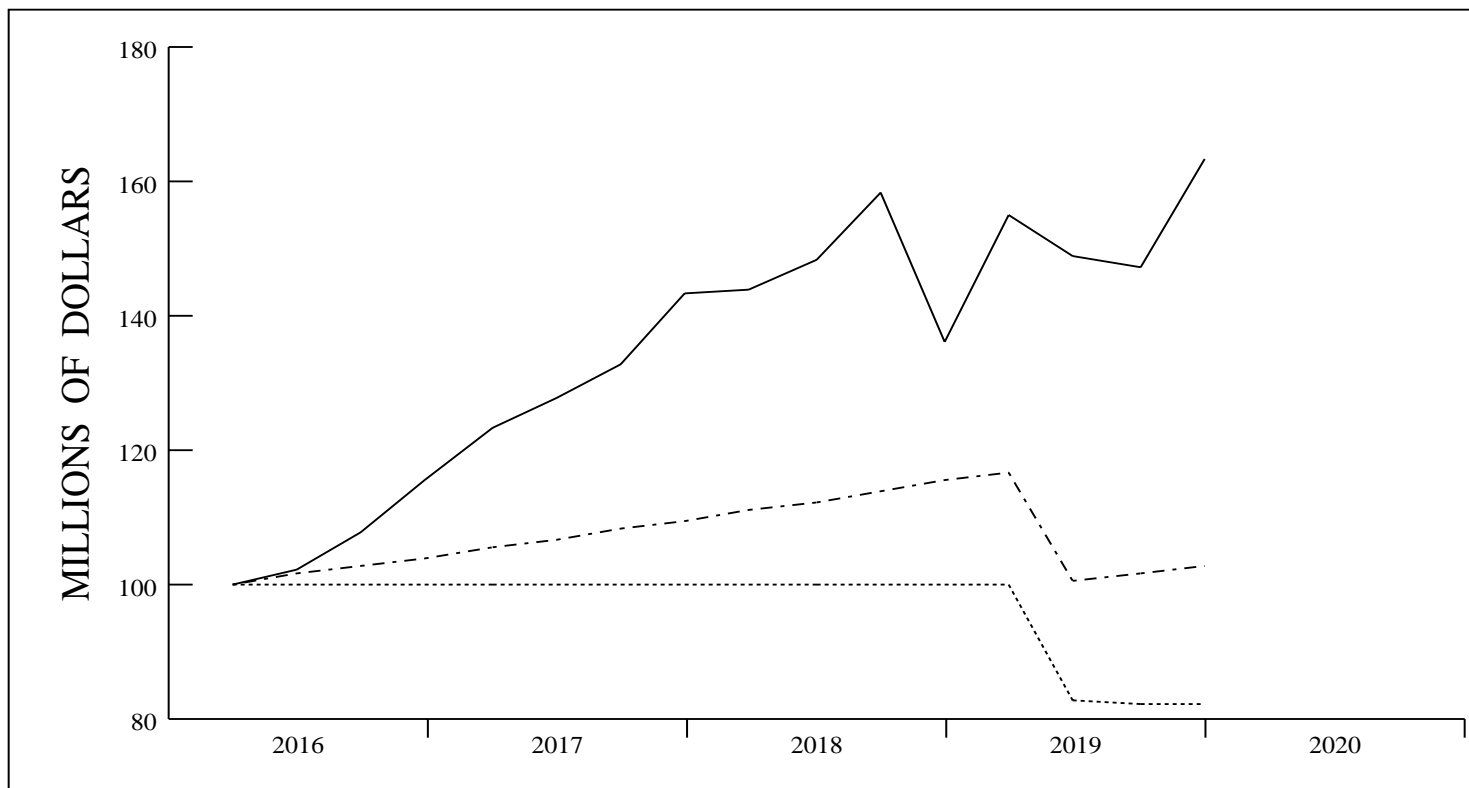
ASSET ALLOCATION

Large Cap Equity	98.3%	\$ 160,756,637
Cash	1.7%	2,730,029
Total Portfolio	100.0%	\$ 163,486,666

INVESTMENT RETURN

Market Value 9/2019	\$ 147,555,253
Contribs / Withdrawals	-282,910
Income	449,019
Capital Gains / Losses	15,765,304
Market Value 12/2019	\$ 163,486,666

INVESTMENT GROWTH

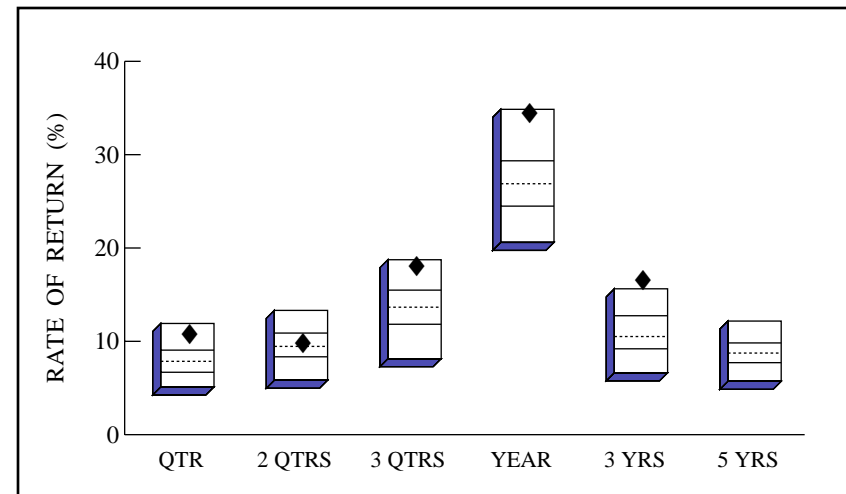
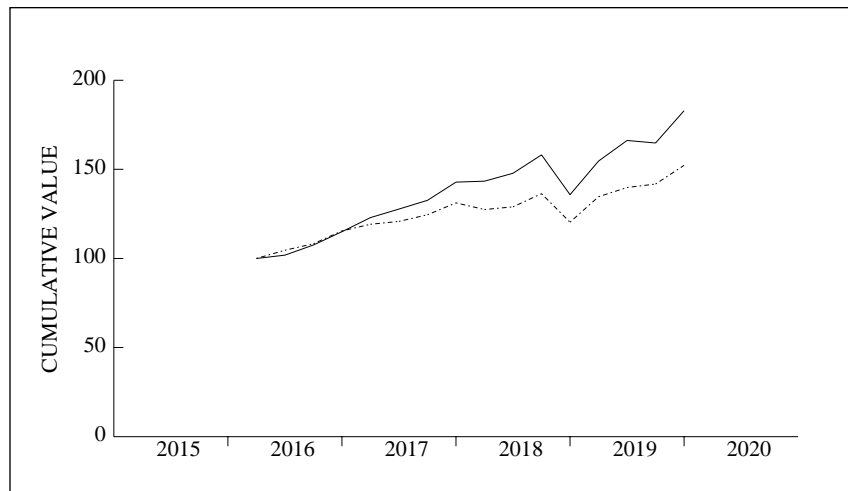


— ACTUAL RETURN
 - - - 5.25%
 0.0%

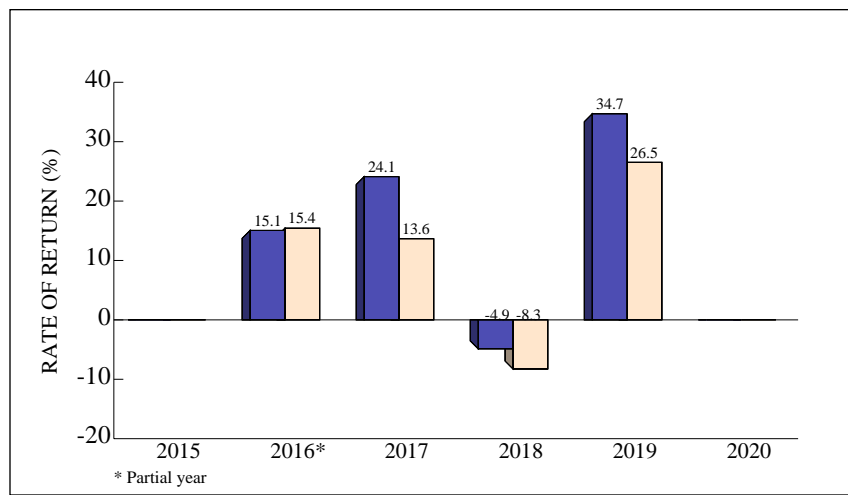
VALUE ASSUMING
 5.25% RETURN \$ 103,006,015

	LAST QUARTER	PERIOD 3/16 - 12/19
BEGINNING VALUE	\$ 147,555,253	\$ 100,475,791
NET CONTRIBUTIONS	-282,910	- 18,068,180
<u>INVESTMENT RETURN</u>	<u>16,214,323</u>	<u>81,079,055</u>
ENDING VALUE	\$ 163,486,666	\$ 163,486,666
INCOME	449,019	5,936,147
<u>CAPITAL GAINS (LOSSES)</u>	<u>15,765,304</u>	<u>75,142,908</u>
INVESTMENT RETURN	16,214,323	81,079,055

TOTAL RETURN COMPARISONS



Large Cap Value Universe



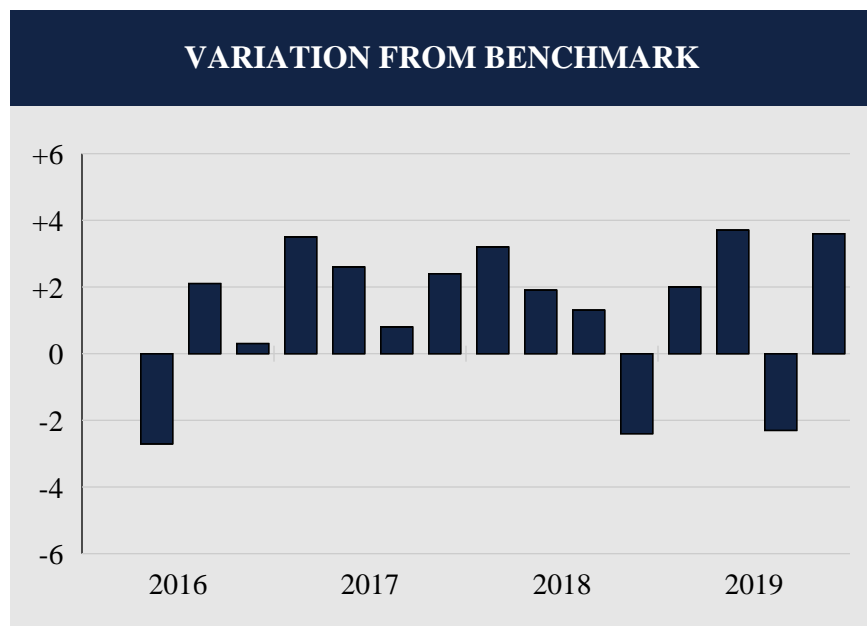
* Partial year

	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	11.0	10.0	18.3	34.7	16.7	---
(RANK)	(8)	(40)	(7)	(6)	(4)	---
5TH %ILE	11.9	13.3	18.7	34.9	15.6	12.2
25TH %ILE	9.1	10.9	15.5	29.4	12.7	9.8
MEDIAN	7.9	9.5	13.7	26.9	10.5	8.7
75TH %ILE	6.7	8.4	11.8	24.5	9.2	7.7
95TH %ILE	5.1	5.8	8.1	20.6	6.6	5.7
Russ 1000V	7.4	8.9	13.0	26.5	9.7	8.3

Large Cap Value Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

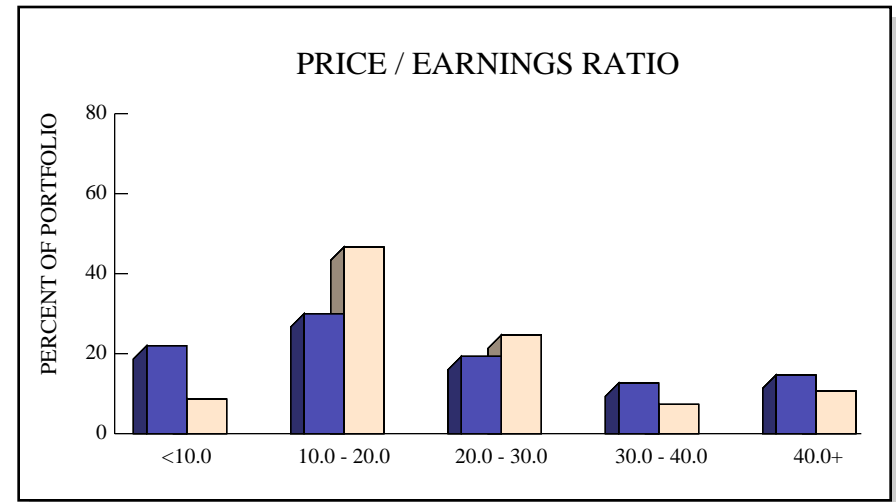
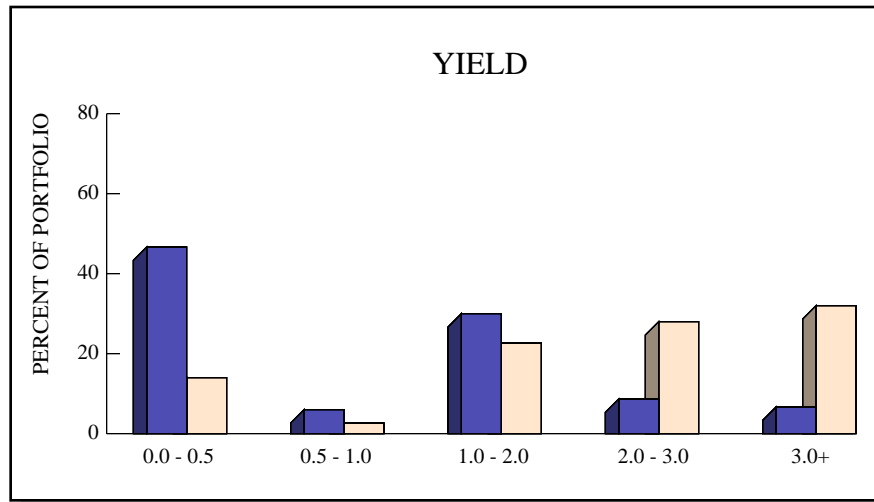
COMPARATIVE BENCHMARK: RUSSELL 1000 VALUE



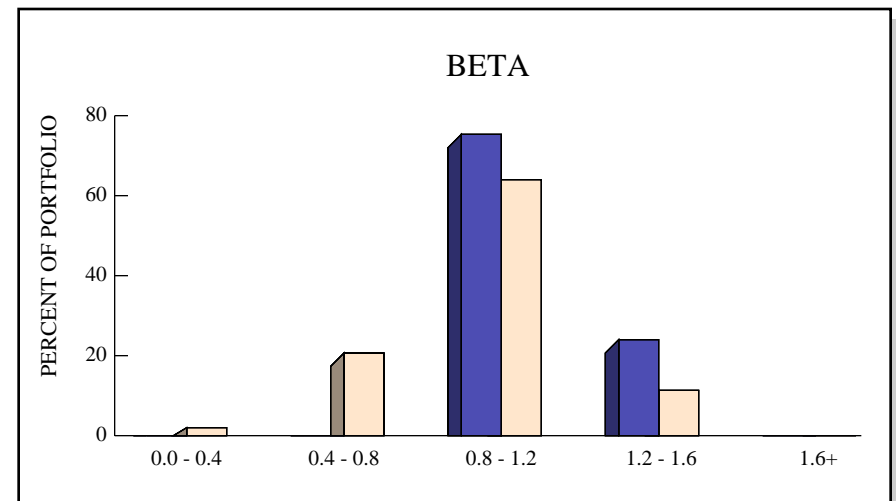
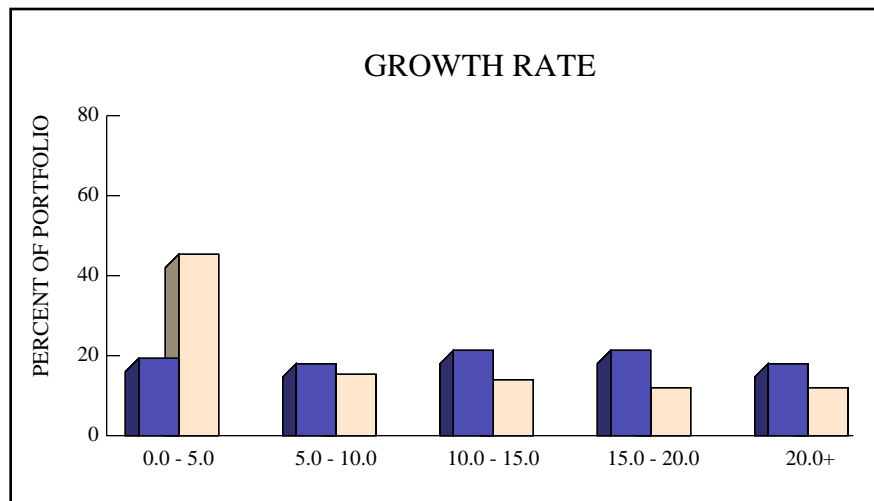
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
6/16	1.9	4.6	-2.7
9/16	5.6	3.5	2.1
12/16	7.0	6.7	0.3
3/17	6.8	3.3	3.5
6/17	3.9	1.3	2.6
9/17	3.9	3.1	0.8
12/17	7.7	5.3	2.4
3/18	0.4	-2.8	3.2
6/18	3.1	1.2	1.9
9/18	7.0	5.7	1.3
12/18	-14.1	-11.7	-2.4
3/19	13.9	11.9	2.0
6/19	7.5	3.8	3.7
9/19	-0.9	1.4	-2.3
12/19	11.0	7.4	3.6

Total Quarters Observed	15
Quarters At or Above the Benchmark	12
Quarters Below the Benchmark	3
Batting Average	.800

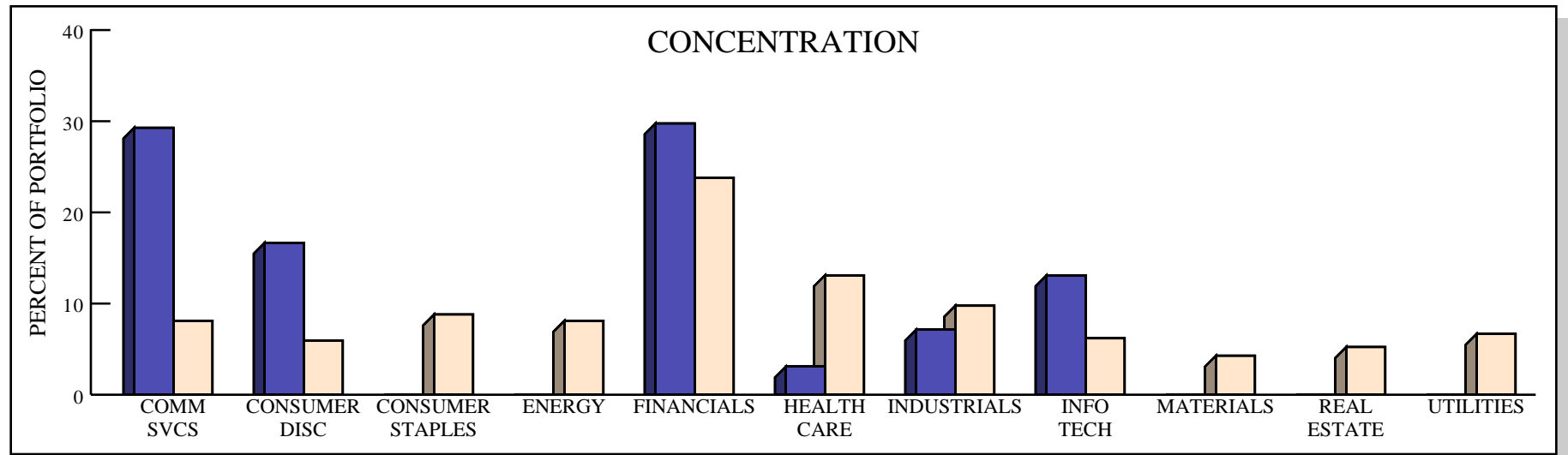
STOCK CHARACTERISTICS



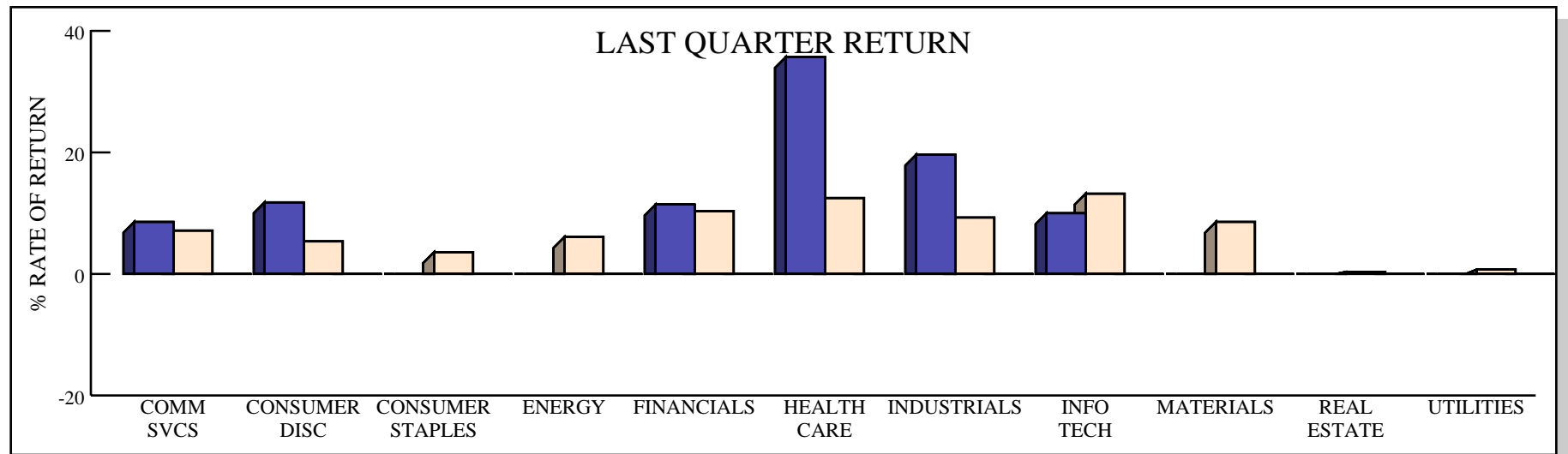
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	27	1.0%	13.6%	24.2	1.08
RUSSELL 1000V	764	2.5%	5.7%	22.7	0.94



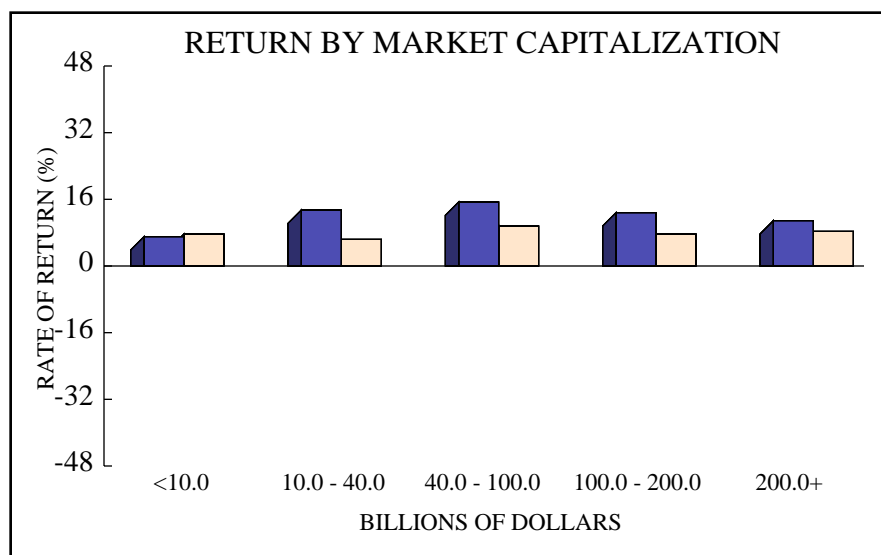
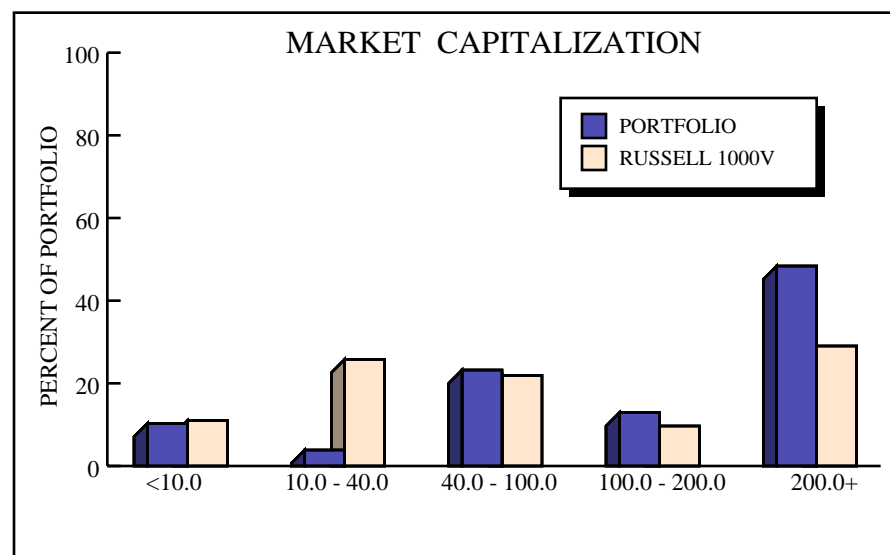
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 1000V



TOP TEN HOLDINGS



TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	\$ 14,882,149	9.26%	13.8%	Information Technology	\$ 1203.1 B
2	ALPHABET INC-CL C	14,122,942	8.79%	9.7%	Communication Services	459.3 B
3	BERKSHIRE HATHAWAY INC-CL B	12,174,602	7.57%	8.9%	Financials	313.3 B
4	CITIGROUP INC	10,849,062	6.75%	16.5%	Financials	174.4 B
5	GOLDMAN SACHS GROUP INC	8,931,171	5.56%	11.6%	Financials	81.4 B
6	AMAZON.COM INC	8,666,369	5.39%	6.5%	Consumer Discretionary	916.2 B
7	COMCAST CORP-CLASS A	8,095,590	5.04%	0.2%	Communication Services	204.2 B
8	WELLS FARGO & CO	7,814,073	4.86%	7.7%	Financials	227.5 B
9	GENERAL ELECTRIC CO	7,386,570	4.59%	25.0%	Industrials	97.5 B
10	MARRIOTT INTERNATIONAL -CL A	7,373,732	4.59%	22.2%	Consumer Discretionary	49.5 B

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

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's Emerald Advisors Diversified Small Cap Growth portfolio was valued at \$70,152,540, representing an increase of \$7,385,898 from the September quarter's ending value of \$62,766,642. Last quarter, the Fund posted withdrawals totaling \$116,162, which partially offset the portfolio's net investment return of \$7,502,060. Income receipts totaling \$71,464 plus net realized and unrealized capital gains of \$7,430,596 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the Emerald Advisors Diversified Small Cap Growth portfolio returned 12.0%, which was 0.6% above the Russell 2000 Growth Index's return of 11.4% and ranked in the 18th percentile of the Small Cap Growth universe. Over the trailing year, the portfolio returned 31.8%, which was 3.4% above the benchmark's 28.4% return, ranking in the 33rd percentile. Since September 1998, the portfolio returned 11.4% annualized. The Russell 2000 Growth returned an annualized 8.1% over the same period.

ASSET ALLOCATION

At the end of the fourth quarter, small cap equities comprised 98.1% of the total portfolio (\$68.8 million), while cash & equivalents totaled 1.9% (\$1.3 million).

EQUITY ANALYSIS

The Emerald portfolio was invested last quarter in ten of the eleven industry sectors depicted in our analysis. Compared to the Russell 2000 Growth index, the portfolio placed greater emphasis on the Consumer Discretionary, Consumer Staples, and Financials sectors. Lesser weights were placed into the Health Care, Industrials, and Materials sectors, while the Utilities sector was vacant.

The portfolio slipped slightly in the Health Care sector, which represented a significant allocation. While the sector's weight gave it a high impact, the difference in return was not too large to overcome through excess returns in other sectors. Strength in the Information Technology sector kept the total return above the benchmark.

EXECUTIVE SUMMARY**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year	10 Year	Since 09/98
Total Portfolio - Gross	12.0	31.8	15.0	11.8	15.8	11.4
<i>SMALL CAP GROWTH RANK</i>	(18)	(33)	(56)	(40)	(23)	----
Total Portfolio - Net	11.8	31.2	14.5	11.3	15.3	10.9
Russell 2000G	11.4	28.4	12.5	9.3	13.0	8.1
Small Cap Equity - Gross	12.1	32.9	15.3	12.1	16.0	11.6
<i>SMALL CAP GROWTH RANK</i>	(16)	(30)	(53)	(37)	(20)	----
Russell 2000G	11.4	28.4	12.5	9.3	13.0	8.1
Russell 2000	9.9	25.5	8.6	8.2	11.8	8.9

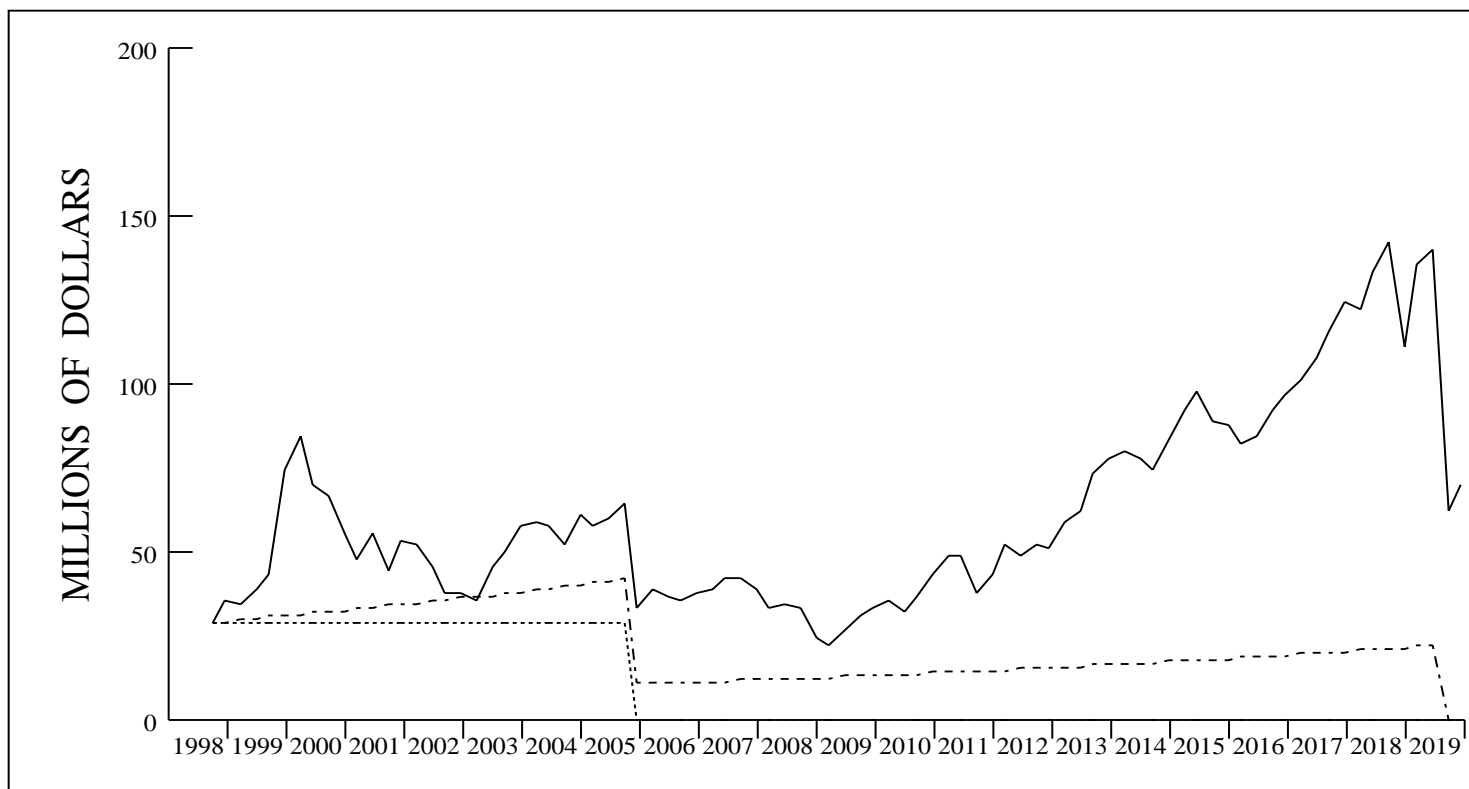
ASSET ALLOCATION

Small Cap	98.1%	\$ 68,834,967
Cash	1.9%	1,317,573
Total Portfolio	100.0%	\$ 70,152,540

INVESTMENT RETURN

Market Value 9/2019	\$ 62,766,642
Contribs / Withdrawals	-116,162
Income	71,464
Capital Gains / Losses	7,430,596
Market Value 12/2019	\$ 70,152,540

INVESTMENT GROWTH

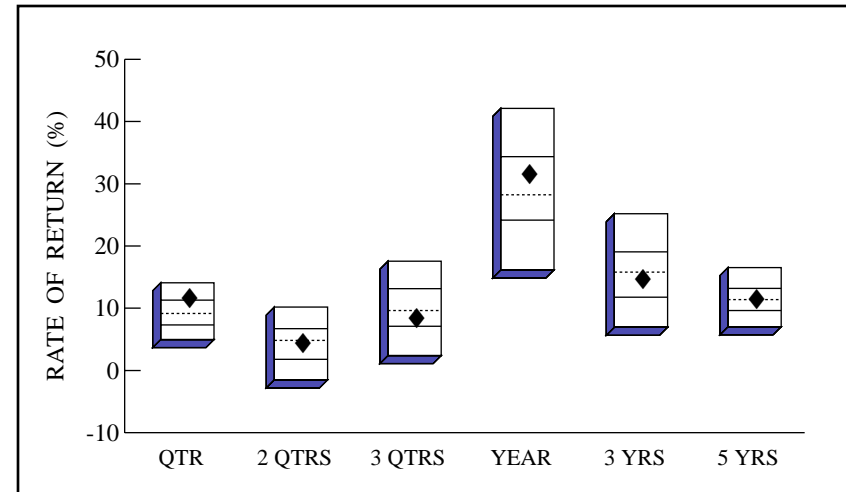
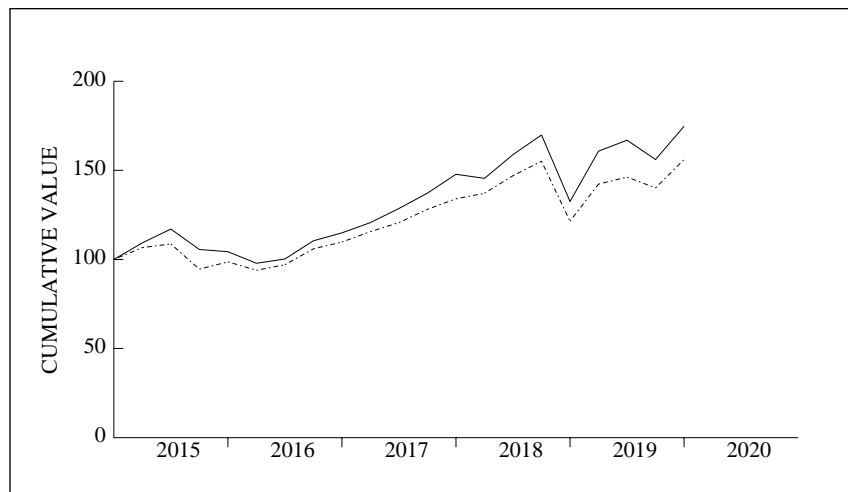


—	ACTUAL RETURN
- - -	5.25%
.....	0.0%

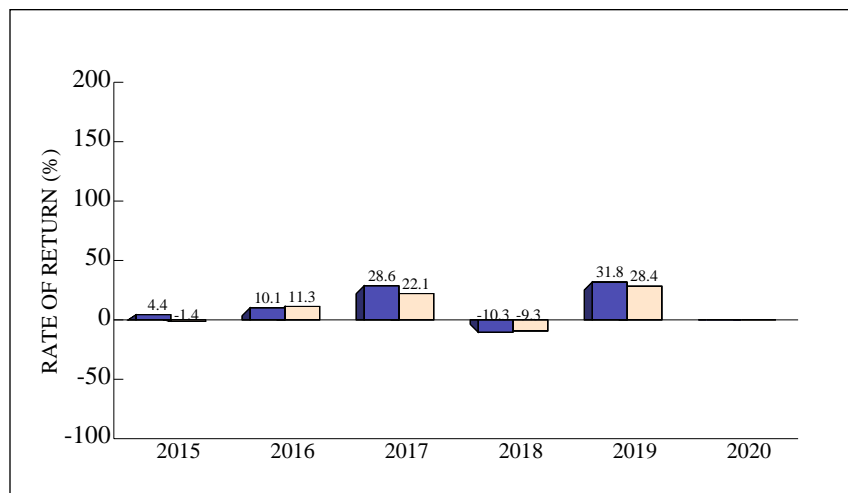
VALUE ASSUMING	
5.25% RETURN	\$ -48,558,213

	LAST QUARTER	PERIOD 9/98 - 12/19
BEGINNING VALUE	\$ 62,766,642	\$ 29,601,782
NET CONTRIBUTIONS	-116,162	-101,695,946
<u>INVESTMENT RETURN</u>	<u>7,502,060</u>	<u>142,246,704</u>
ENDING VALUE	\$ 70,152,540	\$ 70,152,540
INCOME	71,464	6,276,810
<u>CAPITAL GAINS (LOSSES)</u>	<u>7,430,596</u>	<u>135,969,894</u>
INVESTMENT RETURN	7,502,060	142,246,704

TOTAL RETURN COMPARISONS



Small Cap Growth Universe

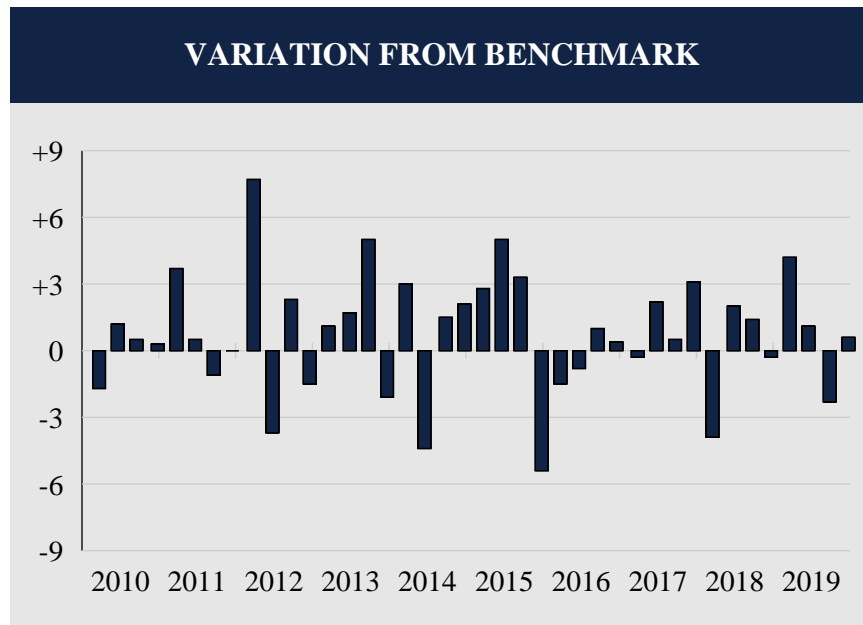


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	12.0	4.6	8.6	31.8	15.0	11.8
(RANK)	(18)	(54)	(60)	(33)	(56)	(40)
5TH %ILE	14.1	10.2	17.5	42.1	25.2	16.5
25TH %ILE	11.3	6.7	13.1	34.3	19.0	13.2
MEDIAN	9.2	4.8	9.6	28.2	15.8	11.4
75TH %ILE	7.3	1.8	7.1	24.2	11.8	9.6
95TH %ILE	4.9	-1.5	2.4	16.2	6.9	7.0
Russ 2000G	11.4	6.7	9.7	28.4	12.5	9.3

Small Cap Growth Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

COMPARATIVE BENCHMARK: RUSSELL 2000 GROWTH

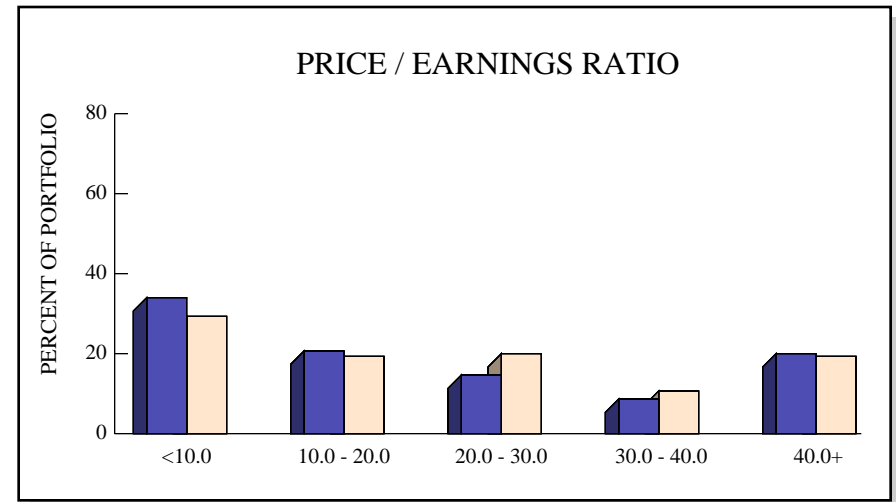
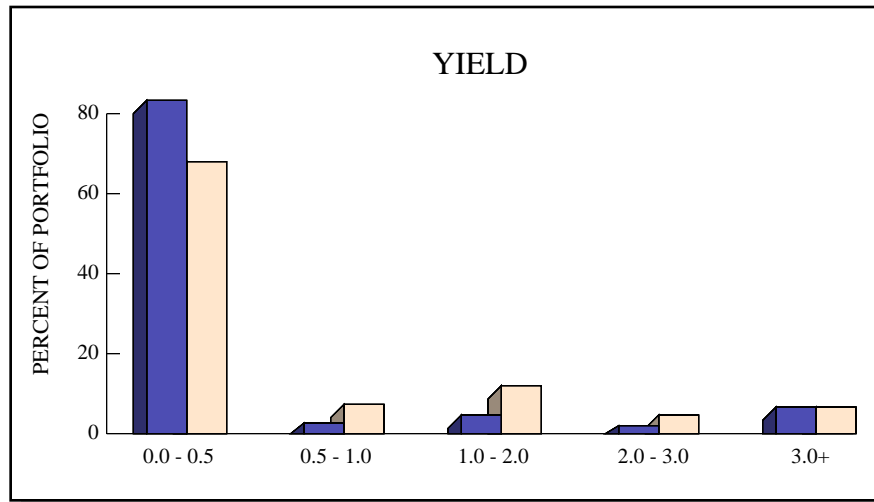


RATES OF RETURN

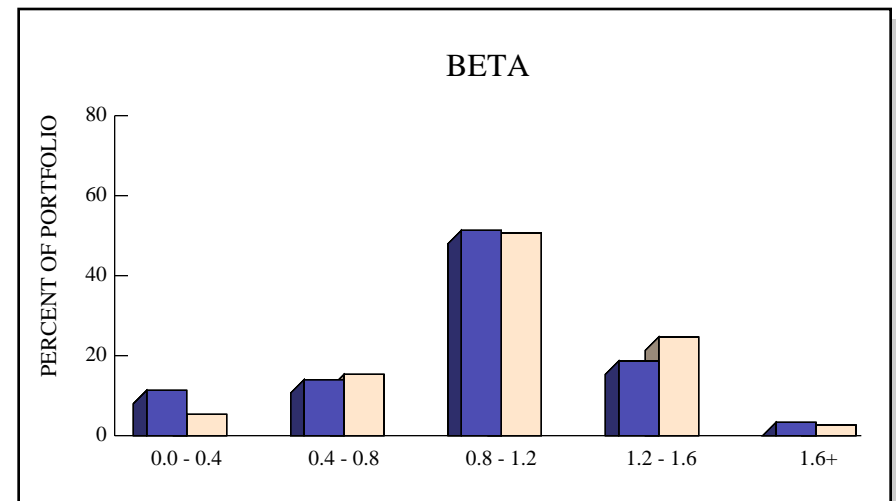
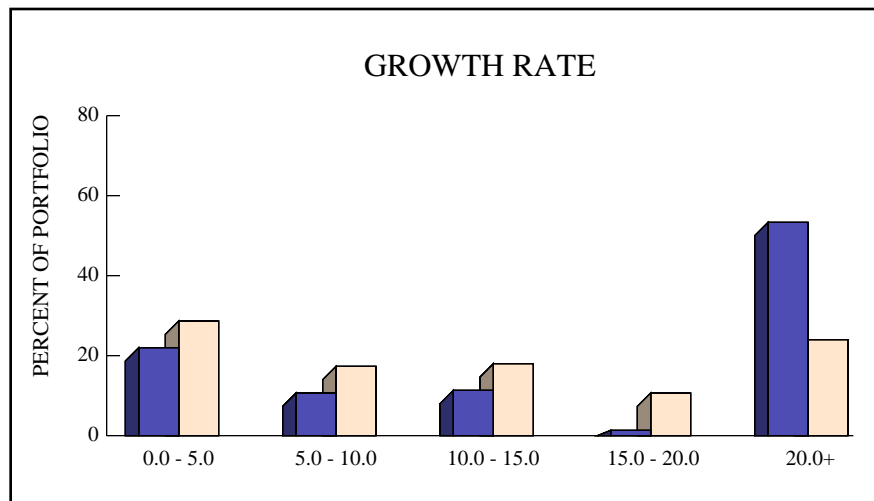
Date	Portfolio	Benchmark	Difference
3/10	5.9	7.6	-1.7
6/10	-8.0	-9.2	1.2
9/10	13.3	12.8	0.5
12/10	17.4	17.1	0.3
3/11	12.9	9.2	3.7
6/11	-0.1	-0.6	0.5
9/11	-23.4	-22.3	-1.1
12/11	15.0	15.0	0.0
3/12	21.0	13.3	7.7
6/12	-7.6	-3.9	-3.7
9/12	7.1	4.8	2.3
12/12	-1.1	0.4	-1.5
3/13	14.3	13.2	1.1
6/13	5.4	3.7	1.7
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
12/19	12.0	11.4	0.6

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

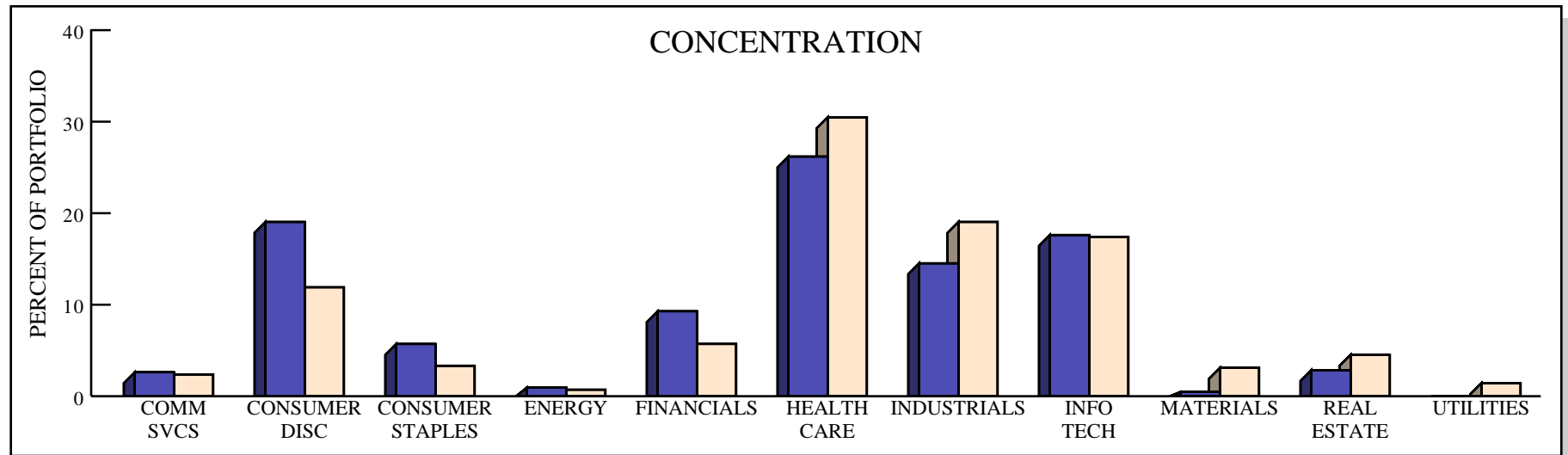
STOCK CHARACTERISTICS



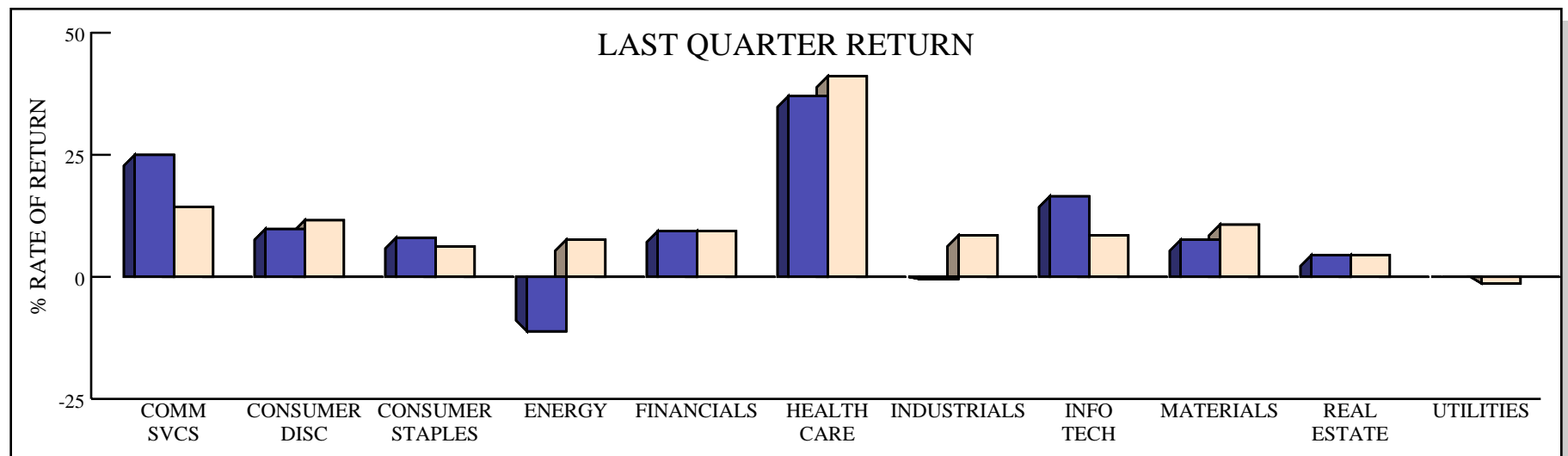
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	117	0.5%	22.8%	18.1	0.94
RUSSELL 2000G	1,169	0.7%	13.3%	18.9	0.99



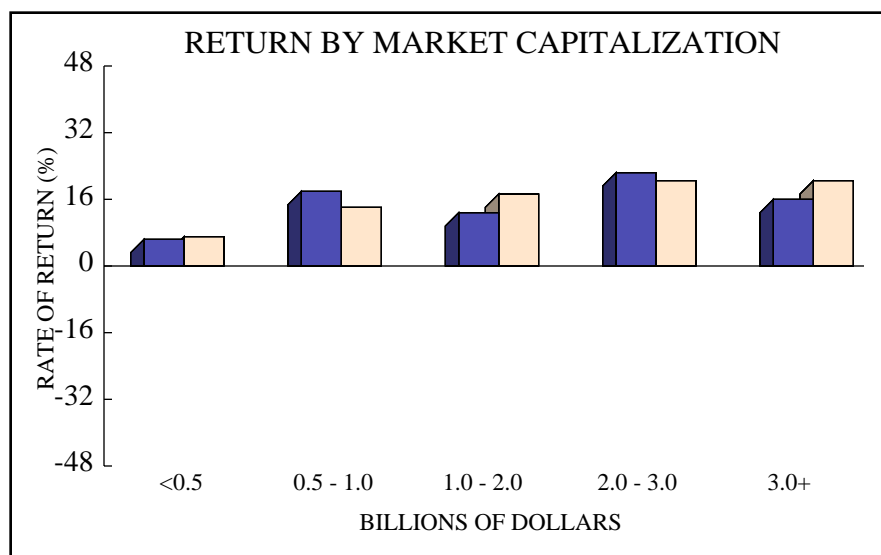
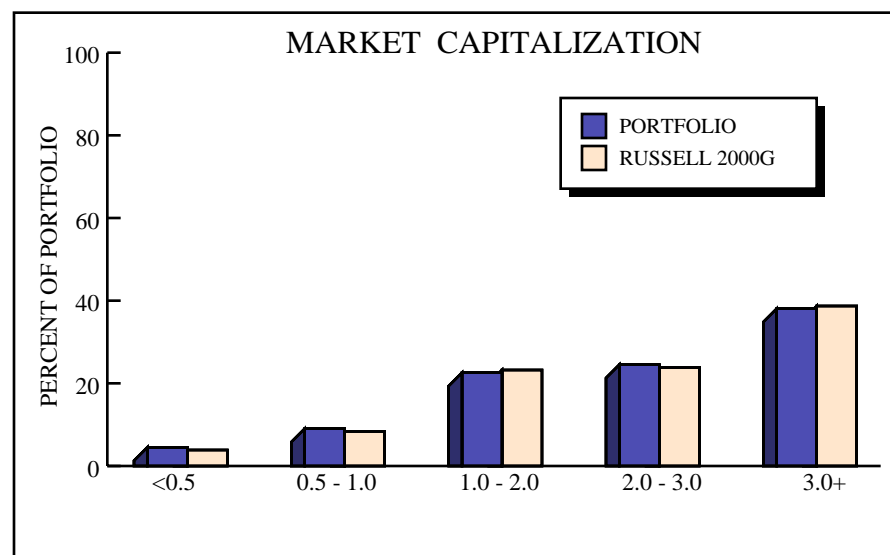
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 2000G



TOP TEN HOLDINGS



TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	TREX COMPANY INC	\$ 1,720,123	2.50%	-1.2%	Industrials	\$ 5.2 B
2	CHEGG INC	1,692,189	2.46%	26.6%	Consumer Discretionary	4.6 B
3	FRESHPET INC	1,379,161	2.00%	18.7%	Consumer Staples	2.1 B
4	NEOGENOMICS INC	1,339,855	1.95%	53.0%	Health Care	3.1 B
5	CHURCHILL DOWNS INC	1,339,621	1.95%	11.6%	Consumer Discretionary	5.5 B
6	HORIZON PHARMA PLC	1,277,715	1.86%	32.9%	Health Care	6.8 B
7	SIMPLY GOOD FOODS CO/THE	1,243,745	1.81%	-1.6%	Consumer Staples	2.7 B
8	PLANET FITNESS INC - CL A	1,206,978	1.75%	29.1%	Consumer Discretionary	6.1 B
9	RAPID7 INC	1,205,550	1.75%	23.4%	Information Technology	2.8 B
10	VARONIS SYSTEMS INC	1,200,153	1.74%	30.0%	Information Technology	2.4 B

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

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's Federated Large Cap Growth Equity portfolio was valued at \$109,912,186, representing an increase of \$8,617,942 from the September quarter's ending value of \$101,294,244. Last quarter, the Fund posted withdrawals totaling \$192,038, which partially offset the portfolio's net investment return of \$8,809,980. Income receipts totaling \$228,533 plus net realized and unrealized capital gains of \$8,581,447 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the Federated Large Cap Growth Equity portfolio returned 8.7%, which was 1.9% below the Russell 1000 Growth Index's return of 10.6% and ranked in the 69th percentile of the Large Cap Growth universe. Over the trailing year, the portfolio returned 38.4%, which was 2.0% above the benchmark's 36.4% return, ranking in the 16th percentile. Since June 2015, the portfolio returned 13.0% annualized and ranked in the 68th percentile. The Russell 1000 Growth returned an annualized 15.4% over the same period.

ASSET ALLOCATION

At the end of the fourth quarter, large cap equities comprised 97.2% of the total portfolio (\$106.8 million), while cash & equivalents totaled 2.8% (\$3.1 million).

EQUITY ANALYSIS

The Federated portfolio was invested across nine of the eleven industry sectors in our analysis. Relative to the Russell 1000 Growth Index, the portfolio had more weight in the Health Care sector and less in the Communication Services, Consumer Staples, and Information Technology sectors. Energy and Utilities, having de minimis allocations for the index, were vacant.

The Health Care and Information Technology sectors both produced returns below their index counterparts and had a combined weight that made up half the portfolio. Communication Services and Consumer Staples also underperformed. Some ground was reclaimed through good stock picks in the Consumer Discretionary, Financials, and Real Estate sectors, but of those, only the Consumer Discretionary carried a double-digit allocation.

EXECUTIVE SUMMARY**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year	Since 06/15
Total Portfolio - Gross	8.7	38.4	20.4	----	13.0
<i>LARGE CAP GROWTH RANK</i>	(69)	(16)	(45)	----	(68)
Total Portfolio - Net	8.5	37.4	19.5	----	12.2
Russell 1000G	10.6	36.4	20.5	14.6	15.4
Large Cap Equity - Gross	9.0	39.9	21.4	----	13.7
<i>LARGE CAP GROWTH RANK</i>	(61)	(11)	(34)	----	(60)
Russell 1000G	10.6	36.4	20.5	14.6	15.4

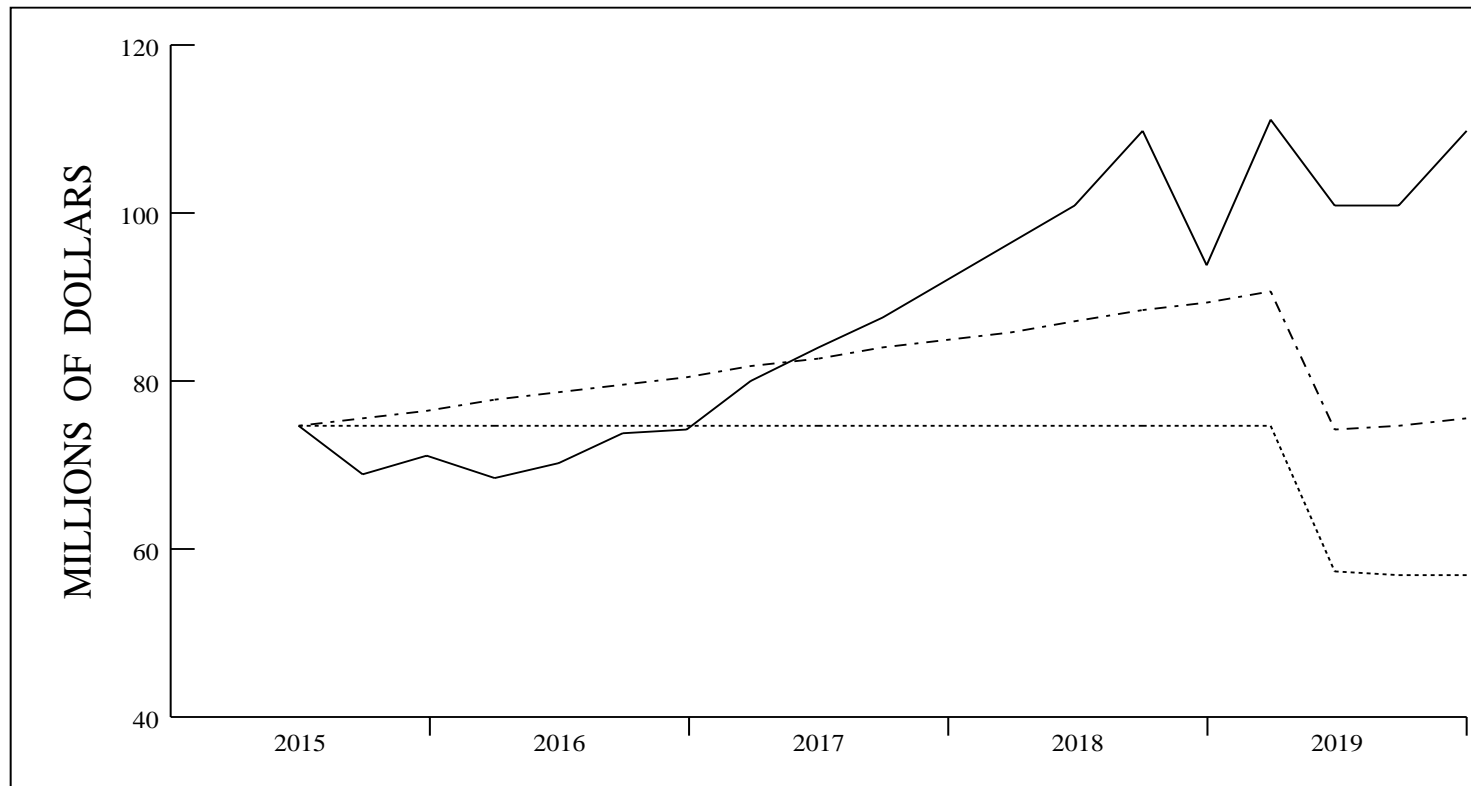
ASSET ALLOCATION

Large Cap Equity	97.2%	\$ 106,786,010
Cash	2.8%	3,126,176
Total Portfolio	100.0%	\$ 109,912,186

INVESTMENT RETURN

Market Value 9/2019	\$ 101,294,244
Contribs / Withdrawals	-192,038
Income	228,533
Capital Gains / Losses	8,581,447
Market Value 12/2019	\$ 109,912,186

INVESTMENT GROWTH

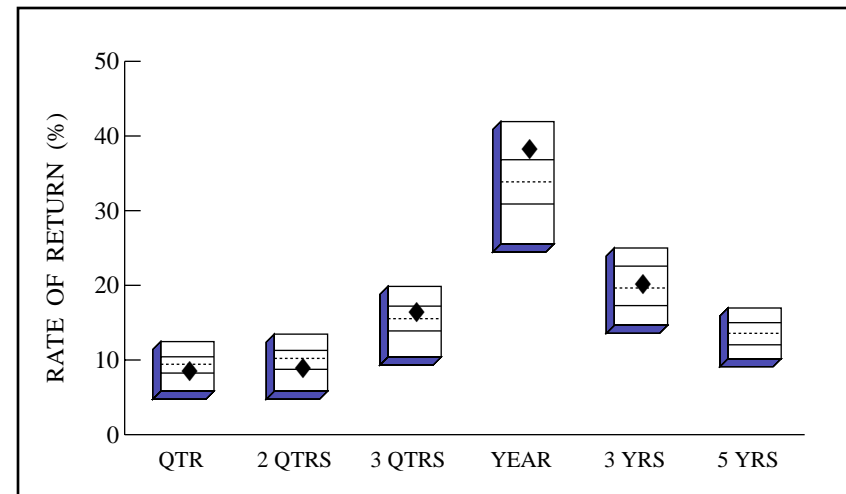
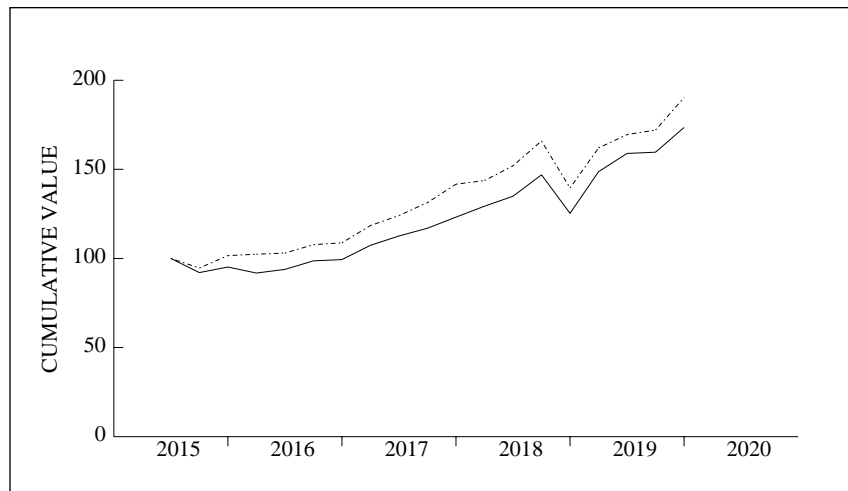


— ACTUAL RETURN
 - - - 5.25%
 0.0%

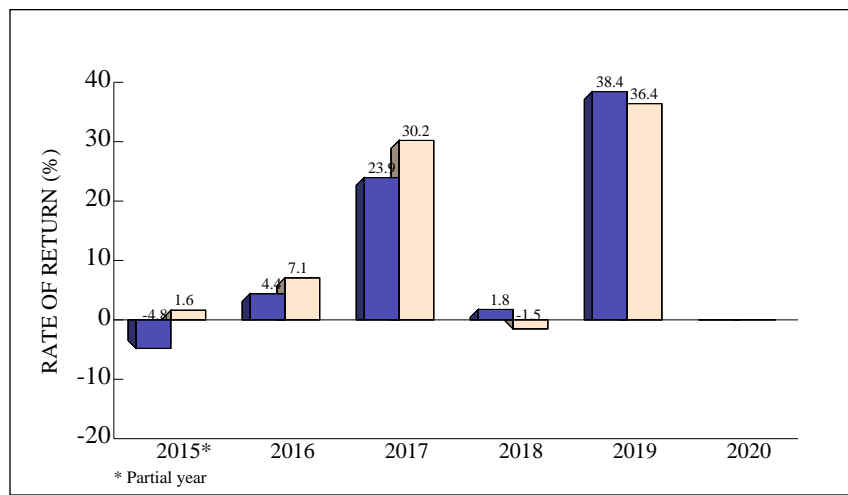
VALUE ASSUMING
 5.25% RETURN \$ 75,770,876

	LAST QUARTER	PERIOD 6/15 - 12/19
BEGINNING VALUE	\$ 101,294,244	\$ 74,904,546
NET CONTRIBUTIONS	-192,038	-17,877,227
<u>INVESTMENT RETURN</u>	<u>8,809,980</u>	<u>52,884,867</u>
ENDING VALUE	\$ 109,912,186	\$ 109,912,186
INCOME	228,533	3,582,506
<u>CAPITAL GAINS (LOSSES)</u>	<u>8,581,447</u>	<u>49,302,361</u>
INVESTMENT RETURN	8,809,980	52,884,867

TOTAL RETURN COMPARISONS



Large Cap Growth Universe

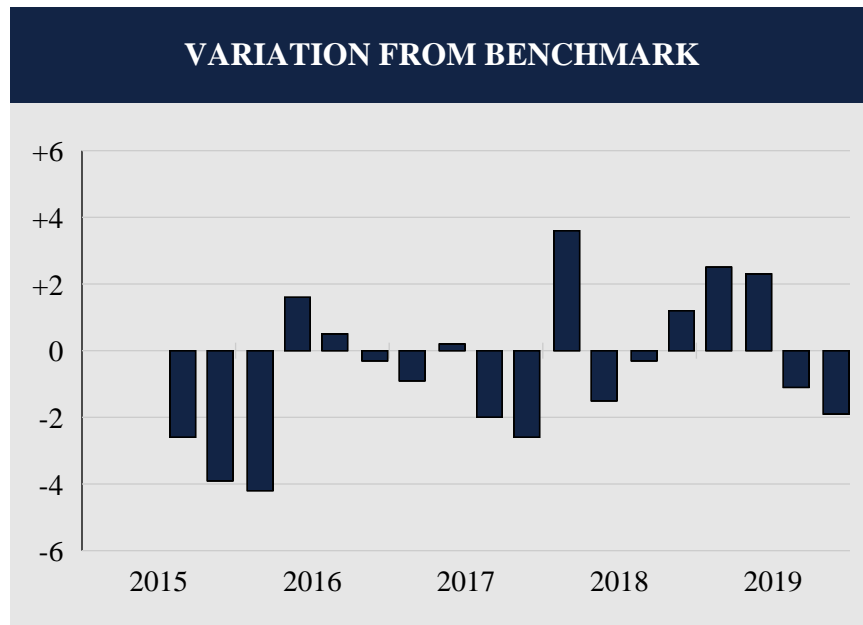


	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	8.7	9.2	16.7	38.4	20.4	----
(RANK)	(69)	(68)	(30)	(16)	(45)	----
5TH %ILE	12.5	13.5	19.9	41.9	25.0	17.0
25TH %ILE	10.4	11.3	17.2	36.8	22.6	15.0
MEDIAN	9.4	10.2	15.5	33.9	19.7	13.6
75TH %ILE	8.3	8.8	13.9	30.9	17.3	12.0
95TH %ILE	5.8	5.8	10.4	25.5	14.7	10.2
Russ 1000G	10.6	12.3	17.5	36.4	20.5	14.6

Large Cap Growth Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

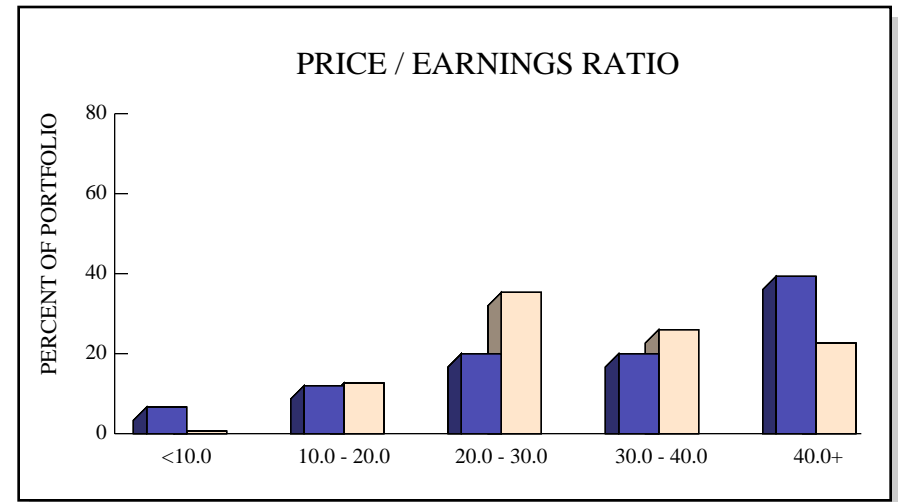
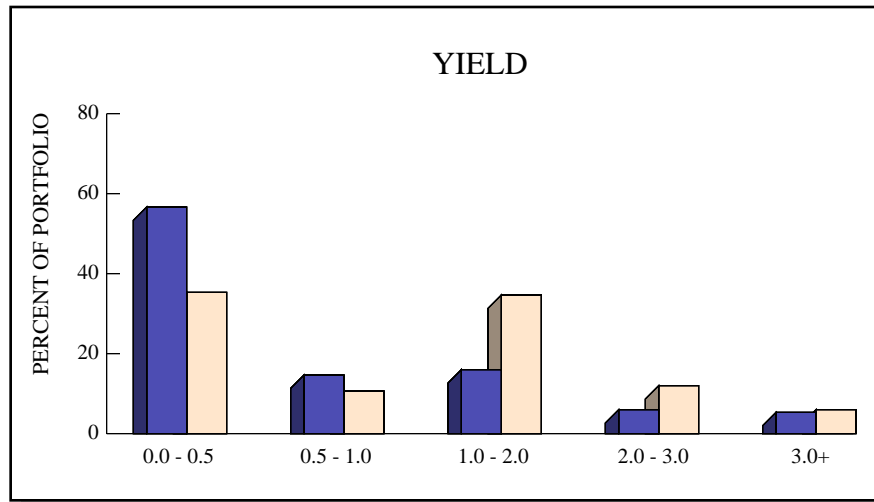
COMPARATIVE BENCHMARK: RUSSELL 1000 GROWTH



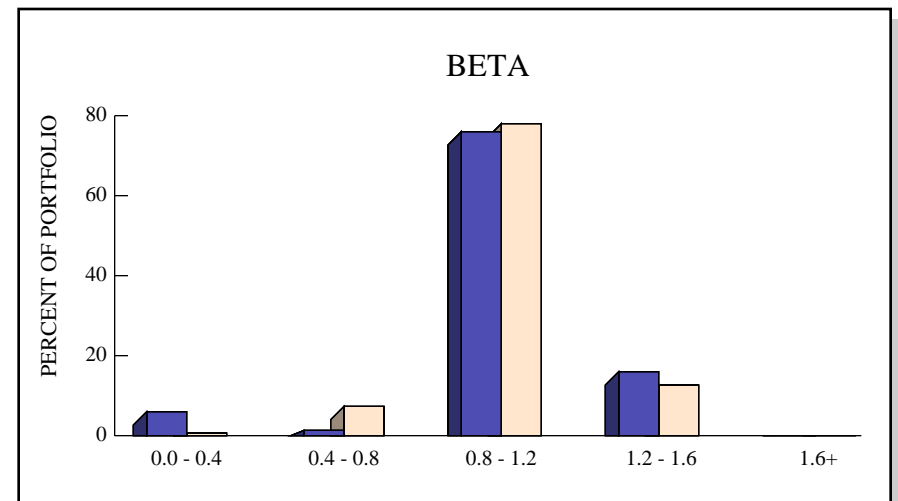
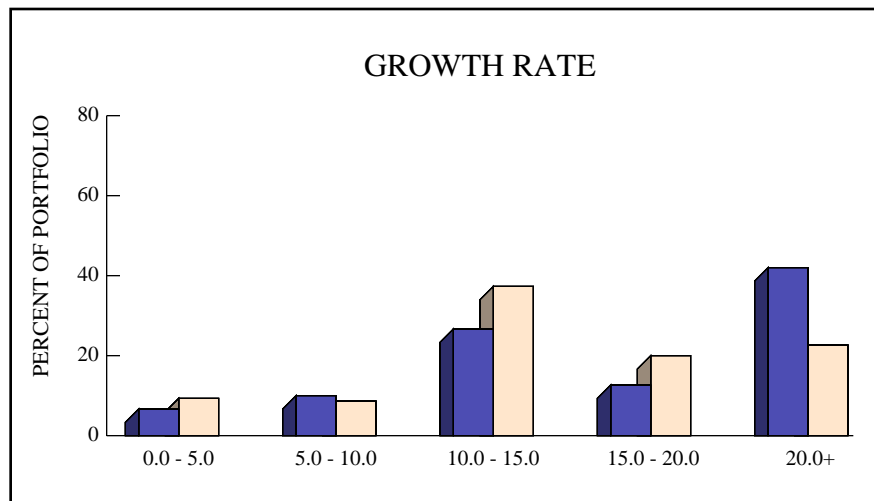
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
9/15	-7.9	-5.3	-2.6
12/15	3.4	7.3	-3.9
3/16	-3.5	0.7	-4.2
6/16	2.2	0.6	1.6
9/16	5.1	4.6	0.5
12/16	0.7	1.0	-0.3
3/17	8.0	8.9	-0.9
6/17	4.9	4.7	0.2
9/17	3.9	5.9	-2.0
12/17	5.3	7.9	-2.6
3/18	5.0	1.4	3.6
6/18	4.3	5.8	-1.5
9/18	8.9	9.2	-0.3
12/18	-14.7	-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
12/19	8.7	10.6	-1.9

Total Quarters Observed	18
Quarters At or Above the Benchmark	7
Quarters Below the Benchmark	11
Batting Average	.389

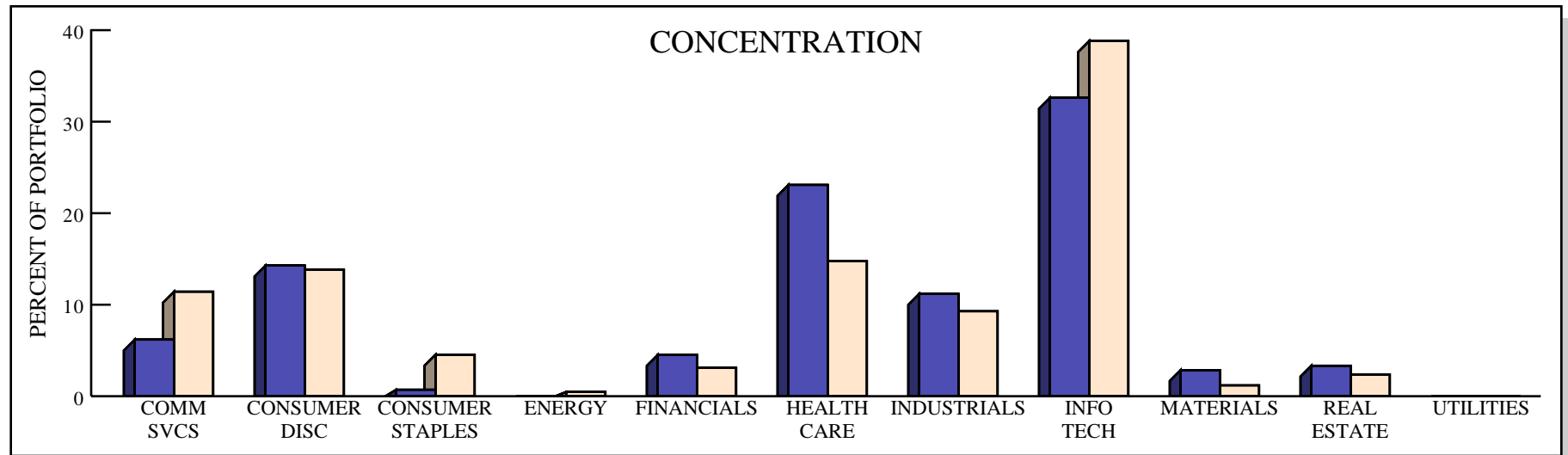
STOCK CHARACTERISTICS



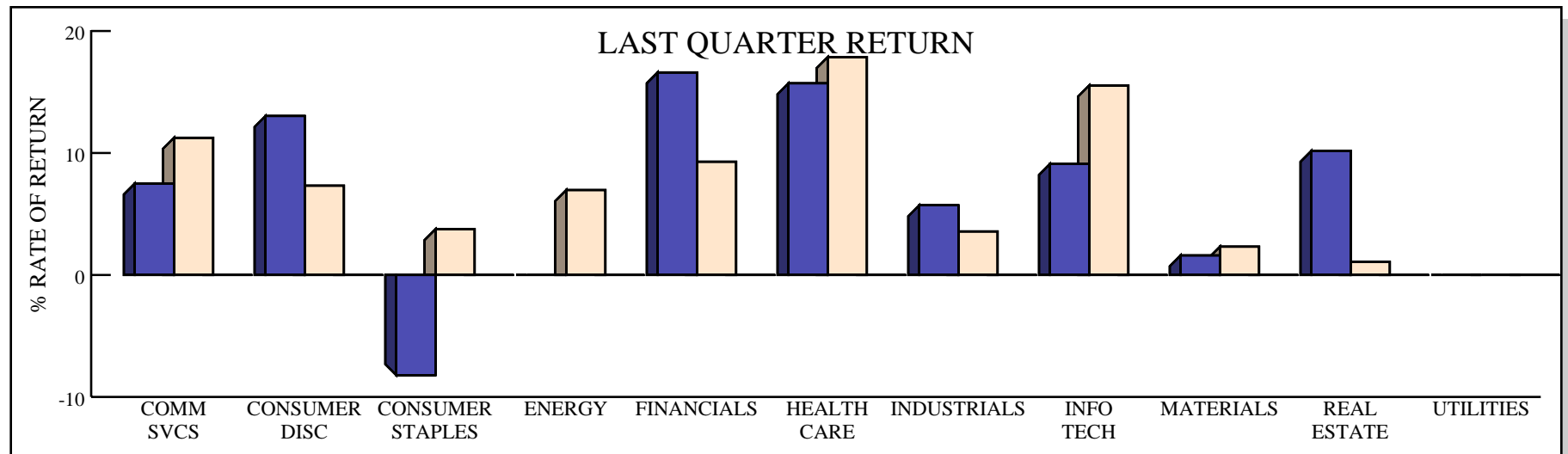
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	55	0.7%	21.7%	37.4	1.01
RUSSELL 1000G	530	1.1%	18.1%	34.6	1.03



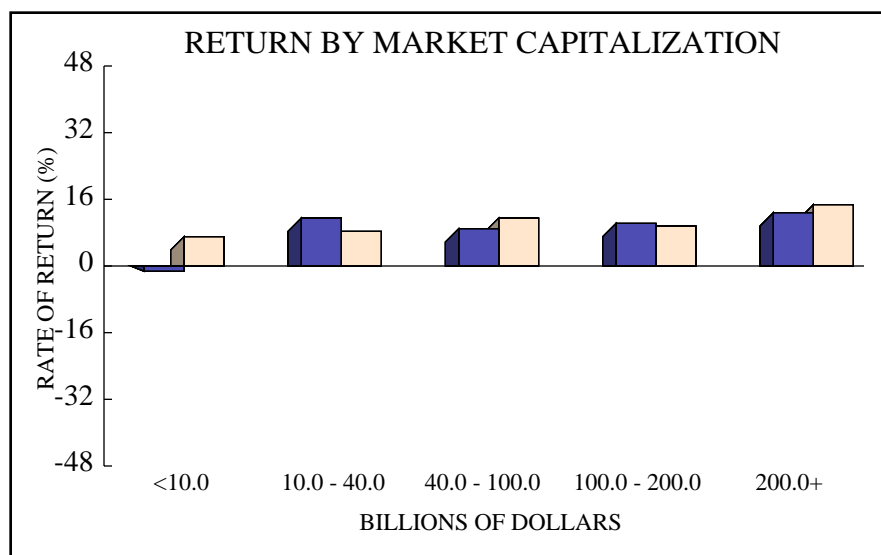
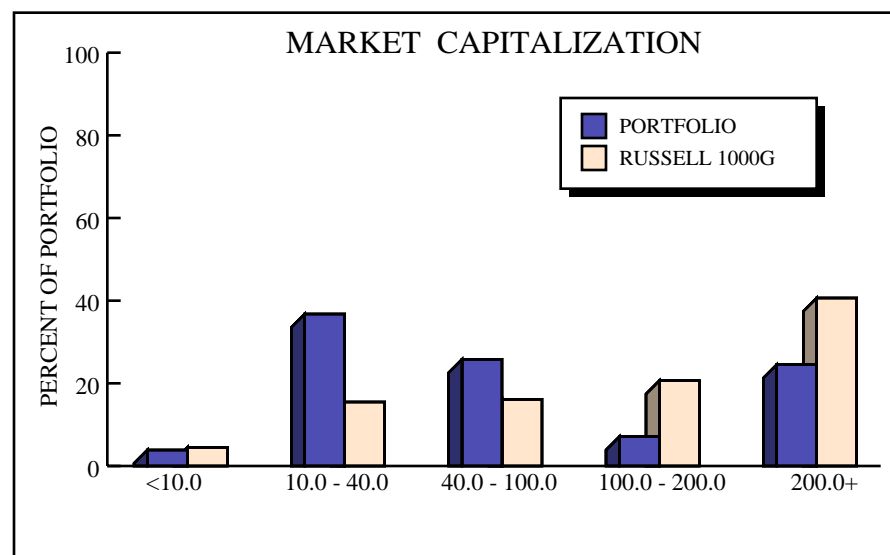
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 1000G



TOP TEN HOLDINGS



TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	\$ 5,125,250	4.80%	13.8%	Information Technology	\$ 1203.1 B
2	VISA INC-CLASS A SHARES	3,457,360	3.24%	9.4%	Information Technology	321.7 B
3	FIDELITY NATIONAL INFO SERV	3,379,887	3.17%	5.0%	Information Technology	85.5 B
4	SERVICENOW INC	3,331,376	3.12%	11.2%	Information Technology	53.2 B
5	MASTERCARD INC - A	3,314,349	3.10%	10.1%	Information Technology	297.8 B
6	GALAPAGOS NV-SPON ADR	3,288,597	3.08%	35.5%	Health Care	13.4 B
7	AMAZON.COM INC	3,084,045	2.89%	6.5%	Consumer Discretionary	916.2 B
8	SALESFORCE.COM INC	3,008,840	2.82%	9.6%	Information Technology	144.3 B
9	BROADCOM INC	2,686,170	2.52%	15.6%	Information Technology	125.7 B
10	INGERSOLL-RAND PLC	2,645,108	2.48%	8.3%	Industrials	31.7 B

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

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's Hardman Johnston Global Advisors International Equity Fully Discretionary portfolio was valued at \$127,212,909, representing an increase of \$15,270,297 from the September quarter's ending value of \$111,942,612. Last quarter, the Fund posted withdrawals totaling \$179,331, which partially offset the portfolio's net investment return of \$15,449,628. Income receipts totaling \$187,181 plus net realized and unrealized capital gains of \$15,262,447 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the Hardman Johnston Global Advisors International Equity Fully Discretionary portfolio returned 13.8%, which was 5.1% above the S&P BMI Developed Ex US Index's return of 8.7% and ranked in the 7th percentile of the International Equity universe. Over the trailing year, the portfolio returned 34.2%, which was 11.4% above the benchmark's 22.8% return, ranking in the 4th percentile. Since March 2012, the portfolio returned 10.3% annualized and ranked in the 12th percentile. The S&P BMI Developed Ex US Index returned an annualized 6.9% over the same period.

ASSET ALLOCATION

At the end of the fourth quarter, international equities comprised 98.3% of the total portfolio (\$125.0 million), while cash & equivalents totaled 1.7% (\$2.2 million).

EXECUTIVE SUMMARY**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year	Since 03/12
Total Portfolio - Gross	13.8	34.2	17.5	10.8	10.3
<i>INTERNATIONAL EQUITY RANK</i>	(7)	(4)	(4)	(7)	(12)
Total Portfolio - Net	13.6	33.4	16.8	10.1	9.6
S&P BMI Ex US	8.7	22.8	10.1	6.4	6.9
International Equity - Gross	13.9	35.5	17.7	10.9	10.3
<i>INTERNATIONAL EQUITY RANK</i>	(6)	(4)	(4)	(7)	(11)
S&P BMI Ex US	8.7	22.8	10.1	6.4	6.9

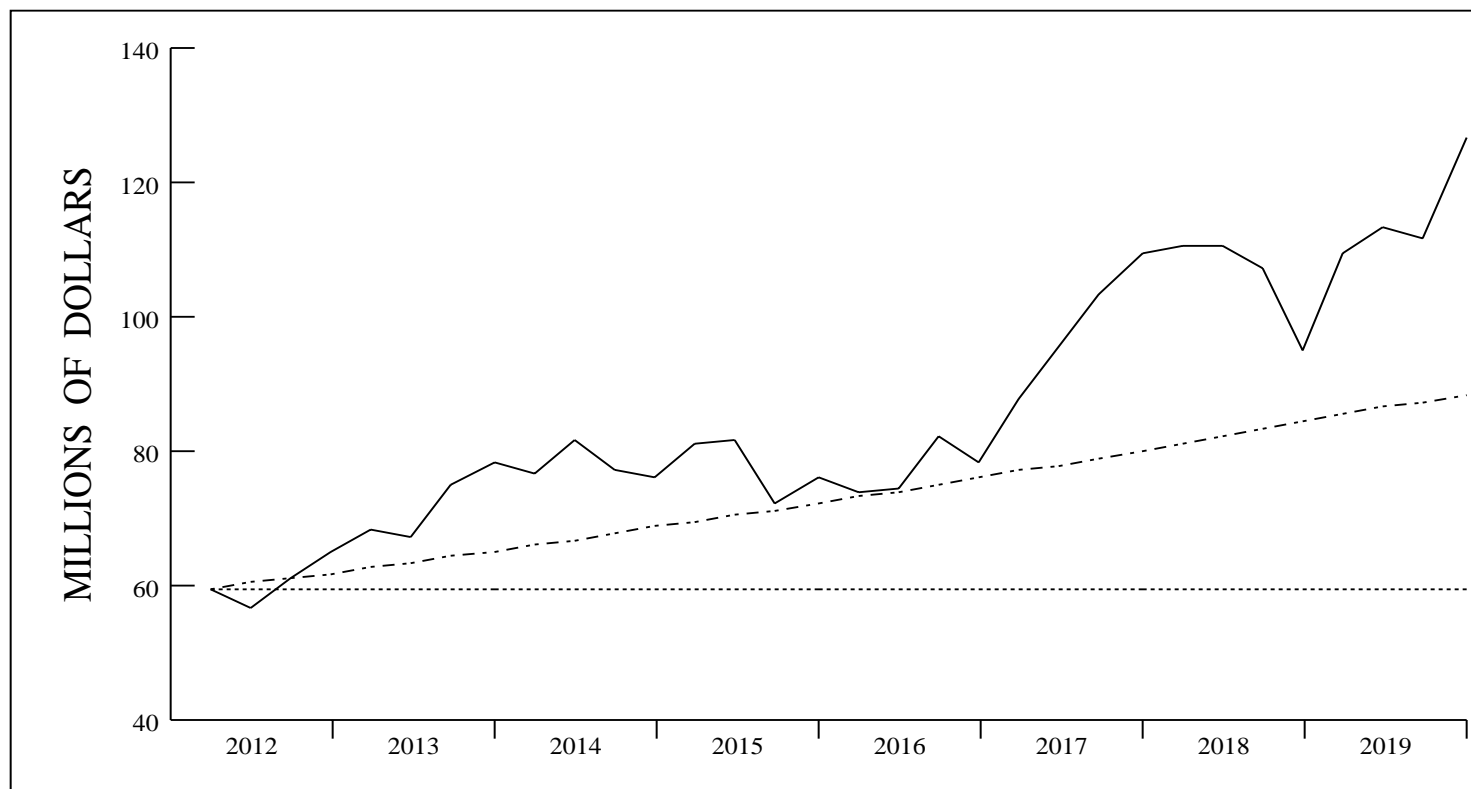
ASSET ALLOCATION

Int'l Equity	98.3%	\$ 125,029,422
Cash	1.7%	2,183,487
Total Portfolio	100.0%	\$ 127,212,909

INVESTMENT RETURN

Market Value 9/2019	\$ 111,942,612
Contribs / Withdrawals	-179,331
Income	187,181
Capital Gains / Losses	15,262,447
Market Value 12/2019	\$ 127,212,909

INVESTMENT GROWTH

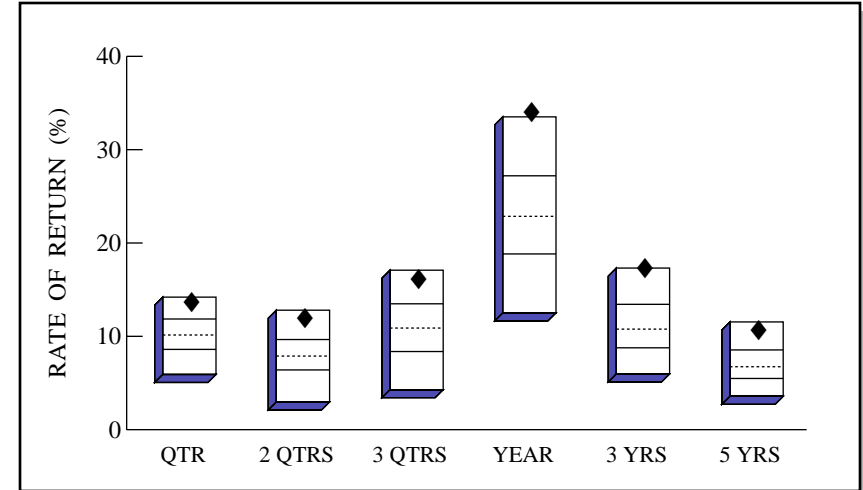
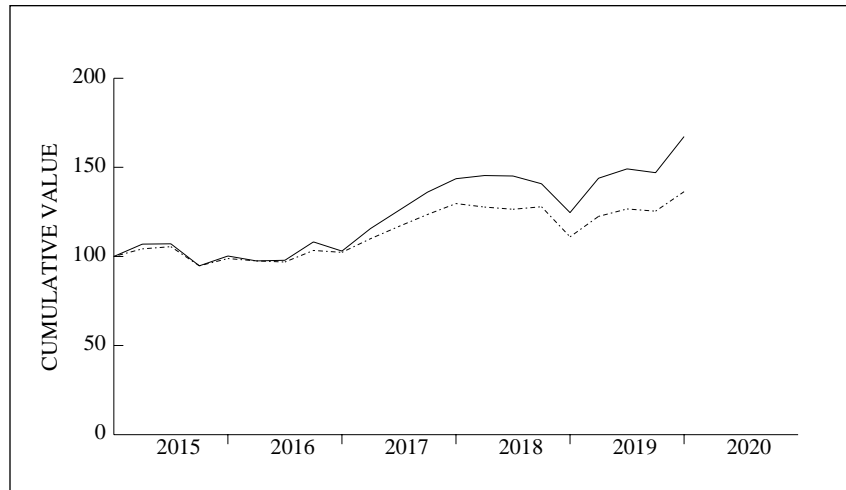


— ACTUAL RETURN
 - - - 5.25%
 . . . 0.0%

VALUE ASSUMING
 5.25% RETURN \$ 88,620,750

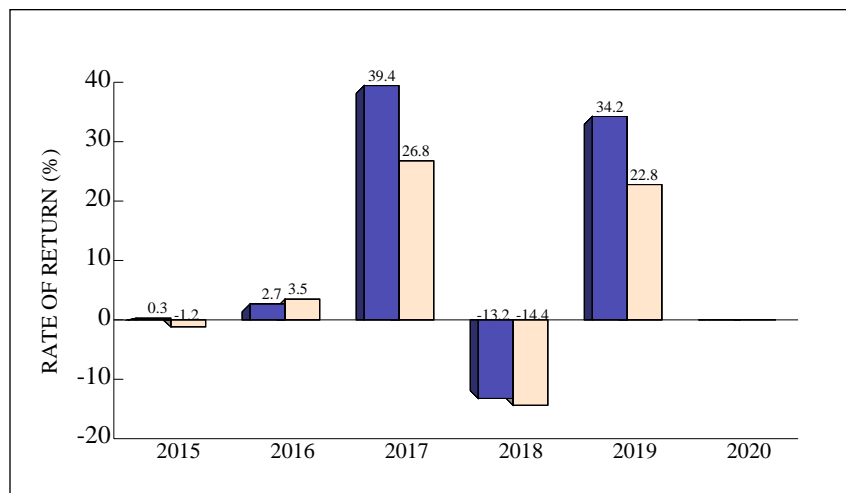
	LAST QUARTER	PERIOD 3/12 - 12/19
BEGINNING VALUE	\$ 111,942,612	\$ 59,853,568
NET CONTRIBUTIONS	-179,331	-357,311
<u>INVESTMENT RETURN</u>	<u>15,449,628</u>	<u>67,716,652</u>
ENDING VALUE	\$ 127,212,909	\$ 127,212,909
INCOME	187,181	10,204,546
<u>CAPITAL GAINS (LOSSES)</u>	<u>15,262,447</u>	<u>57,512,106</u>
INVESTMENT RETURN	15,449,628	67,716,652

TOTAL RETURN COMPARISONS



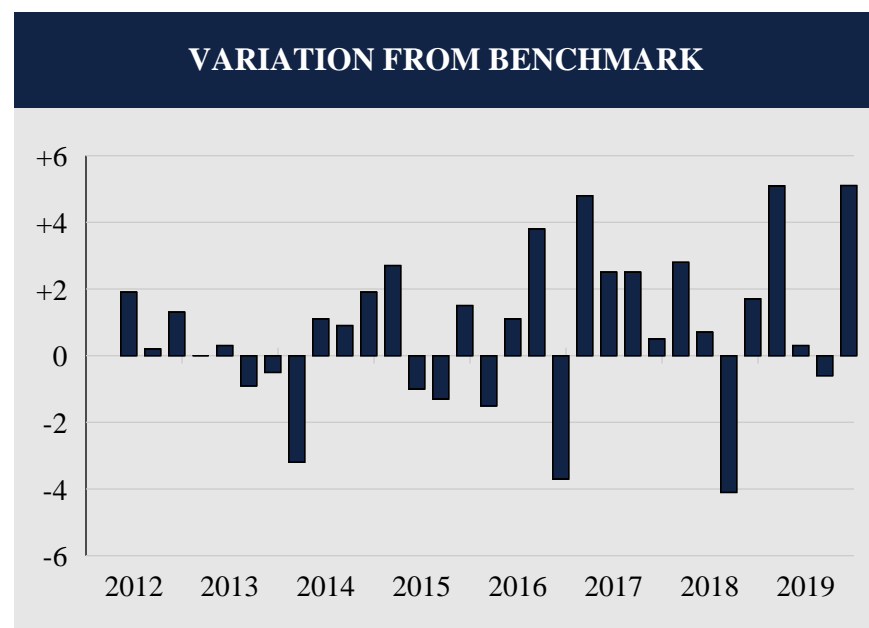
■ ——— PORTFOLIO
■ - - - - S&P BMI EX US

International Equity Universe



	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	13.8	12.1	16.3	34.2	17.5	10.8
(RANK)	(7)	(9)	(8)	(4)	(4)	(7)
5TH %ILE	14.2	12.8	17.1	33.5	17.3	11.6
25TH %ILE	11.9	9.7	13.5	27.2	13.4	8.5
MEDIAN	10.1	7.9	10.9	22.9	10.8	6.7
75TH %ILE	8.6	6.4	8.4	18.8	8.8	5.5
95TH %ILE	5.9	3.0	4.3	12.5	6.0	3.6
BMI Ex US	8.7	7.7	11.3	22.8	10.1	6.4

International Equity Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY**COMPARATIVE BENCHMARK: S&P BMI DEVELOPED EX US INDEX**

Total Quarters Observed	31
Quarters At or Above the Benchmark	22
Quarters Below the Benchmark	9
Batting Average	.710

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
12/19	13.8	8.7	5.1

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

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's HGK Asset Management HGK International Equity portfolio was valued at \$135,684,705, an increase of \$14,531,804 over the September ending value of \$121,152,901. Last quarter, the Fund recorded a net withdrawal of \$201,444, which only partially offset the fund's net investment gain of \$14,733,248. The portfolio's net investment return figure was the product of income receipts totaling \$359,755 and net realized and unrealized capital gains of \$14,373,493.

RELATIVE PERFORMANCE

Total Fund

During the fourth quarter, the HGK Asset Management HGK International Equity portfolio gained 12.2%, which was 3.5% above the S&P BMI Developed Ex US Index's return of 8.7% and ranked in the 22nd percentile of the International Equity universe. Over the trailing year, the portfolio returned 28.3%, which was 5.5% greater than the benchmark's 22.8% performance, and ranked in the 20th percentile. Since March 2012, the portfolio returned 10.6% on an annualized basis and ranked in the 9th percentile. For comparison, the S&P BMI Developed Ex US Index returned an annualized 6.9% over the same period.

ASSET ALLOCATION

At the end of the fourth quarter, international equities comprised 98.6% of the total portfolio (\$133.8 million), while cash & equivalents totaled 1.4% (\$1.8 million).

EXECUTIVE SUMMARY**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year	Since 03/12
Total Portfolio - Gross	12.2	28.3	14.1	9.1	10.6
<i>INTERNATIONAL EQUITY RANK</i>	(22)	(20)	(20)	(17)	(9)
Total Portfolio - Net	12.0	27.5	13.3	8.3	9.9
S&P BMI Ex US	8.7	22.8	10.1	6.4	6.9
International Equity - Gross	12.5	29.2	14.7	9.4	11.1
<i>INTERNATIONAL EQUITY RANK</i>	(18)	(16)	(17)	(15)	(7)
S&P BMI Ex US	8.7	22.8	10.1	6.4	6.9

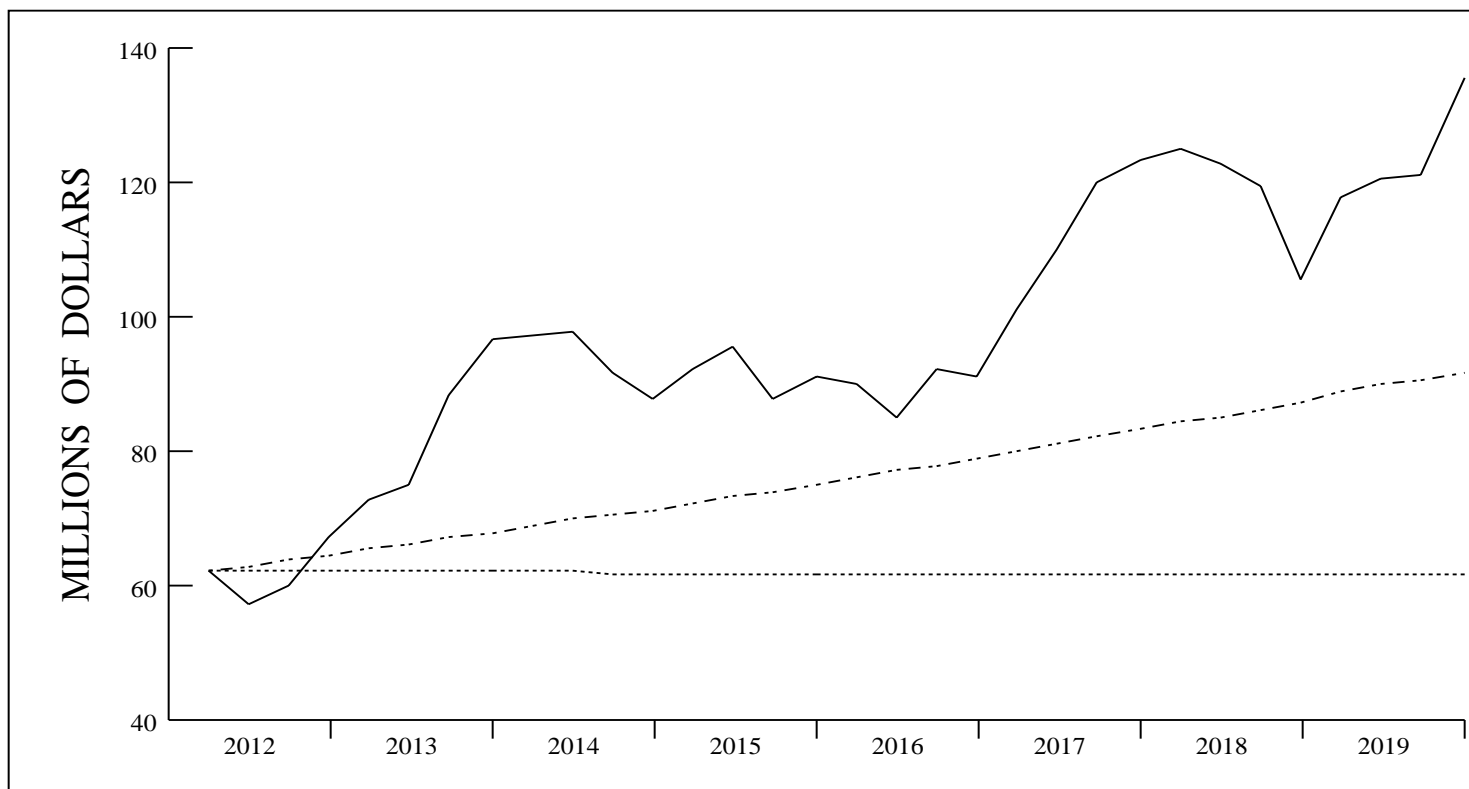
ASSET ALLOCATION

Int'l Equity	98.6%	\$ 133,847,770
Cash	1.4%	1,836,935
Total Portfolio	100.0%	\$ 135,684,705

INVESTMENT RETURN

Market Value 9/2019	\$ 121,152,901
Contribs / Withdrawals	-201,444
Income	359,755
Capital Gains / Losses	14,373,493
Market Value 12/2019	\$ 135,684,705

INVESTMENT GROWTH

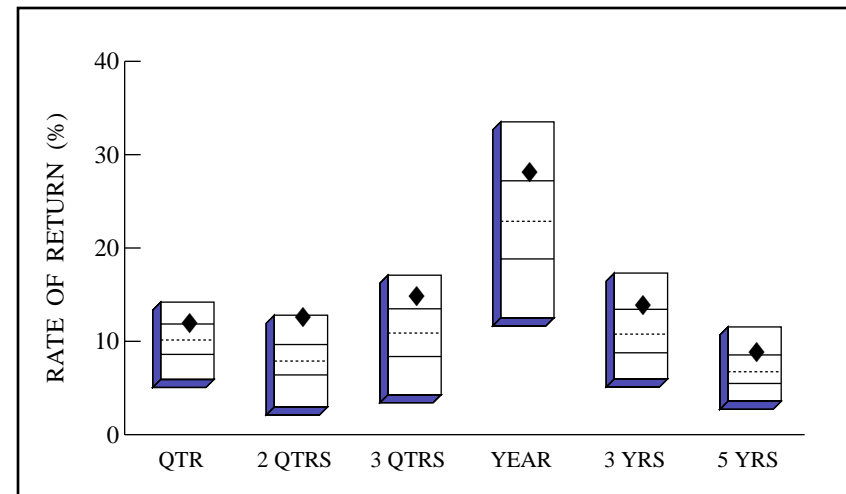
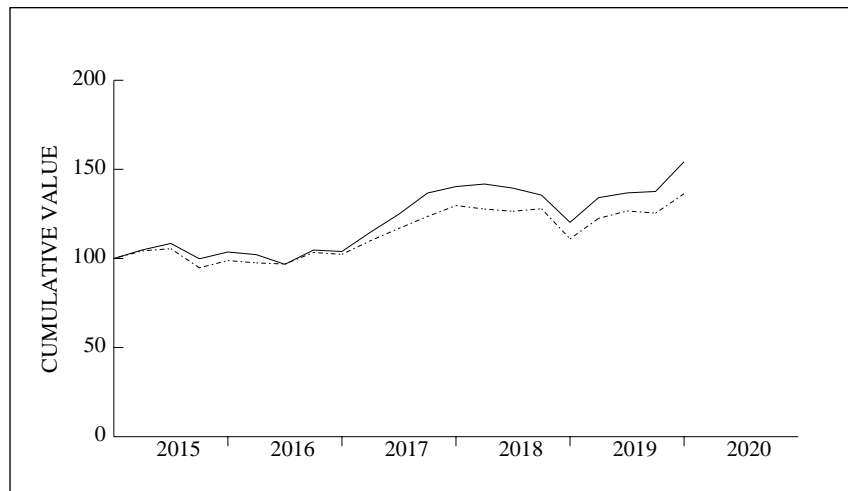


— ACTUAL RETURN
 - - - 5.25%
 0.0%

VALUE ASSUMING
 5.25% RETURN \$ 91,970,092

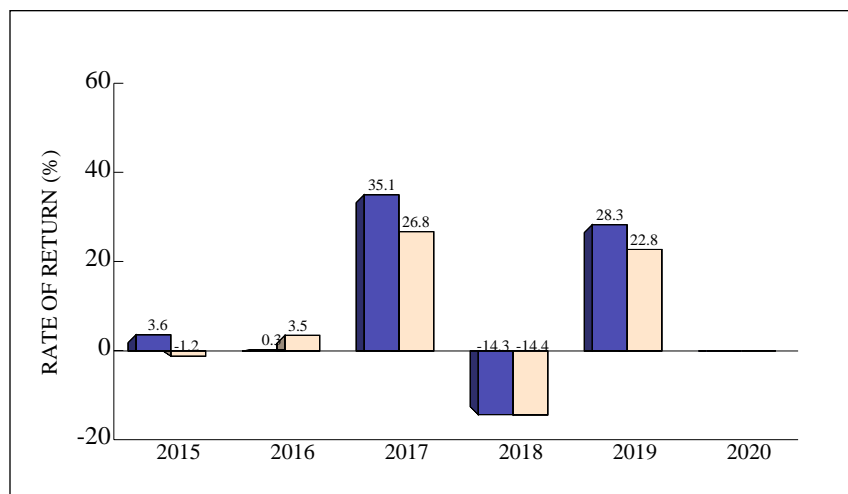
	LAST QUARTER	PERIOD 3/12 - 12/19
BEGINNING VALUE	\$ 121,152,901	\$ 62,430,922
NET CONTRIBUTIONS	-201,444	-735,608
<u>INVESTMENT RETURN</u>	<u>14,733,248</u>	<u>73,989,391</u>
ENDING VALUE	\$ 135,684,705	\$ 135,684,705
INCOME	359,755	16,625,122
<u>CAPITAL GAINS (LOSSES)</u>	<u>14,373,493</u>	<u>57,364,269</u>
INVESTMENT RETURN	14,733,248	73,989,391

TOTAL RETURN COMPARISONS



■ ——— PORTFOLIO
■ - - - - S&P BMI EX US

International Equity Universe

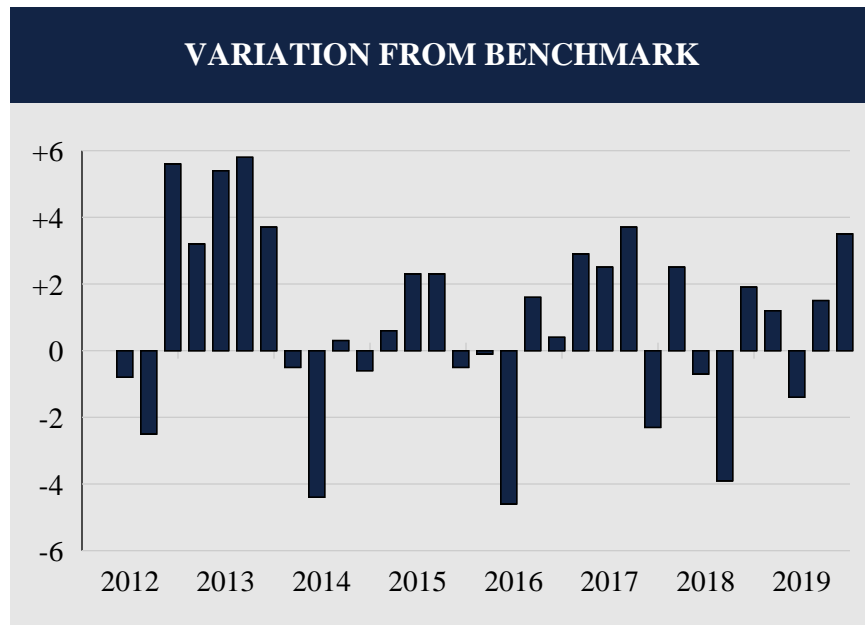


	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	12.2	12.8	15.0	28.3	14.1	9.1
(RANK)	(22)	(5)	(14)	(20)	(20)	(17)
5TH %ILE	14.2	12.8	17.1	33.5	17.3	11.6
25TH %ILE	11.9	9.7	13.5	27.2	13.4	8.5
MEDIAN	10.1	7.9	10.9	22.9	10.8	6.7
75TH %ILE	8.6	6.4	8.4	18.8	8.8	5.5
95TH %ILE	5.9	3.0	4.3	12.5	6.0	3.6
BMI Ex US	8.7	7.7	11.3	22.8	10.1	6.4

International Equity Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

COMPARATIVE BENCHMARK: S&P BMI DEVELOPED EX US INDEX



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
12/19	12.2	8.7	3.5

Total Quarters Observed	31
Quarters At or Above the Benchmark	19
Quarters Below the Benchmark	12
Batting Average	.613

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

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's LSV Asset Management US Large Cap Value portfolio was valued at \$174,824,518, representing an increase of \$14,647,966 from the September quarter's ending value of \$160,176,552. Last quarter, the Fund posted withdrawals totaling \$149,498, which partially offset the portfolio's net investment return of \$14,797,464. Income receipts totaling \$1,130,322 plus net realized and unrealized capital gains of \$13,667,142 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the LSV Asset Management US Large Cap Value portfolio returned 9.2%, which was 1.8% above the Russell 1000 Value Index's return of 7.4% and ranked in the 23rd percentile of the Large Cap Value universe. Over the trailing year, the portfolio returned 25.8%, which was 0.7% below the benchmark's 26.5% return, ranking in the 62nd percentile. Since March 2004, the portfolio returned 8.9% annualized. The Russell 1000 Value returned an annualized 8.1% over the same period.

ASSET ALLOCATION

At the end of the fourth quarter, large cap equities comprised 99.7% of the total portfolio (\$174.3 million), while cash & equivalents totaled 0.3% (\$516,051).

EQUITY ANALYSIS

Last quarter, the LSV large cap portfolio had a footprint across all industry sectors. Relative to the Russell 1000 Value Index, weightings were lower in the Consumer Staples, Energy, Financials, Real Estate, and Utilities sectors, and higher in the Consumer Discretionary, Health Care, Industrials, and Information Technology sectors. Information Technology was notably heavier, making up the largest portion of the portfolio, but a minor allocation for the index.

The portfolio's robust stance in Information Technology paid off last quarter, as that sector was the best earner in the large cap value market. The portfolio also added value through positive selection effects in several sectors. Only two sectors underperformed against their index counterparts: Communication Services and Materials.

EXECUTIVE SUMMARY**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year	10 Year	Since 03/04
Total Portfolio - Gross	9.2	25.8	10.2	7.9	12.3	8.9
<i>LARGE CAP VALUE RANK</i>	(23)	(62)	(56)	(73)	(44)	----
Total Portfolio - Net	9.1	25.4	9.8	7.5	11.8	8.5
Russell 1000V	7.4	26.5	9.7	8.3	11.8	8.1
Large Cap Equity - Gross	9.3	26.1	10.2	7.9	12.4	9.0
<i>LARGE CAP VALUE RANK</i>	(23)	(58)	(55)	(73)	(40)	----
Russell 1000V	7.4	26.5	9.7	8.3	11.8	8.1
S&P 500	9.1	31.5	15.3	11.7	13.5	9.1
Russell 1000G	10.6	36.4	20.5	14.6	15.2	10.3

ASSET ALLOCATION

Large Cap Equity	99.7%	\$ 174,308,467
Cash	0.3%	516,051
Total Portfolio	100.0%	\$ 174,824,518

INVESTMENT RETURN

Market Value 9/2019	\$ 160,176,552
Contribs / Withdrawals	-149,498
Income	1,130,322
Capital Gains / Losses	13,667,142
Market Value 12/2019	\$ 174,824,518

INVESTMENT GROWTH

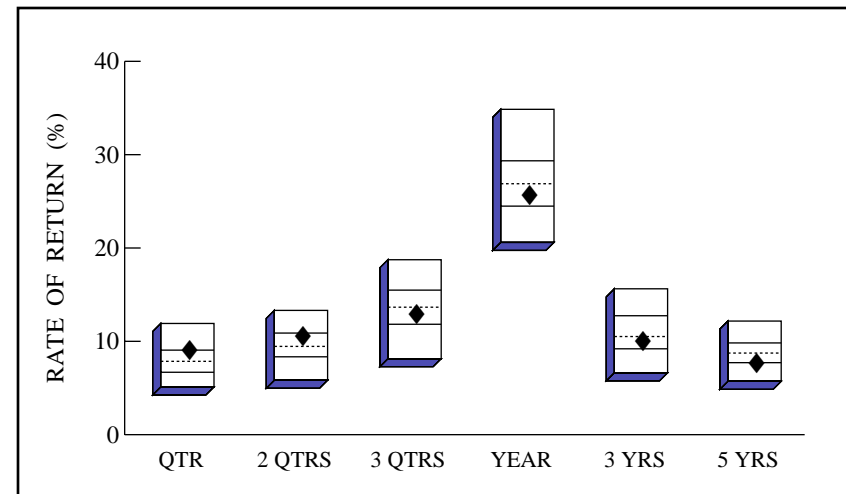
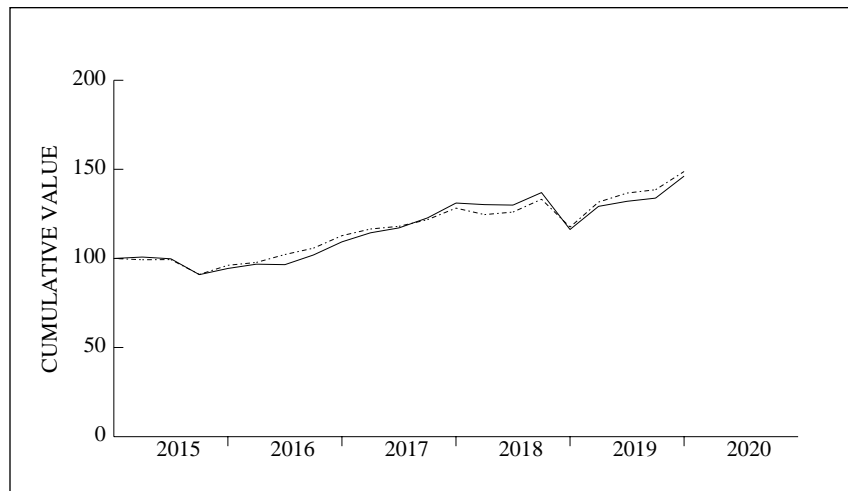


— ACTUAL RETURN
 - - - 5.25%
 . . . 0.0%

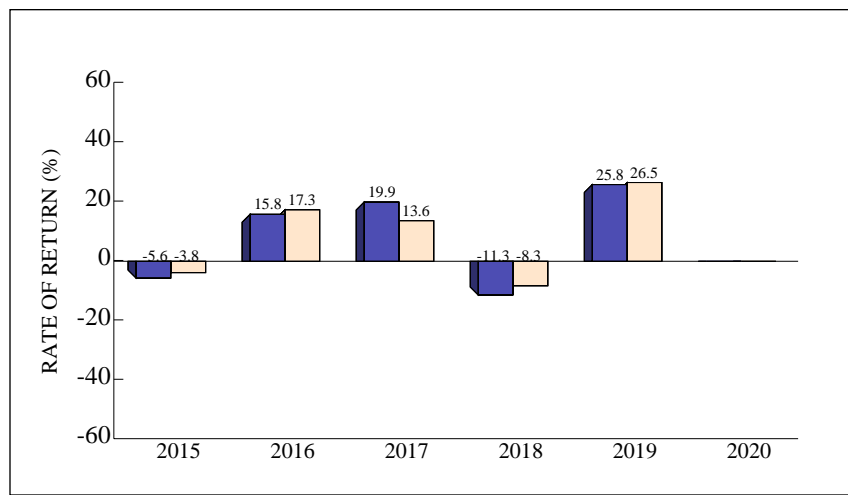
VALUE ASSUMING
 5.25% RETURN \$ 92,980,318

	LAST QUARTER	PERIOD 3/04 - 12/19
BEGINNING VALUE	\$ 160,176,552	\$ 77,834,544
NET CONTRIBUTIONS	-149,498	- 84,561,829
<u>INVESTMENT RETURN</u>	<u>14,797,464</u>	<u>181,551,803</u>
ENDING VALUE	\$ 174,824,518	\$ 174,824,518
INCOME	1,130,322	55,897,277
<u>CAPITAL GAINS (LOSSES)</u>	<u>13,667,142</u>	<u>125,654,526</u>
INVESTMENT RETURN	14,797,464	181,551,803

TOTAL RETURN COMPARISONS



Large Cap Value Universe

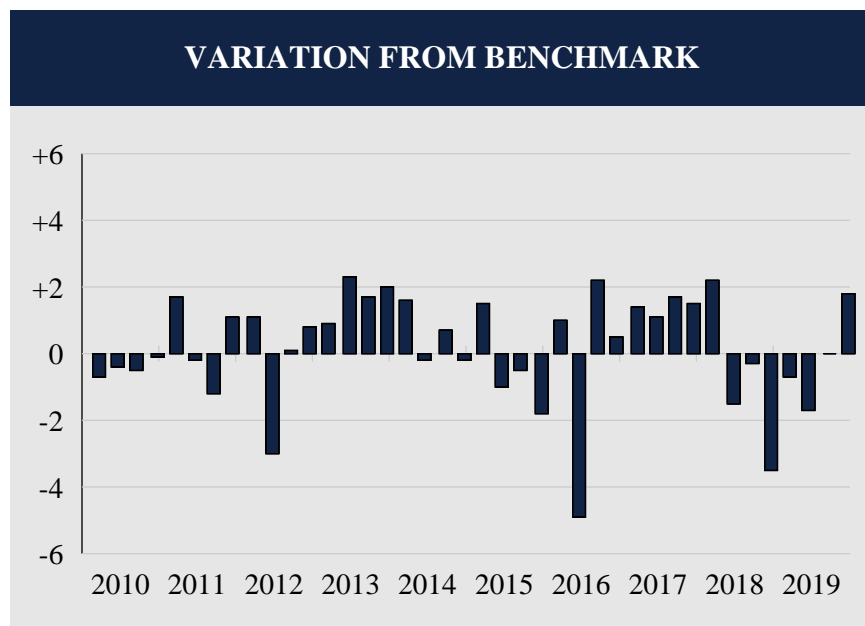


	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	9.2	10.7	13.1	25.8	10.2	7.9
(RANK)	(23)	(29)	(60)	(62)	(56)	(73)
5TH %ILE	11.9	13.3	18.7	34.9	15.6	12.2
25TH %ILE	9.1	10.9	15.5	29.4	12.7	9.8
MEDIAN	7.9	9.5	13.7	26.9	10.5	8.7
75TH %ILE	6.7	8.4	11.8	24.5	9.2	7.7
95TH %ILE	5.1	5.8	8.1	20.6	6.6	5.7
Russ 1000V	7.4	8.9	13.0	26.5	9.7	8.3

Large Cap Value Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY - 10 YEARS

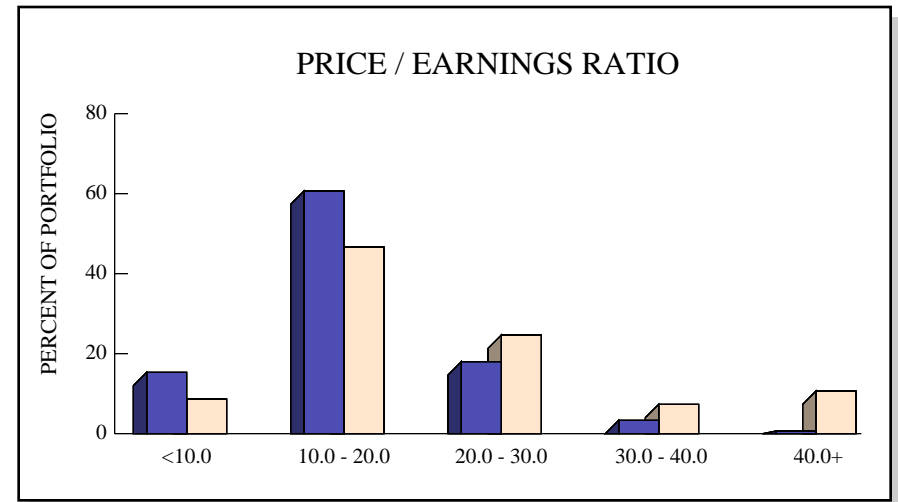
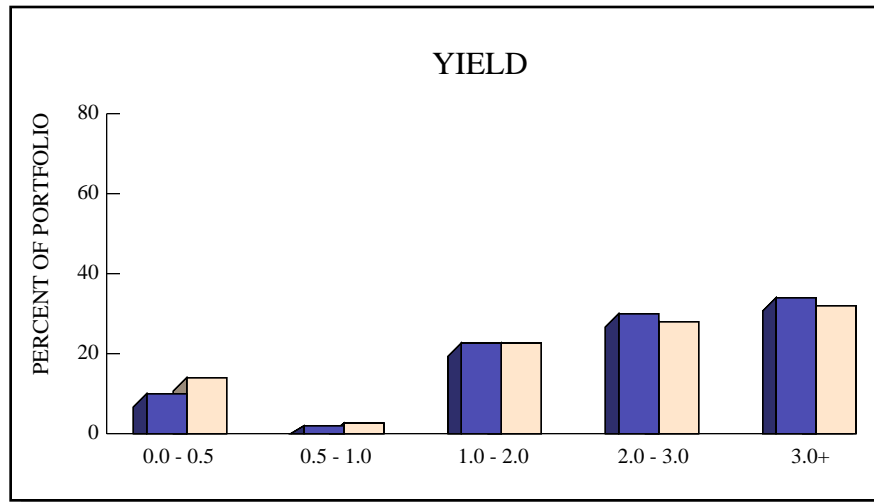
COMPARATIVE BENCHMARK: RUSSELL 1000 VALUE



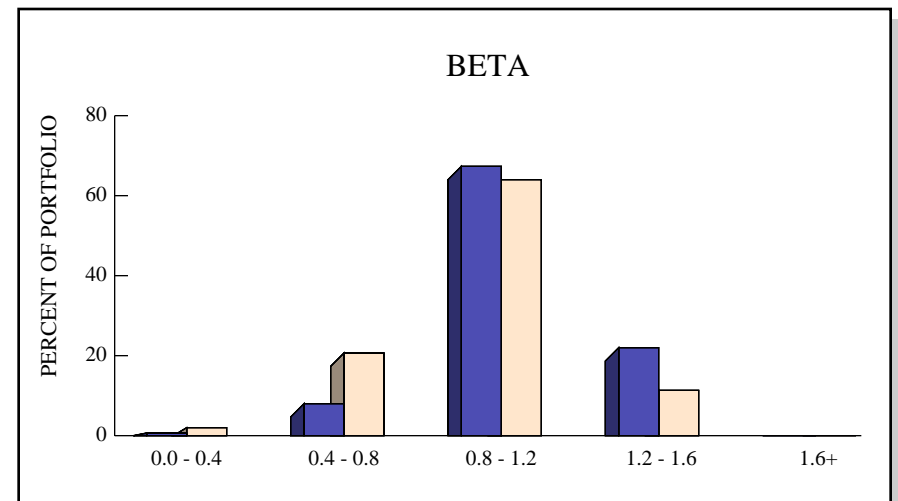
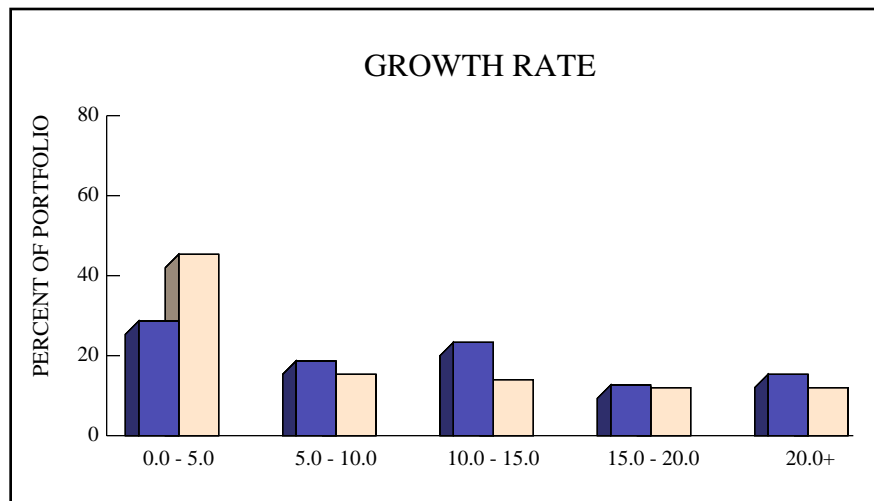
Total Quarters Observed	40
Quarters At or Above the Benchmark	22
Quarters Below the Benchmark	18
Batting Average	.550

RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
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
12/19	9.2	7.4	1.8

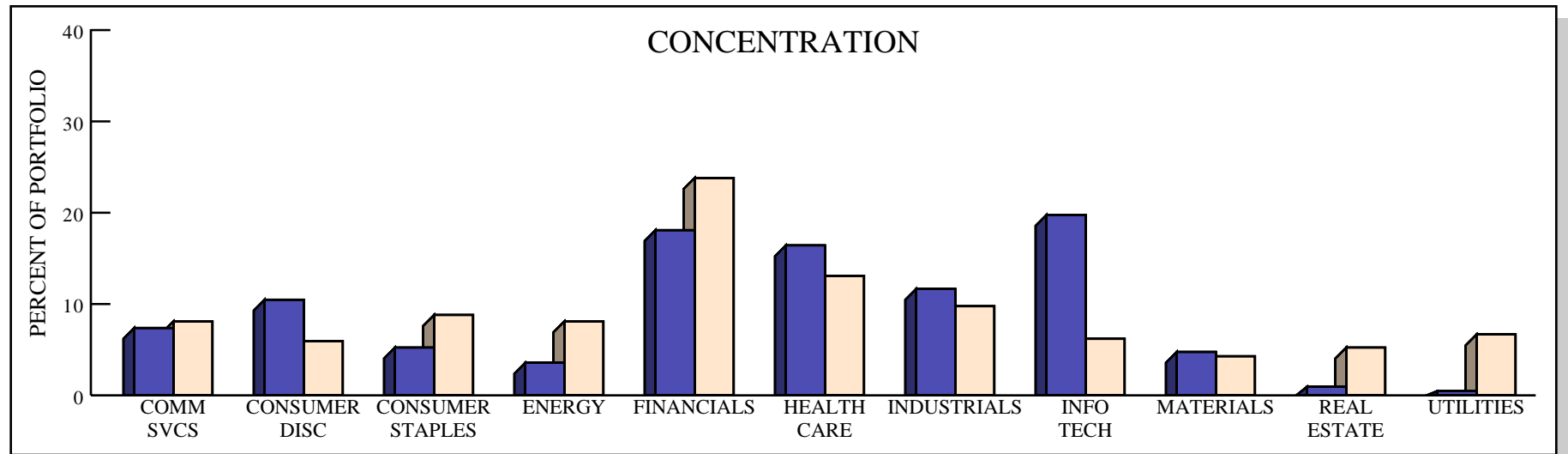
STOCK CHARACTERISTICS



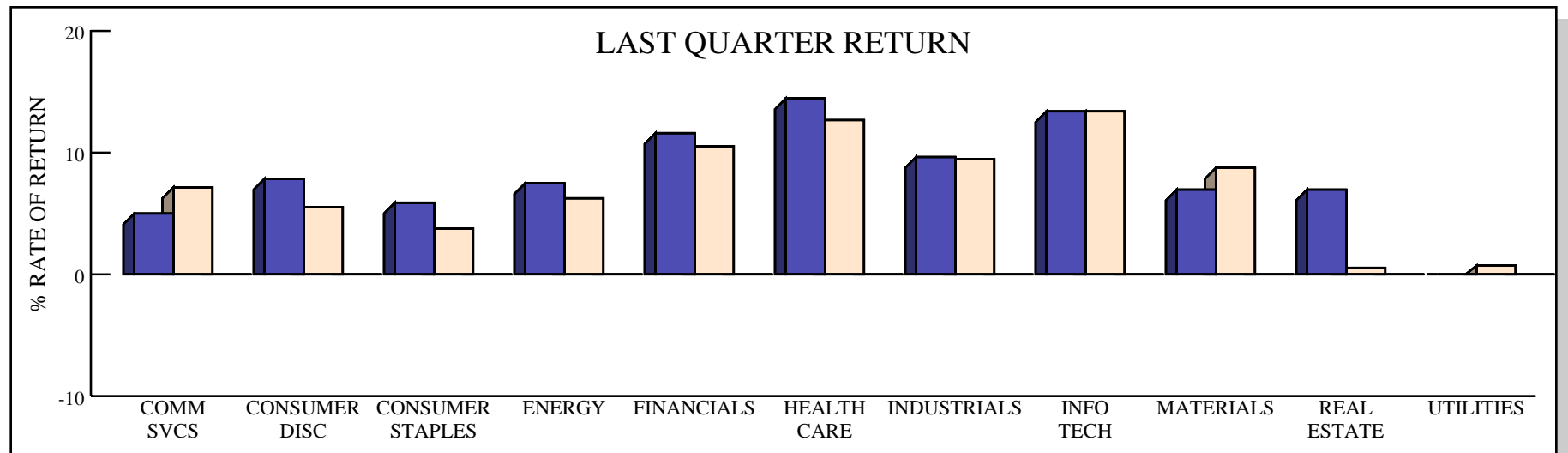
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	145	2.5%	10.3%	16.3	1.05
RUSSELL 1000V	764	2.5%	5.7%	22.7	0.94



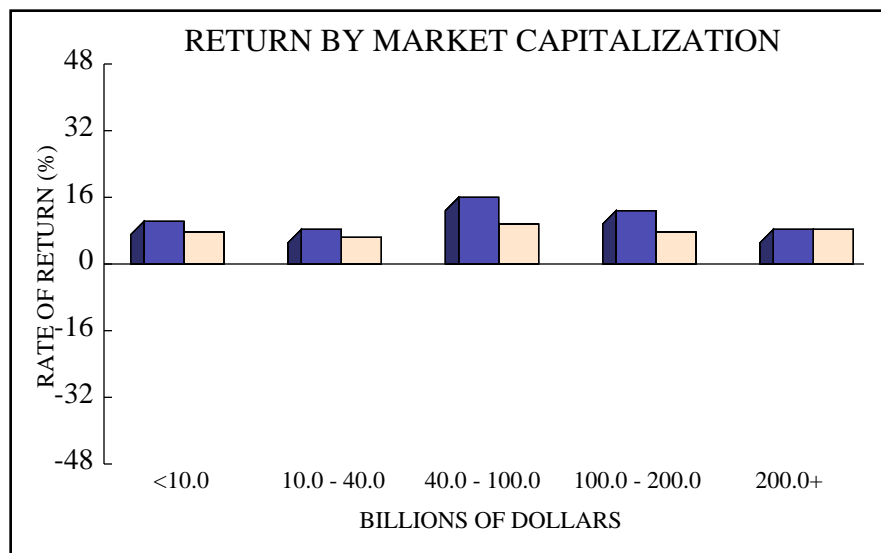
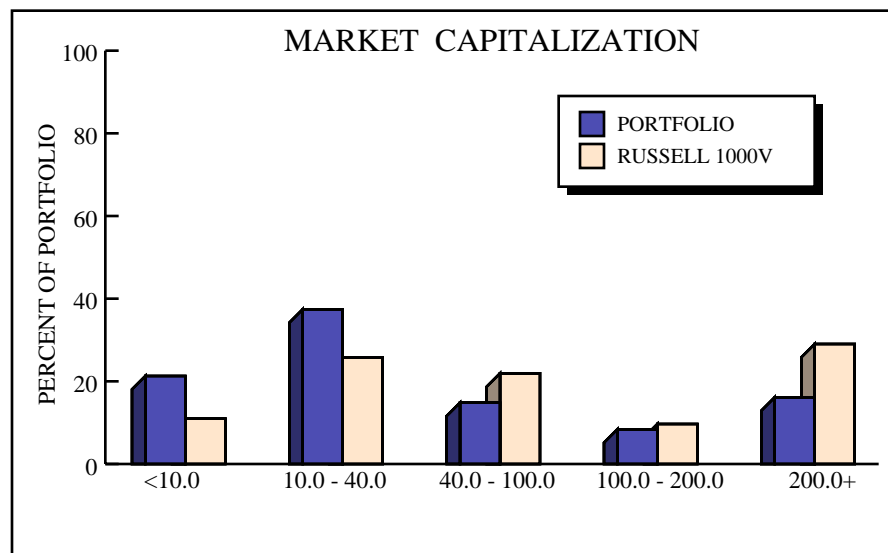
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 1000V



TOP TEN HOLDINGS



TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	JPMORGAN CHASE & CO	\$ 3,903,200	2.24%	19.4%	Financials	\$ 437.2 B
2	VERIZON COMMUNICATIONS INC	3,677,860	2.11%	2.8%	Communication Services	253.9 B
3	AMGEN INC	3,591,943	2.06%	25.4%	Health Care	143.2 B
4	MERCK & CO. INC.	3,537,955	2.03%	8.8%	Health Care	231.6 B
5	AT&T INC	3,482,028	2.00%	4.7%	Communication Services	285.5 B
6	INTEL CORP	3,387,510	1.94%	16.8%	Information Technology	260.3 B
7	PFIZER INC	3,349,890	1.92%	10.1%	Health Care	216.8 B
8	CISCO SYSTEMS INC	3,011,888	1.73%	-2.2%	Information Technology	203.5 B
9	ABBVIE INC	2,762,448	1.58%	18.6%	Health Care	130.9 B
10	ORACLE CORP	2,749,662	1.58%	-3.3%	Information Technology	169.9 B

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

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's LSV Asset Management US Small Cap Value Equity portfolio was valued at \$78,265,826, representing an increase of \$6,232,568 from the September quarter's ending value of \$72,033,258. Last quarter, the Fund posted withdrawals totaling \$103,972, which partially offset the portfolio's net investment return of \$6,336,540. Income receipts totaling \$441,281 plus net realized and unrealized capital gains of \$5,895,259 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the LSV Asset Management US Small Cap Value Equity portfolio returned 8.8%, which was 0.3% above the Russell 2000 Value Index's return of 8.5% and ranked in the 32nd percentile of the Small Cap Value universe. Over the trailing year, the portfolio returned 24.7%, which was 2.3% above the benchmark's 22.4% return, ranking in the 54th percentile. Since December 2016, the portfolio returned 4.3% annualized and ranked in the 77th percentile. The Russell 2000 Value returned an annualized 4.8% over the same period.

ASSET ALLOCATION

At the end of the fourth quarter, small cap equities comprised 98.9% of the total portfolio (\$77.4 million), while cash & equivalents totaled 1.1% (\$840,477).

EQUITY ANALYSIS

Last quarter, the LSV small cap portfolio was invested in all eleven industry sectors in our analysis. More weight was placed in the Consumer Discretionary, Health Care, Industrials, and Information Technology sectors, relative to the Russell 2000 Value index. Financials, Real Estate, and Utilities were underweight.

Although selection effects were generally unfavorable, the portfolio slightly exceeded the index. The weakest sectors—Utilities, Real Estate, and Financials—had reduced positions, while more weight was given to Materials, Information Technology, and Health Care, which were the best performing sectors for small cap value. Unfortunately, the portfolio did not keep pace with the market in most sectors, curbing the total return.

EXECUTIVE SUMMARY**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year
Total Portfolio - Gross	8.8	24.7	4.3	----
<i>SMALL CAP VALUE RANK</i>	(32)	(54)	(77)	----
Total Portfolio - Net	8.7	24.0	3.7	----
Russell 2000V	8.5	22.4	4.8	7.0
Small Cap Equity - Gross	8.8	24.9	4.3	----
<i>SMALL CAP VALUE RANK</i>	(32)	(53)	(77)	----
Russell 2000V	8.5	22.4	4.8	7.0

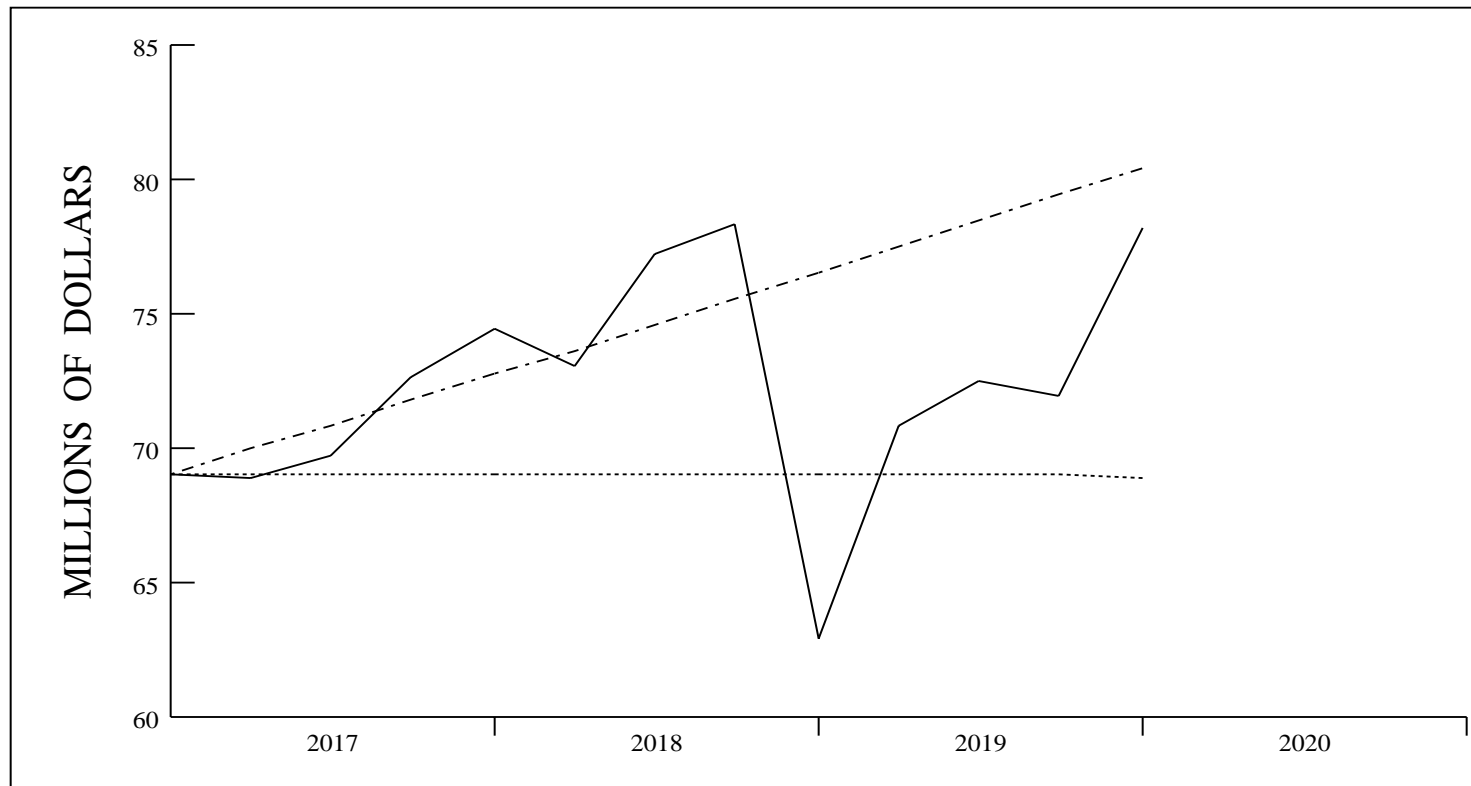
ASSET ALLOCATION

Small Cap	98.9%	\$ 77,425,349
Cash	1.1%	840,477
Total Portfolio	100.0%	\$ 78,265,826

INVESTMENT RETURN

Market Value 9/2019	\$ 72,033,258
Contribs / Withdrawals	-103,972
Income	441,281
Capital Gains / Losses	5,895,259
Market Value 12/2019	\$ 78,265,826

INVESTMENT GROWTH

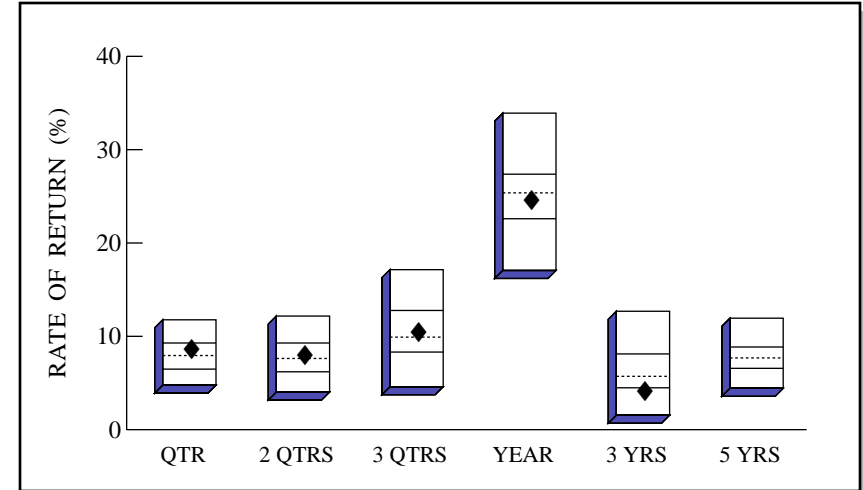
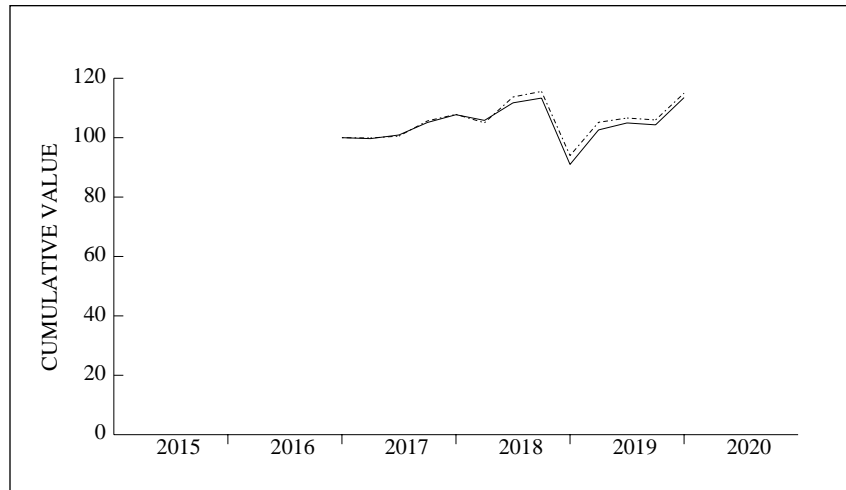


— ACTUAL RETURN
 - - - 5.25%
 0.0%

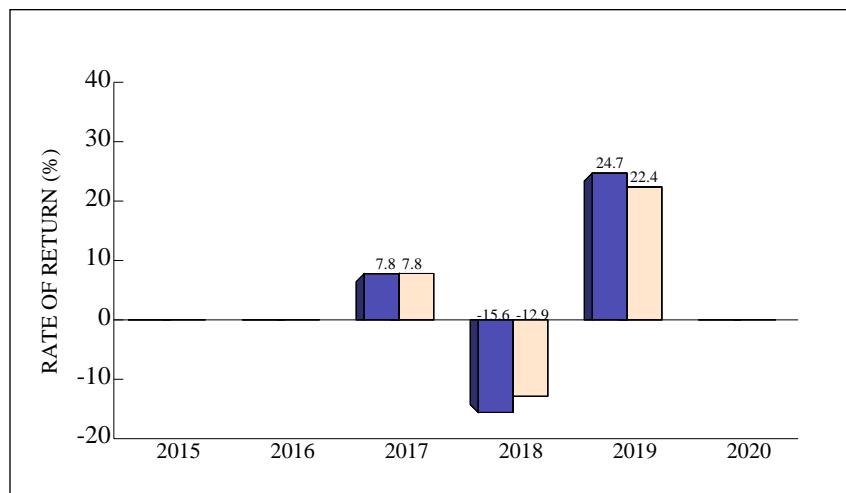
VALUE ASSUMING
 5.25% RETURN \$ 80,428,403

	LAST QUARTER	THREE YEARS
BEGINNING VALUE	\$ 72,033,258	\$ 69,163,490
NET CONTRIBUTIONS	-103,972	-207,128
<u>INVESTMENT RETURN</u>	<u>6,336,540</u>	<u>9,309,464</u>
ENDING VALUE	\$ 78,265,826	\$ 78,265,826
INCOME	441,281	4,928,797
<u>CAPITAL GAINS (LOSSES)</u>	<u>5,895,259</u>	<u>4,380,667</u>
INVESTMENT RETURN	6,336,540	9,309,464

TOTAL RETURN COMPARISONS



Small Cap Value Universe

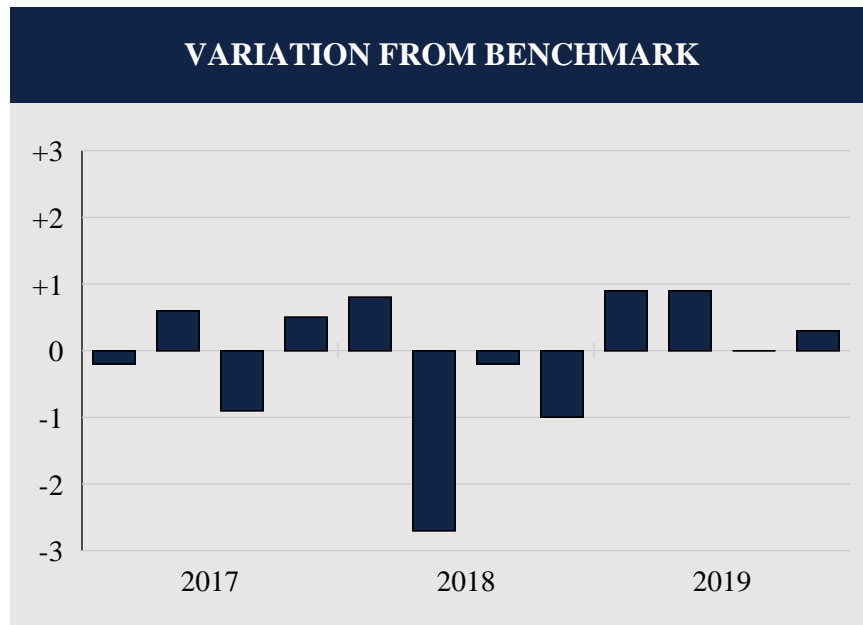


	<u>QTR</u>	<u>2 QTRS</u>	<u>3 QTRS</u>	<u>YEAR</u>	<u>-----ANNUALIZED-----</u> <u>3 YRS</u>	<u>5 YRS</u>
RETURN	8.8	8.1	10.6	24.7	4.3	----
(RANK)	(32)	(44)	(47)	(54)	(77)	----
5TH %ILE	11.8	12.2	17.2	33.9	12.7	11.9
25TH %ILE	9.3	9.3	12.8	27.4	8.1	8.9
MEDIAN	8.0	7.6	9.9	25.4	5.7	7.7
75TH %ILE	6.5	6.2	8.3	22.6	4.5	6.6
95TH %ILE	4.8	4.0	4.6	17.1	1.6	4.4
Russ 2000V	8.5	7.9	9.3	22.4	4.8	7.0

Small Cap Value Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

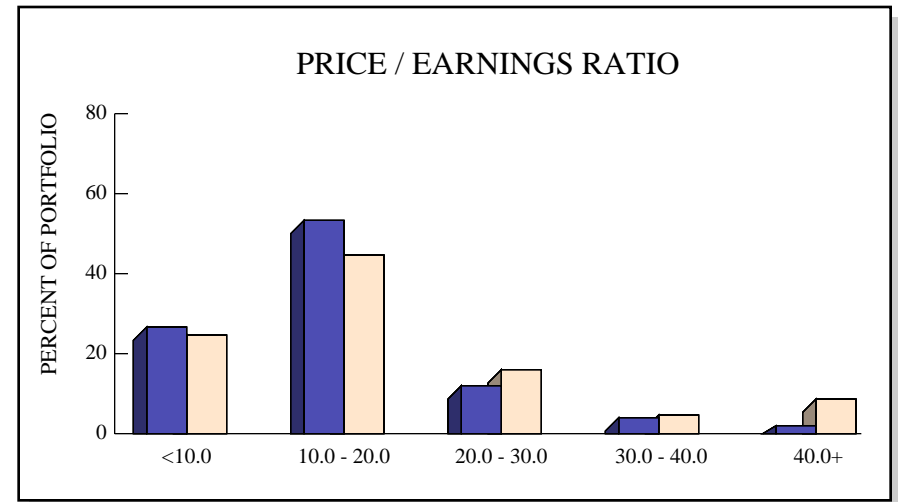
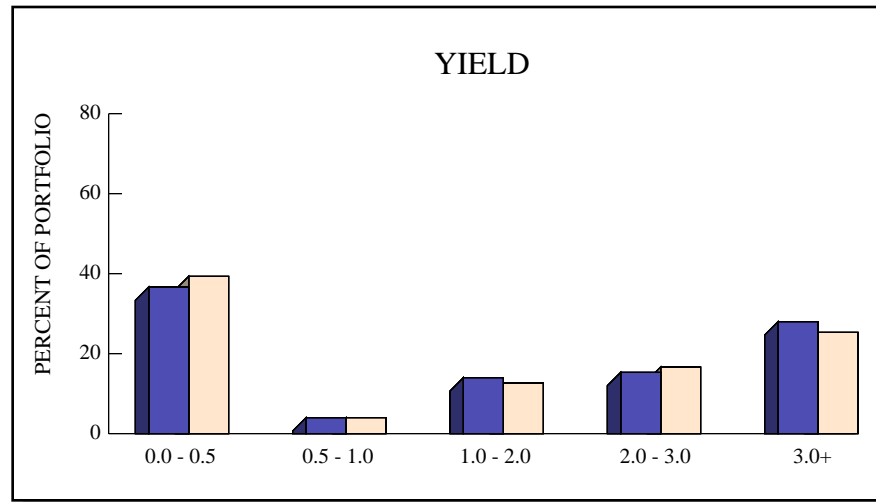
COMPARATIVE BENCHMARK: RUSSELL 2000 VALUE



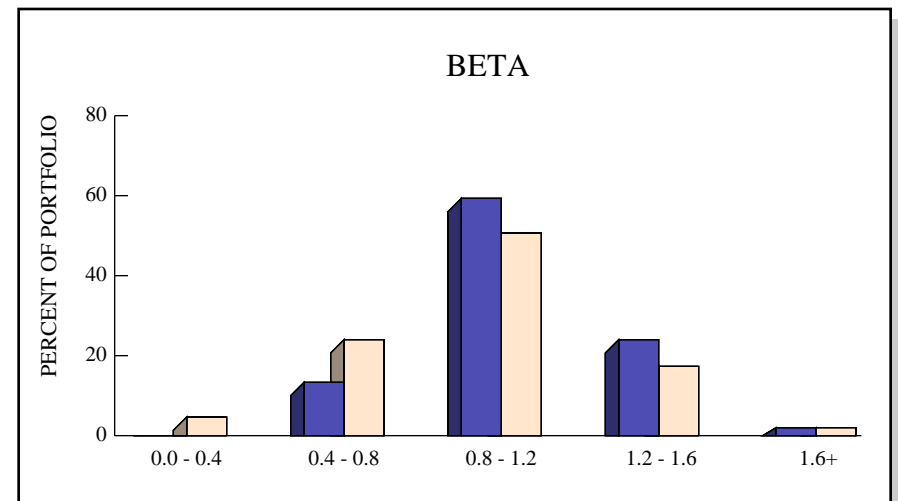
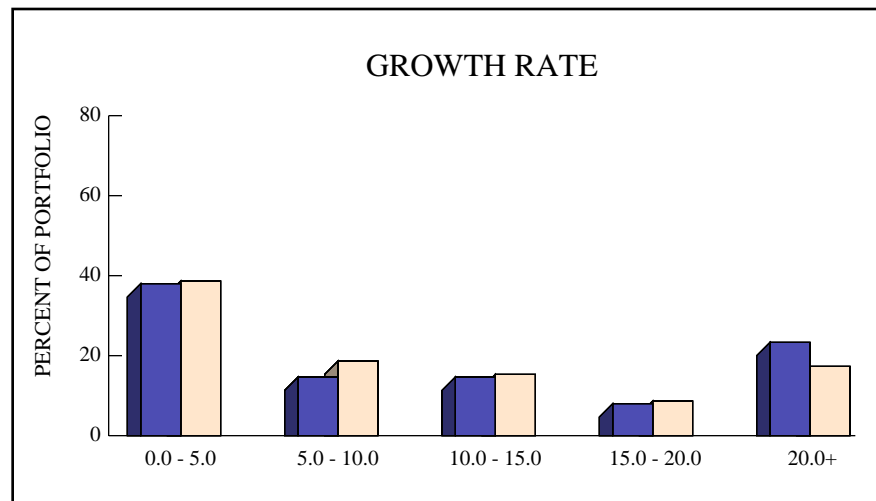
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
3/17	-0.3	-0.1	-0.2
6/17	1.3	0.7	0.6
9/17	4.2	5.1	-0.9
12/17	2.5	2.0	0.5
3/18	-1.8	-2.6	0.8
6/18	5.6	8.3	-2.7
9/18	1.4	1.6	-0.2
12/18	-19.7	-18.7	-1.0
3/19	12.8	11.9	0.9
6/19	2.3	1.4	0.9
9/19	-0.6	-0.6	0.0
12/19	8.8	8.5	0.3

Total Quarters Observed	12
Quarters At or Above the Benchmark	7
Quarters Below the Benchmark	5
Batting Average	.583

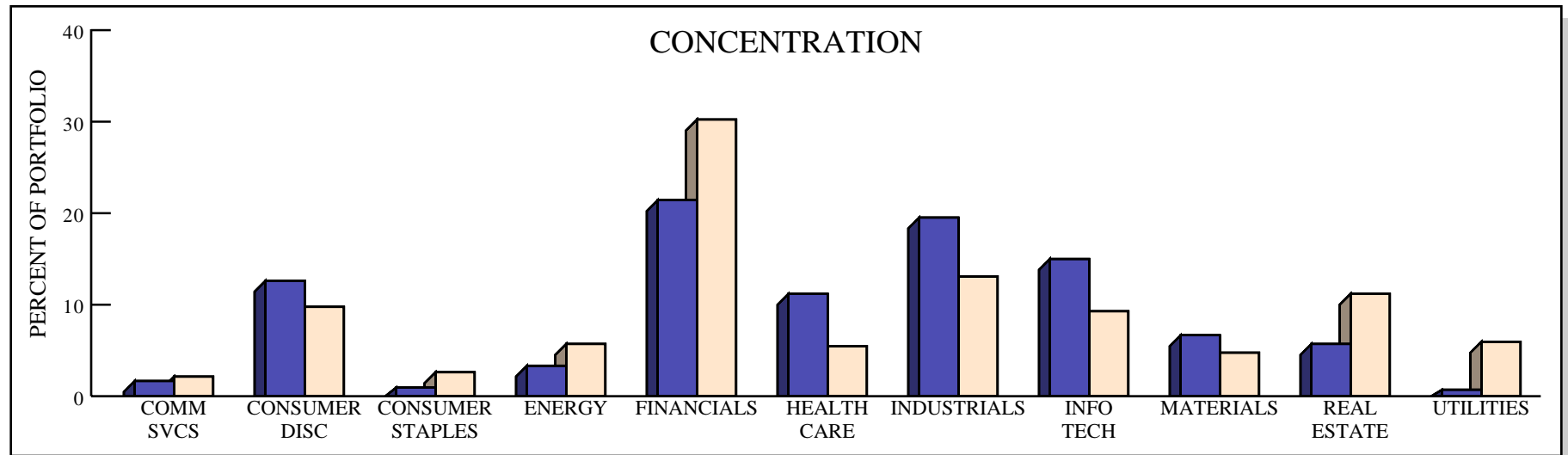
STOCK CHARACTERISTICS



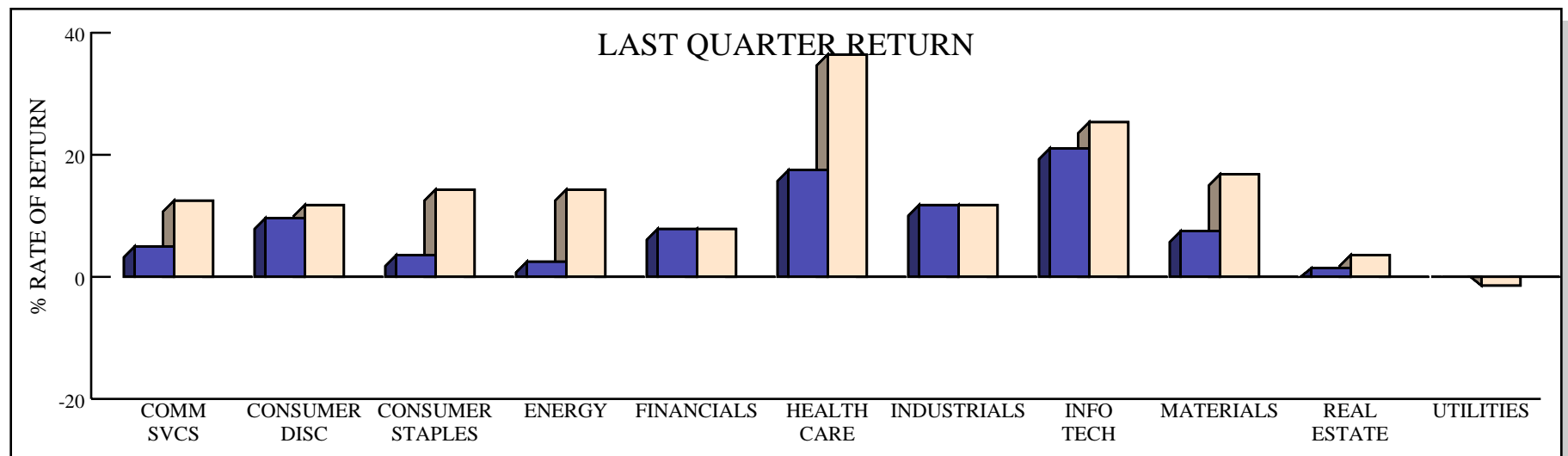
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	198	2.3%	10.3%	14.1	1.05
RUSSELL 2000V	1,401	2.1%	8.0%	16.9	0.94



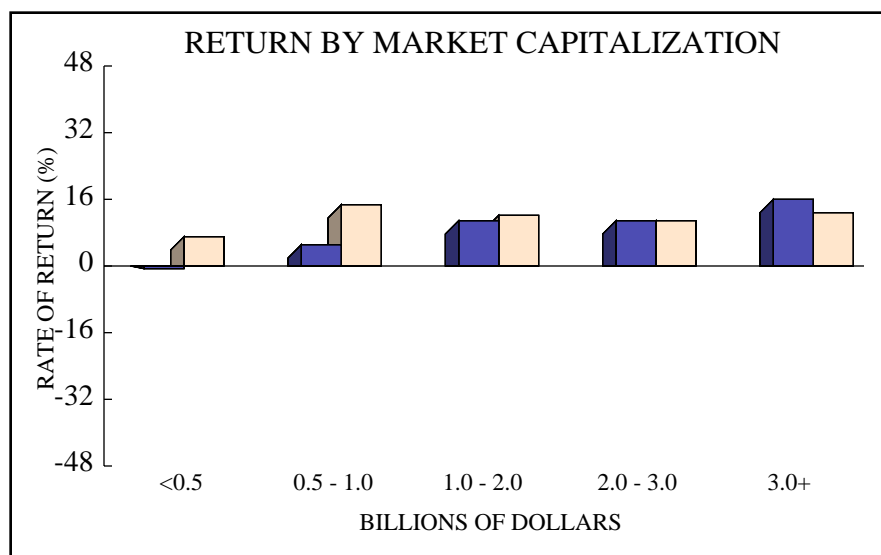
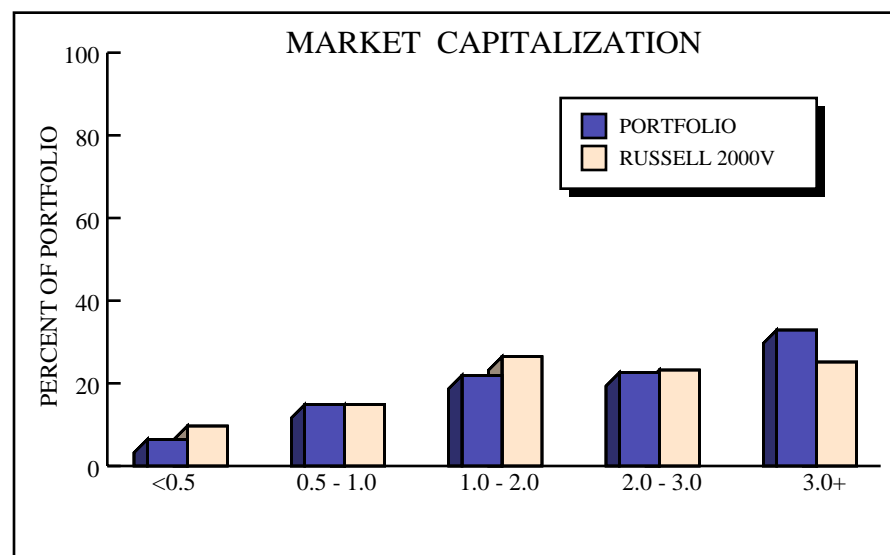
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 2000V



TOP TEN HOLDINGS



TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	TECH DATA CORP	\$ 1,321,120	1.71%	37.8%	Information Technology	\$ 5.1 B
2	TCF FINANCIAL CORP	1,141,358	1.47%	24.0%	Financials	7.2 B
3	SELECT MEDICAL HOLDINGS CORP	1,066,638	1.38%	40.9%	Health Care	3.1 B
4	TENET HEALTHCARE CORP	1,026,810	1.33%	71.9%	Health Care	4.0 B
5	DIODES INC	1,009,023	1.30%	40.4%	Information Technology	2.9 B
6	CSG SYSTEMS INTL INC	968,286	1.25%	0.6%	Information Technology	1.7 B
7	SABRA HEALTH CARE REIT INC	953,770	1.23%	-5.2%	Real Estate	4.3 B
8	SKYWEST INC	950,061	1.23%	12.8%	Industrials	3.3 B
9	ATKORE INTERNATIONAL GROUP I	934,626	1.21%	33.3%	Industrials	1.9 B
10	BUILDERS FIRSTSOURCE INC	899,514	1.16%	23.5%	Industrials	2.9 B

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

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's Polen Capital Management Focus Growth portfolio was valued at \$250,171,677, representing an increase of \$23,660,542 from the September quarter's ending value of \$226,511,135. Last quarter, the Fund posted withdrawals totaling \$227,628, which partially offset the portfolio's net investment return of \$23,888,170. Income receipts totaling \$362,926 plus net realized and unrealized capital gains of \$23,525,244 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the Polen Capital Management Focus Growth portfolio returned 10.6%, which was equal to the Russell 1000 Growth Index's return of 10.6% and ranked in the 25th percentile of the Large Cap Growth universe. Over the trailing year, the portfolio returned 38.9%, which was 2.5% above the benchmark's 36.4% return, ranking in the 13th percentile. Since September 2010, the portfolio returned 17.7% annualized and ranked in the 5th percentile. The Russell 1000 Growth returned an annualized 16.0% over the same period.

ASSET ALLOCATION

At the end of the fourth quarter, large cap equities comprised 98.1% of the total portfolio (\$245.3 million), while cash & equivalents totaled 1.9% (\$4.8 million).

EQUITY ANALYSIS

The Polen portfolio was represented in five of the eleven industry sectors last quarter. The Information Technology sector was heavily concentrated, making up just shy of half the allocation at quarter end. Communication Services and Consumer Discretionary were overweight compared to the Russell 1000 Growth index, while Financials and Health Care were about in line with index weightings.

Despite having very different allocations from the index, the portfolio finished the quarter in a tie with the Russell 1000 Growth return. The very tall Information Technology sector stumbled during the quarter, underperforming against its index counterpart, landing closer to the benchmark's total return. Favorable results in the Health Care sector added value, but it was walked back by weak returns in the portfolio's second largest sector, Consumer Discretionary.

EXECUTIVE SUMMARY**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year	Since 09/10
Total Portfolio - Gross	10.6	38.9	24.6	17.9	17.7
<i>LARGE CAP GROWTH RANK</i>	(25)	(13)	(7)	(3)	(5)
Total Portfolio - Net	10.5	38.4	24.1	17.4	17.1
Russell 1000G	10.6	36.4	20.5	14.6	16.0
Large Cap Equity - Gross	10.8	40.5	25.6	18.6	18.5
<i>LARGE CAP GROWTH RANK</i>	(21)	(10)	(3)	(2)	(2)
Russell 1000G	10.6	36.4	20.5	14.6	16.0

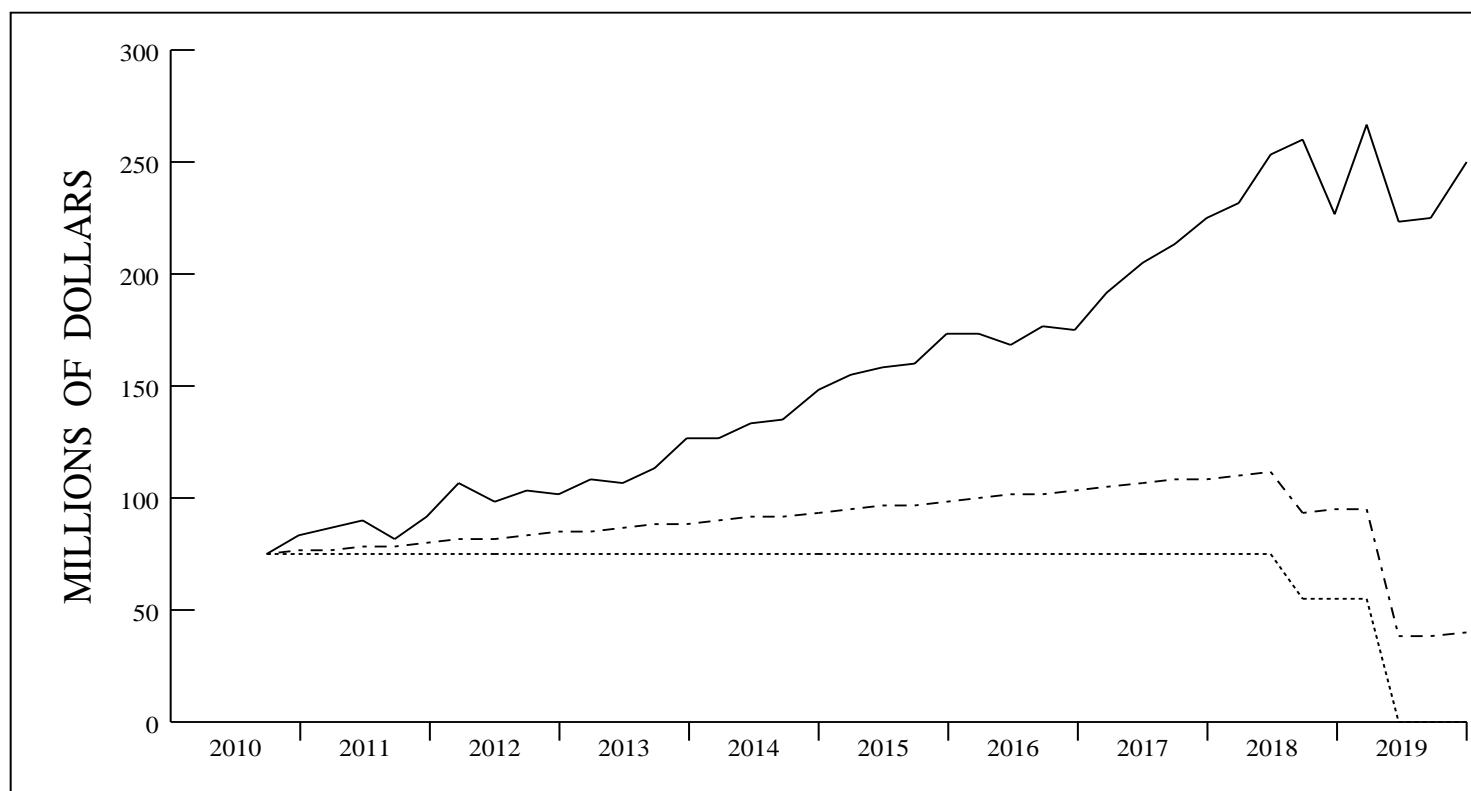
ASSET ALLOCATION

Large Cap Equity	98.1%	\$ 245,332,713
Cash	1.9%	4,838,964
Total Portfolio	100.0%	\$ 250,171,677

INVESTMENT RETURN

Market Value 9/2019	\$ 226,511,135
Contribs / Withdrawals	-227,628
Income	362,926
Capital Gains / Losses	23,525,244
Market Value 12/2019	\$ 250,171,677

INVESTMENT GROWTH

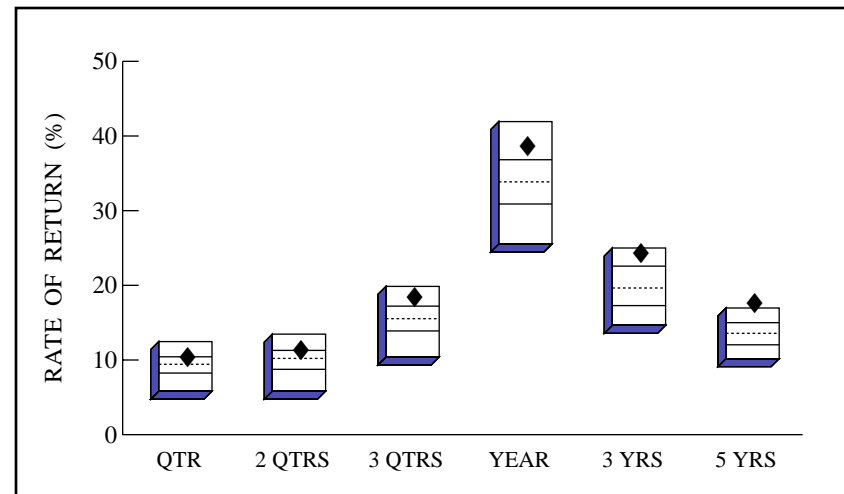
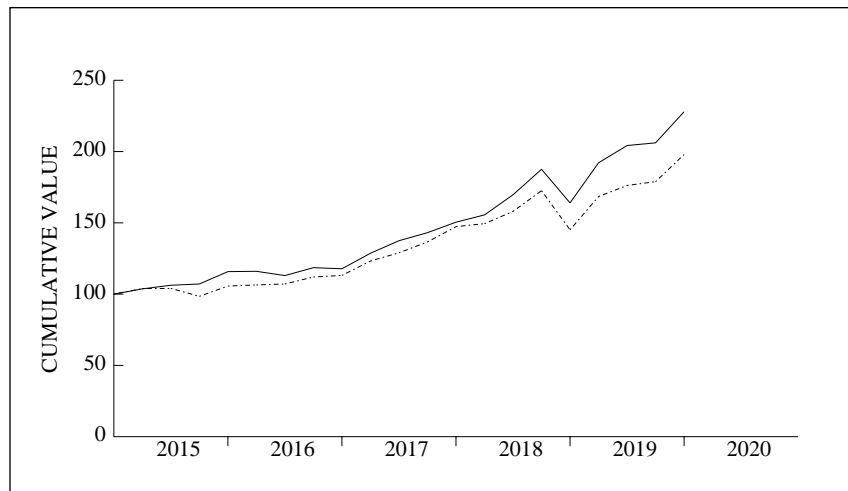


— ACTUAL RETURN
 - - - 5.25%
 0.0%

VALUE ASSUMING
 5.25% RETURN \$ 40,281,659

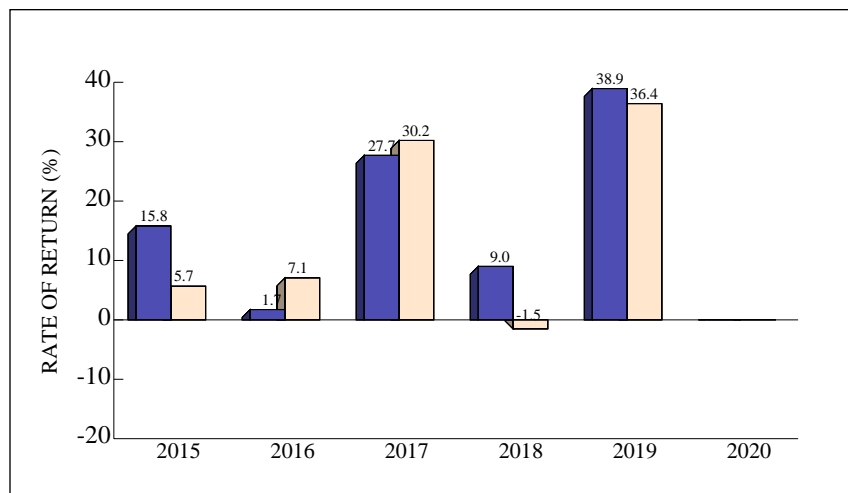
	LAST QUARTER	PERIOD 9/10 - 12/19
BEGINNING VALUE	\$ 226,511,135	\$ 75,827,096
NET CONTRIBUTIONS	-227,628	- 77,947,432
<u>INVESTMENT RETURN</u>	<u>23,888,170</u>	<u>252,292,013</u>
ENDING VALUE	\$ 250,171,677	\$ 250,171,677
INCOME	362,926	13,643,378
<u>CAPITAL GAINS (LOSSES)</u>	<u>23,525,244</u>	<u>238,648,635</u>
INVESTMENT RETURN	23,888,170	252,292,013

TOTAL RETURN COMPARISONS



■ ——— PORTFOLIO
■ - - - - RUSSELL 1000G

Large Cap Growth Universe

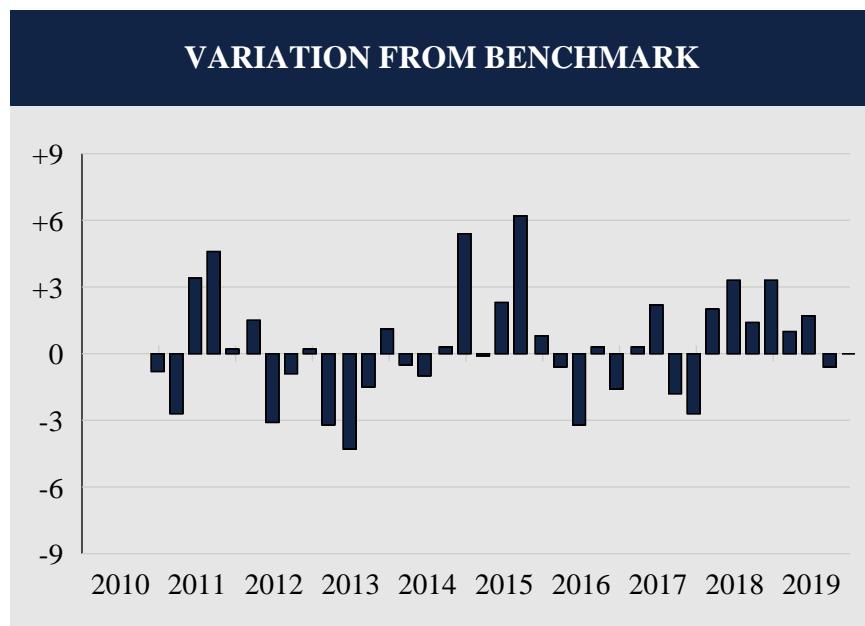


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	10.6	11.6	18.7	38.9	24.6	17.9
(RANK)	(25)	(22)	(10)	(13)	(7)	(3)
5TH %ILE	12.5	13.5	19.9	41.9	25.0	17.0
25TH %ILE	10.4	11.3	17.2	36.8	22.6	15.0
MEDIAN	9.4	10.2	15.5	33.9	19.7	13.6
75TH %ILE	8.3	8.8	13.9	30.9	17.3	12.0
95TH %ILE	5.8	5.8	10.4	25.5	14.7	10.2
Russ 1000G	10.6	12.3	17.5	36.4	20.5	14.6

Large Cap Growth Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

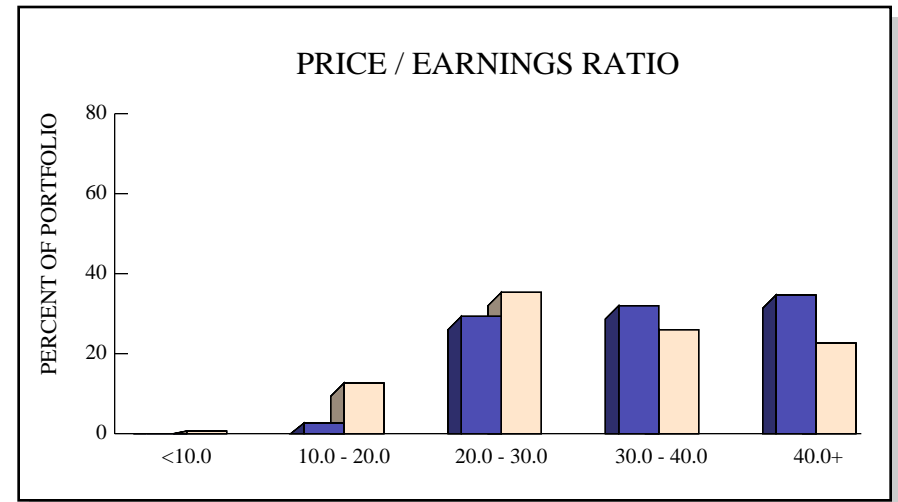
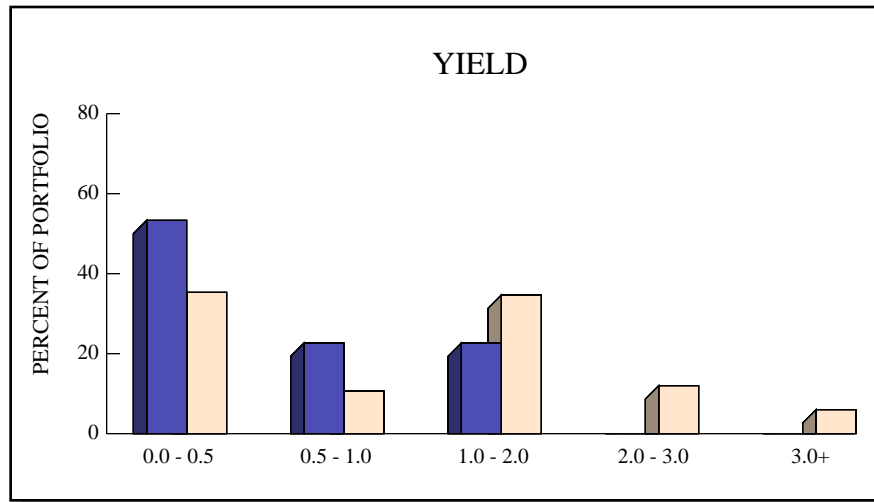
COMPARATIVE BENCHMARK: RUSSELL 1000 GROWTH



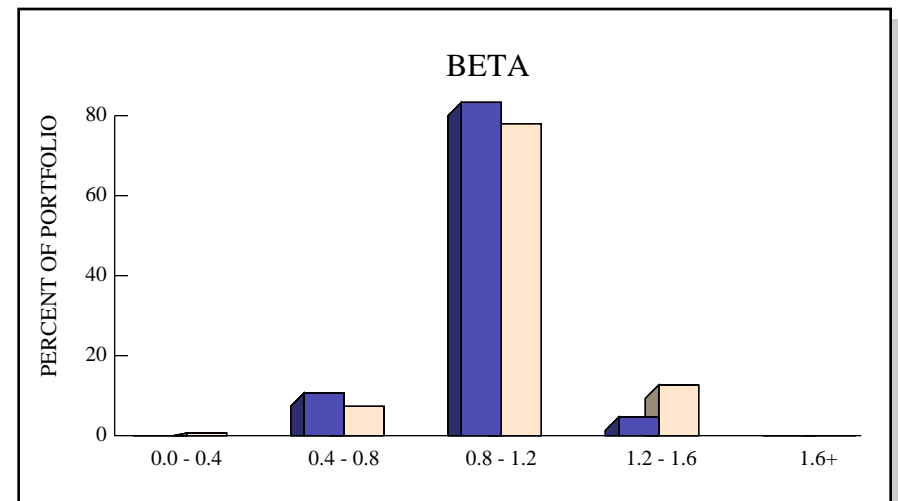
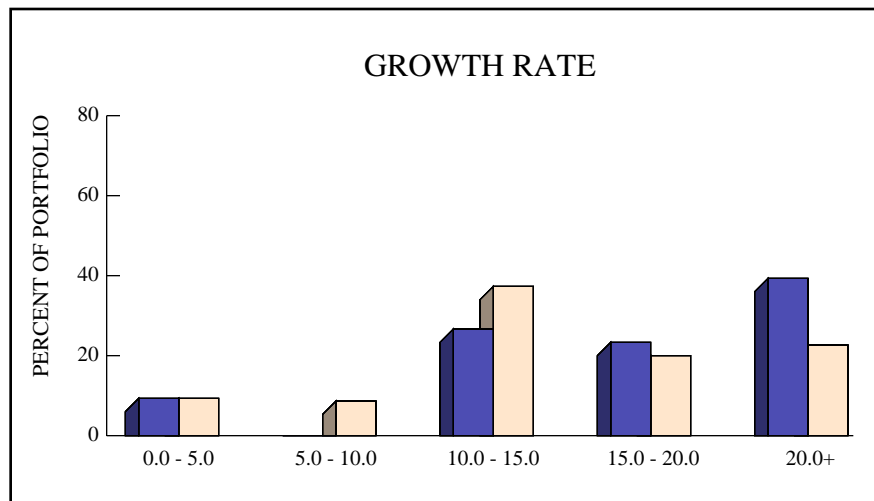
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
12/10	11.0	11.8	-0.8
3/11	3.3	6.0	-2.7
6/11	4.2	0.8	3.4
9/11	-8.5	-13.1	4.6
12/11	10.8	10.6	0.2
3/12	16.2	14.7	1.5
6/12	-7.1	-4.0	-3.1
9/12	5.2	6.1	-0.9
12/12	-1.1	-1.3	0.2
3/13	6.3	9.5	-3.2
6/13	-2.2	2.1	-4.3
9/13	6.6	8.1	-1.5
12/13	11.5	10.4	1.1
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
12/19	10.6	10.6	0.0

Total Quarters Observed	37
Quarters At or Above the Benchmark	21
Quarters Below the Benchmark	16
Batting Average	.568

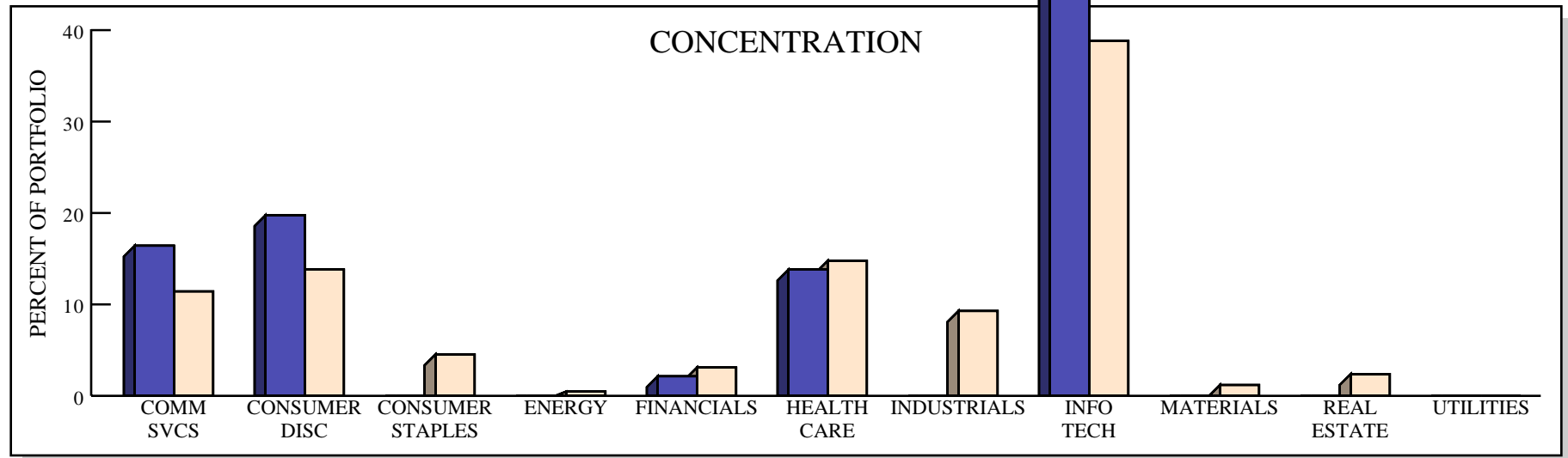
STOCK CHARACTERISTICS



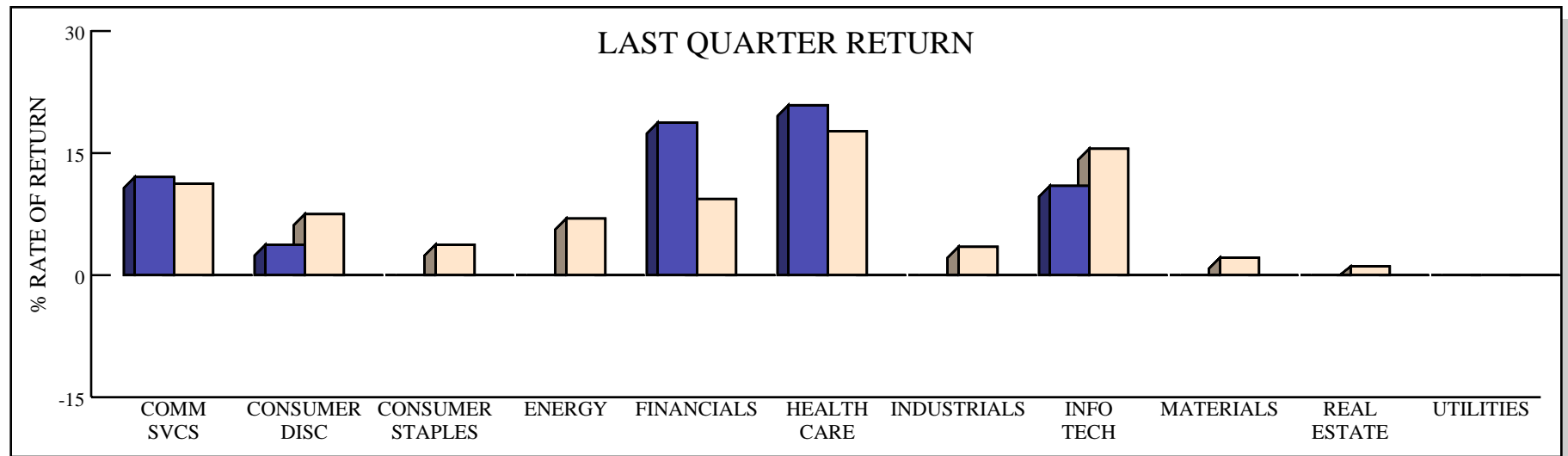
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	24	0.5%	23.0%	37.7	1.03
RUSSELL 1000G	530	1.1%	18.1%	34.6	1.03



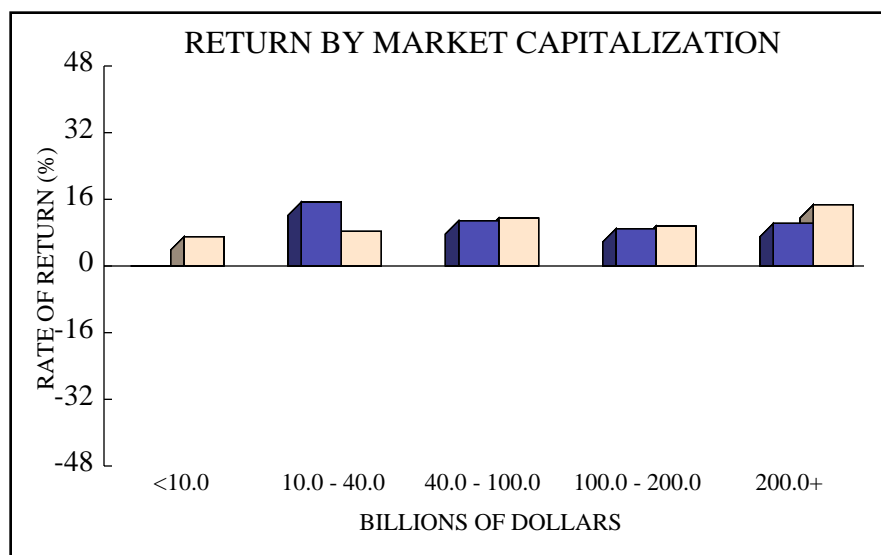
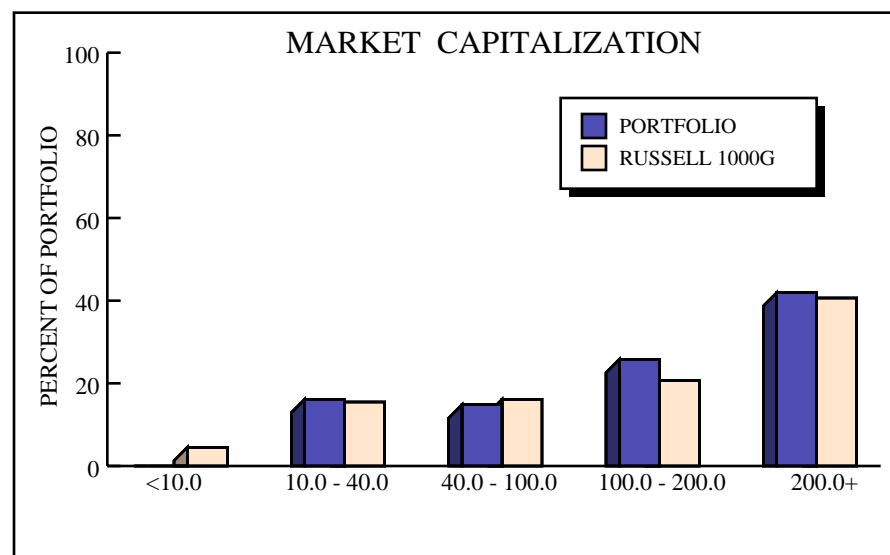
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 1000G



TOP TEN HOLDINGS



TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	\$ 23,410,407	9.54%	13.8%	Information Technology	\$ 1203.1 B
2	VISA INC-CLASS A SHARES	17,987,666	7.33%	9.4%	Information Technology	321.7 B
3	ALPHABET INC-CL C	17,555,073	7.16%	9.7%	Communication Services	459.3 B
4	FACEBOOK INC-CLASS A	17,528,145	7.14%	15.3%	Communication Services	493.9 B
5	ADOBE INC	15,292,630	6.23%	19.4%	Information Technology	159.7 B
6	ZOETIS INC	13,713,711	5.59%	6.4%	Health Care	63.0 B
7	MASTERCARD INC - A	13,364,590	5.45%	10.1%	Information Technology	297.8 B
8	ACCENTURE PLC-CL A	12,165,261	4.96%	9.9%	Information Technology	133.7 B
9	NIKE INC -CL B	10,372,725	4.23%	8.2%	Consumer Discretionary	126.2 B
10	DOLLAR GENERAL CORP	9,766,375	3.98%	-1.7%	Consumer Discretionary	39.7 B

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

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's Smith, Graham & Company Small Cap Value portfolio was valued at \$79,486,947, representing an increase of \$8,231,637 from the September quarter's ending value of \$71,255,310. Last quarter, the Fund posted withdrawals totaling \$124,441, which partially offset the portfolio's net investment return of \$8,356,078. Income receipts totaling \$263,222 plus net realized and unrealized capital gains of \$8,092,856 combined to produce the portfolio's net investment return.

RELATIVE PERFORMANCE

Total Fund

For the fourth quarter, the Smith, Graham & Company Small Cap Value portfolio returned 11.7%, which was 3.2% above the Russell 2000 Value Index's return of 8.5% and ranked in the 6th percentile of the Small Cap Value universe. Over the trailing year, the portfolio returned 33.8%, which was 11.4% above the benchmark's 22.4% return, ranking in the 6th percentile. Since December 2016, the portfolio returned 5.4% annualized and ranked in the 55th percentile. The Russell 2000 Value returned an annualized 4.8% over the same period.

ASSET ALLOCATION

At the end of the fourth quarter, small cap equities comprised 99.1% of the total portfolio (\$78.7 million), while cash & equivalents totaled 0.9% (\$742,108).

EQUITY ANALYSIS

The Smith, Graham portfolio was invested in ten of the eleven industry sectors in our analysis last quarter. Compared to the Russell 2000 Value Index, the Consumer Discretionary, Health Care, and Information Technology sectors were overweight, while Financials, Real Estate and Utilities were underweight. The Communication Services sector was not represented.

The portfolio was able to add value over the index by emphasizing the Information Technology sector over the Financials and Real Estate Sectors. Information Technology stocks produced strong returns in the small cap value space last quarter, while Financials and Real Estate moved at a slower pace. Despite having an expanded footprint in the Health Care sector, the portfolio was unable to capture all the upside that came from a handful of stocks that had stellar returns in the index.

EXECUTIVE SUMMARY**PERFORMANCE SUMMARY**

	Quarter	YTD /1Y	3 Year	5 Year
Total Portfolio - Gross	11.7	33.8	5.4	----
<i>SMALL CAP VALUE RANK</i>	(6)	(6)	(55)	----
Total Portfolio - Net	11.6	32.9	4.7	----
Russell 2000V	8.5	22.4	4.8	7.0
Small Cap Equity - Gross	12.0	34.3	5.5	----
<i>SMALL CAP VALUE RANK</i>	(5)	(5)	(52)	----
Russell 2000V	8.5	22.4	4.8	7.0

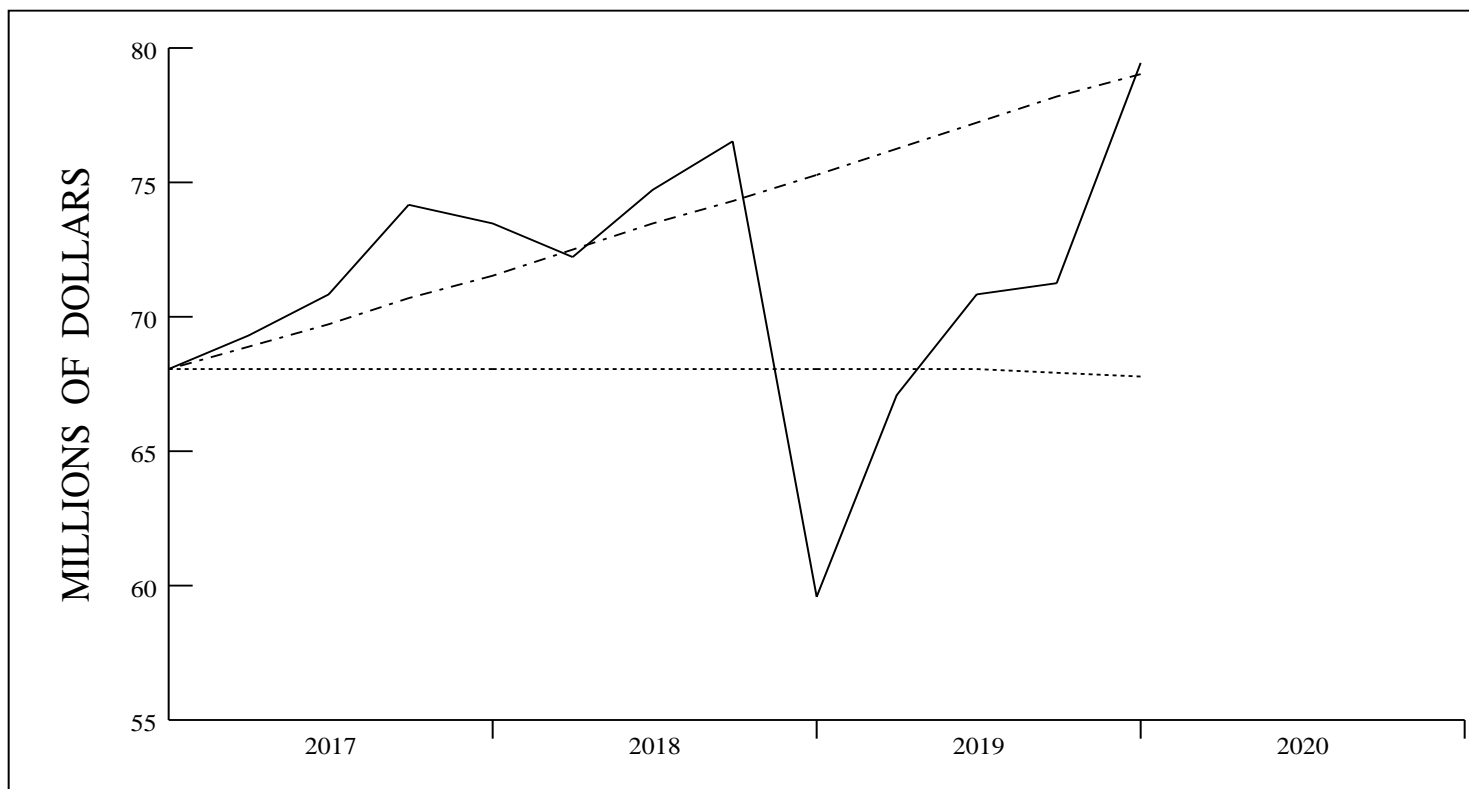
ASSET ALLOCATION

Small Cap	99.1%	\$ 78,744,839
Cash	0.9%	742,108
Total Portfolio	100.0%	\$ 79,486,947

INVESTMENT RETURN

Market Value 9/2019	\$ 71,255,310
Contribs / Withdrawals	-124,441
Income	263,222
Capital Gains / Losses	8,092,856
Market Value 12/2019	\$ 79,486,947

INVESTMENT GROWTH

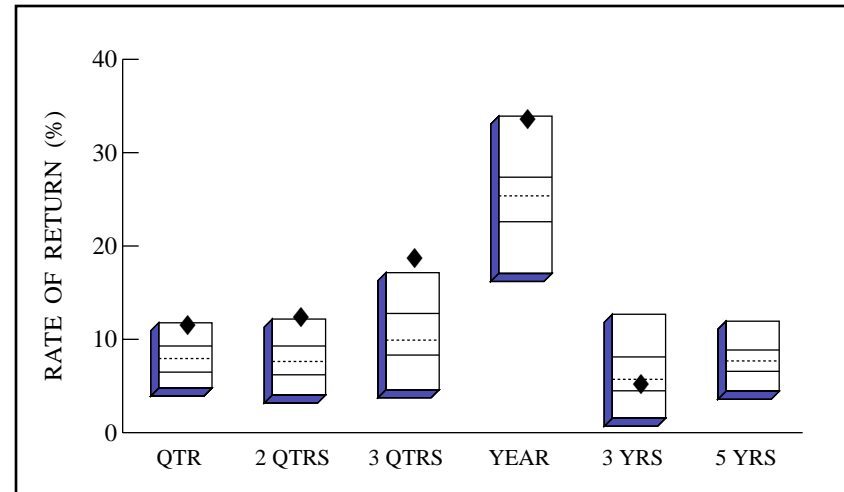
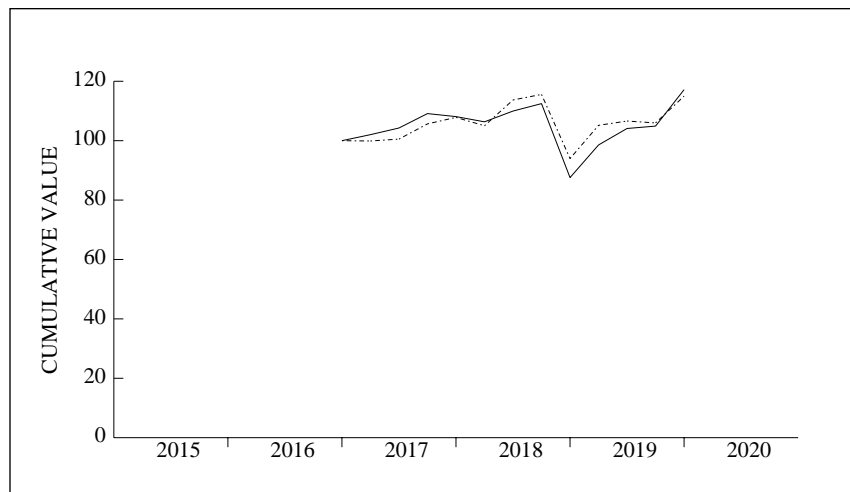


— ACTUAL RETURN
 - - - 5.25%
 0.0%

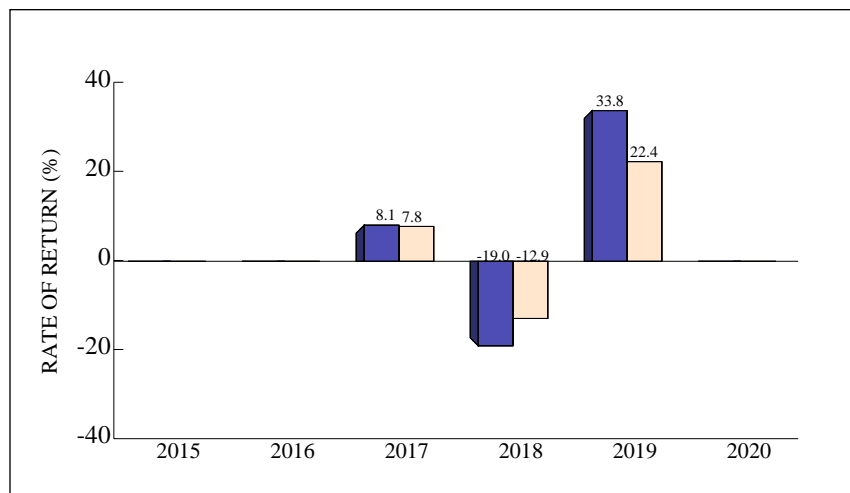
VALUE ASSUMING
 5.25% RETURN \$ 79,097,768

	LAST QUARTER	THREE YEARS
BEGINNING VALUE	\$ 71,255,310	\$ 68,056,392
NET CONTRIBUTIONS	-124,441	-246,398
<u>INVESTMENT RETURN</u>	<u>8,356,078</u>	<u>11,676,953</u>
ENDING VALUE	\$ 79,486,947	\$ 79,486,947
INCOME	263,222	3,172,152
<u>CAPITAL GAINS (LOSSES)</u>	<u>8,092,856</u>	<u>8,504,801</u>
INVESTMENT RETURN	8,356,078	11,676,953

TOTAL RETURN COMPARISONS



Small Cap Value Universe

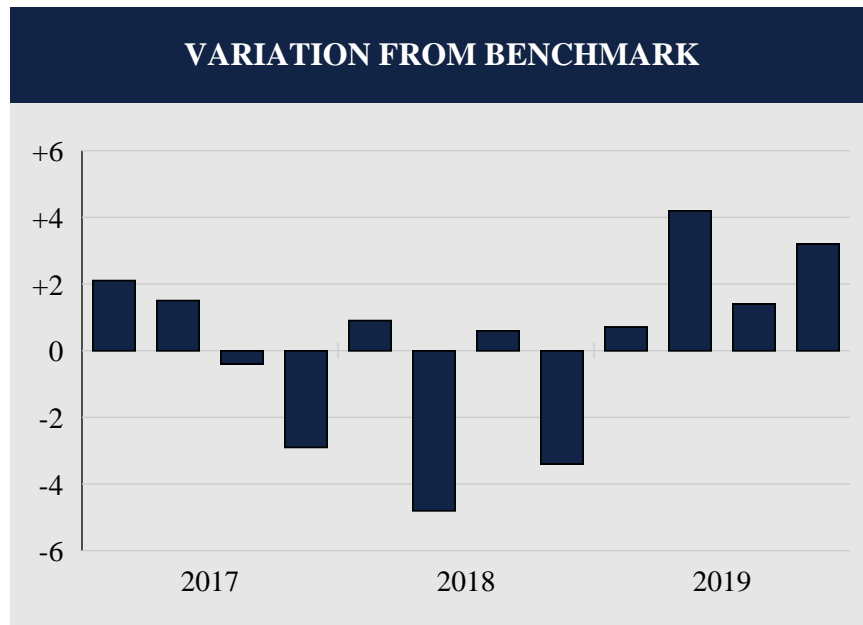


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	11.7	12.6	18.9	33.8	5.4	---
(RANK)	(6)	(4)	(3)	(6)	(55)	---
5TH %ILE	11.8	12.2	17.2	33.9	12.7	11.9
25TH %ILE	9.3	9.3	12.8	27.4	8.1	8.9
MEDIAN	8.0	7.6	9.9	25.4	5.7	7.7
75TH %ILE	6.5	6.2	8.3	22.6	4.5	6.6
95TH %ILE	4.8	4.0	4.6	17.1	1.6	4.4
Russ 2000V	8.5	7.9	9.3	22.4	4.8	7.0

Small Cap Value Universe

TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

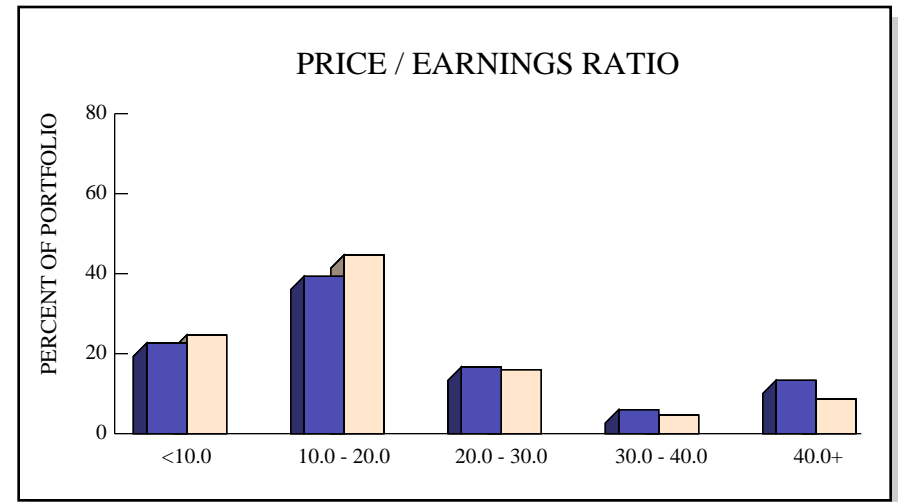
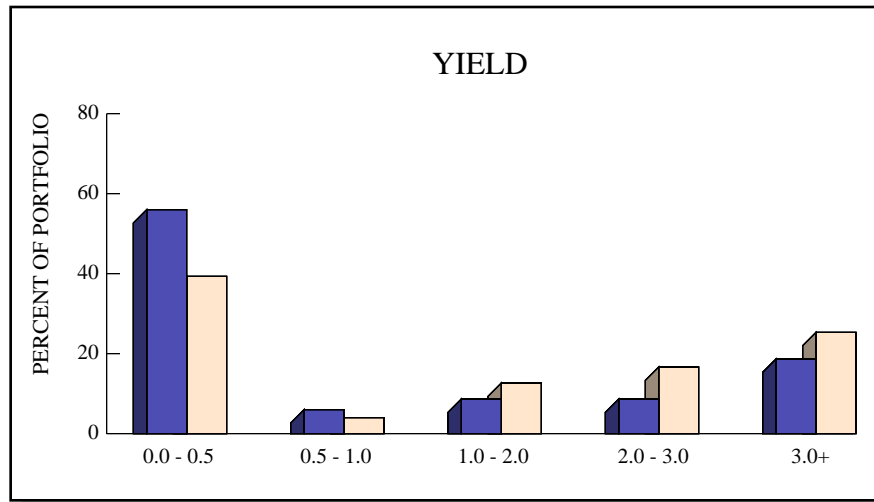
COMPARATIVE BENCHMARK: RUSSELL 2000 VALUE



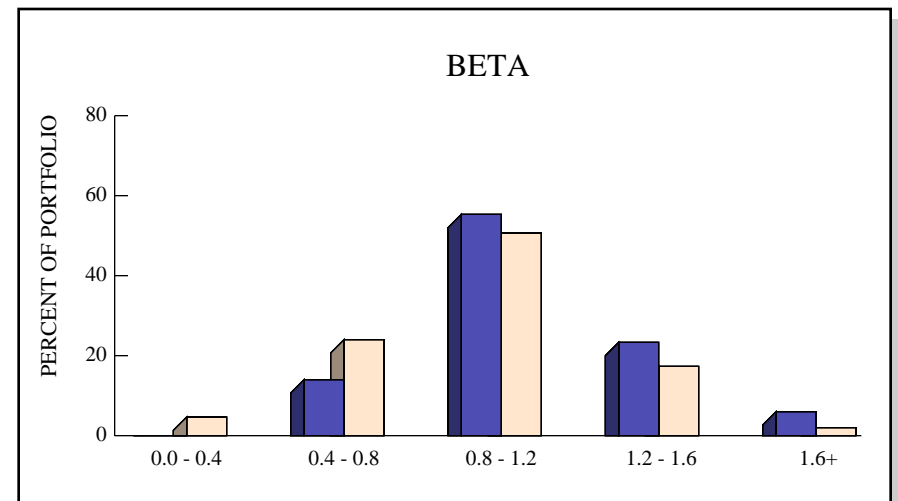
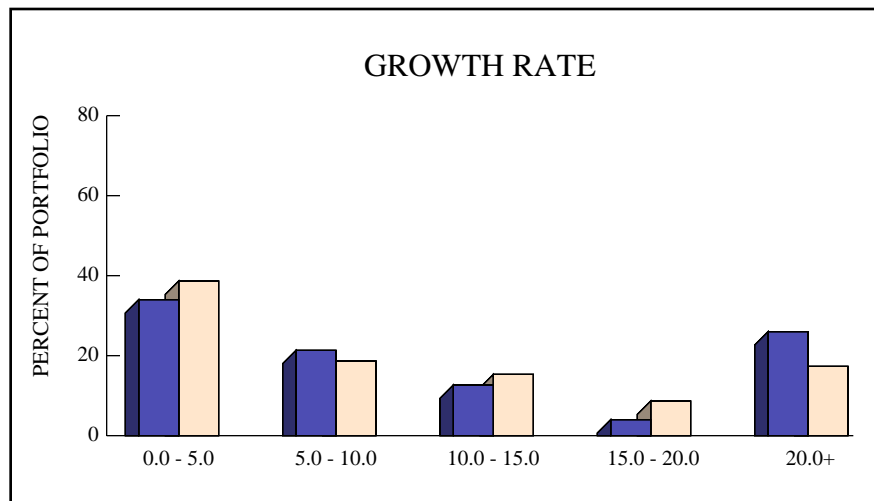
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
3/17	2.0	-0.1	2.1
6/17	2.2	0.7	1.5
9/17	4.7	5.1	-0.4
12/17	-0.9	2.0	-2.9
3/18	-1.7	-2.6	0.9
6/18	3.5	8.3	-4.8
9/18	2.2	1.6	0.6
12/18	-22.1	-18.7	-3.4
3/19	12.6	11.9	0.7
6/19	5.6	1.4	4.2
9/19	0.8	-0.6	1.4
12/19	11.7	8.5	3.2

Total Quarters Observed	12
Quarters At or Above the Benchmark	8
Quarters Below the Benchmark	4
Batting Average	.667

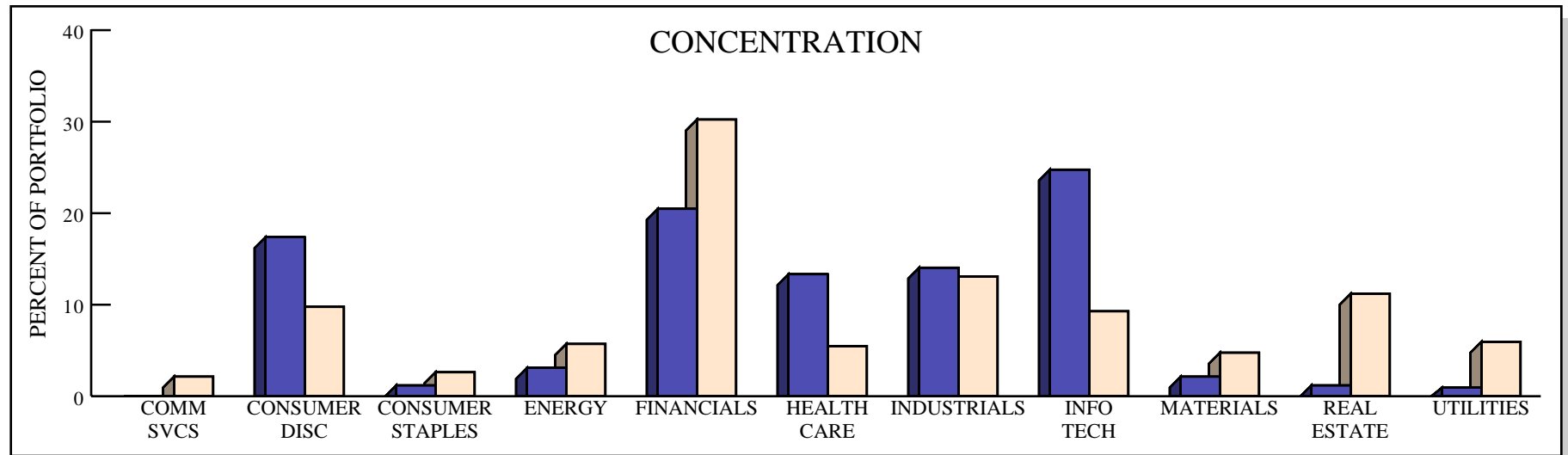
STOCK CHARACTERISTICS



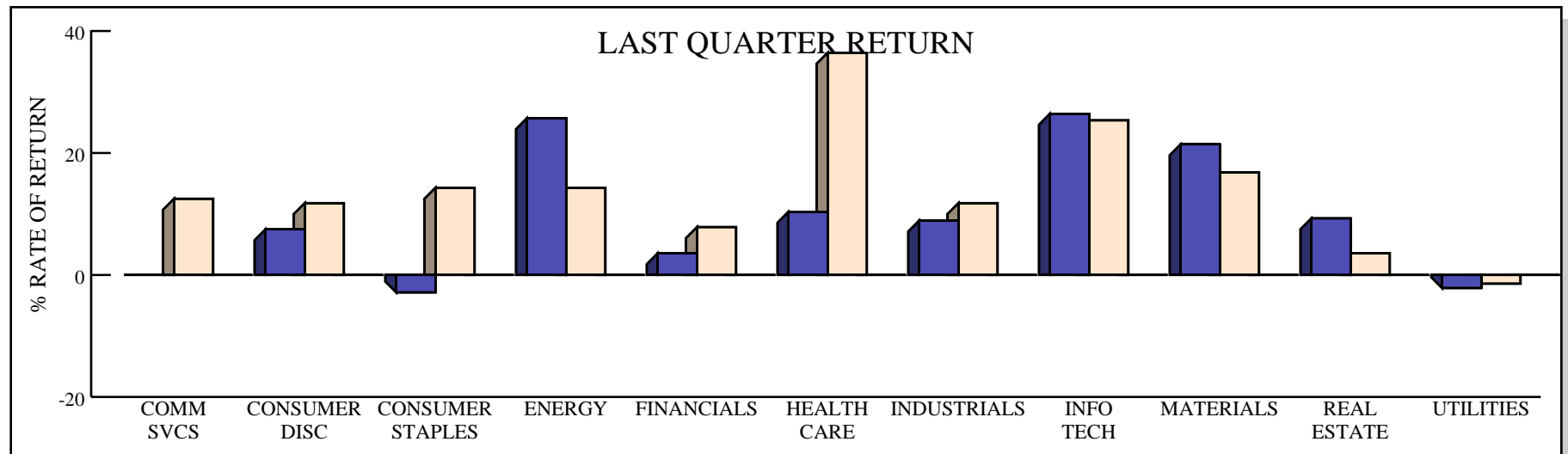
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	63	1.4%	8.5%	19.3	1.08
RUSSELL 2000V	1,401	2.1%	8.0%	16.9	0.94



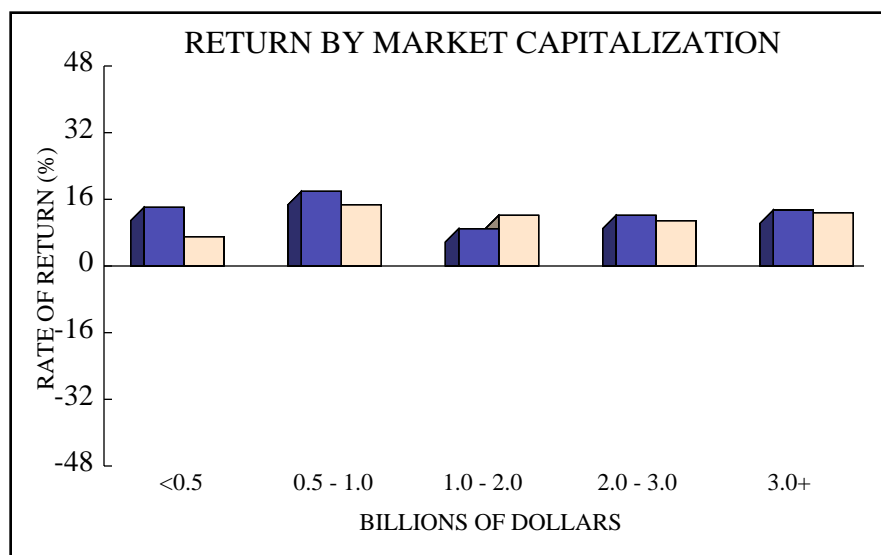
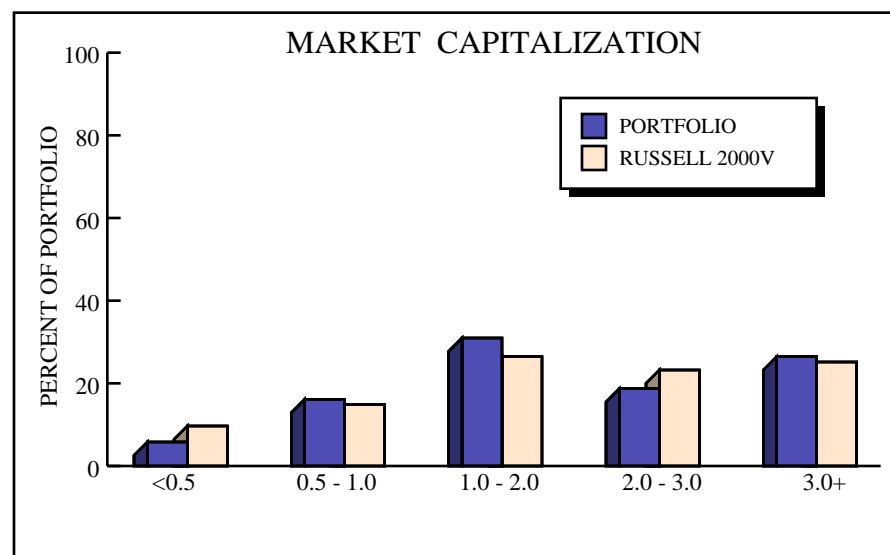
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 2000V



TOP TEN HOLDINGS



TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	SELECT MEDICAL HOLDINGS CORP	\$ 2,049,065	2.60%	40.9%	Health Care	\$ 3.1 B
2	CIRRUS LOGIC INC	2,017,809	2.56%	53.8%	Information Technology	4.8 B
3	SYNAPTICS INC	1,992,173	2.53%	64.6%	Information Technology	2.2 B
4	ULTRA CLEAN HOLDINGS INC	1,975,306	2.51%	60.4%	Information Technology	0.9 B
5	MAGELLAN HEALTH INC	1,780,970	2.26%	26.0%	Health Care	1.9 B
6	HIBBETT SPORTS INC	1,776,614	2.26%	22.5%	Consumer Discretionary	0.5 B
7	ATLAS AIR WORLDWIDE HOLDINGS	1,733,298	2.20%	9.3%	Industrials	0.7 B
8	MATRIX SERVICE CO	1,645,530	2.09%	33.5%	Energy	0.6 B
9	SELECTIVE INSURANCE GROUP	1,548,914	1.97%	-13.0%	Financials	3.9 B
10	INTEGER HOLDINGS CORP	1,534,765	1.95%	6.5%	Health Care	2.6 B

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

INVESTMENT RETURN

On December 31st, 2019, the Pennsylvania Municipal Retirement System's State Street Global Advisors portfolio was valued at \$1,006,771,013, representing an increase of \$56,112,274 from the September quarter's ending value of \$950,658,739. Last quarter, the Fund posted no net contributions or withdrawals, while posting \$56,112,274 in net investment returns. Since there were no income receipts for the fourth quarter, the portfolio's net investment return was the result of net realized and unrealized capital gains totaling \$56,112,274.

RELATIVE PERFORMANCE

Total Portfolio

During the fourth quarter, the State Street Global Advisors portfolio gained 5.9%, which was equal to the Shadow Index's return of 5.9% and ranked in the 39th percentile of the Balanced Fund universe. Over the trailing twelve-month period, the portfolio returned 14.9%, which was 0.3% less than the benchmark's 15.2% performance, and ranked in the 92nd percentile. Since March 1997, the portfolio returned 6.6% per annum. For comparison, the Shadow Index returned an annualized 7.3% over the same time frame.

Large Cap Equity

The large cap equity portion of the portfolio gained 9.1% in the fourth quarter; that return was equal to the S&P 500 Index's return of 9.1% and ranked in the 30th percentile of the Large Cap Core universe. Over the trailing twelve months, this segment returned 31.5%; that return was equal to the benchmark's 31.5% return, ranking in the 30th percentile. Since March 1997, this component returned 8.6% per annum. For comparison, the S&P 500 returned an annualized 8.6% over the same time frame.

Small Cap Equity

In the fourth quarter, the small cap equity segment returned 9.9%, which was equal to the Russell 2000 Index's return of 9.9% and ranked in the 24th percentile of the Small Cap universe. Over the trailing twelve months, the small cap equity portfolio returned 25.6%, which was 0.1% greater than the benchmark's 25.5% performance, and ranked in the 53rd percentile. Since March 1997, this component returned 8.6% annualized, matching the Russell 2000 for the same period.

International Equity

The international equity portfolio gained 7.9% last quarter, 0.1% above the MSCI World Ex US Index's return of 7.8% and ranked in the 84th percentile of the International Equity universe. Over the trailing twelve months, this component returned 23.0%; that return was 0.1% below the benchmark's 23.1% performance, and ranked in the 49th percentile.

Emerging Markets Equity

The emerging markets equity segment returned 11.8% during the fourth quarter; that return was 0.1% below the Blended Emerging Markets Index's return of 11.9% and ranked in the 42nd percentile of the Emerging Markets universe. Over the trailing twelve months, the emerging markets equity portfolio returned 18.4%, 0.5% less than the benchmark's 18.9% performance, ranking in the 63rd percentile.

Fixed Income

During the fourth quarter, the fixed income segment returned 0.2%, which was equal to the Bloomberg Barclays Aggregate Index's return of 0.2% and ranked in the 59th percentile of the Core Fixed Income universe. Over the trailing twelve months, the fixed income portfolio returned 8.8%, which was 0.1% greater than the benchmark's 8.7% return, and ranked in the 75th percentile. Since March 1997, this component returned 5.2% annualized. The Bloomberg Barclays Aggregate Index returned an annualized 5.2% over the same period.

ASSET ALLOCATION

On December 31st, 2019, large cap equities comprised 6.0% of the total portfolio (\$60.7 million), while small cap equities totaled 9.2% (\$92.1 million). The account's international equity segment was valued at \$174.3 million, representing 17.3% of the portfolio, while the emerging markets equity component's \$276.6 million totaled 27.5%. The remaining 40.0% was comprised of fixed income (\$403.1 million).

EXECUTIVE SUMMARY

PERFORMANCE SUMMARY

	Quarter	YTD /1Y	3 Year	5 Year	10 Year	Since 03/97
Total Portfolio - Gross	5.9	14.9	7.7	5.1	5.2	6.6
<i>BALANCED FUND RANK</i>	(39)	(92)	(74)	(92)	(95)	----
Total Portfolio - Net	5.9	14.9	7.6	5.0	5.1	6.5
Shadow Index	5.9	15.2	7.8	5.1	5.4	7.3
Large Cap Equity - Gross	9.1	31.5	15.2	11.7	13.5	8.6
<i>LARGE CAP CORE RANK</i>	(30)	(30)	(35)	(32)	(43)	----
S&P 500	9.1	31.5	15.3	11.7	13.5	8.6
Russell 3000	9.1	31.0	14.6	11.2	13.4	8.8
Russell 1000G	10.6	36.4	20.5	14.6	15.2	8.6
Russell 1000V	7.4	26.5	9.7	8.3	11.8	8.5
Small Cap Equity - Gross	9.9	25.6	8.6	8.3	11.9	8.6
<i>SMALL CAP RANK</i>	(24)	(53)	(51)	(59)	(78)	----
Russell 2000	9.9	25.5	8.6	8.2	11.8	8.6
Russell 2000G	11.4	28.4	12.5	9.3	13.0	7.7
Russell 2000V	8.5	22.4	4.8	7.0	10.6	9.2
International Equity - Gross	7.9	23.0	9.8	5.8	----	----
<i>INTERNATIONAL EQUITY RANK</i>	(84)	(49)	(64)	(67)	----	----
MSCI World Ex US	7.8	23.1	9.9	6.0	5.9	5.7
S&P BMI Ex US	8.7	22.8	10.1	6.4	6.4	6.2
MSCI EAFE	8.2	22.7	10.1	6.2	6.0	5.4
Emerging Markets Equity - Gross	11.8	18.4	11.6	5.6	3.5	----
<i>EMERGING MARKETS RANK</i>	(42)	(63)	(45)	(57)	(91)	----
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	6.2
Fixed Income - Gross	0.2	8.8	4.1	3.1	3.8	5.2
<i>CORE FIXED INCOME RANK</i>	(59)	(75)	(83)	(86)	(90)	----
Aggregate Index	0.2	8.7	4.0	3.1	3.8	5.2
Gov/Credit	0.0	9.7	4.3	3.2	4.0	5.3

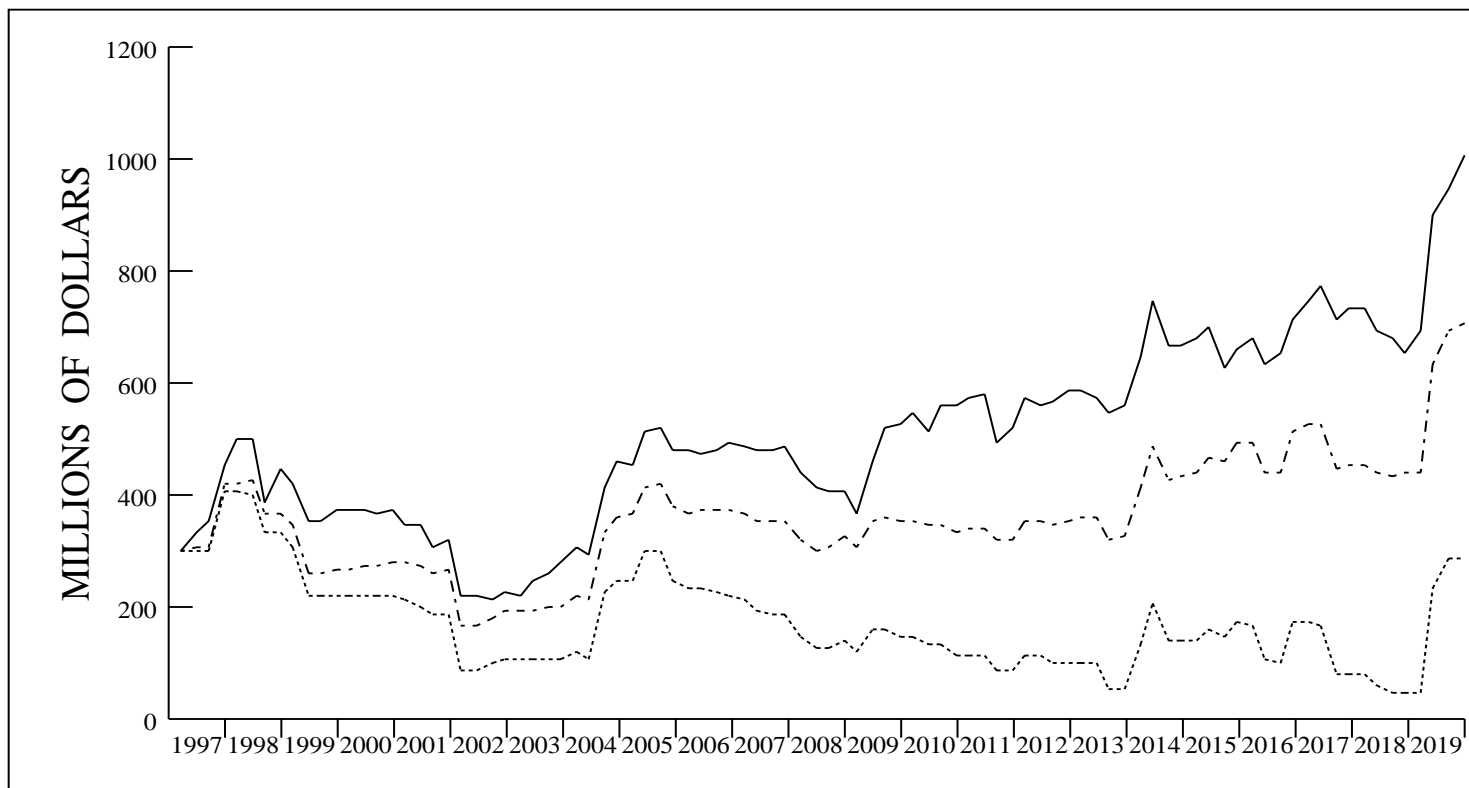
ASSET ALLOCATION

Large Cap Equity	6.0%	\$ 60,655,056
Small Cap	9.2%	92,132,296
Int'l Equity	17.3%	174,294,490
Emerging Markets	27.5%	276,636,099
Fixed Income	40.0%	403,053,072
Total Portfolio	100.0%	1,006,771,013

INVESTMENT RETURN

Market Value 9/2019	\$ 950,658,739
Contribs / Withdrawals	0
Income	0
Capital Gains / Losses	56,112,274
Market Value 12/2019	\$ 1,006,771,013

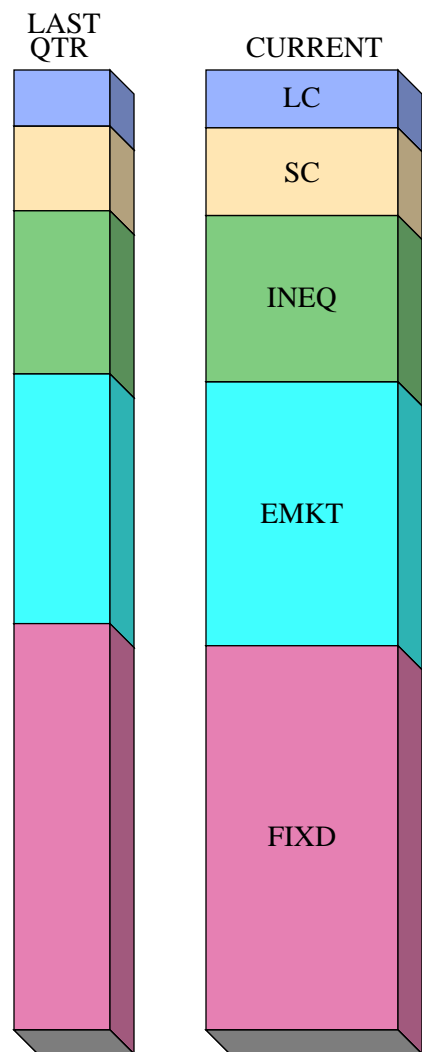
INVESTMENT GROWTH



— ACTUAL RETURN
 - - - 5.25%
 . . . 0.0%

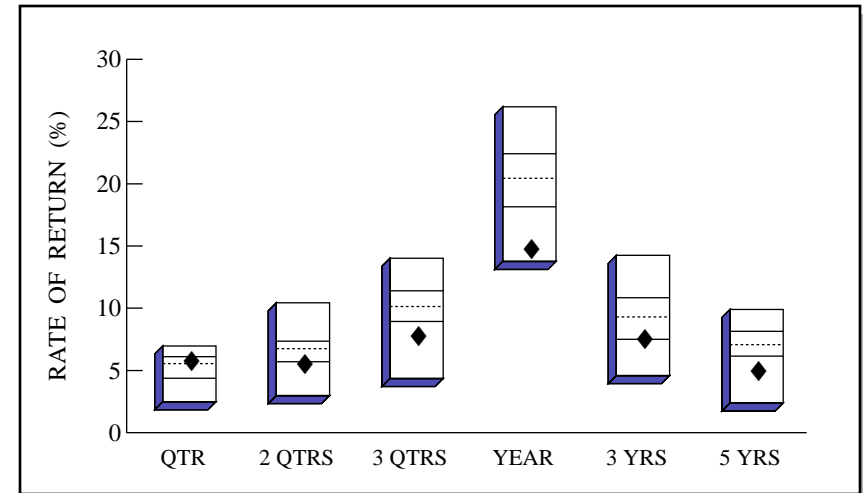
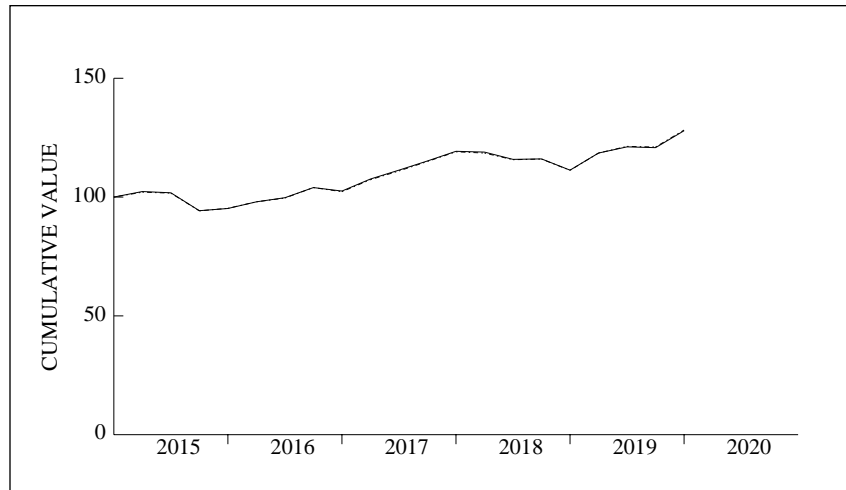
VALUE ASSUMING
 5.25% RETURN \$ 708,992,086

	LAST QUARTER	PERIOD 3/97 - 12/19
BEGINNING VALUE	\$ 950,658,739	\$ 304,615,360
NET CONTRIBUTIONS	0	- 17,209,710
<u>INVESTMENT RETURN</u>	<u>56,112,274</u>	<u>719,365,363</u>
ENDING VALUE	\$ 1,006,771,013	\$ 1,006,771,013
INCOME	0	7,438
<u>CAPITAL GAINS (LOSSES)</u>	<u>56,112,274</u>	<u>719,357,925</u>
INVESTMENT RETURN	56,112,274	719,365,363

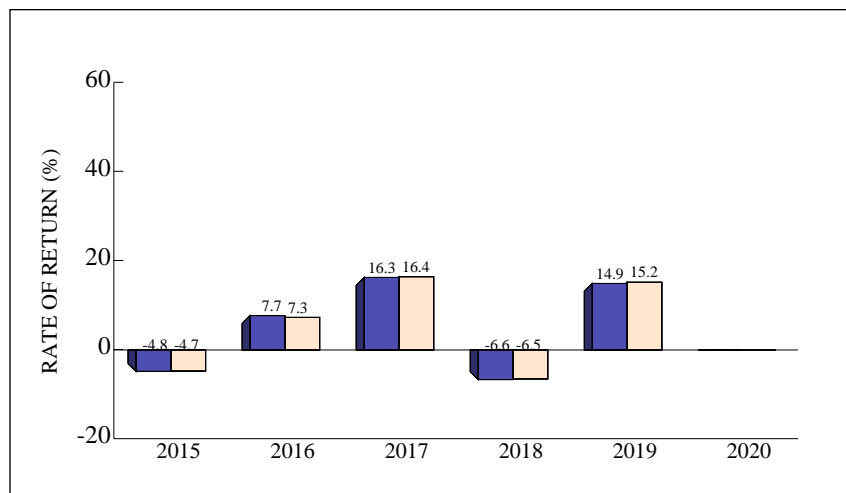


	<u>VALUE</u>	<u>PERCENT</u>
■ LARGE CAP EQUITY	\$ 60,655,056	6.0%
■ SMALL CAP EQUITY	92,132,296	9.2%
■ INTERNATIONAL EQUITY	174,294,490	17.3%
■ EMERGING MARKETS EQUITY	276,636,099	27.5%
■ FIXED INCOME	403,053,072	40.0%
TOTAL FUND	\$ 1,006,771,013	100.0%

TOTAL RETURN COMPARISONS



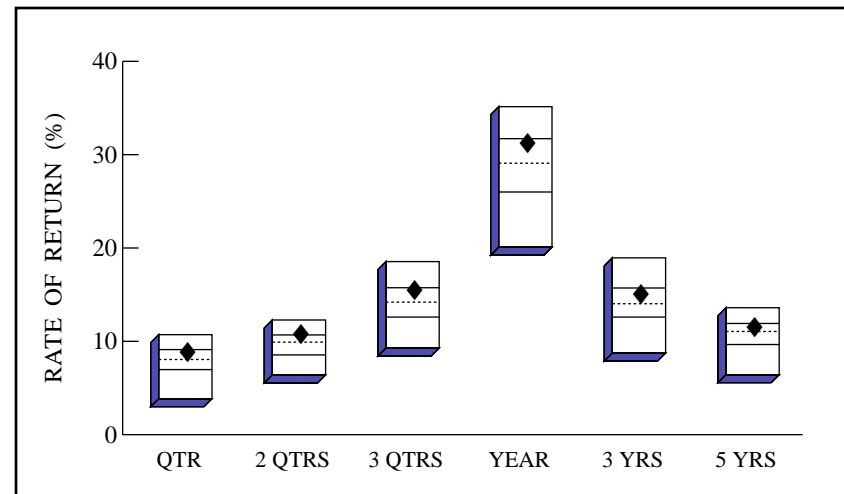
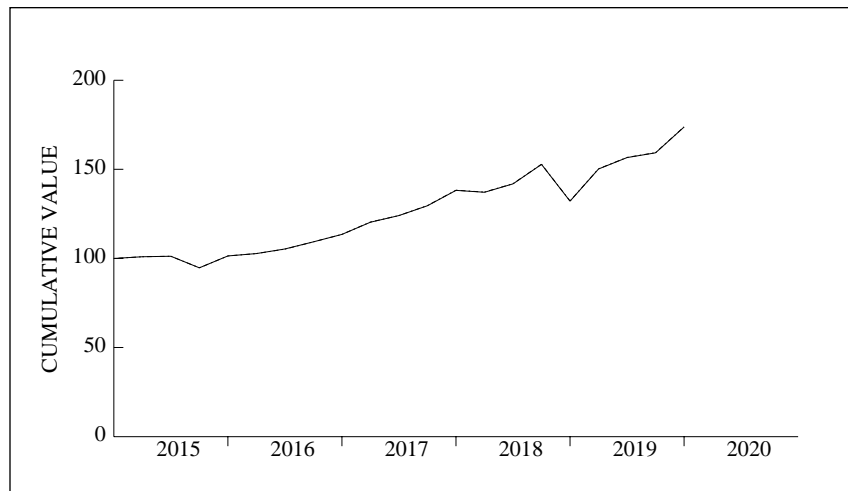
Balanced Fund Universe



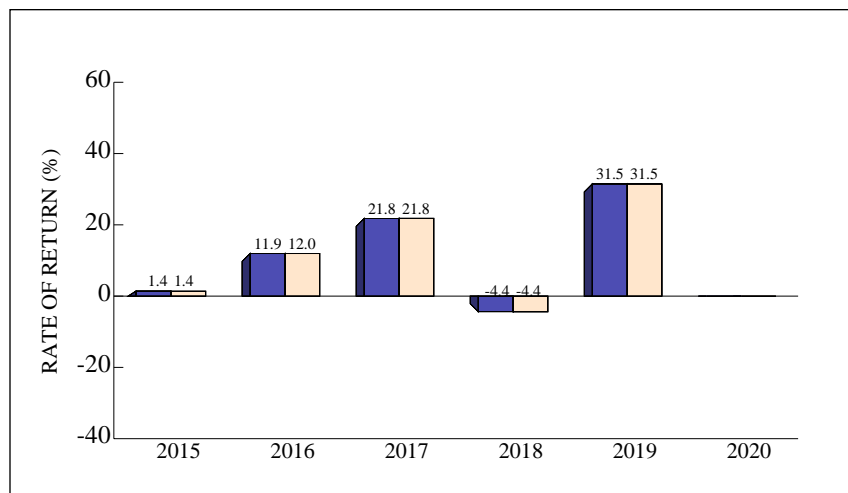
	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	5.9	5.7	7.9	14.9	7.7	5.1
(RANK)	(39)	(77)	(83)	(92)	(74)	(92)
5TH %ILE	7.0	10.4	14.0	26.2	14.2	9.9
25TH %ILE	6.1	7.4	11.4	22.4	10.8	8.1
MEDIAN	5.6	6.8	10.1	20.5	9.3	7.1
75TH %ILE	4.4	5.7	8.9	18.2	7.5	6.1
95TH %ILE	2.5	3.0	4.3	13.8	4.6	2.4
<i>Shadow Idx</i>	<i>5.9</i>	<i>5.7</i>	<i>8.2</i>	<i>15.2</i>	<i>7.8</i>	<i>5.1</i>

Balanced Fund Universe

LARGE CAP EQUITY RETURN COMPARISONS



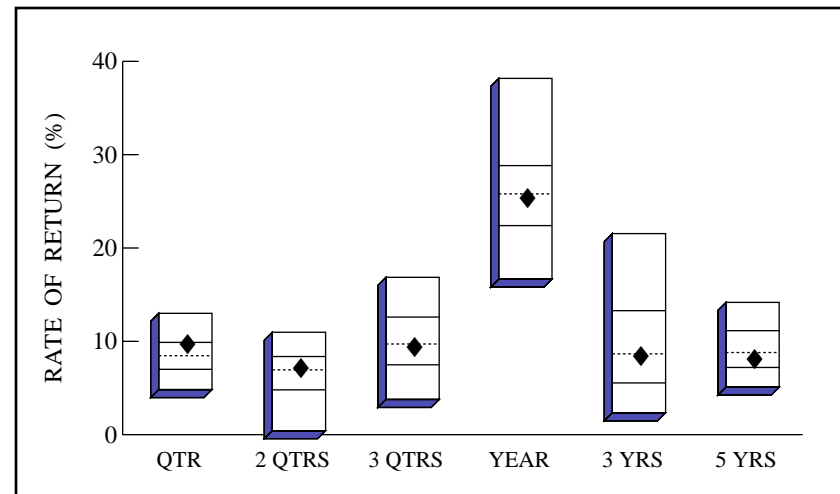
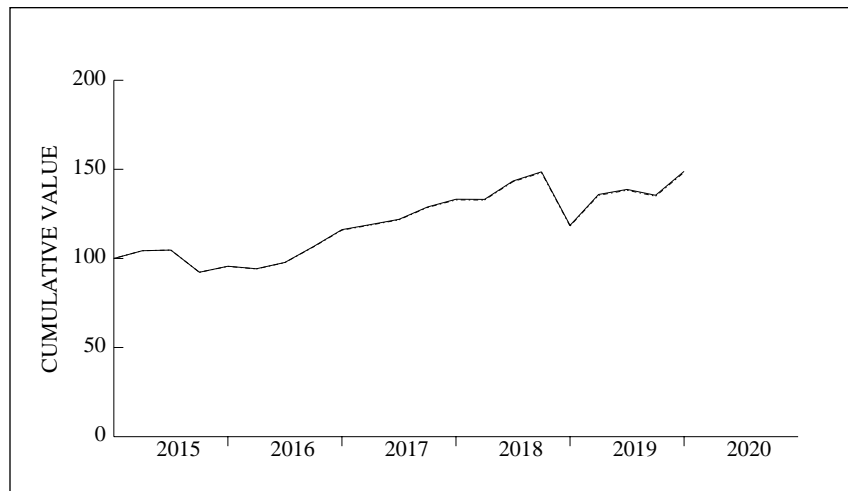
Large Cap Core Universe



	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	9.1	10.9	15.7	31.5	15.2	11.7
(RANK)	(30)	(22)	(29)	(30)	(35)	(32)
5TH %ILE	10.7	12.3	18.5	35.2	19.0	13.6
25TH %ILE	9.1	10.7	15.8	31.7	15.7	11.9
MEDIAN	8.1	9.9	14.2	29.1	14.0	11.1
75TH %ILE	7.0	8.5	12.6	26.0	12.6	9.7
95TH %ILE	3.9	6.4	9.3	20.1	8.7	6.4
S&P 500	9.1	10.9	15.7	31.5	15.3	11.7

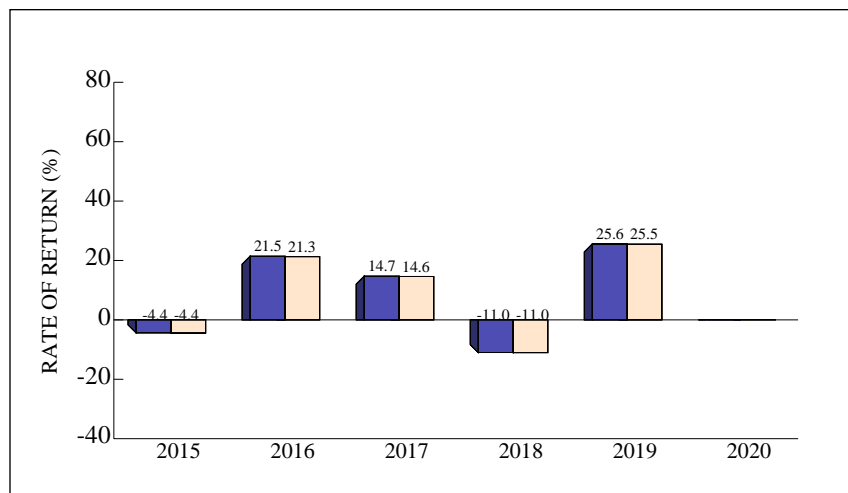
Large Cap Core Universe

SMALL CAP EQUITY RETURN COMPARISONS



Small Cap Universe

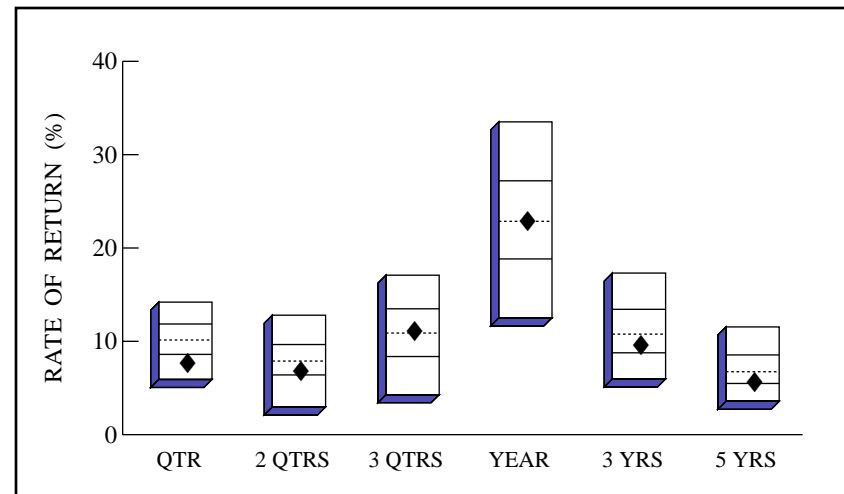
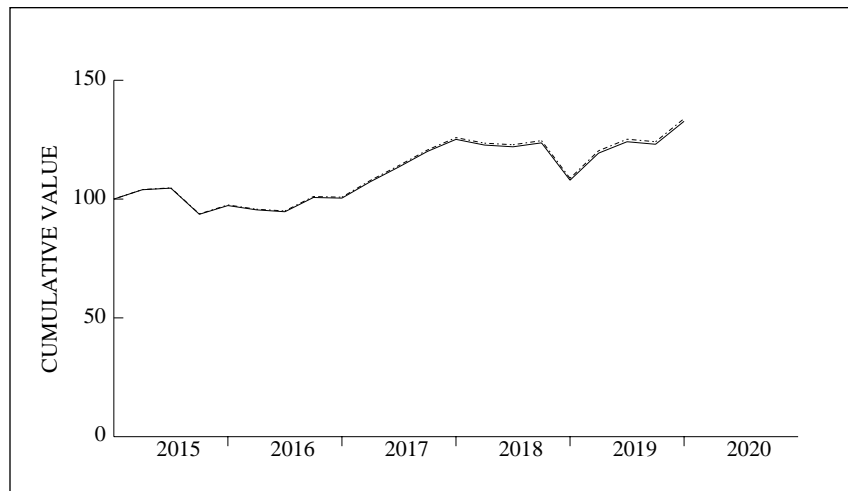
■	—	PORTFOLIO
■	- - - -	RUSSELL 2000



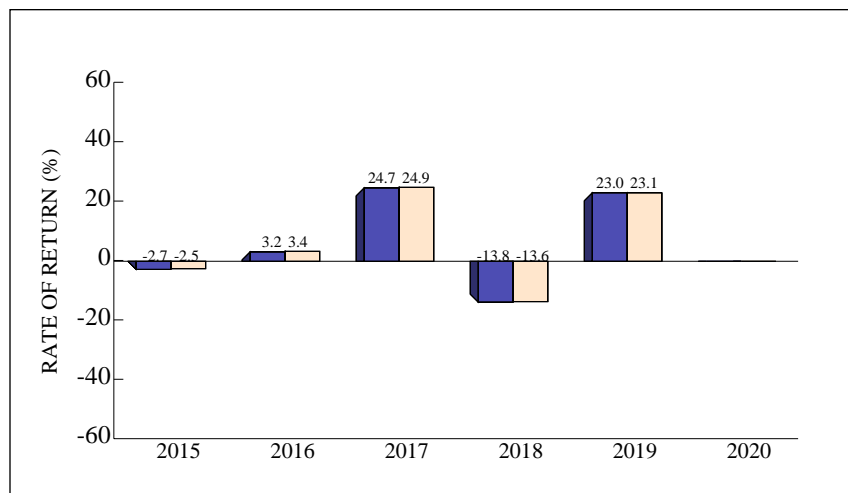
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	9.9	7.3	9.6	25.6	8.6	8.3
(RANK)	(24)	(43)	(52)	(53)	(51)	(59)
5TH %ILE	13.0	11.0	16.9	38.2	21.5	14.2
25TH %ILE	9.9	8.4	12.6	28.8	13.3	11.2
MEDIAN	8.5	6.9	9.7	25.8	8.7	8.8
75TH %ILE	7.0	4.8	7.5	22.4	5.6	7.2
95TH %ILE	4.8	0.4	3.8	16.7	2.3	5.1
<i>Russ 2000</i>	<i>9.9</i>	<i>7.3</i>	<i>9.5</i>	<i>25.5</i>	<i>8.6</i>	<i>8.2</i>

Small Cap Universe

INTERNATIONAL EQUITY RETURN COMPARISONS



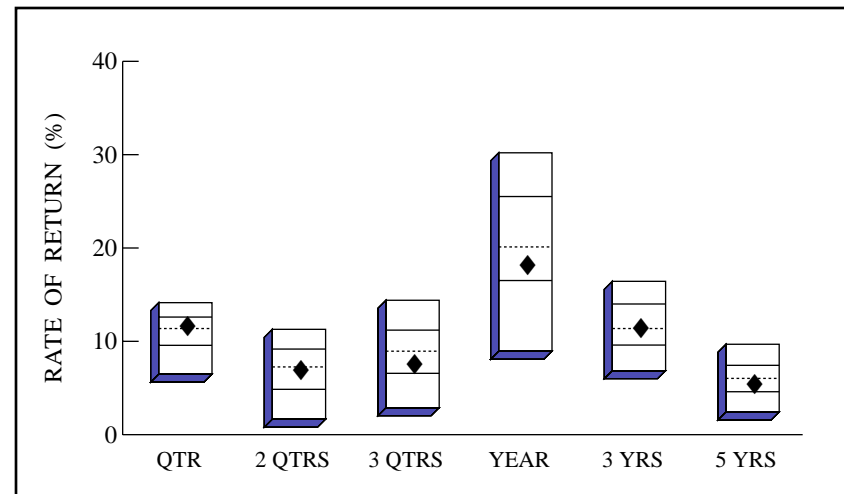
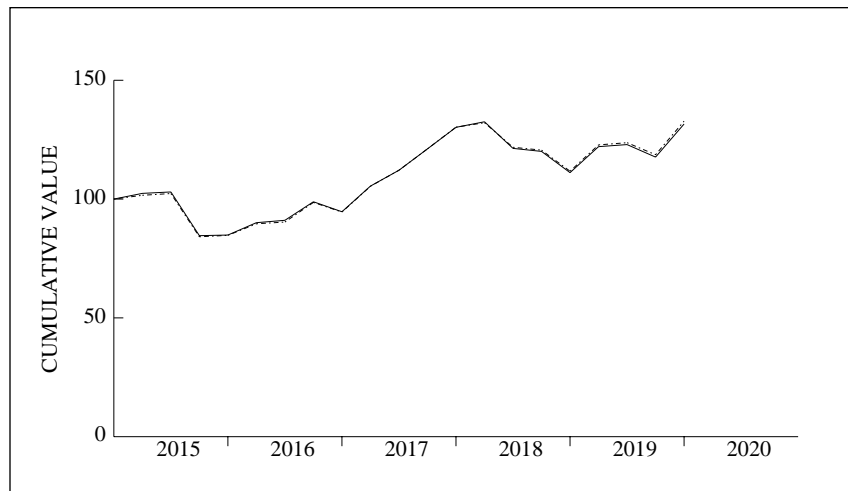
International Equity Universe



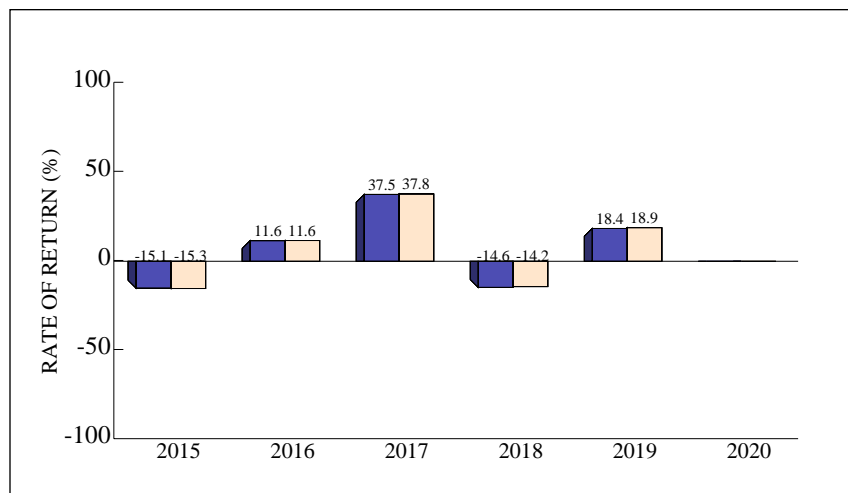
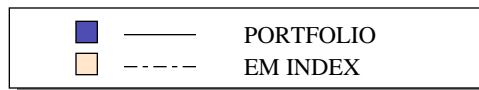
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	7.9	7.0	11.3	23.0	9.8	5.8
(RANK)	(84)	(67)	(47)	(49)	(64)	(67)
5TH %ILE	14.2	12.8	17.1	33.5	17.3	11.6
25TH %ILE	11.9	9.7	13.5	27.2	13.4	8.5
MEDIAN	10.1	7.9	10.9	22.9	10.8	6.7
75TH %ILE	8.6	6.4	8.4	18.8	8.8	5.5
95TH %ILE	5.9	3.0	4.3	12.5	6.0	3.6
World Ex Us	7.8	6.9	11.2	23.1	9.9	6.0

International Equity Universe

EMERGING MARKETS EQUITY RETURN COMPARISONS



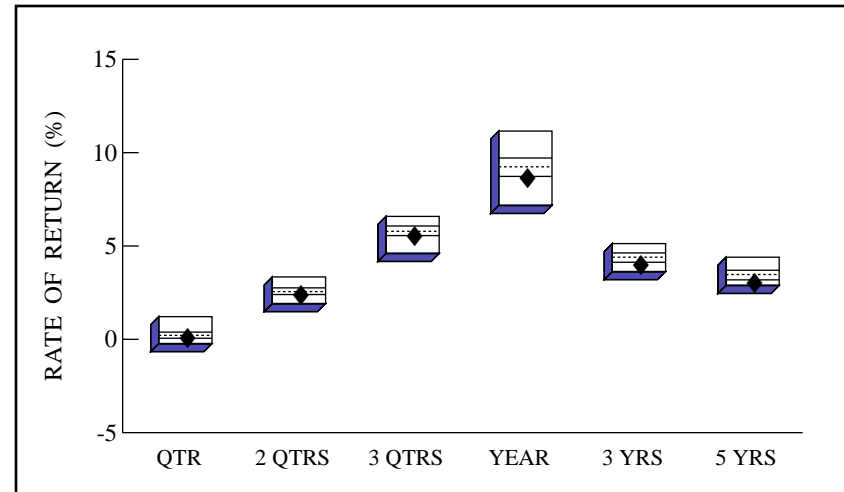
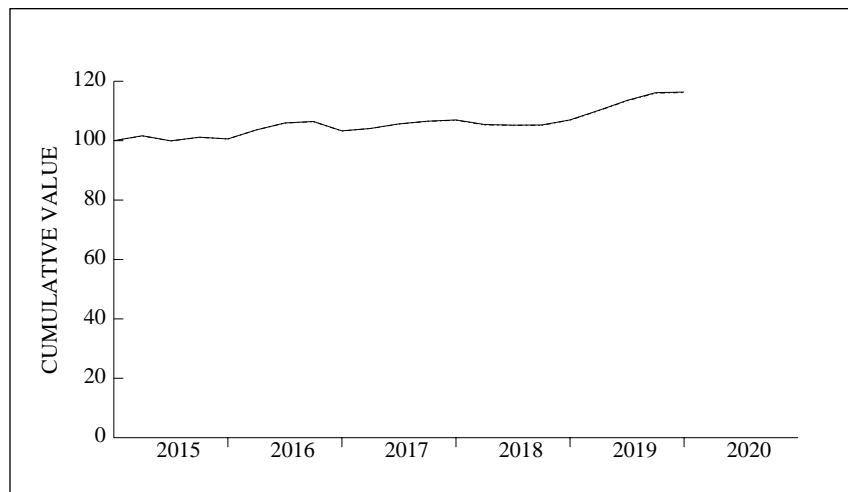
Emerging Markets Universe



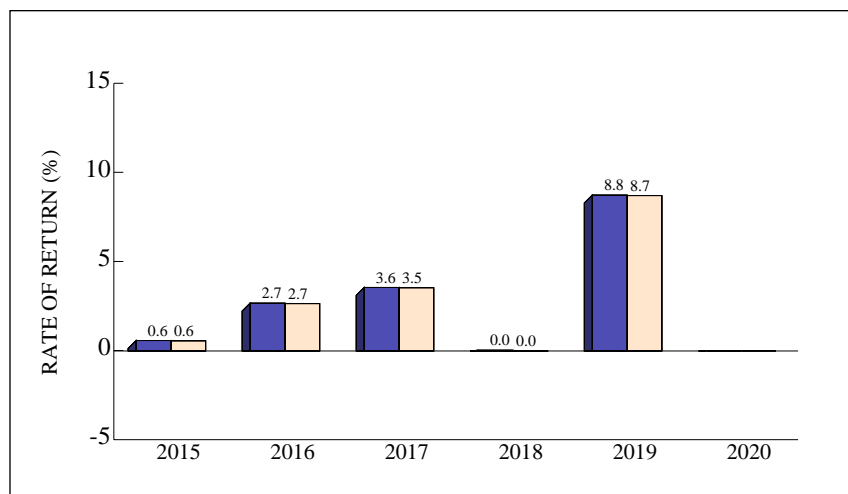
	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	11.8	7.1	7.8	18.4	11.6	5.6
(RANK)	(42)	(55)	(67)	(63)	(45)	(57)
5TH %ILE	14.2	11.3	14.4	30.2	16.4	9.7
25TH %ILE	12.6	9.2	11.2	25.5	14.0	7.4
MEDIAN	11.4	7.3	9.0	20.1	11.4	6.0
75TH %ILE	9.6	4.9	6.6	16.5	9.6	4.6
95TH %ILE	6.5	1.7	2.9	8.9	6.9	2.4
EM Index	11.9	7.3	8.1	18.9	12.0	5.8

Emerging Markets Universe

FIXED INCOME RETURN COMPARISONS



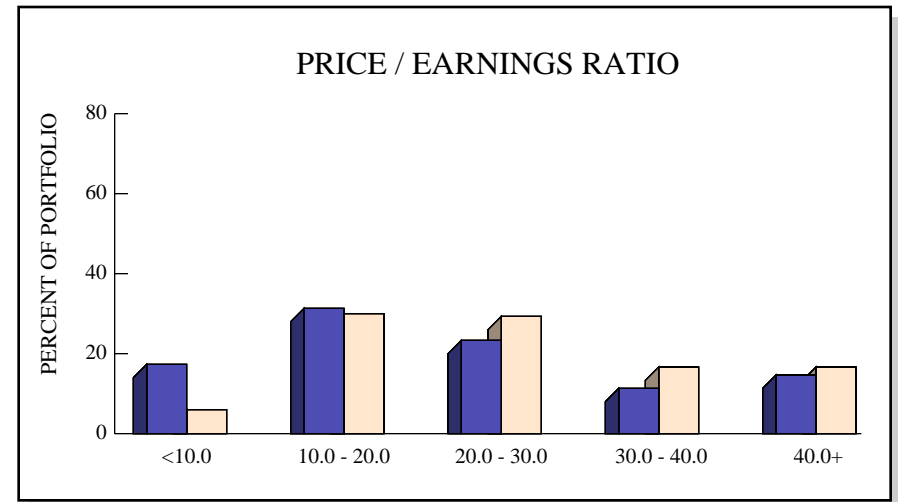
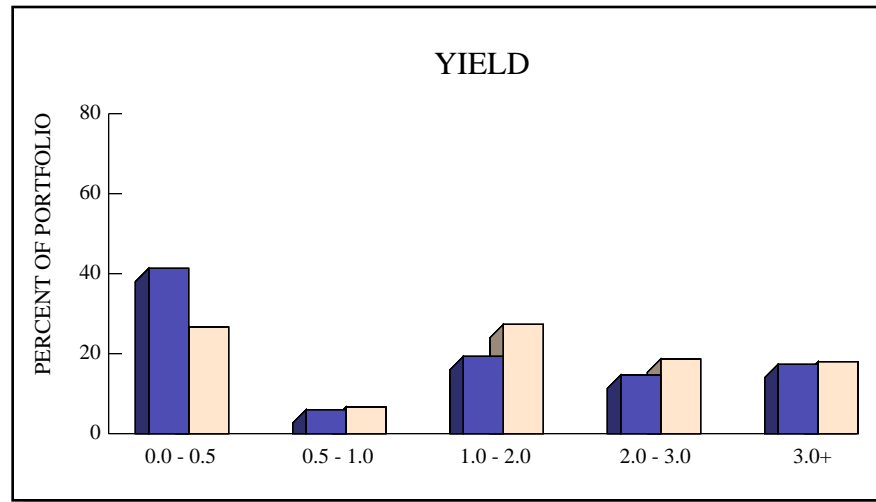
Core Fixed Income Universe



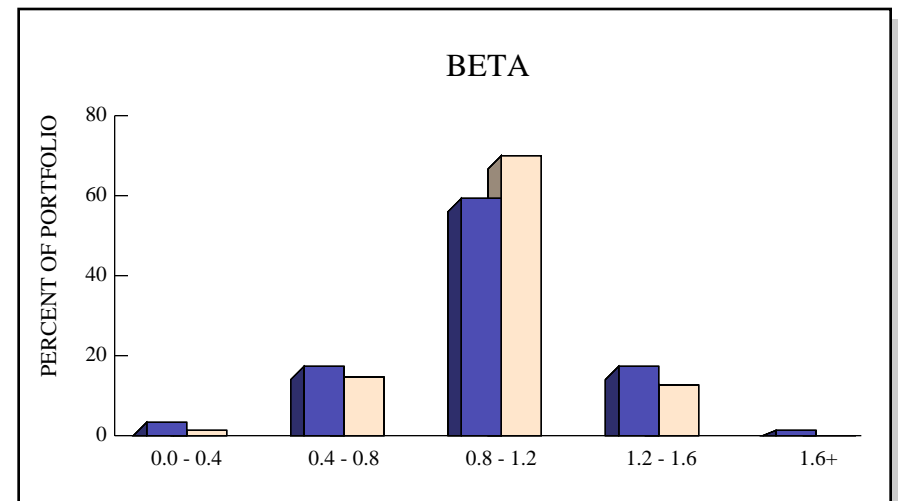
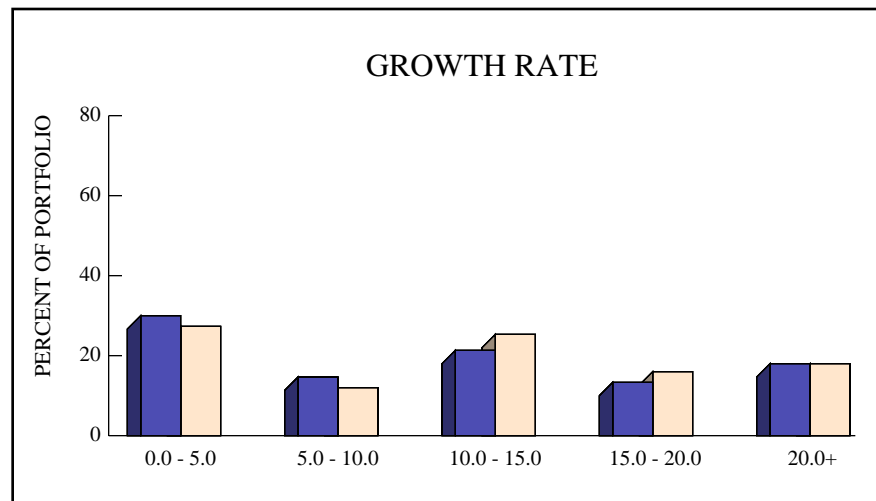
	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	0.2	2.5	5.6	8.8	4.1	3.1
(RANK)	(59)	(64)	(67)	(75)	(83)	(86)
5TH %ILE	1.2	3.3	6.6	11.2	5.1	4.4
25TH %ILE	0.4	2.8	6.1	9.7	4.6	3.7
MEDIAN	0.2	2.6	5.8	9.2	4.4	3.5
75TH %ILE	0.1	2.4	5.6	8.7	4.1	3.2
95TH %ILE	-0.2	1.9	4.6	7.2	3.6	2.9
Agg	0.2	2.5	5.6	8.7	4.0	3.1

Core Fixed Income Universe

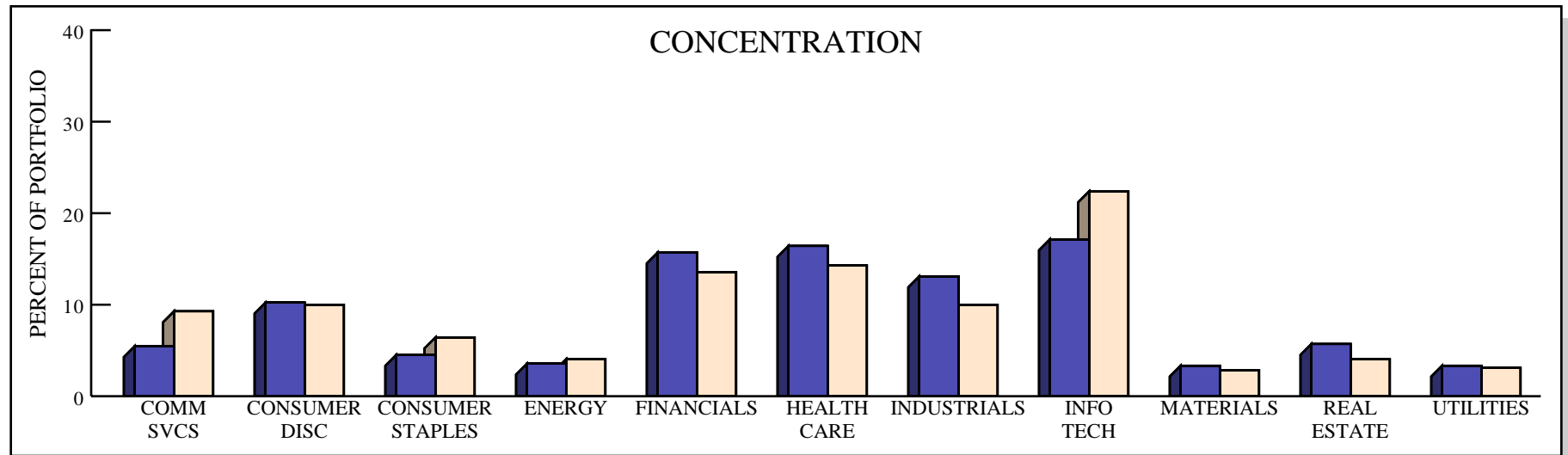
STOCK CHARACTERISTICS



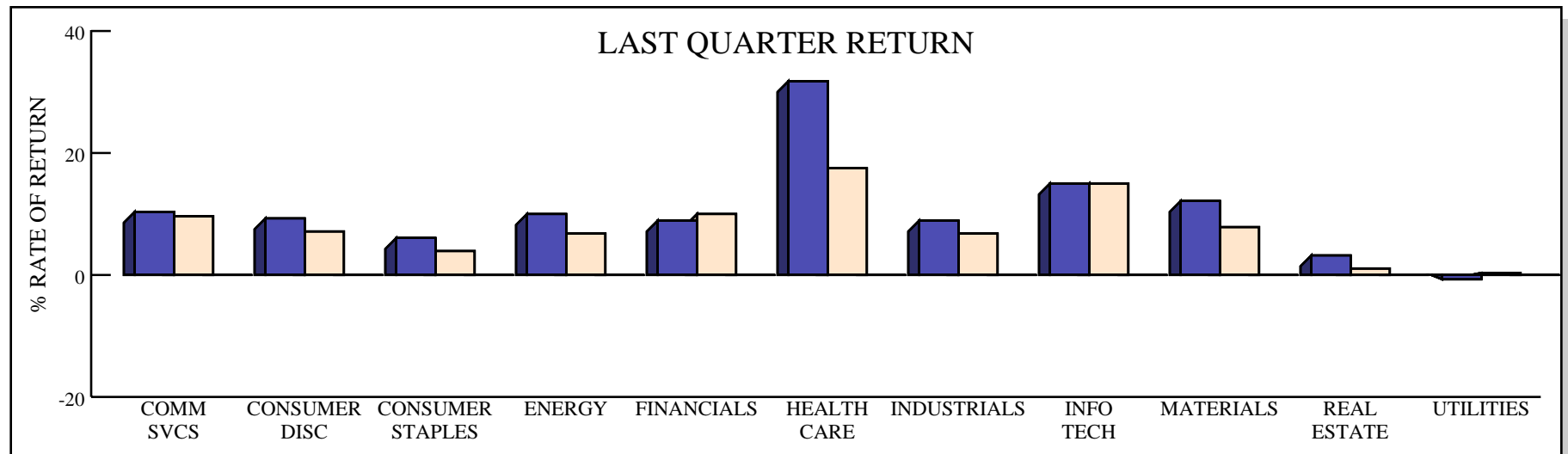
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	2,500	1.6%	11.2%	22.5	0.98
RUSSELL 3000	2,990	1.8%	12.0%	28.0	0.98



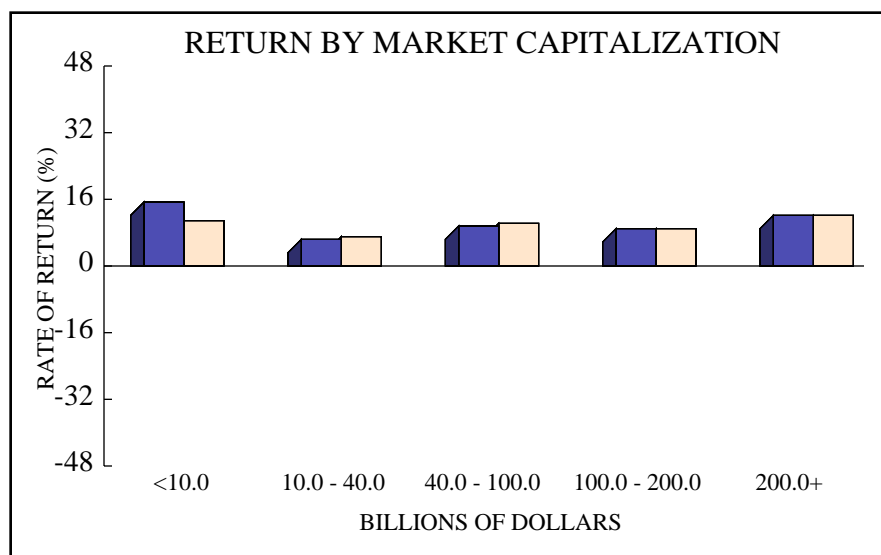
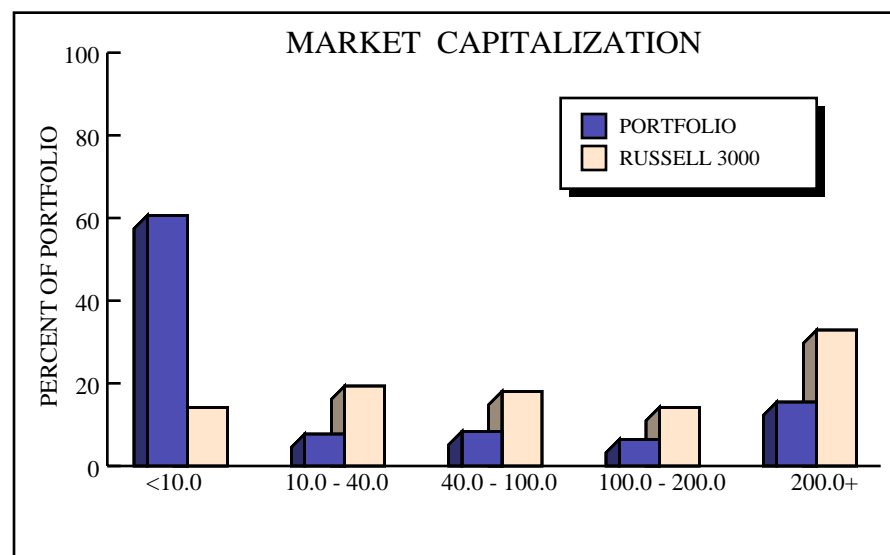
STOCK INDUSTRY ANALYSIS



■ PORTFOLIO ■ RUSSELL 3000



TOP TEN HOLDINGS

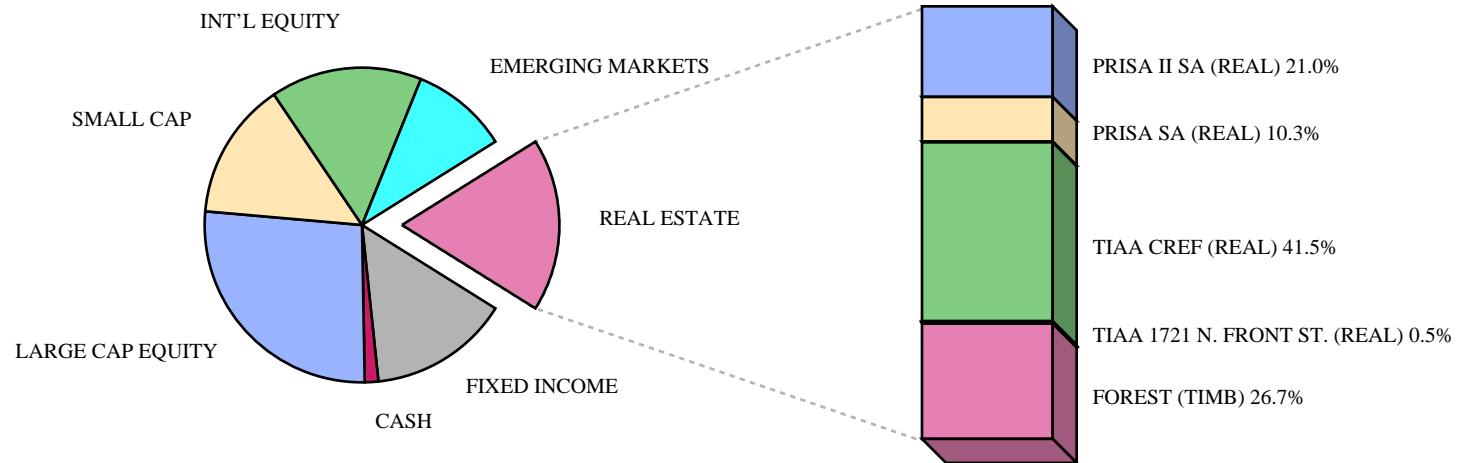


TOP TEN EQUITY HOLDINGS

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	APPLE INC	\$ 2,779,984	1.82%	31.5%	Information Technology	\$ 1304.8 B
2	MICROSOFT CORP	2,726,948	1.78%	13.8%	Information Technology	1203.1 B
3	AMAZON.COM INC	1,744,361	1.14%	6.5%	Consumer Discretionary	916.2 B
4	FACEBOOK INC-CLASS A	1,119,639	.73%	15.3%	Communication Services	493.9 B
5	BERKSHIRE HATHAWAY INC-CL B	1,004,301	.66%	8.9%	Financials	313.3 B
6	JPMORGAN CHASE & CO	990,995	.65%	19.4%	Financials	437.2 B
7	ALPHABET INC-CL A	909,446	.60%	9.7%	Communication Services	401.3 B
8	ALPHABET INC-CL C	905,163	.59%	9.7%	Communication Services	459.3 B
9	JOHNSON & JOHNSON	870,260	.57%	13.5%	Health Care	383.9 B
10	VISA INC-CLASS A SHARES	729,052	.48%	9.4%	Information Technology	321.7 B

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
REAL ESTATE
PERFORMANCE REVIEW
DECEMBER 2019

REAL ESTATE MANAGER SUMMARY

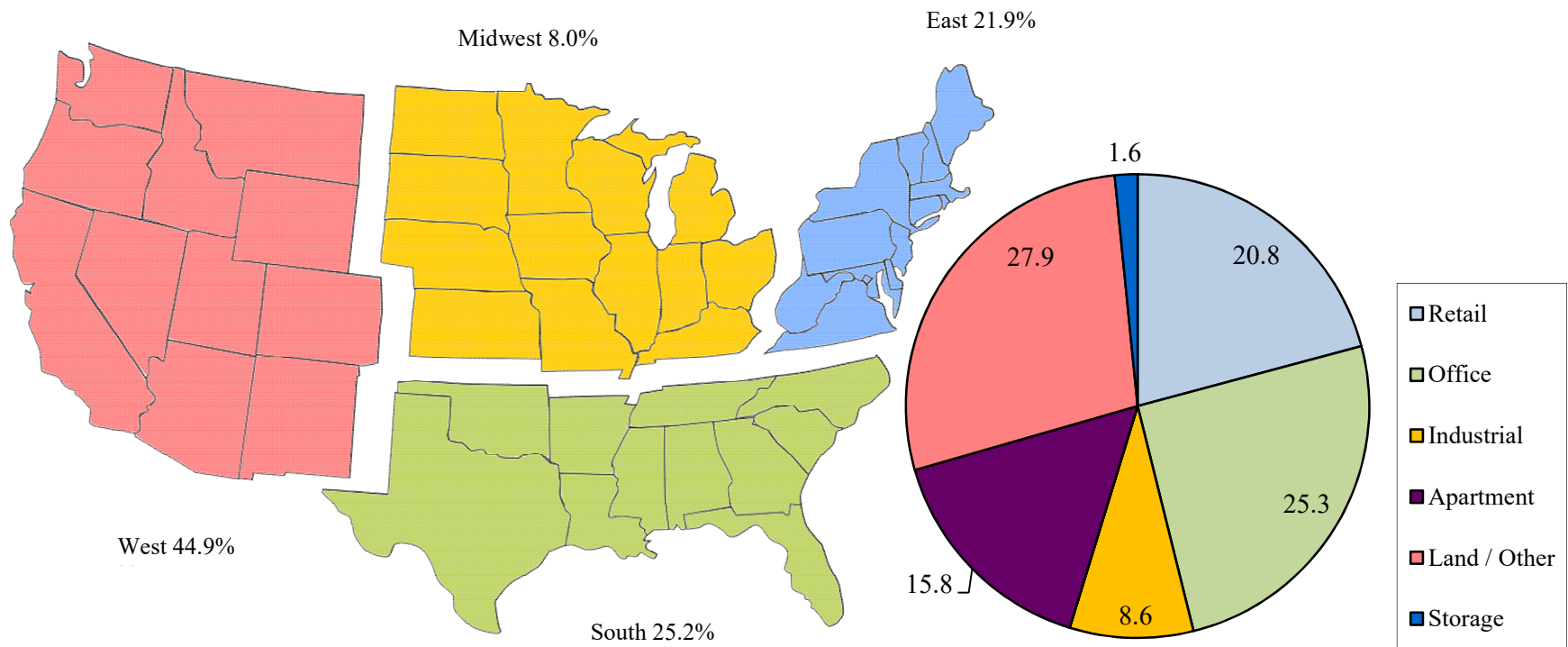


MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	YTD	1 YEAR	3 YEARS	5 YEARS	
PRISA II SA		2.1 ---	7.5 ---	7.5 ---	8.3 ---	10.6 ---	\$105,315,951
PRISA SA		1.3 ---	6.3 ---	6.3 ---	7.5 ---	9.3 ---	\$51,683,670
TIAA CREF		1.5 ---	9.4 ---	9.4 ---	8.5 ---	9.3 ---	\$208,328,085
<i>NCREIF NFI-ODCE Index</i>		<i>1.5 ---</i>	<i>5.3 ---</i>	<i>5.3 ---</i>	<i>7.1 ---</i>	<i>9.0 ---</i>	---
TIAA 1721 N. FRONT ST.		2.1 ---	5.0 ---	5.0 ---	3.1 ---	---	\$2,312,412
<i>NCREIF Property Index</i>		<i>1.5 ---</i>	<i>6.4 ---</i>	<i>6.4 ---</i>	<i>6.7 ---</i>	<i>8.3 ---</i>	---
FOREST		-1.5 ---	-2.3 ---	-2.3 ---	3.0 ---	4.7 ---	\$133,807,118
<i>NCREIF Timber Index</i>		<i>0.0 ---</i>	<i>1.3 ---</i>	<i>1.3 ---</i>	<i>2.7 ---</i>	<i>3.1 ---</i>	---
TOTAL		0.8 ---	5.3 ---	5.3 ---	6.8 ---	8.0 ---	\$501,447,236
<i>NCREIF Property Index</i>		<i>1.5 ---</i>	<i>6.4 ---</i>	<i>6.4 ---</i>	<i>6.7 ---</i>	<i>8.3 ---</i>	---

PMRS Real Estate Commitment

As of December 31st, the Pennsylvania Municipal Retirement System's aggregate real estate portfolio was valued at \$501,447,236, representing 17.9% of the total System's assets. TIAA distributed \$2,050,477 in October and the North Front Street property distributed \$60,932 in December. For reference, the NCREIF Property Index returned 1.5% in the fourth quarter. Over the trailing year, that index returned 6.4%, and an annualized 8.3% for the last five years. Over the same time frames, the Bloomberg Barclays Aggregate Index returned 0.2%, 8.7%, and an annualized 3.1%, 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 December 31st, 2019, the Pennsylvania Municipal Retirement System's Prudential PRISA SA portfolio was valued at \$51,683,670, representing an increase of \$558,628 from the September quarter's ending value of \$51,125,042. Last quarter, the Fund posted withdrawals totaling \$124,266, which partially offset the portfolio's net investment return of \$682,894. Since there were no income receipts for the fourth quarter, the portfolio's net investment return figure was the product of net realized and unrealized capital gains totaling \$682,894.

Property Type/Geographical Distribution

The office sector made up 36% of the PRISA SA portfolio. Industrial and retail properties made up 16.6% and 14.5% respectively. Apartments comprised 25.3% of the portfolio's value, storage was 6.1%, and the remaining 1.6% was in other sectors or vacant land.

Geographically, PRISA's portfolio was mostly situated in the East and West, whose percentages were 38.9% and 35.4%. Another 14.5% of the portfolio was situated in the South, while the remaining 7.6% resided in the Midwest.

Account Performance

During the fourth quarter, the Prudential PRISA SA account returned 1.3%, which was 0.2% below the NCREIF NFI-ODCE Index's return of 1.5%. Over the trailing year, the portfolio returned 6.3%, which was 1.0% above the benchmark's 5.3% return. Since December 1990, the Prudential PRISA SA portfolio returned 7.9% per annum, while the NCREIF NFI-ODCE Index returned an annualized 7.5% over the same time frame.

PRISA II

Investment Return

As of December 31st, 2019, the Pennsylvania Municipal Retirement System's Prudential PRISA II SA portfolio was valued at \$105,315,951, which represented an increase of \$1,935,033 from the September quarter's ending value of \$103,380,918. Last quarter, the portfolio recorded a net withdrawal of \$286,155, which only partially offset the fund's net investment return of \$2,221,188. In the absence of income receipts for the quarter, the portfolio's net investment return was the product of \$2,221,188 in realized and unrealized capital gains.

Property Type/Geographical Distribution

PRISA II, like PRISA, situates the largest component of its portfolio in office properties: 36.3% in this case. Retail and apartments also comprised significant portions, with the former at 18.8%, and the latter at 32.1%. Storage made up 4.5%. Investment in land was 4.9%, and industrial properties represented 3.4%.

Geographically, 32.5% of this portfolio was situated in the West, 41.9% resided in the East, while 23.1% was in the South. The remaining 2.4% was located in the Midwest.

Account Performance

In the fourth quarter, the Prudential PRISA II SA account gained 2.1%, which was 0.6% greater than the NCREIF NFI-ODCE Index's return of 1.5%. Over the trailing twelve-month period, the account returned 7.5%, which was 2.2% greater than the benchmark's 5.3% performance. Since June 2007, the Prudential PRISA II SA portfolio returned 4.9% 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 December 31st, 2019, the Pennsylvania Municipal Retirement System's Forest Investment Associates Keystone Forest Investments portfolio was valued at \$133,807,118, a decrease of \$1,995,675 relative to the September quarter's ending value of \$135,802,793. Last quarter, the Fund recorded no net contributions or withdrawals and posted a net investment loss for the period of \$1,995,675. Since there were no income receipts during the fourth 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 46.8% of its assets in the South, 23.8% in the East, and 29.5% 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 fourth quarter, the Forest Investment Associates Keystone Forest Investments portfolio lost 1.5%, which was 1.5% less than the NCREIF Timber Index's return of 0.0%. Over the trailing year, the account returned -2.3%, which was 3.6% less than the benchmark's 1.3% return. Since March 1999, the portfolio returned 4.8% per annum, while the NCREIF Timber Index returned an annualized 6.1% 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 December 31st, 2019, the Pennsylvania Municipal Retirement System's TIAA CREF portfolio was valued at \$208,328,085, representing an increase of \$661,003 from the September quarter's ending value of \$207,667,082. Last quarter, the Fund posted withdrawals totaling \$2,050,477, which offset the portfolio's net investment return of \$2,711,480. Income receipts totaling \$2,632,402 plus net realized and unrealized capital gains of \$79,078 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 63.9%. The Midwest represented 16.1%, while the South made up 14.5% and the remaining 5.5% was in the East.

Retail space was the largest sector, making up 37.1%. Offices comprised 32.5%, while 15.6% was in apartments and 14.9% was industrial.

Account Performance

For the fourth quarter, the TIAA CREF account gained 1.5%, which was equal to the NCREIF NFI-ODCE Index's return of 1.5%. Over the trailing twelve-month period, the account returned 9.4%, which was 4.1% above the benchmark's 5.3% performance. Since June 2008, the portfolio returned 4.0% 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 December 31st, 2019, the Pennsylvania Municipal Retirement System's TIAA CREF 1721 North Front Street portfolio was valued at \$2,312,412, representing a decrease of \$24,085 relative to the September ending value of \$2,336,497. Over the last three months, the portfolio recorded \$60,932 in net withdrawals, which overshadowed the fund's net investment return of \$36,847. In the absence of income receipts during the quarter, the portfolio's net investment return figure was the result of \$36,847 in realized and unrealized capital gains.

Account Performance

For the fourth quarter, the TIAA CREF 1721 North Front Street portfolio returned 2.1%, which was 0.6% greater than the NCREIF Property Index's return of 1.5%. Over the trailing twelve-month period, the account returned 5.0%, which was 1.4% below the benchmark's 6.4% return. Since June 2016, the portfolio returned 0.6% 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 **6.98%** **As of**
Market Value **\$** **208,328,085** **12/31/2019**

<u>Year</u>	<u>Capital Calls</u>	<u>Distributions</u>	<u>Fees</u>
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	\$ -	\$ 7,209,262	\$ 1,813,349
Total	\$ 198,105,622	\$ 92,716,558	\$ 13,129,685

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM

PRELIMINARY PERFORMANCE SUMMARY AS OF JANUARY 2020

Portfolio	QTD	YTD	Market Value	%
Total Portfolio	-1.1	-1.1	\$2,770,964,280	100%
<i>Total Portfolio Shadow Index</i>	<i>-1.0</i>	<i>-1.0</i>	<i>---</i>	
State Street Global Advisors	-1.4	-1.4	\$992,629,567	35.8%
<i>SSgA Shadow Index</i>	<i>-1.1</i>	<i>-1.1</i>	<i>---</i>	
State Street Global Advisors S&P Conservative Index	0.0	0.0	\$60,628,516	2.2%
<i>S&P 500</i>	<i>0.0</i>	<i>0.0</i>	<i>---</i>	
Federated Large Cap Growth Equity	2.6	2.6	\$112,734,079	4.1%
Polen Capital Management Focus Growth	2.6	2.6	\$256,519,426	9.3%
<i>Russell 1000 Growth</i>	<i>2.2</i>	<i>2.2</i>	<i>---</i>	
Eagle Capital Management Equity	0.5	0.5	\$164,244,695	5.9%
LSV Asset Management US Large Cap Value	-5.0	-5.0	\$165,931,573	6.0%
<i>Russell 1000 Value</i>	<i>-2.2</i>	<i>-2.2</i>	<i>---</i>	
State Street Global Advisors Russell 2000 Index Fund	-3.2	-3.2	\$89,176,655	3.2%
<i>Russell 2000</i>	<i>-3.2</i>	<i>-3.2</i>	<i>---</i>	
AMI Asset Management Small Cap Growth Equity	0.1	0.1	\$37,490,967	1.4%
Copeland Capital Management Small Cap Dividend Growth	-1.7	-1.7	\$47,067,537	1.7%
Emerald Advisors Diversified Small Cap Growth	0.1	0.1	\$70,113,799	2.5%
<i>Russell 2000 Growth</i>	<i>-1.1</i>	<i>-1.1</i>	<i>---</i>	
LSV Asset Management US Small Cap Value Equity	-5.7	-5.7	\$73,659,609	2.7%
Smith, Graham & Company Small Cap Value	-4.9	-4.9	\$75,568,908	2.7%
<i>Russell 2000 Value</i>	<i>-5.4</i>	<i>-5.4</i>	<i>---</i>	
GlobeFlex Capital	-0.8	-0.8	\$4,256	0.0%
HGK Asset Management HGK International Equity	-3.0	-3.0	\$131,459,747	4.7%
Hardman Johnston Global Advisors International Equity	-3.1	-3.1	\$123,102,277	4.4%
Jarislowsky Fraser JFL International Equity	-0.3	-0.3	\$521,363	0.0%
Mercator	-1.3	-1.3	\$17,910	0.0%
WHV Investment Management	-1.3	-1.3	\$2,962	0.0%
<i>S&P BMI Developed Ex US Index</i>	<i>-2.2</i>	<i>-2.2</i>	<i>---</i>	
State Street Global Advisors World Ex-US	-1.9	-1.9	\$170,921,178	6.2%
<i>MSCI World Ex US</i>	<i>-2.0</i>	<i>-2.0</i>	<i>---</i>	
State Street Global Advisors Emerging Markets Index	-5.6	-5.6	\$261,050,865	9.4%
<i>MSCI Emerging Markets</i>	<i>-4.7</i>	<i>-4.7</i>	<i>---</i>	
Prudential PRISA SA	----	----	\$51,683,670	1.9%
Prudential PRISA II SA	----	----	\$105,315,951	3.8%
TIAA CREF	----	----	\$206,773,623	7.5%
<i>NCREIF NFI-ODCE Index</i>	<i>----</i>	<i>----</i>	<i>---</i>	
TIAA CREF 1721 North Front Street	----	----	\$2,275,565	0.1%
<i>NCREIF Property Index</i>	<i>----</i>	<i>----</i>	<i>---</i>	
Forest Investment Associates Keystone Forest Investments	----	----	\$133,807,118	4.8%
<i>NCREIF Timber Index</i>	<i>----</i>	<i>----</i>	<i>---</i>	
State Street Global Advisors Bond Market	1.9	1.9	\$410,852,353	14.8%
<i>Bloomberg Barclays Aggregate Index</i>	<i>1.9</i>	<i>1.9</i>	<i>---</i>	
BNY Cash	----	----	\$3,725,577	0.1%
Treasury Pool STIP	----	----	\$16,314,101	0.6%

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ALLOCATIONS & TARGETS AS OF JANUARY 2020**

Manager	Target	Market Value	%	+ / -	Market Value Ex- cash	%	+ / -
Total Portfolio	-	\$2,770,964,280	100%		\$2,770,964,280	100%	
Large Cap	25	760,058,289	27.4	2.4	750,557,838	27.1	2.1
Eagle		164,244,695	5.9		161,446,685	5.8	
Federated		112,734,079	4.1		111,378,897	4.0	
LSV Large Cap		165,931,573	6.0		164,791,324	5.9	
Polen		256,519,426	9.3		252,312,416	9.1	
SSgA S&P 500		60,628,516	2.2		60,628,516	2.2	
Small Cap	15	393,077,475	14.2	-0.8	386,706,471	14.0	-1.0
AMI		37,490,967	1.4		35,122,807	1.3	
Copeland		47,067,537	1.7		46,478,058	1.7	
Emerald		70,113,799	2.5		68,656,271	2.5	
LSV Small Cap		73,659,609	2.7		72,483,892	2.6	
Smith, Graham & Co		75,568,908	2.7		74,788,788	2.7	
SSgA Russell 2000		89,176,655	3.2		89,176,655	3.2	
International Equity	15	426,029,693	15.4	0.4	421,220,055	15.2	0.2
GlobeFlex		4,256	0.0		4,256	0.0	
HGK		131,459,747	4.7		129,266,798	4.7	
Jarislowsky Fraser		521,363	0.0		521,363	0.0	
Johnston		123,102,277	4.4		120,485,588	4.3	
Mercator		17,910	0.0		17,910	0.0	
SSgA International		170,921,178	6.2		170,921,178	6.2	
WHV		2,962	0.0		2,962	0.0	
Emerging Markets	10	261,050,865	9.4	-0.6	261,050,865	9.4	-0.6
SSgA Emerging Mkts		261,050,865	9.4		261,050,865	9.4	
Real Assets	20	499,855,927	18.0	-2.0	499,855,927	18.0	-2.0
Forest		133,807,118	4.8		133,807,118	4.8	
PRISA I		51,683,670	1.9		51,683,670	1.9	
PRISA II		105,315,951	3.8		105,315,951	3.8	
TIAA N. Front St.		2,275,565	0.1		2,275,565	0.1	
TIAA CREF		206,773,623	7.5		206,773,623	7.5	
Fixed Income	15	410,852,353	14.8	-0.2	410,852,353	14.8	-0.2
SSgA BC Aggregate		410,852,353	14.8		410,852,353	14.8	
Cash & Equivalent	0	20,039,678	0.7	0.7	40,720,771	1.5	1.5
BNY Cash		3,725,577	0.1		3,725,577	0.1	
STIP Cash		16,314,101	0.6		16,314,101	0.6	
Manager Cash		<i>n/a</i>	-		20,681,093	0.7	

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM

PRELIMINARY PERFORMANCE SUMMARY AS OF FEBRUARY 2020

Portfolio	QTD	YTD	Market Value	%
Total Portfolio	-5.5	-5.5	\$2,642,890,758	100%
<i>Total Portfolio Shadow Index</i>	<i>-5.9</i>	<i>-5.9</i>	<i>---</i>	
State Street Global Advisors	-4.4	-4.4	\$962,607,062	36.4%
<i>SSgA Shadow Index</i>	<i>-4.6</i>	<i>-4.6</i>	<i>---</i>	
State Street Global Advisors S&P Conservative Index	-8.3	-8.3	\$55,647,404	2.1%
<i>S&P 500</i>	<i>-8.3</i>	<i>-8.3</i>	<i>---</i>	
Federated Large Cap Growth Equity	-3.0	-3.0	\$106,447,703	4.0%
Polen Capital Management Focus Growth	-3.2	-3.2	\$241,979,333	9.2%
<i>Russell 1000 Growth</i>	<i>-4.7</i>	<i>-4.7</i>	<i>---</i>	
Eagle Capital Management Equity	-7.7	-7.7	\$150,681,591	5.7%
LSV Asset Management US Large Cap Value	-14.4	-14.4	\$149,535,676	5.7%
<i>Russell 1000 Value</i>	<i>-11.6</i>	<i>-11.6</i>	<i>---</i>	
State Street Global Advisors Russell 2000 Index Fund	-11.3	-11.3	\$81,675,779	3.1%
<i>Russell 2000</i>	<i>-11.4</i>	<i>-11.4</i>	<i>---</i>	
AMI Asset Management Small Cap Growth Equity	-6.3	-6.3	\$35,082,308	1.3%
Copeland Capital Management Small Cap Dividend Growth	-9.9	-9.9	\$43,071,053	1.6%
Emerald Advisors Diversified Small Cap Growth	-6.7	-6.7	\$65,342,628	2.5%
<i>Russell 2000 Growth</i>	<i>-8.2</i>	<i>-8.2</i>	<i>---</i>	
LSV Asset Management US Small Cap Value Equity	-16.5	-16.5	\$65,292,863	2.5%
Smith, Graham & Company Small Cap Value	-14.3	-14.3	\$67,964,973	2.6%
<i>Russell 2000 Value</i>	<i>-14.6</i>	<i>-14.6</i>	<i>---</i>	
GlobeFlex Capital	---	---	\$4,232	0.0%
HGK Asset Management HGK International Equity	-10.4	-10.4	\$121,367,459	4.6%
Hardman Johnston Global Advisors International Equity	-8.5	-8.5	\$116,161,851	4.4%
Jarislowsky Fraser JFL International Equity	---	---	\$518,320	0.0%
Mercator	---	---	\$17,752	0.0%
WHV Investment Management	---	---	\$2,936	0.0%
<i>S&P BMI Developed Ex US Index</i>	<i>-11.0</i>	<i>-11.0</i>	<i>---</i>	
State Street Global Advisors World Ex-US	-10.6	-10.6	\$155,811,727	5.9%
<i>MSCI World Ex US</i>	<i>-10.9</i>	<i>-10.9</i>	<i>---</i>	
State Street Global Advisors Emerging Markets Index	-9.2	-9.2	\$251,103,457	9.5%
<i>MSCI Emerging Markets</i>	<i>-9.7</i>	<i>-9.7</i>	<i>---</i>	
Prudential PRISA SA	---	---	\$51,683,670	2.0%
Prudential PRISA II SA	---	---	\$105,315,951	4.0%
TIAA CREF	---	---	\$206,773,623	7.8%
<i>NCREIF NFI-ODCE Index</i>	<i>---</i>	<i>---</i>	<i>---</i>	
TIAA CREF 1721 North Front Street	---	---	\$2,275,565	0.1%
<i>NCREIF Property Index</i>	<i>---</i>	<i>---</i>	<i>---</i>	
Forest Investment Associates Keystone Forest Investments	---	---	\$133,807,118	5.1%
<i>NCREIF Timber Index</i>	<i>---</i>	<i>---</i>	<i>---</i>	
State Street Global Advisors Bond Market	3.8	3.8	\$418,368,695	15.8%
<i>Bloomberg Barclays Aggregate Index</i>	<i>3.8</i>	<i>3.8</i>	<i>---</i>	
BNY Cash	---	---	\$3,613,635	0.1%
Treasury Pool STIP	---	---	\$13,343,456	0.5%

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM

ALLOCATIONS & TARGETS AS OF FEBRUARY 2020

Manager	Target	Market Value	%	+ / -	Market Value Ex-cash	%	+ / -
Total Portfolio	-	\$2,642,890,758	100%		\$2,642,890,758	100%	
Large Cap	25	704,291,707	26.6	1.6	696,736,368	26.4	1.4
Eagle		150,681,591	5.7		149,164,596	5.6	
Federated		106,447,703	4.0		105,366,892	4.0	
LSV Large Cap		149,535,676	5.7		148,916,064	5.6	
Polen		241,979,333	9.2		237,641,412	9.0	
SSgA S&P 500		55,647,404	2.1		55,647,404	2.1	
Small Cap	15	358,429,604	13.6	-1.4	352,566,943	13.3	-1.7
AMI		35,082,308	1.3		33,379,404	1.3	
Copeland		43,071,053	1.6		41,726,891	1.6	
Emerald		65,342,628	2.5		63,580,375	2.4	
LSV Small Cap		65,292,863	2.5		64,575,682	2.4	
Smith, Graham & Co		67,964,973	2.6		67,628,812	2.6	
SSgA Russell 2000		81,675,779	3.1		81,675,779	3.1	
International Equity	15	393,884,277	14.9	-0.1	380,088,206	14.4	-0.6
GlobeFlex		4,232	0.0		4,232	0.0	
HGK		121,367,459	4.6		111,334,922	4.2	
Jarislowsky Fraser		518,320	0.0		297,717	0.0	
Johnston		116,161,851	4.4		112,618,920	4.3	
Mercator		17,752	0.0		17,752	0.0	
SSgA International		155,811,727	5.9		155,811,727	5.9	
WHV		2,936	0.0		2,936	0.0	
Emerging Markets	10	251,103,457	9.5	-0.5	251,103,457	9.5	-0.5
SSgA Emerging Mkts		251,103,457	9.5		251,103,457	9.5	
Real Assets	20	499,855,927	18.9	-1.1	499,855,927	18.9	-1.1
Forest		133,807,118	5.1		133,807,118	5.1	
PRISA I		51,683,670	2.0		51,683,670	2.0	
PRISA II		105,315,951	4.0		105,315,951	4.0	
TIAA N. Front St.		2,275,565	0.1		2,275,565	0.1	
TIAA CREF		206,773,623	7.8		206,773,623	7.8	
Fixed Income	15	418,368,695	15.8	0.8	418,368,695	15.8	0.8
SSgA BC Aggregate		418,368,695	15.8		418,368,695	15.8	
Cash & Equivalents	0	16,957,091	0.6	0.6	44,171,162	1.7	1.7
BNY Cash		3,613,635	0.1		3,613,635	0.1	
STIP Cash		13,343,456	0.5		13,343,456	0.5	
Manager Cash		<i>n/a</i>	-		27,214,071	1.0	

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM

PRELIMINARY PERFORMANCE SUMMARY AS OF MARCH 2020

Portfolio	QTR	1 Year	3 Years	5 Years	10 Years	Since Inception	
Total Portfolio	-15.4	-6.8	3.4	4.2	6.9	8.3	12/85
<i>Total Portfolio Shadow Index</i>	<i>-15.0</i>	<i>-6.8</i>	<i>2.4</i>	<i>3.6</i>	<i>6.7</i>	<i>8.6</i>	<i>12/85</i>
State Street Global Advisors	-13.1	-6.2	1.1	1.7	3.4	5.9	03/97
<i>SSgA Shadow Index</i>	<i>-13.3</i>	<i>-6.3</i>	<i>1.2</i>	<i>1.7</i>	<i>3.5</i>	<i>6.5</i>	<i>03/97</i>
State Street Global Advisors S&P Conservative Index	-19.6	-7.0	5.1	6.7	10.5	7.5	03/97
<i>S&P 500</i>	<i>-19.6</i>	<i>-7.0</i>	<i>5.1</i>	<i>6.7</i>	<i>10.5</i>	<i>7.5</i>	<i>03/97</i>
Federated Large Cap Growth Equity	-15.2	-1.1	11.1	---	---	8.5	06/15
<i>Russell 1000 Growth</i>	<i>-14.1</i>	<i>0.9</i>	<i>11.3</i>	<i>10.4</i>	<i>13.0</i>	<i>10.9</i>	<i>06/15</i>
Polen Capital Management Focus Growth	-13.0	3.3	15.5	13.9	---	15.5	09/10
<i>Russell 1000 Growth</i>	<i>-14.1</i>	<i>0.9</i>	<i>11.3</i>	<i>10.4</i>	<i>13.0</i>	<i>13.7</i>	<i>09/10</i>
Eagle Capital Management Equity	-23.7	-9.8	4.3	---	---	8.7	03/16
<i>Russell 1000 Value</i>	<i>-26.7</i>	<i>-17.2</i>	<i>-2.2</i>	<i>1.9</i>	<i>7.7</i>	<i>2.8</i>	<i>03/16</i>
LSV Asset Management US Large Cap Value	-30.5	-21.4	-3.9	0.2	7.6	6.3	03/04
<i>Russell 1000 Value</i>	<i>-26.7</i>	<i>-17.2</i>	<i>-2.2</i>	<i>1.9</i>	<i>7.7</i>	<i>5.9</i>	<i>03/04</i>
State Street Global Advisors Russell 2000 Index Fund	-30.6	-24.0	-4.6	-0.2	7.0	6.8	03/97
<i>Russell 2000</i>	<i>-30.6</i>	<i>-24.0</i>	<i>-4.7</i>	<i>-0.3</i>	<i>6.9</i>	<i>6.8</i>	<i>03/97</i>
AMI Asset Management Small Cap Growth Equity	-24.3	-25.9	---	---	---	-9.2	09/17
<i>Russell 2000 Growth</i>	<i>-25.8</i>	<i>-18.6</i>	<i>0.1</i>	<i>1.7</i>	<i>8.9</i>	<i>-4.0</i>	<i>09/17</i>
Copeland Small Cap Dividend Growth	-26.5	-16.1	---	---	---	-1.7	09/17
<i>Russell 2000 Growth</i>	<i>-25.8</i>	<i>-18.6</i>	<i>0.1</i>	<i>1.7</i>	<i>8.9</i>	<i>-4.0</i>	<i>09/17</i>
Emerald Advisors Diversified Small Cap Growth	-24.7	-18.2	2.9	3.8	11.9	9.8	09/98
<i>Russell 2000 Growth</i>	<i>-25.8</i>	<i>-18.6</i>	<i>0.1</i>	<i>1.7</i>	<i>8.9</i>	<i>6.5</i>	<i>09/98</i>
LSV Asset Management US Small Cap Value Equity	-40.7	-34.4	-12.3	---	---	-11.5	12/16
<i>Russell 2000 Value</i>	<i>-35.7</i>	<i>-29.7</i>	<i>-9.5</i>	<i>-2.4</i>	<i>4.8</i>	<i>-8.9</i>	<i>12/16</i>
Smith, Graham & Company Small Cap Value	-37.1	-25.2	-10.3	---	---	-9.0	12/16
<i>Russell 2000 Value</i>	<i>-35.7</i>	<i>-29.7</i>	<i>-9.5</i>	<i>-2.4</i>	<i>4.8</i>	<i>-8.9</i>	<i>12/16</i>
HGK Asset Management HGK International Equity	-23.1	-11.6	1.1	2.5	---	6.7	03/12
<i>S&P BMI Developed Ex US Index</i>	<i>-23.7</i>	<i>-15.1</i>	<i>-1.8</i>	<i>0.0</i>	<i>3.3</i>	<i>3.2</i>	<i>03/12</i>
Hardman Johnston International Equity	-21.3	-8.5	4.4	4.2	---	6.7	03/12
<i>S&P BMI Developed Ex US Index</i>	<i>-23.7</i>	<i>-15.1</i>	<i>-1.8</i>	<i>0.0</i>	<i>3.3</i>	<i>3.2</i>	<i>03/12</i>
State Street Global Advisors World Ex-US	-23.1	-14.5	-1.7	-0.4	---	2.9	03/12
<i>MSCI World Ex US</i>	<i>-23.9</i>	<i>-15.3</i>	<i>-1.9</i>	<i>-0.4</i>	<i>2.9</i>	<i>3.0</i>	<i>03/12</i>
State Street Global Advisors Emerging Markets Index	-23.2	-17.2	-1.4	-0.3	0.6	6.0	12/08
<i>Blended Emerging Markets Index</i>	<i>-23.6</i>	<i>-17.4</i>	<i>-1.3</i>	<i>0.0</i>	<i>1.0</i>	<i>6.8</i>	<i>12/08</i>
Prudential PRISA SA	---	4.4	7.0	8.6	12.1	7.8	12/90
<i>NCREIF NFI-ODCE Index</i>	<i>---</i>	<i>3.9</i>	<i>6.5</i>	<i>8.2</i>	<i>11.3</i>	<i>7.5</i>	<i>12/90</i>
Prudential PRISA II SA	---	5.4	7.9	9.8	14.1	4.8	06/07
<i>NCREIF NFI-ODCE Index</i>	<i>---</i>	<i>3.9</i>	<i>6.5</i>	<i>8.2</i>	<i>11.3</i>	<i>5.5</i>	<i>06/07</i>
TIAA CREF	---	6.8	7.9	8.7	8.6	3.9	06/08
<i>NCREIF NFI-ODCE Index</i>	<i>---</i>	<i>3.9</i>	<i>6.5</i>	<i>8.2</i>	<i>11.3</i>	<i>5.3</i>	<i>06/08</i>
TIAA CREF 1721 North Front Street	---	4.5	3.2	---	---	0.5	06/16
<i>NCREIF Property Index</i>	<i>---</i>	<i>4.5</i>	<i>6.2</i>	<i>7.5</i>	<i>10.1</i>	<i>6.3</i>	<i>06/16</i>
Forest Investment Associates	---	-5.2	2.3	3.9	4.4	4.8	03/99
<i>NCREIF Timber Index</i>	<i>---</i>	<i>1.2</i>	<i>2.4</i>	<i>2.8</i>	<i>4.5</i>	<i>6.0</i>	<i>03/99</i>
State Street Global Advisors Bond Market	3.2	9.0	4.9	3.4	3.9	5.3	03/97
<i>Bloomberg Barclays Aggregate Index</i>	<i>3.1</i>	<i>8.9</i>	<i>4.8</i>	<i>3.4</i>	<i>3.9</i>	<i>5.3</i>	<i>03/97</i>

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ALLOCATIONS & TARGETS AS OF MARCH 2020**

Manager	Target	Market Value	%	+ / -
Total Portfolio	-	\$2,357,599,810	100%	
Large Cap	25	605,114,605	25.7	0.7
Eagle		124,413,188	5.3	
Federated		92,990,678	3.9	
LSV Large Cap		121,382,657	5.1	
Polen		217,553,132	9.2	
SSgA S&P 500		48,774,950	2.1	
Small Cap	15	276,402,118	11.7	-3.3
AMI		28,349,571	1.2	
Copeland		35,134,025	1.5	
Emerald		52,749,599	2.2	
LSV Small Cap		46,343,159	2.0	
Smith, Graham & Co		49,898,132	2.1	
SSgA Russell 2000		63,927,632	2.7	
International Equity	15	338,587,879	14.4	-0.6
GlobeFlex		4,229	0.0	
HGK		104,125,968	4.4	
Jarislowsky Fraser		519,519	0.0	
Johnston		99,950,574	4.2	
Mercator		17,733	0.0	
SSgA International		133,966,923	5.7	
WHV		2,933	0.0	
Emerging Markets	10	212,483,745	9.0	-1.0
SSgA Emerging Mkts		212,483,745	9.0	
Real Assets	20	500,000,859	21.2	1.2
Forest		133,807,118	5.7	
PRISA I		51,683,670	2.2	
PRISA II		105,315,951	4.5	
TIAA N. Front St.		2,312,412	0.1	
TIAA CREF		206,881,708	8.8	
Fixed Income	15	415,900,320	17.6	2.6
SSgA BC Aggregate		415,900,320	17.6	
Cash & Equivalent	0	9,110,284	0.4	0.4
BNY Cash		3,617,688	0.2	
STIP Cash		5,492,596	0.2	