

Response to Request for Proposal for
Investment Performance Evaluation Services

Ohio Retirement Study Council

July 21, 2014

Presented by:

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July 21, 2014



Ms. Bethany Rhodes
Director
Ohio Retirement Study Council
88 E. Broad Street, Suite 1175
Columbus, OH 43215

RE: Request for Proposal - Investment Performance Evaluation of Ohio's Public Retirement Systems

Dear Ms. Rhodes,

RVK, Inc. ("RVK") is pleased to submit our response for Investment Performance Evaluation services to the Ohio Retirement Study Council ("ORSC"). With over 28 years of experience providing independent investment consulting services, we have the proven skills and capability to provide the services outlined in this RFP.

RVK provides services, comparable to the components outlined in the RFP scope of work, to virtually all of our 180 retainer clients (including 26 public fund clients). One such public fund client, of similar asset size to the ORSC, is the New York State Common Retirement Fund (\$176 billion, as of 3/31/14). Additionally, our firm recently won a large project mandate which includes performance evaluation services for a portfolio totaling \$16 billion.

Over the years, our firm has invested significant revenue into enhancing our various technology platforms, resulting in a state-of-the-art performance evaluation system that enables us to customize performance reports and exhibits to meet our client's specific needs. We believe our firm's ability to evaluate performance of mutual funds, commingled funds, separate accounts, and alternative investments (as well as their respective benchmarks and peer groups) provides our clients with a strategic investment advantage as well as an additional layer of fiduciary protection.

The ORSC would be an important account for RVK, therefore, we are proposing a deeply experienced and senior client service team to work with you and your colleagues, as well as members of the General Assembly. The team has been specifically structured to provide substantial experience in both the methods and protocols for best practices in performance evaluation as well as deep senior experience in the development, execution and oversight of public fund investment programs and portfolios.

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The proposed team includes.

- Jim Voytko: President and Senior Consultant (Primary Contact)
- Nick Woodward, CFA. Co-Lead Consultant
- Janelle Stone: Investment Associate
- Zach Brumett: Investment Analyst

The proposed team will seek to develop a collaborative working relationship with the ORSC and to be your trusted advisor on all matters within our assigned scope of work. Contacting members of the team would be quick and easy as every client at RVK is provided with a client service team email, which includes every member of the team. We encourage clients to utilize this email address as an effective way to correspond with all members of the service team.

We are one of a few remaining full-service investment consultants that is 100% employee owned and solely focused on non-discretionary strategic investment consulting, resulting in a direct alignment of RVK's interests and our clients' interests. Our clients have peace of mind in knowing that recommendations come from an unbiased, objective perspective.

The undersigned has authority to submit this proposal (including this cover letter) on behalf of RVK and to bind our firm contractually. Please contact any member of the team, as outlined in this cover letter, at the number below should you have questions concerning our proposal. Thank you for your consideration of RVK, and we look forward to the opportunity of making a personal presentation to you and the ORSC in Columbus.

Sincerely,

James M. Voytko
President, Director of Research, Senior Consultant, Principal
RVK, Inc.
503-221-4200



Proposal Summary

Scope of Investment Performance Evaluation:

“The services sought are a comparative evaluation of the investment performance of the funds of Ohio’s five state retirement systems – PERS, OP&F, STRS, SERS, and SHPRS – for the 6-month periods January 1 to June 30 and July 1 to December 31 of each contract year. Note that PERS has two funds, a pension fund [PERS] and health care fund [PERS-HC]. Because the investment objectives of these two funds are widely divergent, for purposes of the evaluation, these funds will be compared separately, meaning that an evaluation of the performance of six funds is requested.”

- RVK understands ORSC’s Scope of Investment Performance Evaluation clearly.
- Successful execution of this mandate will require deep experience in performance evaluations for comparable public funds, clear and straightforward presentations, and complete independence.
- We understand (and have summarized) the following specific services to be provided under this mandate:
 1. Overview of Broad Market Analysis and Relationship to Performance Results
 2. Review and Compare Median Public Fund Peer Performance
 3. Review of Comparative Asset Allocations
 4. Compare Total Fund Performance Against Each System’s Policy Benchmark/Peer Group
 5. Compare Broad Asset Classes Against Each System’s Policy Benchmark/Peer Group
 6. Review Risk-Return Performance for Each System’s Total Fund and Asset Class
 7. Compare Actual Versus Approved Asset Allocation
 8. Compare Total Fund Performance Versus Assumed Rate of Return
 9. Provide Commentary on Areas Needing Further Review
 10. Review Each System’s Net of Fees Performance and External Versus Internal Management

Although not specifically requested above, our proposal includes complementary special education in understanding and interpreting terms and metrics that are commonly used in performance analyses.



Capabilities and Experience

RVK's general consulting work on many public fund relationships, along with our longstanding semi-annual Public Fund Report, has enabled the firm to gain substantial experience in working with public funds. We have a state-of-the-art performance evaluation system that enables us to customize performance evaluation reports and exhibits based on our clients' preferences, and our robust department of 29 Investment Analysts ensures that every client deliverable undergoes an in-depth peer review. RVK is deeply experienced in providing the services outlined in this RFP to public fund clients of various asset sizes and plan types. Two examples are detailed below:

1. RVK currently provides a quarterly performance evaluation summary for one of our public fund clients, which is presented to the Board on a quarterly basis. The Defined Benefit Plan has assets exceeding \$20 billion and includes over 145,000 employee accounts and 45,000 retired members, as of December 31, 2013. The System includes 850 member cities. Please see Tab 3 for a sample of this evaluation summary.
2. For another public fund client, RVK conducts a comprehensive analysis on a quarterly basis. We provide analysis of the client's current roster of investment managers in order to assess "fit" within their desired asset class structure. Additionally, we conduct asset class structure studies for their U.S. and non-U.S. portfolios. We meet with the Staff on a regular basis to discuss the portfolio, manager updates, and other key topics of interest. The Defined Benefit Plan has assets exceeding \$176 billion and includes over 640,000 employee accounts and 380,000 retired members, as of March 31, 2014.

Jim Voytko, the proposed Primary Contact, works with the firm's largest public fund clients and serves in various capacities including Lead Consultant and Backup Consultant. A representative list of Jim's public fund clients include:

- New York State Common Retirement Fund
- Ohio Bureau of Worker's Compensation
- State of Michigan Retirement System
- Montana Board of Investments
- Los Angeles Fire and Police Pension System

Nick Woodward, the proposed Co-Lead Consultant, has worked with some of the firm's largest public fund plans during his tenure at RVK. He has served these clients in various roles, from Investment Analyst to Investment Associate to Associate Consultant. A representative list of Nick's public fund clients include:

- Texas Municipal Retirement System
- State of Michigan Retirement System
- Navajo Nation
- City of Phoenix Employees Retirement System
- California Department of Human Resources
- Wyoming State Treasurer's Office
- Commissioners of the Land Office, State of Oklahoma



Biographies of Support Personnel:

Janelle Stone – Investment Associate

Janelle joined RVK in 2011 as an Investment Analyst and was promoted to Senior Investment Analyst and Team Lead in 2012. She was again promoted in 2014 to Investment Associate. Janelle has over two years of public fund experience and has served on some of RVK's larger public fund clients with combined plan assets of \$53 billion. She works closely with RVK's public fund consulting teams on a variety of projects including asset allocation studies, client education presentations, custom performance and attribution deliverables, and asset class structure studies.

A representative list of Janelle's public fund clients include:

- Wyoming State Treasurer's Office
- New Mexico State Investment Council
- Kentucky Retirement Systems

Janelle graduated Magna Cum Laude from the University of Portland with a Bachelor of Business Administration degree in Finance and a minor in Economics. She is currently a Level I Candidate in the CFA program.

Zach Brumett – Investment Analyst

Zach joined RVK as an Investment Analyst in 2012, and his responsibilities include performance calculation, attribution, and portfolio rebalancing. Zach has experience in providing performance reporting for a public pension client with assets in excess of \$200 million.

Prior to joining RVK, Zach was a Field Collections/FHA Representative with Vanderbilt Mortgage and Finance, Inc. He earned a Bachelor of Science degree in Business Administration, Finance with a minor in Economics from the University of Tennessee. While studying at the University of Tennessee, Zach was involved with the Economics Club and the UT Investment Group. He is currently a Level I Candidate in the CFA program

RVK affirms that it meets each of the following minimum criteria:

- Have provided an investment performance evaluation comparable to that requested under this RFP in the past three years.
- As of March 31, 2014, and for at least the five most recent continuous years, the firm must have a verifiable operating history with at least three institutional fund clients with similar size, complexity and asset mix to Ohio's systems.
- As of March 31, 2014, the primary contact dedicated to the ORSC contract must have at least ten years' experience in providing investing consulting services to institutional fund clients.
- The firm must be registered as an investment adviser under the Investment Advisers Act of 1940. The firm will promptly advise the ORSC if it, at any time, is not so registered.



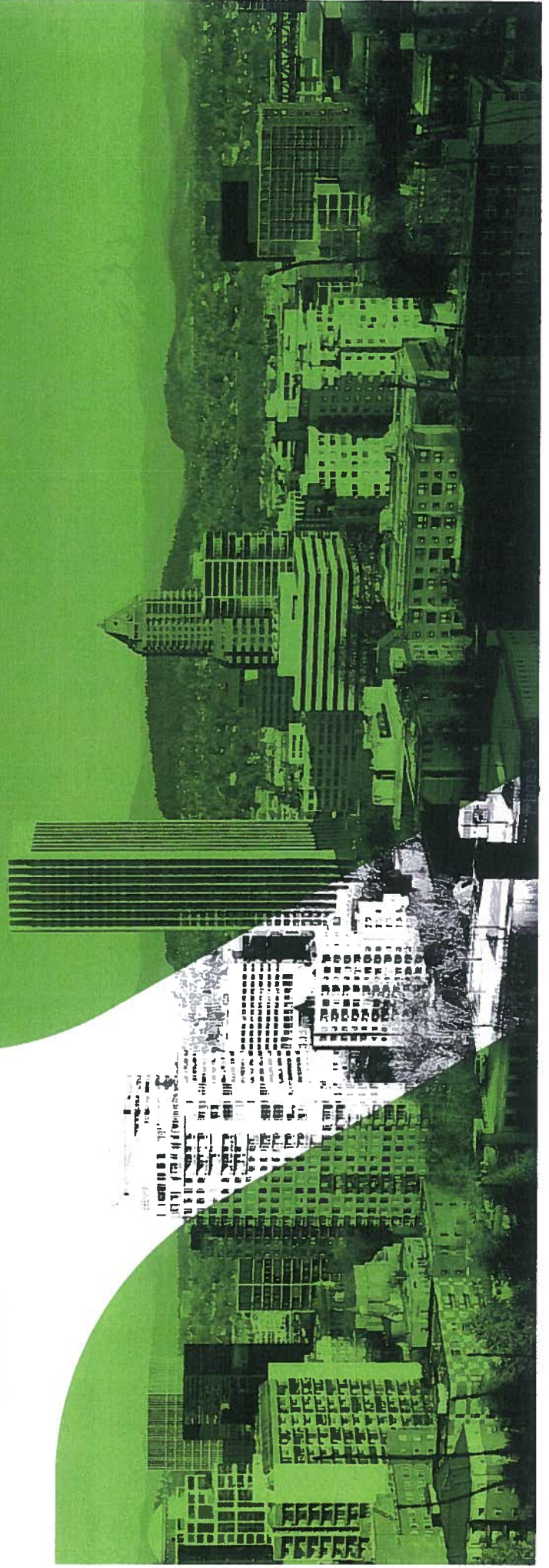
Collectively, RVK's proposed team has over 15 years of consulting experience in working with defined benefit and defined contribution public pension plans. Given our extensive experience in working with public fund entities, we feel we are well-positioned to provide the ORSC with ongoing investment performance evaluation and analysis services.

Please see Tab 4 for our most recent Capital Markets Review and Commentary.



Retirement System

Executive Summary: Quarterly Plan Assessment
Quarter Ended March 31, 2014

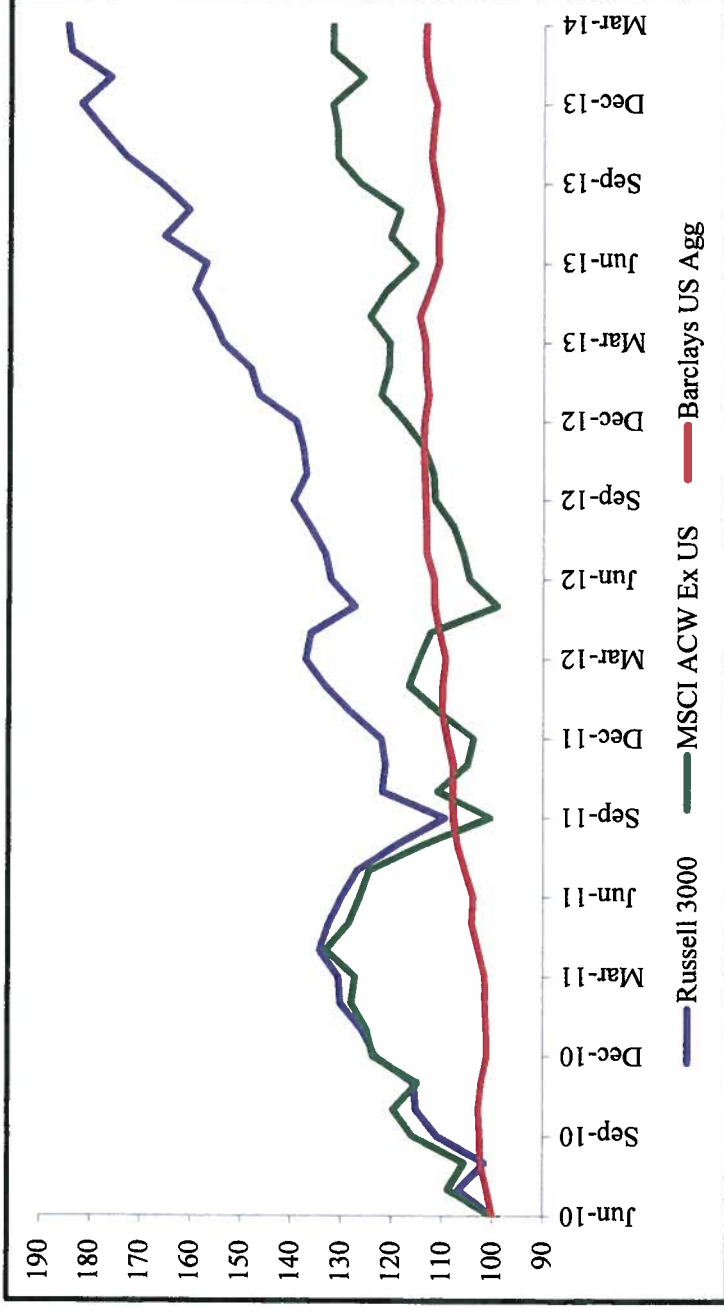


Capital Markets Update



Performance Update as of March 2014

Market Price Levels (Normalized)



1st Calendar Quarter Observations

- The first quarter saw an initial period of volatility in January, but in general, capital markets finished the quarter on a positive note.
- The Fed Chair, Janet Yellen, spoke to the eventual end of quantitative easing. Markets responded with an increase in short term yields, while growing global economic concerns weighted on longer maturities.
- After experiencing its first negative year of performance in over fourteen years in 2013, fixed income finished the quarter in positive territory.

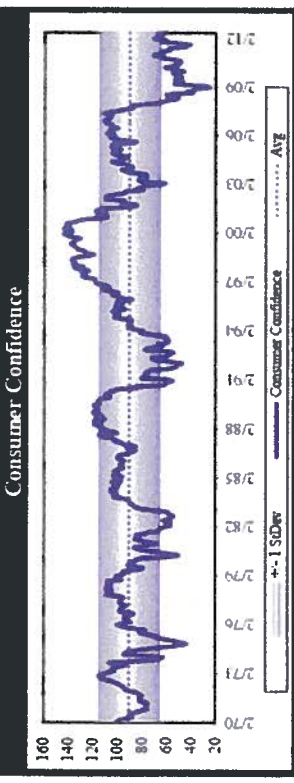
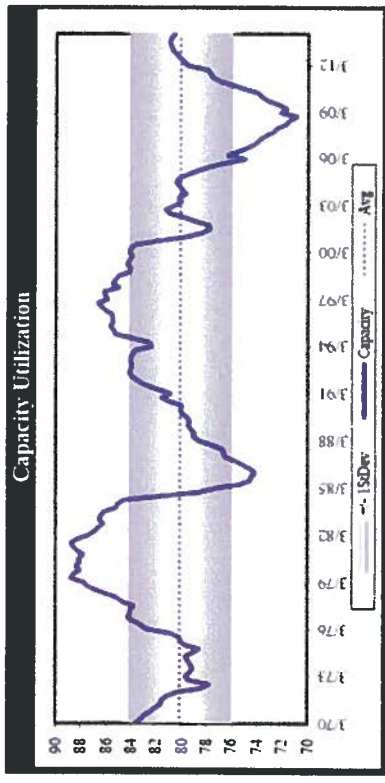


Current Economic/Market Themes

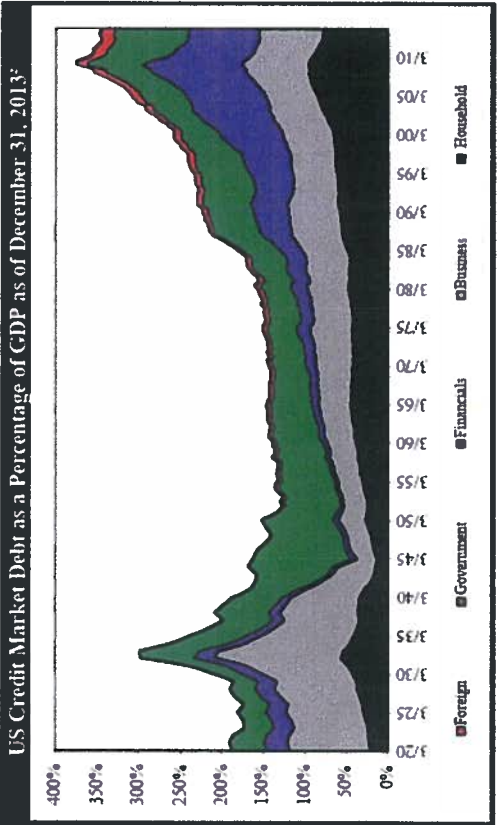
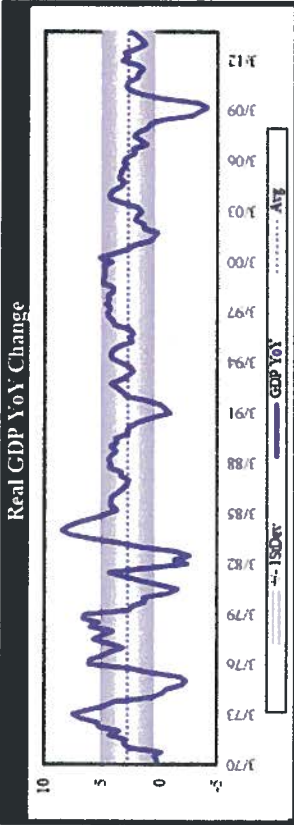
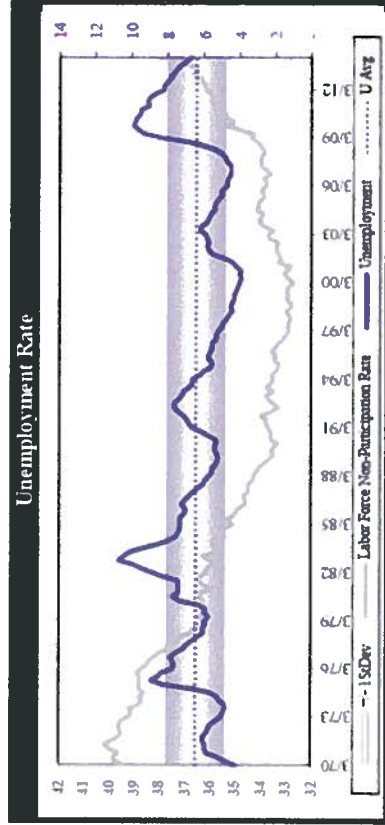
- **Federal Reserve Activity:**
 - The Fed released the results of its Comprehensive Capital Analysis and Review (“CCAR”) or “stress test”, which indicated quality improvement in the U.S. banking industry.
 - In her first press conference as Fed Chair, Janet Yellen indicated that the Fed would initiate rate increases, if consistent with economic data, approximately six months after the end of quantitative easing. This initial stance was more hawkish than markets assumed.
- **GDP:**
 - The Bureau of Economic Analysis states that the real GDP growth for the first quarter was 0.1% annualized.
- **Unemployment:**
 - U.S. unemployment held steady at 6.7% this quarter with modest job growth. Labor participation rose to a four year high, however the absolute level remains low, indicating the job market is not yet back to full health.
- **Inflation:**
 - One-year inflation expectations (as measured by the market implied breakeven rate) increased to 1.79%.
- **International:**
 - The quarter ended positively for international markets, though they could not keep pace with domestic markets for the quarter.
 - Emerging markets experienced a selloff during January due to slowing growth and broad economic concerns. China’s contraction in manufacturing activity as well as Argentina’s devaluation of the Peso were the main contributors.
 - On a relative basis, developed markets outperformed their emerging counterparts as the MSCI EAFE returned 0.66% versus -0.43% for the MSCI Emerging Markets.



Capital Markets Update



	3/31/2014	12/31/2013	20 Year	40 Year
Capacity Utilization	79.20	78.40	78.90	79.80
Unemployment Rate	6.70%	6.70%	6.00%	6.50%
Shiller 20 City YoY - Housing	N/A	13.38%	3.70%	N/A
FMI - Manufacturing	53.70	56.50	52.10	51.80
Baltic Dry Index - Shipping	1,362	2,277	2,423	2,041
Real GDP YoY	N/A	2.60%	2.60%	2.70%
Consumer Confidence (Conf. Bd.)	82.30	77.50	93.52	90.85
Breakeven Inflation - 10 Year	2.14	2.23	N/A	N/A
CPI YoY (Headline) ¹	1.50%	1.50%	2.40%	4.30%
CPI YoY (Core) ²	1.70%	1.70%	2.20%	4.20%
PPI YoY	1.70%	1.20%	2.40%	3.80%
M2 YoY	6.00%	5.40%	6.00%	6.60%
Personal Savings	N/A	4.10%	4.90%	7.30%
Disposable Personal Income	N/A	-0.10%	0.40%	0.50%
Prnl Consumption Expenditures	N/A	1.20%	1.90%	3.70%
US Dollar Total Weighted Index	76.86	76.44	86.58	94.50
WTI Crude Oil per Barrel	\$102	\$98	\$51	\$40
Gold Spot per Oz³	\$1,284	\$1,206	\$332	\$341



¹ All data courtesy of Bloomberg Professional Service, except as noted below.

² Data prior to 1952 is from "The Statistical History of the United States, From Colonial Times to the Present", by Ben Wattenberg, Morgan Stanley Research.

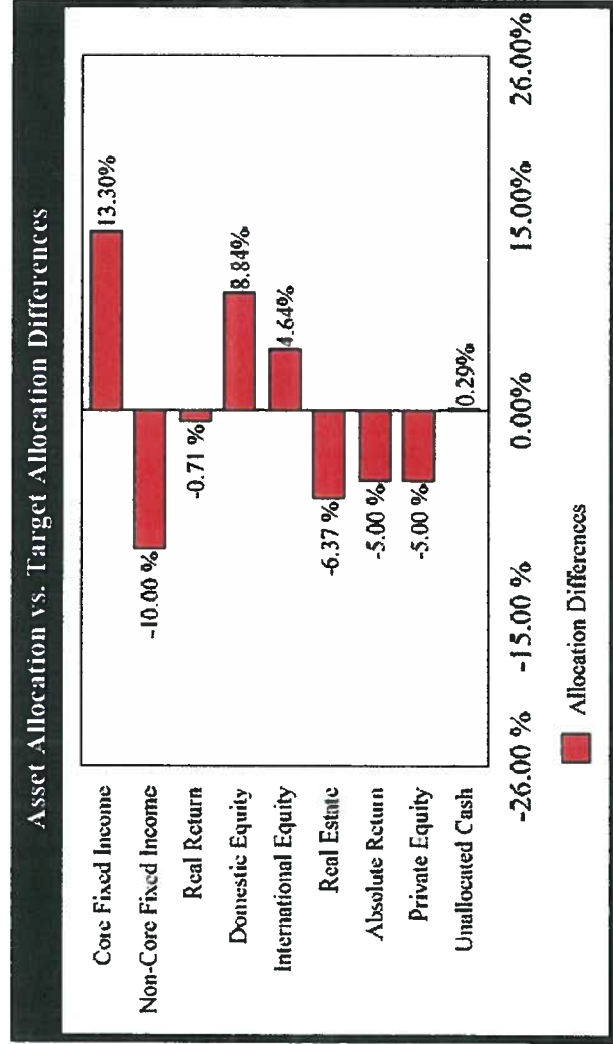
³ "N/A" is shown for data that is not yet available. ⁴ CPI figures are cyclically adjusted. ⁵ 20- and 40-year average Gold spot prices are adjusted for inflation.

Total Fund



Asset Allocation vs. Policy Target

Asset Allocation vs. Target Allocation			
	Market Value (\$)	Allocation (%)	Target (%)
Core Fixed Income	9,869,345,736	43.30	30.00
Non-Core Fixed Income	-	-	10.00
Real Return	977,378,330	4.29	5.00
Domestic Equity	6,003,853,781	26.34	17.50
International Equity	5,046,836,464	22.14	17.50
Real Estate	826,599,625	3.63	10.00
Absolute Return	-	-	5.00
Private Equity	-	-	5.00
Unallocated Cash	66,627,756	0.29	0.00
Total Fund	22,790,641,690	100.00	100.00

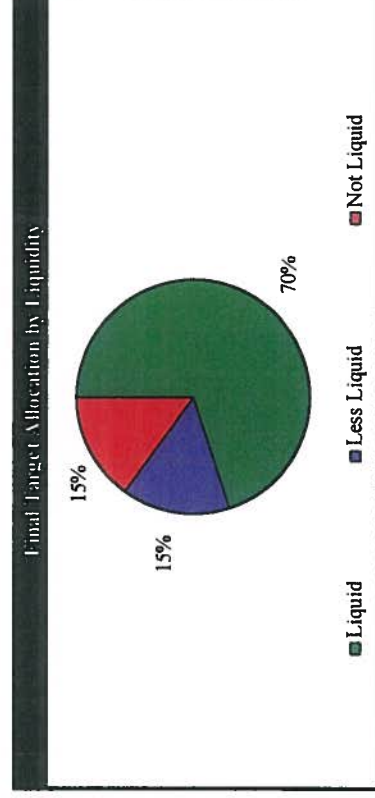
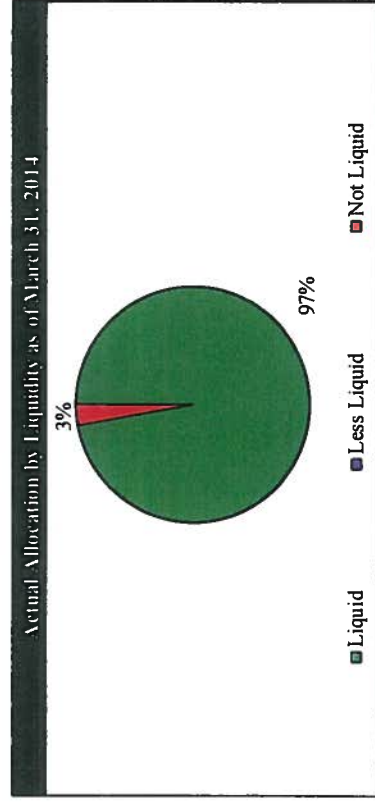
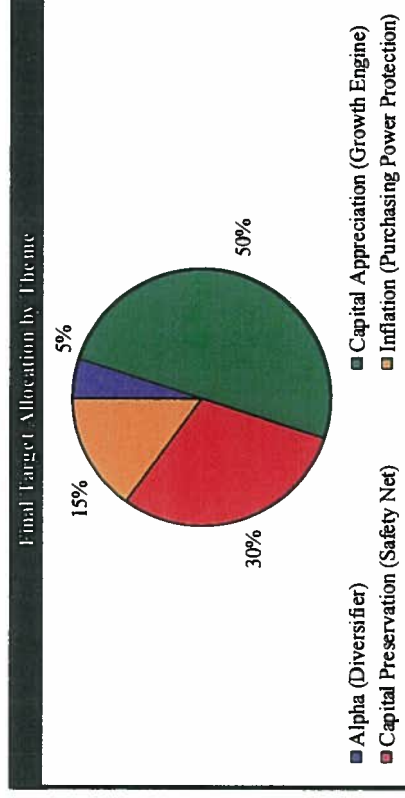
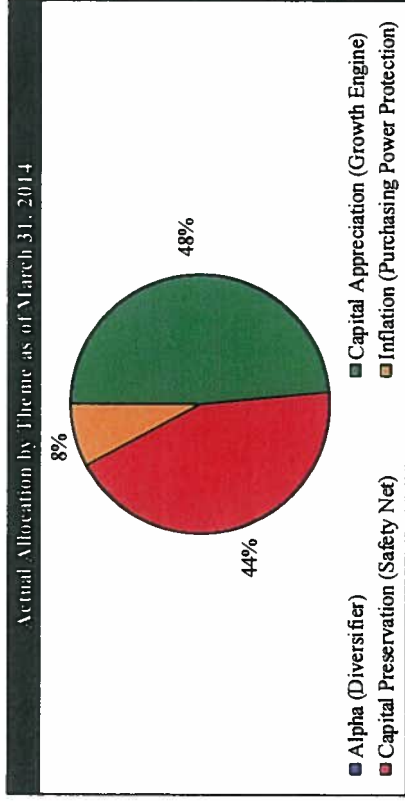


Data shown as of March 31, 2014.



Allocation by Theme and Liquidity

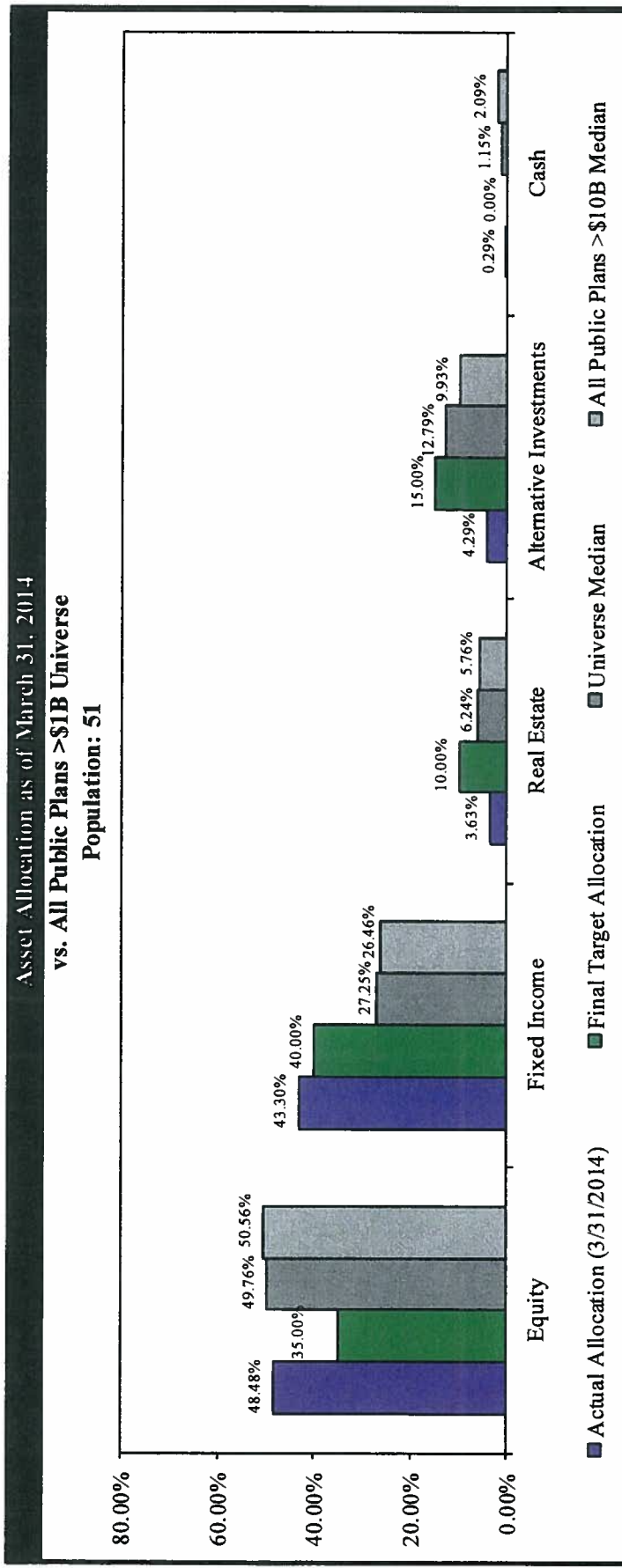
- It is also important to consider broad investment themes and liquidity, as these issues may not be directly addressed when reviewing other asset allocation metrics.
 - The System has a large portion of assets in bonds (safety net) and equities (growth engine), with a small allocation to inflation hedging assets.
 - The Final Target is more heavily weighted towards Inflation and Alpha; the makeup of the Capital Appreciation bucket will also change with the funding of Non-Core Fixed Income.
 - Current investments are very liquid (based on the RVK liquidity metrics).



Please note that allocations to Inflation and Capital Appreciation may change depending on the mix of core and non-core fixed income and real estate. Allocations may not sum up to 100% exactly due to rounding.

Asset Allocation vs. Peers

- The actual allocation has more exposure to fixed income than its peers, but the portfolio continues to move towards a well diversified structure as the fixed income allocation is reduced.
- A slow and methodical pace into new asset classes and strategies via ongoing research and due diligence efforts, coupled with dollar cost averaging into new investments over multiple time periods continues to be prudent.

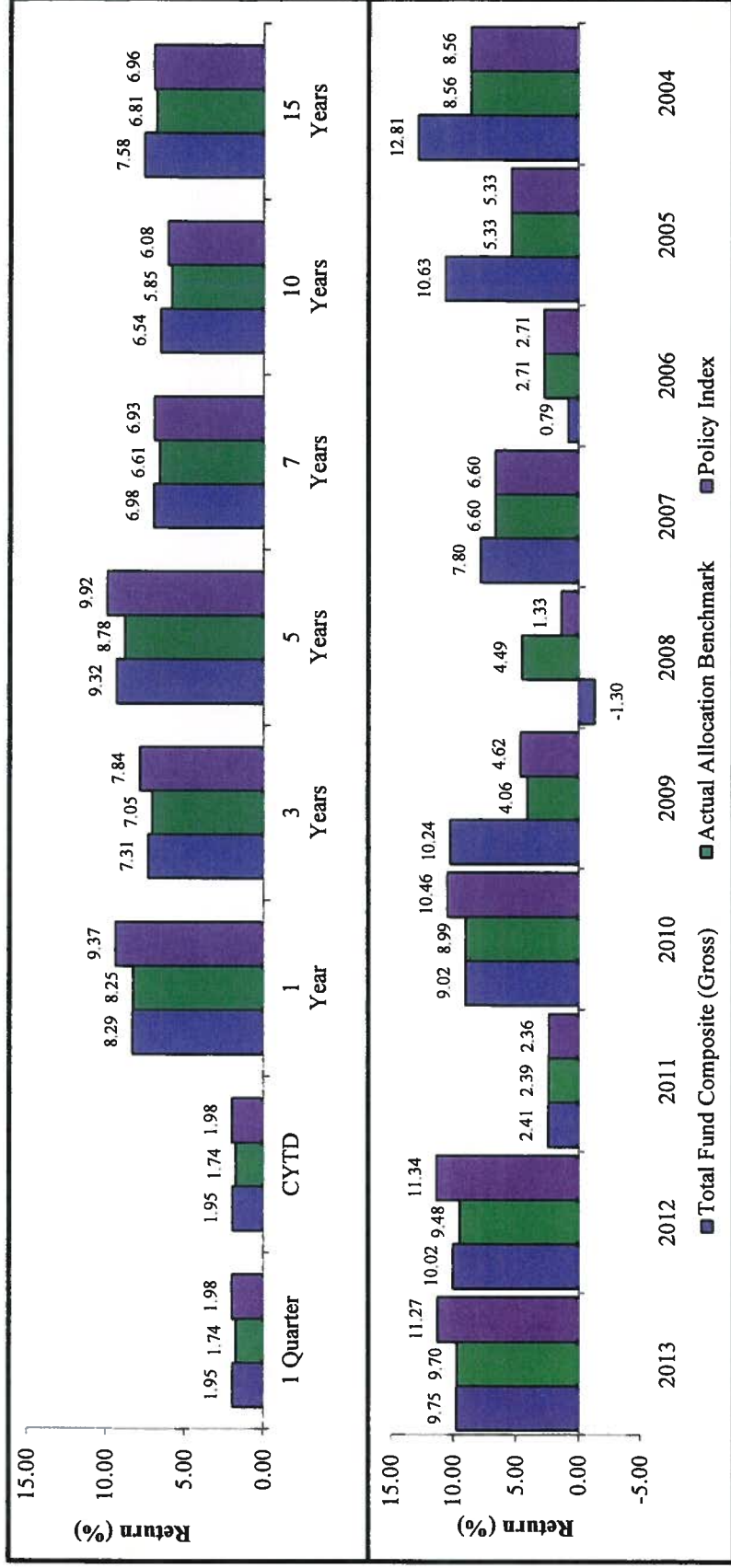


Universe Median allocation is based on actual plan allocations. All Public Plans >\$10B universe has a population of 16.



Total Fund Performance vs. Benchmarks

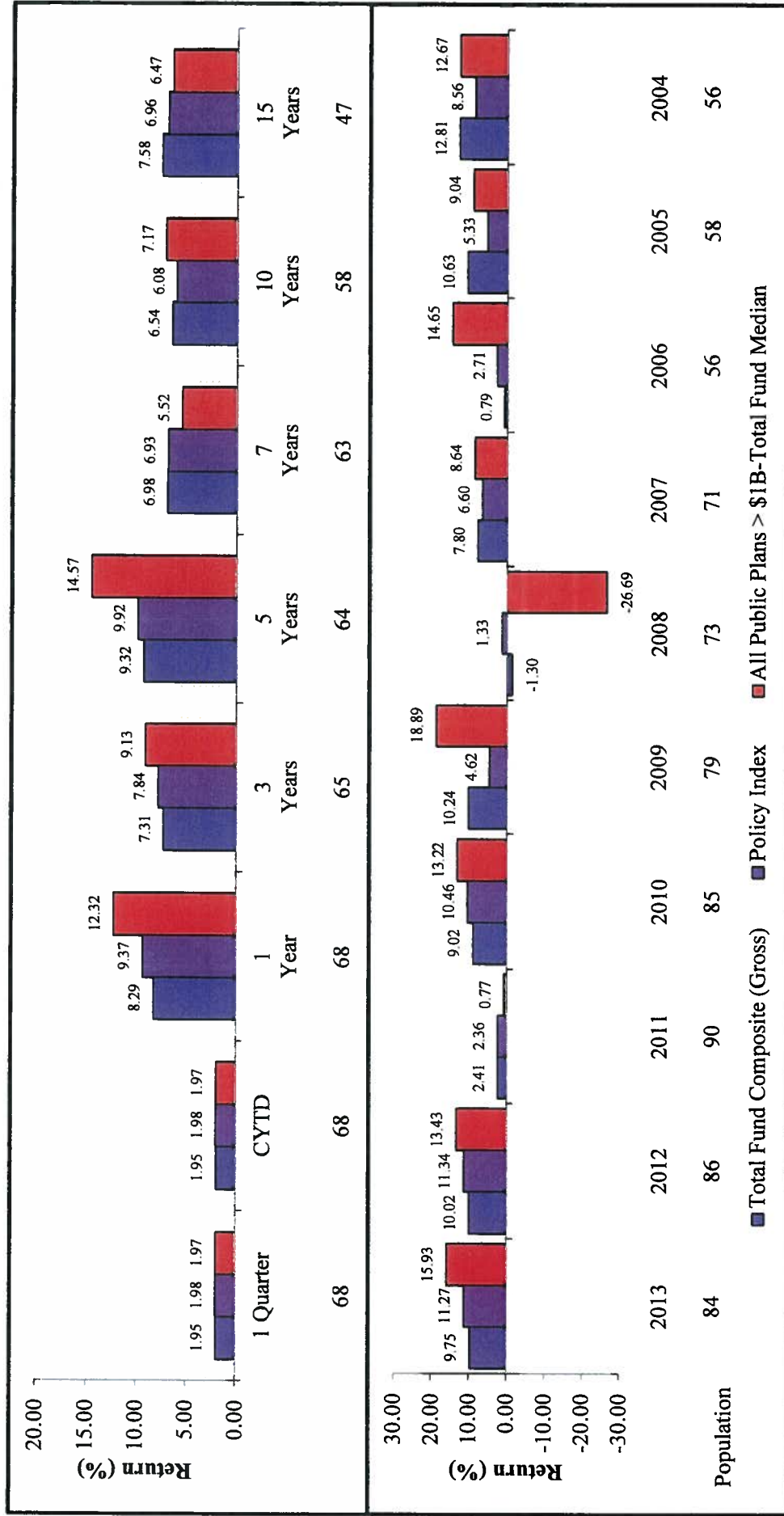
- The Total Fund Composite (Gross) returned 9.32% over the trailing five-year period ending March 31, 2014, lagging the Investment Policy Objective for performance relative to the Policy Index.
 - The Total Fund outperformed the Actual Allocation Benchmark by 54 basis points over the five-year period, partially due to relative performance of the Total Fixed Income Composite.
 - The Total Fund underperformed the Policy Index (Target Allocation) by 60 basis points over the same period, primarily due to strong recent performance by the alternative asset classes the System is currently in the process of funding.
- The assumed long term rate of return established by the actuary is currently 7%.
- In September 2009, the System shifted return objectives from income generation to a total return approach.
- Prior to that date, Total Fund performance on a total return basis versus the assumed actuarial rate is of interest, but is a less meaningful comparison as the Policy objectives were different at that time.



Please see Supplemental Information for custom benchmark definitions. Performance shown is gross of fees as of March 31, 2014.

Total Fund Performance vs. Peers

- It is generally of interest to be aware of the performance of other public pension systems, however there can be a wide range in investment objectives and different benefit plan structures.

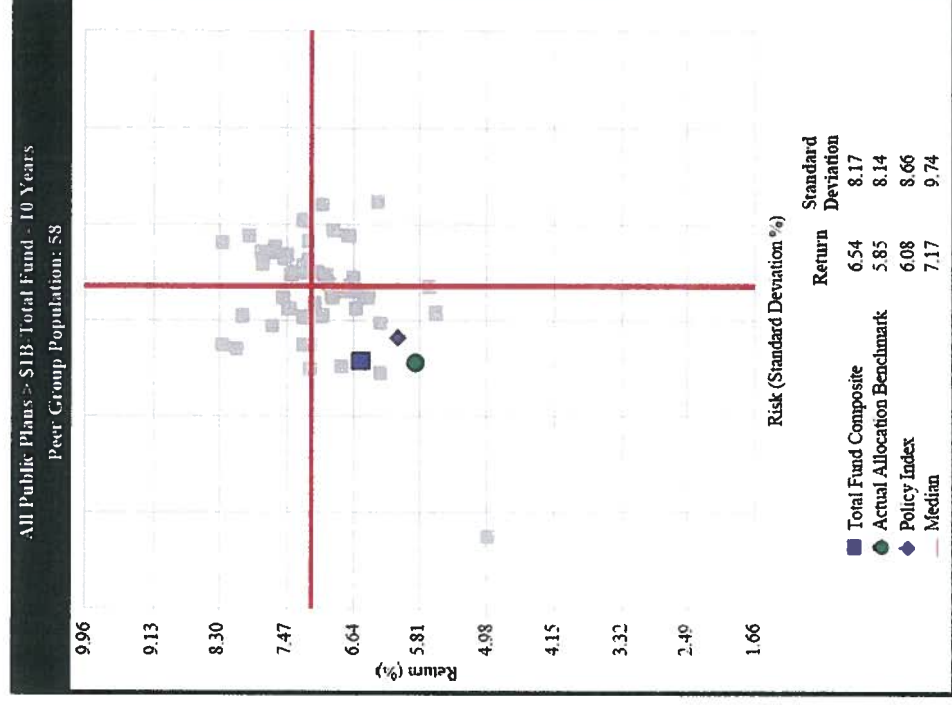
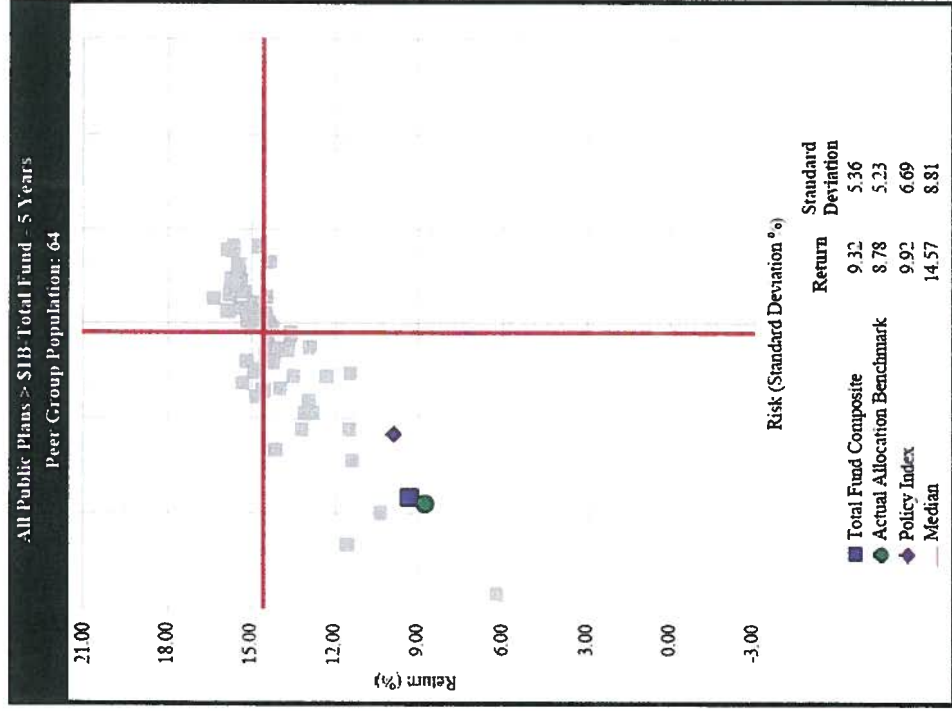


Please see Supplemental Information for custom benchmark definitions. Performance shown is gross of fees as of March 31, 2014.



Total Fund Risk/Return Profile vs. Peers

- Over the short-term, the Total Fund has experienced slightly lower returns than the median plan in the universe, but has significantly less risk.
- Over the trailing 10-year period, the Total Fund had a lower return, with lower risk as compared to the median plan. This was largely due to strong returns by equities and alternatives, to which the system was underweight relative to the median plan, during this period.



Please see Supplemental Information for custom benchmark definitions. Performance shown is gross of fees as of March 31, 2014.



Asset Class Composites



Asset Class Composite Performance

- The Real Return and International Equity composites were the key contributors to the relative outperformance over the trailing one-year period.
- Real Estate made the largest absolute gains during the quarter, adding to the strong absolute performance for the trailing one-year period, however, equity markets have remained volatile.

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	2013	Since Incep.	Inception Date
Total Fund Composite	1.95	1.95	8.29	7.31	9.32	6.98	6.54	9.75	8.98	01/01/1989
Actual Allocation Benchmark	1.74	1.74	8.25	7.05	8.78	6.61	5.85	9.70	8.35	
Difference	0.21	0.21	0.04	0.26	0.54	0.37	0.69	0.05	0.63	
Total Fixed-Income Composite	1.85	1.85	-0.15	4.06	5.53	4.96	5.13	-1.94	8.41	01/01/1989
Fixed Income Benchmark	1.84	1.84	-0.10	3.75	5.01	4.61	4.47	-2.02	7.78	
Difference	0.01	0.01	-0.05	0.31	0.52	0.35	0.66	0.08	0.63	
Real Return Composite	2.60	2.60	-0.73	4.60	N/A	N/A	N/A	-4.06	5.04	02/01/2011
Barelays World Gov. Infl-Lnk'd Index (Unhedged)	2.68	2.68	-1.59	3.75	6.40	4.89	5.01	-4.84	4.49	
Difference	-0.08	-0.08	0.86	0.85	N/A	N/A	N/A	0.78	0.55	
Global Equity Composite	1.59	1.59	17.93	9.75	18.37	N/A	N/A	24.87	4.58	02/01/2008
Global Equity Benchmark	1.42	1.42	17.69	9.60	18.20	N/A	N/A	24.49	4.44	
Difference	0.17	0.17	0.24	0.15	0.17	N/A	N/A	0.38	0.14	
Domestic Equity Composite	2.10	2.10	22.26	14.53	21.88	N/A	N/A	33.20	7.94	02/01/2008
R. 3000 Index	1.97	1.97	22.61	14.61	21.93	6.60	7.86	33.55	7.96	
Difference	0.13	0.13	-0.35	-0.08	-0.05	N/A	N/A	-0.35	-0.02	
International Equity Composite	0.98	0.98	13.17	4.82	14.70	N/A	N/A	16.31	1.08	02/01/2008
International Equity Benchmark	0.87	0.87	12.80	4.58	14.38	0.27	5.77	15.82	0.81	
Difference	0.11	0.11	0.37	0.24	0.32	N/A	N/A	0.49	0.27	
Real Estate Composite	7.76	7.76	13.75	N/A	N/A	N/A	N/A	11.69	11.80	01/01/2012
NCREIF ODCE Index (Gross) (AWA) - 1 Quarter Lag	3.17	3.17	13.94	13.60	3.68	3.25	7.16	13.04	12.43	
Difference	4.59	4.59	-0.19	N/A	N/A	N/A	N/A	-1.35	-0.63	
Unallocated Cash (SA)	0.00	0.00	0.16	0.07	0.10	N/A	N/A	0.12	0.25	06/01/2008
BoFA ML 3 Mo US T-Bill Index	0.01	0.01	0.07	0.08	0.12	0.91	1.65	0.07	0.28	
Difference	-0.01	-0.01	0.09	-0.01	-0.02	N/A	N/A	0.05	-0.03	

Performance is as of March 31, 2014 and is shown gross of fees. Please see Supplemental Information for custom benchmark definitions. As the Real Return asset class structure becomes diversified, the performance objective will be the Consumer Price Index + 4%. Real Estate fund returns are calculated by Private Edge and are lagged 1 quarter.



Custom Benchmark Definitions



Custom Benchmark Definitions: Total Fund Composite

- The **Actual Allocation Benchmark** is calculated monthly using beginning of month asset class weights applied to each corresponding benchmark return and currently consists of the following:

Russell 3000 Index

International Equity Benchmark

Fixed Income Benchmark

Barclays World Government Inflation-Linked Index (Unhedged)*

NCREIF Open-End Diversified Core Equity Index (Gross) (AWA)**

BofA Merrill Lynch 3 Month US Treasury Bill Index

- The **Policy Index** represents asset allocation targets adopted historically and currently consists of the following:

17.5% Russell 3000 Index

17.5% MSCI All Country World Excluding US Investable Market Index (Net)

30.0% Barclays US Aggregate Bond Index

10.0% Non-Core Fixed Income Benchmark

5.0% Consumer Price Index + 4%

10.0% NCREIF Open-End Diversified Core Equity Index (Gross) (AWA)**

5.0% Hedge Fund.net Fund of Funds Multi-Strategy Index (Net)

5.0% S&P 500 Index + 5%

*As the Real Return asset class structure becomes diversified, the performance objective will be the Consumer Price Index + 4%.

**Performance for NCREIF Open-End Diversified Core Equity Index (Gross) (AWA) is lagged one quarter.



Custom Benchmark Definitions: Asset Class Composites

- The **Fixed Income Benchmark** is calculated monthly and consists of the Barclays Gov't/Credit Long Term Bond Index through June 30, 2009; Barclays US Aggregate Bond Index thereafter.
- The **Non-Core Fixed Income Benchmark** is calculated monthly and consists of 50.0% Barclays US Corporate: High Yield Index and 50.0% JPMorgan Gov't Bond Index-Emg Mkts Global Diversified Index (USD) (Unhedged).
- The **Global Equity Benchmark** is calculated monthly and consists of 50% Russell 3000 and 50% MSCI EAFE Index (Net) through July 31, 2013; a blend of the Russell 3000 Index, MSCI All Country World Excluding US Investable Market Index (Net) and MSCI EAFE Index (Net) at beginning of month investment weights through November 30, 2012; and 50% Russell 3000 Index and 50% MSCI All Country World Excluding US Investable Market Index (Net) thereafter.
- The **International Equity Benchmark** is calculated monthly and consists of the MSCI EAFE Index (Net) through July 31 2010; a blend of the MSCI All Country World Excluding US Investable Market Index (Net) and MSCI EAFE Index (Net) at beginning of month investment weights through January 31, 2012; and the MSCI All Country World Excluding US Investable Market Index (Net) thereafter



CAPITAL MARKETS REVIEW

2nd Quarter 2014

June 30, 2014



RVK

OVERVIEW

During the second quarter, capital markets added to first quarter gains by delivering generally positive returns in a muted volatility environment. Global equity markets rose broadly, with emerging market equities slightly outperforming developed market equities. Fixed income markets benefited from narrowing credit spreads and falling real interest rates. In particular, longer-term treasuries benefitted from the yield curve flattening, which stemmed from lower consensus expectations for economic growth. Finally, geopolitical instability in the Middle East continued to support real asset prices.

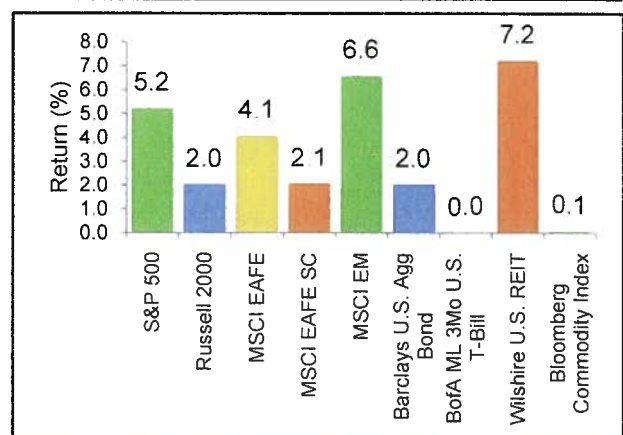
In the U.S., first quarter GDP growth was revised downward to -2.9% and the IMF reduced its 2014 U.S. growth forecast from 2.8% to 2.0%. The decline in anticipated U.S. growth is largely attributable to negative growth in the first quarter, which is expected to be partially offset by a recovery in the latter part of the year. Despite a weak Q1 GDP reading, recent data releases suggest a strengthening labor market and accelerating economic expansion. A key indicator, the ISM Purchasing Managers Index, averaged 55.2 during the second quarter, up from the first quarter level of 52.7 and decidedly above the average since 2009. In June, the unemployment rate fell to 6.1%, the lowest rate since September 2008; however, the level of long-term unemployment and underemployment remains above pre-crisis levels. The minutes from the Fed's June meeting revealed it would end its quantitative easing program by October, and that it has no set date to raise rates. Many market analysts don't expect the Fed to raise interest rates until the first half of 2015.

On the international front, the European Central Bank (ECB) announced several policy changes intended to increase liquidity for stressed banks and businesses. The benchmark policy rate was lowered by 10 basis points to 0.15%, bringing the interest rate on excess deposits to -0.10%. The negative rate requires banks to pay the ECB interest on excess reserves, which incentivizes banks to extend credit to the economy. The ECB also announced a long-term loan program targeted toward peripheral Europe's most stressed banks. China reduced the reserve requirement ratios for banks that lend to small- and medium-sized business, as well as agricultural borrowers. The move is part of the PBOC's plan to encourage lending outside the highly levered real estate sector. In Japan, anticipation of Prime Minister Abe's reform announcements bolstered the country's efforts to reflate the currency. In India, equities rallied in response to the election of Prime Minister Narendra Modi, who is generally viewed as a business-friendly politician.

TRAILING PERIOD MARKET PERFORMANCE (%)

	QTD	CYTD	1 Year	5 Years	10 Years
S&P 500	5.2	7.1	24.6	18.8	7.8
Russell 2000	2.0	3.2	23.6	20.2	8.7
MSCI EAFE	4.1	4.8	23.6	11.8	6.9
MSCI EAFE SC	2.1	5.5	29.1	15.2	8.8
MSCI EM	6.6	6.1	14.3	9.2	11.9
Barclays U.S. Agg Bond	2.0	3.9	4.4	4.9	4.9
BofA ML 3-Month U.S. T-Bill	0.0	0.0	0.1	0.1	1.6
Wilshire U.S. REIT	7.2	18.1	13.5	24.0	9.6
Bloomberg Commodity Index	0.1	7.1	8.2	2.0	0.9

QUARTER-TO-DATE PERFORMANCE (%)



KEY ECONOMIC INDICATORS

		As of	3/31/2014	12/31/2013	10 Year Average
Federal Funds Rate	0.09%	6/30/2014	0.06%	0.07%	2.08%
Treasury - 1 Year	0.10%	6/30/2014	0.11%	0.11%	0.63%
Treasury - 10 Year	2.53%	6/30/2014	2.72%	3.03%	4.05%
Treasury - 30 Year	3.36%	6/30/2014	3.56%	3.97%	4.69%
Breakeven Inflation - 1 Year	1.46%	6/30/2014	1.79%	1.50%	1.09%
Breakeven Inflation - 10 Year	2.24%	6/30/2014	2.14%	2.23%	2.11%
Breakeven Inflation - 30 Year	2.35%	6/30/2014	2.28%	2.36%	2.45%
Barclays US Corp: Hi Yld Index - OAS	3.37%	6/30/2014	3.58%	3.82%	6.00%
Capacity Utilization	79.10%	5/31/2014	79.30%	78.50%	76.50%
Unemployment Rate	6.30%	5/31/2014	6.70%	6.70%	6.40%
ISM PMI - Manufacturing	55.30%	6/30/2014	53.70%	56.50%	52.10%
Baltic Dry Index - Shipping	850	6/30/2014	910	2,277	3,487
Consumer Confidence (Conf. Board)	85.18	6/30/2014	83.86	77.54	81.93
CPI YoY (Headline)	2.10%	5/31/2014	1.50%	1.50%	2.40%
PPI YoY - Producer Prices	2.40%	5/31/2014	1.70%	1.40%	2.90%
US Dollar Total Weighted Index	\$76	6/27/2014	\$77	\$76	\$84
WTI Crude Oil per Barrel	\$105	6/30/2014	\$102	\$98	\$60
Gold Spot per Ounce	\$1,327	6/30/2014	\$1,284	\$1,205	\$687

ASSET CLASS COMMENTARY

U.S. Equity

The U.S. stock market ended Q2 on a strong note despite the headwind of negative U.S. GDP data revisions and geopolitical instability experienced early in the quarter. Large- and mid-cap stocks outperformed their smaller counterparts, with micro-cap lagging all other market cap groups. By quarter end, value stocks outpaced growth stocks despite mixed performance throughout the quarter.

Active managers struggled to keep pace with the strong returns produced by large- and mid-cap indices. Small-cap managers were more likely to outperform, as the Russell 2000 ranked near median in the U.S. small-cap peer group. Based on a non-cyclically adjusted, 12-month trailing P/E ratio, U.S. equities appear priced at or near fair value. Mid-cap value stocks exhibit the richest P/E ratio, currently at 120% of the 20 year average, whereas large-cap growth stocks appear relatively cheap, trading at 87% of the 20 year average.

The energy sector led equity returns for the quarter, benefitting from supply uncertainty, followed by the utilities sector, which remains attractive to yield-oriented investors. Similarly the U.S. REIT index had a strong quarter, outperforming all other broad U.S. equity indexes. In response to weak economic growth and low interest rates, many managers are positioning their portfolios to capture cyclical growth opportunities anticipated in the latter half of the year.

Figure 1 provides an indicator of collective, active manager performance by displaying the median three-year rolling excess returns, gross of fees, for active U.S. large-, mid-, and small-cap managers calculated using each strategy's preferred benchmark. The recent struggle is due, in part, to high correlations between stock movements, mainly driven by macroeconomic events. As stock price movement exhibits higher dispersion the performance of active management may reverse course.

Figure 1: U.S. Active Manager Returns



Non-U.S. Equity

Developed international markets generated strong absolute returns in Q2. Value outperformed growth, but still lags over longer periods. Small-cap stocks underperformed large-cap stocks in

ASSET CLASS COMMENTARY

developed markets. Financials and information technology stocks experienced weakness while supply concerns resulting from regional instability in the Middle East fueled an energy sector rally. In developed regions, European markets lagged while Canadian markets provided the most attractive returns. The ECB lowered rates, providing downward pressure on the Euro; however, the Euro actually strengthened to a 2009 high versus the U.S. Dollar. Finally, despite an increase in the consumption tax from 5.0% to 8.0%, Japanese markets rose meaningfully.

Emerging markets outperformed domestic and developed international markets. Large-cap outperformed small-cap stocks, reversing a trend from past quarters. Initially, Russia and surrounding markets weighed heavily on the MSCI Emerging Markets Index, as turmoil in the Ukraine persisted. However, concerns quickly dissipated, and Russian stocks responded with a greater than 10% return in May. India equities generated double digit returns due to expected economic and social reforms resulting from the election of Prime Minister Narendra Modi. Finally, there were notable changes to the index with the demotion of Greece to an emerging market and the promotion of Qatar and the UAE, which had been classified as frontier markets.

Fixed Income

The Barclays U.S. Aggregate Index returned 2.0% for the second quarter pushing year-to-date returns to near 4.0%. These gains were surprising, as many market participants were anticipating rising rates. The opposite occurred due to slower than projected economic expansion and a yield spread advantage of the U.S. over many G8 nations.

U.S. Treasuries gained 1.4% for the quarter with the U.S. Long Treasury Index gaining an impressive 12.1% year-to-date. A historically low volatility environment contributed to a 2.4% return for mortgage-backed securities. Reduced refinancing activity helped agencies post 29 basis points of excess returns. Credit led all sectors with a 2.7% return for the quarter. Long credit benefited from a flattening yield curve and outperformed intermediate credit on an absolute and duration-adjusted basis. Due to strong demand, year-to-date

corporate debt issuance is on pace to beat last year's issuance amount by 10%. The appetite for yield continued in Q2 as lower quality investment-grade securities (BBB) returned 3.4% for the quarter and 7.2% year-to-date, compared to 1.2% and 2.4% for AAA securities, respectively.

The Barclays Global Aggregate Index returns were in line with the U.S. Aggregate Index. Due to compelling valuation opportunities, emerging market debt returned 5.8% in Q2 as measured by the JPMorgan Emerging Bond Index+. While hard currency indices have outpaced local indices year-to-date, local currency offerings outperformed broad emerging market debt in June. With global growth on a slow, yet steadily improving trajectory, and developed market exports rising, emerging market currencies could generate healthy returns in the second half of 2014.

Hedge Funds

Hedge funds were up broadly during the second quarter despite a difficult long/short equity environment in April. Initial estimates show multi-strategy funds of hedge funds with high RVK client exposure up from 1.0% to 2.5% in Q2, bringing year-to-date returns in the range of up 1.8% to 4.0%. Within long/short equity, the technical rotation away from momentum and growth stocks continued into the first few weeks of April, triggering losses for a number of managers. Managers that rotated to value names or decreased gross exposure early in the second quarter were rewarded for defensive positioning. Gains in May and June more than offset earlier losses with long/short equity managers ending the quarter firmly in positive territory. Credit managers continued to perform well, benefiting from the positive carry associated with the strategy and narrowing credit spreads. Some managers capitalized on idiosyncratic events in distressed, lower quality, and asset backed credits, helping to buoy returns. Estimates also show positive returns for the quarter within systematic and discretionary macro strategies. Discretionary managers benefited from long equity exposure and a renewal of the reflation trade in Japan. Systematic managers captured positive trends in energy and agricultural commodities, rates, and equities.

ASSET CLASS COMMENTARY

Global Tactical Asset Allocation (GTAA)

Global Tactical Asset Allocation (GTAA) strategies posted solidly positive results for the second straight quarter. Risk parity strategies that target equal risk contributions from multiple asset classes significantly outperformed those that follow a blended 60% equity and 40% fixed income approach. Exposure to inflation-sensitive themes, income-oriented equities and emerging markets allocations provided modest tailwinds driven by strong performance in REITs and emerging markets. Cash positions, short-term high quality fixed income and positions in lower-volatility, absolute return holdings detracted from the performance of a number of managers that recently increased exposure to lower volatility areas. Over the past twelve months, strategies with larger U.S. equity allocations have outperformed those with higher exposure to foreign developed equity, and especially those with emerging markets equity. In the second quarter, this trend reversed as emerging market equities rebounded from weak performance in 2013. Similarly, managers with allocations to REITs and energy equities posted stronger returns reversing another recent trend.

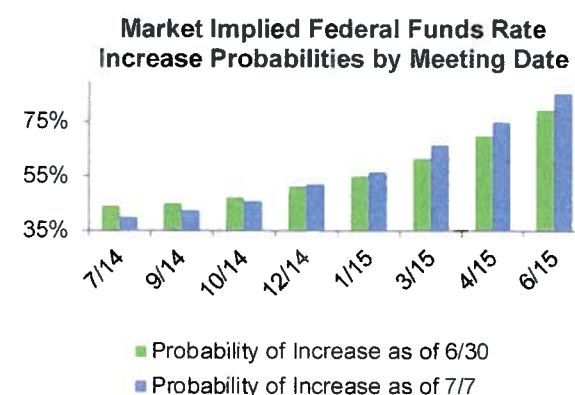
Diversified Inflation Strategies (Real Return)

Diversified Inflation Strategies (DIS) extended strong performance that began in early 2014. Poor performance among several inflation-sensitive asset classes including TIPS, REITs, commodities and natural resource equities in 2013 became additive to returns in Q2 for managers that maintained exposure. REITs and MLPs provided the largest gains and managers with persistent strategic weights to natural resource equities were also rewarded. Those with allocations to emerging markets inflation-linked bonds performed well. Heavier weightings to TIPS dragged somewhat on returns despite a quarter of respectable performance. Strategies with heavier commodities exposures lagged significantly given relative weakness in the asset class. Most DIS managers provide beta sensitivity relative to CPI, and are likely to provide lackluster returns in environments with low, stagnating or declining inflationary expectations. Core CPI increased slightly in Q2 from 1.7% to 2.0% with expectations for future

inflation remaining close to the Fed's long-term 2.0% target.

Figure 2 illustrates the implied probability of a Fed Funds target rate increase at upcoming Fed meeting dates. The recent positive jobs data boosted the implied probability of a rate increase as shown in the difference between the readings as of 6/30 and 7/7.

Figure 2: Interest Rate Increase Probability



Real Estate

Core U.S. Real Estate continued to show positive performance, as evidenced by preliminary returns between 2.0% and 3.0% for the NCREIF-ODCE Index constituent funds during Q2. Trailing one-year returns for the index were between 9% and 14%. The FTSE NAREIT All Equity REITs Index returned 7.0% illustrating strength in publicly-traded securities. Major U.S. commercial property types improved in the second quarter, including office, retail, industrial, and apartment markets. The office market expansion has been driven by private sector job growth, particularly in areas with heavy concentrations of technology and energy companies. According to CBRE, 45 of 63 of the largest regional markets have experienced declines in office and industrial vacancy for 16 quarters in a row. Private Real Estate fundraising remained strong with 33 funds closing, representing \$16 billion in aggregate capital raised, with a majority of the assets flowing to North American focused funds. Additionally, approximately \$7.5 billion was closed by debt-focused funds during Q2, showing continued investor appetite for the strategy.



References

RVK currently provides services, comparable to the components outlined in the RFP scope of work, to virtually all of our 180 retainer clients (including 26 public fund clients). The following major public pension clients are excellent examples of our capabilities in this area:

Texas Municipal Retirement System

T.J. Carlson

Chief Investment Officer

1200 North IH 35

Austin, TX 78701

512-476-7577

TCarlson@tmrs.com

Total Assets Under Advisement: \$22.8 billion, as of March 31, 2014

Date of Performance Review or Study:

Ongoing service

Description of Work Performed:

A comprehensive presentation is presented to the Board on a quarterly basis and provides an update on the capital markets environment, an asset allocation review, and total fund and asset class results, along with key takeaways.

New York State Common Retirement Fund

Vicki Fuller

Chief Investment Officer

59 Maiden Lane, 30th Floor

New York, NY 10038

212-861-4019

vfuller@osc.state.ny.us

Total Assets Under Advisement: \$176.2 billion, as of March 31, 2014

Date of Performance Review or Study:

Ongoing service

Description of Work Performed:

A comprehensive analysis is conducted on a quarterly basis to analyze our client's current roster of investment managers in order to assess "fit" within their desired asset class structure. Additionally, we conduct asset class structure studies for their U.S. and non-U.S. portfolios. We meet with our client's Staff on a regular basis to discuss the portfolio, manager updates, and other key topics of interest.



James M. Voytko, MPA, MPP
President, COO, Director of Research, Senior Consultant, Principal

Current Responsibilities:

Jim is President and an active Senior Consultant at RVK. He joined the firm in 2004 and consults to a wide array of large complex clients with a special emphasis on RVK's major public fund and insurance clients. Among the major clients that Jim serves are four large state public plans with assets of \$170 billion, \$75 billion, \$26 billion and \$12 billion. Each of these clients has multiple fund structures and complex asset allocations.

Jim also generally oversees RVK's multiple research efforts and more directly the firm's notable Asset/Liability Team. He serves on Institutional Investor's Conference Board of Advisors and is frequently asked to speak on a wide variety of topics at conferences throughout the year.

Summary of Experience:

Jim is a veteran of institutional investing and has an unblemished 30+ year record as a fiduciary. His experience spans virtually all major roles associated with institutional investing, including service as:

- Public Board Investment Trustee – for a multiple fund public board of investment directing more than \$45 billion in assets
- CEO of a major state public DB plan – with assets exceeding \$40 billion
- Trustee for a major corporate pension and DC plan based in NYC
- Director of Research for a major Wall Street firm (PaineWebber)
- Deputy Director of Investment Banking and Chair of the Underwriting Committee for a major investment bank
- Chief Investment Officer for a private bank asset management company with more than \$50 billion in assets

Management Plan:

The estimated portion of time that Jim would spend on ORSC's semi-annual evaluations is 4-8%. Jim would serve as the Primary Contact and would lead the formulation and presentation of RVK's analysis and conclusions.

Education:

Harvard University, Masters of Public Policy, 1978
University of Washington, Masters of Public Administration, 1976
Carnegie Mellon University, Bachelor of Arts, History & Social Science, 1973

Professional Qualifications, Accreditations, Certifications:

NYSE Supervisory Analyst, 1989
Series 7 Securities License, 1986



Nick A. Woodward, CFA
Consultant

Current Responsibilities:

Nick consults to a variety of the firm's Public Pension plan clients, as well as Taft-Hartley plans, Defined Contribution plans and Endowment/Foundation clients. Nick currently is a team member on three Public DB Plans. He holds the roles and responsibility of Primary Lead on one \$2 billion Public DB Plan, Co-Lead on one \$20 billion Public DB plan, and Project Assistant on one client comprised of four Public DB Plans totaling \$55 billion. In addition to his lead consulting relationships, he is involved in the firm's capital market assumptions process and assists with general research efforts. Nick is a seven year veteran of RVK and is a Chartered Financial Analyst.

Summary of Experience:

Associate Consultant, 2010 – 2012 (RVK)

Nick was responsible for managing and leading client relationships across assigned accounts, as well as planning and developing education and recommendation presentations. He attended and led quarterly committee meetings, reviewed the capital markets environment and investment performance results, provided education, and made recommendations. Nick led or assisted with projects such as an annual public fund compensation analysis and evaluation, annual active-passive analysis, and mean benchmark optimization assumptions development.

Investment Associate, 2008 – 2010 (RVK)

Nick provided internal team support, assisted with internal research projects, and managed multiple client relationships as well as deliverables. Special projects included multiple thematic investing and risk budgeting portfolio reviews, public fund organizational structure analysis, and securities litigation education.

Senior Investment Analyst, Team Leader, 2007 – 2008 (RVK)

As a team leader, Nick mentored and trained his fellow analysts. Nick also created performance reports and wrote, prepared, and reviewed monthly Global Markets pages for clients.

Management Plan:

The estimated portion of time that Nick would spend on ORSC's semi-annual evaluations is 5-8%. Nick is the proposed Primary Contact for the ORSC project, drawing upon his extensive work on performance reporting methods, techniques, and execution.

Previous Positions:

Bates Private Capital, an LECG Company, 2005 - 2007

Analyst

Responsibilities included researching securities and mutual funds using Bloomberg and Morningstar proprietary software. Further responsibilities included producing, reviewing and revising the Bates Standard Analysis and various Bates supplemental schedules by using Excel to analyze investment performance, managing a 40 member team project for litigation support, as well as many others.



Education:

University of Portland. Bachelor of Arts, Business Administration. 2004

Professional Qualifications, Accreditations, Certifications:

Chartered Financial Analyst (CFA). 2012

CFA Society of Portland. Member

CFA Institute. Member



Proposed Methodology and Work Product

Please see below for RVK's proposed methodology for each element of the components listed under the Scope of Investment Performance Evaluation.

1. Overview of Broad Market Analysis and Relationship to Performance Results

For all of our 180 full-retainer clients, RVK routinely includes a capital markets overview that precisely targets this aspect of the ORSC scope of work. We are able to customize our capital markets overview to highlight critically important or unusual trends when deemed necessary. An example of one of these summaries is attached as Tab 8. RVK also produces a broader quarterly capital markets commentary that also directly addresses this aspect of the ORSC scope of work. An example of our most recent report is attached as Tab 4.

Our firm and proposed consulting team has substantial experience in relating – in both technical and layman's terms – the implications of significant trends in the capital markets and broader economy for institutional investment portfolios.

2. Review and Compare Median Public Fund Peer Performance

RVK has broad and deep experience in comparing and analyzing fund performance against similarly situated peer funds. All of our public fund performance reports contain peer comparisons at the total fund, asset class, and manager level. We utilize a wide variety of peer groups to ensure that an apples-to-apples comparison is achieved when ranking a total fund portfolio.

At the total fund level, we access the Master Trust Plan Sponsor Peer Group which utilizes actual client returns (gross of fees) compiled from consultant and custodial data. The database includes performance and other quantitative data for over 2,200 plans which include public, corporate, endowment, foundation, healthcare, and Taft-Hartley plans. For public plans specifically, there are currently over 400 plans with assets ranging from \$103.000 to \$143.8 billion.

We also have the capability to create customized peer universes that are more aligned with the fund whose performance we are evaluating. The factors underlying the selection of a customized peer universe vary by client – fund size, expected access to a similar investment universe, expected access to similar asset allocation options, similar types of liabilities and client type are some examples. An example of our use of a customized peer universe is shown in Tab 9.

An additional universe, unique to RVK, is our proprietary Public Fund Report. For more than 25 years, we have conducted research of more than 80 major public funds across the U.S., and we believe our database of public fund performance and attributes will be a powerful tool in successfully executing this component of the ORSC scope of work. RVK conducts the research on a semi-annual basis (on the same schedule as noted in the ORSC scope of work) and provides a complimentary report to all participants.



The report helps public fund entities see how their fund(s) compare to others of similar size in the areas of

- Asset Allocation
- Active/Passive Mix
- Internal/External Management
- Total Fund and Asset Class Performance
- Funded Status
- Actuarial Statistics
- Administrative & Investment Fees

The report also includes aggregated participant responses to 4-5 survey questions that focus on topics such as market trends, actuarial rates of return, rebalancing, active versus passive management, the use of a risk management software system, and fees. Ohio PERS is a current participant, and we have included their most recent report as an example in Tab 10.

3. Review of Comparative Asset Allocations

RVK has multiple tools available to compare and review the asset allocations of the six Ohio Systems versus their respective peers. These tools include the Master Trust Plan Sponsor Peer Group (and customizable subsets) available in our performance reporting system and the proprietary semi-annual RVK Public Fund Survey (both discussed above). In addition, RVK serves as the consultant to multiple large public DB plans and has intimate knowledge of their asset allocations. We are confident that we will be able to review and analyze the asset allocations of the Ohio Systems and provide significant value-added insights to the ORSC.

4. Compare Total Fund Performance Against Each System's Policy Benchmark/Peer Group

Virtually, all of RVK's 469 plans (excluding DC plans) utilize policy benchmarks with a very small number utilizing actual allocation benchmarks. Thus, our standard performance reports and analytics contain comparisons of total fund performance against the policy portfolio benchmark. We have included an excerpt from a performance report for a relatively complex public fund in Tab 9. Total fund performance comparisons to this fund's policy benchmark can be found on page 44. Finally, as specified in this component of the scope, as well as component #3 above, we will be able to compare total fund performance against a general and customized peer universe.

5. Compare Broad Asset Classes Against Each System's Policy Benchmark/Peer Group

We would propose to address this more complex task in several ways. First, we would review the asset class performance for each Ohio System and compare it against their chosen asset class benchmarks.



Secondly, we would compare the absolute performance of the Ohio Systems against absolute performance of customized asset class peer groups in our performance measurement system as well as the asset classes reported in our Public Fund Report. Peer comparisons can be challenging as asset class definition, construction, and composition can vary significantly across funds. We would also compare absolute and relative performance at the asset class level among the Ohio Systems with due consideration of differences in asset class composition.

6. Review Risk-Return Performance for Each System's Total Fund and Asset Class

RVK routinely analyzes risk-return performance for our general consulting clients over multiple time periods. We prefer to report risk/return performance graphically as the visual presentation offers, in our judgment, a much clearer and more intuitive appreciation of the risk taken to produce an associated return stream. This graphical presentation also allows a comparison against peers, providing further insight into the performance of each System's total fund and respective asset classes. An example of risk/return graphics can be found on page 94 of the Ohio PERS Public Fund Report in Tab 10.

7. Compare Actual Versus Approved Asset Allocation

Asset allocation "drift" is a critical area for the introduction of unintended risk in a fund. Our standard performance reporting platform includes a display of actual versus policy allocations. In many cases, RVK is tasked by our clients to periodically report compliance checks on actual allocations versus approved ranges as well as comparisons to specific targets. An example of actual versus policy allocations in a sample public fund performance report can be found on page 42 of Tab 9.

8. Compare Total Fund Performance Versus Assumed Rate of Return

RVK's performance reporting platform has the ability to address this task. We can do this for annual and multi-year periods, addressing any changes in the assumed rate of return in a variety of ways.

9. Provide Commentary on Areas Needing Further Review

We believe this is a critical component in your scope of work. In our experience, risk (and sometimes inadequately addressed capital markets opportunities), often emerges in areas that are best examined with metrics other than those noted in scope items 2 through 8 above. This is a task that calls for significant experience in the public fund arena which is among our firm's strongest attributes. Examples of metrics we might apply include:

- **Liquidity Rating** – a qualitative method for determining the relative amount of liquidity in a portfolio. Developed by RVK and includes characteristics such as trading volume, leverage, and pricing mechanisms.
- **Downside Risk** – the volatility of negative movements of a return series
- **Equity Beta Risk** – a measure of the sensitivity of a portfolio to the movements in the equity market
- **Up Market Capture** – the ratio in percentage terms of a portfolio's average return versus the benchmark during the benchmark's positive returns
- **Historical Total Fund Volatility** – a statistical measure of the range of a portfolio's performance around its average return over a specified time period



10. Review Each System's Net of Fees Performance and External Versus Internal Management

Net of fees returns are a critically important metric and will require access to net of fee performance for each Ohio System. Many of our clients ask us to calculate total fund returns net of fees while using gross of fee performance to execute peer comparisons (generally, all peer returns are provided to third-party vendors on a gross of fees basis). Regarding the analysis of external versus internal management for each System, we are in an excellent position to provide a thorough and comprehensive analysis due to our proprietary semi-annual Public Fund Report. We can compare the external/internal mix for each Ohio System against the robust peer group of more than 80 public funds across the U.S. Please see page 61 of Tab 10 for external versus internal management results from our most recent report.

Analysis and Interpretation

RVK is exceptionally well-versed in all of the analytics outlined in the ORSC scope of work. To be comprehensive, analytics need to be accompanied by thoughtful and clearly articulated interpretation, context, and takeaways. This can only be provided by a skilled investment consulting team that is fully engaged with the performance data of the Ohio Systems. We believe we can provide this interpretation and analysis with unique clarity, utilizing layman's terms and avoiding technical jargon and terminology wherever possible. Where terms of art are required, we will make great effort to articulate their meaning, use, and purpose.

When reporting performance, or providing performance evaluations, our objective is to present data and analyses that can drive decisions. In this regard, we believe that the depth of analysis is equally important to the simplicity of a presentation. This commitment to insightful interpretation, based on experience and delivery in clear language, will be particularly important in supplying the following three key summary statements required for the executive summary:

1. An overall opinion as to the validity, completeness, and appropriateness of the investment performance data provided by each of the Ohio Systems.
 - We understand that this is not intended to be an "audit level" opinion but rather an insightful commentary on the achievement of best practices for performance reporting at each of the Systems and a high-level review of performance relative to benchmarks & peer groups.
2. Comments on the appropriateness of performance benchmarks used by the Systems.
 - We are prepared to call out observed instances where current benchmarks depart from standard norms, are potentially mismatched against the investment exposures, and/or are inconsistently applied.
3. Comments on each System's performance versus the board universe of comparable public retirement systems.
 - We strongly believe that as we execute each component of the scope enumerated above, we will be in an excellent position to utilize our experience and technical knowledge to provide useful insights as we monitor and analyze the performance of these Systems over time.



Type and Level of Anticipated Assistance

In order to fully execute each of the components in the scope of work, RVK would need to have access to the following data for each of the six Ohio Systems for the term of the contract:

- Monthly performance data (market values, net cash flows, and performance)
 - The custodian bank, or the entity serving as the book of record, for each System will be expected to provide RVK with this data to be used in our performance analysis. RVK understands that it is not an expectation of the ORSC for the vendor to calculate or reconcile performance.
- Performance report, as reviewed by the Board, for each System

We believe that obtaining the necessary data noted above will be the most important component to conducting our analysis. However, from time to time, there may be a need to discuss certain data definitions and methodological processes with Staff from Ohio's Retirement Systems. For example, we may need to understand a specific policy on how returns for alternative investments (particularly private equity and non-core real estate investments) are calculated within both the total fund composite and the policy benchmark. Typically, illiquid alternative investments are reported on a one or two quarter lag, whereas the benchmark may be up-to-date.

It would also be helpful for us to obtain any changes that may occur over time to the target asset allocation index as these changes can have a significant effect on the long-term returns that each individual System achieves versus the respective policy index. Having this additional information will assist us in providing a thorough review of the long-term results for each System.

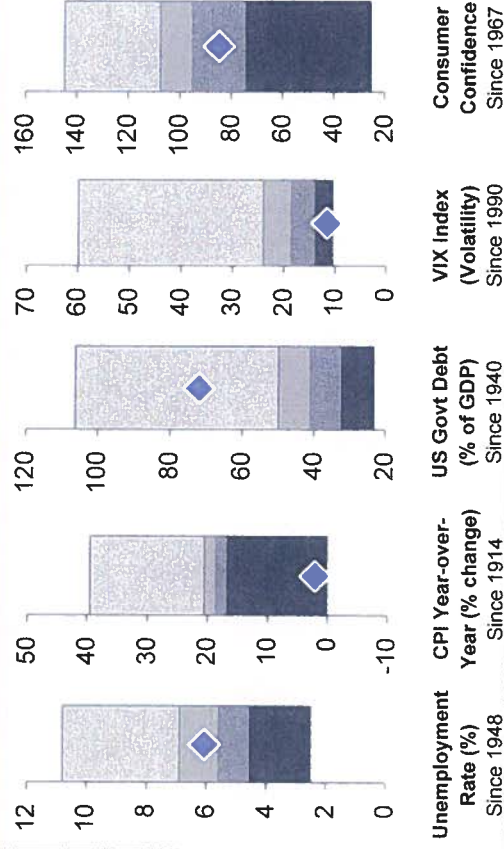
Any additional information we may need would likely be obtained by Staff, and we expect initial phone conversations (to discuss our data needs as outlined above) to take approximately 1-2 hours. Finally, we would note our firm has a strong reputation in the institutional investment industry for forging effective relationships with plan vendors and other advisors.

Second Quarter Economic Environment

Key Economic Indicators

In the U.S., first quarter GDP growth was revised down to -2.9% and the IMF revised its 2014 U.S. growth forecast down to 2.0% from 2.8%, anticipating that the strengthening pace of recovery will only partially offset the first quarter's uninspiring performance. Following disappointing Q1 GDP numbers, recent data releases have indicated continued economic expansion and improving labor markets. In June, the economy added 288,000 jobs with the unemployment rate declining to 6.1%, the lowest rate since September 2008, while most inflation measures ticked up marginally. On the international front, the European Central Bank (ECB) announced several policy changes intended to increase liquidity for stressed banks and businesses. The benchmark policy rate was lowered by 10 basis points to 0.15%, bringing the interest rate on excess deposits to -0.10%. The negative rate requires banks to pay the ECB interest on excess reserves, which incentivizes banks to extend credit to the economy.

Key Economic Indicators



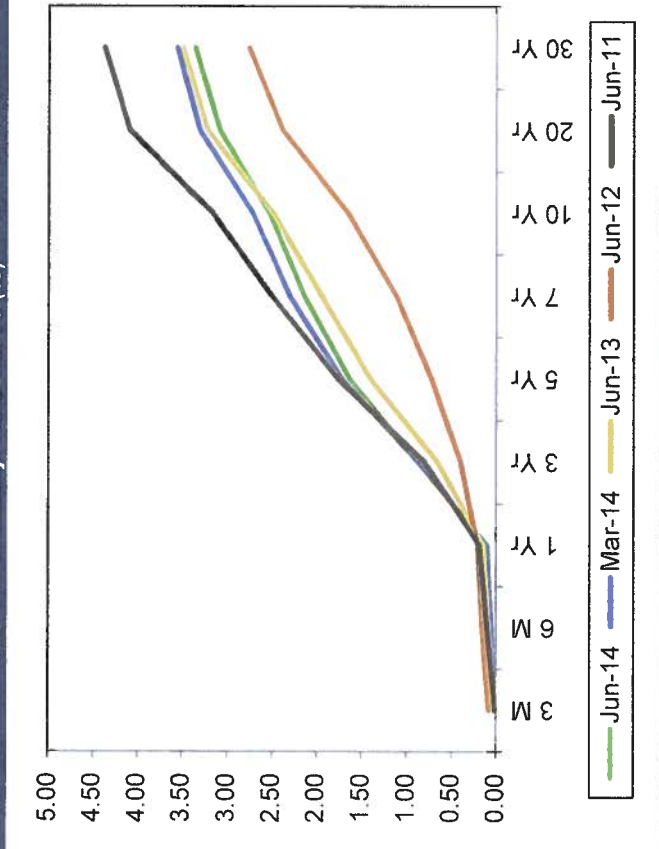
Economic Indicators

	Jun-14	Mar-14	Jun-13	Jun-11	20 Yr
Federal Funds Rate (%)	0.09 ▲	0.06	0.07	0.07	2.97
Breakeven Infl. - 1 Yr (%)	1.46 ▼	1.79	0.74	1.01	1.19
Breakeven Infl. - 10 Yr (%)	2.24 ▲	2.14	1.99	2.38	2.05
Consumer Price Index (%)	N/A	1.50	1.50	3.60	2.41
Unemployment Rate (%)	6.10 ▼	6.70	7.50	9.10	6.01
Real GDP YoY (%)	N/A	1.50	1.30	1.90	2.53
PMI - Manufacturing	55.30 ▲	53.70	51.50	56.60	52.06
USD Total Wtd Idx (%)	75.91 ▼	76.86	77.72	69.08	86.43
WTI Crude Oil per Barrel (\$)	105 ▲	102	97	95	51.95
Gold Spot per Oz (\$)	1,327 ▲	1,284	1,235	1,500	684

Market Performance (%)

	QTD	YTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	5.24	7.14	24.61	18.83	7.78
R 2000	2.05	3.19	23.64	20.21	8.70
MSCI EAFE (Net)	4.09	4.78	23.57	11.77	6.93
MSCI EAFE SC (Net)	2.08	5.50	29.08	15.21	8.78
MSCI EM (Net)	6.60	6.14	14.31	9.24	11.94
Barclays US Agg Bond	2.05	3.93	4.38	4.85	4.93
BofAML 3 Mo US T-Bill	0.01	0.02	0.06	0.11	1.63
NCREIF ODCE (Gross)	2.93	5.53	12.75	10.00	7.14
Wilshire US REIT	7.22	18.08	13.54	24.04	9.55
HFN FOF Multi-Strat	1.44	2.20	7.62	4.00	3.18
Bloomberg Cmnty (TR)	0.08	7.08	8.21	1.99	0.87

Treasury Yield Curve (%)



Treasury data courtesy of the U.S. Department of the Treasury. Economic data courtesy of Bloomberg Professional Service. N/A is shown for data that is currently unavailable. HFN Index performance is preliminary and subject to change.

Domestic Equity Review
As of June 30, 2014

Second Quarter Review

Broad Market

U.S. Equities had a strong second quarter after an up and down first quarter. The Russell 3000 returned 4.87% for the quarter.

Market Cap

Large and mid-cap stocks significantly outperformed small-cap and micro-cap equities during the quarter.

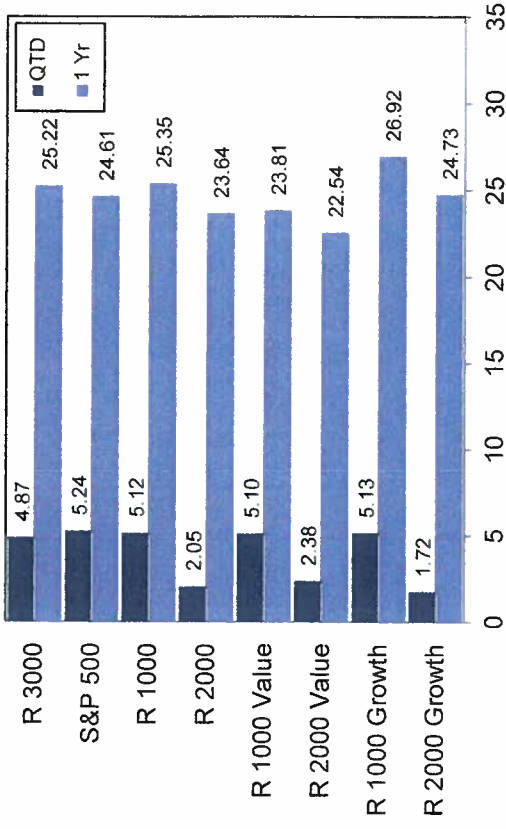
Style

While there was not much separation between value and growth stocks, value stocks edged out growth stocks by the end of the second quarter.

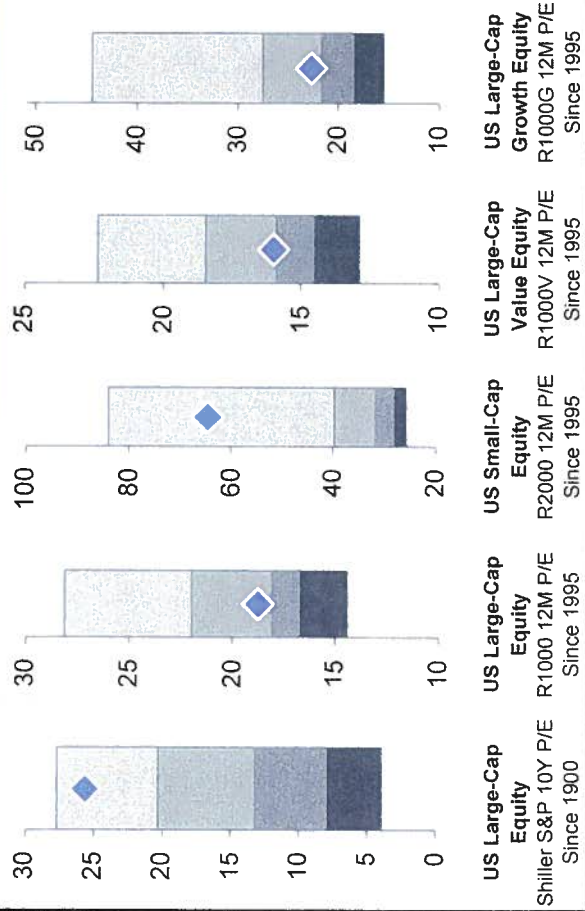
Sector

All major sectors had positive returns for the quarter, but the Energy sector, due to supply uncertainty, led all others in a strong quarter of equity performance. The Utilities sector also performed well, as it remains an attractive option for yield-oriented investors. In response to weak economic growth and low interest rates, many managers are positioning their portfolios to capture cyclical growth opportunities anticipated in the latter half of the year.

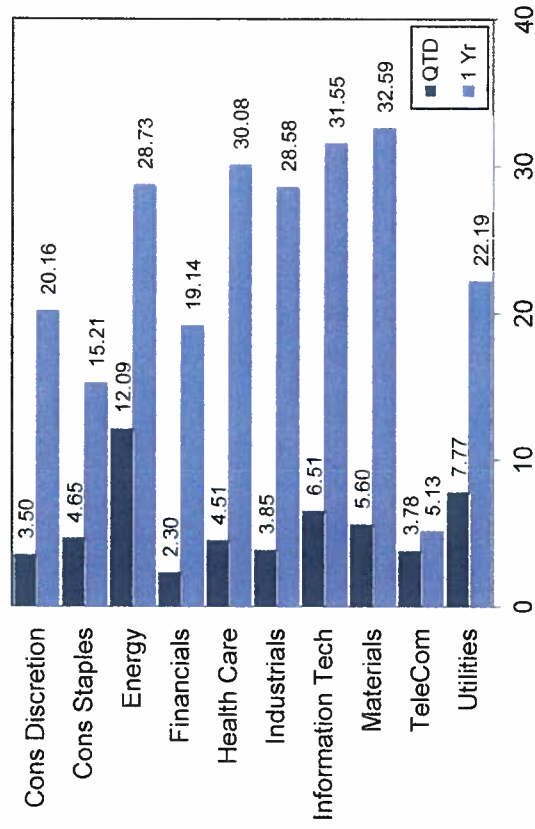
Style and Capitalization Market Performance



Valuations



S&P 500 Index Sector Performance



Valuation data courtesy of Bloomberg Professional Service and Robert J. Shiller: Irrational Exuberance, Second Edition. Trailing 10 year and 12 month P/E metrics exclude the 5th and 95th percentile.

Second Quarter Review

Broad Market

International markets performed very comparably to U.S. markets during the second quarter. Returns for all major non-U.S. indices were positive in Q2.

Market Cap

In both developed and emerging markets, large-cap stocks drastically outperformed small-cap stocks.

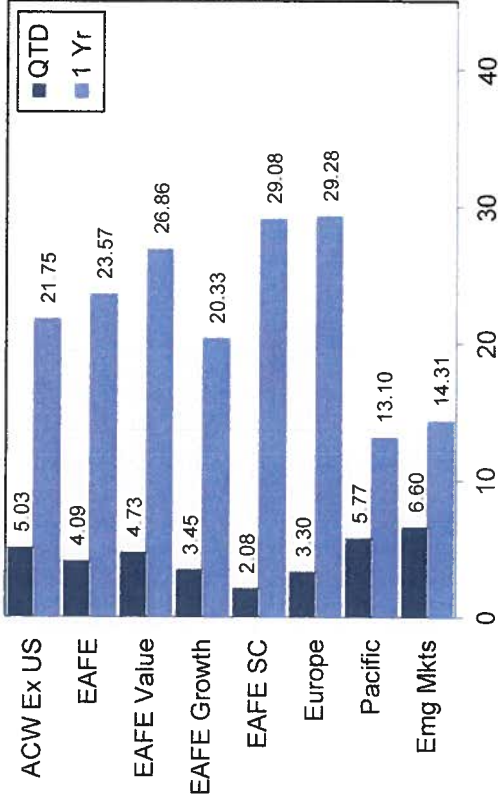
Developed Markets

The developed international markets generated strong absolute returns in Q2. Value continues to outperform growth over the short-term but still lags over longer time periods. Energy was the best performing sector this quarter while financials and information technology trailed the broad market.

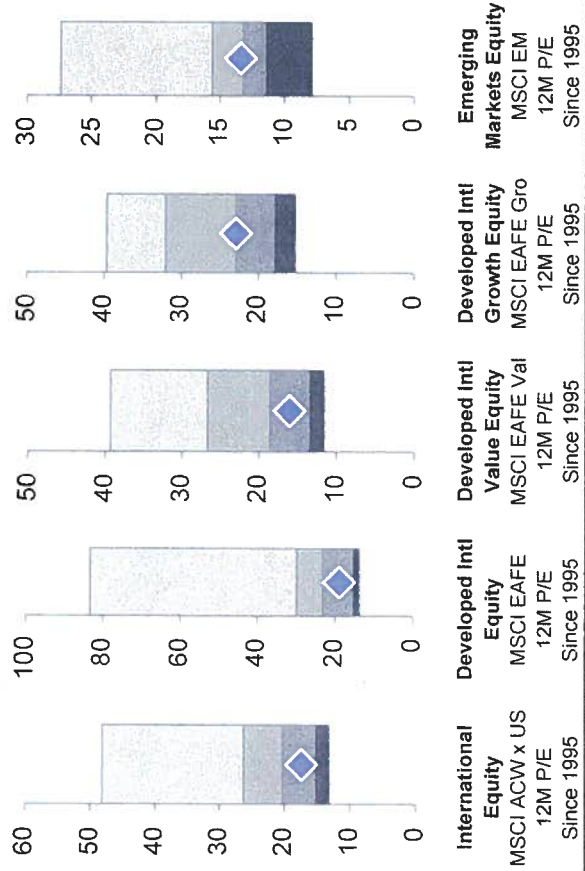
Emerging Markets

Emerging markets had a very strong quarter, outperforming both domestic and developed markets. Russia along with Eastern Europe weighed heavily on the MSCI Emerging Markets Index as turmoil in the Ukraine persisted. Concerns quickly dissipated in May with Russian stocks nearing double-digit returns for the quarter

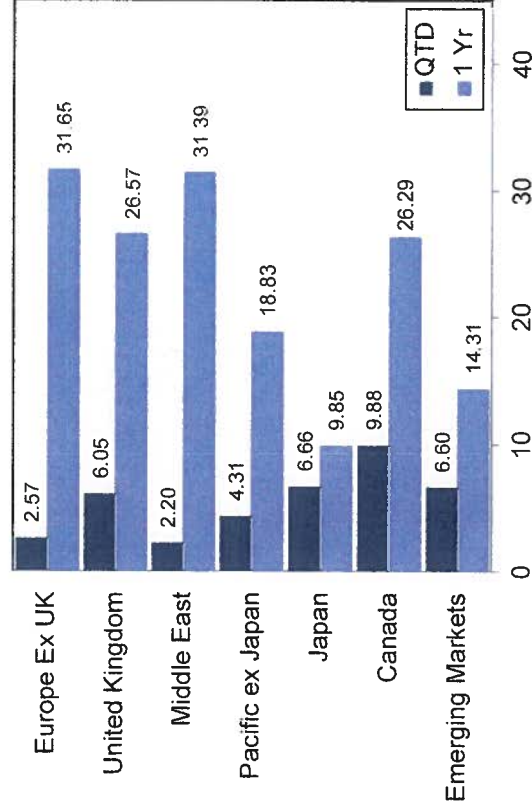
MSCI Style and Capitalization Market Performance



Valuations



MSCI Region Performance



Valuation data courtesy of Bloomberg Professional Service. Trailing 12 month P/E metrics exclude the 5th and 95th percentile. All returns are shown net of foreign taxes on dividends.

Second Quarter Review

Broad Market

The Barclays US Aggregate index returned an unexpected 2.05% for the second quarter and brought the year-to-date return to 4.38%. This bump was unexpected due to the low yield environment in Q1 which had most investors believing the only direction yields could move was up.

US Treasury Market

US Treasuries gained 1.35% for the quarter and the US Treasury: Long index gained an impressive 12.14% year-to-date, outperforming each other fixed income index over the same time period.

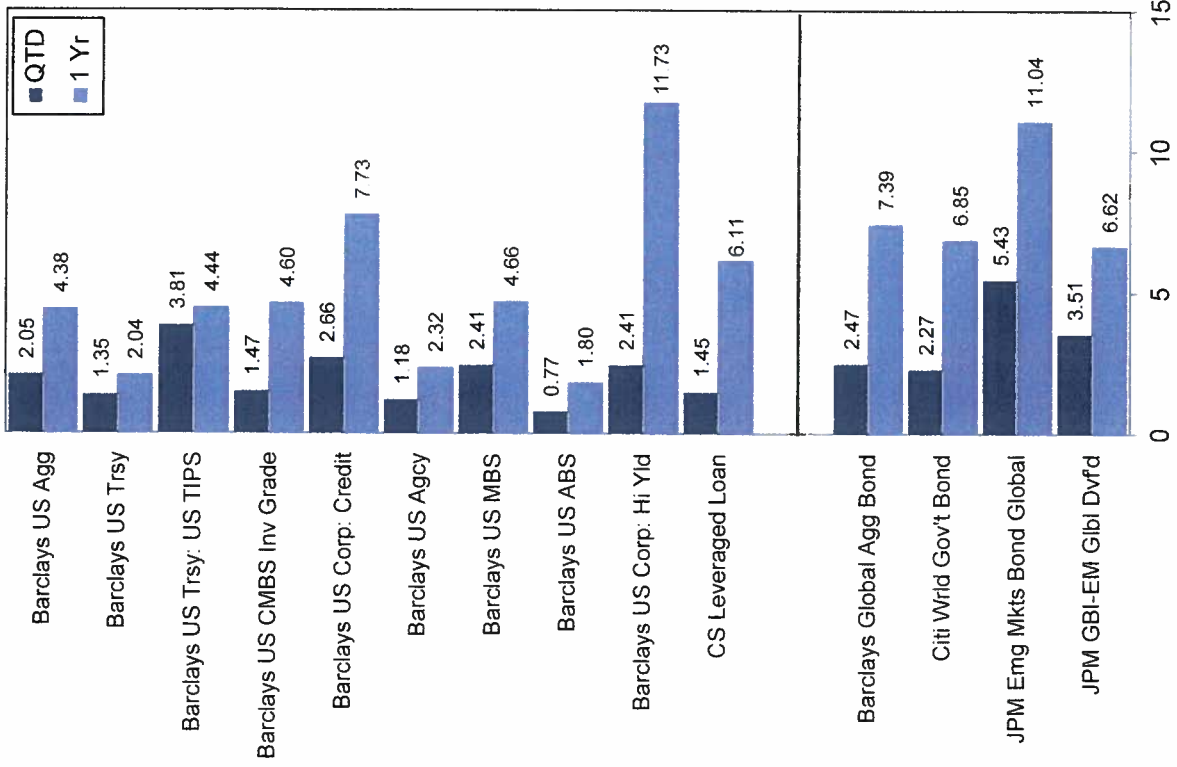
Investment Grade

The appetite for yield continued in Q2 as lower quality investment-grade securities (BBB) returned 3.43% for the quarter and 7.17% year-to-date compared to 1.23% and 2.37% for AAA securities, respectively.

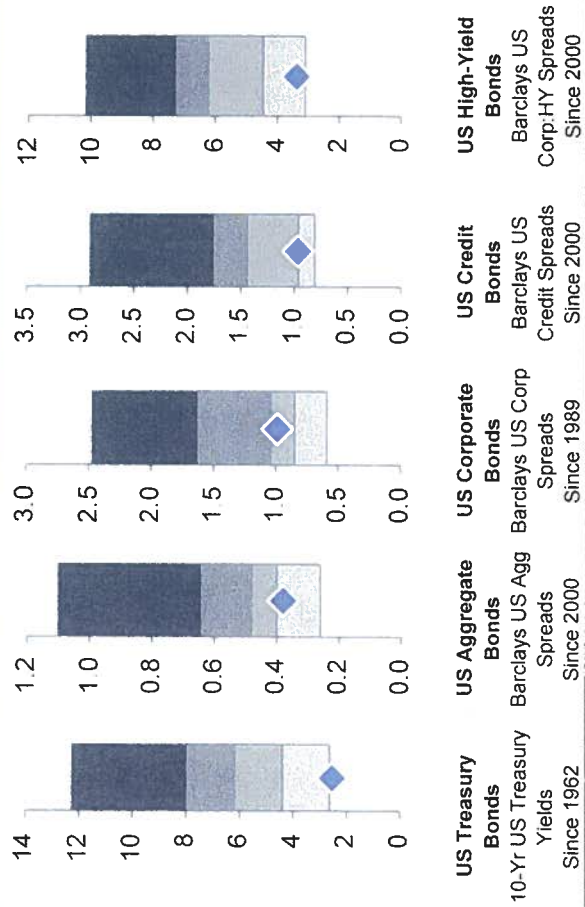
Non-Investment Grade

EMD returned 5.81% in Q2, a relief for investors who saw a large hit for this asset class in 2013. Improving return figures can be contributed to more compelling valuations in emerging countries after the sell-off in 2013.

Fixed Income Performance



Valuations



Valuation data courtesy of Bloomberg Professional Service.

Second Quarter Review - Absolute Return

General Market - Hedge Funds

Hedge funds were up broadly during the second quarter despite a difficult long/short equity environment in April. Multi-strategy funds of hedge funds were up from 1.0% to 2.5% in Q2, bringing the YTD return to 4%. Credit managers continued to perform well, benefiting from the positive carry associated with the strategy as well as marginally narrowing credit spreads. Managers were also able to capitalize on some idiosyncratic events in distressed, lower quality, and asset backed credits, helping to buoy returns.

General Market - Global Tactical Asset Allocation (GTAA)

Global Tactical Asset Allocation (GTAA) strategies posted positive results in the second quarter as most asset classes built upon gains from Q1. Risk parity strategies significantly outperformed others in the space, while those that follow a blended 60/40 index lagged those that are less benchmark constrained. Similarly, managers with allocations to REITs and energy equities also posted stronger performance in a trend reversal over the past twelve months.

Second Quarter Review - Real Assets

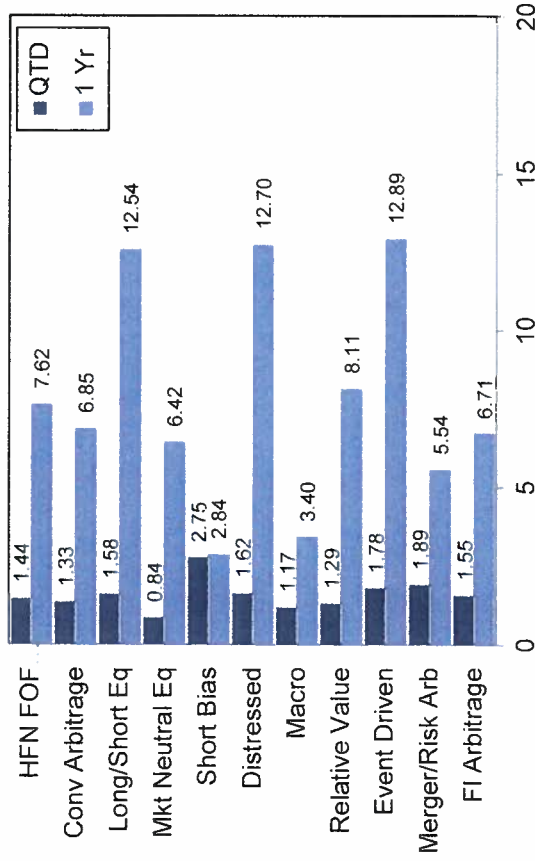
General Market - Diversified Inflation Strategies

Following a difficult 2013, the second quarter extended the welcome trend of strong performance in Diversified Inflation Strategies (DIS) that began in early 2014. DIS managers have rebounded through the first half of 2014 as several of the asset classes that previously dragged on results became additive to returns in Q2. REITs and MLPs provided the largest gains, and global natural resources equities contributed to the performance of several managers with long-standing strategic weights to the asset class.

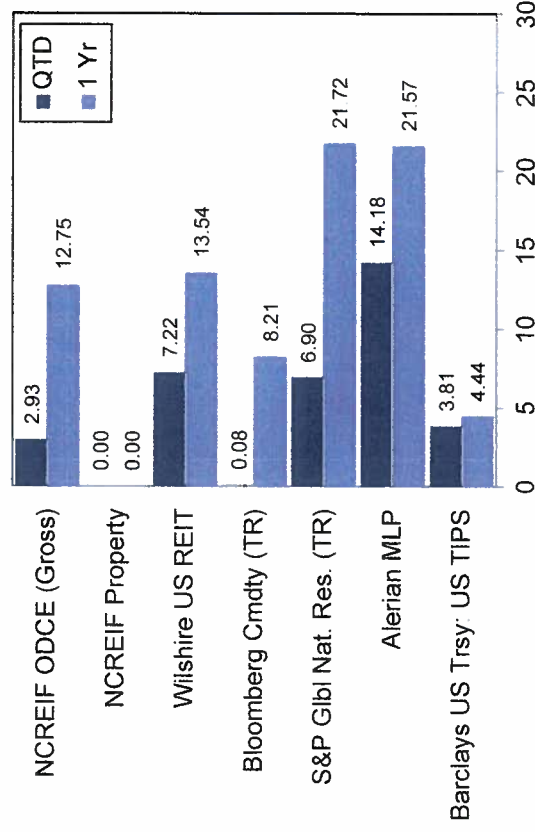
General Market - Real Estate

Core U.S. Real Estate continued to exhibit positive performance, as evidenced by preliminary returns between 2% and 3%. Publicly-traded real estate also continued to produce strong returns, as demonstrated by a 7.0% return in the FTSE NAREIT All Equity REITs Index. Noticeable growth in the office market has been driven by private sector job growth, particularly in areas with heavy concentration of technology and energy companies.

HFN Hedge Fund Performance



Real Asset Performance



HFN Index performance is preliminary and subject to change. Performance for the NCREIF Property Index is currently unavailable.

**Annual Asset Class Performance
As of June 30, 2014**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	YTD
	31.84	12.35	25.91	61.34	33.16	34.00	35.97	39.38	8.44	78.51	28.60	22.49	20.00	38.82	18.08
	31.04	8.44	16.56	55.81	31.45	26.19	32.18	16.23	5.24	58.21	26.86	15.99	18.23	32.39	11.81
	16.16	7.89	14.81	47.25	25.55	21.39	36.34	15.97	2.06	46.78	22.04	13.56	17.59	29.30	7.14
	14.28	7.28	10.25	38.59	20.25	21.36	19.31	11.63	-2.35	31.78	18.88	9.24	17.32	22.78	7.08
	13.15	6.61	5.54	36.18	18.33	13.82	18.37	11.17	-10.01	28.60	16.83	7.84	16.34	13.94	6.14
	12.40	5.64	3.58	28.97	13.06	13.51	16.32	9.91	-20.87	27.18	16.36	4.98	16.00	9.10	5.83
	11.63	5.28	3.12	28.68	11.13	6.75	15.79	6.97	-26.16	26.46	15.12	2.11	15.81	7.44	5.50
	6.18	4.42	1.78	23.93	10.88	5.33	11.85	6.60	-33.79	18.91	15.06	0.10	10.94	1.86	5.47
	-3.02	2.49	-1.41	11.93	9.15	4.91	9.85	5.49	-35.65	11.41	10.16	-4.18	8.82	0.07	5.46
	-5.86	-2.62	-6.17	9.28	8.56	4.55	4.85	5.00	-37.00	9.72	7.75	-3.56	6.98	-3.00	1.78
	-7.56	-11.89	-7.83	8.39	8.46	3.07	4.33	1.87	-39.20	5.93	6.54	-12.14	4.80	-2.60	3.93
	-9.10	-12.53	-15.94	5.87	6.79	2.84	2.71	1.45	-43.38	1.92	6.31	-13.32	4.21	-8.61	3.19
	-14.17	-19.51	-20.48	4.10	4.34	2.74	2.07	-1.57	-47.01	0.21	4.77	-35.94	0.11	-8.83	2.21
	-30.83	-31.44	-22.10	1.15	1.33	2.43	0.41	-17.55	-53.33	-29.76	0.13	-18.42	-1.06	-9.52	0.02

Best

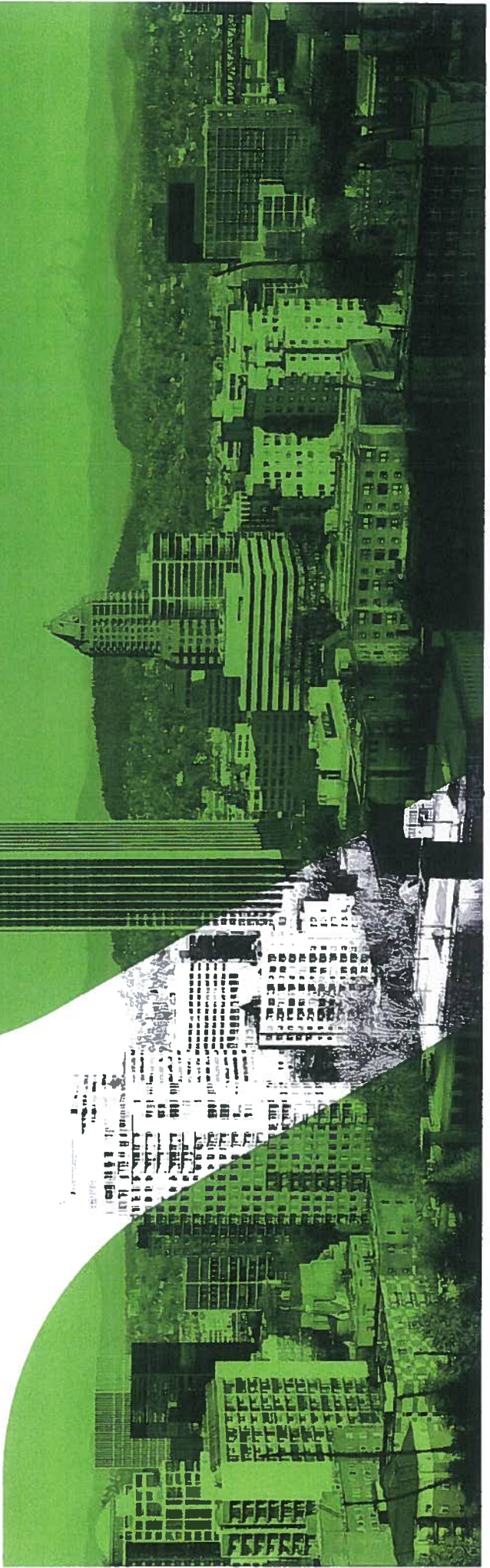


Worst

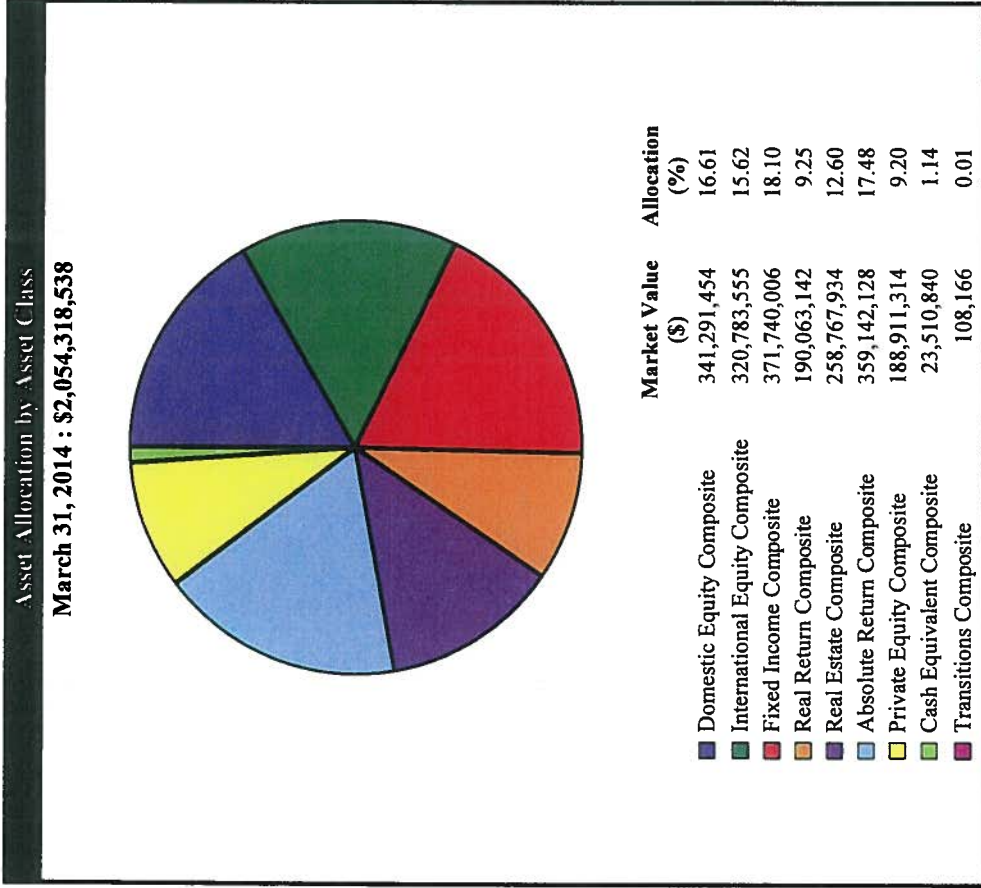
S&P 500 - US Large Cap	R 2000 - US Small Cap	MSCI EAFE (Net) - Int'l	MSCI EAFE SC (Net) - Int'l	MSCI EM (Net) - Int'l	Emerg Mkts	Barclays US Agg Bond - FI	Barclays US Corp: Hi Yield - FI	Barclays US Trsy: US TIPS - FI	Barclays US Gov/Credit: Lag - FI	NCREIF ODC (Gross) - Real Estate	Wilshire US REIT - REITs	HFN FOF Multi-Strat (Net) - ARS	Bloomberg Comdy (DIR) - Commod.	BofA ML 3 Mo T-Bill - Cash Equiv
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Quarterly Investment Performance Analysis
Period Ended: March 31, 2014

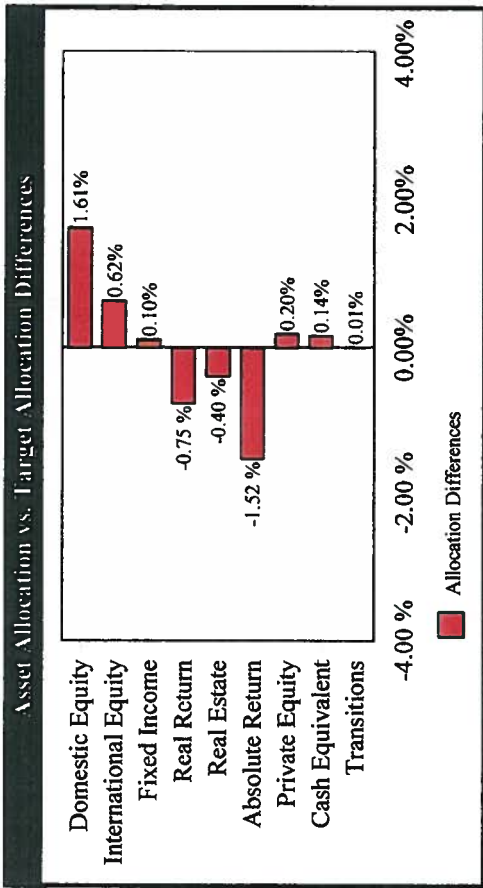


Total Fund Composite
Asset Allocation by Asset Class, Asset Allocation, and Schedule of Investable Assets
As of March 31, 2014



Asset Allocation vs. Target Allocation

	Market Value (\$)	Allocation (%)	Target Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)
Total Fund	2,054,318,538	100.0	100.0	-	-
Domestic Equity	341,291,454	16.6	15.0	11.0	18.0
International Equity	320,783,555	15.6	15.0	11.0	18.0
Fixed Income	371,740,006	18.1	18.0	16.0	20.0
Real Return	190,063,142	9.3	10.0	8.0	12.0
Real Estate	258,767,934	12.6	13.0	10.0	16.0
Absolute Return	359,142,128	17.5	19.0	17.0	21.0
Private Equity	188,911,314	9.2	9.0	5.0	13.0
Cash Equivalent	23,510,840	1.1	1.0	0.0	5.0
Transitions	108,166	0.0	0.0	0.0	0.0



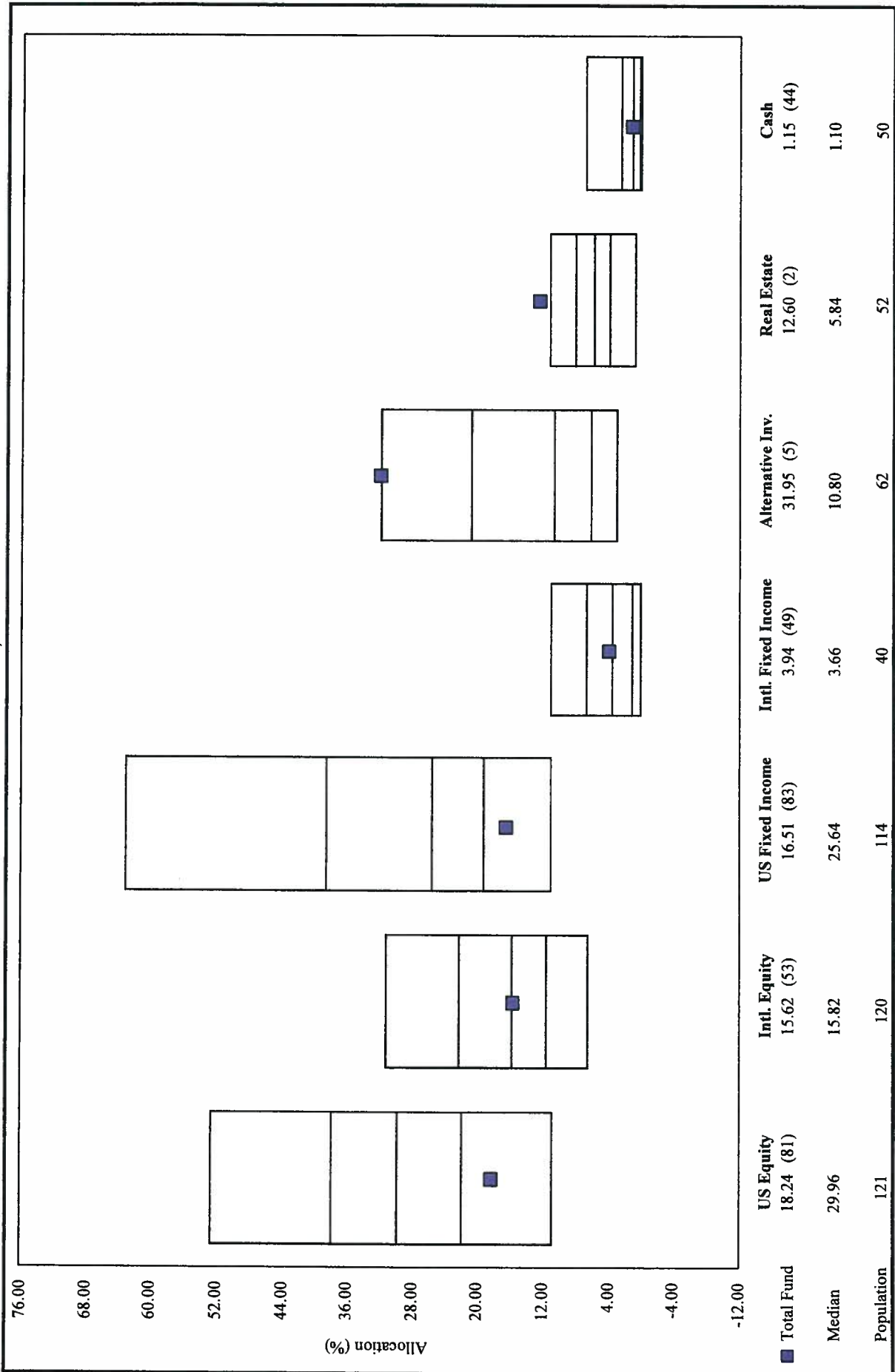
Schedule of Investable Assets

Periods Ending	Beginning Market Value (\$)	Cash Flow (\$)	Net Gain/Loss (\$)	Ending Market Value (\$)	%Return	Unit Value
CYTD	2,029,593,879	-18,562,538	43,287,197	2,054,318,538	2.15	102.15

Allocations shown may not sum up to 100% exactly due to rounding. Performance shown is net of fees.



**All Pension Plans \$1B-\$5B
Plan Sponsor TF Asset Allocation
As of March 31, 2014**



Parenttheses contain percentile ranks. Due to the structure of the fund, Energy Opportunities (SA) is included in the US Equity allocation.



Comparative Performance
As of March 31, 2014

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Total Fund Composite	2.24	2.24	6.07	10.93	7.71	12.84	6.45	9.17	09/01/1983
Target Allocation Index	1.78	1.78	6.32	10.72	7.68	13.59	7.22	N/A	
Difference	0.46	0.46	-0.25	0.21	0.03	-0.75	-0.77	N/A	
Actual Allocation Index	1.76	1.76	6.36	10.69	7.61	12.23	6.25	N/A	
Difference	0.48	0.48	-0.29	0.24	0.10	0.61	0.20	N/A	
All Pension Plans \$1B-\$5B	2.24	2.24	7.30	11.84	9.14	14.49	7.19	N/A	
Total Fund Composite Rank	50	50	87	61	87	87	82	N/A	
Population	157	157	153	151	132	125	112	N/A	
Total Fund Composite ex PE & Private RE	1.78	1.78	5.74	9.32	6.87	N/A	N/A	12.45	05/01/2009
Domestic Equity Composite	1.97	1.97	11.73	24.51	12.95	22.63	7.76	10.52	09/01/1983
R 3000 Index	1.97	1.97	12.28	22.61	14.61	21.93	7.86	10.85	
Difference	0.00	0.00	-0.55	1.90	-1.66	0.70	-0.10	-0.33	
IM U.S. Equity (SA+CF) Median	1.89	1.89	11.96	24.34	14.61	22.95	9.29	12.21	
Domestic Equity Composite Rank	48	48	53	49	74	54	81	100	
Population	2,241	2,241	2,238	2,227	2,152	2,043	1,514	28	
International Equity Composite	0.22	0.22	5.37	15.36	6.11	15.78	8.61	7.33	06/01/1987
Int'l Equity Custom Index	0.51	0.51	5.30	12.31	4.15	14.73	5.94	5.02	
Difference	-0.29	-0.29	0.07	3.05	1.96	1.05	2.67	2.31	
IM International Equity (SA+CF) Median	0.70	0.70	5.97	14.70	7.18	17.47	9.02	8.84	
International Equity Composite Rank	59	59	55	47	58	70	56	82	
Population	824	824	821	810	737	676	430	22	
Fixed Income Composite	2.35	2.35	2.75	-0.10	5.12	11.11	N/A	5.79	07/01/2007
Barclays US Unv Bond Index	1.95	1.95	2.18	0.51	4.23	5.74	4.78	5.45	
Difference	0.40	0.40	0.57	-0.61	0.89	5.37	N/A	0.34	
IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median	2.29	2.29	3.00	1.28	5.17	8.25	5.60	6.42	
Fixed Income Composite Rank	41	41	61	99	54	13	N/A	79	
Population	117	117	117	117	115	109	90	101	

Performance shown is gross of fees. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary. The fiscal year ends September 30.



**Comparative Performance
As of March 31, 2014**

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Real Return Composite	3.02	3.02	3.16	0.54	1.13	N/A	N/A	8.53	08/01/2009
Real Return Custom Index	2.91	2.91	4.67	3.52	2.47	N/A	N/A	8.23	
Difference	0.11	0.11	-1.51	-2.98	-1.34	N/A	N/A	0.30	
Real Estate Composite	4.07	4.07	5.93	11.70	9.41	3.77	2.65	4.77	10/01/2003
Real Estate Custom Index	3.01	3.01	5.90	12.77	12.77	9.32	7.38	7.67	
Difference	1.06	1.06	0.03	-1.07	-3.36	-5.55	-4.73	-2.90	
ERF Hedge Fund	1.31	1.31	5.26	7.49	5.78	8.28	5.77	5.73	03/01/2004
Hedge Fund Custom Index	0.50	0.50	4.19	5.98	2.35	4.56	2.57	2.57	
Difference	0.81	0.81	1.07	1.51	3.43	3.72	3.20	3.16	
Private Equity Composite	4.74	4.74	9.37	24.16	18.01	10.88	N/A	4.58	04/01/2006
Wilshire 5000 Index + 3%	2.73	2.73	13.93	26.51	18.05	25.75	11.37	10.65	
Difference	2.01	2.01	-4.56	-2.35	-0.04	-14.87	N/A	-6.07	

Performance shown is gross of fees. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary. The fiscal year ends September 30.



Comparative Performance
As of March 31, 2014

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Domestic Equity									
Cooke & Bieler LCV (SA)	1.39	1.39	10.94	23.21	14.59	21.65	N/A	7.98	04/01/2005
R 1000 Value Index	3.02	3.02	13.33	21.57	14.80	21.75	7.58	6.98	
Difference	-1.63	-1.63	-2.39	1.64	-0.21	-0.10	N/A	1.00	
IM U.S. Large Cap Value Equity (SA+CF) Median	2.65	2.65	12.80	23.43	14.82	21.56	8.60	8.16	
Cooke & Bieler LCV (SA) Rank	84	84	83	52	55	49	N/A	56	
Population	316	316	316	314	307	300	242	253	
MFS LCV (SA)	1.47	1.47	12.10	23.49	N/A	N/A	N/A	15.73	06/01/2011
R 1000 Value Index	3.02	3.02	13.33	21.57	14.80	21.75	7.58	15.10	
Difference	-1.55	-1.55	-1.23	1.92	N/A	N/A	N/A	0.63	
IM U.S. Large Cap Value Equity (SA+CF) Median	2.65	2.65	12.80	23.43	14.82	21.56	8.60	14.86	
MFS LCV (SA) Rank	83	83	66	50	N/A	N/A	N/A	38	
Population	316	316	316	314	307	300	242	306	
Vanguard Instl Indx; Inst (VINIX)	1.79	1.79	12.50	21.82	14.63	N/A	N/A	14.76	05/01/2010
S&P 500 Index (Cap Wtd)	1.81	1.81	12.51	21.86	14.66	21.16	7.42	14.78	
Difference	-0.02	-0.02	-0.01	-0.04	-0.03	N/A	N/A	-0.02	
IM U.S. Large Cap Core Equity (SA+CF) Median	2.12	2.12	12.75	22.91	14.83	21.06	8.36	15.14	
Vanguard Instl Indx; Inst (VTNIX) Rank	65	65	59	67	57	N/A	N/A	60	
Population	291	291	290	289	282	265	187	275	
Westfield Capital LCG (SA)	0.97	0.97	12.20	26.73	12.84	N/A	N/A	14.58	05/01/2010
R 1000 Growth Index	1.12	1.12	11.67	23.22	14.62	21.68	7.86	15.55	
Difference	-0.15	-0.15	0.53	3.51	-1.78	N/A	N/A	-0.97	
IM U.S. Large Cap Growth Equity (SA+CF) Median	0.82	0.82	11.64	23.94	13.96	20.86	8.29	15.16	
Westfield Capital LCG (SA) Rank	48	48	43	28	71	N/A	N/A	59	
Population	284	284	284	283	275	265	205	264	

Performance shown is gross of fees. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary. The fiscal year ends September 30.



Comparative Performance
As of March 31, 2014

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Frontier Capital S/MCG (SA)	5.74	5.74	14.16	32.78	15.13	N/A	N/A	18.84	04/01/2010
R 2500 Growth Index	1.04	1.04	9.62	26.66	13.93	25.82	9.64	17.77	
Difference	4.70	4.70	4.54	6.12	1.20	N/A	N/A	1.07	
IM U.S. SMID Cap Growth Equity (SA+CF) Median	1.07	1.07	10.05	27.12	13.59	25.53	10.65	18.13	
Frontier Capital S/MCG (SA) Rank	3	3	9	12	36	N/A	N/A	44	
Population	63	63	62	61	59	59	34	59	
Artisan SCV (SA)	0.07	0.07	8.57	18.69	7.42	21.01	10.36	12.77	11/01/1999
R 2000 Value Index	1.78	1.78	11.24	22.65	12.74	23.33	8.07	10.76	
Difference	-1.71	-1.71	-2.67	-3.96	-5.32	-2.32	2.29	2.01	
IM U.S. Small Cap Value Equity (SA+CF) Median	1.79	1.79	11.66	25.67	14.48	26.31	10.57	13.39	
Artisan SCV (SA) Rank	82	82	86	92	98	97	52	58	
Population	236	236	236	235	224	217	182	118	
International Equity									
Manning & Napier Non-U.S. Equity (SA)	2.14	2.14	6.82	16.24	6.14	16.25	N/A	9.58	09/01/2004
Int'l Equity Custom Index	0.51	0.51	5.30	12.31	4.15	14.73	5.94	6.50	
Difference	1.63	1.63	1.52	3.93	1.99	1.52	N/A	3.08	
IM International Core Equity (SA+CF) Median	1.02	1.02	7.96	19.09	8.45	17.59	8.26	8.78	
Manning & Napier Non-U.S. Equity (SA) Rank	25	25	63	74	83	83	N/A	29	
Population	124	124	124	123	113	108	65	68	
Thornburg Int'l Equity (SA)	-4.14	-4.14	0.16	9.04	3.73	14.67	N/A	8.90	11/01/2004
Int'l Equity Custom Index	0.51	0.51	5.30	12.31	4.15	14.73	5.94	5.95	
Difference	-4.65	-4.65	-5.14	-3.27	-0.42	-0.06	N/A	2.95	
IM International Core Equity (SA+CF) Median	1.02	1.02	7.96	19.09	8.45	17.59	8.26	8.21	
Thornburg Int'l Equity (SA) Rank	100	100	100	100	99	98	N/A	32	
Population	124	124	124	123	113	108	65	72	

Performance shown is gross of fees. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary. The fiscal year ends September 30.



Comparative Performance
As of March 31, 2014

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Franklin Templeton Small Cap Int'l Equity (SA)	1.62	1.62	6.77	N/A	N/A	N/A	N/A	14.02	05/01/2013
MSCI ACW Ex US Sm Cap Index (Net)	3.47	3.47	8.26	16.28	5.52	21.18	9.31	13.22	
Difference	-1.85	-1.85	-1.49	N/A	N/A	N/A	N/A	0.80	
IM International Small Cap Equity (SA+CF) Median	3.53	3.53	11.47	25.37	12.23	24.33	11.23	20.74	
Franklin Templeton Small Cap Int'l Equity (SA) Rank	83	83	92	N/A	N/A	N/A	N/A	90	
Population	75	75	75	75	66	62	38	75	
Wm Blair EM Equity (CF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.67	02/01/2014
MSCI Emg Mkts Index (Net)	-0.43	-0.43	1.39	-1.43	-2.86	14.48	10.11	6.48	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.19	
IM Emerging Markets Equity (SA+CF) Median	-0.40	-0.40	1.95	-0.69	-1.14	16.62	11.12	6.22	
Wm Blair EM Equity (CF) Rank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10	
Population	238	238	237	231	191	162	91	238	
Robeco SAM SWS (SA)	3.91	3.91	13.43	25.88	11.82	19.86	N/A	15.87	11/01/2008
MSCI World Index (Net)	1.26	1.26	9.36	19.07	10.23	18.28	6.83	13.32	
Difference	2.65	2.65	4.07	6.81	1.59	1.58	N/A	2.55	
IM International Equity (SA+CF) Median	0.70	0.70	5.97	14.70	7.18	17.47	9.02	13.94	
Robeco SAM SWS (SA) Rank	12	12	8	12	15	26	N/A	31	
Population	824	824	821	810	737	676	430	663	
Fixed Income									
PIMCO Total Return (SA)	1.24	1.24	1.23	-1.02	3.84	5.97	5.61	7.66	12/01/1988
Barclays US Agg Bond Index	1.84	1.84	1.70	-0.10	3.75	4.80	4.46	6.81	
Difference	-0.60	-0.60	-0.47	-0.92	0.09	1.17	1.15	0.85	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	2.02	2.02	2.05	0.32	4.38	5.98	4.89	7.21	
PIMCO Total Return (SA) Rank	100	100	97	100	83	52	8	2	
Population	136	136	136	135	132	131	121	17	

Performance shown is gross of fees. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary. The fiscal year ends September 30.



Comparative Performance
As of March 31, 2014

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
Aberdeen Total Return (SA)	2.14	2.14	2.37	-0.46	4.41	N/A	N/A	5.20	01/01/2010
Barclays US Agg Bond Index	1.84	1.84	1.70	-0.10	3.75	4.80	4.46	4.28	
Difference	0.30	0.30	0.67	-0.36	0.66	N/A	N/A	0.92	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	2.02	2.02	2.05	0.32	4.38	5.98	4.89	4.99	
Aberdeen Total Return (SA) Rank	34	34	36	93	48	N/A	N/A	36	
Population	136	136	136	135	132	131	121	131	
Loomis Sayles Global Bond (SA)	3.83	3.83	6.90	4.83	8.87	16.37	N/A	11.94	06/01/2008
Barclays US Unv Bond Index	1.95	1.95	2.18	0.51	4.23	5.74	4.78	5.19	
Difference	1.88	1.88	4.72	4.32	4.64	10.63	N/A	6.75	
IM Global Fixed Income (SA+CF) Median	2.79	2.79	3.16	1.98	4.78	7.36	5.58	5.25	
Loomis Sayles Global Bond (SA) Rank	7	7	17	27	13	12	N/A	1	
Population	143	143	143	143	129	111	78	100	
Brandywine Int'l Opportunistic (SA)	3.49	3.49	3.51	1.50	7.49	12.47	N/A	8.21	06/01/2008
Citi Non-US Wrld Gov't Bond Index	3.22	3.22	1.94	2.43	1.36	4.15	4.27	3.28	
Difference	0.27	0.27	1.57	-0.93	6.13	8.32	N/A	4.93	
IM International Fixed Income (SA+CF) Median	2.74	2.74	3.18	-0.87	5.34	11.75	8.76	7.23	
Brandywine Int'l Opportunistic (SA) Rank	21	21	44	23	16	42	N/A	32	
Population	148	148	146	139	123	104	63	100	
Stone Harbor EM Dbt;Inst (SHMDX)	3.57	3.57	3.12	-3.41	N/A	N/A	N/A	3.97	06/01/2011
JPMorgan EMBI Global Dvfd TR Index	3.73	3.73	5.31	0.56	7.10	11.70	8.19	6.44	
Difference	-0.16	-0.16	-2.19	-3.97	N/A	N/A	N/A	-2.47	
IM Emerging Markets Debt (SA+CF) Median	2.75	2.75	3.49	-2.22	5.55	12.81	9.54	4.79	
Stone Harbor EM:Dbt;Inst (SHMDX) Rank	20	20	57	62	N/A	N/A	N/A	57	
Population	109	109	107	100	86	71	37	87	
Real Return									
Energy Opportunities (SA)	2.58	2.58	5.20	14.54	1.08	20.40	N/A	4.30	03/01/2008
IXE/OSX Blended Energy Index	2.20	2.20	7.94	17.08	3.36	19.28	N/A	3.45	
Difference	0.38	0.38	-2.74	-2.54	-2.28	1.12	N/A	0.85	

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Comparative Performance
As of March 31, 2014

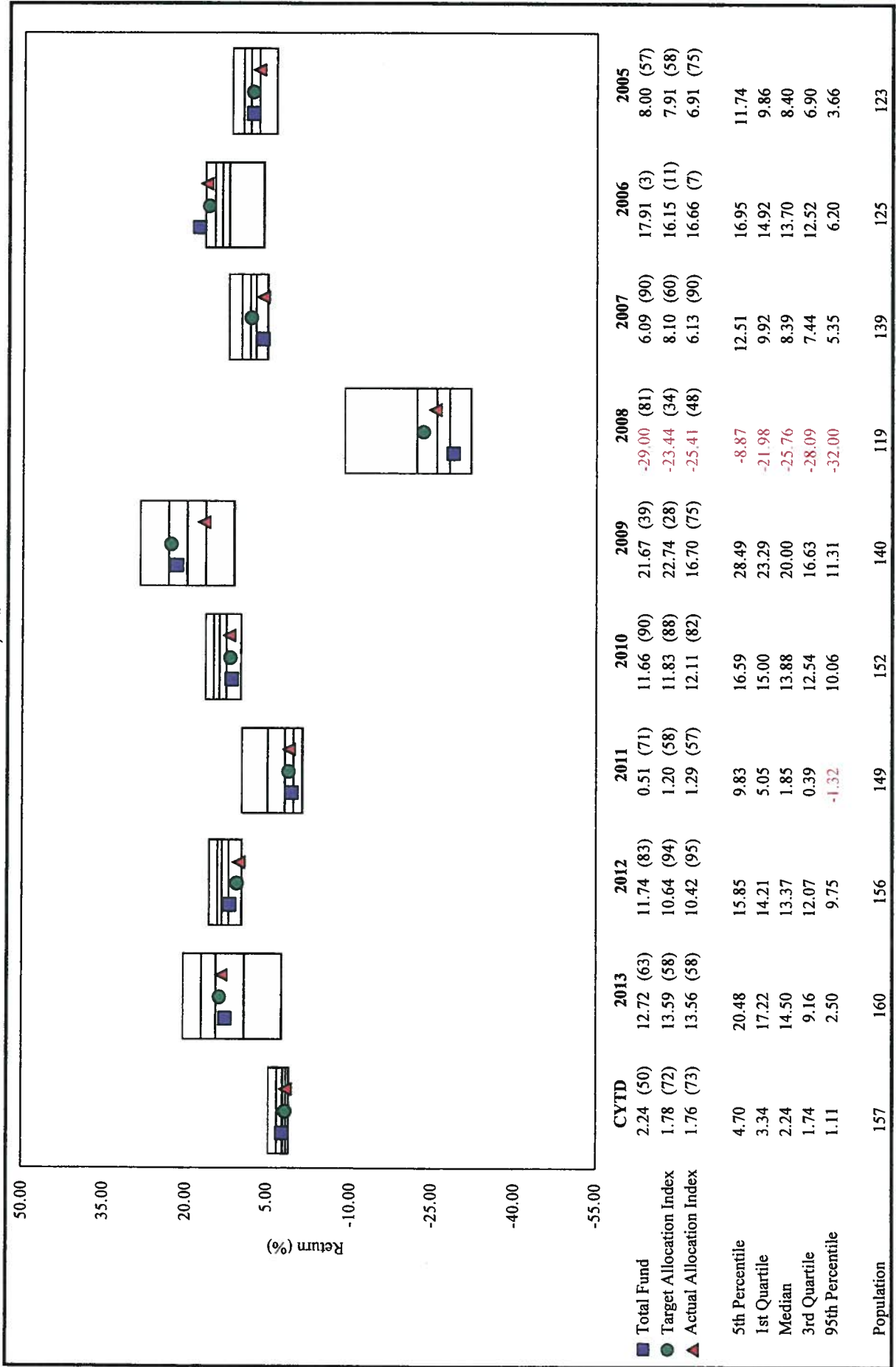
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	10 Years	Since Incep.	Inception Date
PIMCO:All Asset;Inst (PAAIX)	2.31	2.31	3.64	2.20	5.69	N/A	N/A	7.84	02/01/2010
60% MSCI ACW (Net)/40% B Global Agg Index	1.66	1.66	5.89	10.57	6.42	12.83	6.28	8.48	
Difference	0.65	0.65	-2.25	-8.37	-0.73	N/A	N/A	-0.64	
Vanguard Infl-Pro;Inst (VIPIX)	2.08	2.08	-0.21	-6.70	3.44	N/A	N/A	4.09	06/01/2010
Barclays US Trsy: US TIPS Index	1.95	1.95	-0.09	-6.49	3.50	4.91	4.53	4.16	
Difference	0.13	0.13	-0.12	-0.21	-0.06	N/A	N/A	-0.07	
Jefferies Commodity Diversified I (CF)	5.59	5.59	5.18	-2.69	N/A	N/A	N/A	-6.26	07/01/2011
DJ-UBS Cmdty Index (TR)	6.99	6.99	5.86	-2.10	-7.37	4.24	0.43	-5.65	
Difference	-1.40	-1.40	-0.68	-0.59	N/A	N/A	N/A	-0.61	
Schroders Opus Commodities Core+, Ltd.	6.26	6.26	4.52	-3.44	N/A	N/A	N/A	-9.68	09/01/2011
DJ-UBS Cmdty Index (TR)	6.99	6.99	5.86	-2.10	-7.37	4.24	0.43	-7.42	
Difference	-0.73	-0.73	-1.34	-1.34	N/A	N/A	N/A	-2.26	
Public Real Estate									
Heitman Public Real Estate	7.61	7.61	7.45	4.24	9.64	N/A	N/A	20.56	05/01/2009
FTSE EPRA/NAREIT Dvl'd Rental TR Index	7.35	7.35	6.87	3.74	9.16	25.15	N/A	20.74	
Difference	0.26	0.26	0.58	0.50	0.48	N/A	N/A	-0.18	
IM All REITs (SA+CF) Median	8.69	8.69	8.50	4.41	10.33	27.56	9.33	21.61	
Heitman Public Real Estate Rank	55	55	59	55	65	N/A	N/A	62	
Population	81	81	81	80	77	74	48	74	

Please see the addendum for additional information regarding custom indices and performance.

Performance shown is gross of fees. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary. The fiscal year ends September 30.



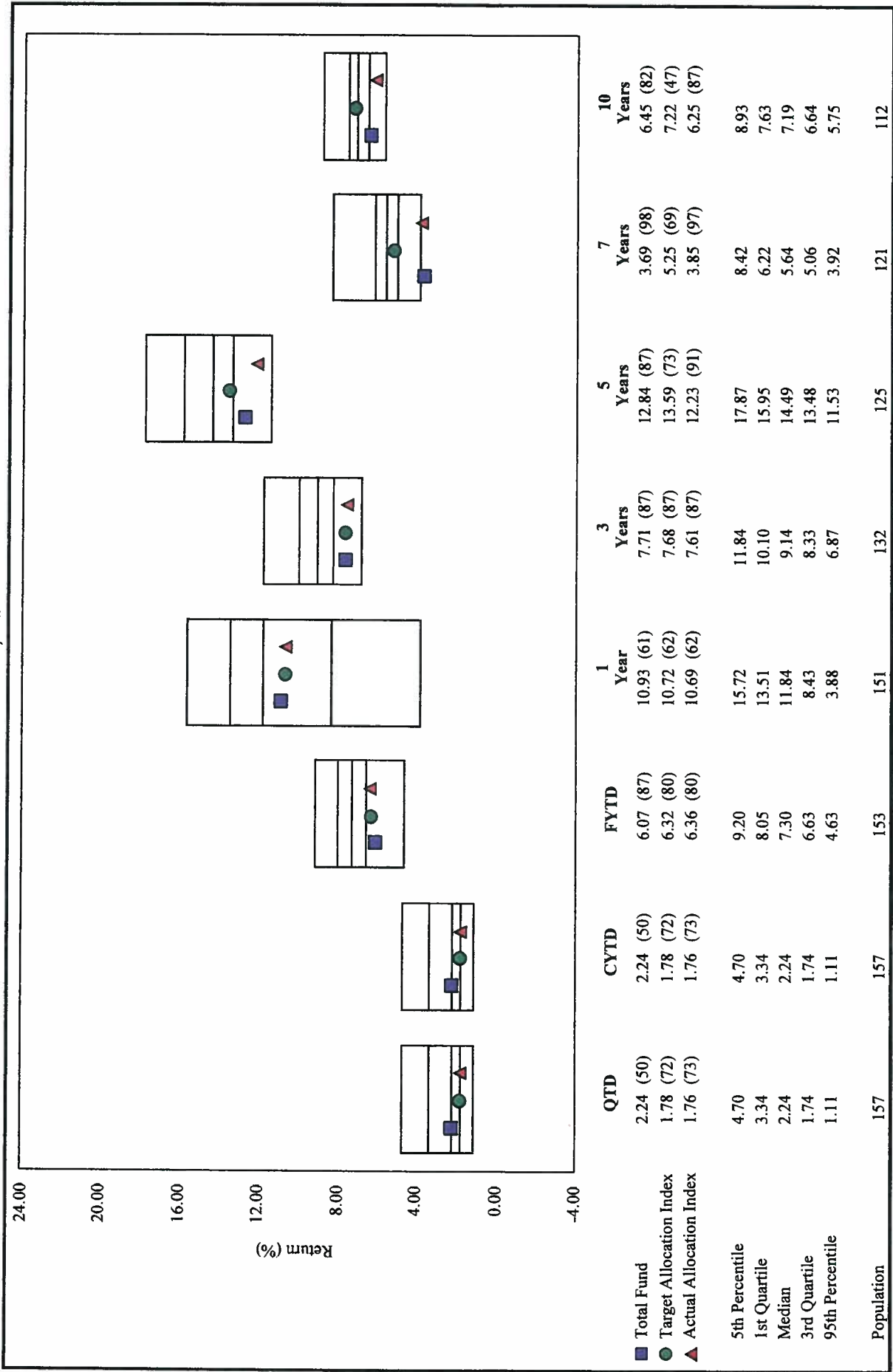
**All Pension Plans \$1B-\$5B
Plan Sponsor Peer Group Analysis
As of March 31, 2014**



Performance shown is gross of fees. Parentheses contain percentile ranks.



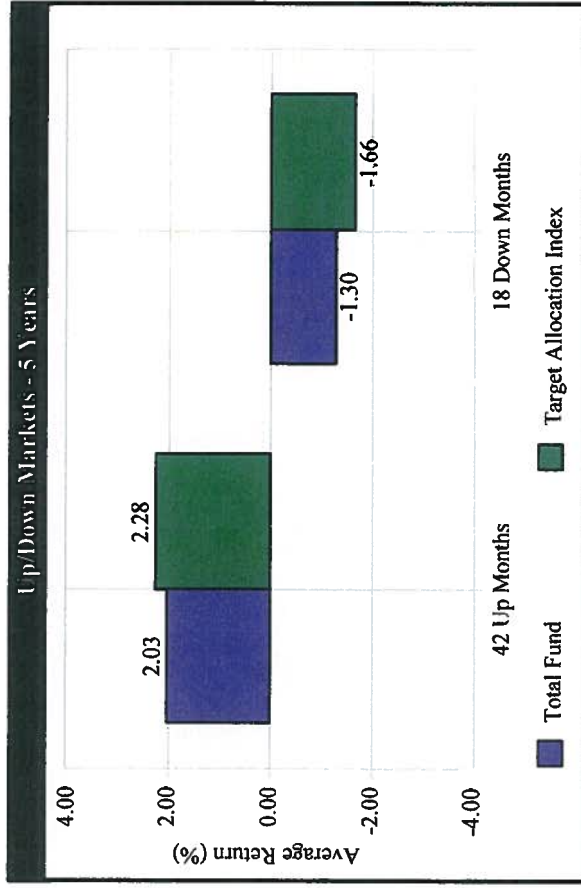
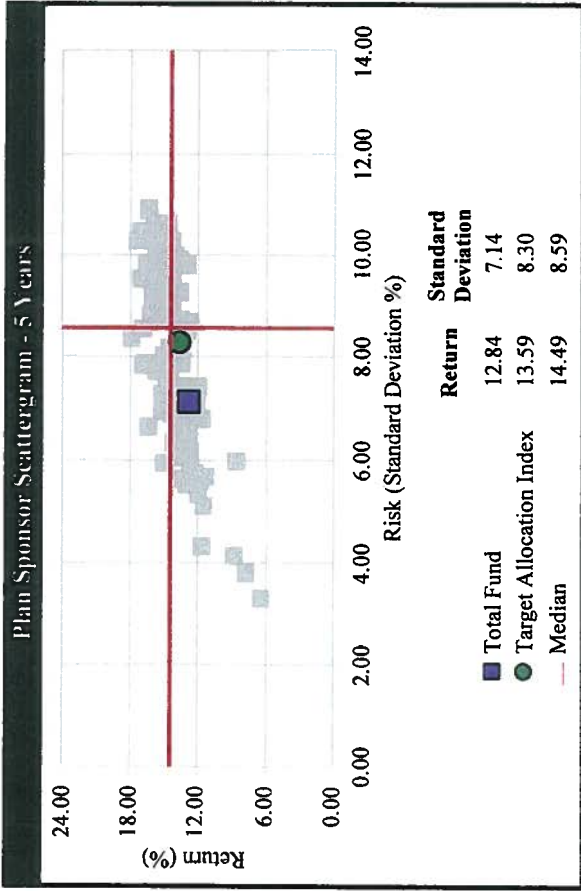
**All Pension Plans \$1B-\$5B
Plan Sponsor Peer Group Analysis
As of March 31, 2014**



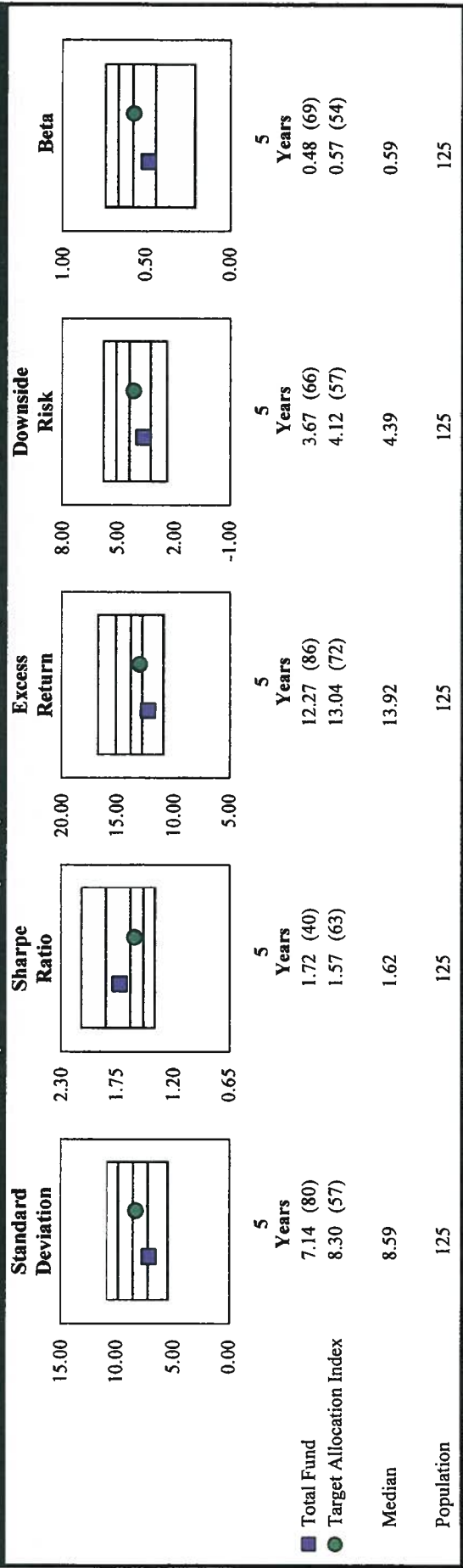
Performance shown is gross of fees. Parentheses contain percentile ranks. The fiscal year ends September 30.



Total Fund vs. All Pension Plans \$1B-\$5B
As of March 31, 2014



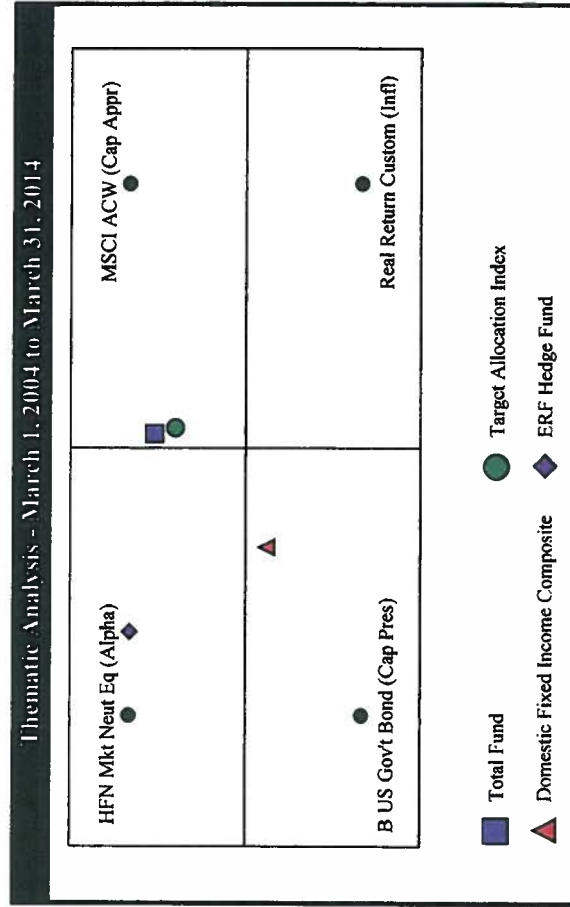
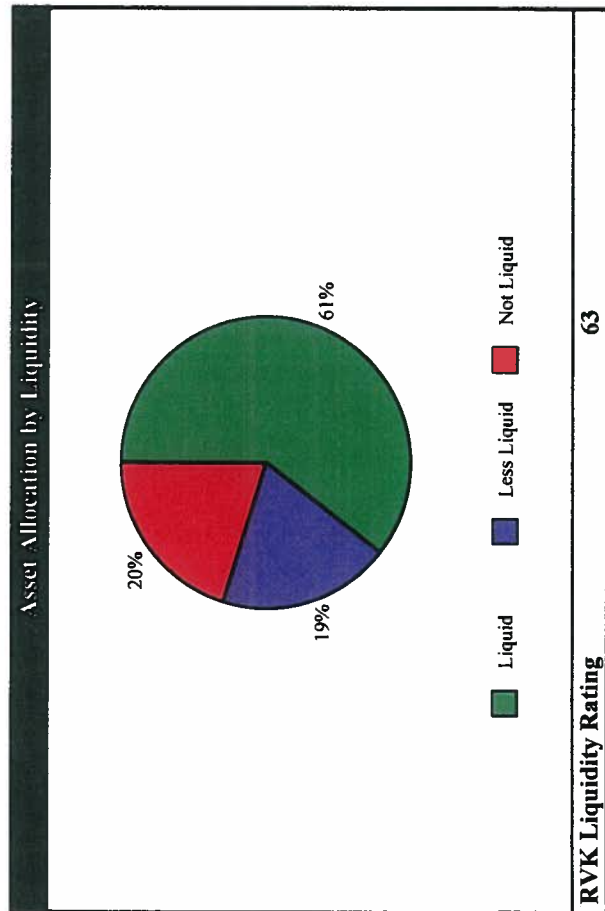
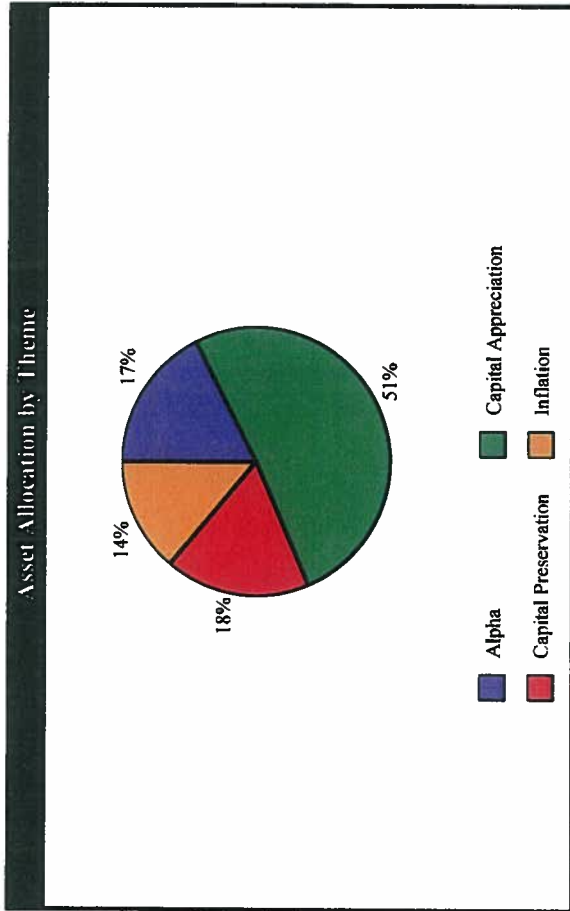
Plan Sponsor Peer Group Analysis - Multi Statistics (Beta vs. S&P 500)



Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.



Total Fund Composite - Thematic and Liquidity Analysis
As of March 31, 2014



Correlation Matrix - 10 Years

	A	B	C	D
A	1.00			
B	0.64	1.00		
C	-0.32	-0.25	1.00	
D	0.58	0.85	-0.02	1.00

Legend: A = HFN Mkt Neut Eq Index (Alpha), B = MSCI ACW Index (Capital Appreciation), C = Barclays US Gov't Bond Index (Capital Preservation), D = Real Return Custom Index (Inflation)

Asset Allocation by Theme is based on dedicated manager allocations; as such, thematic allocations are approximations. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating. Please see the Glossary for additional information regarding liquidity, thematic and custom index descriptions.



RVKuhns

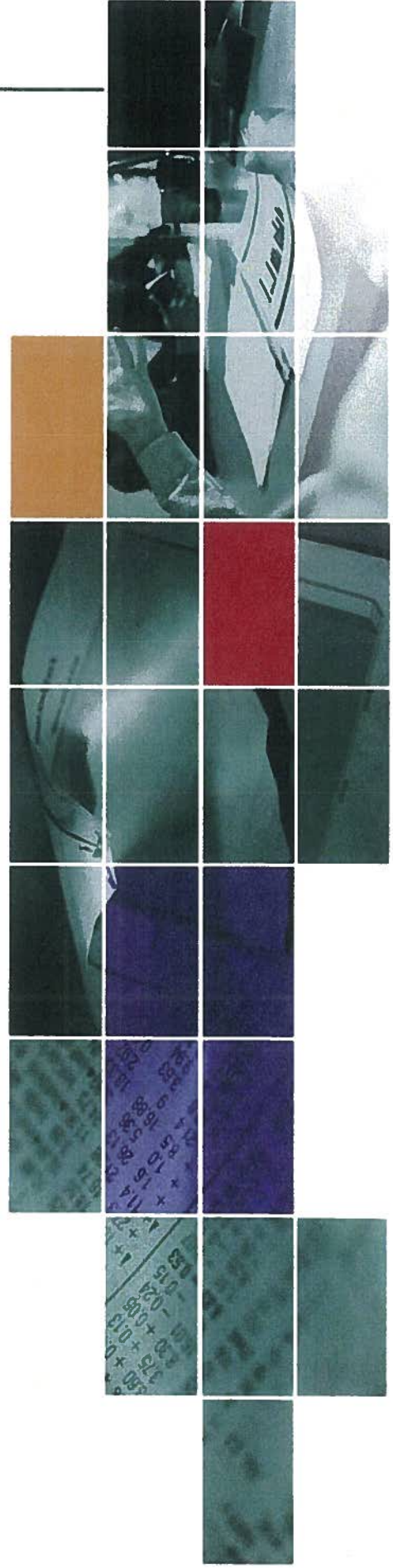
▶▶ & ASSOCIATES, INC.

Ohio Public Employees' Retirement System

Public Fund Universe Analysis

Period Ending December 31, 2013

Fund Number: 180



Report and Firm Summary

The following report is a compilation of data provided to RVK, Inc. by 79 public funds throughout the United States. We are a registered investment advisor with the Securities Exchange Commission under the Investment Advisors Act of 1940. Our firm provides investment consulting services to 199 clients across 480 plans with total assets in excess of \$1.23 trillion. The confidentiality of participants is maintained by revealing the fund name only to each individual fund. For more information about services provided by RVK please visit our website at www.RVKuhns.com.

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Participants

As of December 31, 2013

Fund Number: 180

Alameda County Employees' Retirement Association	Arlington County Employees' Retirement System
Big Spring Firemen's Relief & Retirement Fund	California Public Employees' Retirement System
California State Teachers' Retirement System	Chicago Teachers' Pension Fund
City of Fresno Retirement Systems	City of Phoenix Employees' Retirement System
Civilian Employees' Retirement System of the Police Department of Kansas City, Missouri	Colorado Public Employees' Retirement Association
Contra Costa County Employees' Retirement Association	County Employees' Annuity & Benefit Fund of Cook County
District of Columbia Retirement Board	Educational Employees' Supplementary Retirement System of Fairfax County
Employees Retirement System of Texas	Fire & Police Employees' Retirement System of Baltimore
Fire and Police Pension Association of Colorado	Florida State Board of Administration
Fort Worth Employees' Retirement Fund	Fresno County Employees' Retirement Association
Georgia Division of Investment Services	Gila River Indian Community Retirement Plan
Illinois Municipal Retirement Fund	Illinois State Board of Investment
Imperial County Employees' Retirement System	Iowa Public Employees' Retirement System
Kansas Public Employees' Retirement System	Kentucky Retirement Systems
Kentucky Teachers' Retirement System	Kern County Employees' Retirement Association
Los Angeles City Employees' Retirement System	Los Angeles County Employees Retirement Association
Los Angeles Fire and Police Pension System	Los Angeles Water & Power Employees Retirement Plan
Marin County Employees' Retirement Association	Mendocino County Employees' Retirement Association
Merced County Employees' Retirement Association	Metro Water Reclamation District Retirement Fund
Milwaukee Employees' Retirement System	Montana Public Employees' Retirement System
Montana Teachers' Retirement System	Municipal Employees' Annuity and Benefit Fund of Chicago
Navajo Nation Retirement Plan	Nevada Public Employees' Retirement System
New York State Common Retirement Fund	North Carolina Retirement System

Participants

As of December 31, 2013

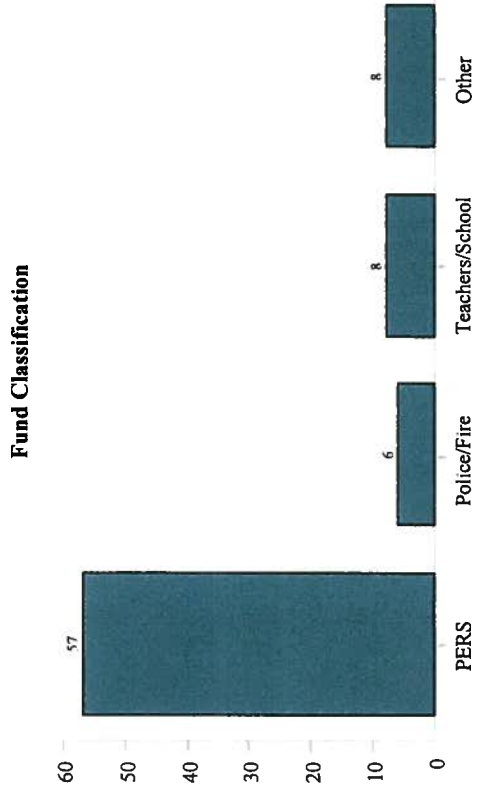
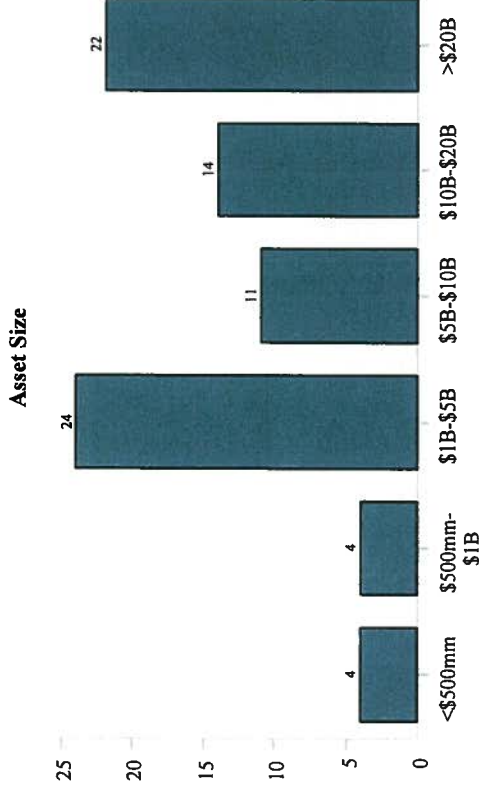
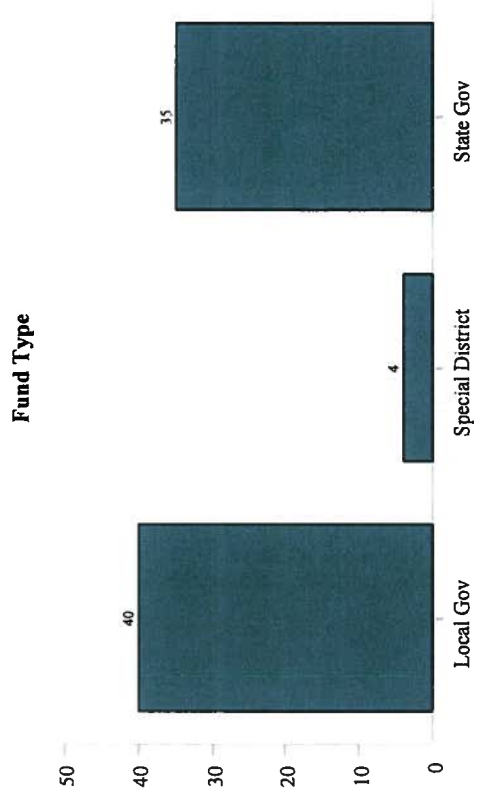
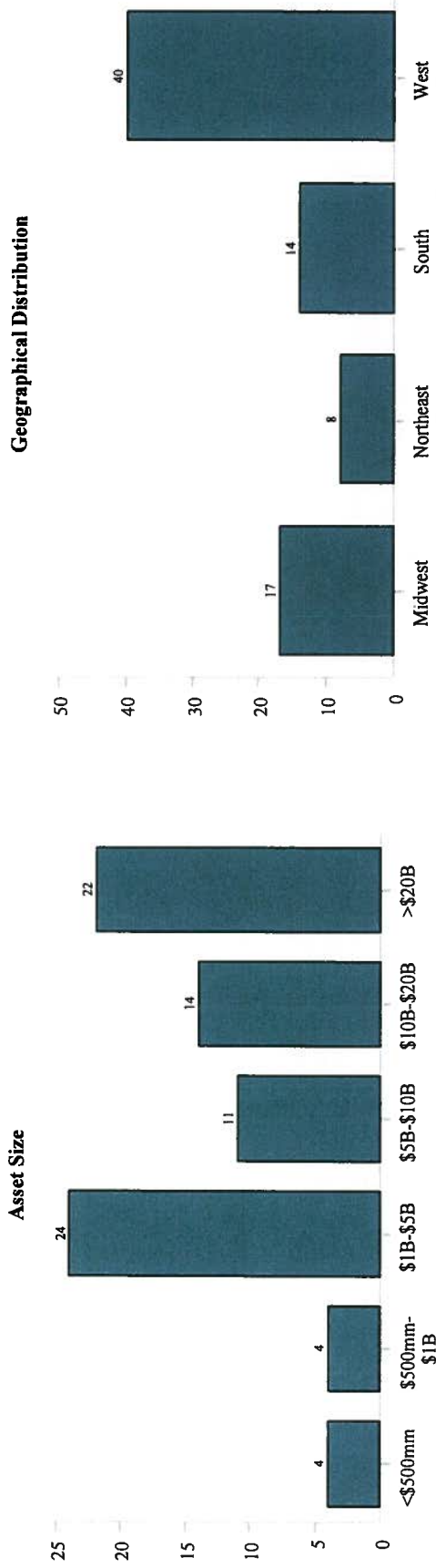
Fund Number: 180

Ohio Public Employees' Retirement System (180)	Orange County Employees' Retirement System
Pennsylvania Municipal Retirement System	Pennsylvania Public School Employees' Retirement System
Pennsylvania State Employees' Retirement System	Police Retirement System of Kansas City, Missouri
Public Employees Retirement Association of New Mexico	Public School and Education Employee Retirement Systems of Missouri
Sacramento County Employees' Retirement System	San Bernardino County Employees' Retirement Association
San Diego City Employees' Retirement System	San Diego County Employees Retirement Association
San Joaquin County Employees' Retirement Association	San Jose Federated City Employees' Retirement System
San Jose Police and Fire Department Retirement Plan	San Mateo County Employees' Retirement Association
Santa Barbara County Employees' Retirement System	Sonoma County Employees' Retirement Association
South Dakota Retirement System	Stanislaus County Employees' Retirement Association
State of Michigan Retirement Systems	State of New Jersey Pension Fund
State Retirement and Pension System of Maryland	State Universities Retirement System of Illinois
Teachers' Retirement System of Louisiana	Teachers' Retirement System of the State of Illinois
Texas Municipal Retirement System	Tulare County Employees' Retirement Association
Utah Retirement Systems	Ventura County Employees' Retirement Association
Virginia Retirement System	West Virginia Investment Management Board
Wyoming Retirement System	

Universe Characteristics

As of December 31, 2013

Fund Number: 180



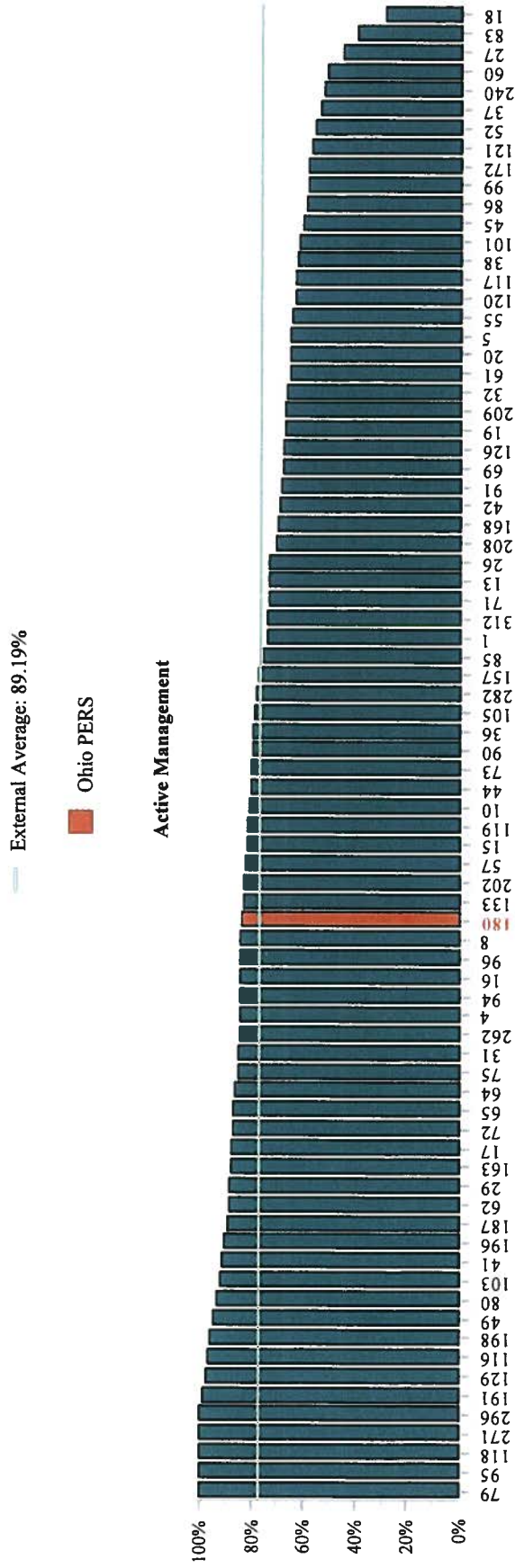
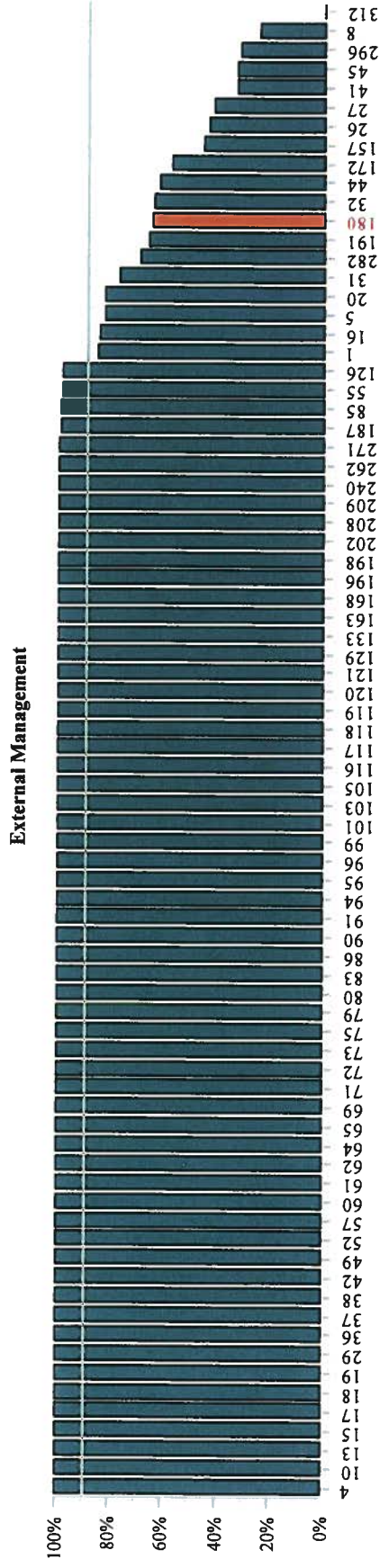
■ Universe: 79 funds

Portfolio Management

Percentage Externally Managed & Percentage Actively Managed

As of December 31, 2013

Fund Number: 180



Portfolio Management Statistics

As of December 31, 2013

Fund Number: 180

Asset Range	Percentage Actively Managed	Percentage Passively Managed	Percentage Externally Managed	Percentage Internally Managed
Over \$20B	73.98%	26.02%	72.92%	27.08%
\$10B-\$20B	74.08%	25.92%	88.98%	11.02%
\$5B-\$10B	75.55%	24.45%	93.81%	6.19%
\$1B-\$5B	77.55%	22.45%	98.54%	1.46%
\$500mm-\$1B	81.67%	18.33%	99.66%	0.34%
Under \$500mm	94.55%	5.45%	100.00%	0.00%
Ohio PERS	83.54%	16.46%	64.69%	35.31%

Percentage of Portfolio	Active Management		External Management	
	Public Fund Universe	Ohio PERS	Public Fund Universe	Ohio PERS
90% to 100%	14	0	60	0
50% to 89%	62	1	11	1
10% to 49%	3	0	7	0
Less than 10%	0	0	1	0
Total Funds Reporting	79	1	79	1

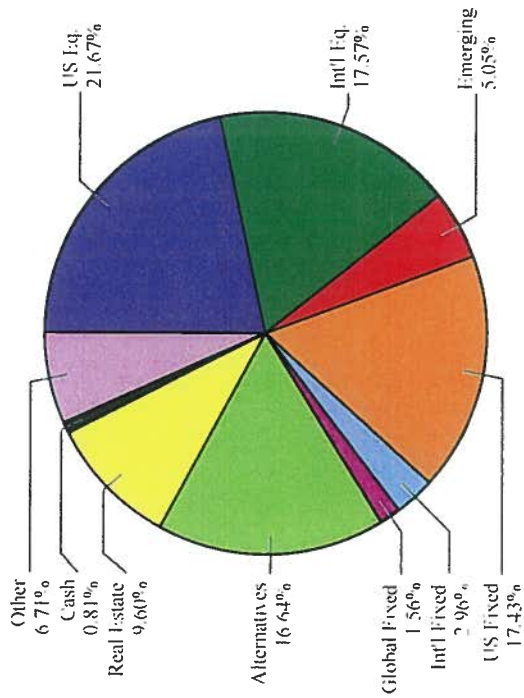
Asset Allocation

Ohio PERS vs. Average of All Funds

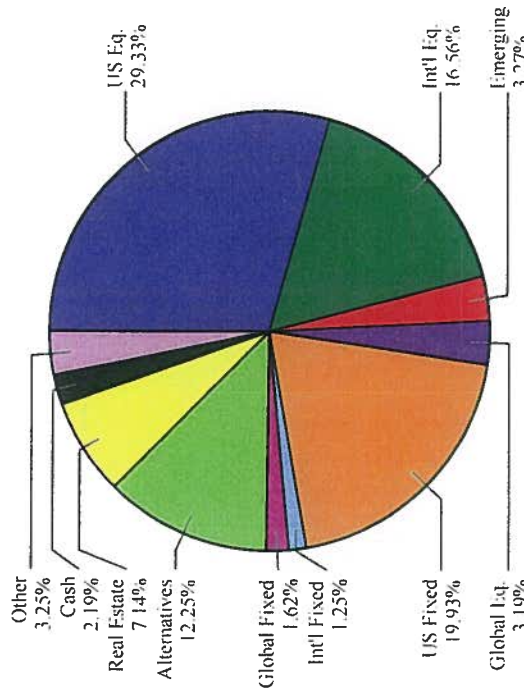
As of December 31, 2013

Fund Number: 180

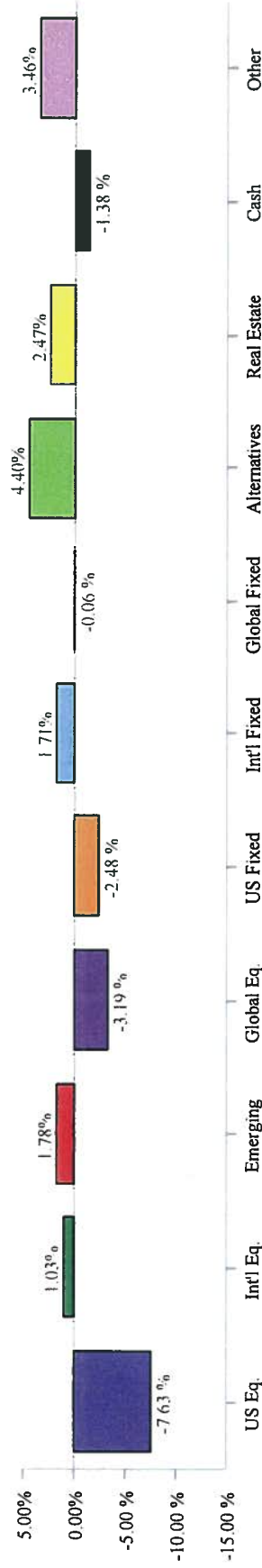
Ohio PERS



All Funds



Variance



Allocations shown may not sum up to 100% exactly due to rounding.

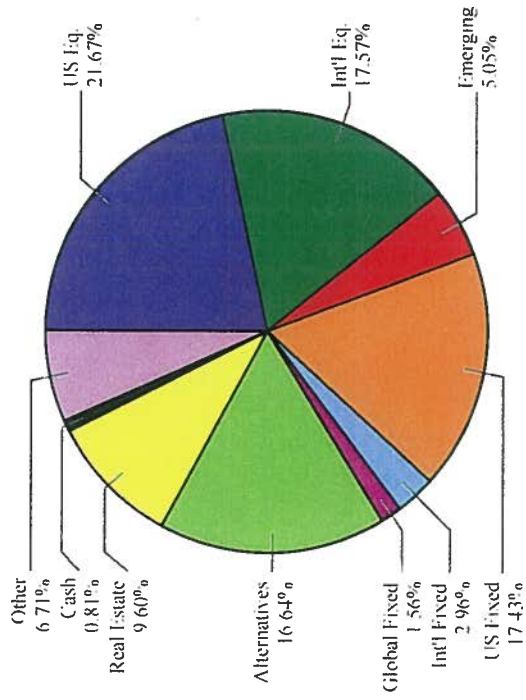
Asset Allocation

Ohio PERS vs. Average of Similar Size Funds

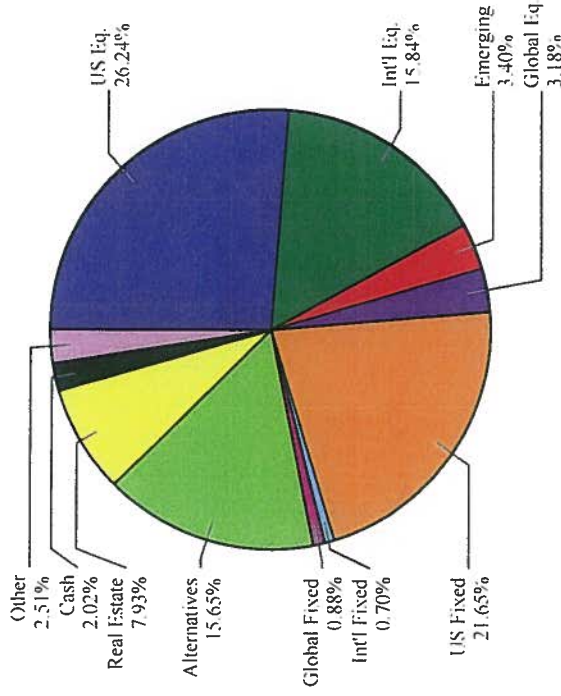
As of December 31, 2013

Fund Number: 180

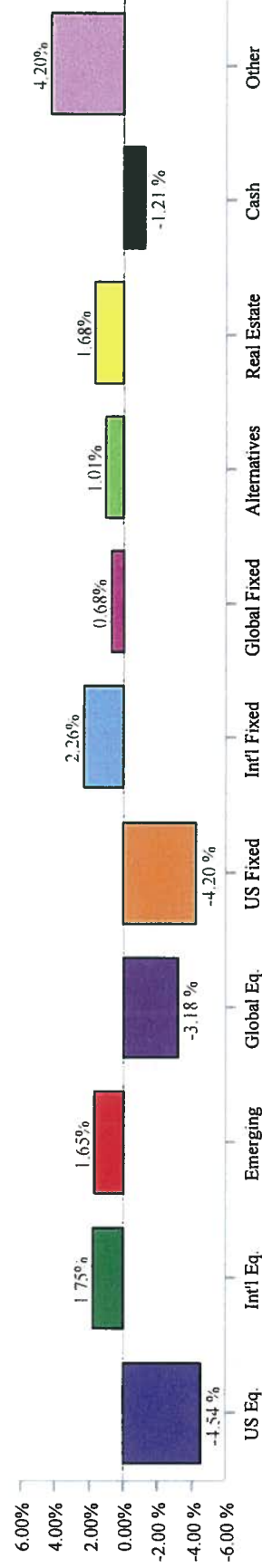
Ohio PERS



Over \$20 Billion



Variance



Allocations shown may not sum up to 100% exactly due to rounding.

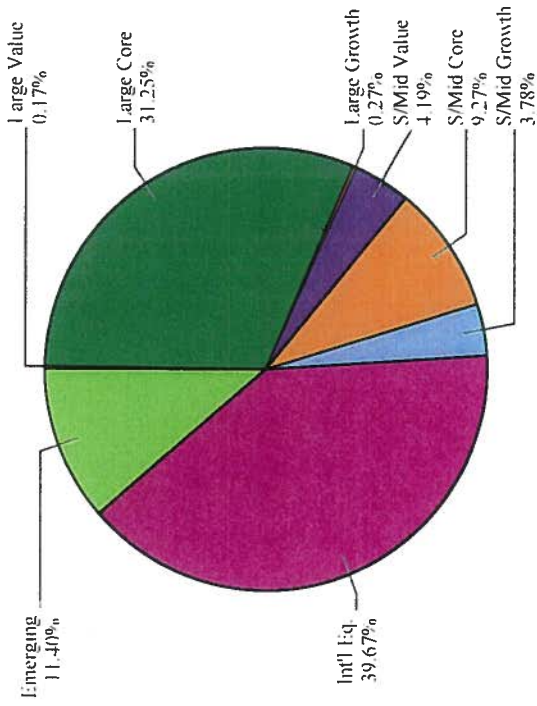
Equity Style Allocation

Ohio PERS vs. Average of All Funds

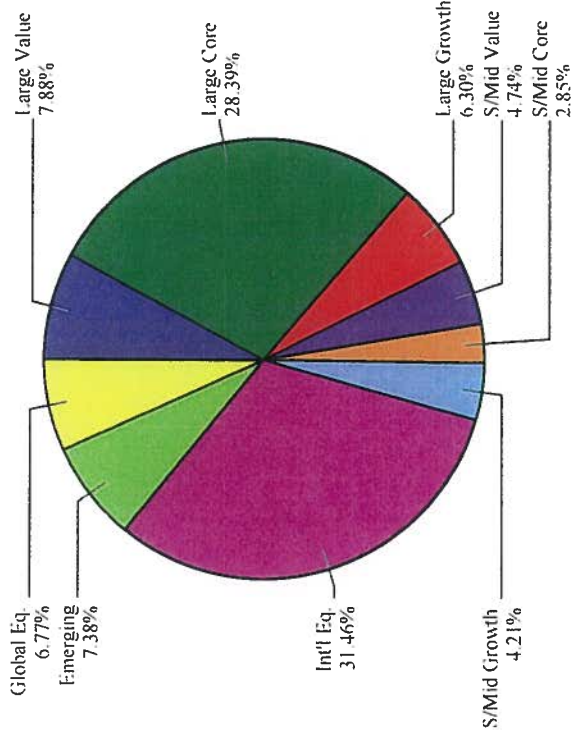
As of December 31, 2013

Fund Number: 180

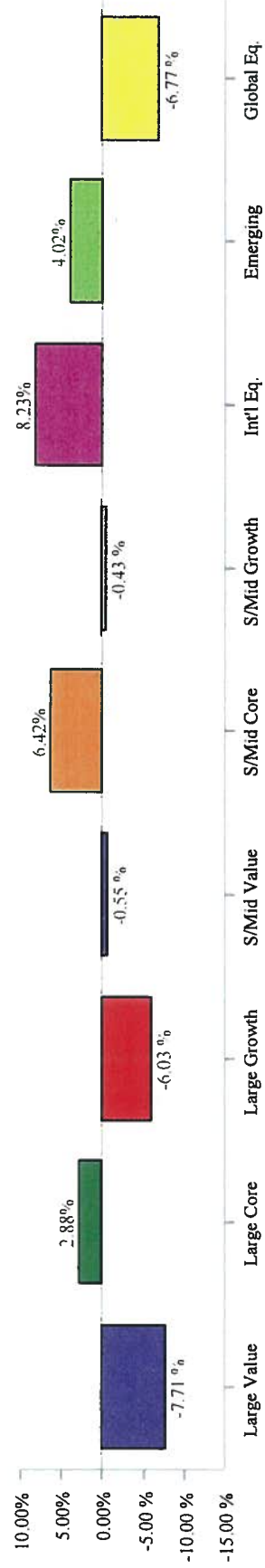
Ohio PERS



All Funds



Variance



Allocations shown may not sum up to 100% exactly due to rounding.

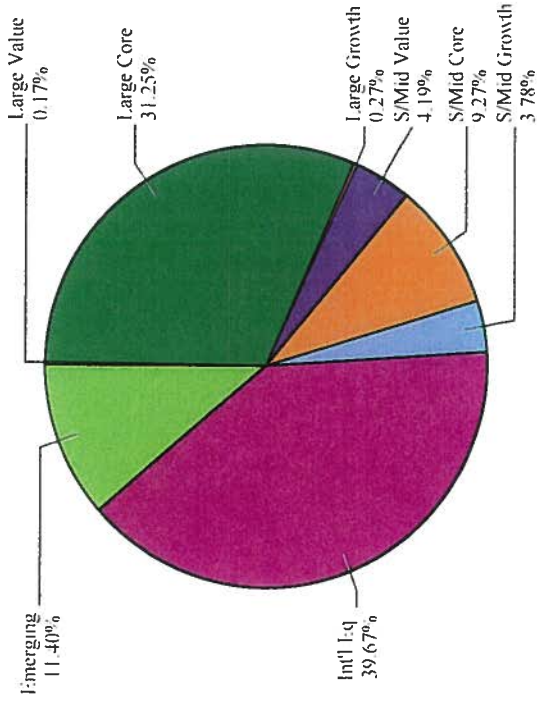
Equity Style Allocation

Ohio PERS vs. Average of Similar Size Funds

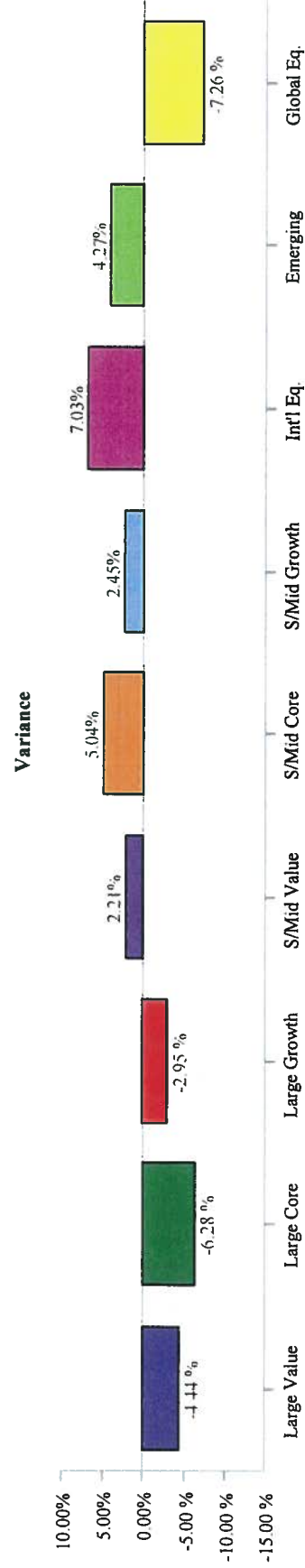
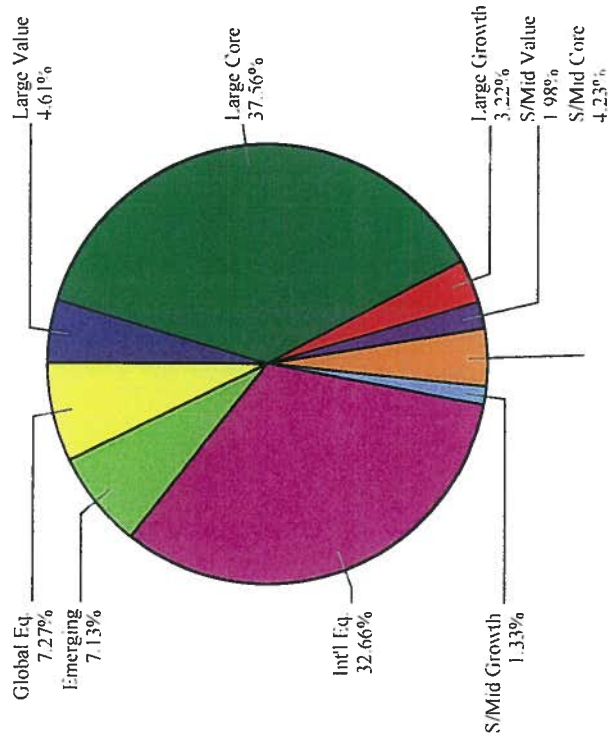
As of December 31, 2013

Fund Number: 180

Ohio PERS



Over \$20 Billion



Allocations shown may not sum up to 100% exactly due to rounding.

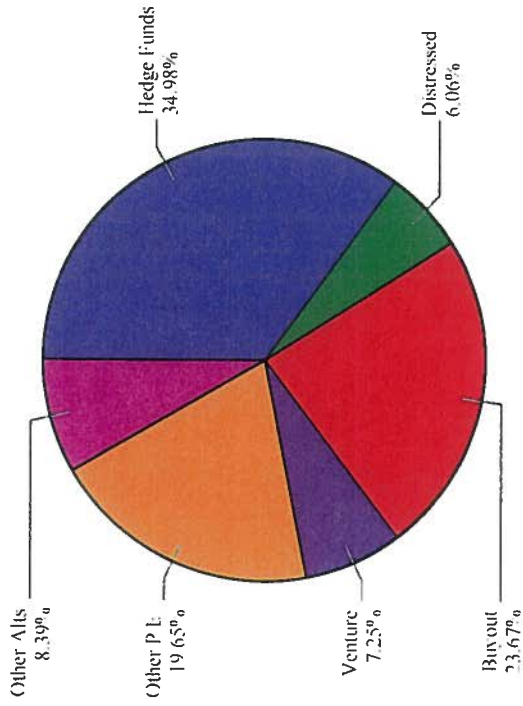
Alternatives Style Allocation

Ohio PERS vs. Average of All Funds

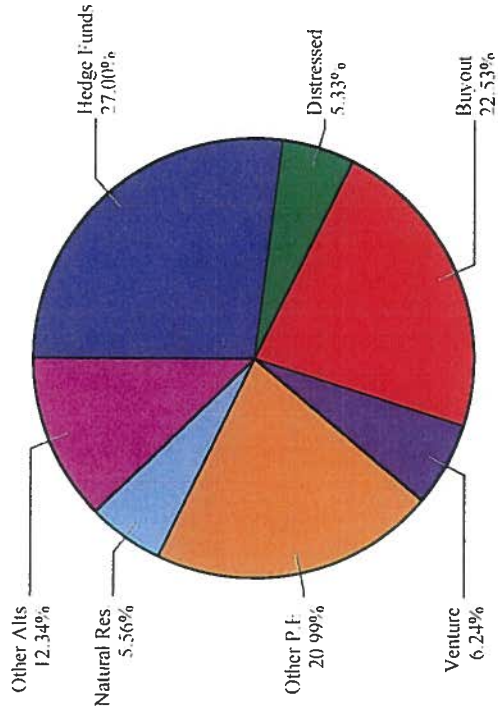
As of December 31, 2013

Fund Number: 180

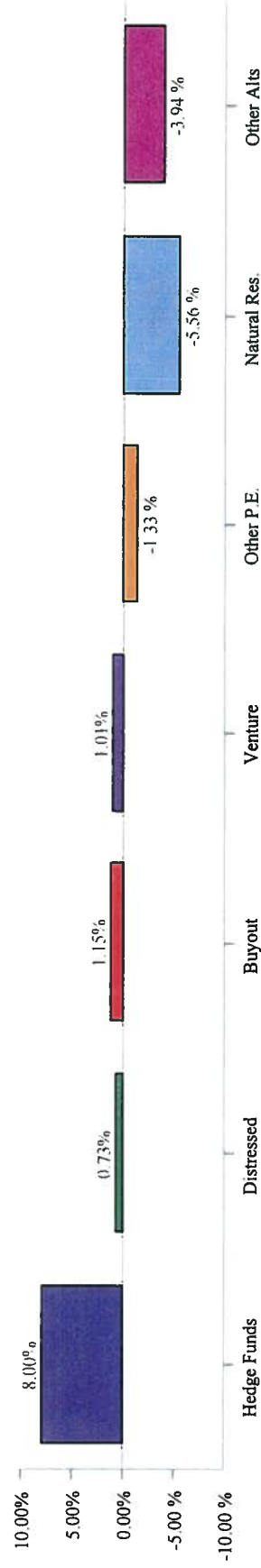
Ohio PERS



All Funds



Variance



Allocations shown may not sum up to 100% exactly due to rounding.

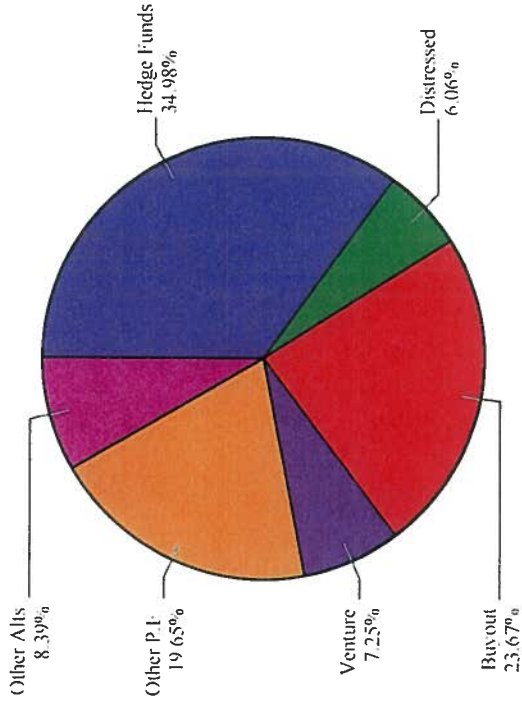
Alternatives Style Allocation

Ohio PERS vs. Average of Similar Size Funds

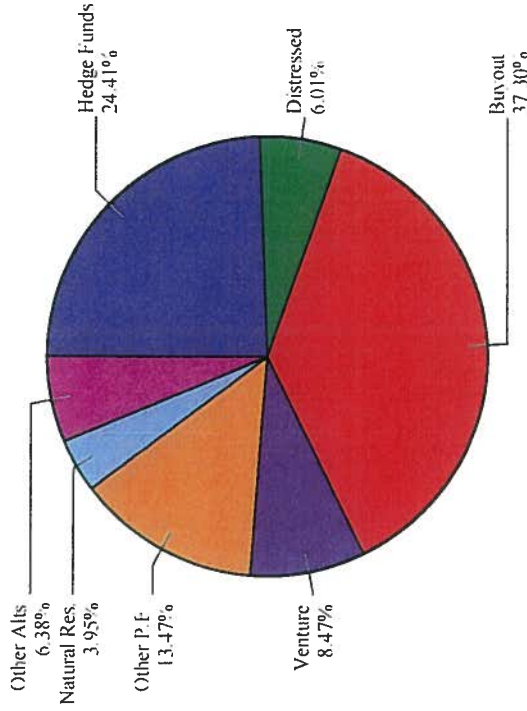
As of December 31, 2013

Fund Number: 180

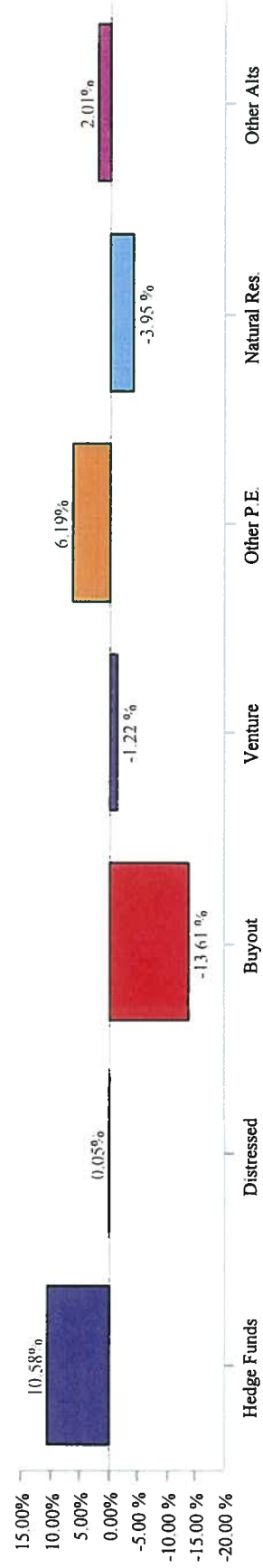
Ohio PERS



Over \$20 Billion



Variance



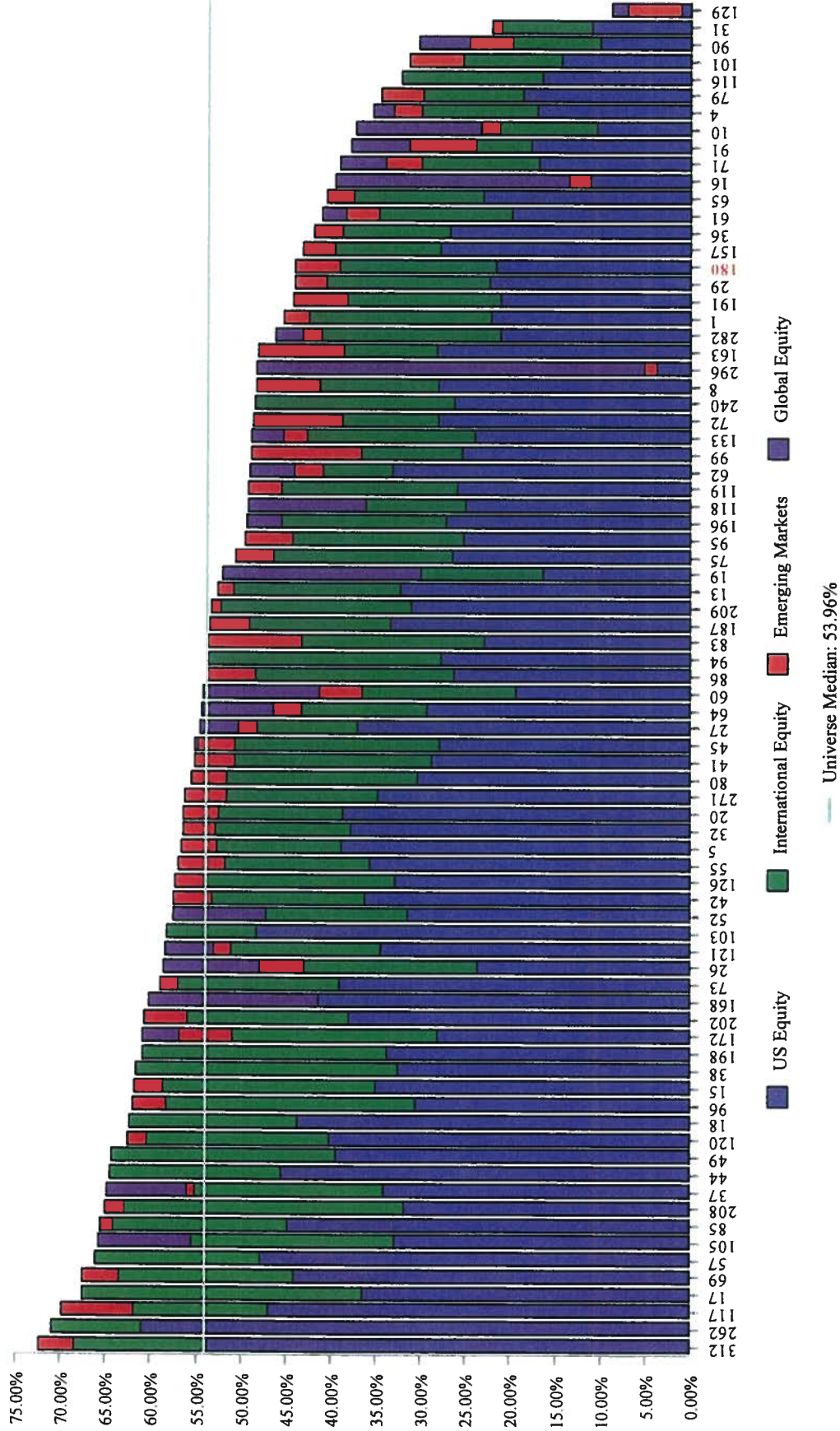
Allocations shown may not sum up to 100% exactly due to rounding.

Equity Style Allocation

As of December 31, 2013

Fund Number: 180

79 of 79 funds invest in Equity

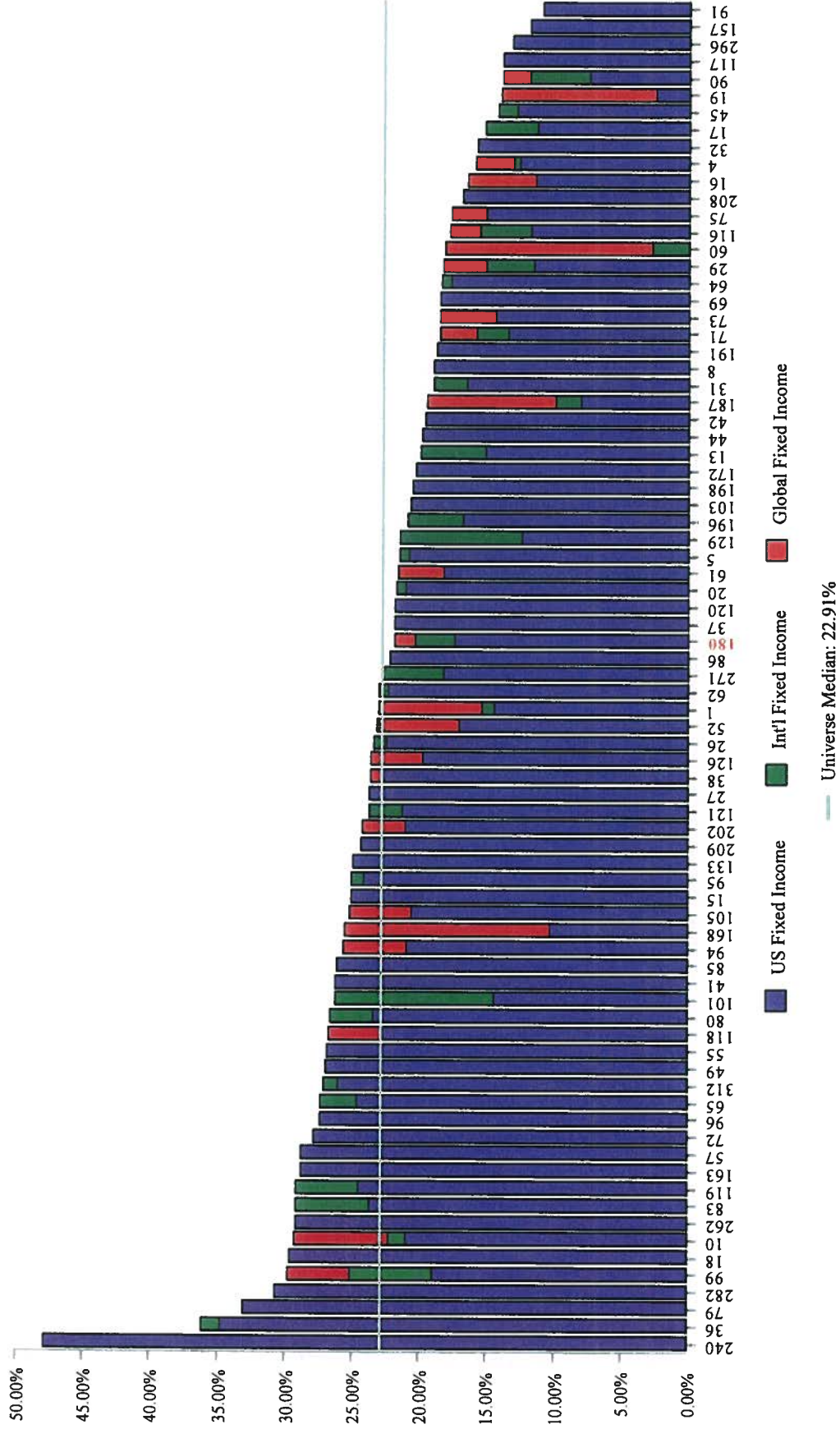


Fixed Income Style Allocation

As of December 31, 2013

Fund Number: 180

79 of 79 funds invest in Fixed Income

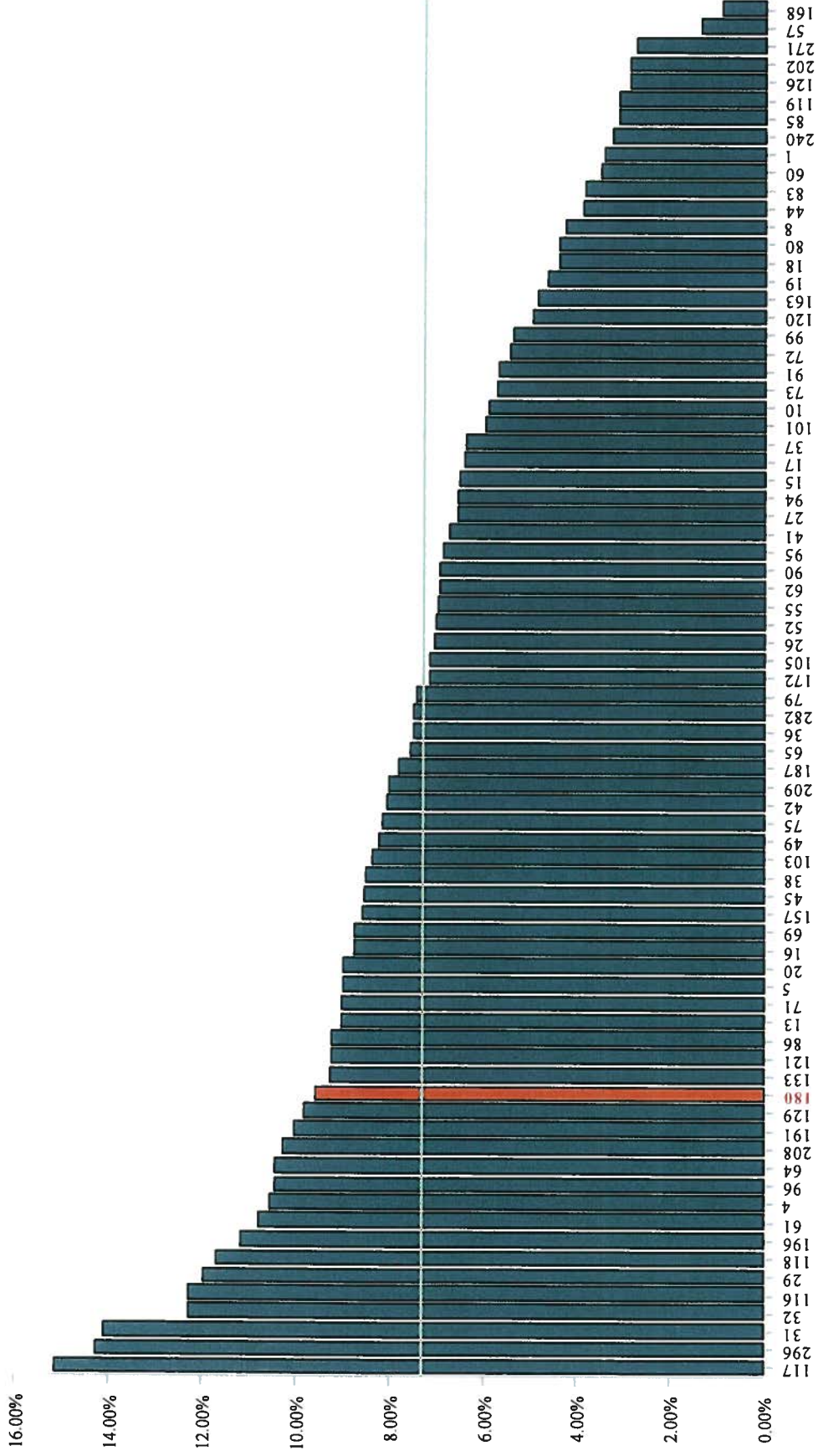


Real Estate Allocation

As of December 31, 2013

Fund Number: 180

76 of 79 funds invest in Real Estate

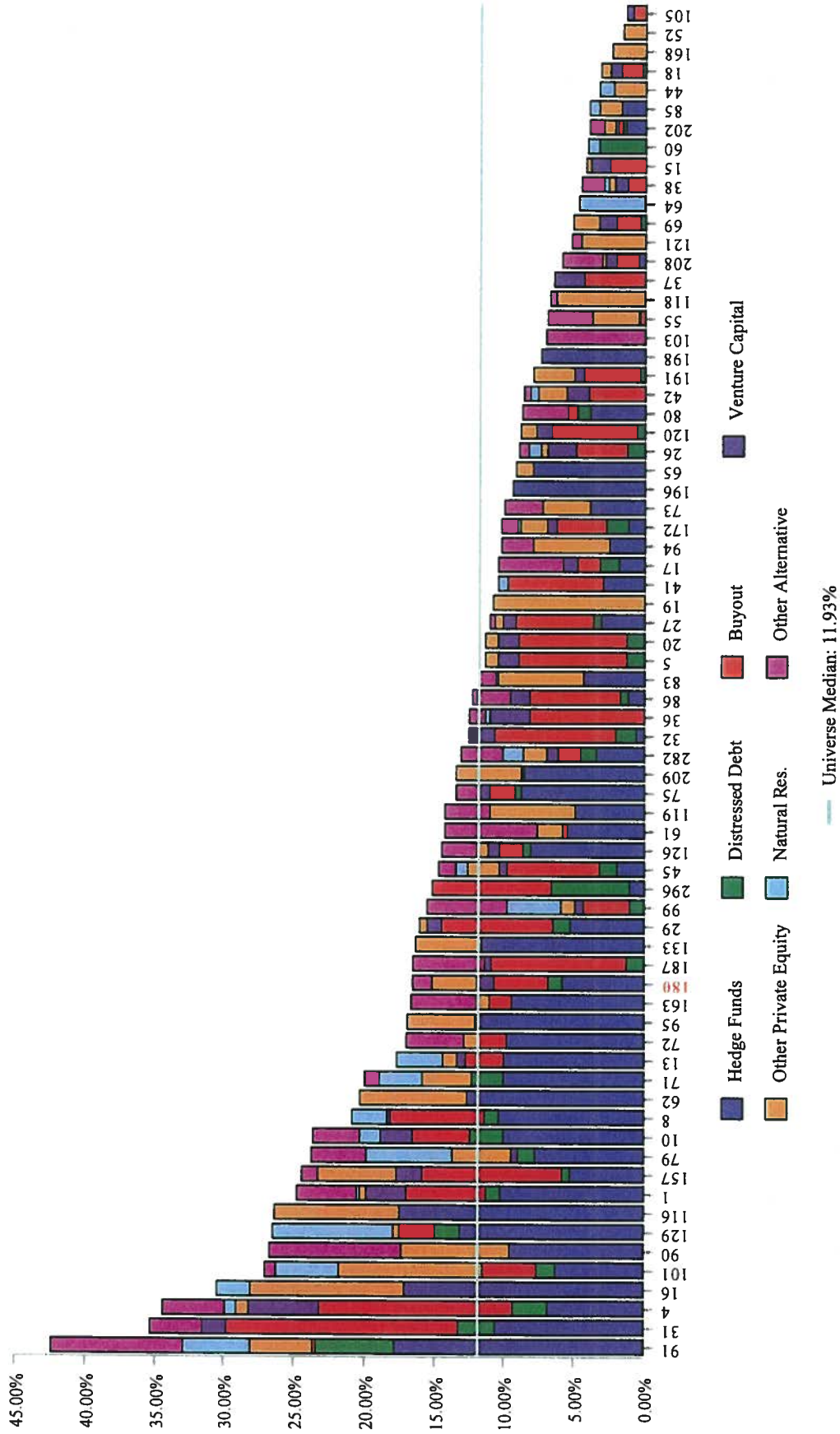


Alternatives Style Allocation

As of December 31, 2013

Fund Number: 180

71 of 79 funds invest in Alternatives

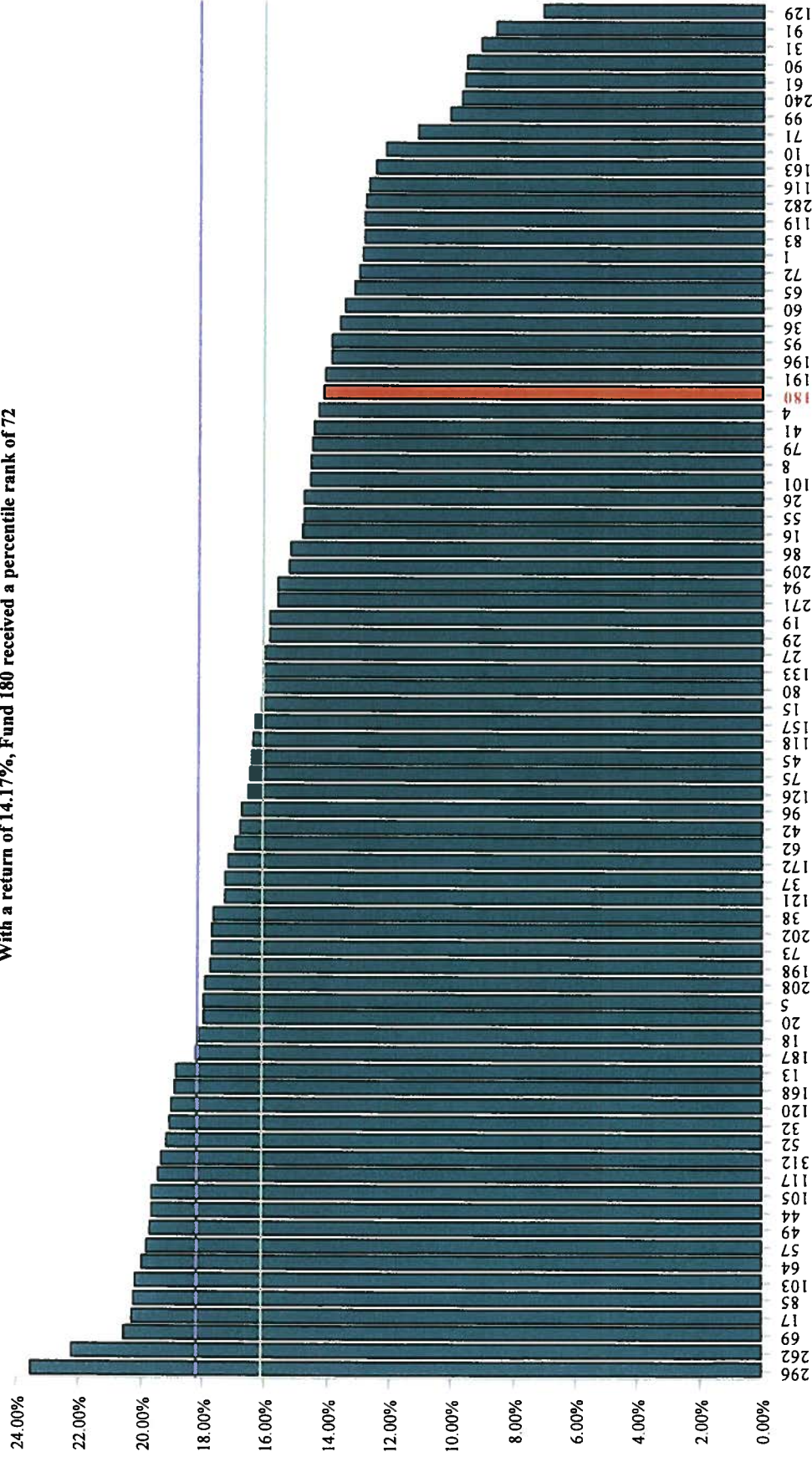


1 Year Annualized Total Fund Returns

As of December 31, 2013

Fund Number: 180

79 of 79 funds provided Total Fund returns for this time period
 With a return of 14.17%, Fund 180 received a percentile rank of 72



Universe Median: 16.11% 60% R 3000/40% Barclays US Agg Bond Index: 18.19%

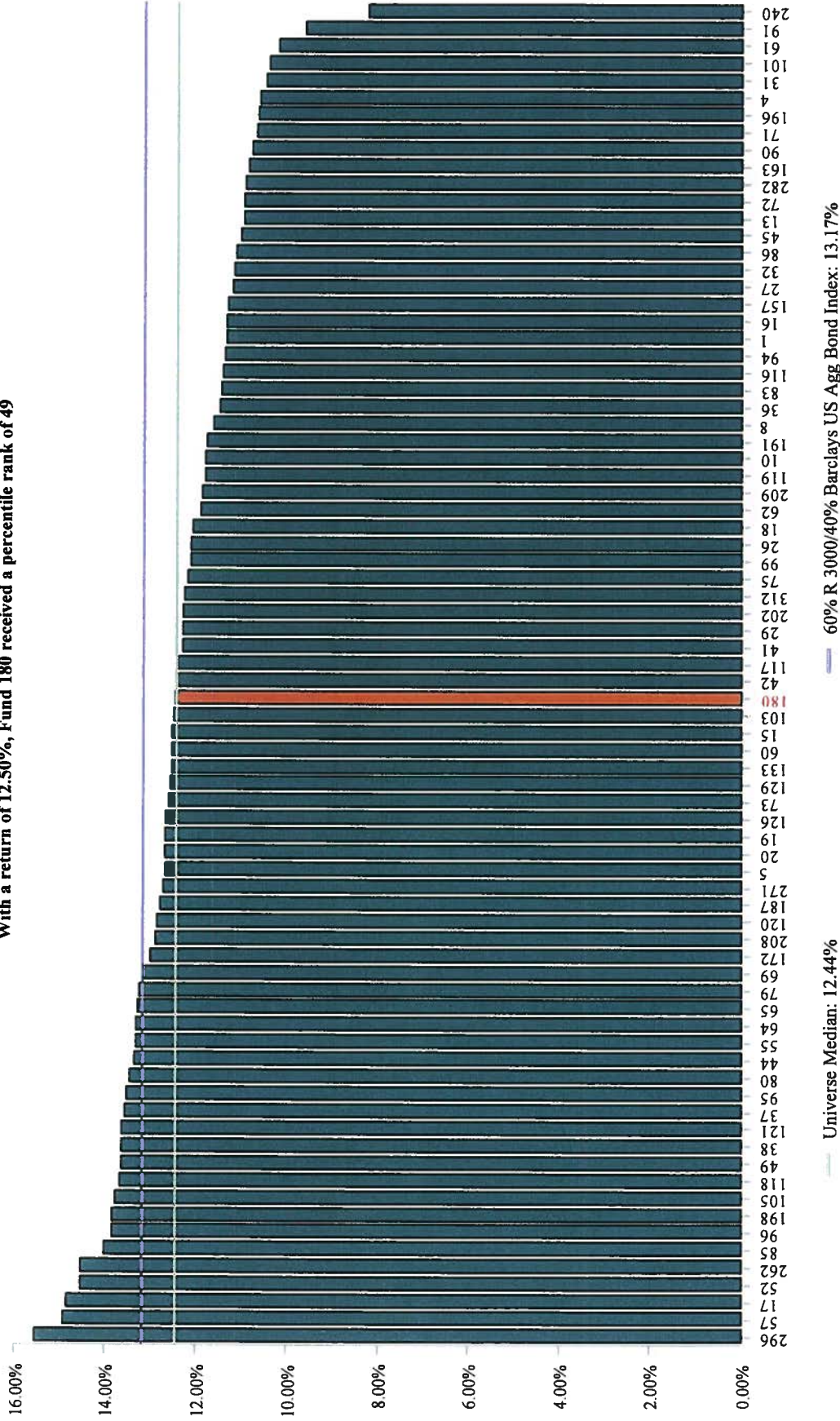
Funds with less history than the specified time period will not appear in the chart.

5 Year Annualized Total Fund Returns

As of December 31, 2013

Fund Number: 180

78 of 79 funds provided Total Fund returns for this time period
 With a return of 12.50%, Fund 180 received a percentile rank of 49



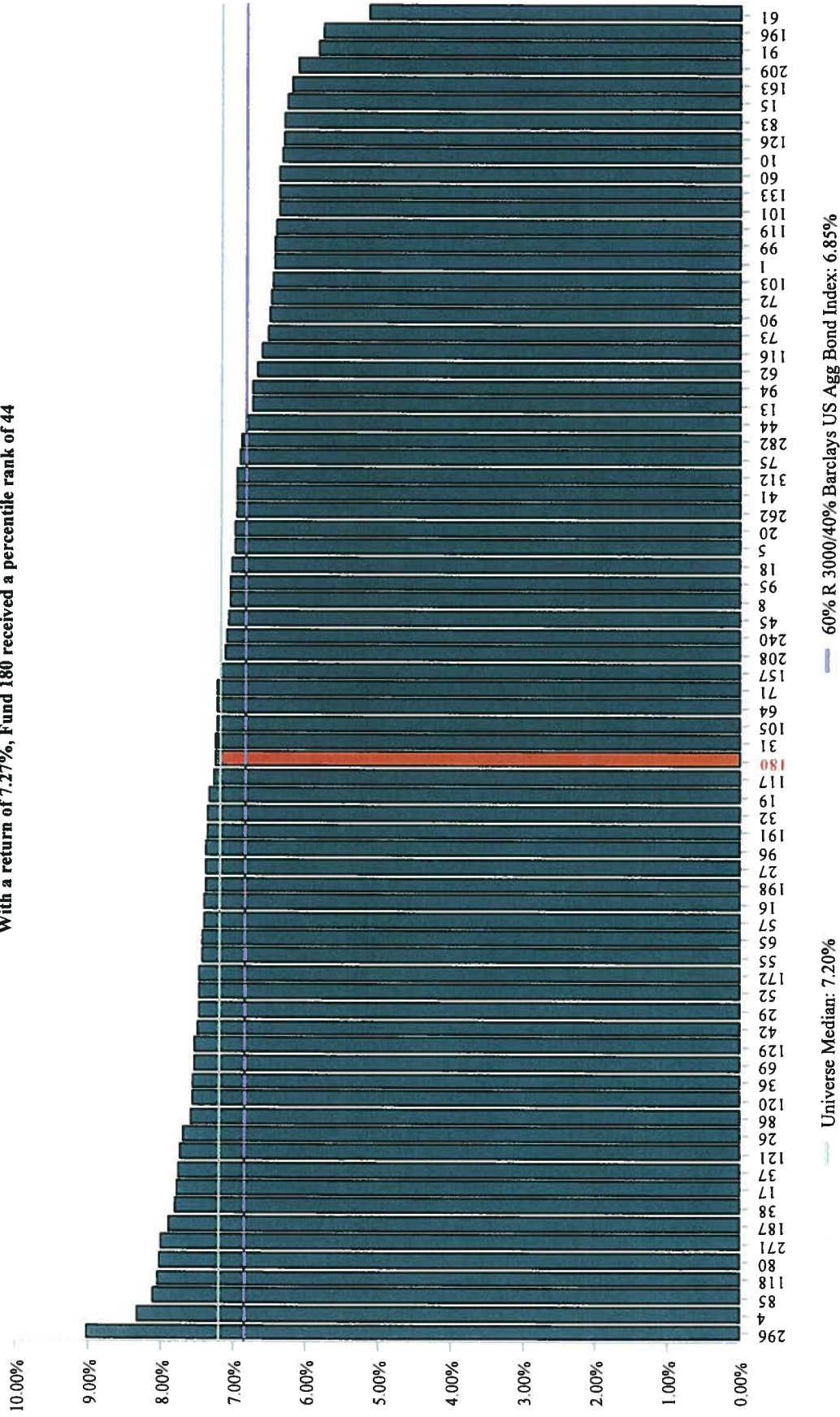
Funds with less history than the specified time period will not appear in the chart.

10 Year Annualized Total Fund Returns

As of December 31, 2013

Fund Number: 180

75 of 79 funds provided Total Fund returns for this time period
 With a return of 7.27%, Fund 180 received a percentile rank of 44



Funds with less history than the specified time period will not appear in the chart.

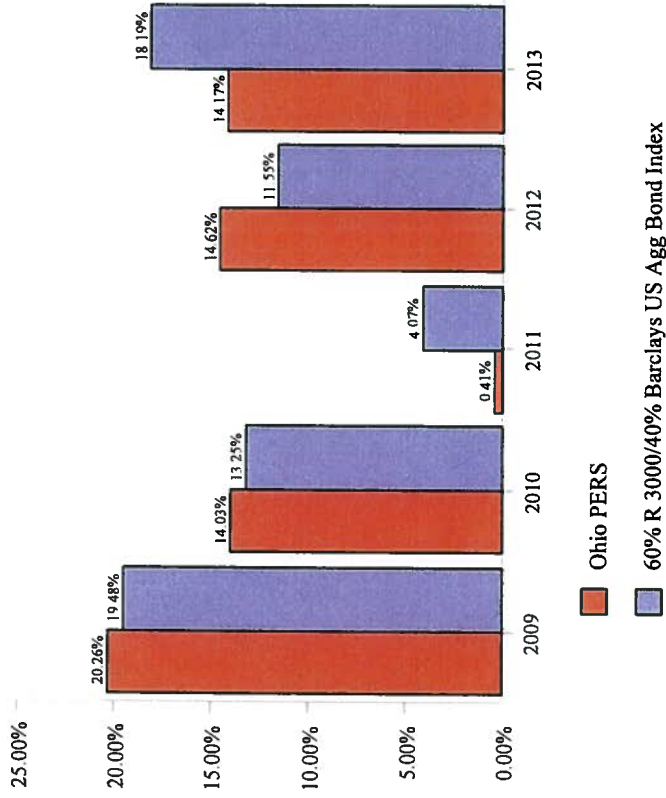
Total Return - Total Fund

Ohio PERS vs. 60% R 3000/40% Barclays US Agg Bond Index

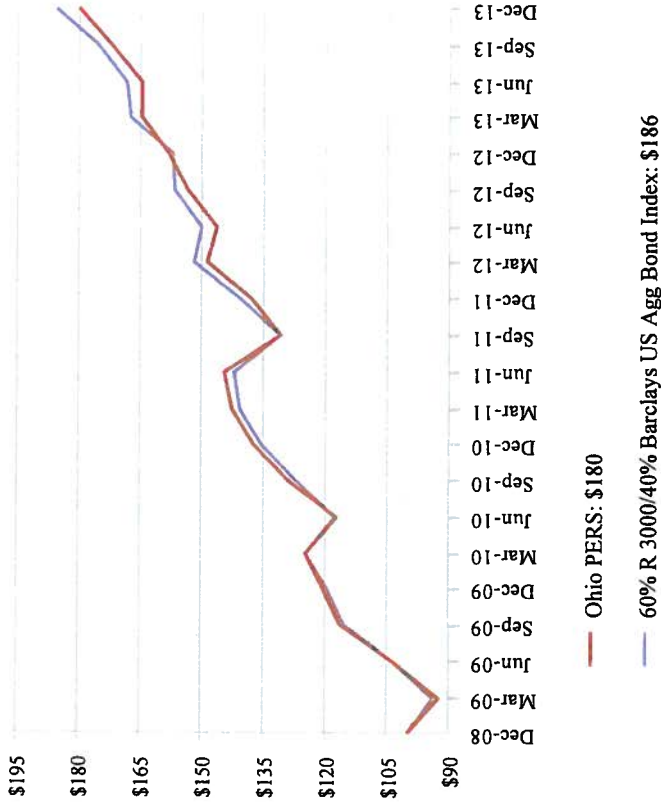
As of December 31, 2013

Fund Number: 180

Calendar Year Rates of Return



Cumulative Performance (Growth of \$100)



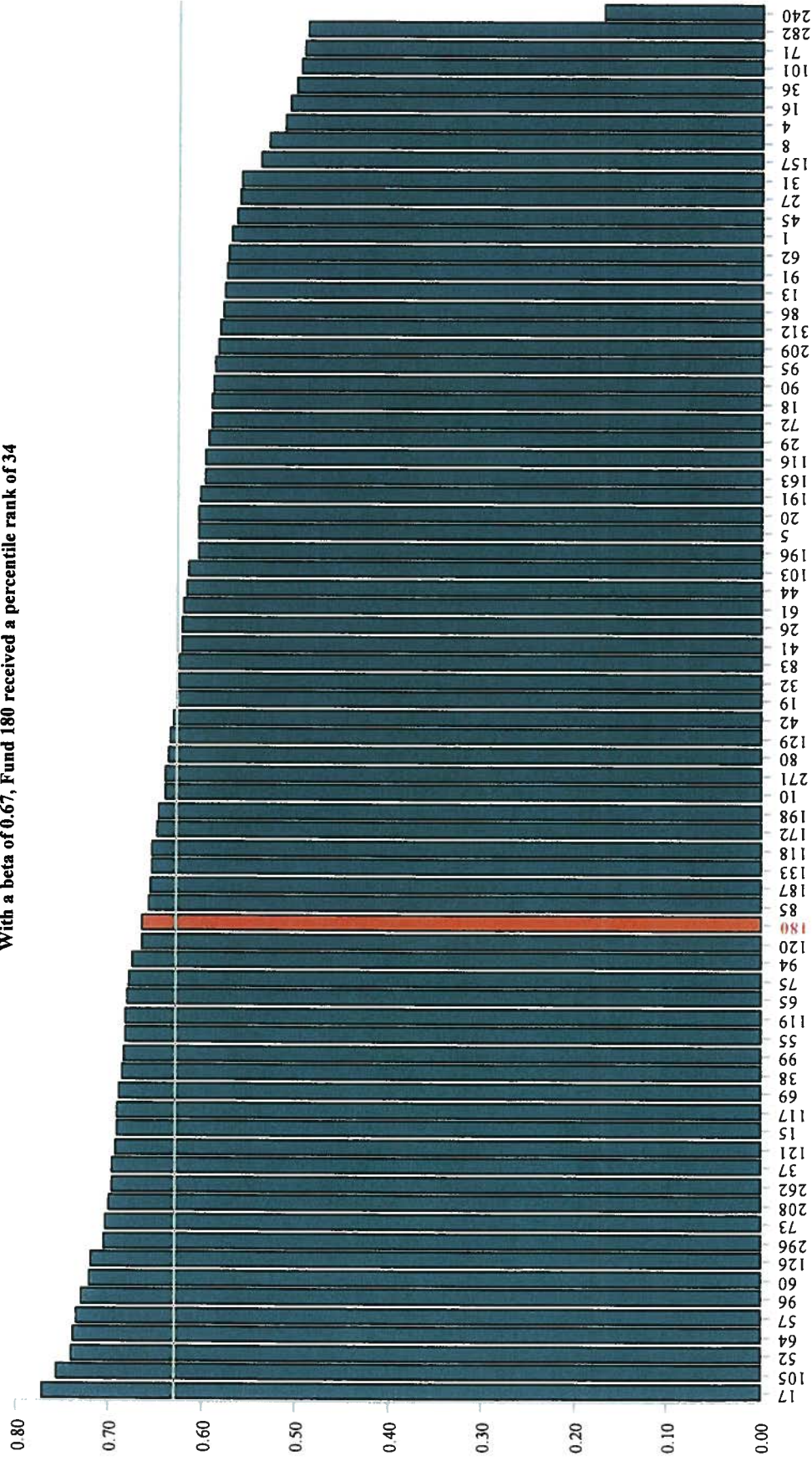
<u>Annualized Returns:</u>		<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>
Ohio PERS	60% R 3000/40% Barclays US Agg Bond Index	14.17%	9.53%	12.50%
Variance		18.19%	11.12%	13.17%
		-4.02%	-1.59%	-0.67%

10 Year Total Fund Beta

As of December 31, 2013

Fund Number: 180

75 of 79 funds provided Total Fund returns for this time period
 With a beta of 0.67, Fund 180 received a percentile rank of 34



Universe Median: 0.63

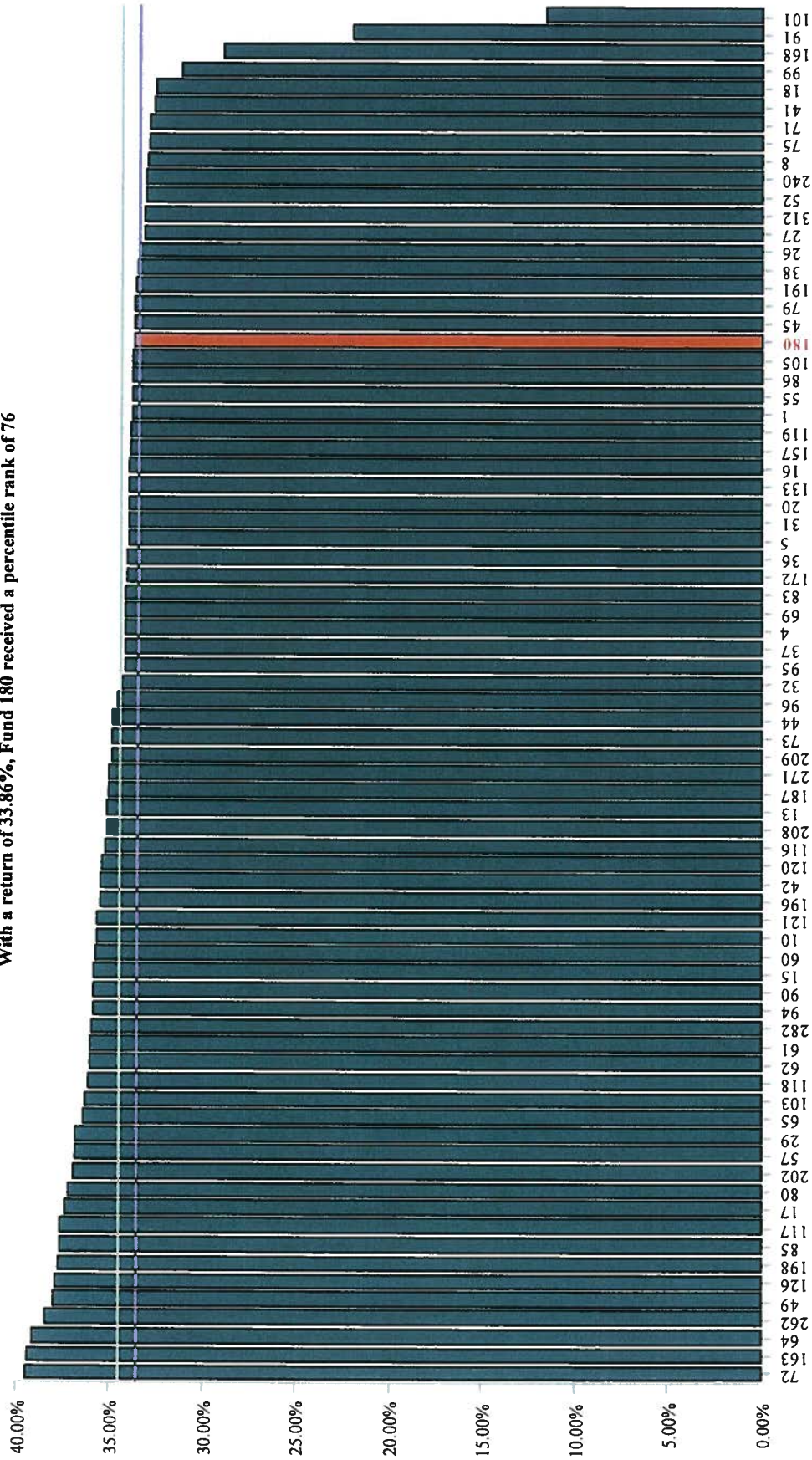
Funds with less history than the specified time period will not appear in the chart. Benchmark used is the S&P 500 Index (Cap Wid).

1 Year Annualized US Equity Returns

As of December 31, 2013

Fund Number: 180

76 of 79 funds provided US Equity returns for this time period
 With a return of 33.86%, Fund 180 received a percentile rank of 76



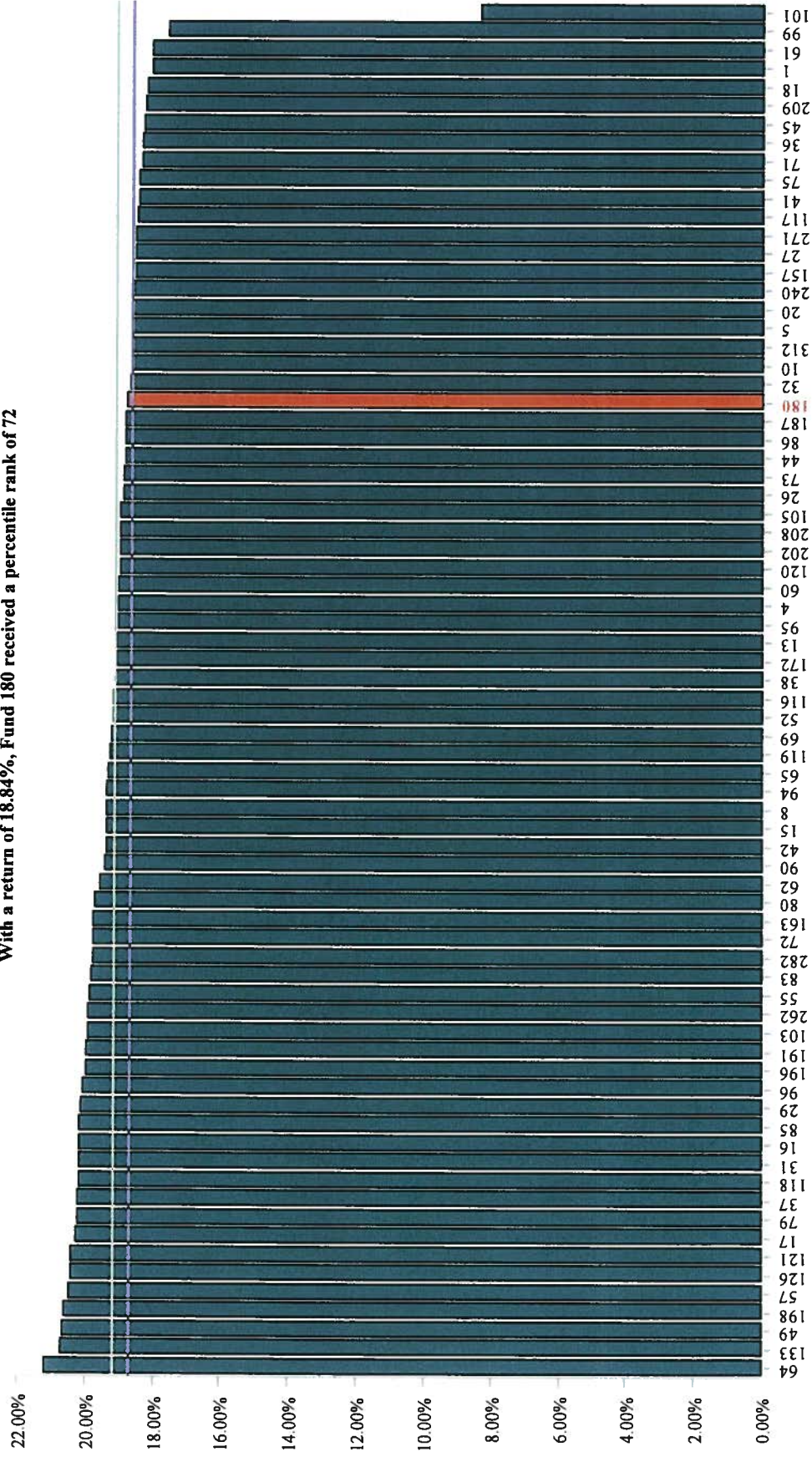
Funds with less history than the specified time period will not appear in the chart.

5 Year Annualized US Equity Returns

As of December 31, 2013

Fund Number: 180

74 of 79 funds provided US Equity returns for this time period
 With a return of 18.84%, Fund 180 received a percentile rank of 72



— Universe Median: 19.20% — R 3000 Index: 18.71%

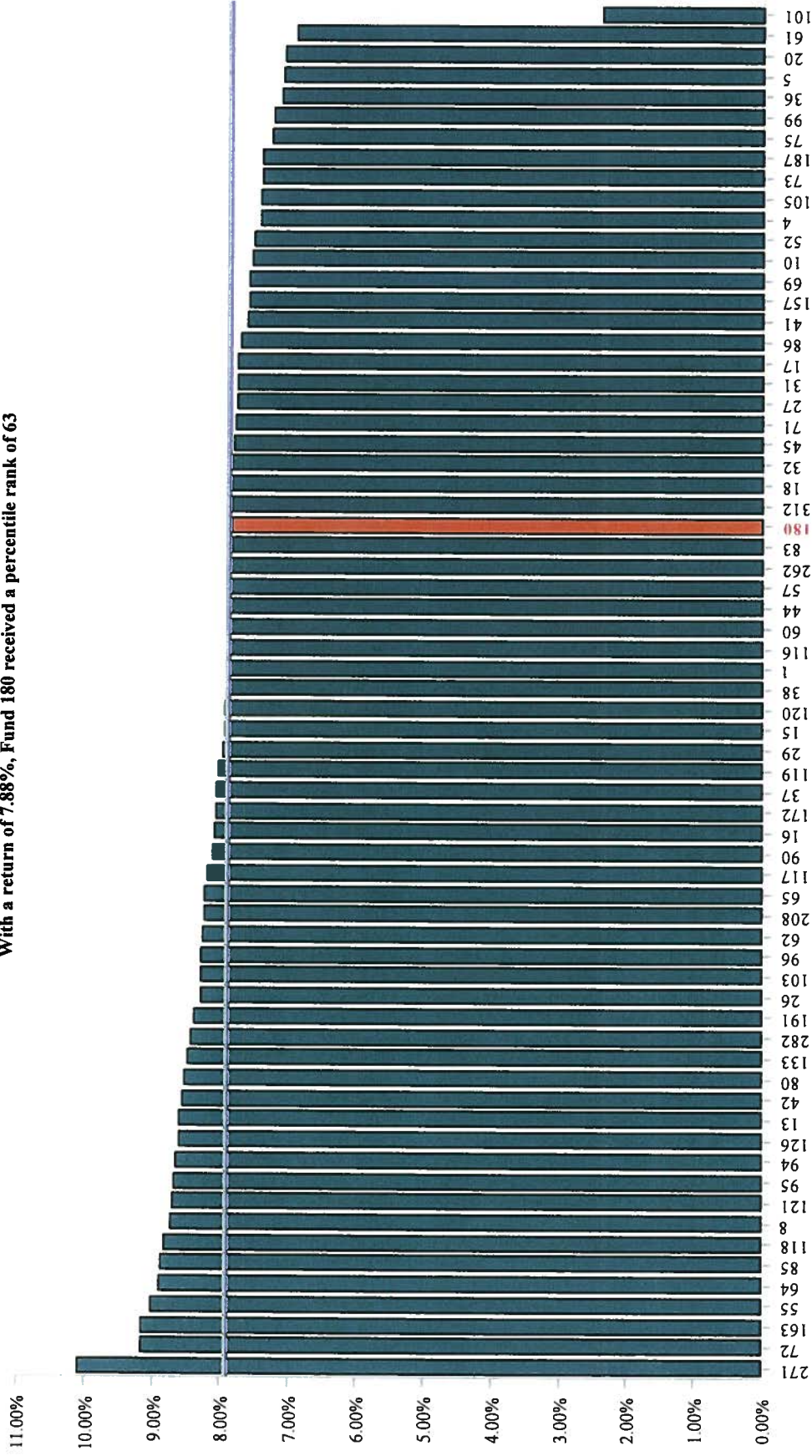
Funds with less history than the specified time period will not appear in the chart.

10 Year Annualized US Equity Returns

As of December 31, 2013

Fund Number: 180

67 of 79 funds provided US Equity returns for this time period
 With a return of 7.88%, Fund 180 received a percentile rank of 63



— Universe Median: 7.95% — R 3000 Index: 7.88%

Funds with less history than the specified time period will not appear in the chart.

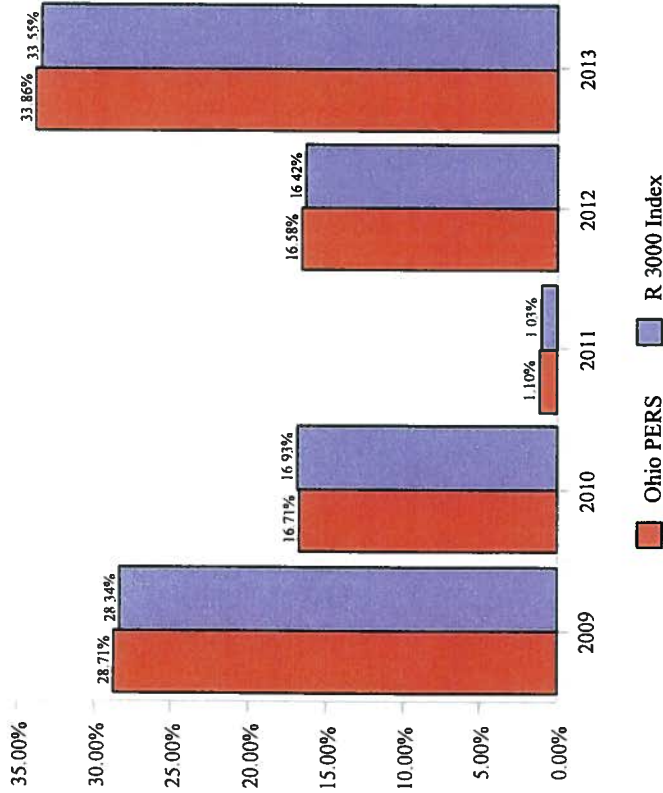
Total Return - US Equity

Ohio PERS vs. R 3000 Index

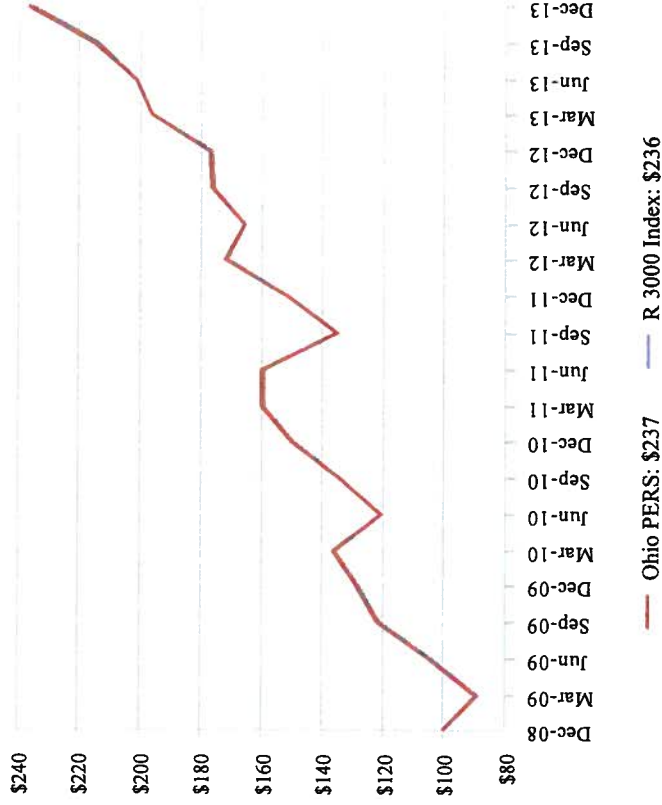
As of December 31, 2013

Fund Number: 180

Calendar Year Rates of Return



Cumulative Performance (Growth of \$100)



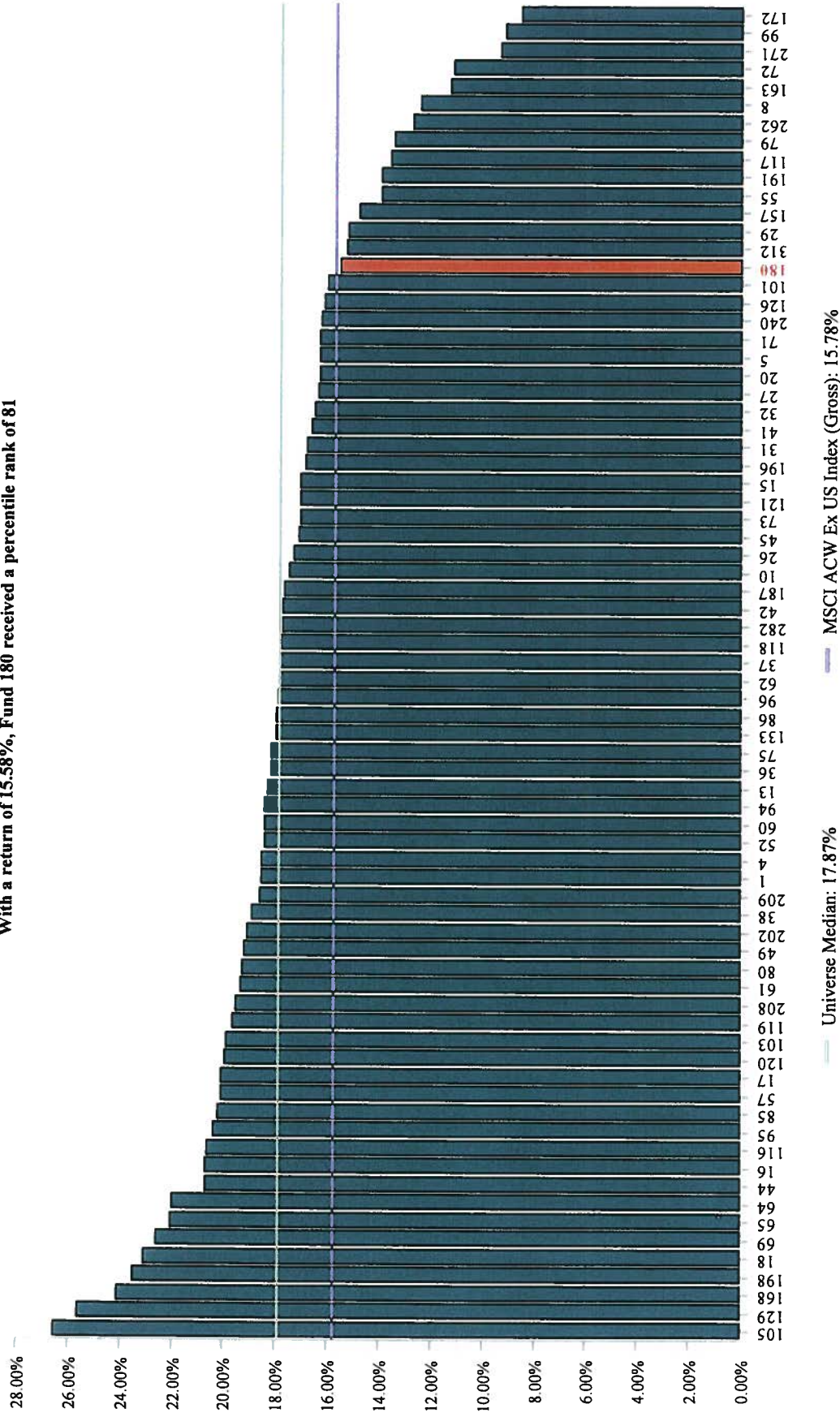
Annualized Returns:	1 Year	3 Years	5 Years
Ohio PERS	33.86%	16.42%	18.84%
R 3000 Index	33.55%	16.24%	18.71%
Variance	0.31%	0.18%	0.13%

1 Year Annualized International Equity Returns

As of December 31, 2013

Fund Number: 180

74 of 79 funds provided International Equity returns for this time period
 With a return of 15.58%, Fund 180 received a percentile rank of 81



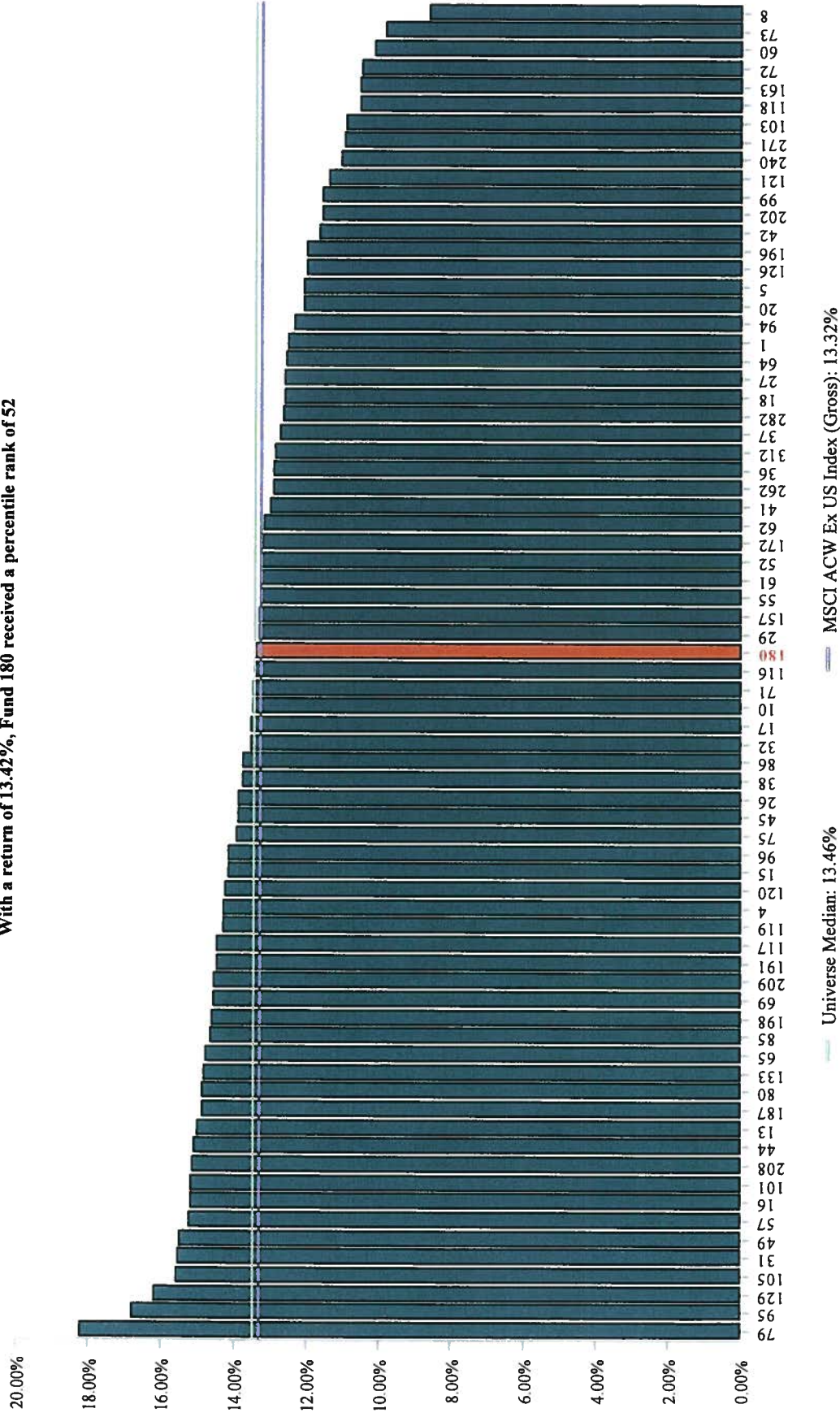
Funds with less history than the specified time period will not appear in the chart.

5 Year Annualized International Equity Returns

As of December 31, 2013

Fund Number: 180

73 of 79 funds provided International Equity returns for this time period
 With a return of 13.42%, Fund 180 received a percentile rank of 52



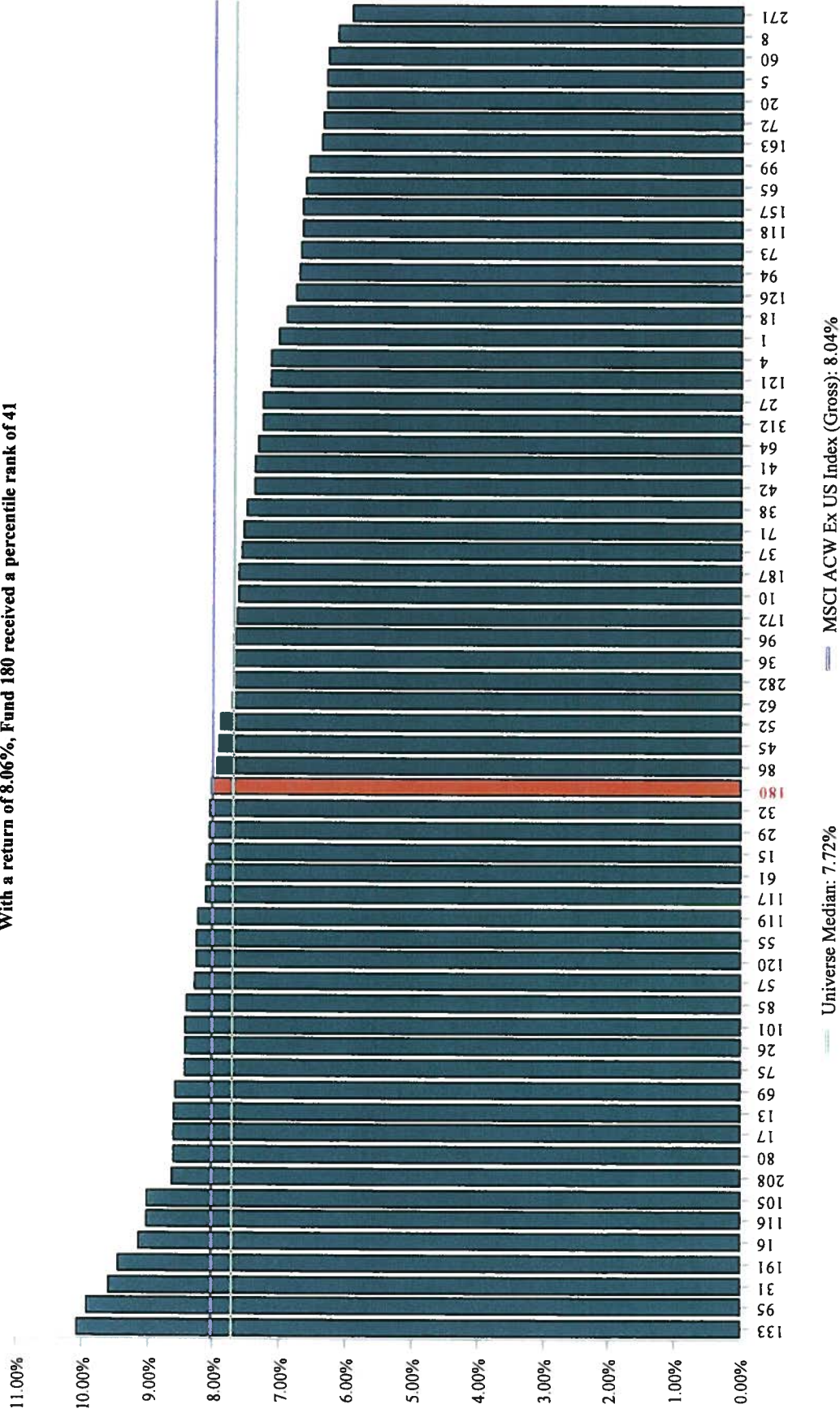
Funds with less history than the specified time period will not appear in the chart.

10 Year Annualized International Equity Returns

As of December 31, 2013

Fund Number: 180

62 of 79 funds provided International Equity returns for this time period
 With a return of 8.06%, Fund 180 received a percentile rank of 41



Funds with less history than the specified time period will not appear in the chart.

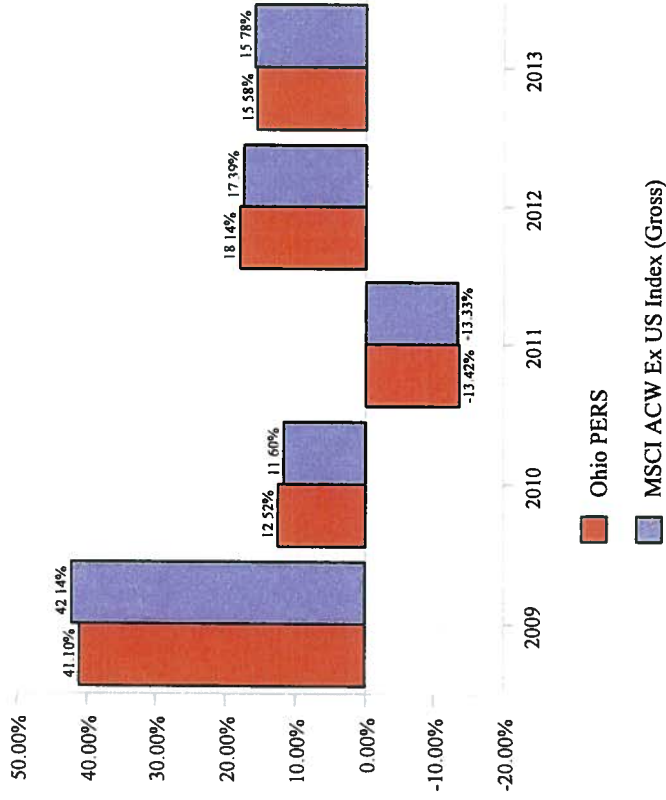
Total Return - International Equity

Ohio PERS vs. MSCI ACW Ex US Index (Gross)

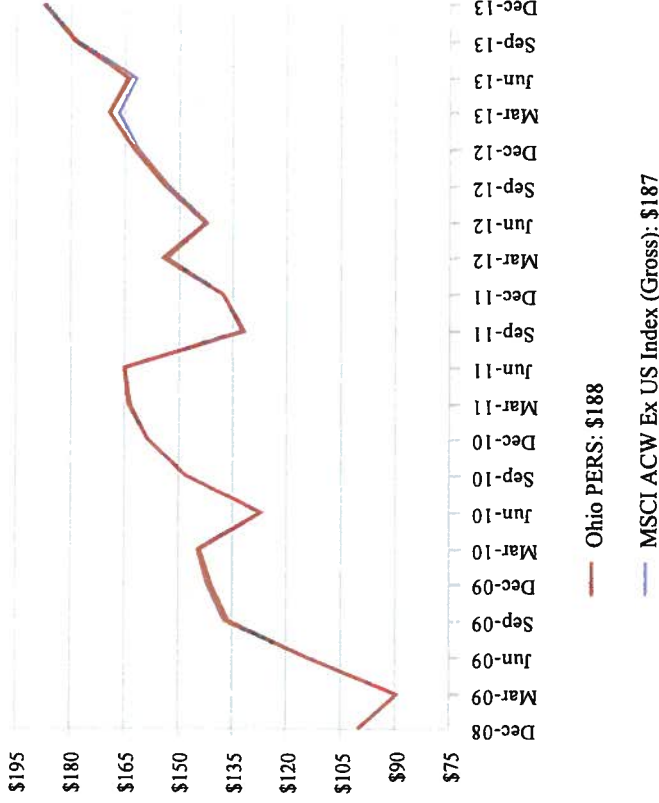
As of December 31, 2013

Fund Number: 180

Calendar Year Rates of Return



Cumulative Performance (Growth of \$100)



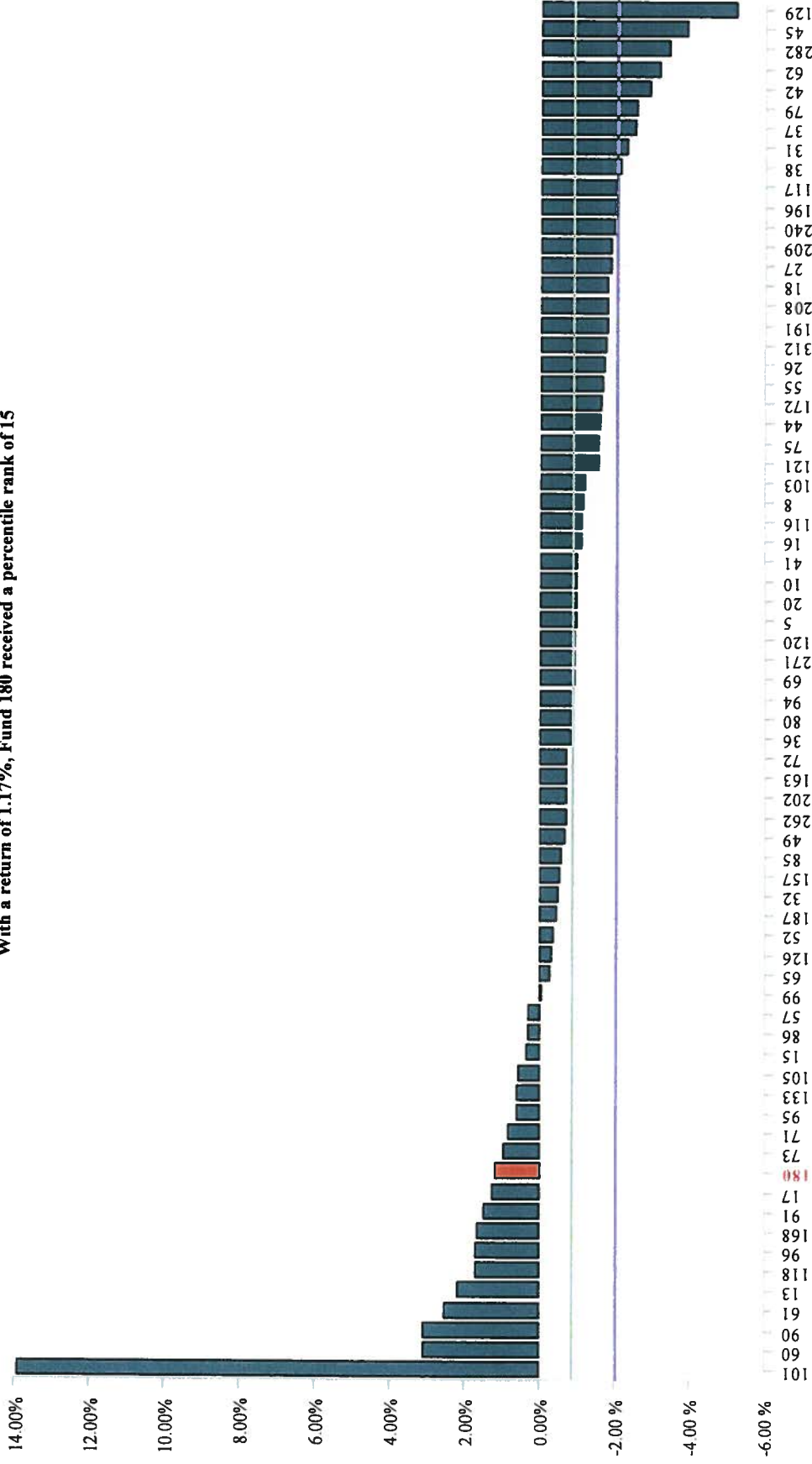
Annualized Returns:	1 Year	3 Years	5 Years
Ohio PERS	15.58%	5.74%	13.42%
MSCI ACW Ex US Index (Gross)	15.78%	5.61%	13.32%
Variance	-0.20%	0.13%	0.10%

1 Year Annualized US Fixed Income Returns

As of December 31, 2013

Fund Number: 180

70 of 73 funds provided US Fixed Income returns for this time period
 With a return of 1.17%, Fund 180 received a percentile rank of 15



Universe Median: -0.88% Barclays US Agg Bond Index: -2.02%

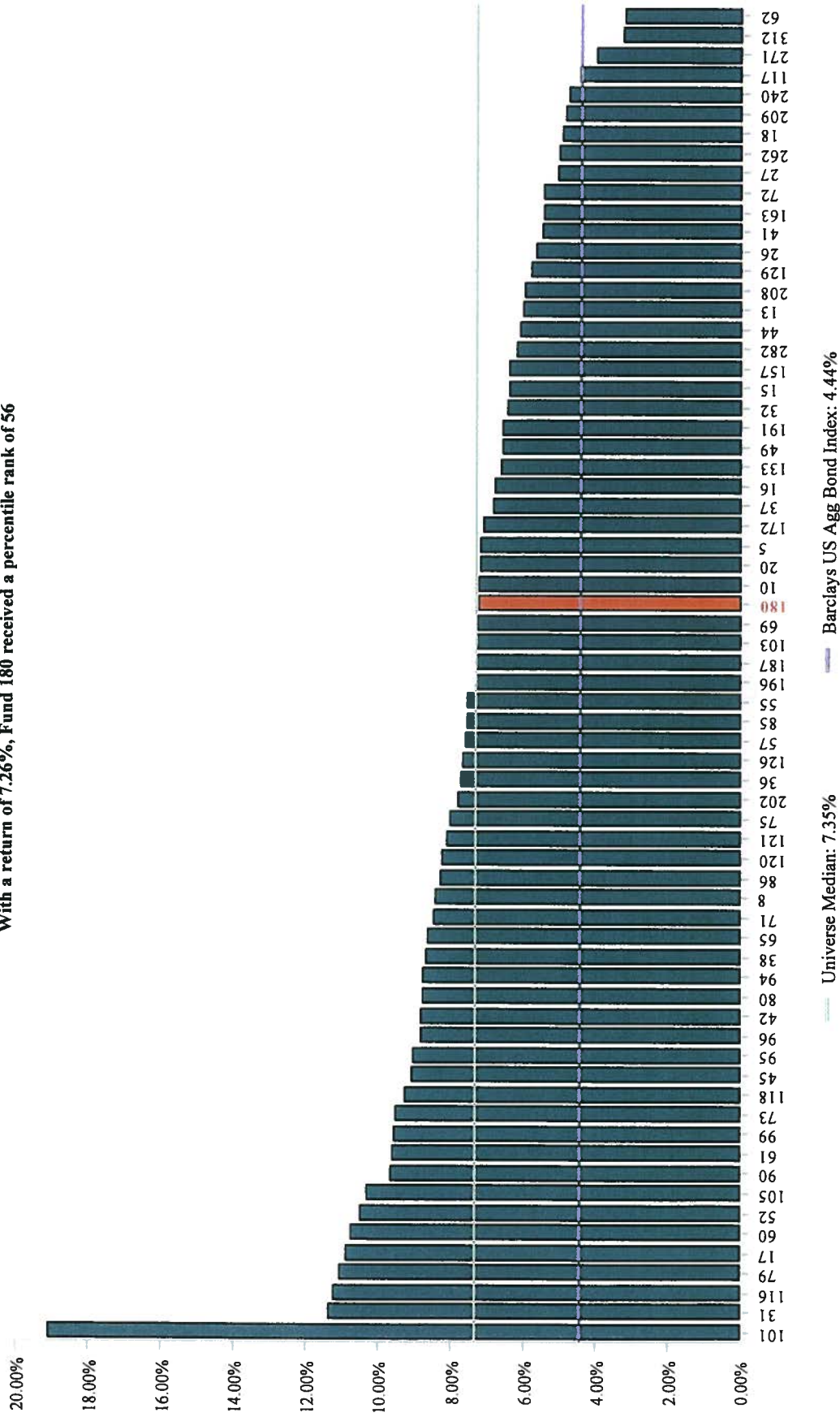
Funds with less history than the specified time period will not appear in the chart.

5 Year Annualized US Fixed Income Returns

As of December 31, 2013

Fund Number: 180

68 of 73 funds provided US Fixed Income returns for this time period
 With a return of 7.26%, Fund 180 received a percentile rank of 56



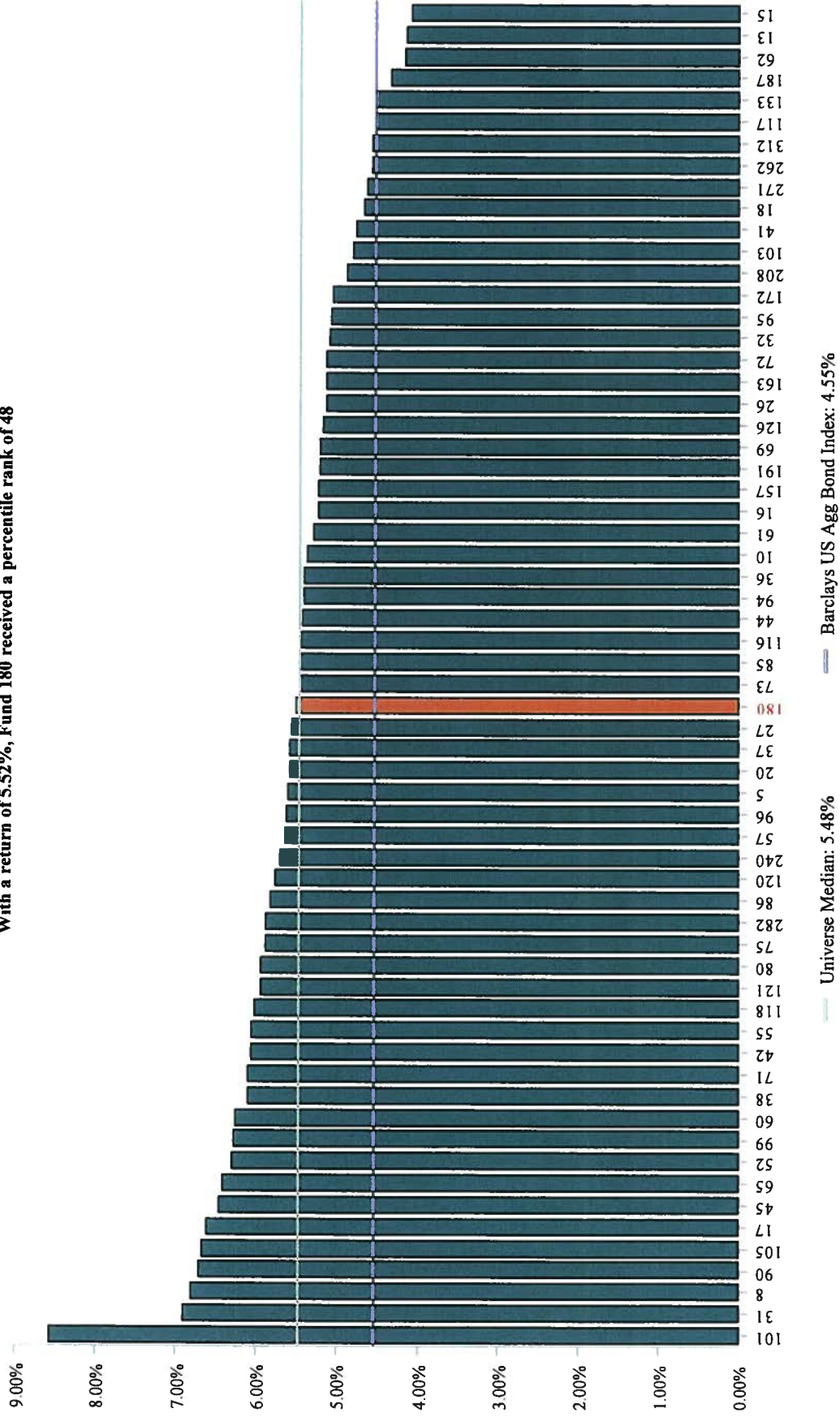
Funds with less history than the specified time period will not appear in the chart.

10 Year Annualized US Fixed Income Returns

As of December 31, 2013

Fund Number: 180

62 of 73 funds provided US Fixed Income returns for this time period
 With a return of 5.52%, Fund 180 received a percentile rank of 48



Funds with less history than the specified time period will not appear in the chart.

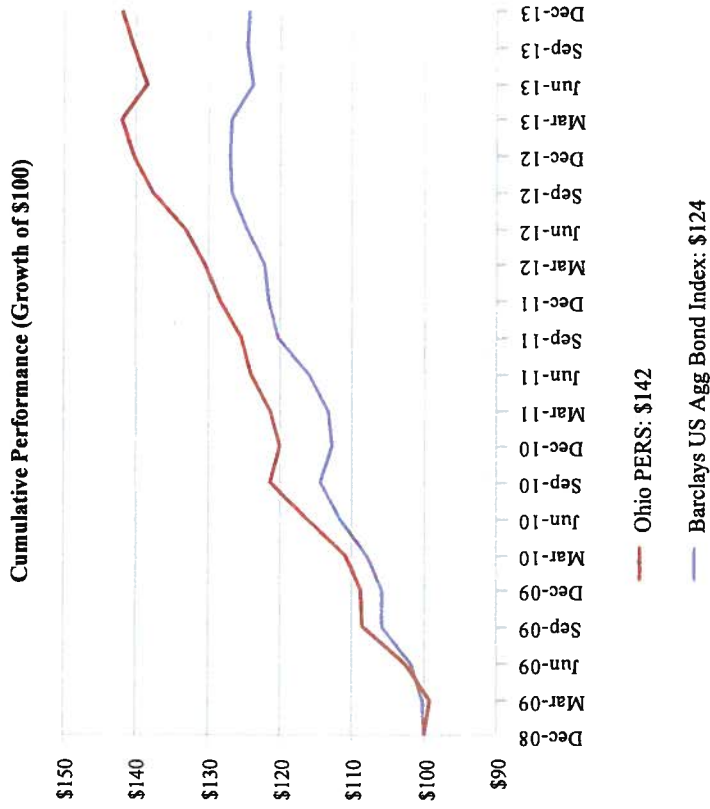
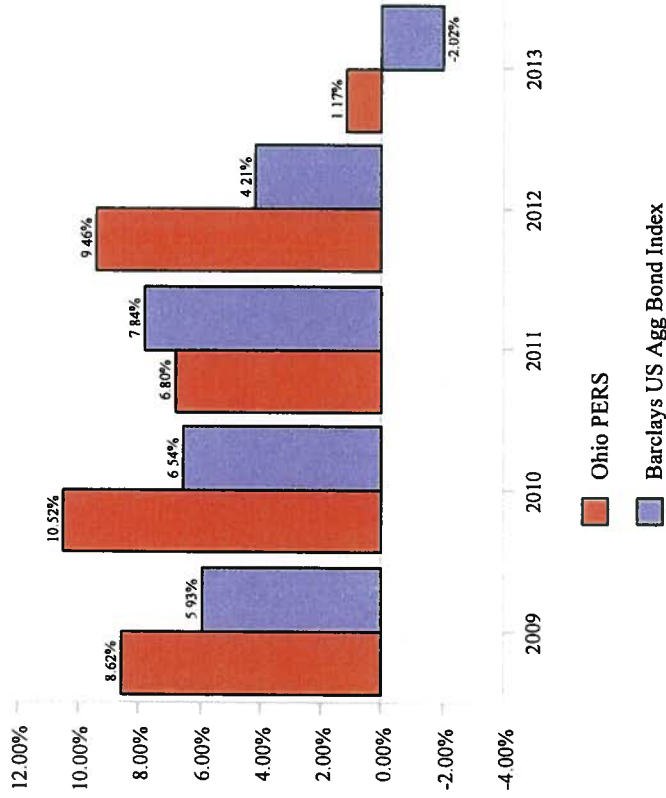
Total Return - US Fixed Income

Ohio PERS vs. Barclays US Agg Bond Index

As of December 31, 2013

Fund Number: 180

Calendar Year Rates of Return



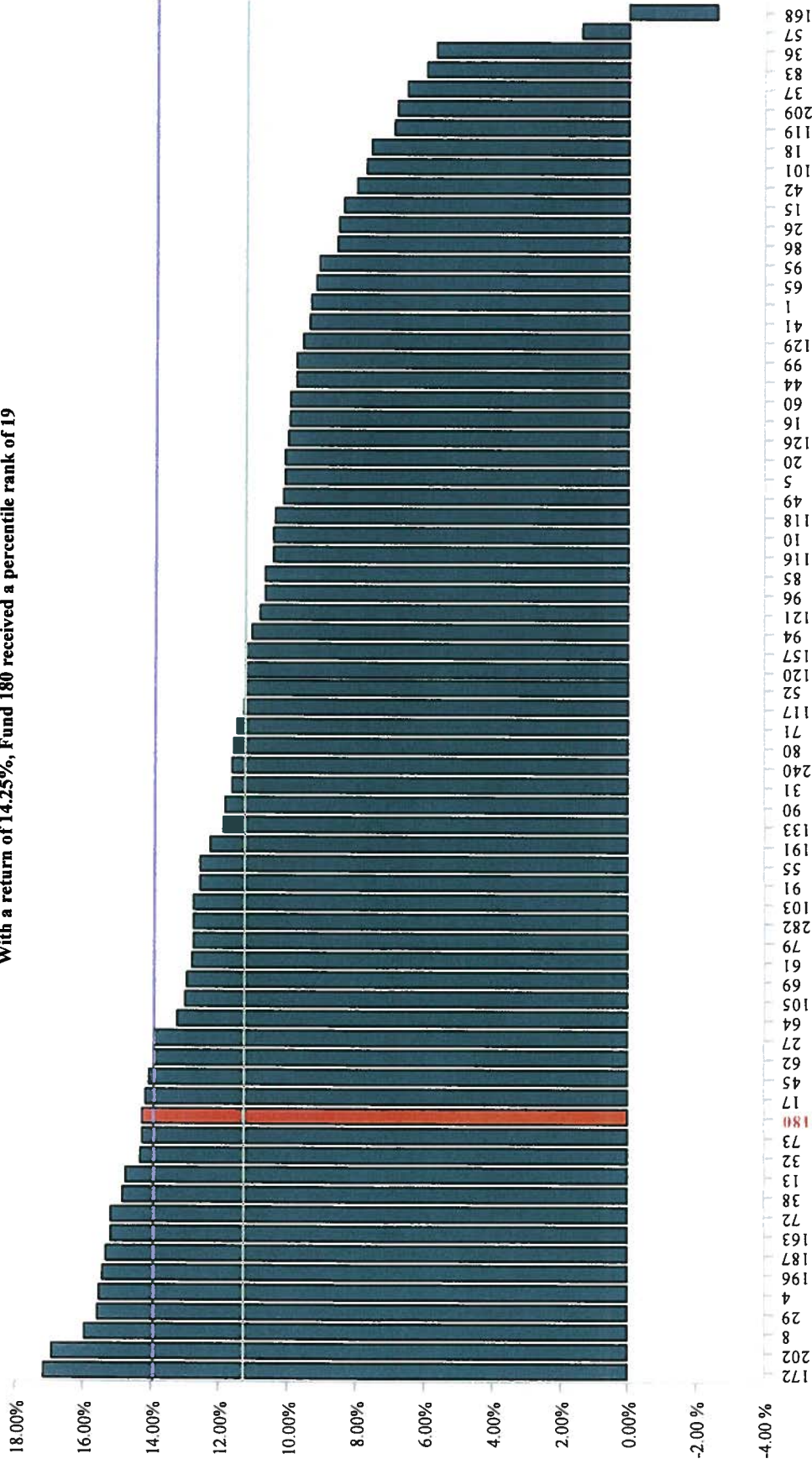
Annualized Returns:	1 Year	3 Years	5 Years
Ohio PERS	1.17%	5.75%	7.26%
Barclays US Agg Bond Index	-2.02%	3.26%	4.44%
Variance	3.19%	2.49%	2.82%

1 Year Annualized Real Estate Returns

As of December 31, 2013

Fund Number: 180

71 of 79 funds provided Real Estate returns for this time period
 With a return of 14.25%, Fund 180 received a percentile rank of 19



Universe Median: 11.30% NCREIF ODCE Index (Gross) (Asset Wtd Avg): 13.94%

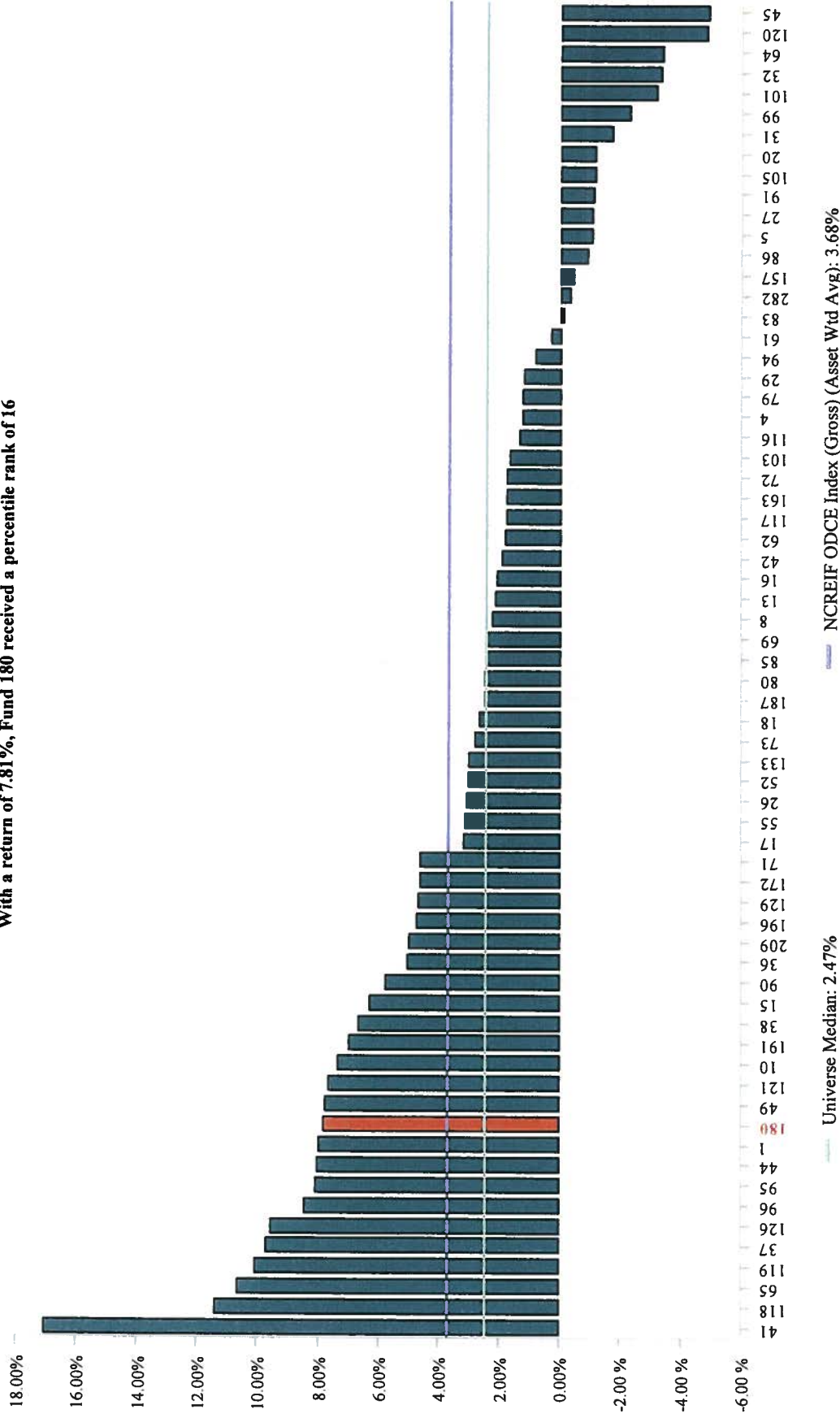
Funds with less history than the specified time period will not appear in the chart.

5 Year Annualized Real Estate Returns

As of December 31, 2013

Fund Number: 180

66 of 79 funds provided Real Estate returns for this time period
 With a return of 7.81%, Fund 180 received a percentile rank of 16



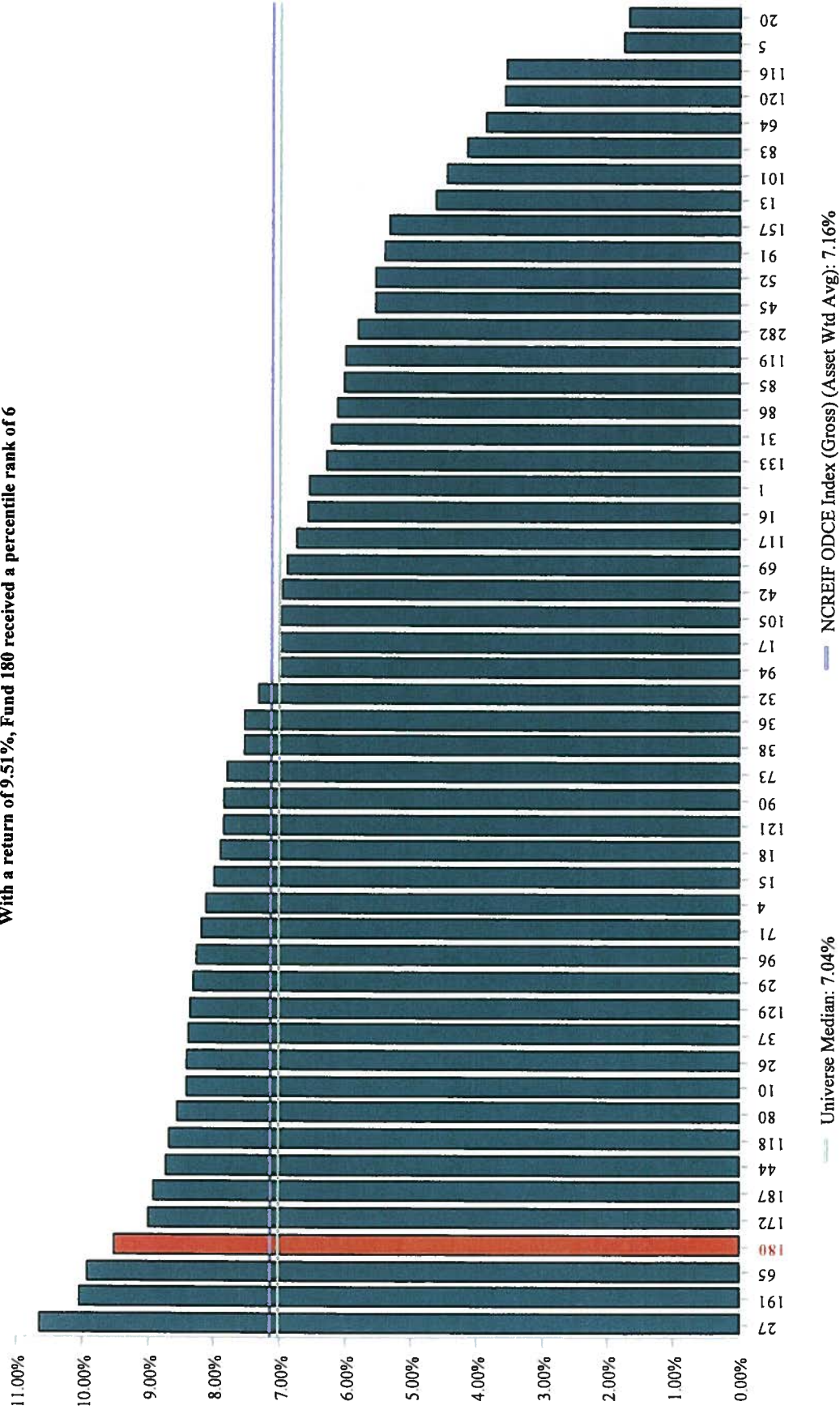
Funds with less history than the specified time period will not appear in the chart.

10 Year Annualized Real Estate Returns

As of December 31, 2013

Fund Number: 180

51 of 79 funds provided Real Estate returns for this time period
With a return of 9.51%, Fund 180 received a percentile rank of 6



Funds with less history than the specified time period will not appear in the chart.

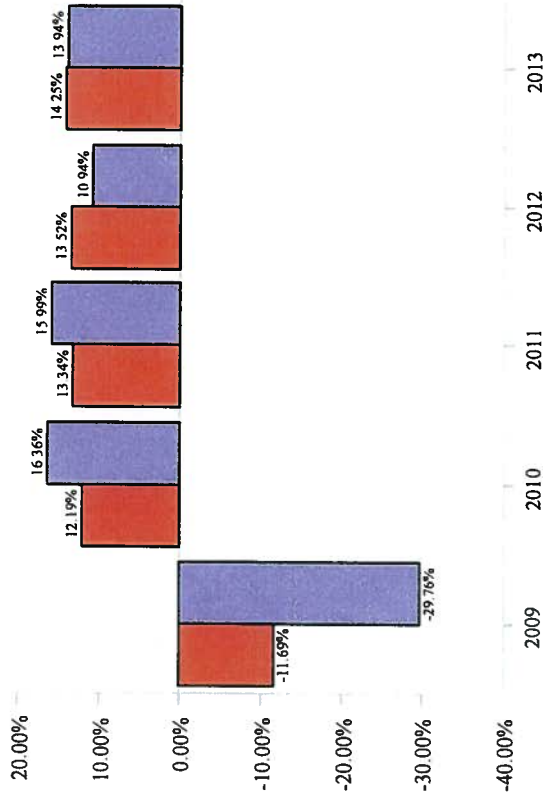
Total Return - Real Estate

Ohio PERS vs. NCREIF ODCE Index (Gross) (Asset Wtd Avg)

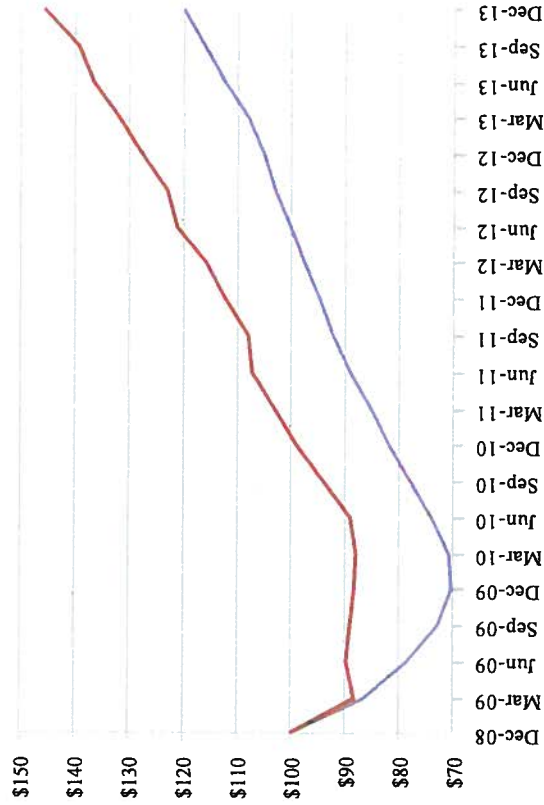
As of December 31, 2013

Fund Number: 180

Calendar Year Rates of Return



Cumulative Performance (Growth of \$100)



Ohio PERS

NCREIF ODCE Index (Gross) (Asset Wtd Avg)

Ohio PERS: \$146

NCREIF ODCE Index (Gross) (Asset Wtd Avg): \$120

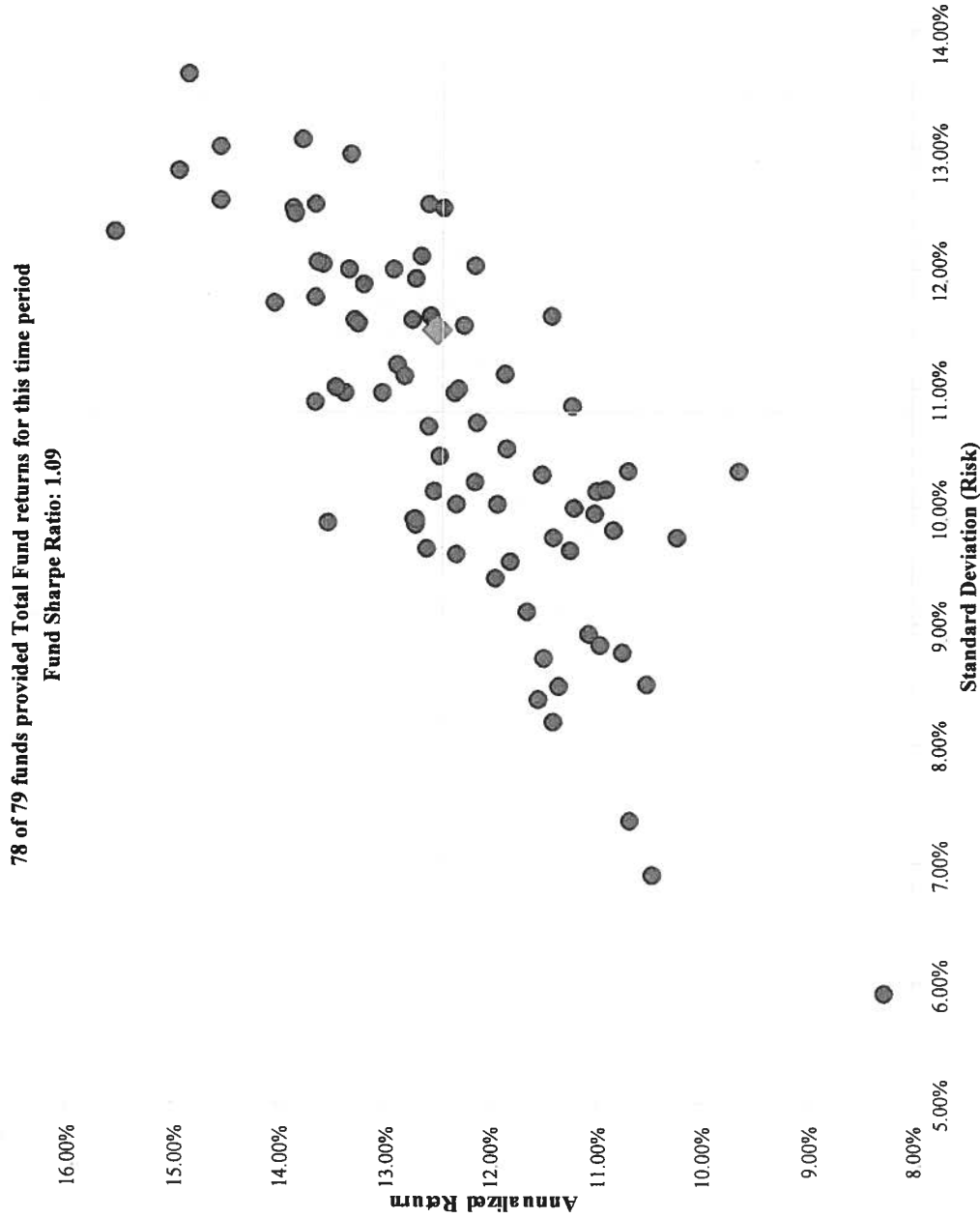
<u>Annualized Returns:</u>		<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>
Ohio PERS		14.25%	13.70%	7.81%
NCREIF ODCE Index (Gross) (Asset Wtd Avg)		13.94%	13.60%	3.68%
<i>Variance</i>		<i>0.31%</i>	<i>0.10%</i>	<i>4.13%</i>

Risk/Return Analysis

5 Year Annualized Total Fund Returns vs. Standard Deviation

As of December 31, 2013

Fund Number: 180



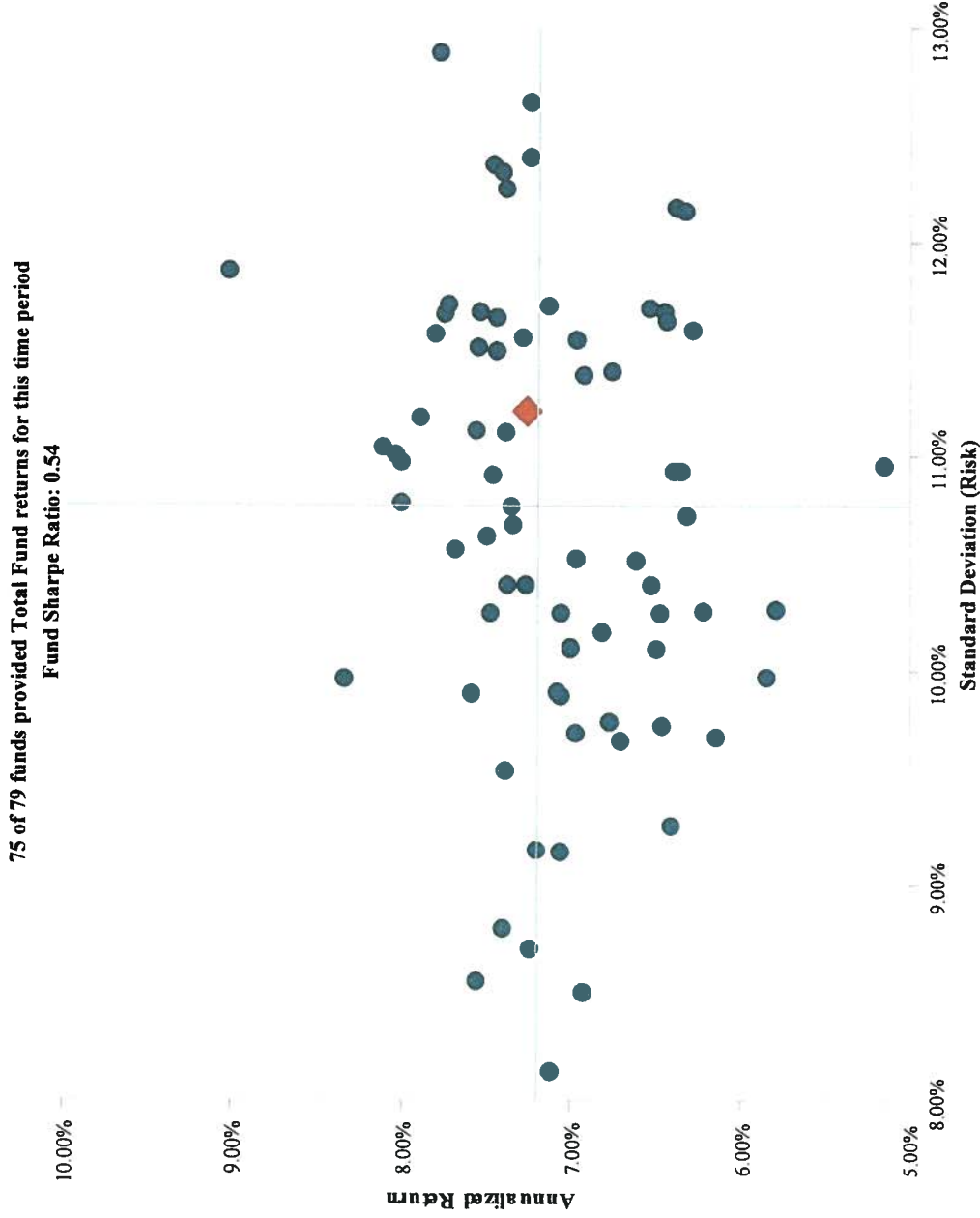
Funds with less history than the specified time period will not appear in the chart.

Risk/Return Analysis

10 Year Annualized Total Fund Returns vs. Standard Deviation

As of December 31, 2013

Fund Number: 180



— Universe Median Risk: 10.77% Median Return: 7.20% Median Sharpe Ratio: 0.55

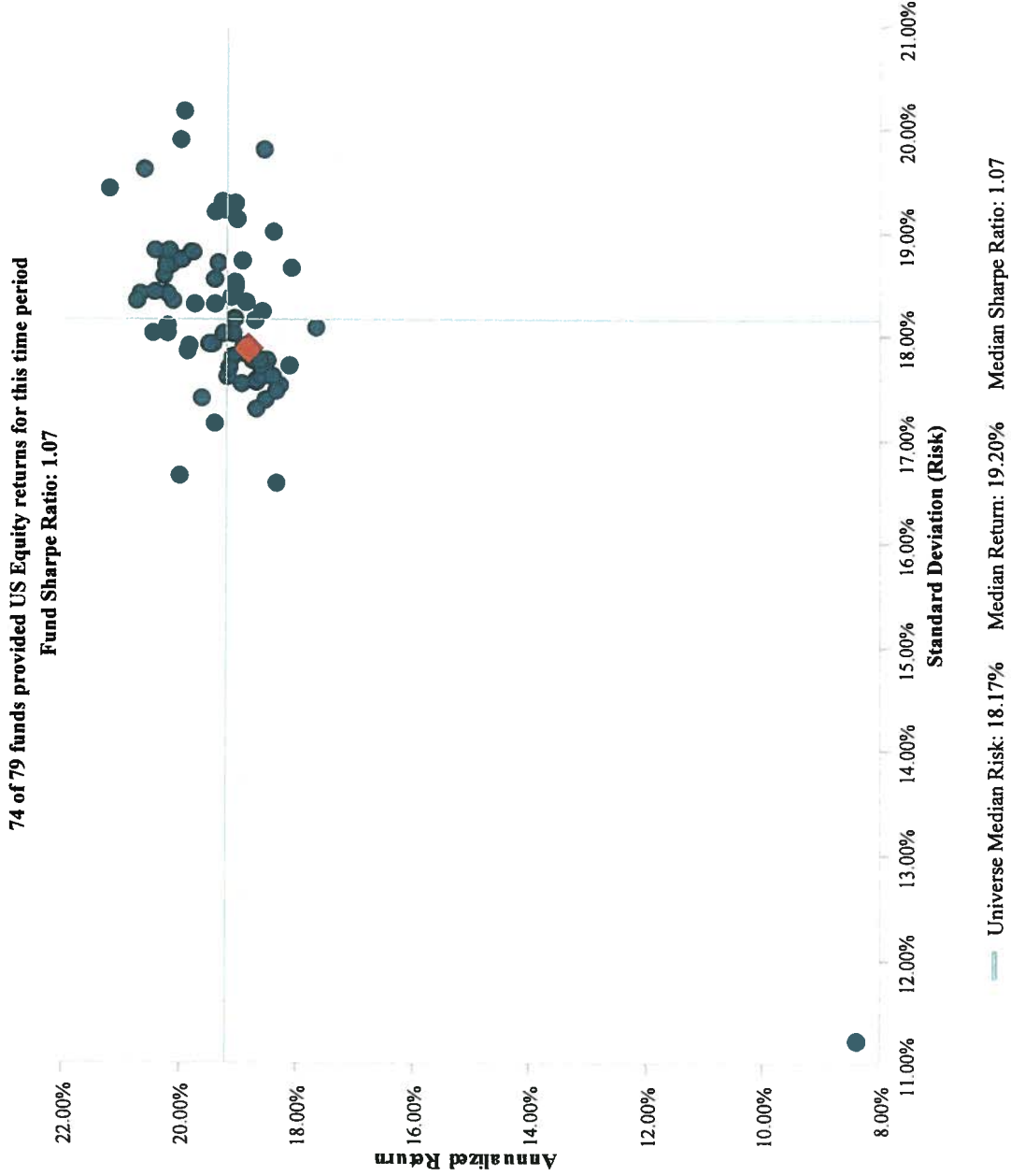
Funds with less history than the specified time period will not appear in the chart.

Risk/Return Analysis

5 Year Annualized US Equity Returns vs. Standard Deviation

As of December 31, 2013

Fund Number: 180



Funds with less history than the specified time period will not appear in the chart.

Risk/Return Analysis

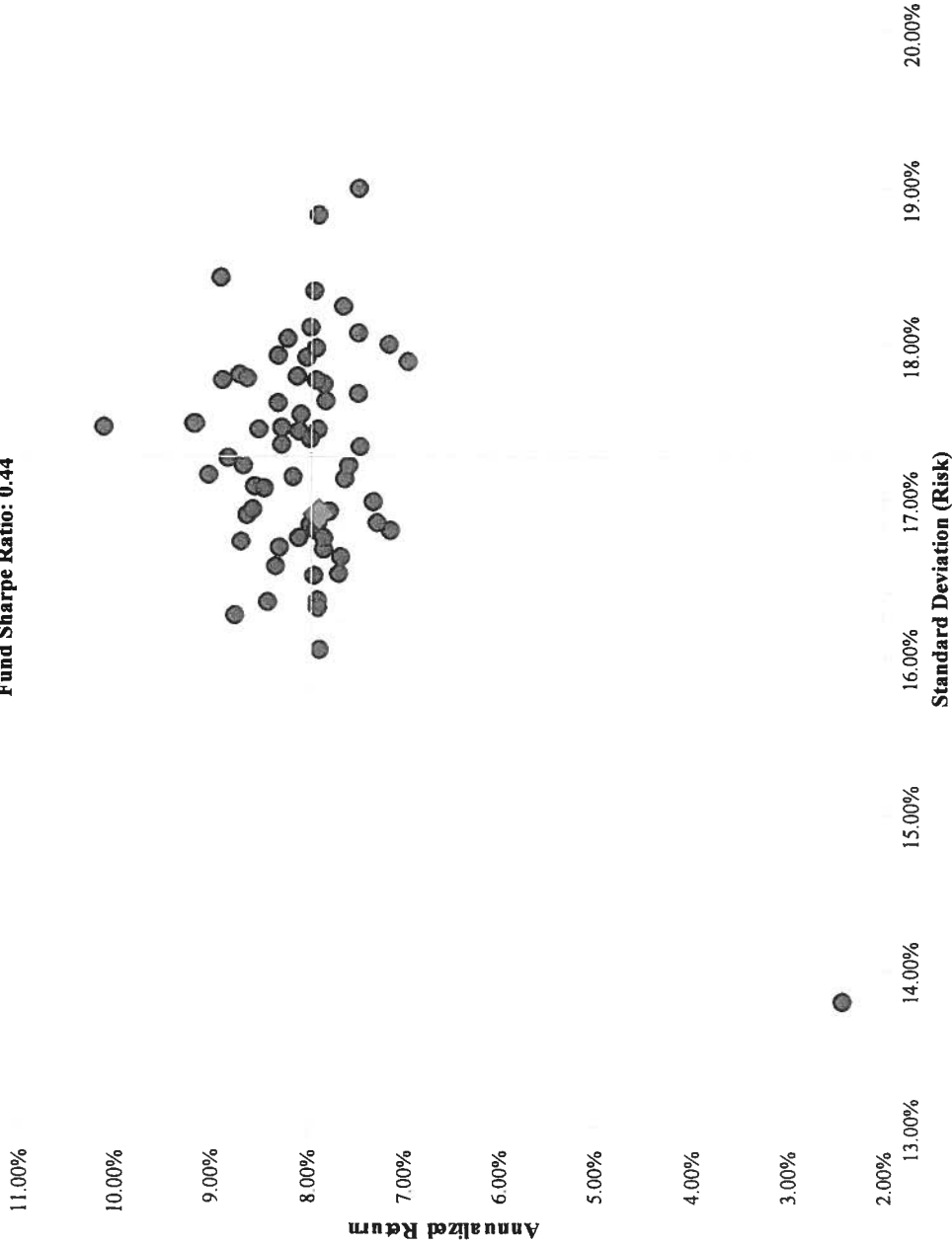
10 Year Annualized US Equity Returns vs. Standard Deviation

As of December 31, 2013

Fund Number: 180

67 of 79 funds provided US Equity returns for this time period

Fund Sharpe Ratio: 0.44



Universe Median Risk: 17.27% Median Return: 7.95% Median Sharpe Ratio: 0.44

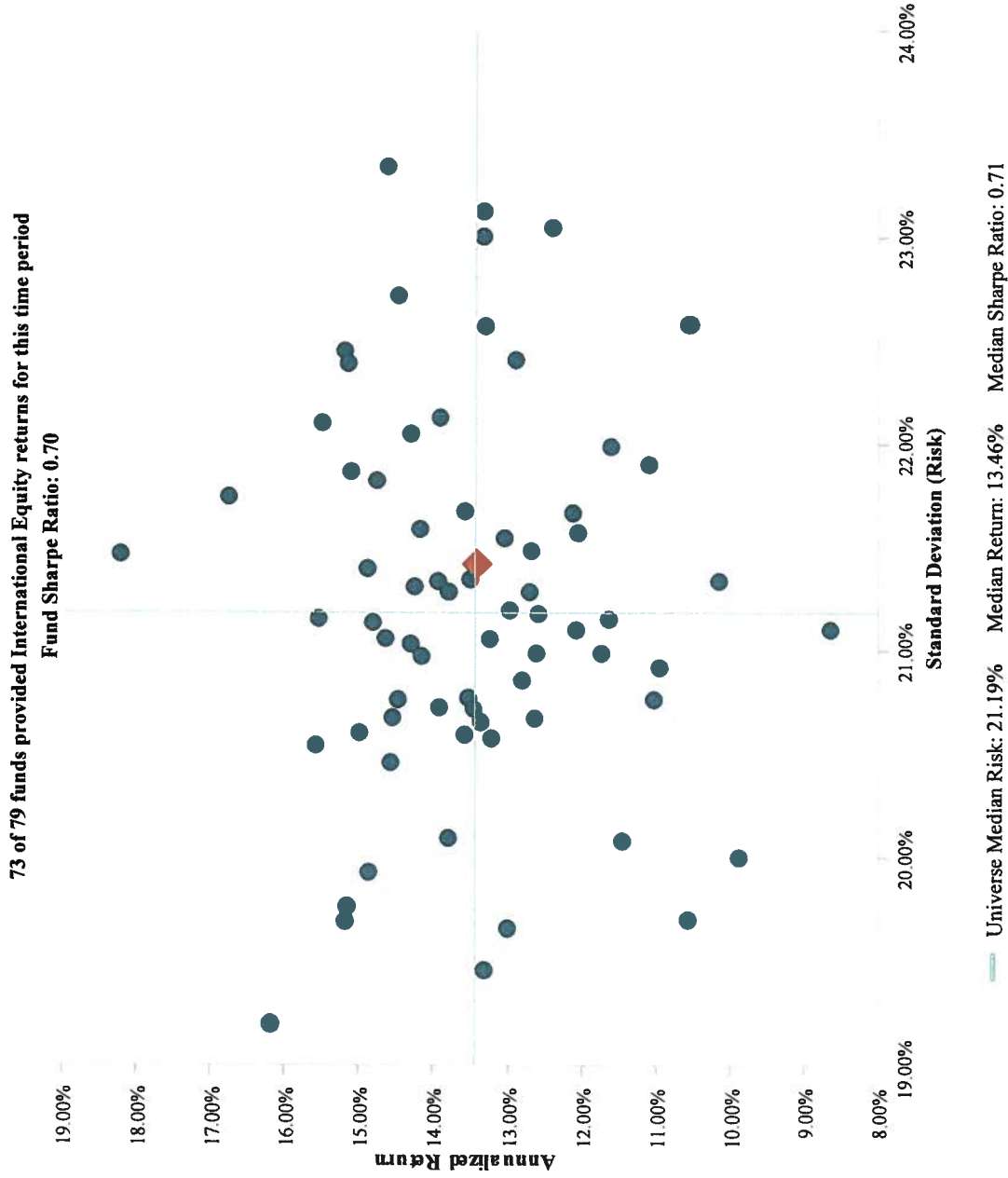
Funds with less history than the specified time period will not appear in the chart.

Risk/Return Analysis

5 Year Annualized International Equity Returns vs. Standard Deviation

As of December 31, 2013

Fund Number: 180



Funds with less history than the specified time period will not appear in the chart.

Risk/Return Analysis

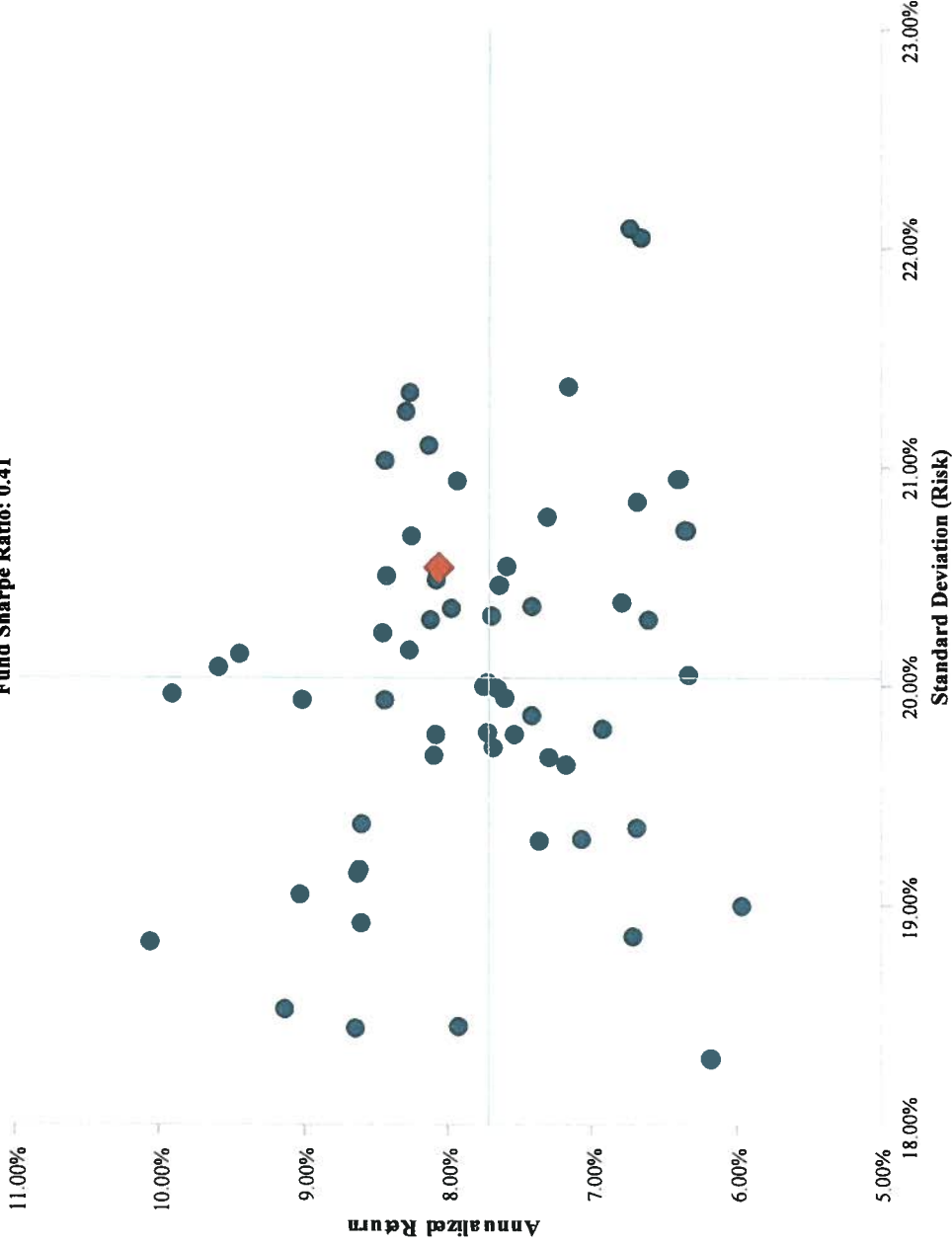
10 Year Annualized International Equity Returns vs. Standard Deviation

As of December 31, 2013

Fund Number: 180

62 of 79 funds provided International Equity returns for this time period

Fund Sharpe Ratio: 0.41



— Universe Median Risk: 20.03% Median Return: 7.72% Median Sharpe Ratio: 0.39

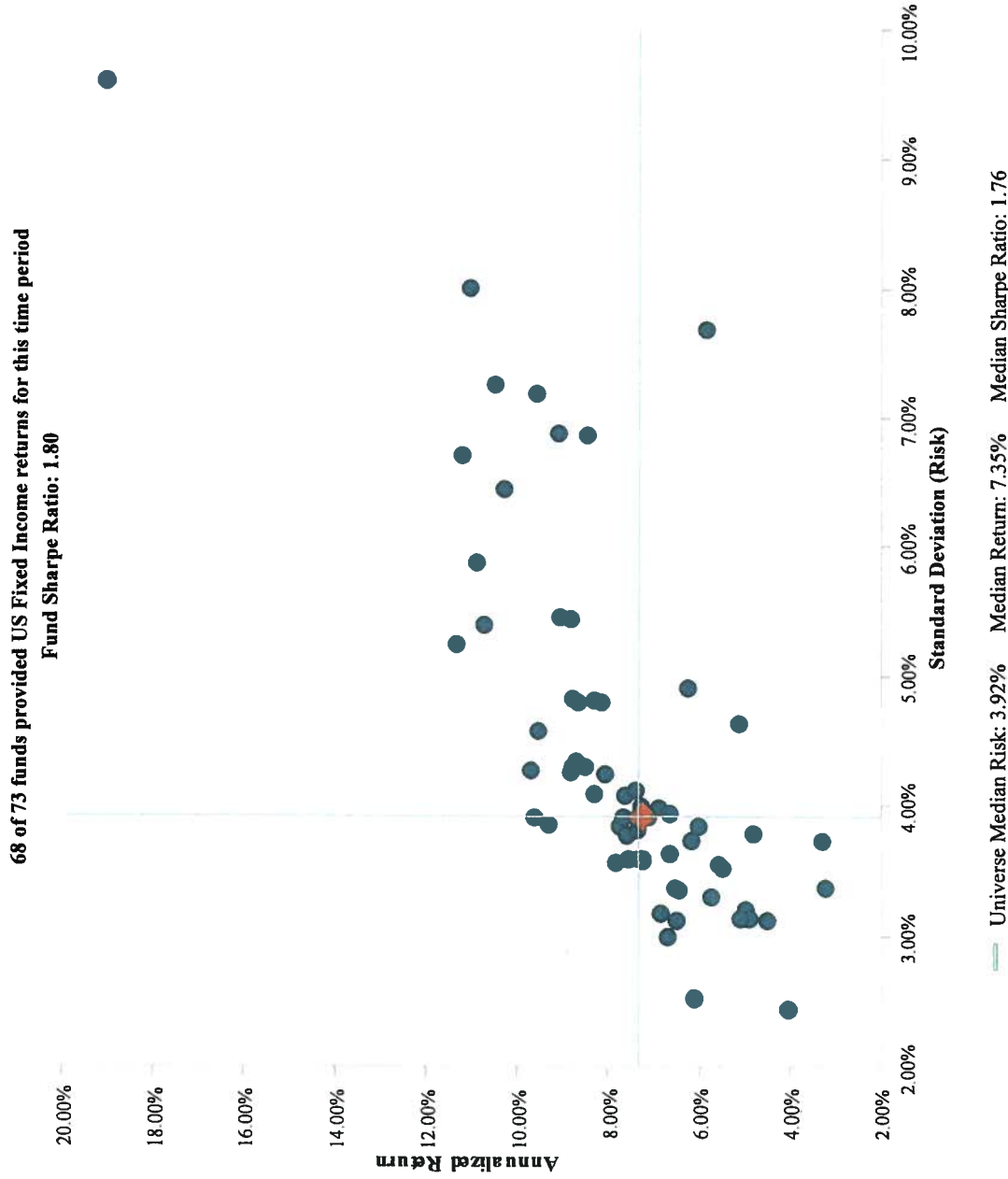
Funds with less history than the specified time period will not appear in the chart.

Risk/Return Analysis

5 Year Annualized US Fixed Income Returns vs. Standard Deviation

As of December 31, 2013

Fund Number: 180



Funds with less history than the specified time period will not appear in the chart.

Risk/Return Analysis

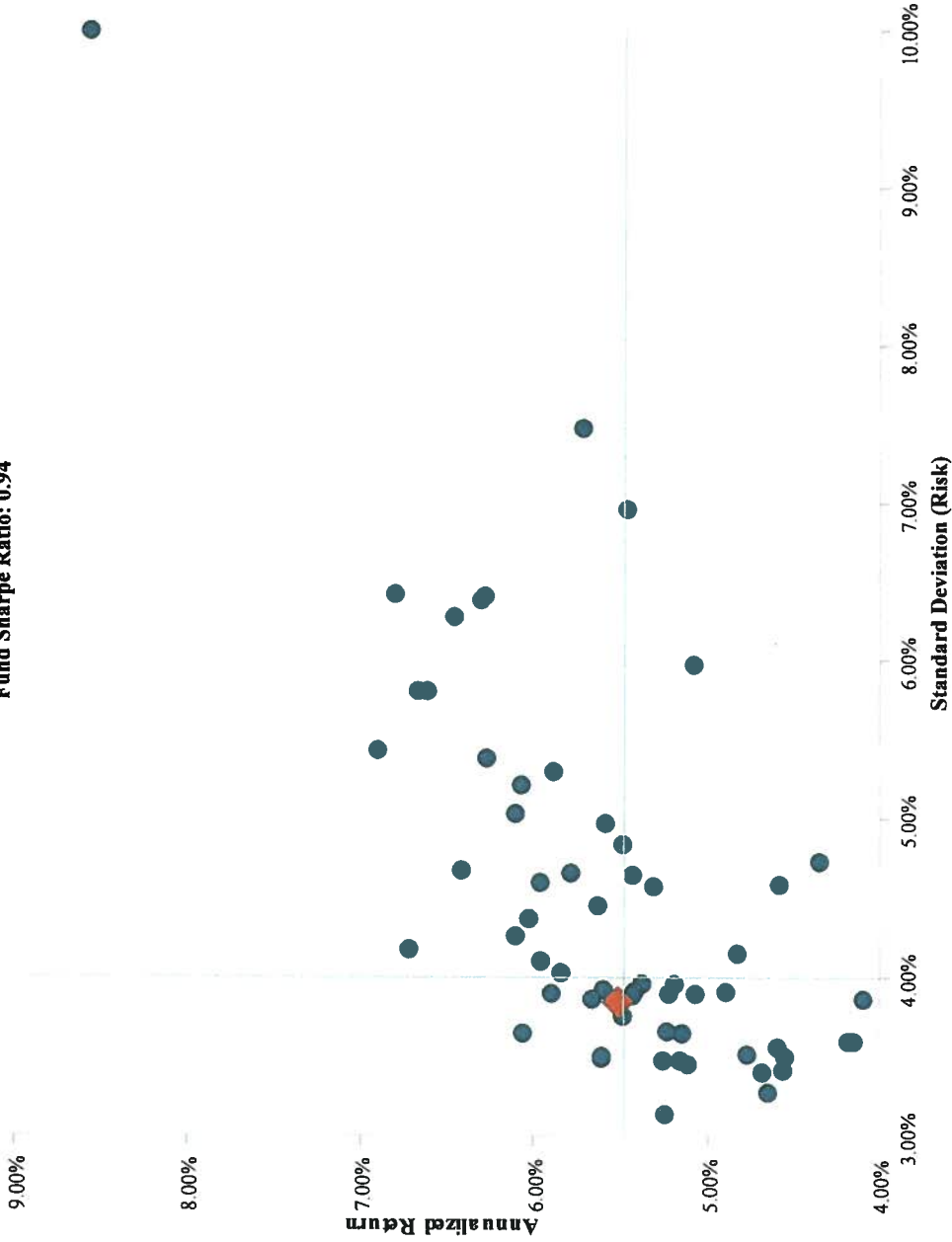
10 Year Annualized US Fixed Income Returns vs. Standard Deviation

As of December 31, 2013

Fund Number: 180

62 of 73 funds provided US Fixed Income returns for this time period

Fund Sharpe Ratio: 0.94



— Universe Median Risk: 4.00% Median Return: 5.48% Median Sharpe Ratio: 0.84

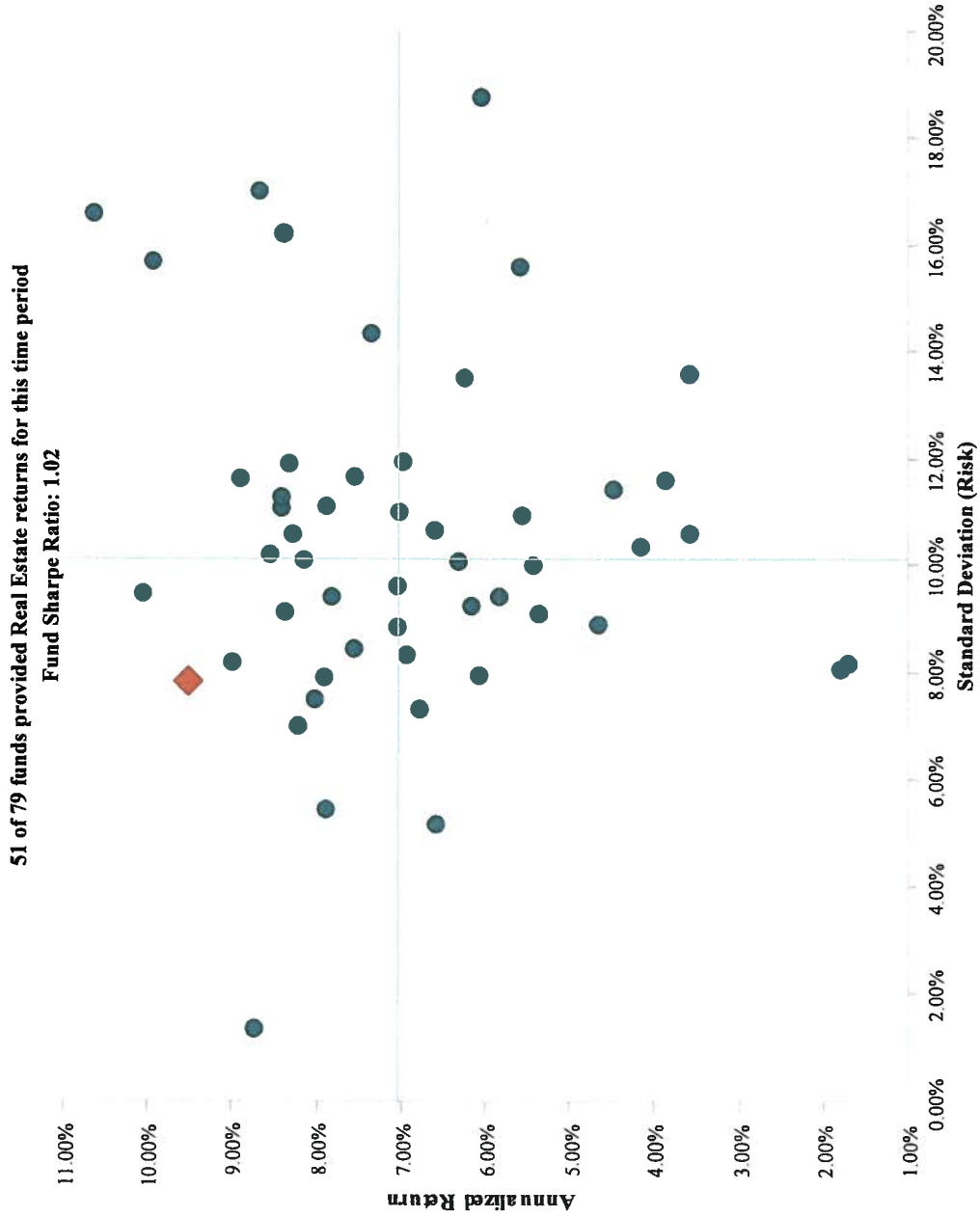
Funds with less history than the specified time period will not appear in the chart.

Risk/Return Analysis

10 Year Annualized Real Estate Returns vs. Standard Deviation

As of December 31, 2013

Fund Number: 180



Funds with less history than the specified time period will not appear in the chart.

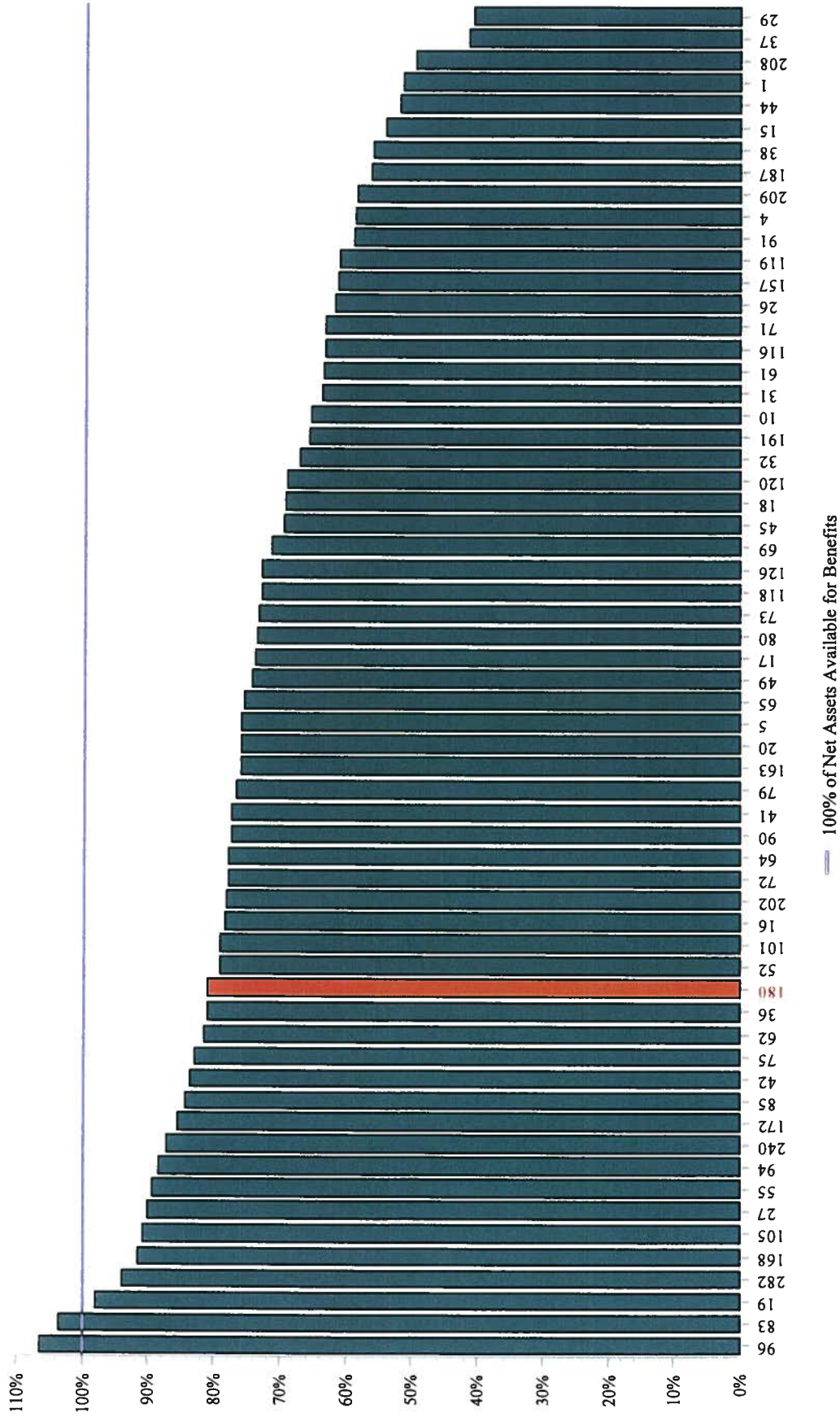
Net Assets Available For Benefits

Expressed as a Percentage of the Pension Benefit Obligation

As of December 31, 2013

Fund Number: 180

61 of 79 funds provided Net Assets Available data



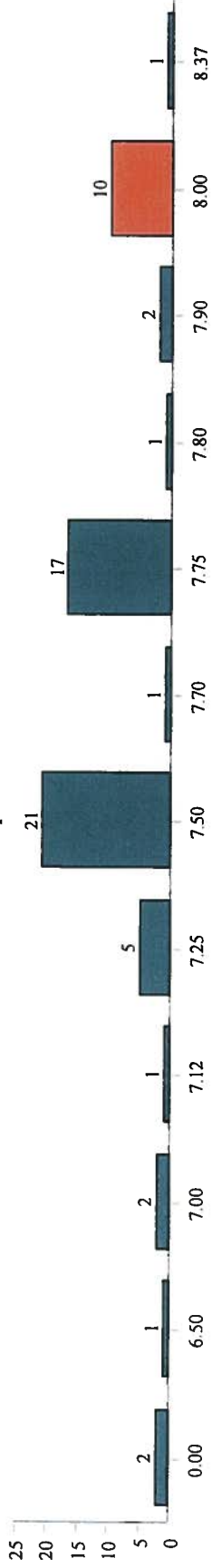
Funds that did not provide data will not appear in the chart.

Actuarial Assumption Rates

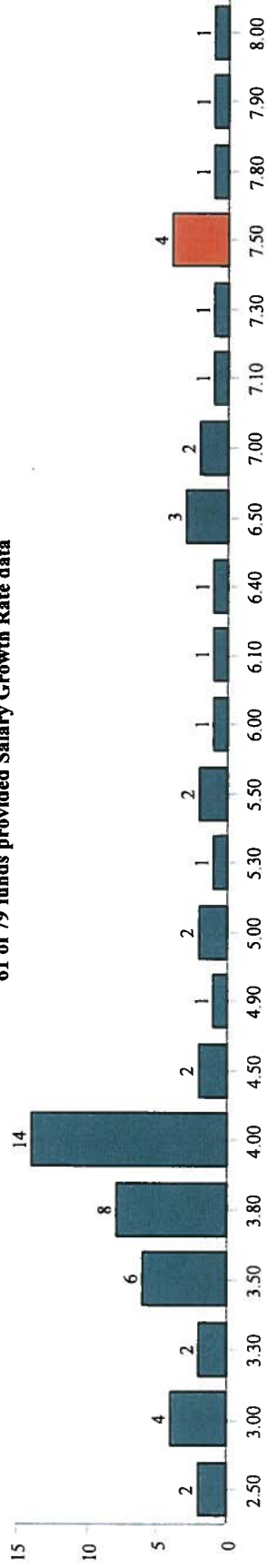
As of December 31, 2013

Fund Number: 180

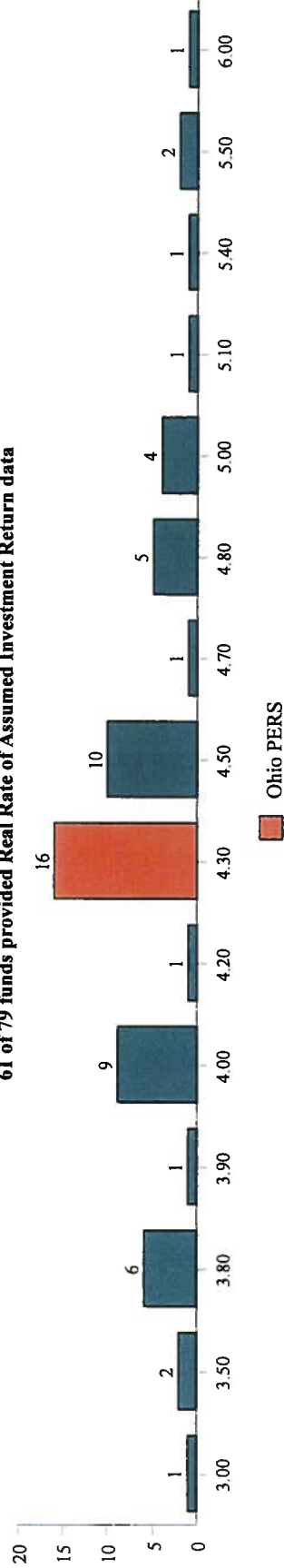
Actuarial Rate Assumptions - 7.50% Median
64 of 79 funds provided Actuarial Rate data



Salary Growth Rate Assumptions (Inflation plus Merit) - 4.00% Median
61 of 79 funds provided Salary Growth Rate data



Real Rate of Assumed Investment Return (Interest Rate minus Inflation) - 4.25% Median
61 of 79 funds provided Real Rate of Assumed Investment Return data



Ohio PERS

Funds that did not provide data will not appear in the chart.

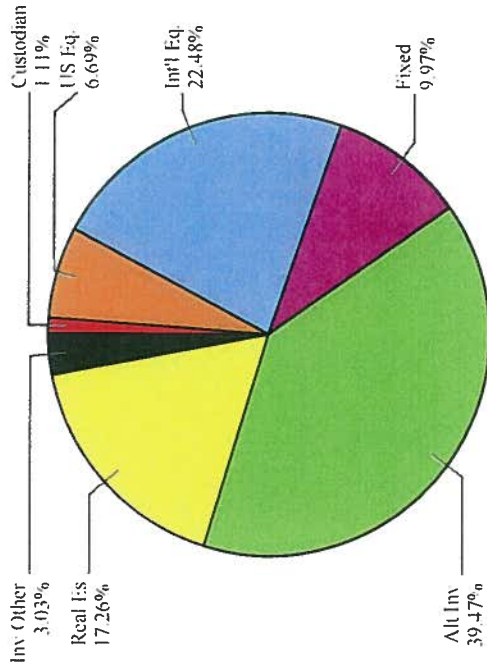
Total Administrative and Investment Fees

Ohio PERS vs. All Funds

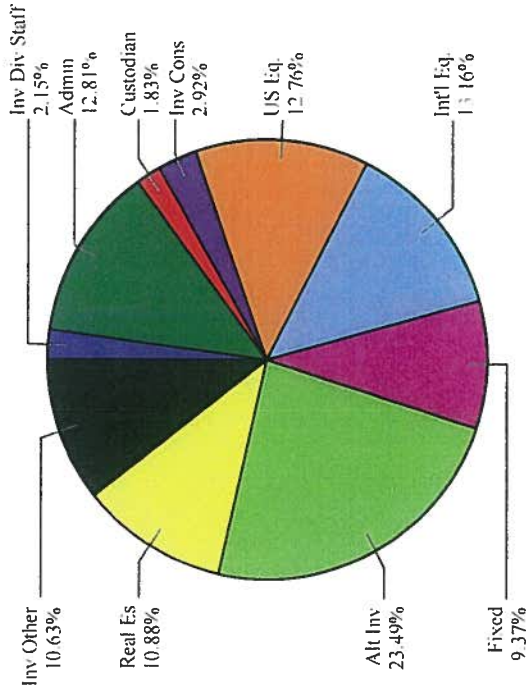
As of December 31, 2013

Fund Number: 180

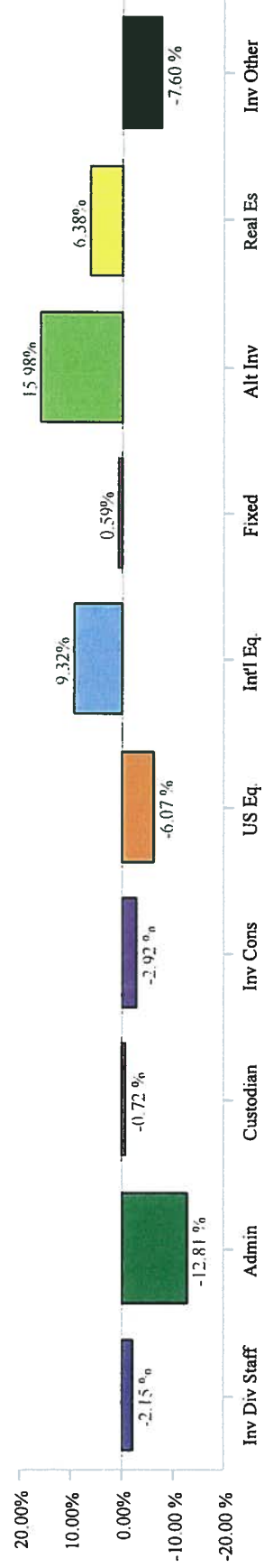
Ohio PERS



All Funds



Variance



Allocations shown may not sum up to 100% exactly due to rounding.

Total Fund Fee Summary in Basis Points

Ohio PERS vs. Average by Asset Range

As of December 31, 2013

Fund Number: 180

64 of 79 funds provided fee data for this time period

Administrative Expenses	Ohio PERS	Under \$500 Million	\$500mm - \$1 Billion	\$1 - \$5 Billion	\$5 - \$10 Billion	\$10 - \$20 Billion	Over \$20 Billion
Internal Inv. Div. Staff	0.00	0.00	0.00	1.45	0.80	0.62	1.24
Actuary	0.00	2.33	1.00	0.51	0.33	0.15	0.13
Legal	0.00	1.33	0.51	1.29	1.01	0.28	0.16
Consultant	0.00	0.12	0.10	0.25	0.48	0.18	0.19
Audit	0.00	0.53	0.52	0.19	0.08	0.08	0.06
Other Professional	0.00	0.00	0.32	0.62	0.05	0.11	0.67
General Administrative	0.00	6.23	9.93	6.25	4.81	2.92	1.67
Total Administrative Expenses	N/A	10.53	12.38	10.57	7.57	4.33	4.12

Investment Expenses	Ohio PERS	Under \$500 Million	\$500mm - \$1 Billion	\$1 - \$5 Billion	\$5 - \$10 Billion	\$10 - \$20 Billion	Over \$20 Billion
Custodial	0.38	2.34	2.14	1.50	0.62	0.43	0.24
Investment Consulting	0.00	5.33	1.82	1.88	1.90	0.73	0.37
Domestic Equity	2.31	11.58	6.50	8.57	6.39	4.75	3.21
International Equity	7.74	8.75	6.51	6.63	6.72	6.33	4.78
Fixed Income	3.43	4.91	5.38	5.09	5.24	3.40	3.80
Real Estate	5.95	3.93	3.40	4.84	6.55	3.36	6.40
Other Investment Management	1.04	30.16	0.00	2.99	6.85	3.77	4.86
Total Investment Expenses (ex. Alt Inv)	20.85	67.00	25.75	31.50	34.27	22.77	23.67
Alternative Investments	13.60	5.20	8.80	7.28	10.18	9.51	17.74
Total Investment Expenses	34.45	72.20	34.55	38.78	44.45	32.27	41.41

Total Expenses	34.45	82.74	46.93	49.35	52.02	36.60	45.53
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Expressed in basis points on total fund assets. Funds that did not provide fee data will not appear in the table.

Addendum and Glossary

As of December 31, 2013

Miscellaneous Comments

- Performance shown is gross of fees, with the exception of the following:
 - **Funds 36, 49, 127 and 128:** Performance shown is net of fees.
 - **Funds 5 and 20:** Performance shown is net of fees, except for Total Fund performance.
- Performance shown is calculated using quarterly performance provided by participating public funds.
- Performance shown may differ from a fund's actual performance due to rounding.
- Net Assets Available for Benefit includes funding percentage valuation as of dates between June 2012 and June 2013.
- Allocations shown reflect dedicated managers/mandates rather than actual exposure.

Glossary of Terms

Beta - A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of a portfolio's non-diversifiable or systematic risk.

Return - Compounded rate of return for the period.

%Return - The time-weighted rate of return of a portfolio for a specified time period.

Sharpe Ratio - Represents the excess rate of return over the risk-free return (i.e., BofA ML 3 Mo US T-Bill Index), divided by the standard deviation of the excess return. The result is the absolute rate of return per unit of risk. The higher the value, the better the product's historical risk-adjusted performance.

Standard Deviation - A statistical measure of the range of a portfolio's performance. The variability of a return around its average return over a specified time period. Calculation is based on quarterly periodicity.

Glossary

Alpha - A measure of the difference between a portfolio's actual returns and its expected performance, given its level of risk as measured by beta. It is a measure of the portfolio's historical performance not explained by movements of the market or a portfolio's non-systematic return.

Beta - A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of a portfolio's non-diversifiable or systematic risk.

Capital Markets Review -

Breakeven Inflation - Measures the expected inflation rate at each stated maturity by taking the difference between the real yield of the inflation-linked maturity curve and the yield of the closest nominal Treasury maturity.

Consumer Price Index (CPI) - Measures the change in the price level of consumer goods and services.

Purchasing Managers Index (PMI)- Measures economic activity by surveying purchasing managers on a monthly basis as to whether business conditions have improved, worsened, or stayed the same.

US Dollar Total Weighted Index - Measures the value of the US Dollar relative to a basket of other world currencies. It is calculated as the weighted geometric mean of the dollar's value versus the EUR, GBP, CAD, SEK, CHF, and JPY.

Correlation - A statistical measure of the relationship between asset class returns. A value of 1.00 is a perfect correlation; that is, the asset classes always move in the same direction. A value of -1.00 indicates a perfect negative correlation, in which the asset classes always move in opposite directions of each other. A value of 0 indicates there is no relationship between the direction of returns of the two asset classes. Correlation calculations only consider the direction of changes relative to two variables and not the magnitude of those changes.

Down Market Capture - Down market by definition is negative benchmark return and down market capture represents the ratio in % terms of the average portfolios return over the benchmark during the down market period. The lower the value of the down market capture the better the product's performance.

Downside Risk - A measure similar to standard deviation, but focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. The higher the factor, the riskier the product.

Equity Beta Risk – A measure of the sensitivity of a portfolio to the movements in the equity market.

Excess Return vs. Market - Average of the monthly arithmetic difference between the manager's return and the benchmark return over a specified time period, shown on an annualized basis.

Historical Total Fund Volatility – A statistical measure of the range of a portfolio's performance around its average return over a specified time period.

Indices - All indices and related information are considered intellectual property and are licensed by each index provider. The indices may not be copied, used or distributed without the index provider's prior written approval. Index providers make no warranties and bear no liability with respect to the indices, any related data, their quality, accuracy, suitability and/or completeness.

Information Ratio - Measured by dividing the active rate of return by the tracking error. The higher the information ratio, the more value-added contribution by the manager

Net Cash Flow - The sum, in dollars, of a portfolio's contributions and withdrawals. This includes all management fees and expenses only when performance shown is gross of fees.

Peer Groups -

Plan Sponsor Peer Groups - RVK utilizes the Mellon Analytical Solutions Trust Universe along with the Investment Metrics Plan Sponsor Universe. The combined Mellon Analytical Solutions Trust Universe and Investment Metrics Plan Sponsor Universe is used for comparison of total fund composite results and utilizes actual client returns compiled from consultant and custodial data.

The Plan Sponsor Peer Group database includes performance and other quantitative data for over 2,100 plans which include corporate, endowment, foundation, public, and Taft Hartley plans. Plan Sponsor Peer Groups are gross of fees.

Percentile Rankings - Percentile rank identifies the percentage of a fund's peer group that has a higher return (or other comparative measurement) than the fund being ranked. Conversely, 100 minus the individual fund's ranking will identify the percentage of funds within the peer group that have a lower return than the fund being ranked.

1 - Highest Statistical Value 100 - Lowest Statistical Value

Performance Methodology - RVK endorses the Global Investment Performance Standards (GIPS) and calculates performance for investment managers and composites using different methodologies. Investment manager performance is calculated by revaluing the portfolio on the date of all large external cash flows while composite performance is calculated using the Modified Dietz calculation methodology. According to the CFA Institute, "Only investment management firms that actually manage assets can claim compliance with the Standards. Plan Sponsors and consultants cannot make a claim of compliance unless they actually manage assets for which they are making a claim of compliance. They can claim to endorse the Standards and/or require that their investment managers comply with the Standards."

Investment Managers - Performance is calculated for interim periods between all large external cash flows for a given month and geometrically linked to calculate period returns. An external cash flow is defined as cash, securities, or assets that enter or exit a portfolio. RVK defines a "large cash flow" as a net aggregate cash flow of ≥10% of the beginning-period portfolio market value or any cash flow that causes RVK calculated performance to deviate from manager/custodian reported performance in excess of 5 basis points for a given month.

Composites - The Modified Dietz methodology is utilized to calculate asset class, sub-asset class, and total fund composite performance. The Modified Dietz method calculates a time-weighted total rate of return that considers the timing of external cash flows; however, it does not utilize interim period performance to mitigate the impact of significant cash in- and outflows to the composite.

RVK calculates performance beginning with the first full month following inception. Since inception performance may vary from manager reported performance due to RVK using the first full month of returns as the inception date. Performance for both managers and composites is annualized for periods greater than one year.

Return - Compounded rate of return for the period.

%Return - The time-weighted rate of return of a portfolio for a given period.

Risk Free Benchmark - BofA ML 3 Mo US T-Bill Index unless specified otherwise

RVK Liquidity Rating - A qualitative method for determining the relative amount of liquidity in a portfolio. The characteristics considered when determining relative liquidity include trading volume, gates for redemption, leverage, nature of transactions, and pricing mechanisms. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating.

<u>Asset Class</u>	<u>RVK Liquidity Rating</u>	<u>Asset Class</u>	<u>RVK Liquidity Rating</u>
<u>Liquid Investments</u>		<u>Less Liquid Investments</u>	
T-Bills and Treasuries	100	Fixed Income Plus Sector	50
Cash Equivalents	98	Bank Loans	50
TIPS	95	Stable Value (Plan Sponsor Directed)	50
US Large Cap Equity	95	Absolute Return Strategies	35
Diversified Real Return	93	<u>Not Liquid Investments</u>	
Stable Value (Participant Directed)	91	Core Real Estate	25
Non-US Large Cap Equity	90	Core Plus Real Estate	15
Global Tactical Asset Allocation	88	Plus Only Real Estate	5
US Small Cap Equity	85	Private Equity Funds of Funds	5
REITS	85		
Non-US Small Cap Equity	85		
Emerging Markets Equity	85		
Core Fixed Income	85		
Core Plus Fixed Income	80		

Sharpe Ratio - Represents the excess rate of return over the risk-free return (i.e., BofA ML 3 Mo US T-Bill Index unless specified otherwise), divided by the standard deviation of the excess return. The result is the absolute rate of return per unit of risk. The higher the value, the better the product's historical risk-adjusted performance.

Standard Deviation - A statistical measure of the range of a portfolio's performance. The variability of a return around its average return over a specified time period.

Time Period Abbreviations - **QTD** - Quarter-to-Date. **CYTD** - Calendar Year-to-Date. **FYTD** - Fiscal Year-to-Date. **YOY** - Year Over Year

Thematic Classification - Represents dedicated manager allocations; as such, thematic allocations are approximations. RVK categorizes the following asset classes as Alpha. Capital Appreciation, Capital Preservation, and Inflation:

Alpha
 Absolute Return Strategies
 Currency Overlay

Capital Appreciation
 Public Equity
 Private Equity
 Balanced Funds
 High Yield
 Convertible Fixed Income
 TALF Funds
 Distressed Debt
 Emerging Market Fixed Income
 Preferred Securities
 Value Added Real Estate
 Opportunistic Real Estate

Capital Preservation
 Core Fixed Income
 CMBS Fixed Income
 Asset Backed Fixed Income
 Domestic Core Plus Fixed Income
 Mortgage Backed Fixed Income
 International Developed Fixed Income
 Cash Equivalents
 Stable Value

Inflation
 TIPS
 Bank Loans
 Core Real Estate
 Real Return
 Inflation Hedges
 REITS
 Commodities

Total Fund Beta - Total Fund Beta is calculated using the S&P 500 as the benchmark. It represents a measure of the sensitivity of the total fund to movements in the S&P 500 and is a measure of the Total Fund's non-diversifiable or systematic risk.

Tracking Error - A measure of the standard deviation of a portfolio's performance relative to the performance of an appropriate market benchmark.

Unit Value - The dollar value of a portfolio, assuming an initial nominal investment of \$100, growing at the compounded rate of %Return for a given period.

Up Market Capture - Up market by definition is positive benchmark return and up market capture represents the ratio in % terms of the average portfolios return over the benchmark during the up market period. The higher the value of the up market capture the better the product's performance.

Yield to Maturity - The rate of return achieved on a bond or other fixed income security assuming the security is bought and held to maturity and that the coupon interest paid over the life of the bond will be reinvested at the same rate of return.



Cost Information

RVK proposes a \$150,000 annual retainer fee for providing investment performance evaluation services to the ORSC. Our proposed fee will be guaranteed for the duration of the contract period of four years and includes all related out-of-pocket expenses, including travel, lodging, data processing costs, materials, and any other costs that RVK may incur.

Please see the chart below for discounted hourly rates for the ORSC and the number of hours that we estimate to conduct services, as outlined in the RFP, on an annual basis.

Title	Discounted Hourly Rates for ORSC	Estimated Hours to Conduct Services Annually
Senior Consultant	\$475	88
Consultant	\$375	120
Investment Associate	\$240	136
Investment Analyst	\$175	160
Administrative Assistant	\$95	24

For no additional fee, we would be pleased to add to the deliverables, as outlined in our response to the scope of work, a customized Public Fund Survey Report for all six Ohio Systems (contingent upon surveys being completed for each System). Note that Ohio PERS is a current participant in our survey, thus, we would need completed surveys from the remaining four Systems and PERS-HC. Our public fund clients and participants have found customized reports to be extremely valuable in seeing how their state's systems compare to one another in terms of:

- Asset Allocation
- Active/Passive Mix
- Internal/External Management
- Total Fund and Asset Class Performance
- Funded Status
- Actuarial Statistics
- Administrative & Investment Fees

Also, for no additional fee, we propose having one additional meeting in the first year, specifically for the purpose of providing education regarding technical issues, metrics, and the interpretation involved in performance reporting. We propose a fee thereafter of \$7,500 for each in-person meeting that may be needed beyond the two that are noted in the scope of work.



Supplemental Required Information

When submitting your proposal, briefly respond to all of the following questions. Please note that the following will not be used to score your proposal but will be used for informational purposes by ORSC staff in providing recommendations and understanding your firm's philosophy towards investment evaluation.

- 1. Has your firm, or any of its principals, officers, or any affiliate ever been a party to any litigation or allegations concerning fraud, negligence, criminal activity, violations of law or regulations, or fiduciary responsibility or other investment related matters?**

No.

- 2. Has your firm, or any of its principals, officers, or any affiliate ever been the focus of a non-routine Securities and Exchange Commission (SEC) inquiry or investigation or a similar inquiry or investigation from federal, state, or self-regulatory body or organization?**

No.

- 3. Will the firm contractually agree to disclose all conflicts of interest that exist or occur and disclose all sources of revenue, affiliations, and details of other relationships that may present conflicts of interest? Does the firm have any active contractual agreements with any of the five state retirement systems? If so, what methods would be used to ensure that no conflict of interest is present in your work with respect to your contract with the retirement system or the ORSC?**

RVK is willing to disclose any conflicts of interest that exist or occur and to disclose all sources of revenue, affiliations, and details of other relationships that may present conflicts of interest. Our firm is open and upfront about all aspects of our business and is willing to provide any requested information about our business. As a pure, non-discretionary consulting firm, we are proud to report that we do not have any conflicts of interest to disclose.

Our firm does not have any active contractual agreements with any of the five state retirement systems.

- 4. Does the firm intend to utilize any subcontractors in delivering any elements of investment performance evaluation services? If yes, explain.**

No.



5. Provide the following information about the firm:

- a) A brief description of the structure of the firm, including the legal form of organization, the parent company, and any affiliated companies, strategic partnerships, and joint ventures.**

RVK is led by Becky Gratsinger as CEO and Jim Voytko as President and Director of Research. A seven-member Board of Directors comprised of senior consultants oversees the firm's operating policy. RVK is a 100% employee-owned S-corporation. We are a privately-held company with no affiliates or parent company.

- b) Within the past three years, have there been any significant developments in your organization such as changes in ownership, restructuring, or personnel reorganizations? Do you anticipate any significant structural changes in your organization in the next 12 months?**

RVK has not had any significant developments within the past three years other than some changes in our shareholder base, shown below:

- May 2012 - Four of our fifteen shareholders at the time decided to take an offer to redeem their shares just prior to a rewrite of our bylaws and governance documents
- March 2014 – Seven additional employees were named shareholders of the firm for a total of 18 shareholders

The only anticipated change in the next 12 months is the continued expansion of our ownership base to employees who significantly contribute to the firm's success.

6. Discuss rates of staff turnover for the past three calendar years, including the professional staff that left the firm in each period and reasons for departure.

RVK's average rate of turnover for the past three calendar years is 10%. This represents our firm's total personnel as well as our performance reporting and manager research departments. Please see below for a list of our professional staff departures for each period:

Position	Departure Date
Manager Research Consultant	12/2/2013
Consultant	5/24/2013
Consultant	8/1/2012
Consultant	8/1/2012
Consultant	8/1/2012
Senior Consultant	8/1/2012
Manager Research Consultant	8/17/2011
Consultant	1/21/2011



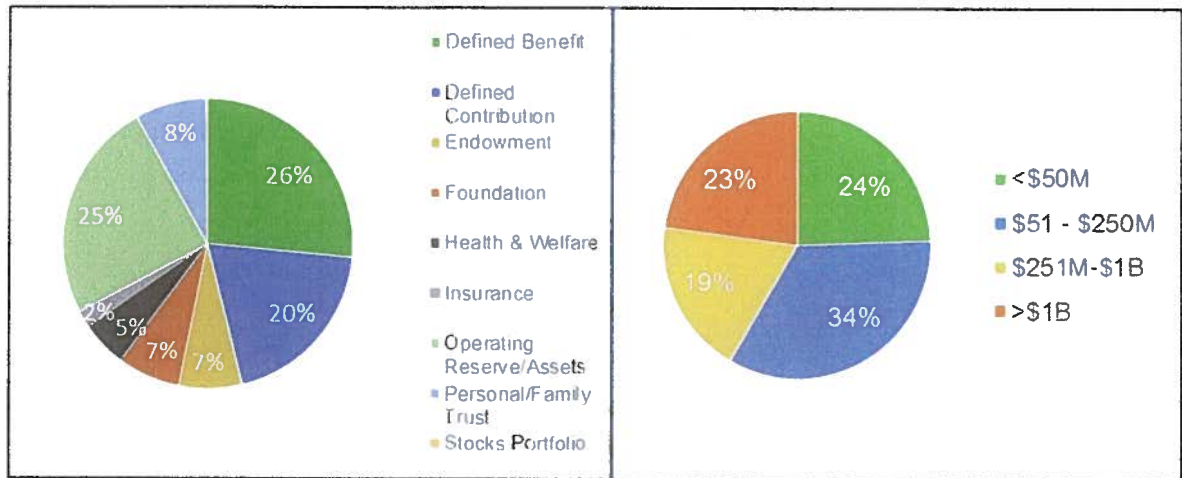
The majority of professional staff departures were the result of employees wanting to pursue careers in asset management or with plan sponsors, not with other investment consulting firms. The only exception was four consultants that departed RVK in 2012, they left to form a local boutique consulting firm as they wanted to avoid travel, stay local and focus on smaller clients while our firm had successfully grown to serve many large and complex clients nationwide.

7. Describe your firm's philosophy as it pertains to investment consulting and investment performance evaluations. What role does the firm see itself playing for a client such as the ORSC? What do you see as the value your firm can provide to the ORSC?

We view our role in fiduciary terms, as a non-voting trustee. As a non-discretionary, co-fiduciary to our clients' investment programs, we see ourselves as an extension of staff and long-term partner with committee members. We believe that in order to provide clients with our best advice, we need to be completely independent and objective. We recognize that every investment program is unique and requires a focused effort from within our organization to meet the objectives exclusive to their program. Our duty is to be proactive with clients in regards to investment recommendations and ongoing monitoring. Inclusion of a new asset class and/or investment option must provide a clear enhancement to an existing portfolio and ultimately be beneficial to retirees.

We believe RVK and the proposed client service team are uniquely qualified to provide the best value to the ORSC based on the following key reasons:

- **No Conflicts of Interest** - Many investment consulting organizations have deviated away from their core business in recent years and now offer discretionary consulting services, resulting in a misalignment of interests. RVK, however, has remained steadfast to its principles of providing objective investment consulting advice, and our interests are directly aligned with our clients' interests. We view our role as a non-voting, hidden trustee, and we cannot fulfill this role if we have any conflicts of interest. We pride ourselves on our reputation of maintaining high ethical standards in working with clients, investment managers, and employees of the firm.
- **Diverse Client Base** - RVK currently provides investment consulting services to 44 public pension plans, including retainer and project clients. We believe it is important to have a diversified client base by both plan type and asset size (see charts on the next page), enabling RVK to share the best investment ideas with our clients regardless of the source. Our firm has significant experience working with many public fund clients of similar size with similar goals to that of Ohio's state retirement systems.



- Organizational Scale** - RVK has reached a scale that is sufficient to enable specialization, while not becoming so large that collaboration is stifled. Our organizational scale enhances the quality of our work in areas such as performance reporting and analysis, plan evaluation, investment manager research, operational consulting, and general investment research and education. We believe this attribute gives us a material competitive advantage compared to a large percentage of the investment consulting universe.
- Quality Assurance** - Because of RVK's unique team approach to consulting, every client deliverable goes through a rigorous peer review process, ensuring that performance evaluations are thorough, accurate and error-free. Please see our process outlined below:

 - An Investment Analyst provides an initial thorough review of the deliverable to ensure accuracy
 - A peer review is then conducted by another Investment Analyst to confirm accuracy
 - The Associate on the team conducts another layer of review of the deliverable
 - The final review is completed by the Consultant assigned to the account
 - The Administrative Assistant on the team does a final check prior to shipping materials to ensure completeness of the deliverables
- In Depth Knowledge of Public Fund Industry** - RVK has conducted public fund research for over 25 years, and we produce a unique comprehensive analysis of public pension funds. The report is produced semi-annually and all participating funds receive a complimentary copy of the report. The analysis provides an apples-to-apples comparison of asset allocation, performance, fees and actuarial comparative data for more than 80 U.S. public pension funds. The Ohio Public Employees Retirement System ("Ohio PERS") is one of our current participants, and we would welcome participation from the other four Systems. Please see Tab 10 for the most recent Ohio PERS Public Fund Report.



8. Describe your firm's philosophy and methodology in determining appropriate benchmarks and how performance is best evaluated. What is important in determining if a system is outperforming its peers? What are the most important standards of comparisons between funds?

We believe the most relevant methods of evaluating performance is to look at multiple levels – the plan level, the asset class level, and the individual manager level. We believe that both index comparisons and peer rankings are useful measurement tools at all three levels. In isolation, peer comparisons at the total plan level may not give a clear picture of how the total fund has done without also taking into consideration how the fund has performed versus an appropriate benchmark. The benchmark is where asset allocation comes into consideration. We believe both measures are needed to understand relative performance.

Given our belief that performance monitoring is constantly evolving and subject to change, we independently explore quantitative and qualitative metrics to determine the most suitable benchmarks for a client's portfolio and its underlying components. The key questions we seek to answer when determining a benchmark are:

- When designing a customized benchmark/policy portfolio for an individual client, what is the appropriate subset of benchmarks and relative weighting?
- What are the objectives and structuring of the underlying asset classes?
- How are the underlying asset classes implemented?

In selecting a benchmark we leverage our performance measurement system which has access to over 1,600 individual benchmarks for every major asset class. All of our benchmarks are calculated and maintained by third-party index providers.

In addition to traditional benchmarks, RVK often creates custom benchmarks that combine multiple traditional indices based on a predetermined allocation, actual allocation, or a combination of the two. These hybrid benchmarks can be created in both a dynamic and static fashion. Each is described below:

- **Dynamic** - a dynamic custom benchmark takes the weights of either an asset class or individual investment at the beginning of each month and applies it to the corresponding primary benchmark return
- **Static** - a static custom benchmark is created by assigning predetermined weights to corresponding indices. These weights and indices follow a set target allocation.

At the asset class level, peer comparisons attempt to measure how well the collection of managers within that asset class performed as a whole. In conjunction with the benchmark, the effectiveness of the manager structure can be measured.

At the individual manager level, peer comparisons may be the most instructive as they attempt to isolate how an individual manager performs versus other managers in the same asset class. Benchmark comparisons may also be useful indicators of how well the benchmark ranks in the same peer group. For example, if a manager is ranked in the first quartile yet does not beat the benchmark, it is an indication that very few active managers were able to exceed the benchmark return.



If this situation persists over long periods of time, it may bring into question the effectiveness of active management in the asset class.

Both the index and peer rankings, when observed together, are useful indicators in evaluating performance. The combination of these two measures can certainly assist in determining outperformance versus peers. When comparing defined benefit plans, however, wide ranges in Plan investment objectives and differences in benefit plan structures should be considered. An in-depth analysis of both benchmark performance and peer group results over the long term, combined with performance versus Plan-specific objectives (assumed rate of return), provide a picture of overall success levels. Viewing performance on a risk-adjusted basis (the return per unit of risk, as measured by standard deviation - the variability of a return around its average return) can also assist in standardizing results between Plans.

9. How do you define investment risk, and how does that apply to public pension funds?

As a firm, we believe there are multiple types of investment risk. Each type of risk requires different methods for assessment, different metrics for measurement, and different approaches for mitigation. Addressing or targeting only one type of risk, no matter how successfully done, can leave a fund at the mercy of other types of risk. RVK is experienced with the various types of risk and has embedded the continuous assessment and monitoring of such risks in our team consulting services and reporting.

The types of risk that should be monitored and mitigated in public pension fund management include:

- **Total fund volatility:** How volatile is the return stream of the fund likely to be given its investment strategy?
- **Benchmark risk:** How likely are the fund's returns and asset values likely to diverge from established benchmarks?
- **Liquidity risk:** How liquid is the fund's asset allocation and deployment to specific investments in both normal and extreme market environments?
- **Equity beta:** How closely correlated is the return stream of the total fund to the equity market, a substantial source of volatility?
- **Operational risk:** How tightly executed and monitored are all the operational details of the fund's management, particularly cash flows and performance reporting?



- **Fiduciary risk:** How solid is the ethical and fiduciary framework embedded in the Investment Policy and is it periodically monitored?
- **Leverage risk:** How much of the fund's returns are due to the use of leverage in underlying investments?
- **Inflation and/or interest rate risk:** How sensitive might the fund's returns be to substantial, sustained changes in inflation/interest rates? By running sensitivity analyses, RVK can simulate the effect of parallel interest rate changes and provide an understanding of the range of potential outcomes to a portfolio based on interest rate movements.
- **Tail risk:** How would the fund's returns be affected by "left tail events" (the risk of low probability, yet extreme, down-side scenarios within a normal distribution of returns)?

With regard to liquidity risk specifically, we have been working with our public pension plan clients to revisit their liquidity needs in light of funded status and cash flow needs. Liquidity is a key consideration when setting an overall asset allocation for public pension plans as well as in selecting individual investment vehicles. This has historically been a largely qualitative assessment; however have developed liquidity metrics to assist in the evaluation of asset allocation alternatives and to aid in ongoing assessments of a plan's liquidity.

Taken as a whole, risk assessment, measurement, and mitigation is an integrated part of our consulting practice and the services we provide to clients.