



Public Fund Universe Analysis

Mendocino County Employees' Retirement Association

Period Ending June 30, 2019
Fund Number: 49



RVK Honored to Receive 2ND Greenwich *Quality Leader* Award

- In 2018, Greenwich Associates* conducted interviews with 1,128 senior professionals of large plan sponsors and ranked opinions of their investment consulting relationships on a series of key metrics, including, but not limited to:
 - Understanding of Client Goals and Objectives
 - Advice on Long-term Asset Allocation and Liability Issues
 - Proactive Advice and Innovative Ideas
 - Credibility with Boards and/or Investment Committees
 - Knowledge of Investment Managers
 - Advice on DC Plan Structure and Design
 - Client Satisfaction with Manager Recommendations
 - Responsiveness to Client Requests and Needs
 - Competitive Fees
- For a 2nd consecutive year, RVK is 1 of 3 firms among large US consultants to receive this award.



**As a valued client, we are humbled by your continued confidence and thankful for your support.
From all of us here at RVK, thank you for the opportunity to serve you!**

*Greenwich Associates is the leading provider of global market intelligence and advisory services to the financial services industry. They conduct an annual survey of institutional investors whereby approx. 1,100 respondents rank their respective investment consulting relationships on key metrics on a scale from 1 (poor) to 5 (excellent). The award is based upon Greenwich Associates' 2018 US Institutional Investors study.

Report and Firm Summary

The following report is a compilation of data provided to RVK, Inc. by 75 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 nearly 200 clients across more than 400 plans with total assets under advisement in excess of \$2 trillion. The confidentiality of participants is maintained by revealing the fund name only to each individual fund, with the exception of SACRS funds which have provided permission to share their respective fund numbers. For more information about services provided by RVK, please visit our website at www.RVKInc.com.

Alameda County Employees' Retirement Association (Fund No. 17)

Arlington County Employees' Retirement System
California State Teachers' Retirement System
City of Austin Employees' Retirement System
City of Fresno Fire & Police Retirement System
City of Milwaukee Employees' Retirement System
City of Plano Retirement Security Plan

Colorado Public Employees' Retirement Association
County Employees' Annuity & Benefit Fund of Cook County
Employees Retirement System of Texas
Fire & Police Employees' Retirement System of Baltimore
Fort Worth Employees' Retirement Fund
Gila River Indian Community Retirement Plan

Imperial County Employees' Retirement System (Fund No. 55)

Kansas City, Missouri Employees' Retirement System

Kern County Employees' Retirement Association (Fund No. 119)**Los Angeles County Employees Retirement Association (Fund No. 86)**

Los Angeles Water & Power Employees Retirement Plan
Maryland State Retirement and Pension System

Merced County Employees' Retirement Association (Fund No. 15)

Montana Teachers' Retirement System
Nevada Public Employees' Retirement System
North Carolina Retirement System

Orange County Employees' Retirement System (Fund No. 71)

Pennsylvania State Employees' Retirement System
Public Employees Retirement Association of New Mexico

Sacramento County Employees' Retirement System (Fund No. 75)

San Diego City Employees' Retirement System
San Diego Transit Corporation Employees Retirement

Anchorage Police & Fire Retirement System

Baltimore City Employees' Retirement Systems

Chicago Teachers' Pension Fund

City of Fresno Employees Retirement Systems

City of Jacksonville Retirement System

City of Plano Other Post-Employment Benefits Trust

Civilian Employees' Retirement System of the Police Department of Kansas City, Missouri

Confederated Tribes of the Warm Springs Tribal Council Pension Fund

District of Columbia Retirement Board

Employees' Retirement System of Rhode Island

Fire and Police Pension Association of Colorado

Fresno County Employees' Retirement Association (Fund No. 80)

Illinois Municipal Retirement Fund

Iowa Public Employees' Retirement System

Kansas Public Employees' Retirement System

Los Angeles City Employees' Retirement System

Los Angeles Fire and Police Pension System

Marin County Employees' Retirement Association (Fund No. 69)**Mendocino County Employees' Retirement Association (Fund No. 49)**

Montana Public Employees' Retirement System

Municipality of Anchorage Pre-Funding Program

New York State Common Retirement Fund

Ohio Public Employees' Retirement System

Pennsylvania Public School Employees' Retirement System

Police Retirement System of Kansas City, Missouri

Public School and Education ERS of Missouri

San Bernardino County Employees' Retirement Association (Fund No. 101)**San Diego County Employees Retirement Association (Fund No. 129)**

Santa Barbara County Employees' Retirement System (Fund No. 99)

South Dakota Retirement System

State of Michigan Retirement Systems

State Teachers Retirement System of Ohio

Teachers' Retirement System of Louisiana

Texas Municipal Retirement System

Tulare County Employees' Retirement Association (Fund No. 94)

Virginia Retirement System

Wyoming Retirement System

San Mateo County Employees' Retirement Association (Fund No. 73)

Sonoma County Employees' Retirement Association (Fund No. 64)

Stanislaus County Employees' Retirement Association (Fund No. 57)

State of New Jersey Pension Fund

State Universities Retirement System of Illinois

Teachers' Retirement System of the State of Illinois

The Navajo Nation Retirement Plan

Ventura County Employees' Retirement Association (Fund No. 52)

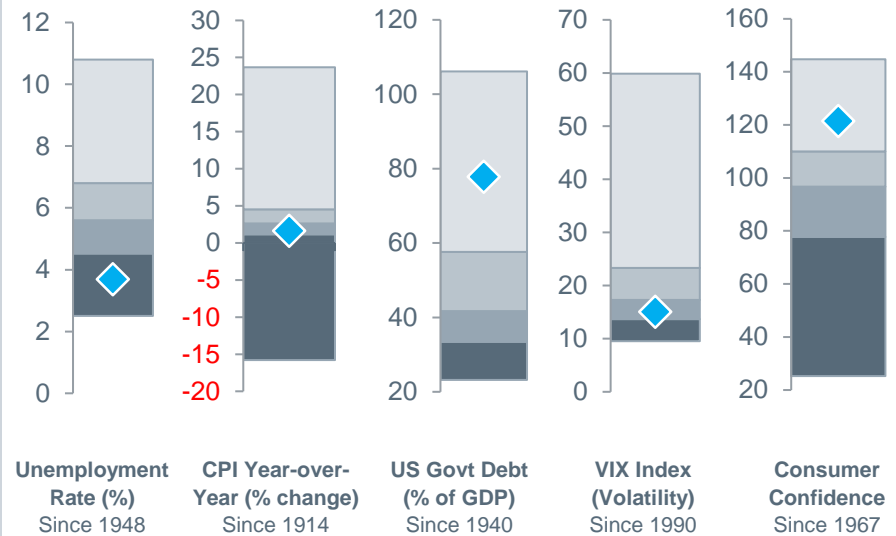
West Virginia Investment Management Board

Second Quarter Economic Environment

Key Economic Indicators

The second quarter of 2019 saw global risk assets add to the gains realized during the first quarter, albeit with considerable bouts of volatility tied to heightened geopolitical tensions and the evolving China-US trade dispute. The strong equity returns realized in April were erased in May as confidence in the steady pace of global economic expansion waned and the US threatened to impose additional tariffs on \$300B worth of Chinese goods. The World Bank lowered its global GDP growth estimate for CY 2019 from 2.9% to 2.6%. Global central banks collectively reacted to the negative market sentiment with a flurry of dovish guidance that cooled the market's concern and brought about renewed optimism coming into June. The European Central Bank ("ECB") and Bank of Japan ("BoJ") both reaffirmed guidance to keep interest rates low into 2020. Yields on the 10-year Treasury note fell from 2.41% ending Q1, to 2.00% at the end of the second quarter, providing a strong pass-through to higher equity valuations via the lower discount rate. The economic data released during the quarter was largely consistent with a slowing economy, but one that doesn't necessarily appear on the verge of recession.

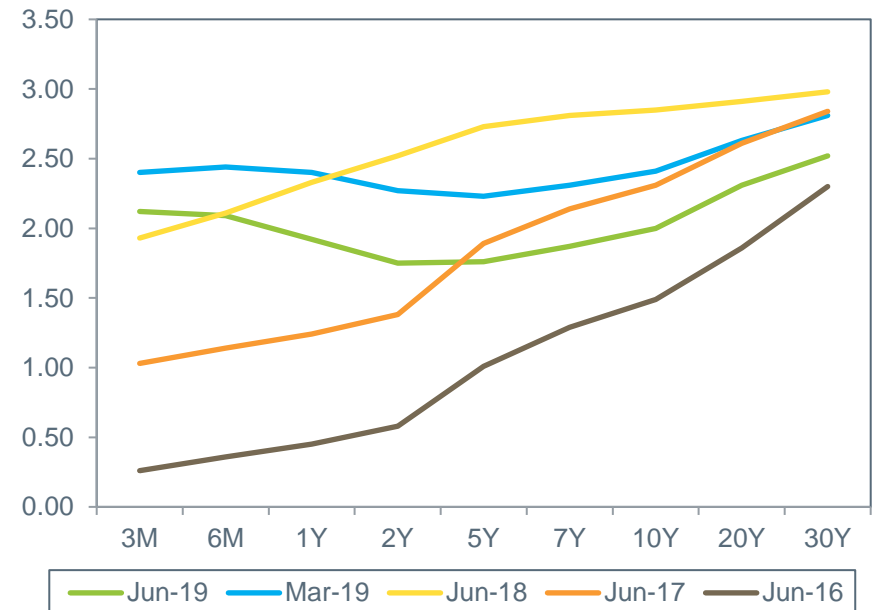
Key Economic Indicators



Economic Indicators	Jun-19	Mar-19	Jun-18	Jun-16	20 Yr
Federal Funds Rate (%)	2.40 ▼	2.43	1.91	0.30	1.88
Breakeven Infl. - 5 Yr (%)	1.54 ▼	1.79	2.08	1.40	1.86
Breakeven Infl. - 10 Yr (%)	1.70 ▼	1.87	2.13	1.44	2.04
CPI YoY (Headline) (%)	1.6 ▼	1.9	2.9	1.0	2.2
Unemployment Rate (%)	3.7 ▼	3.8	4.0	4.9	5.9
Real GDP YoY (%)	2.3 ▼	2.7	3.2	1.3	2.2
PMI - Manufacturing	51.7 ▼	55.3	60.0	52.5	52.8
USD Total Wtd Idx	90.86 ▼	92.07	89.97	90.58	86.19
WTI Crude Oil per Barrel (\$)	58.5 ▼	60.1	74.2	48.3	61.1
Gold Spot per Oz (\$)	1,409 ▲	1,292	1,253	1,322	905

Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	4.30	18.54	10.42	10.71	14.70
Russell 2000	2.10	16.98	-3.31	7.06	13.45
MSCI EAFE (Net)	3.68	14.03	1.08	2.25	6.90
MSCI EAFE SC (Net)	1.71	12.55	-6.35	4.40	9.67
MSCI Emg Mkts (Net)	0.61	10.59	1.21	2.49	5.81
Bloomberg US Agg Bond	3.08	6.11	7.87	2.95	3.90
ICE BofAML 3 Mo US T-Bill	0.64	1.24	2.31	0.87	0.49
NCREIF ODCE (Gross)	1.00	2.43	6.41	9.76	9.88
FTSE NAREIT Eq REIT (TR)	1.24	17.78	11.21	7.92	15.46
HFRI FOF Comp	1.49	6.16	1.15	2.19	3.21
Bloomberg Cmtty (TR)	-1.19	5.06	-6.75	-9.15	-3.74

Treasury Yield Curve (%)



Second Quarter Review

Broad Market

US equity markets sustained the strong performance trends from the first quarter into the second quarter, with all major indices finishing in positive territory, mostly buoyed by a dovish Federal Reserve and confidence surrounding a potential trade deal. The quarter finished strongly, with the strongest monthly S&P 500 return since 1955, at 7.0%, and finishing 4.3% for the quarter.

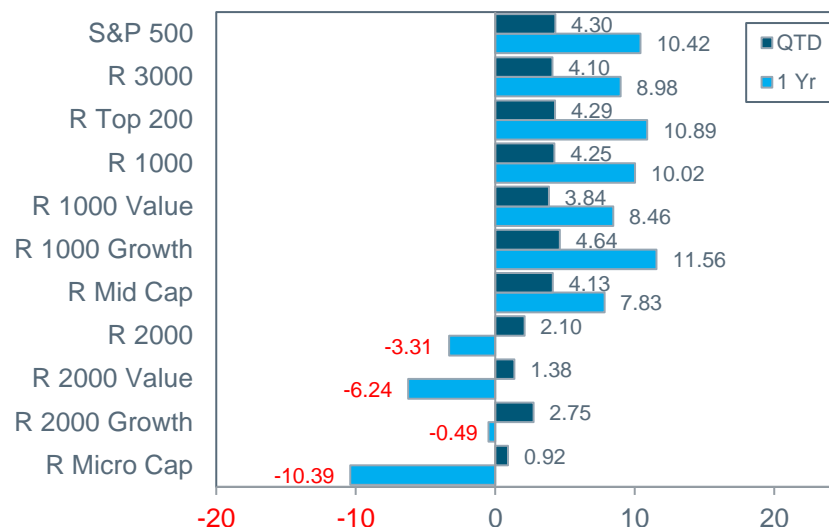
Market Cap

Larger-capitalization names outperformed their small-cap counterparts, with the Russell 1000 Index outperforming the Russell 2000 Index by 2.2%.

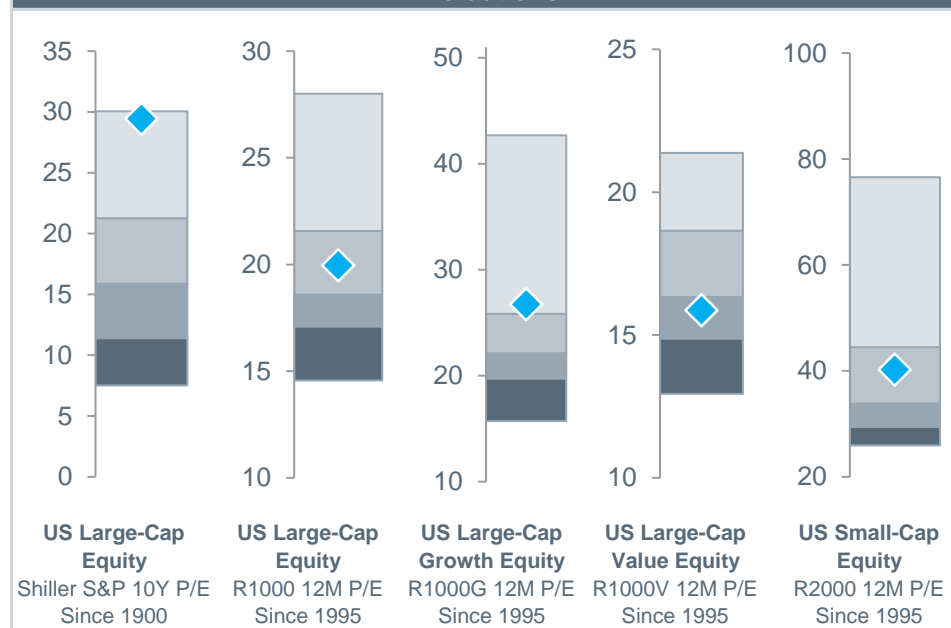
Style and Sector

All sectors, with the exception of energy, posted positive returns, with Financials taking the lead, as the S&P Financials returned 8.0% for the quarter. Both growth and value managers in the small and mid-cap segments experienced improved success rates during the quarter.

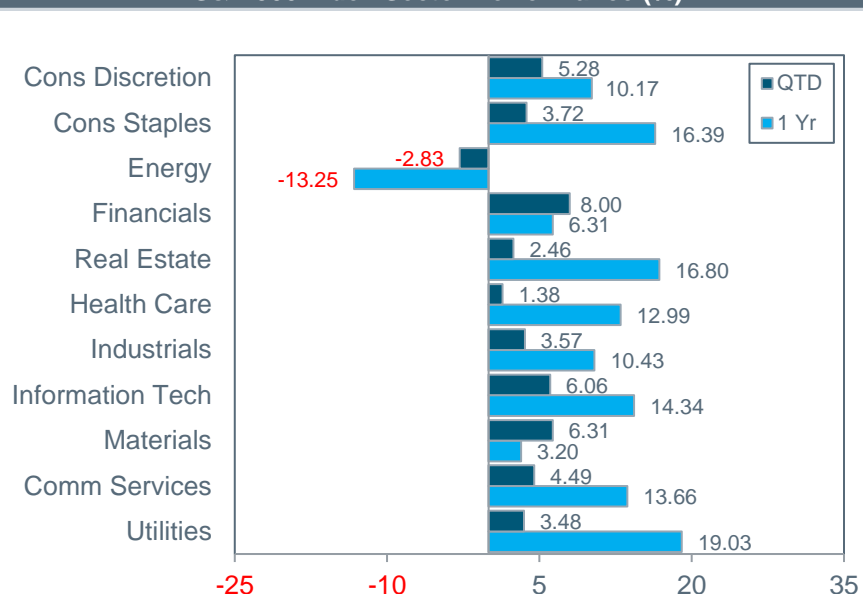
Style and Capitalization Market Performance (%)



Valuations



S&P 500 Index Sector Performance (%)



Second Quarter Review

Developed Markets

Developed international markets lagged domestic equities, but did have positive returns during the quarter. Quarterly returns were positive across almost every country with only Israel ending the quarter in negative territory. However, economic growth has been disappointing across multiple developed international countries.

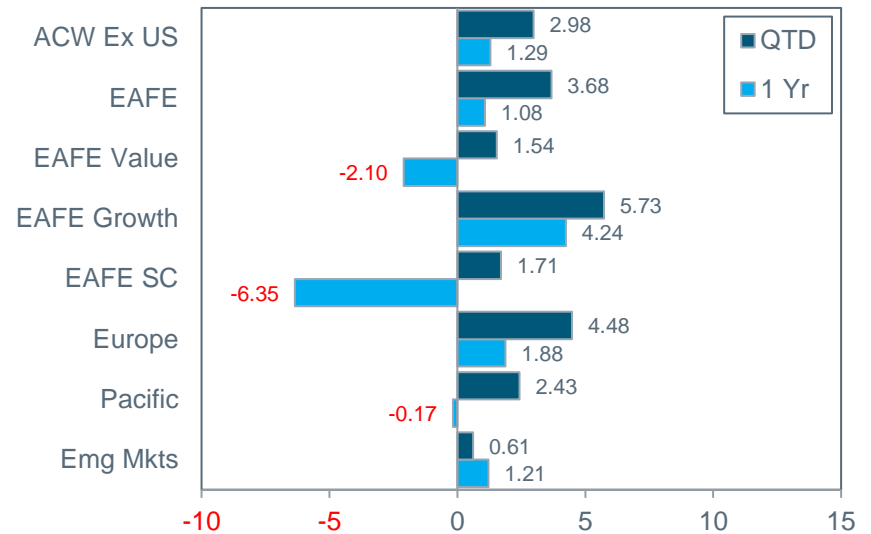
Emerging Markets

Emerging markets did not fare as well as developed markets, but broadly remained in positive territory despite emerging market small cap stocks having slightly negative returns. Yet again, headlines and actions related to trade negotiations dominated the emerging markets landscape.

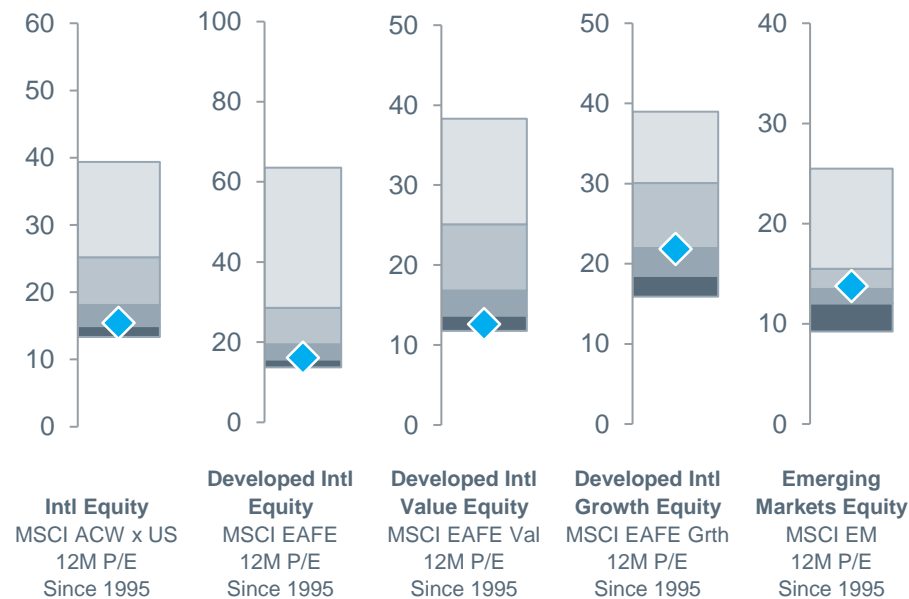
Market Cap & Style

Large cap stocks outperformed their smaller counterparts. Additionally, growth stocks continued to outperform value stocks in the developed international markets, but emerging markets value stocks outperformed growth stocks during the quarter.

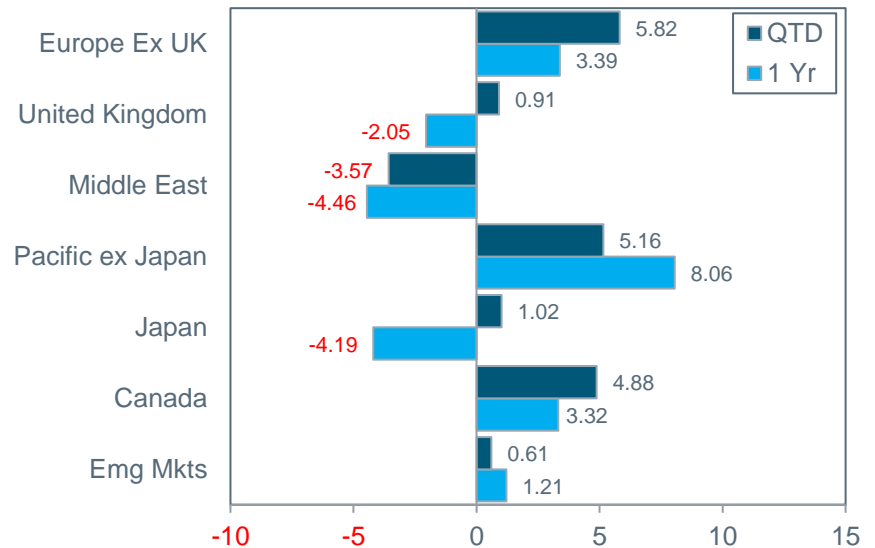
MSCI Style and Capitalization Market Performance (%)



Valuations



MSCI Region Performance (%)



Valuation data courtesy of Bloomberg Professional Service.

P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.

All returns are shown net of foreign taxes on dividends.

Second Quarter Review

Broad Market

US Treasury rates held relatively steady for the first half of the quarter, but weakened later in the quarter in response to trade war escalations, signs of moderating economic and job growth, and the potential for US interest rate cuts. US Treasury yields fell most in the belly of the curve, leading to a slight curve steepening with the spread between 2- and 10-year maturities increasing to 0.25%. Despite a sluggish start, the Bloomberg US Aggregate Index finished with another strong quarter, returning 3.1%.

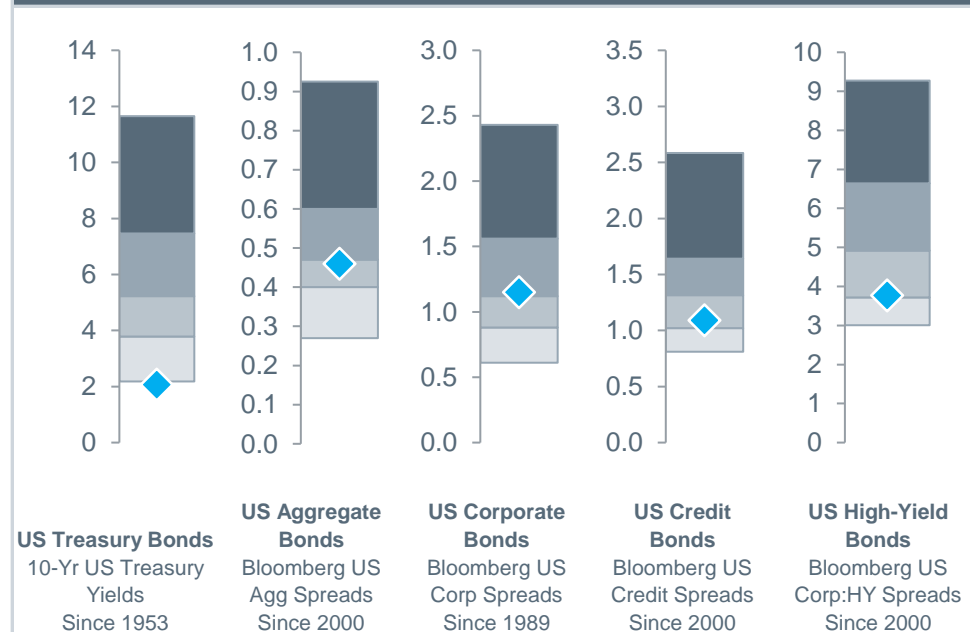
Credit Market

Though investment-grade corporate spreads widened for much of the quarter, they reversed course in June to finish slightly tighter, and the decline in US Treasury yields helped propel the Bloomberg US Corporate Bond Index to a 4.5% return.

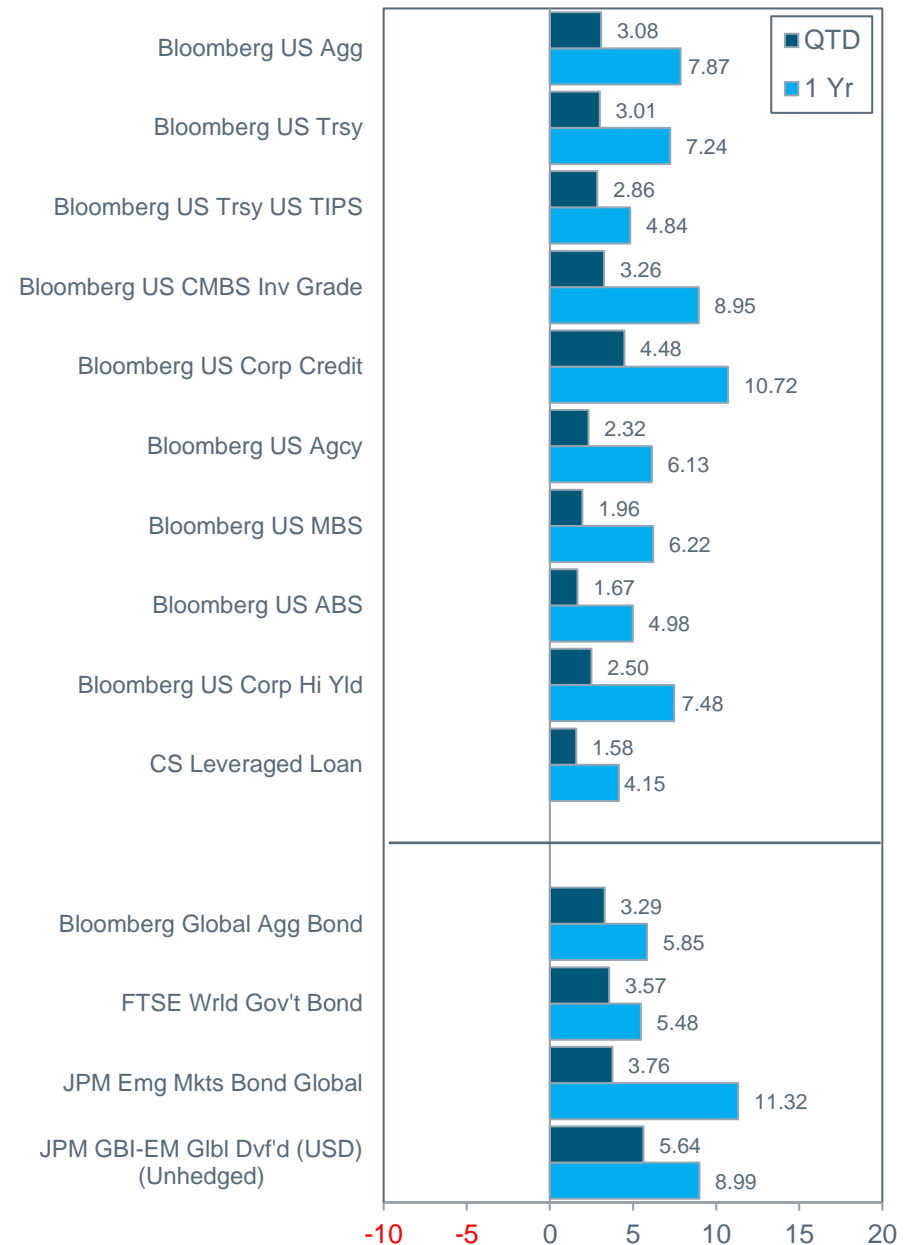
Emerging Market Debt

The JPM EMBI Global Diversified Index returned 4.1%, and has been one of the best performing areas of the bond market, returning 11.3% year to date.

Valuations



Fixed Income Performance (%)



Valuation data courtesy of Bloomberg Professional Service.

Valuations shown represent the 5th through 95th percentiles to minimize the effect of outliers.

Second Quarter Review - Absolute Return

General Market - Hedge Funds

Hedge funds produced positive returns across all major strategy groups during the second quarter and are enjoying their best start to the year as an industry since 2009. The HFRI Equity Hedge Index reported YTD net returns of +9.4% through Q2, and remains the strongest performing broad hedge fund category.

General Market - Global Tactical Asset Allocation (GTAA)

GTAA managers posted positive absolute returns during the second quarter, however most still underperformed a blend of 60% US equity and 40% US fixed income given the positive US equity returns as well as positive relative performance of fixed income versus other asset classes. Similar to the first quarter, performance across managers varied. Those with a greater reliance on a benchmark-aware investment processes provided stronger peer relative performance in a quarter where US large cap equity, developed international equity, and US fixed income contributed to performance.

Second Quarter Review - Real Assets

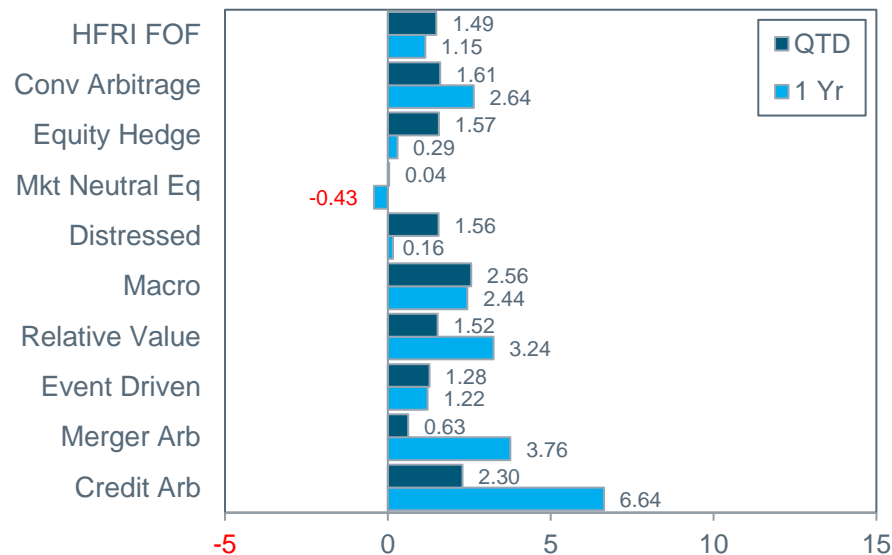
General Market - Diversified Inflation Strategies (DIS)

Despite low levels of inflation, most DIS managers posted moderately positive returns during the second quarter. Those who outperformed peers tended to deploy investment processes that do not explicitly track CPI-relative performance and generally held larger allocations to global listed infrastructure. DIS managers that trailed peers held larger exposures to commodities, natural resources equities, and, to a lesser extent, REITs.

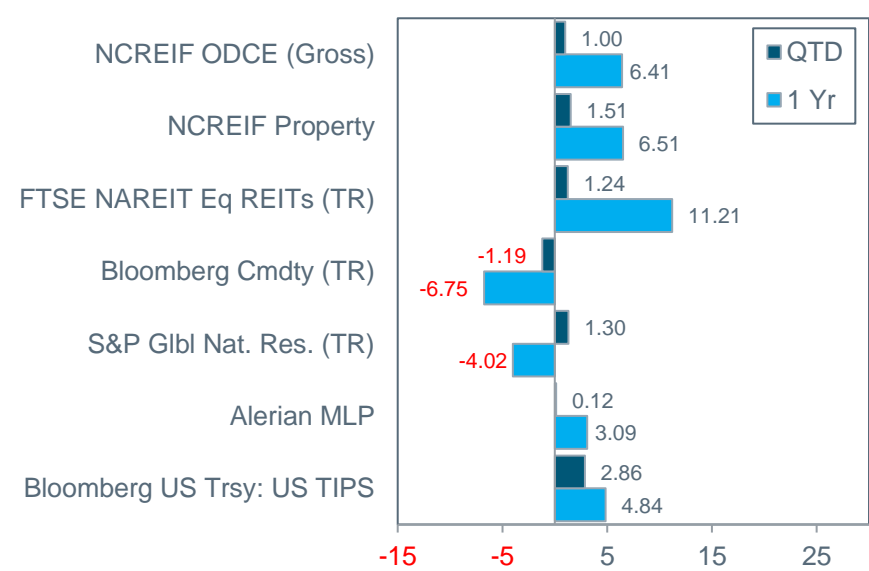
General Market - Real Estate

Core private real estate returned 1.0% during the second quarter, as reported by the NCREIF-ODCE Index, with the total return comprised of 1.01% income and -0.01% price appreciation. Investors in publicly traded real estate outperformed their private market counterparts during the second quarter. Publicly traded real estate experienced a more modest second quarter return of 1.8%, as measured by FTSE/NAREIT All REITs Index.

HFRI Hedge Fund Performance (%)



Real Asset Performance (%)

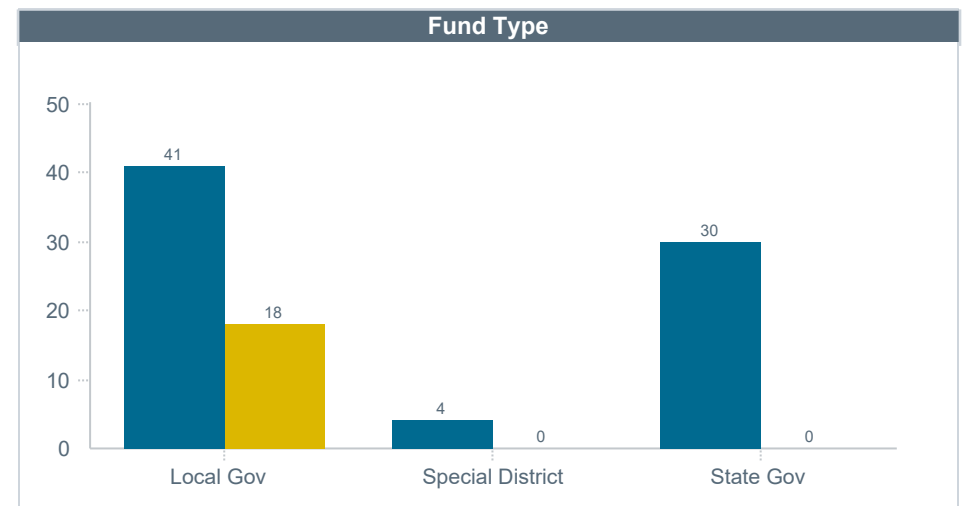
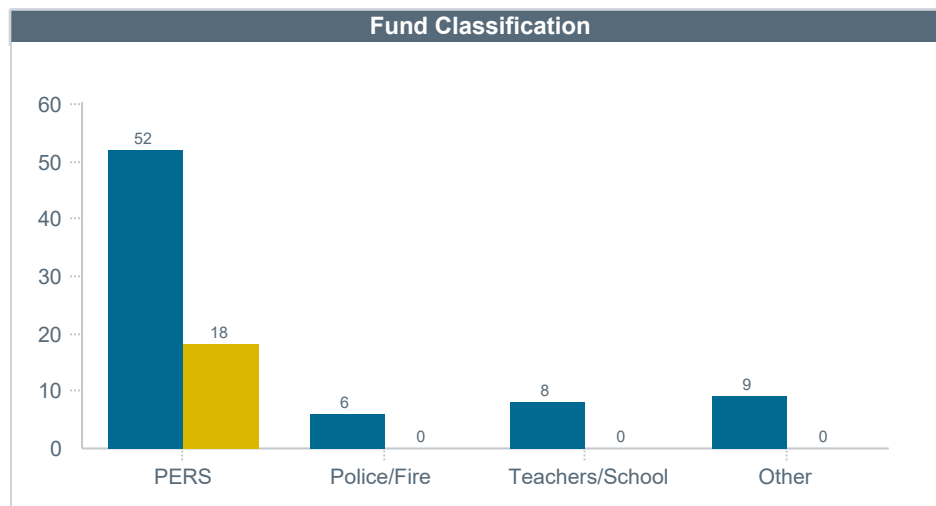
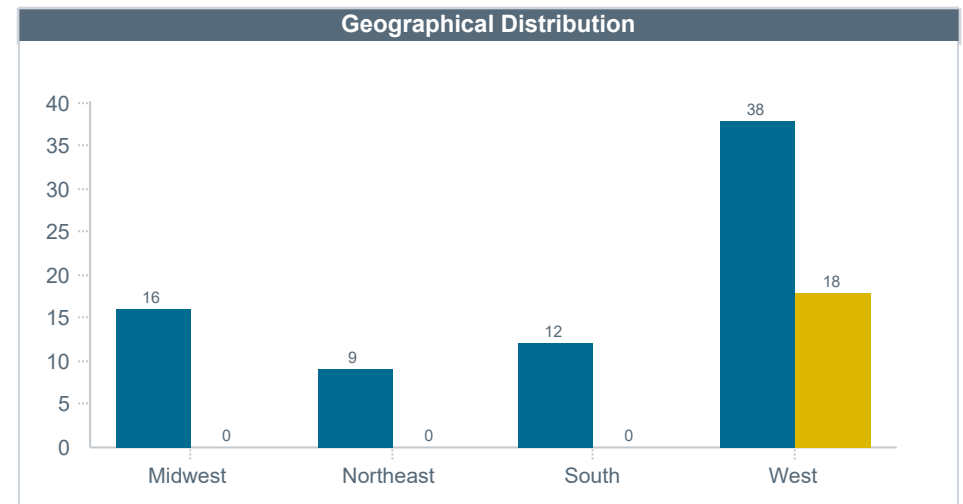
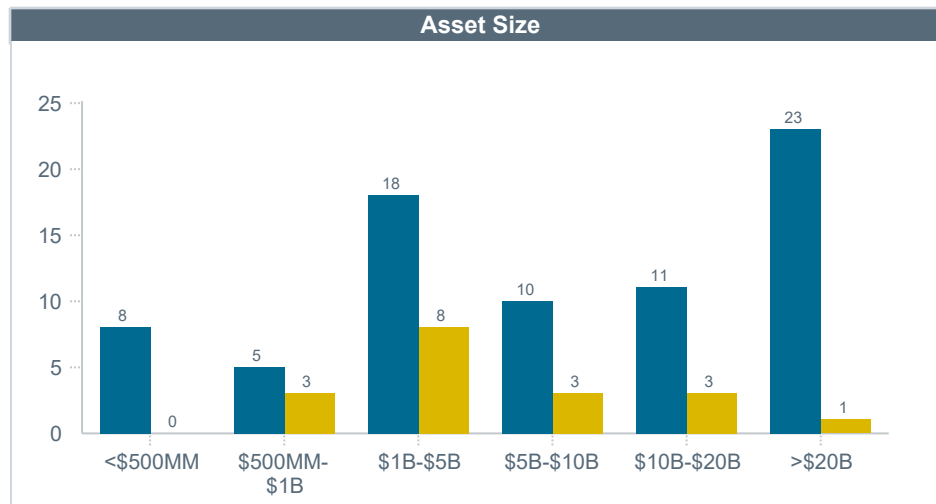


Annual Asset Class Performance

As of June 30, 2019

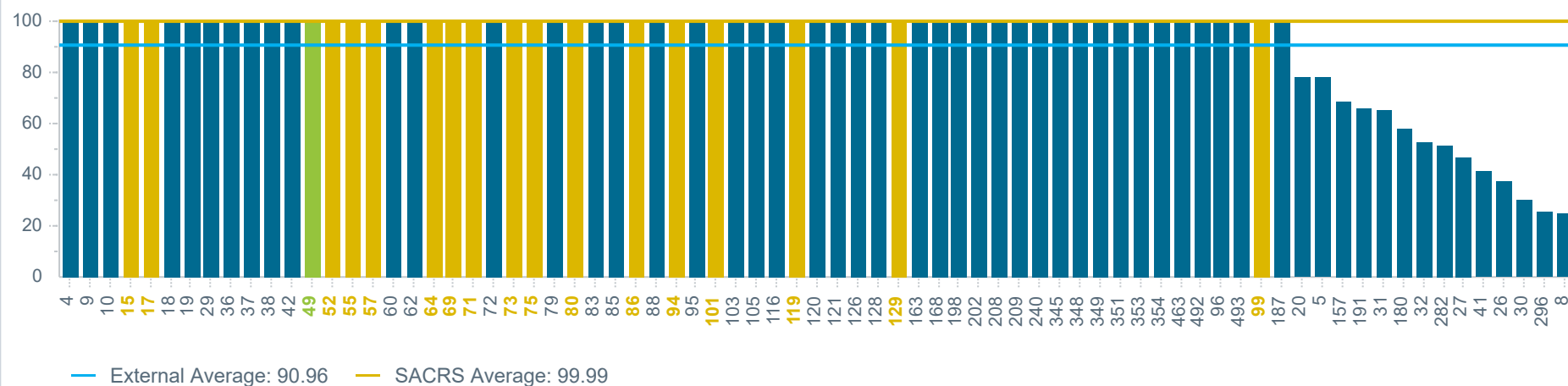
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD
Best ↑ <															

NCREIF ODCE (Gross) performance is reported quarterly; performance is shown N/A in interim-quarter months.

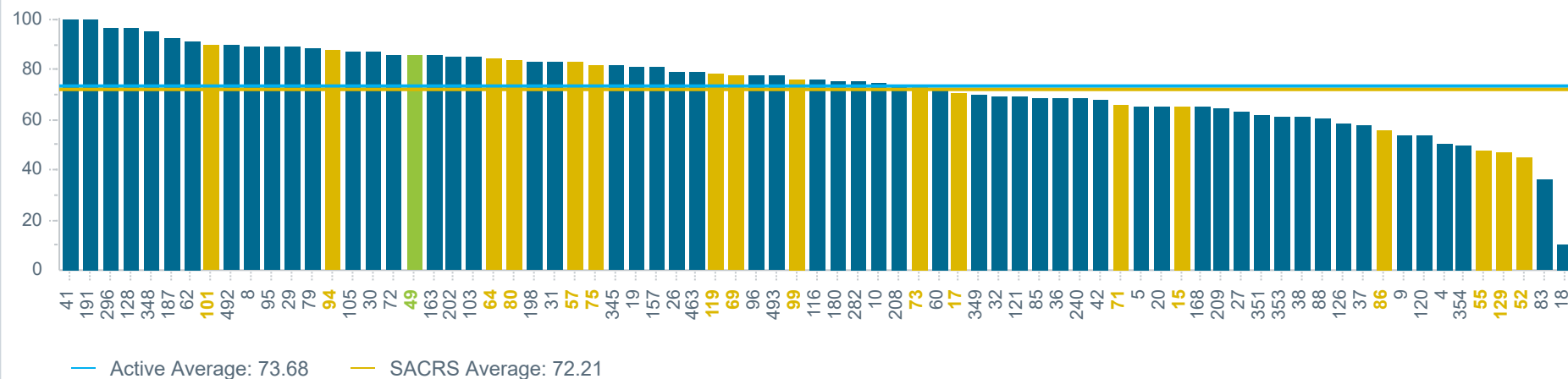


■ Universe: 75 funds ■ SACRS: 18 funds

External Management (%)



Active Management (%)

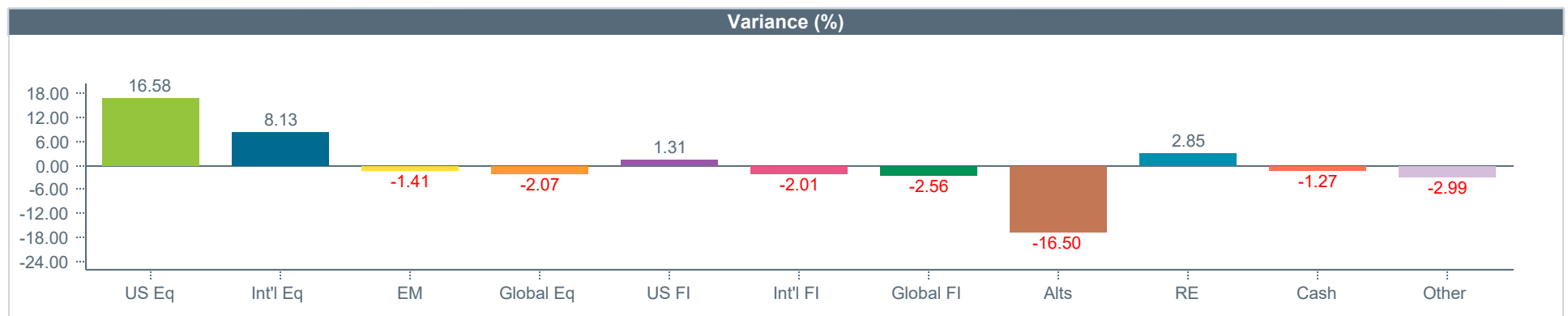
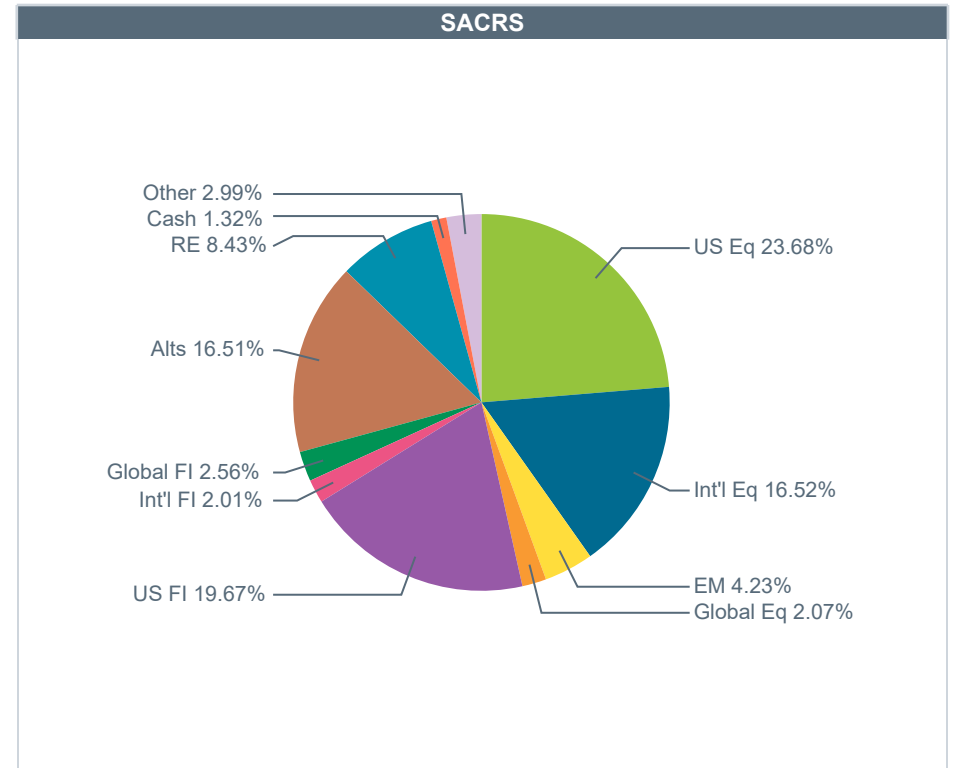
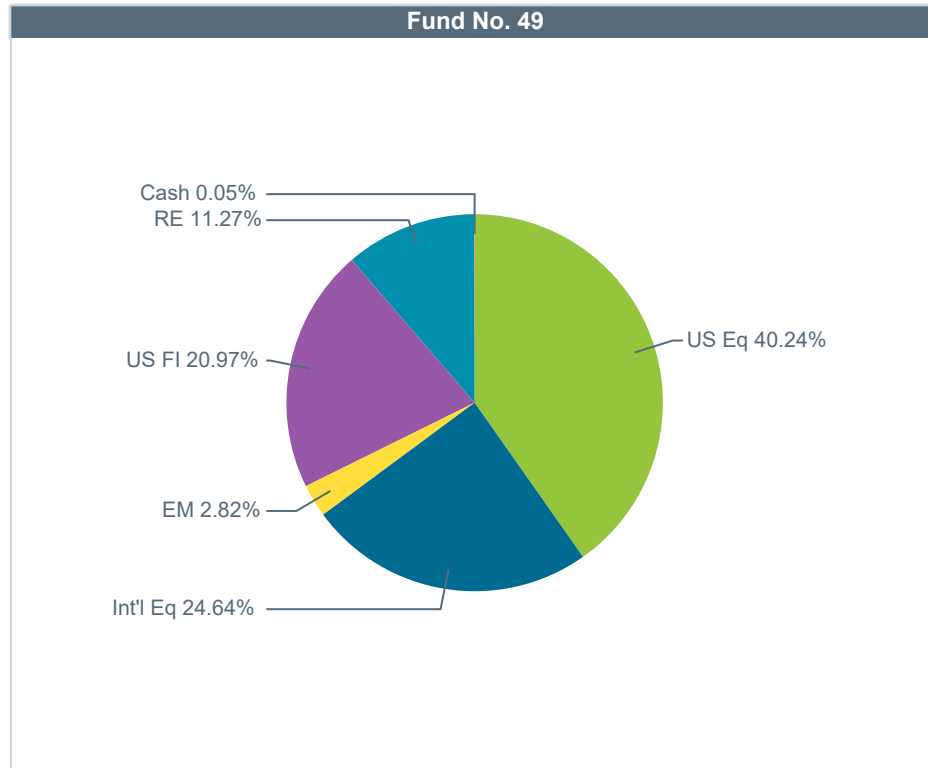


■ Fund No. 49 ■ SACRS

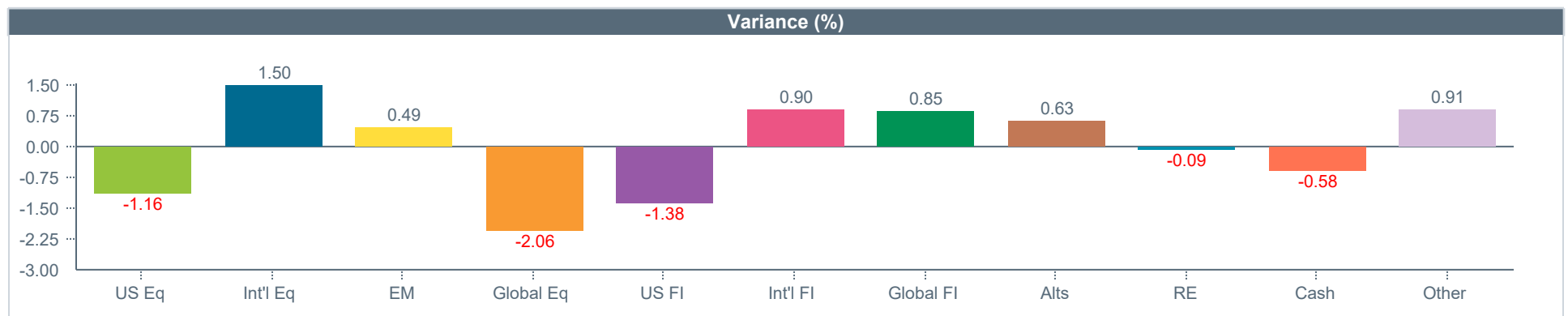
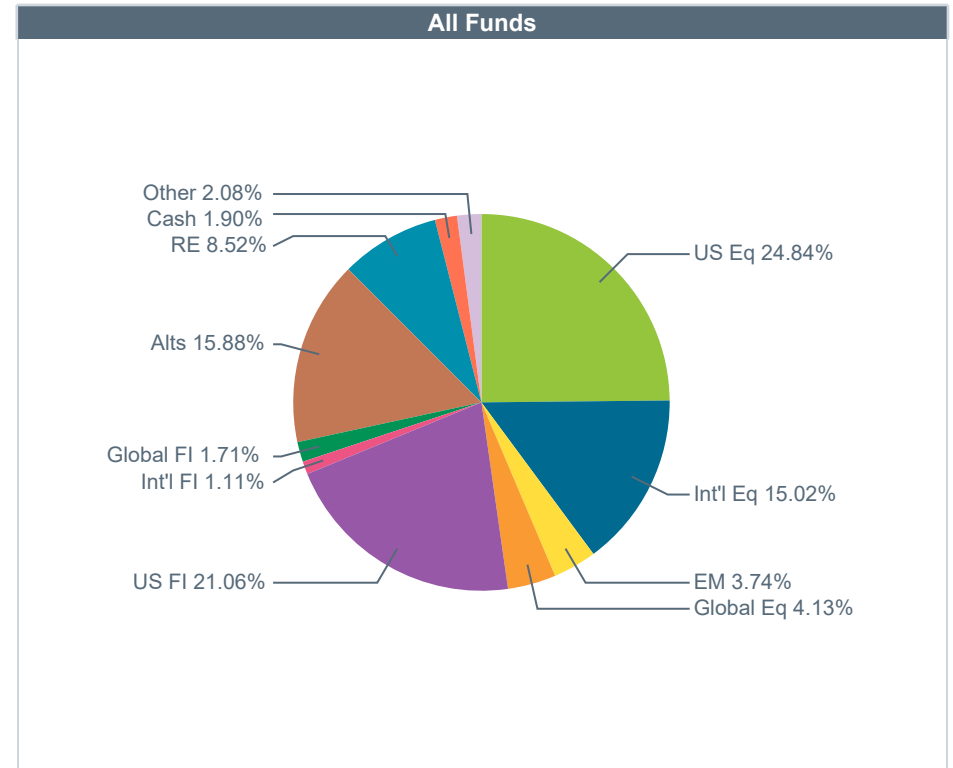
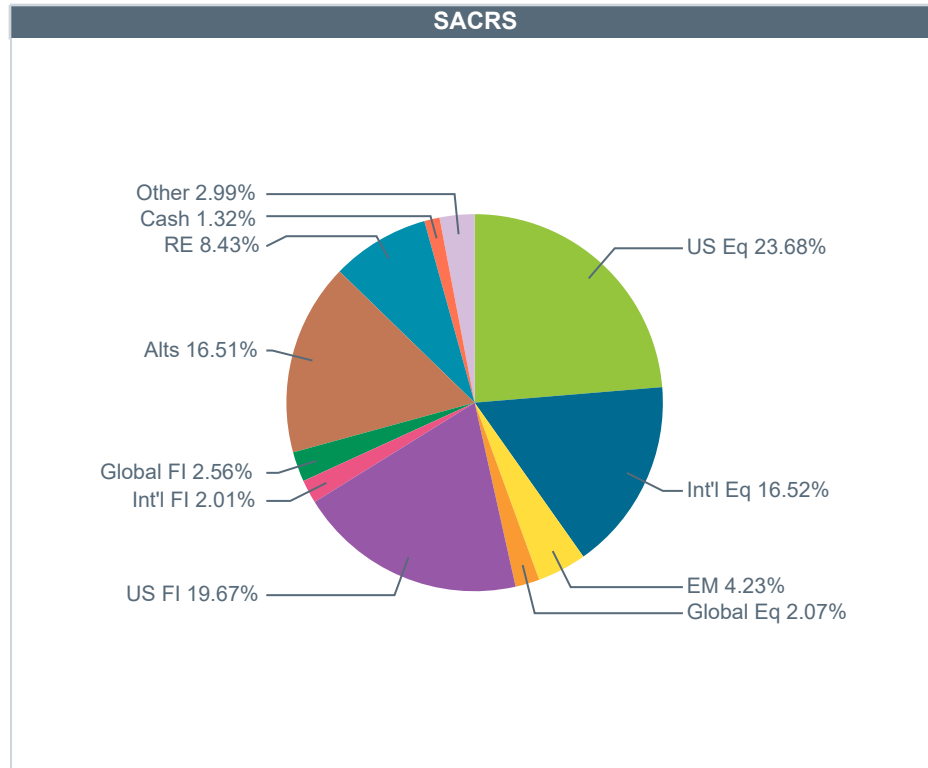
Asset Range	Actively Managed (%)	Passively Managed (%)	Externally Managed (%)	Internally Managed (%)
Over \$20B	73.92	26.08	74.59	25.41
\$10B-\$20B	71.12	28.88	93.21	6.79
\$5B-\$10B	67.66	32.34	97.55	2.45
\$1B-\$5B	78.32	21.68	98.51	1.49
\$500MM-\$1B	73.86	26.14	100.00	0.00
Under \$500MM	73.60	26.40	100.00	0.00
Fund No. 49	85.71	14.29	100.00	0.00

Percentages shown for asset ranges are representative of the average allocation.

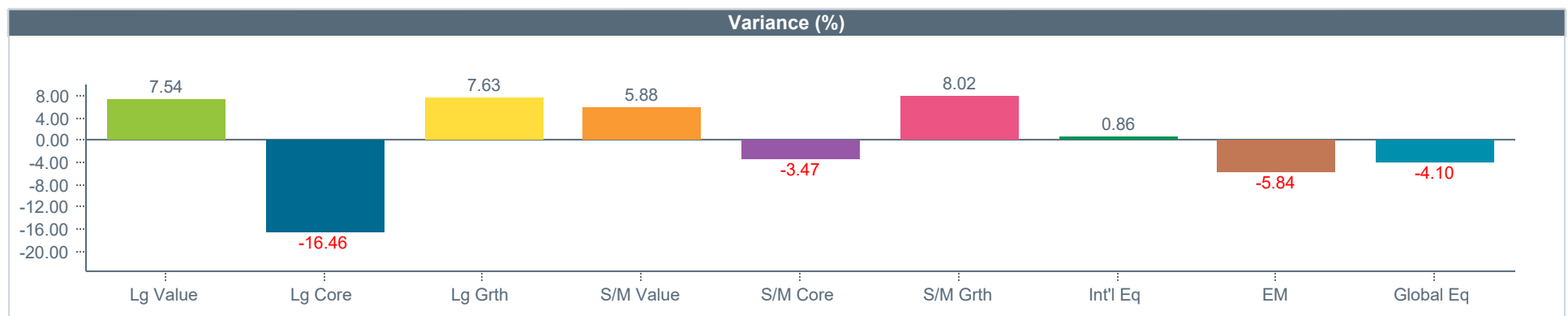
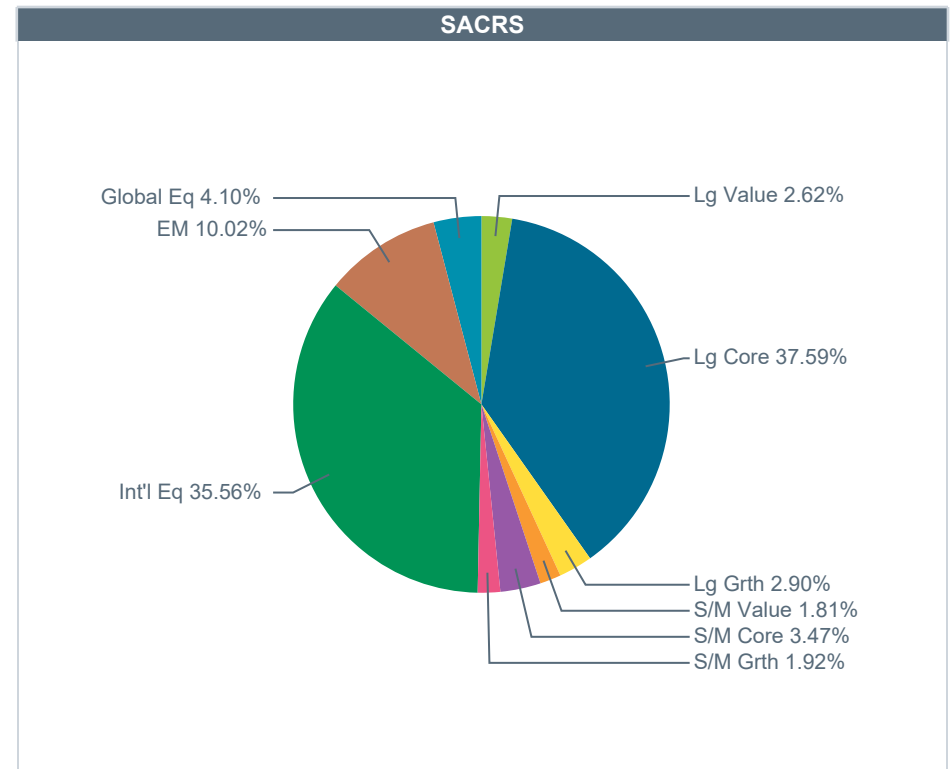
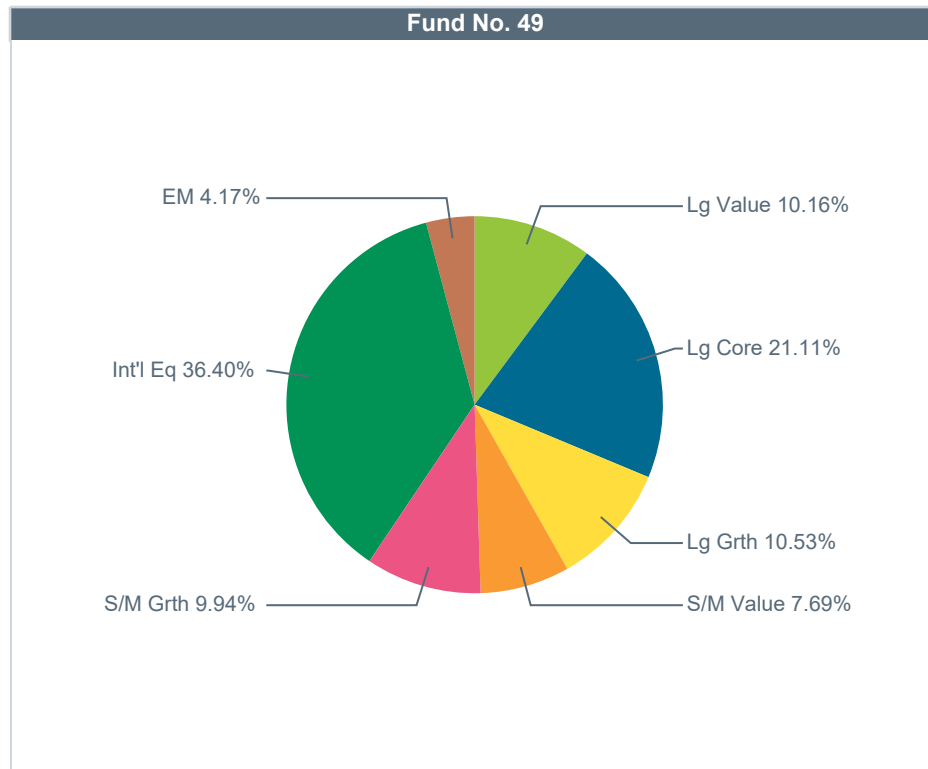
Portfolio (%)	Active Management		External Management	
	Public Fund Universe	Fund No. 49	Public Fund Universe	Fund No. 49
90 to 100	8	0	56	1
50 to 89	56	1	8	0
10 to 49	6	0	6	0
Less than 10	0	0	0	0
Total Funds Reporting	70	1	70	1



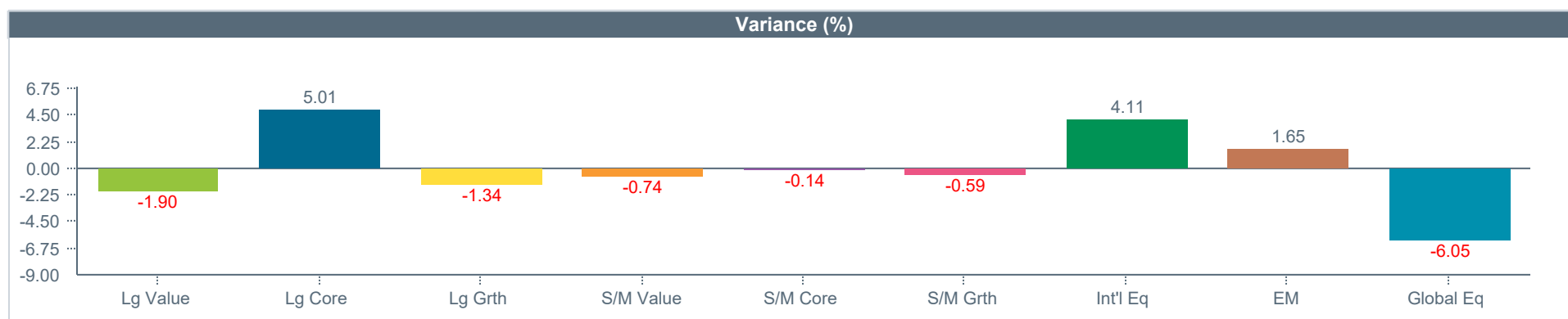
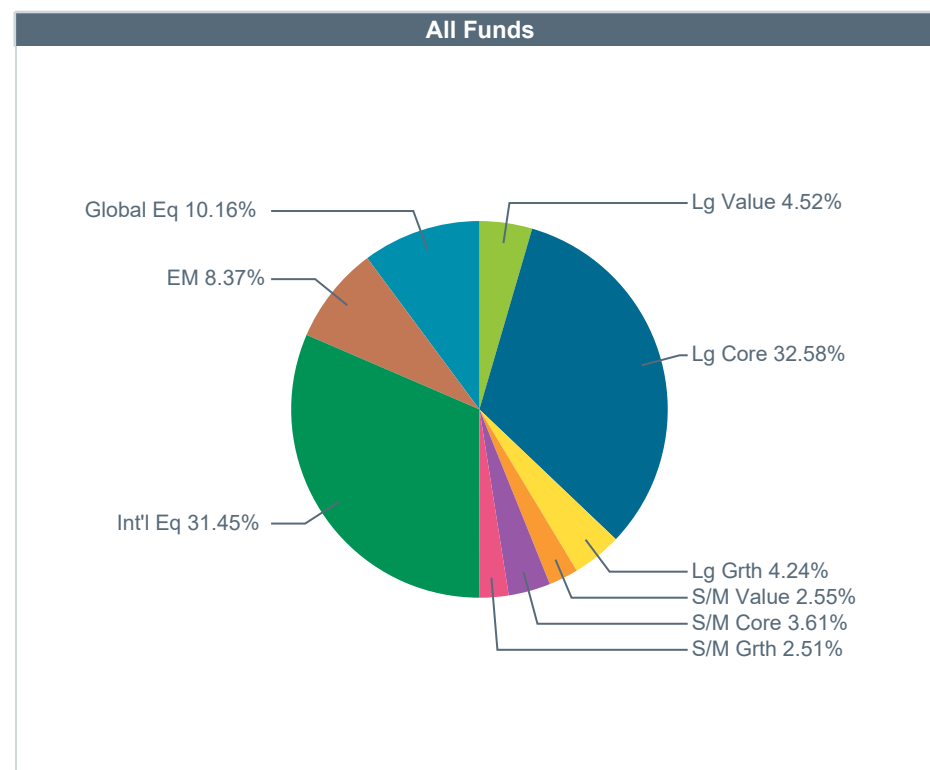
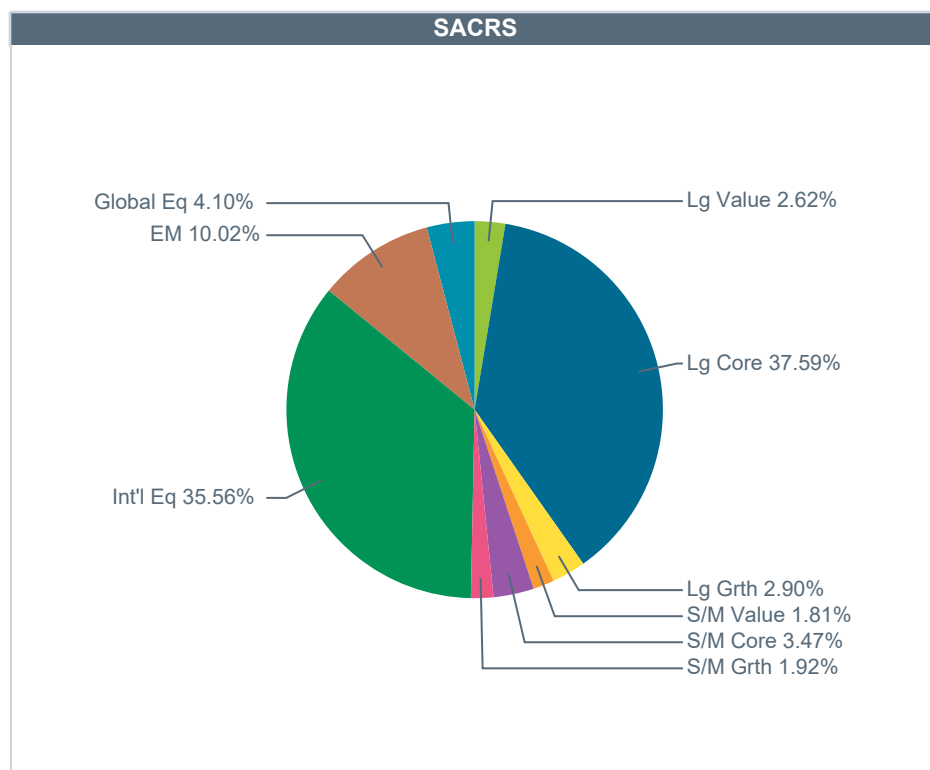
Allocations shown may not sum up to 100% exactly due to rounding.



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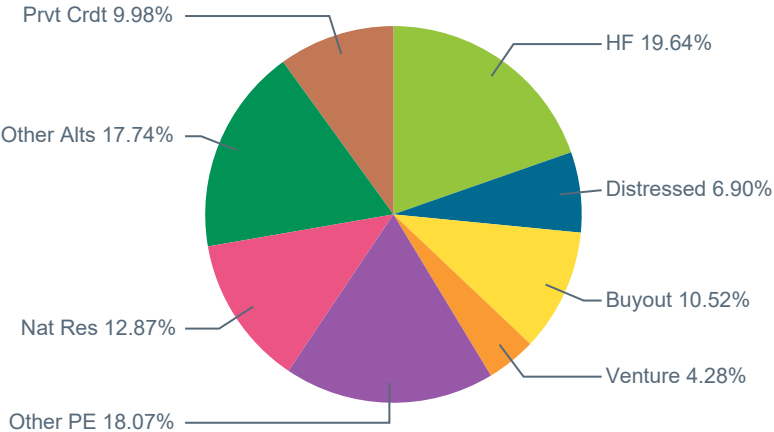


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Fund No. 49

Fund No. 49 does not have data for Alternatives Style Allocation

SACRS

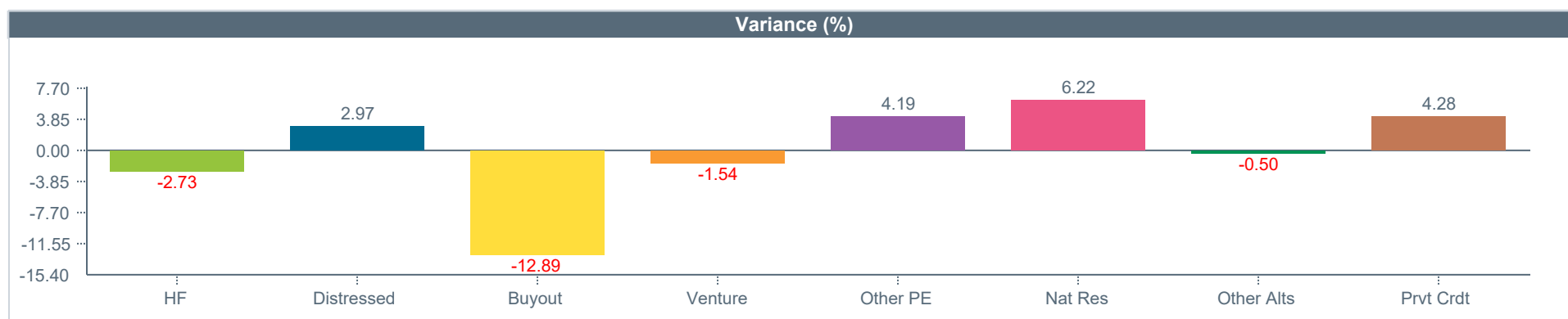
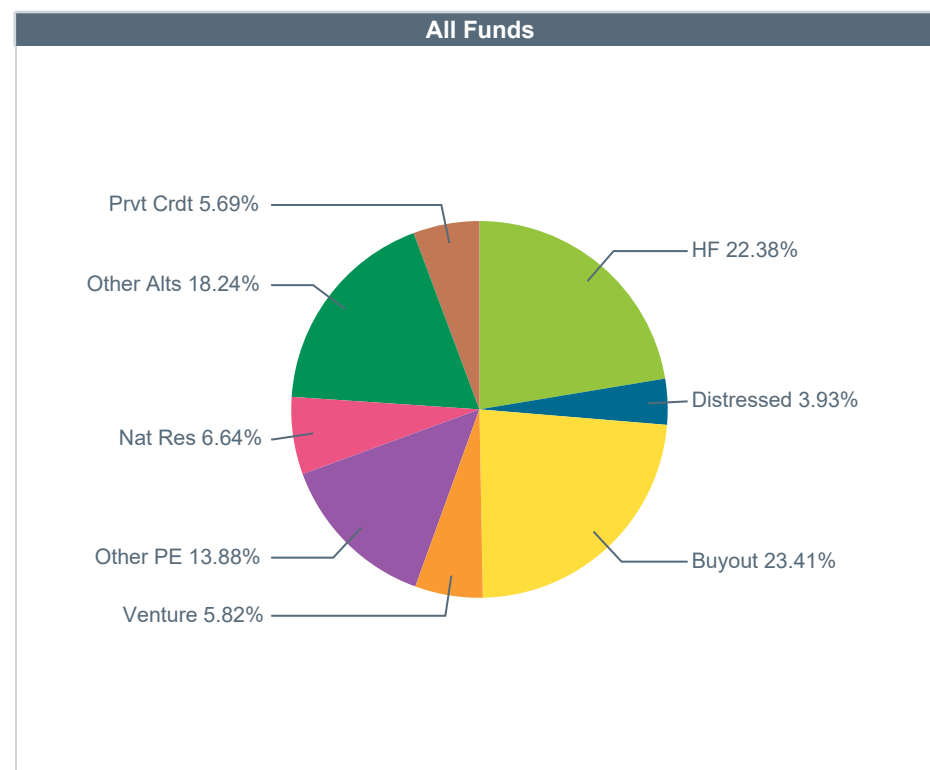
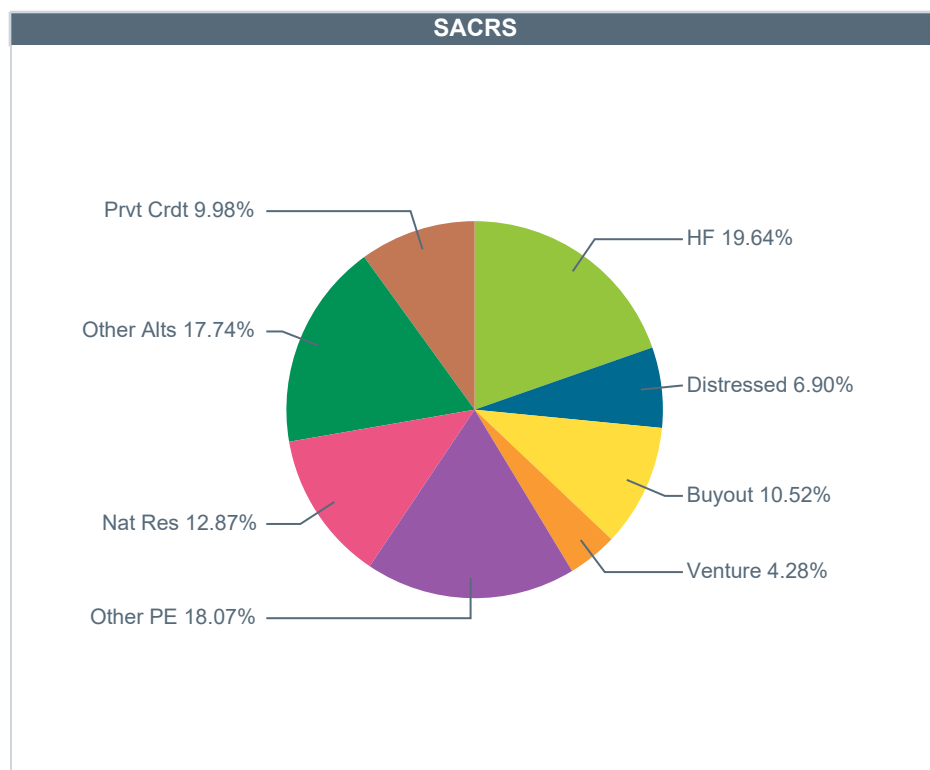


Variance (%)

Fund No. 49 does not have data for Alternatives Style Allocation

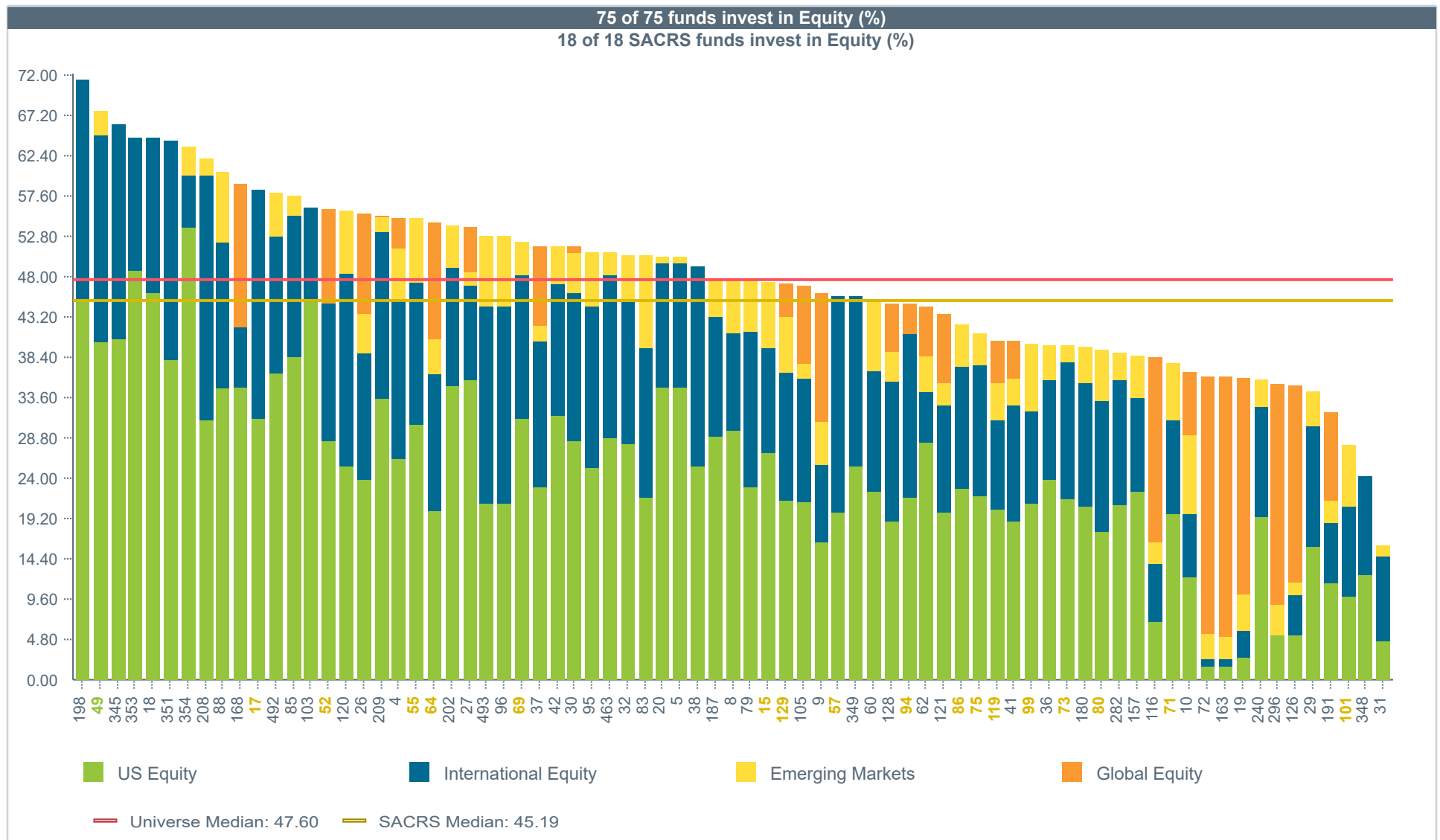
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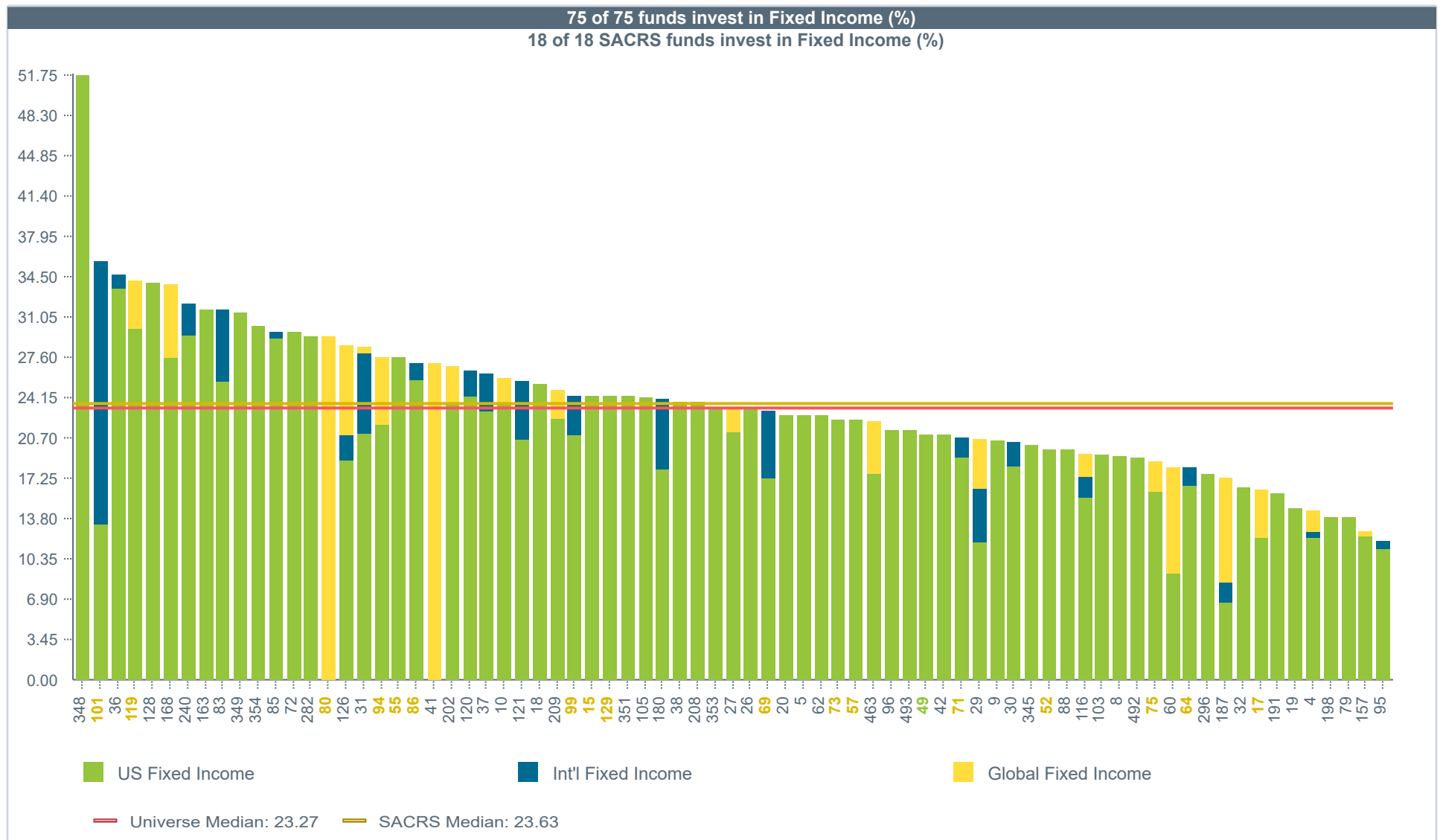


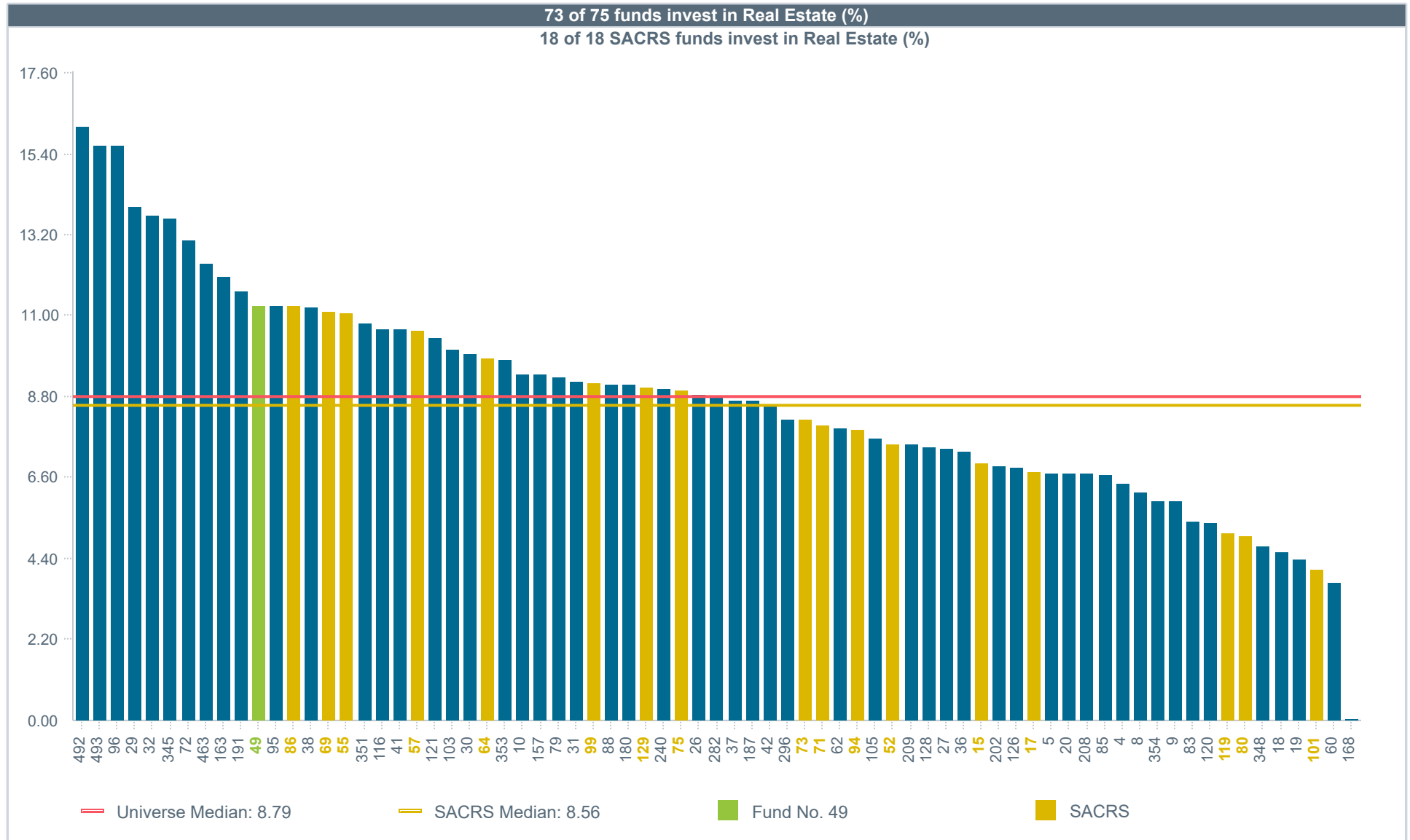


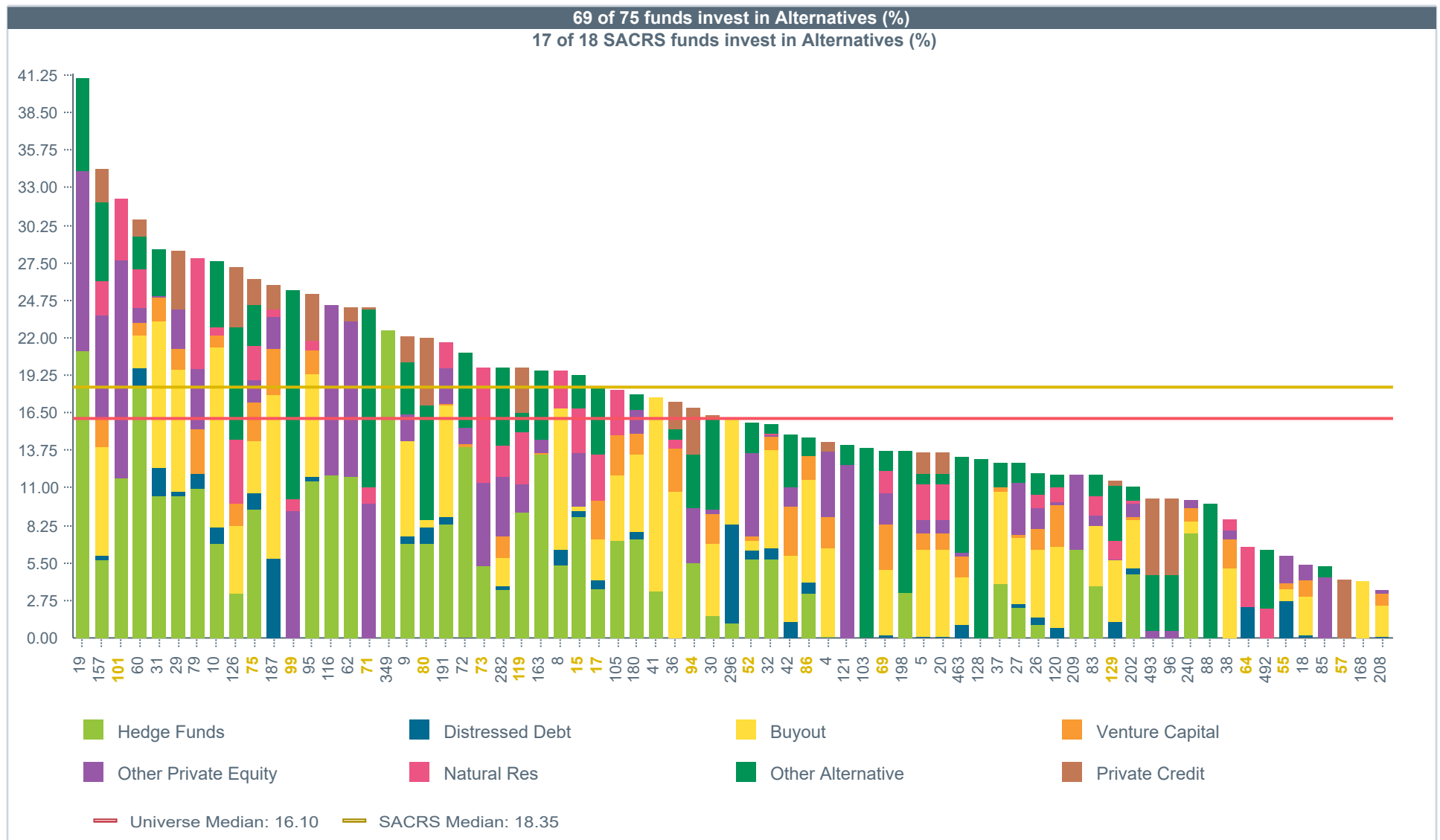
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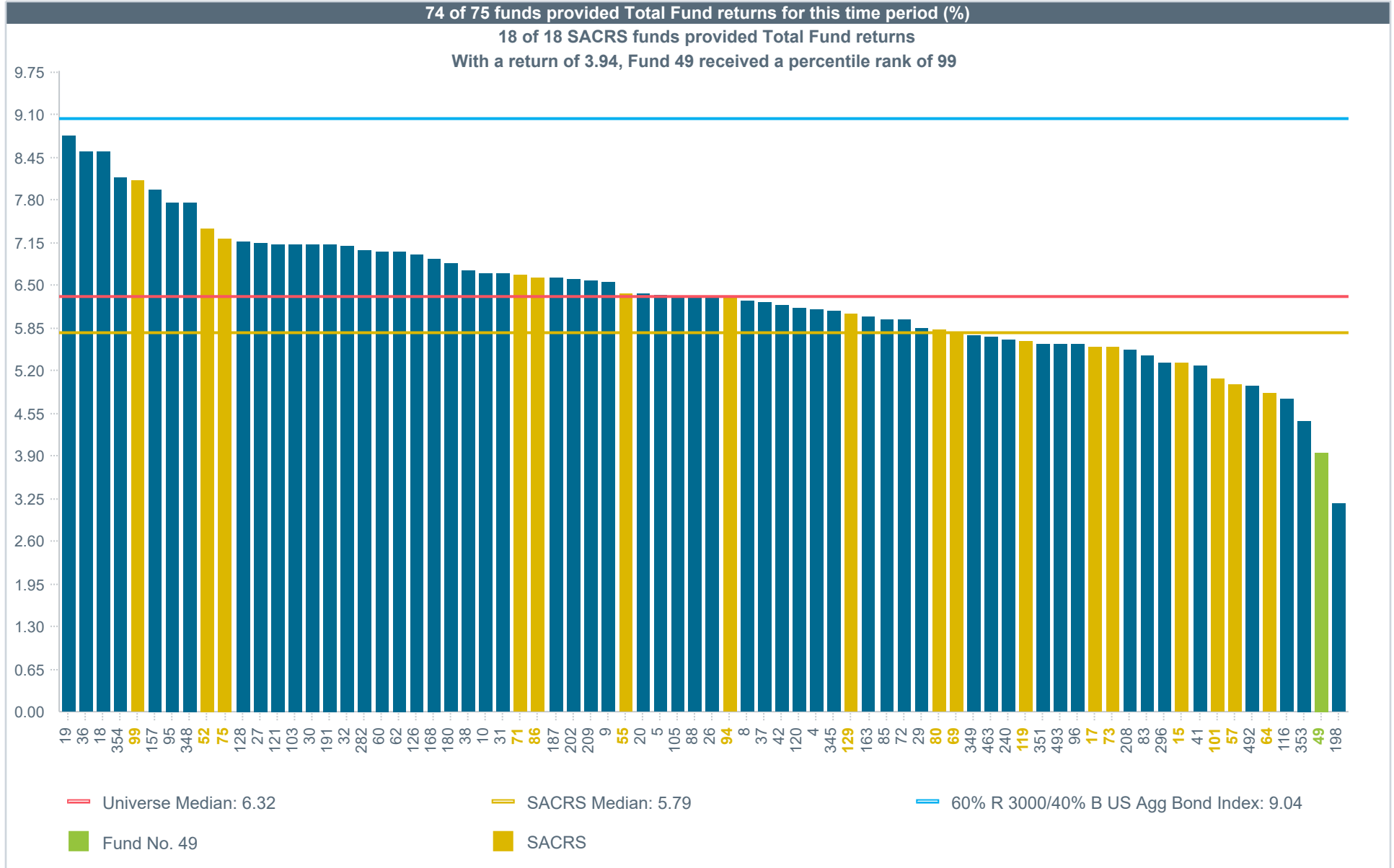






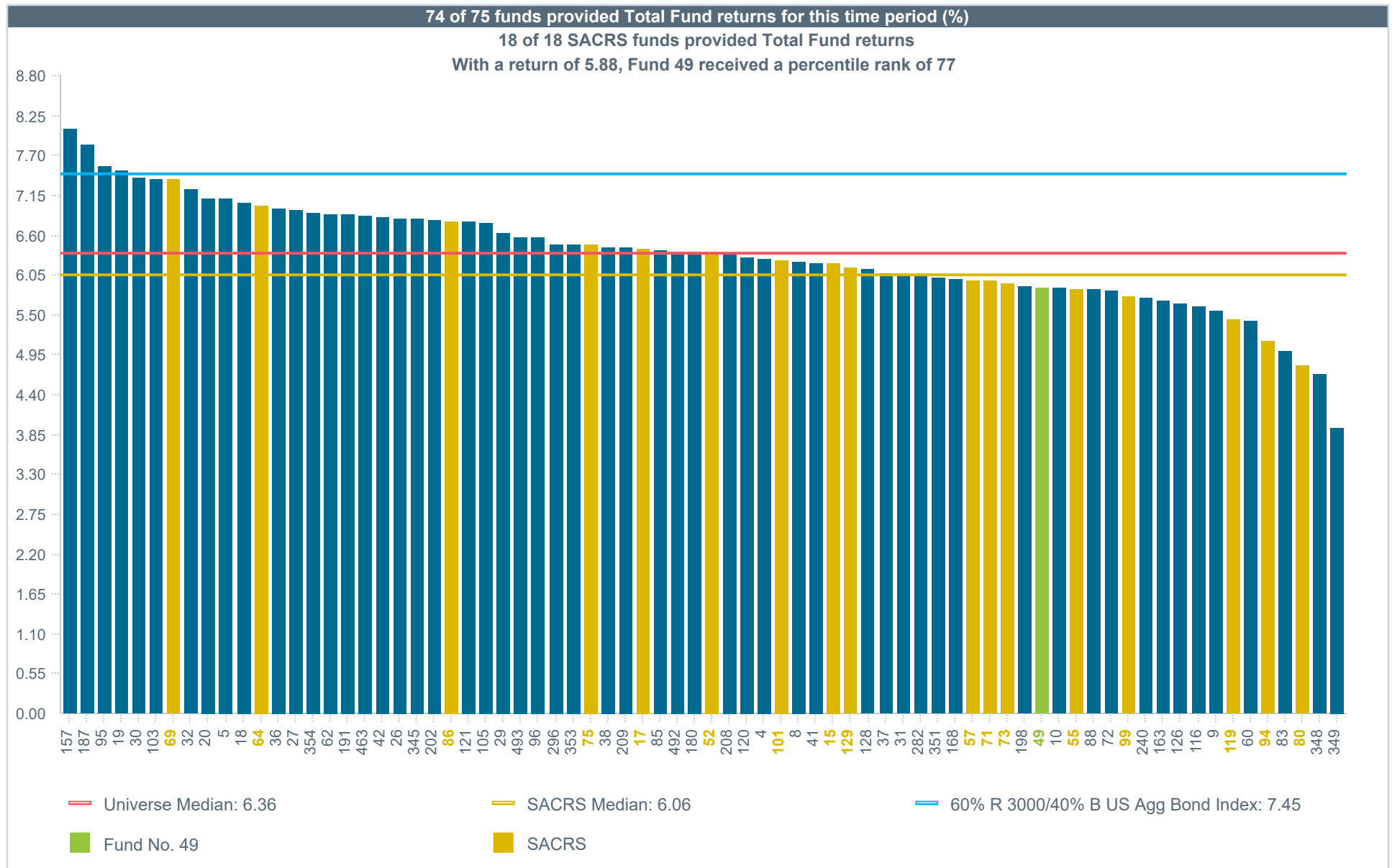






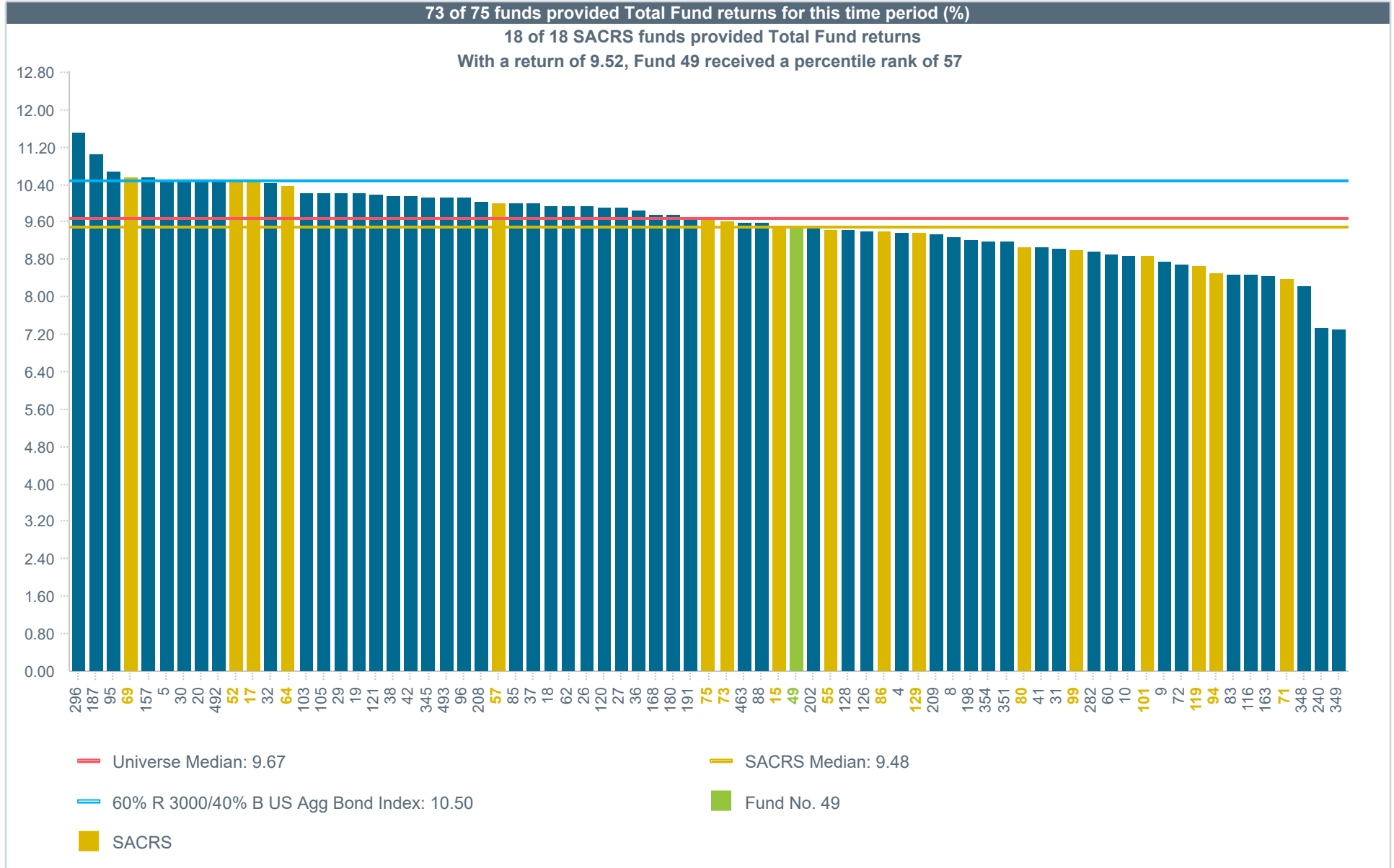
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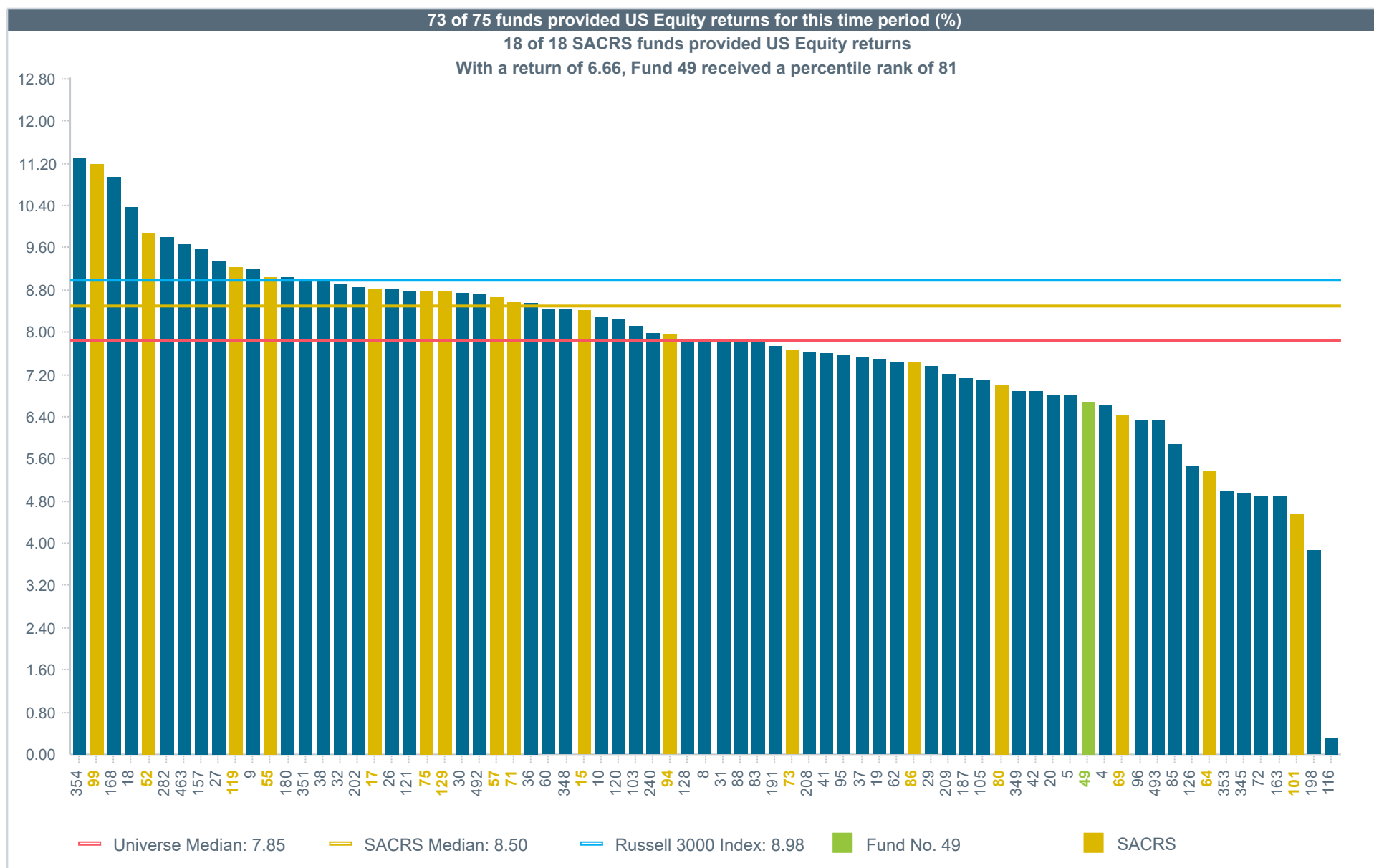
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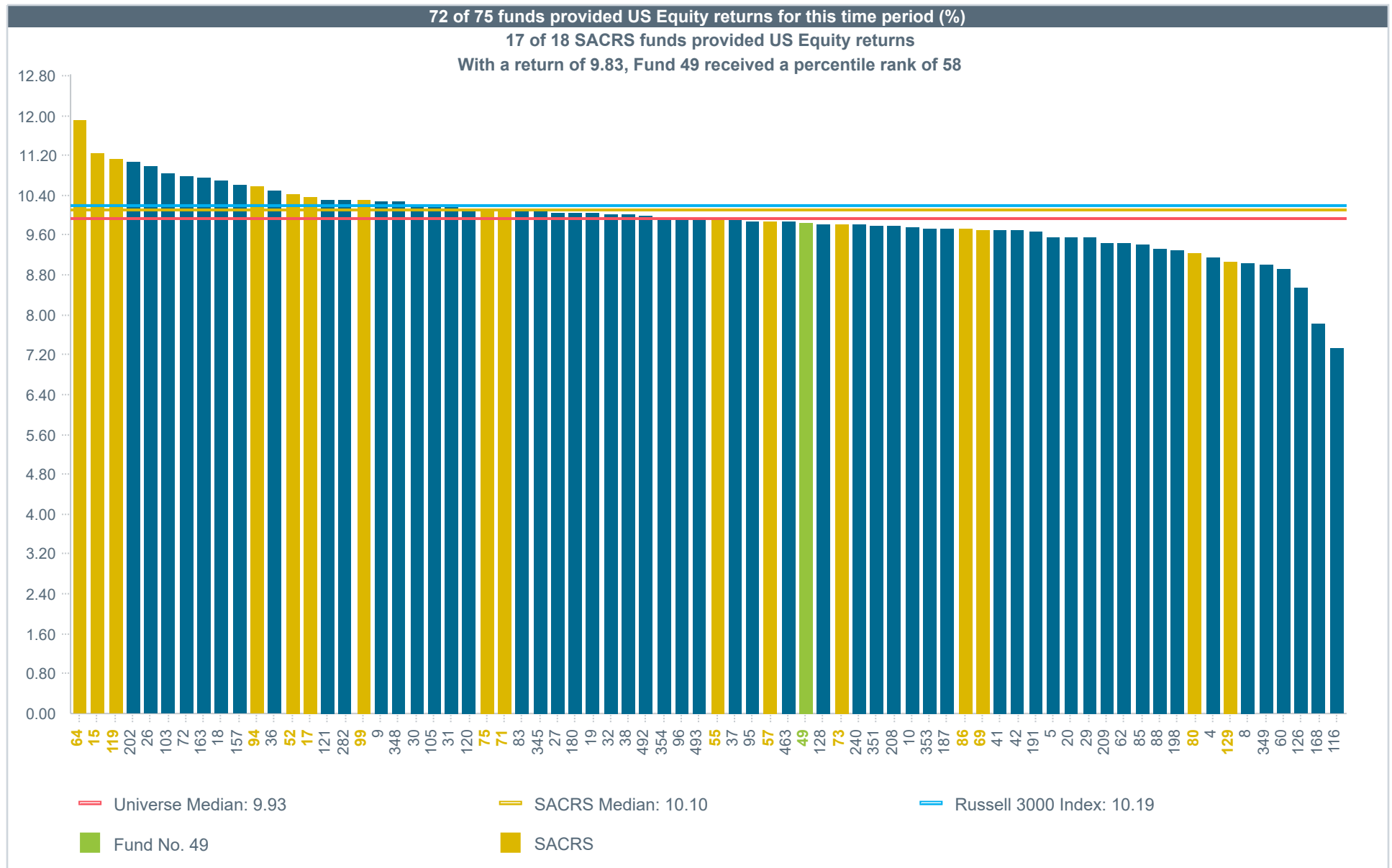
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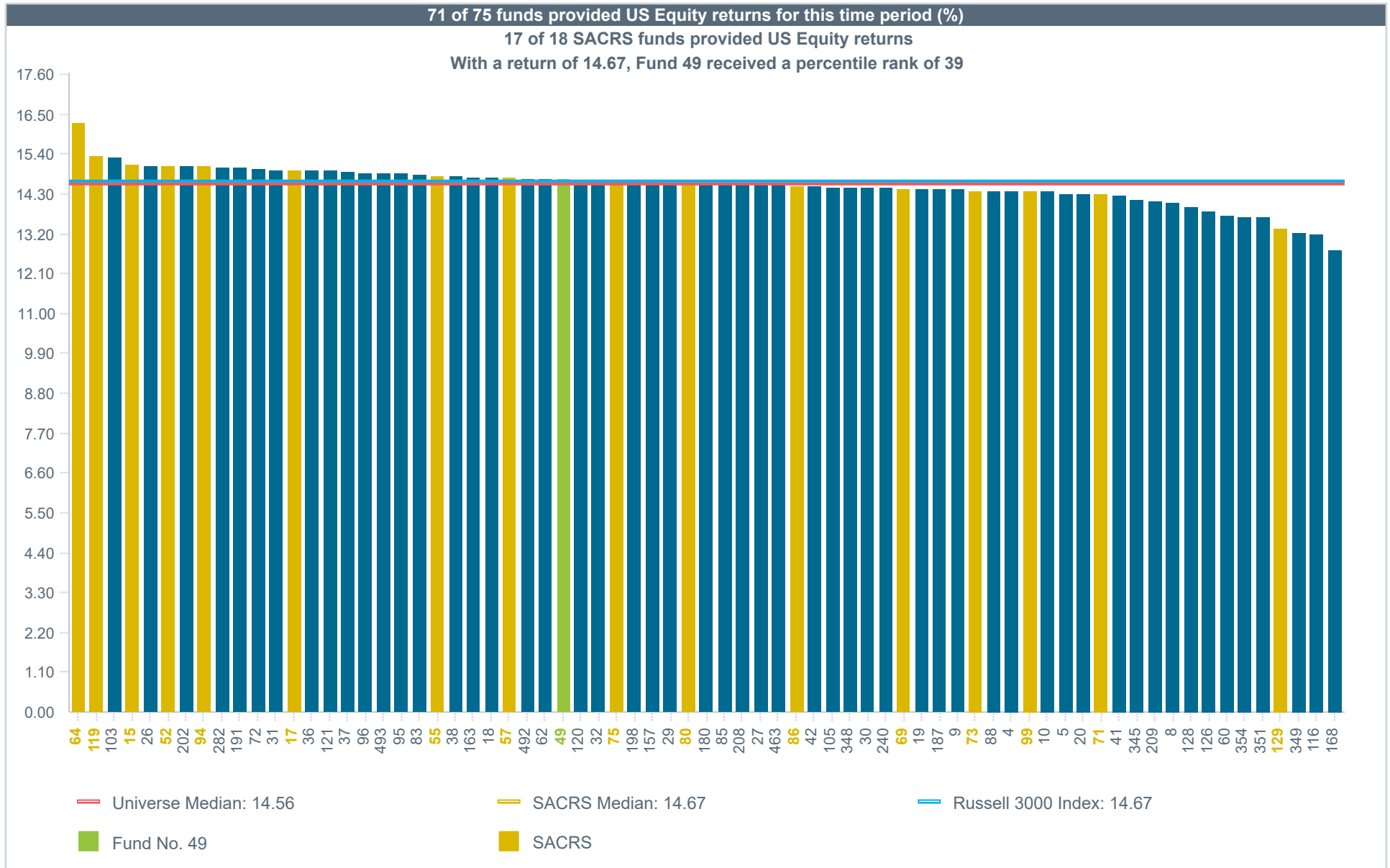
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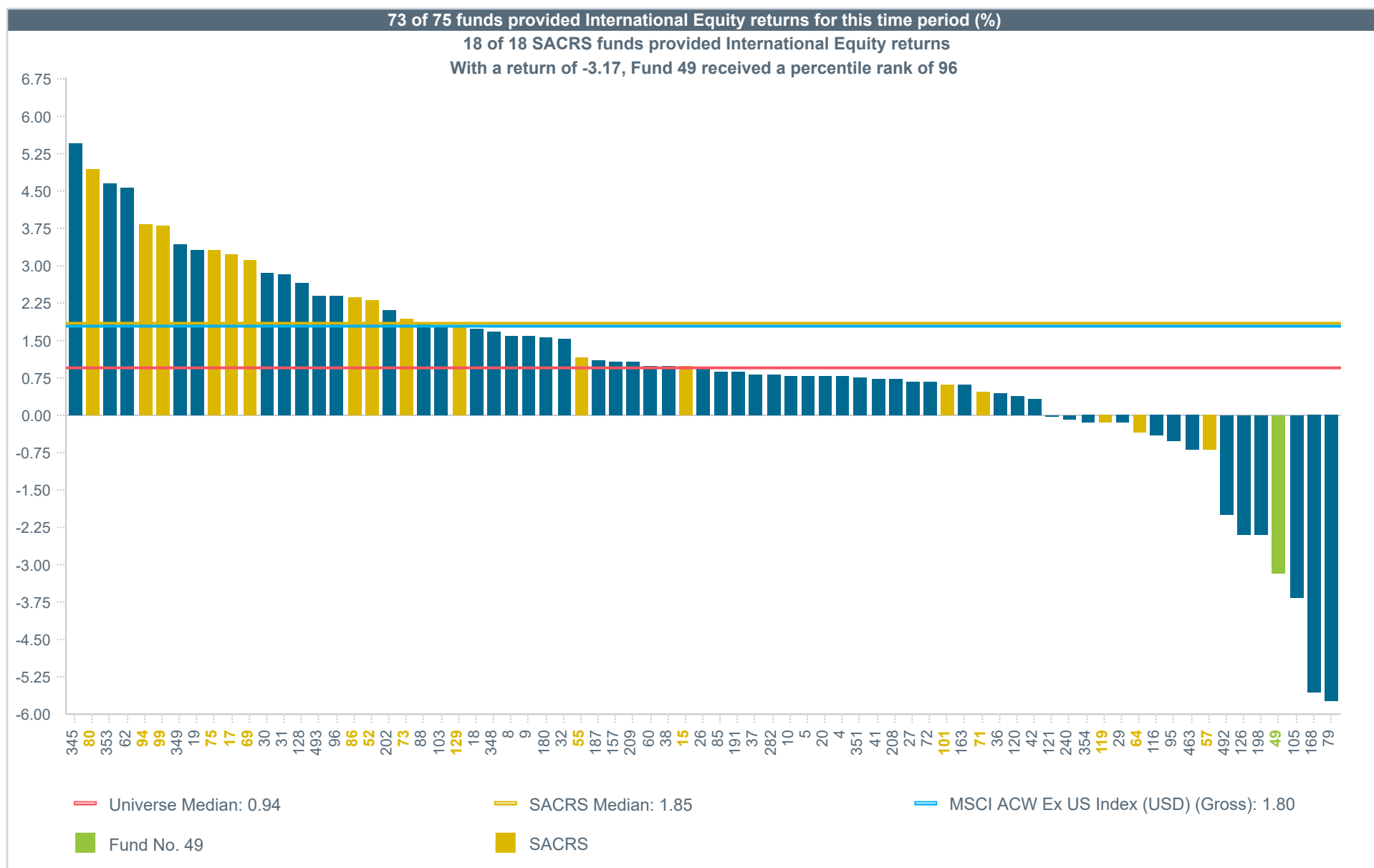
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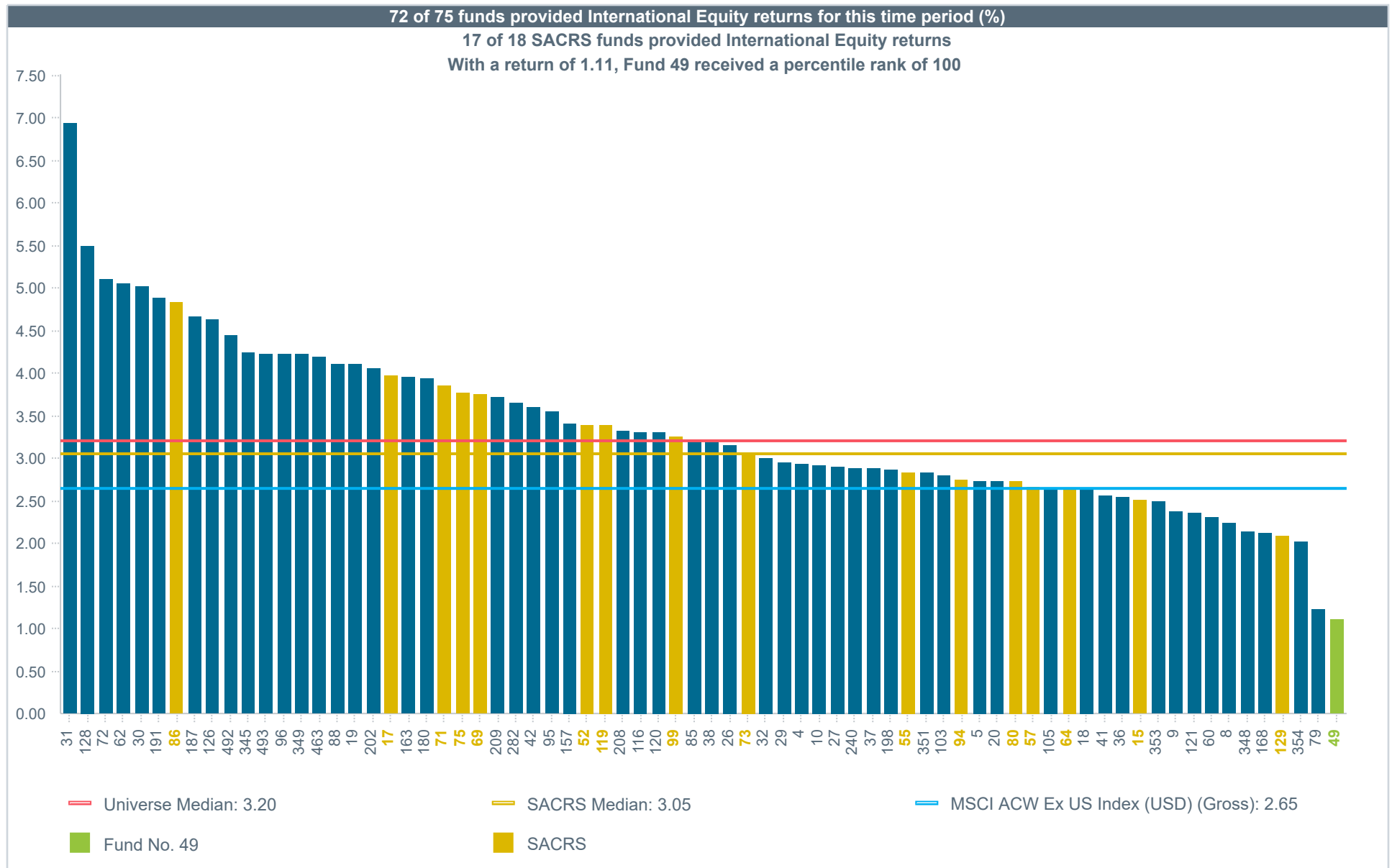
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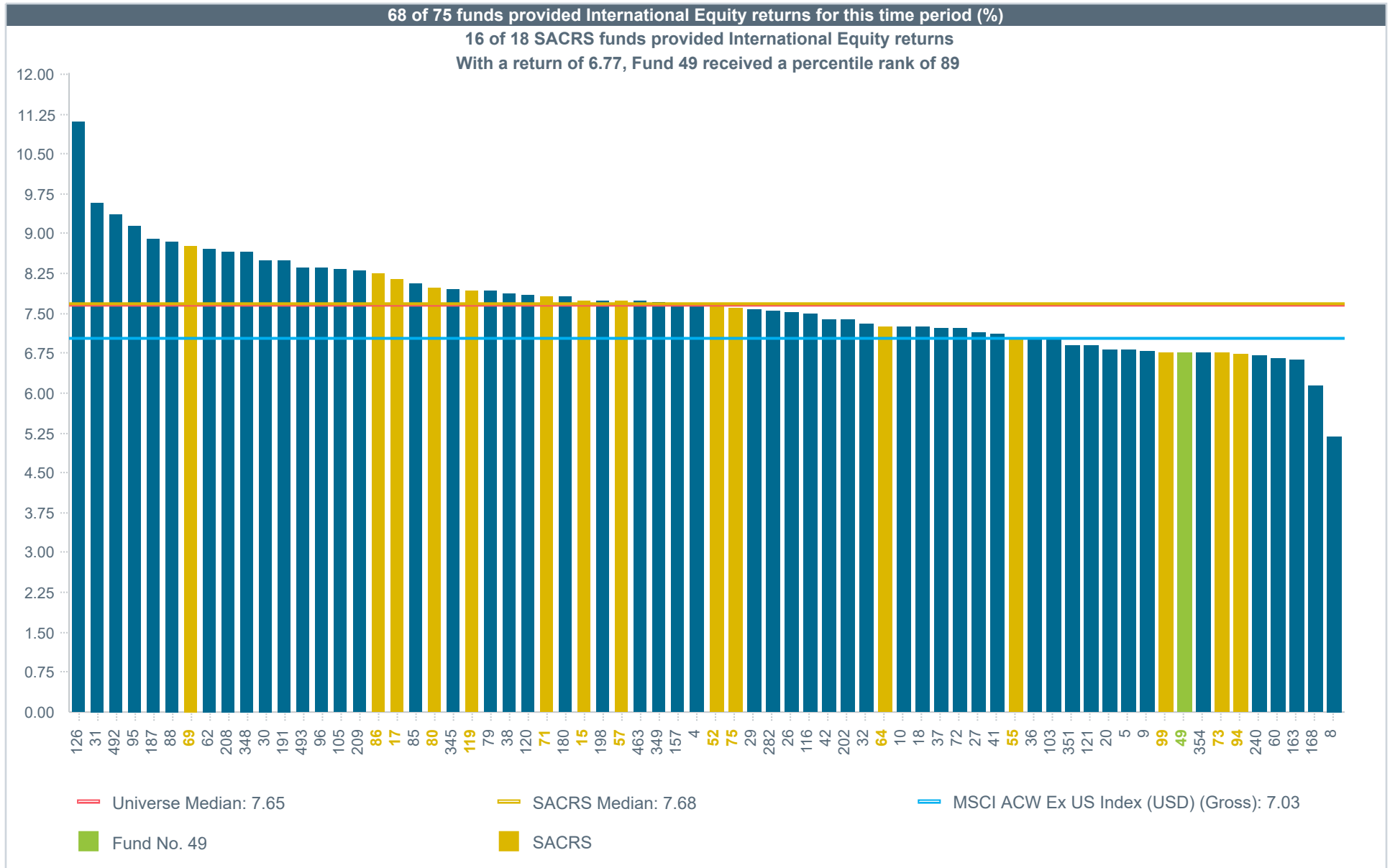


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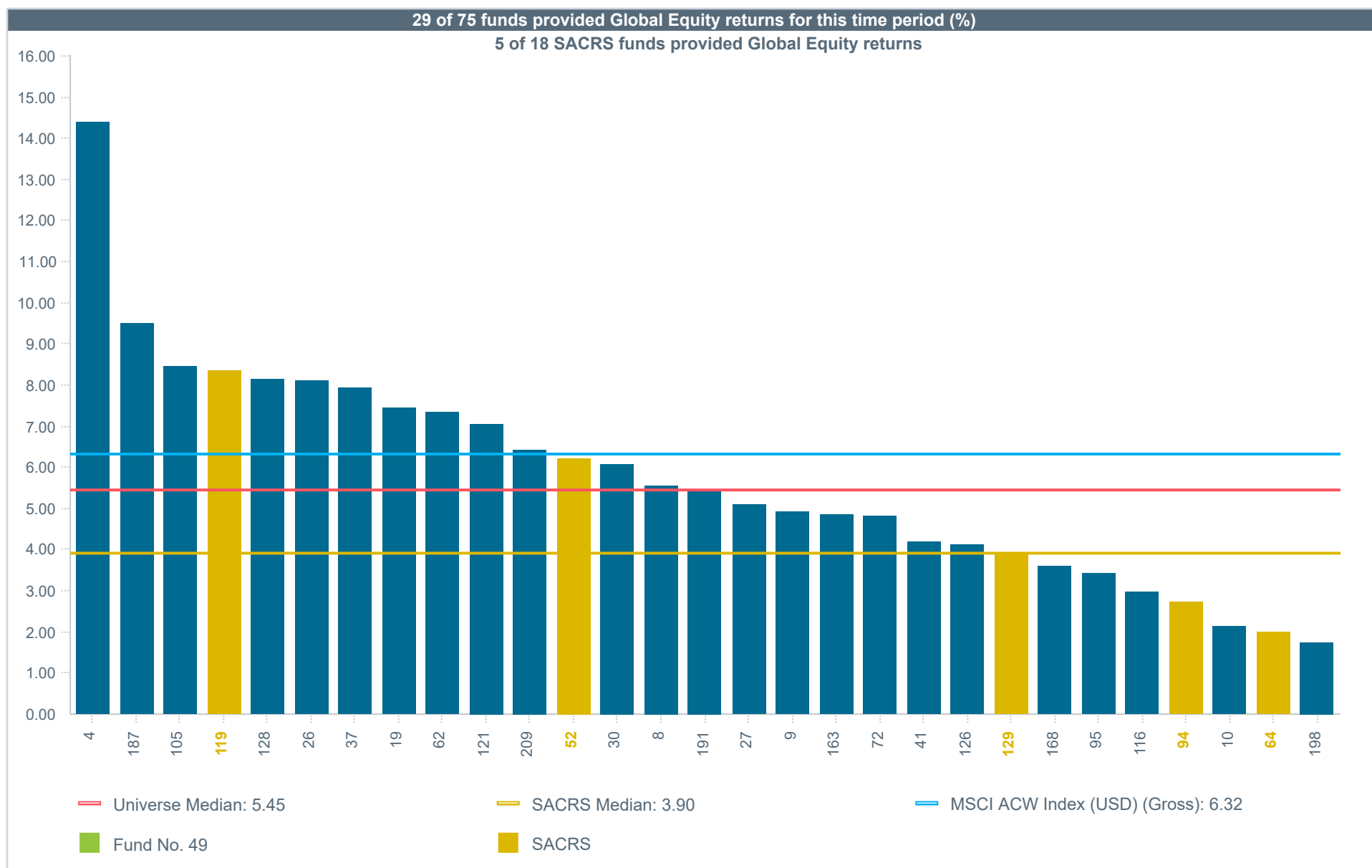


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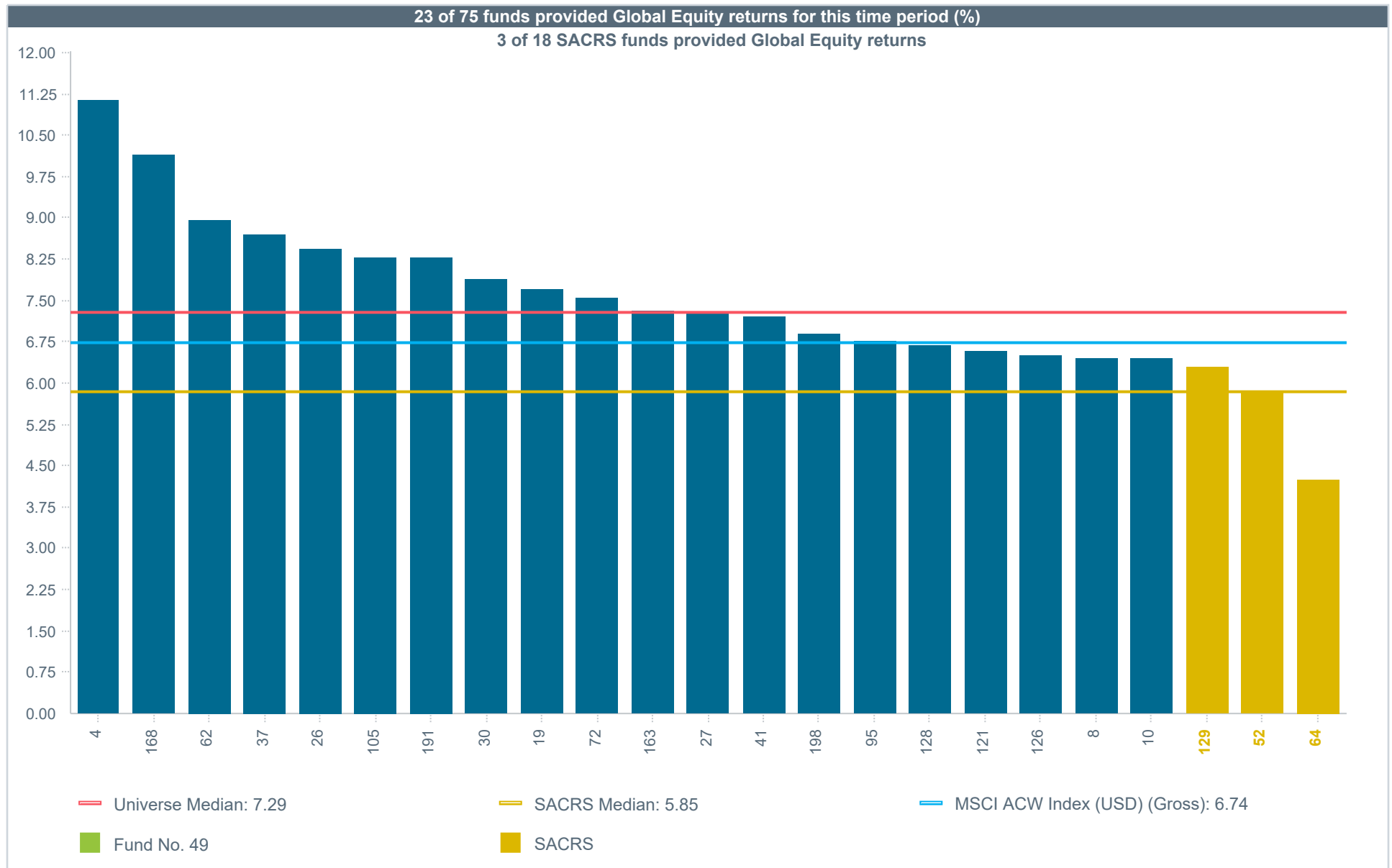


Funds with less history than the specified time period will not appear in the chart.

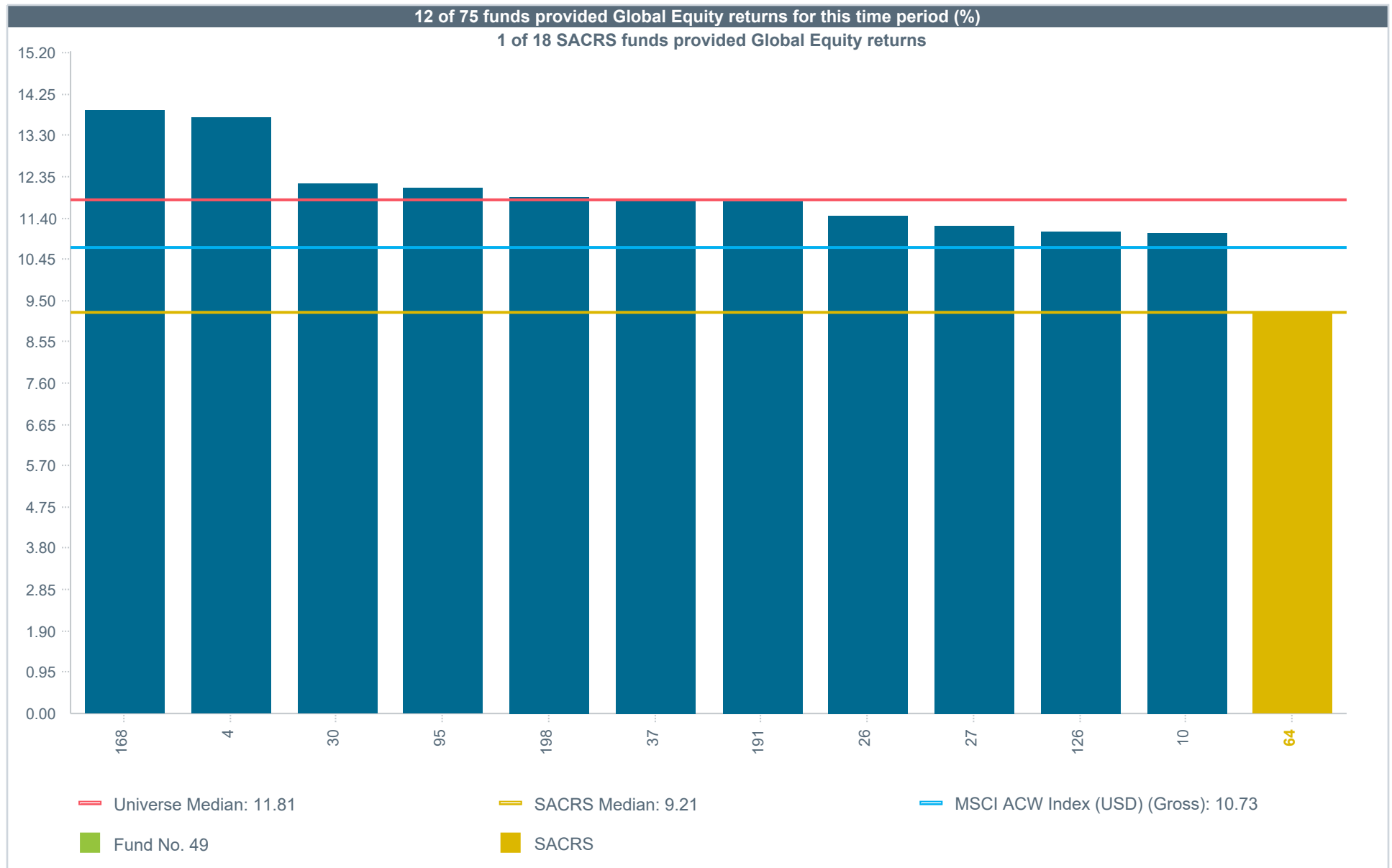




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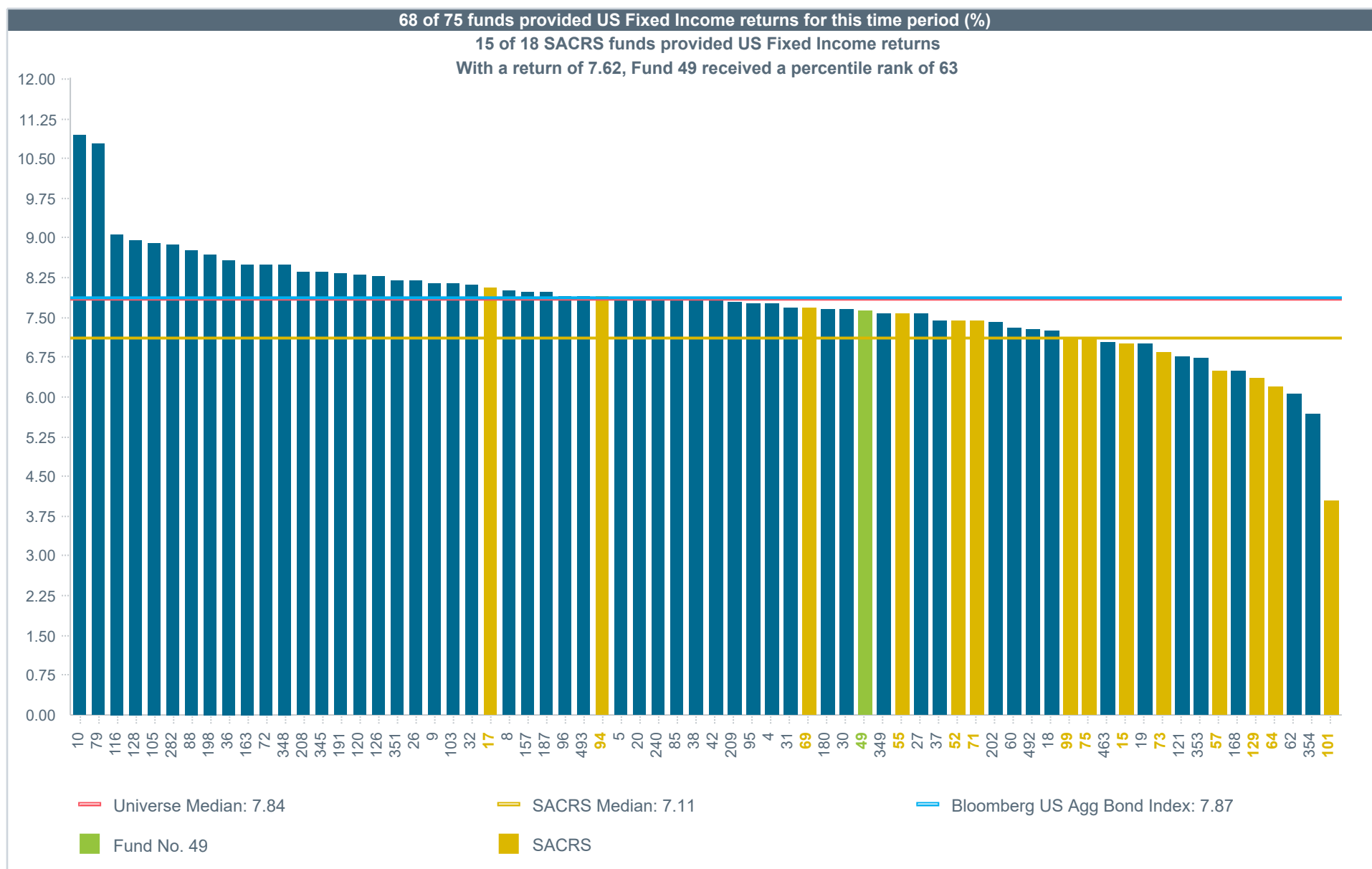


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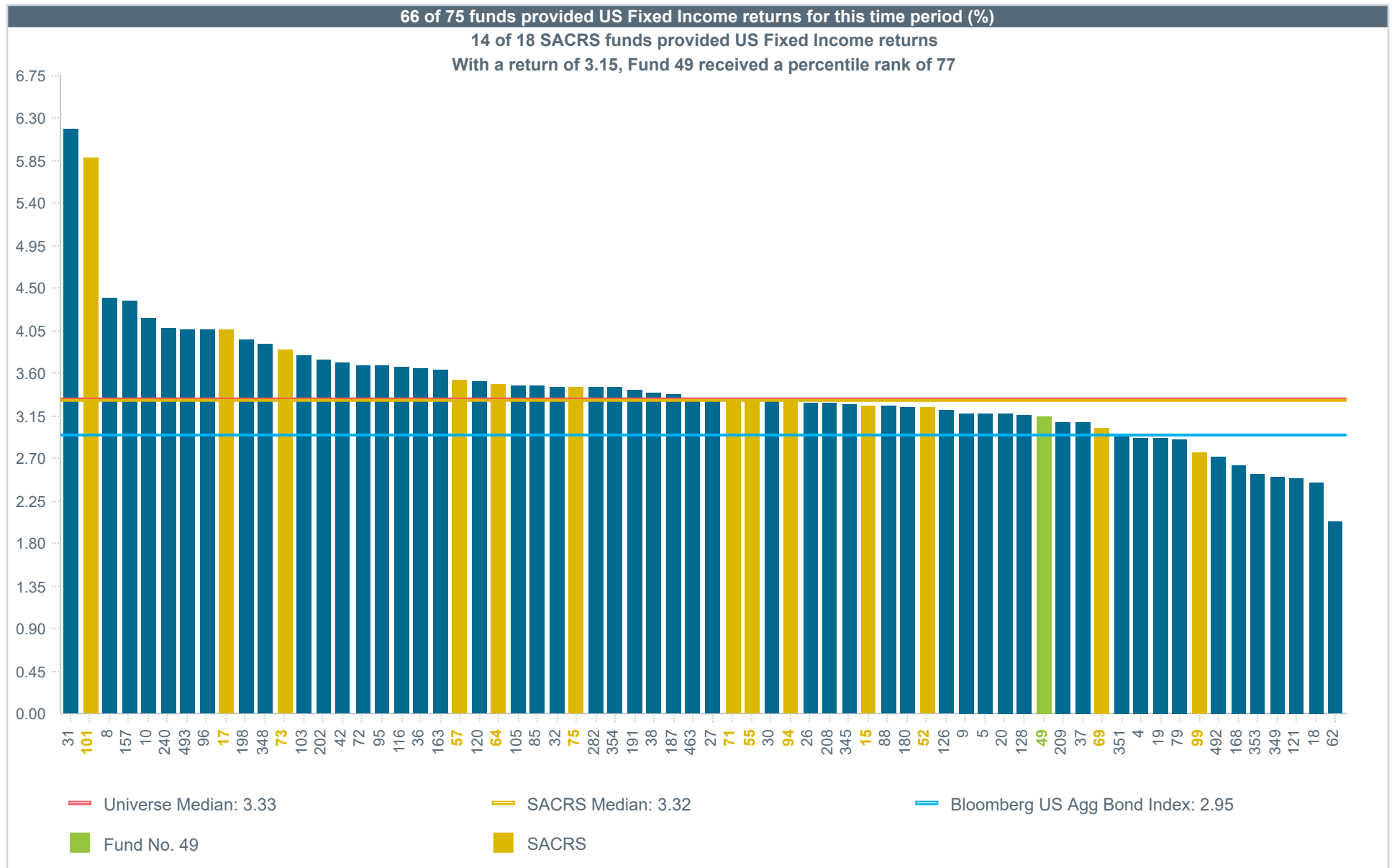
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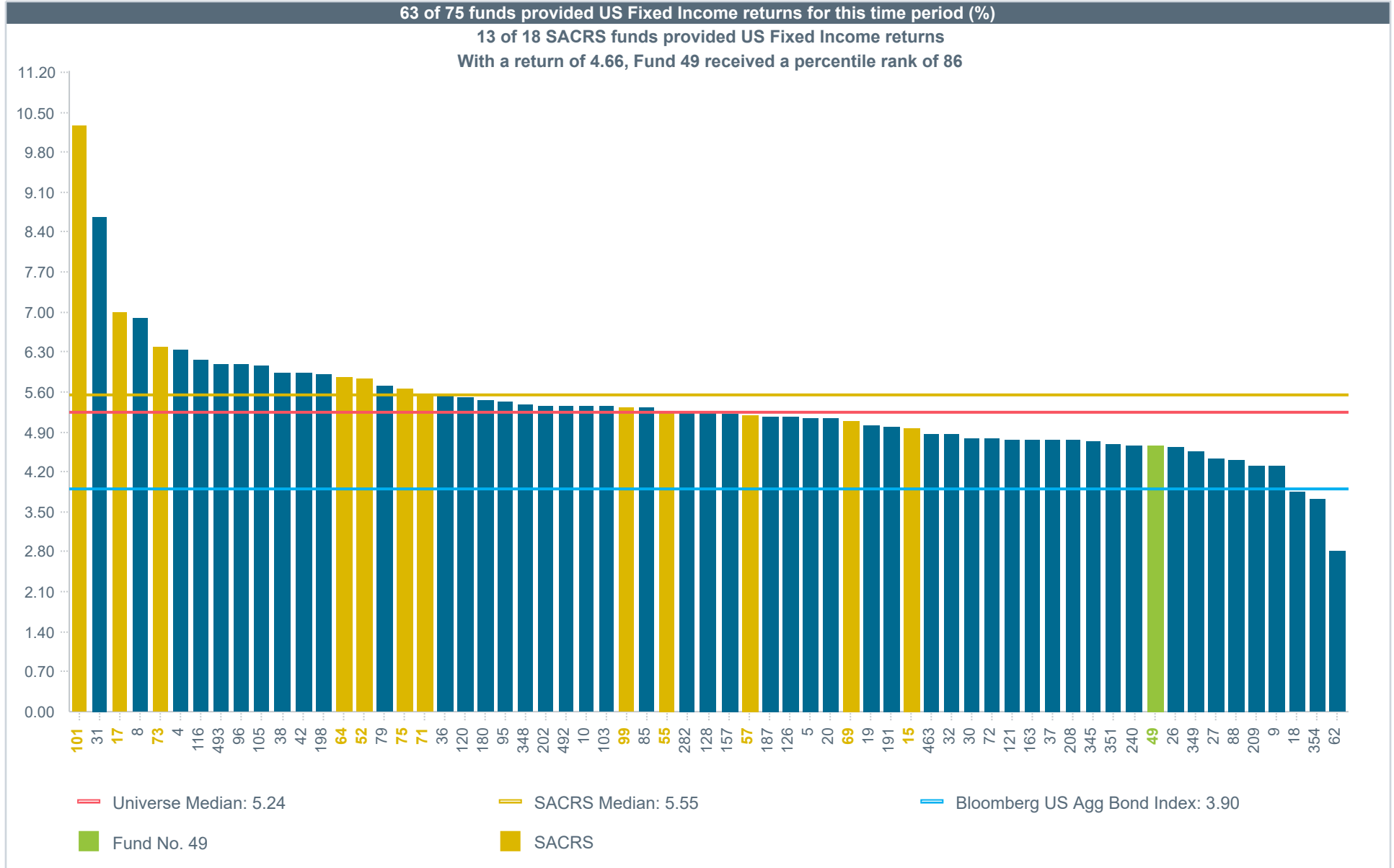


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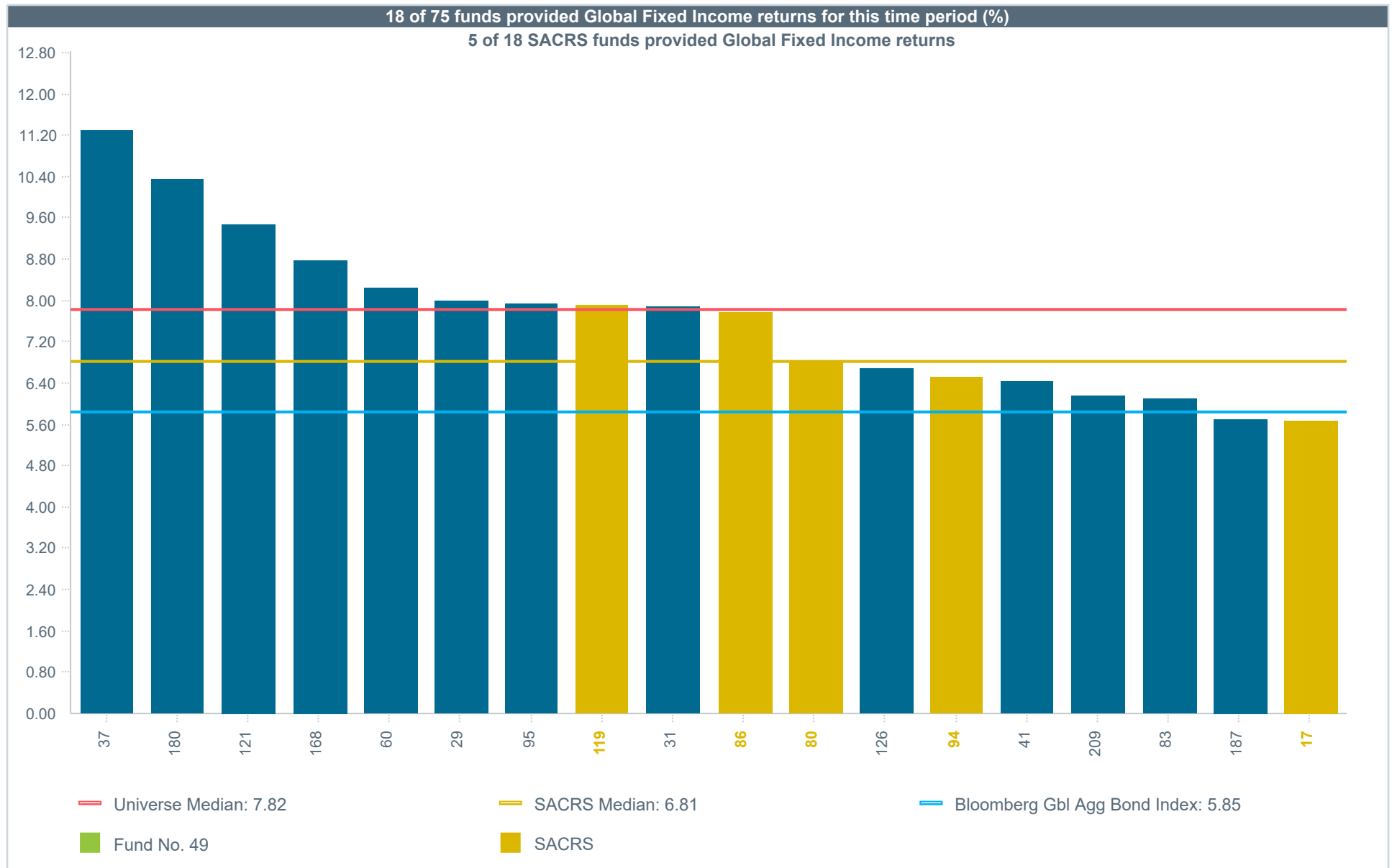




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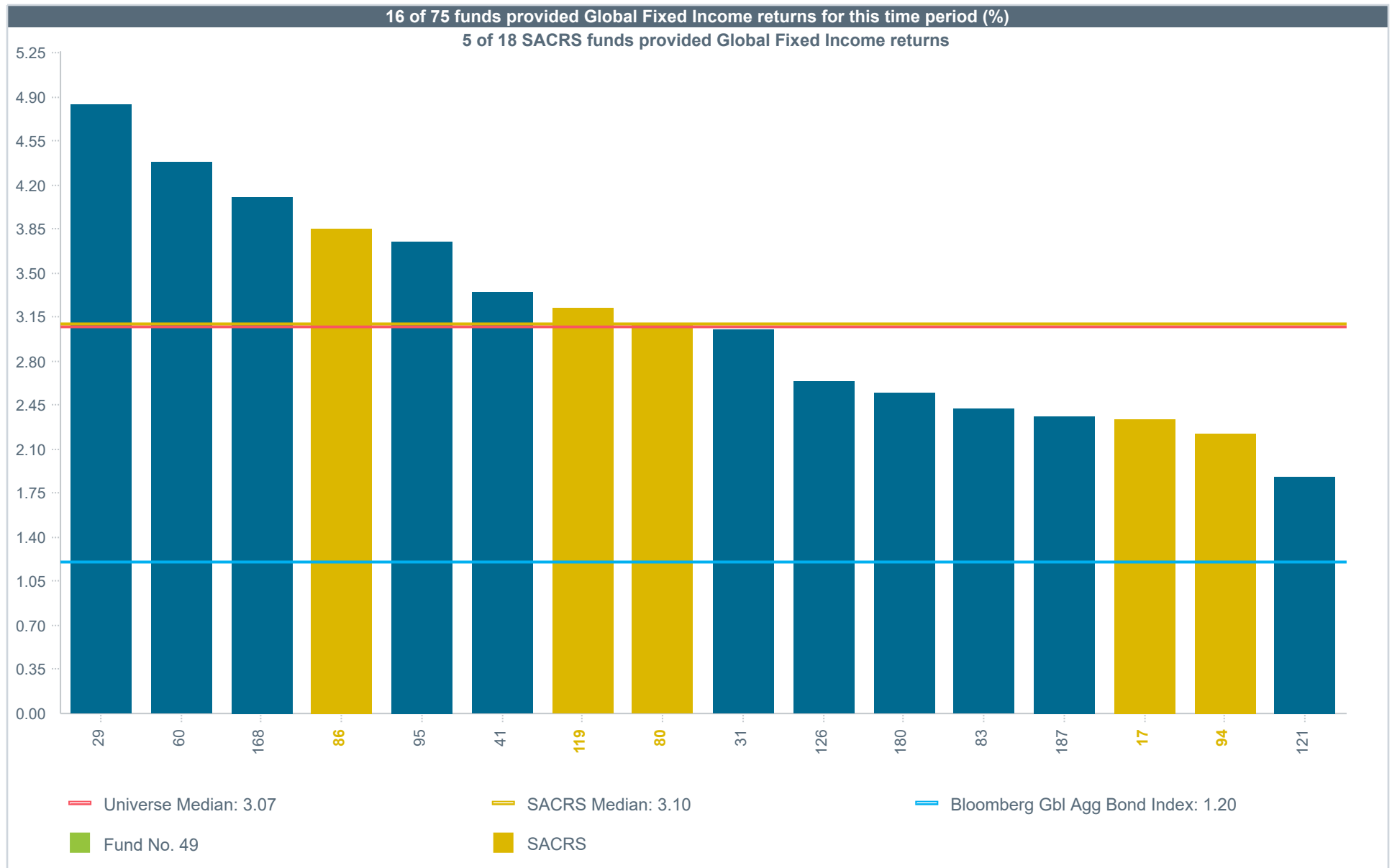


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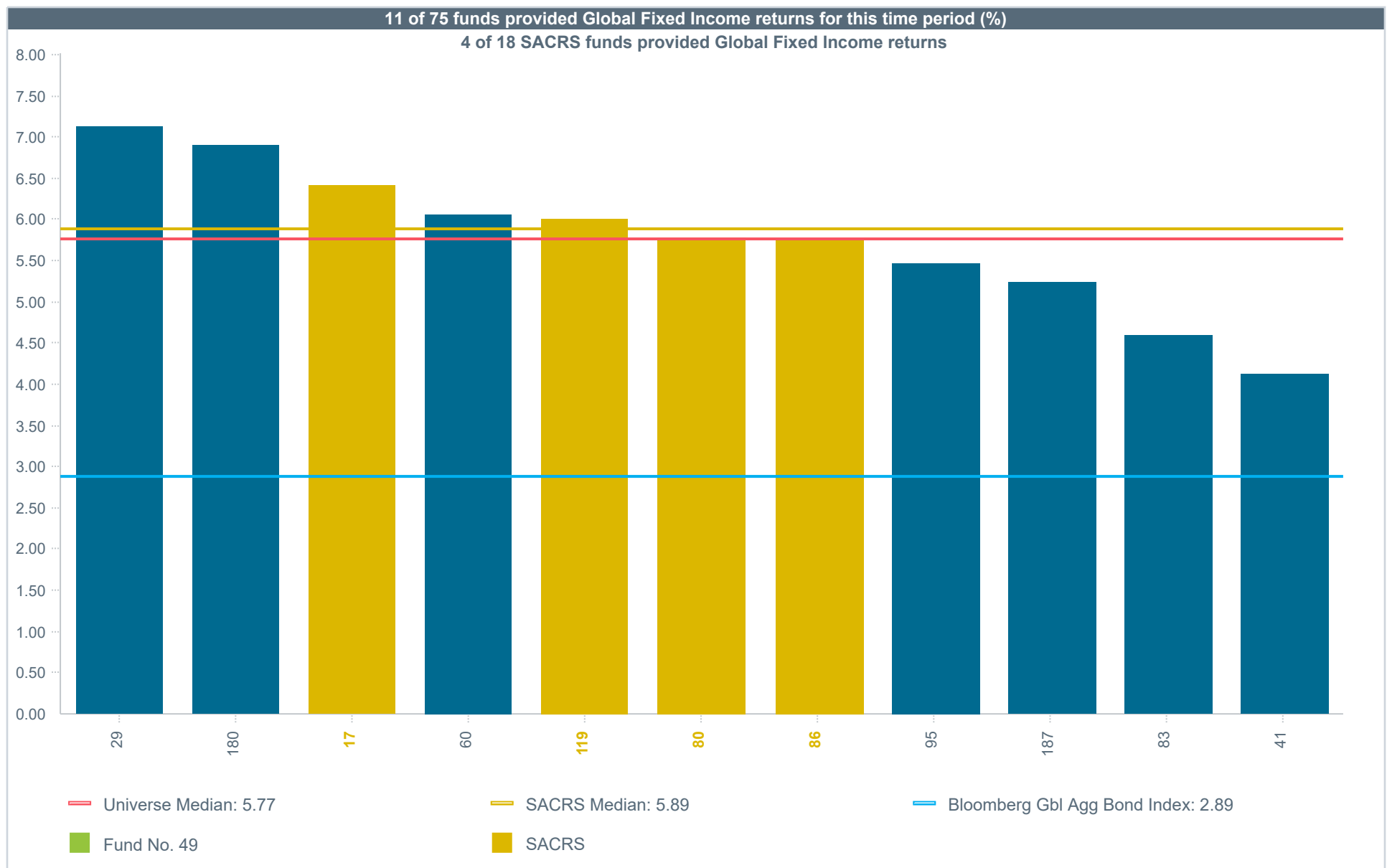


Funds with less history than the specified time period will not appear in the chart.



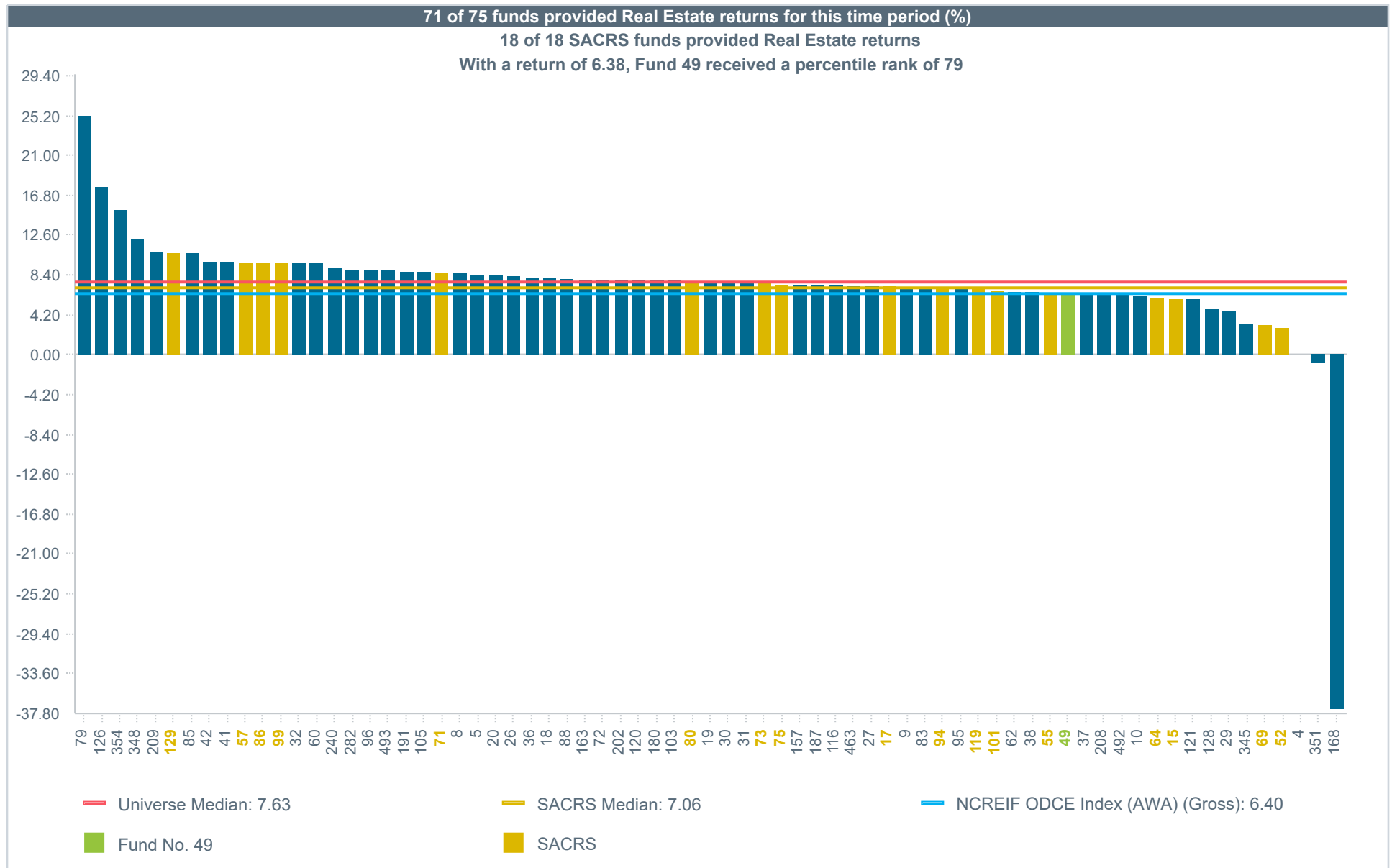


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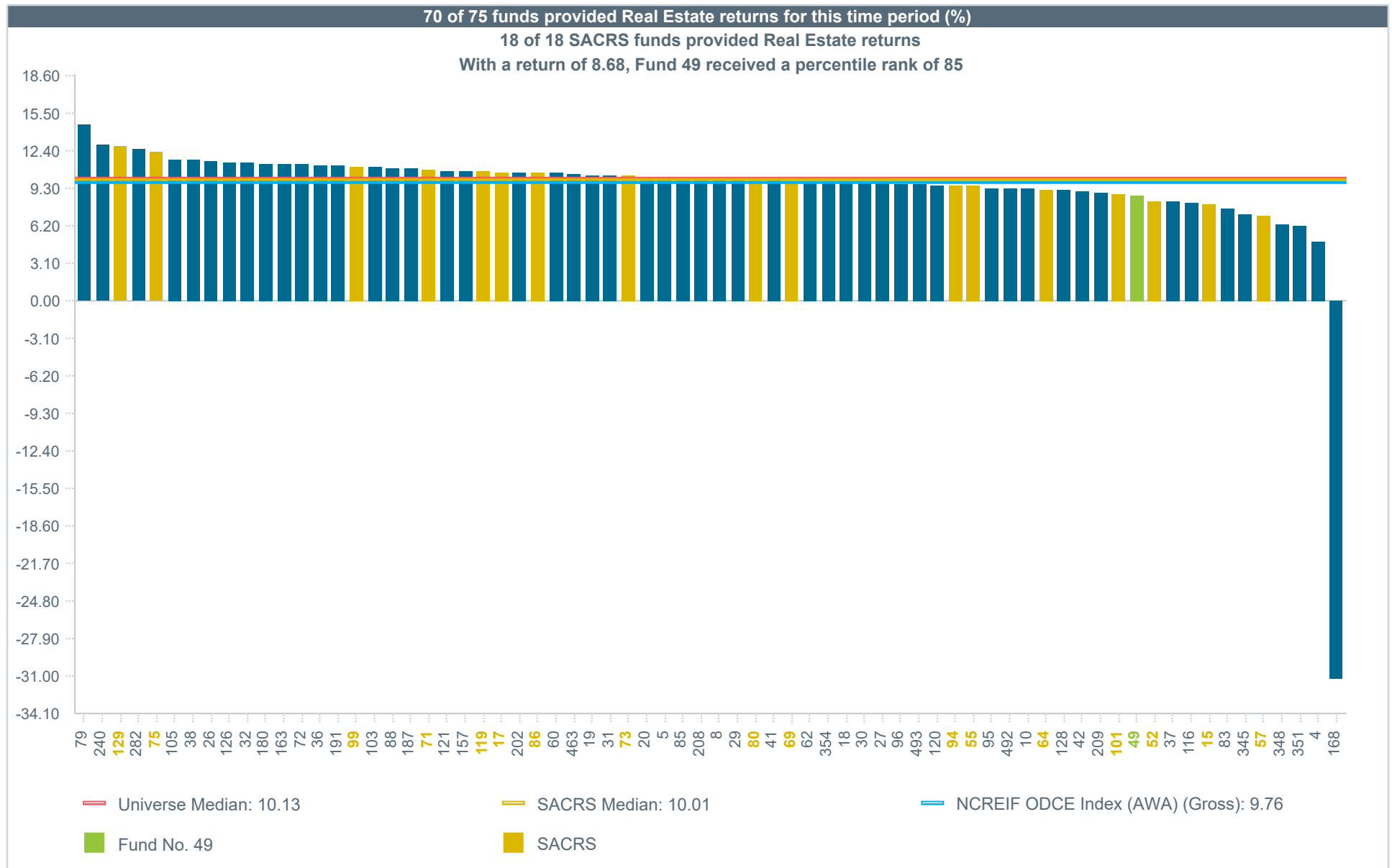
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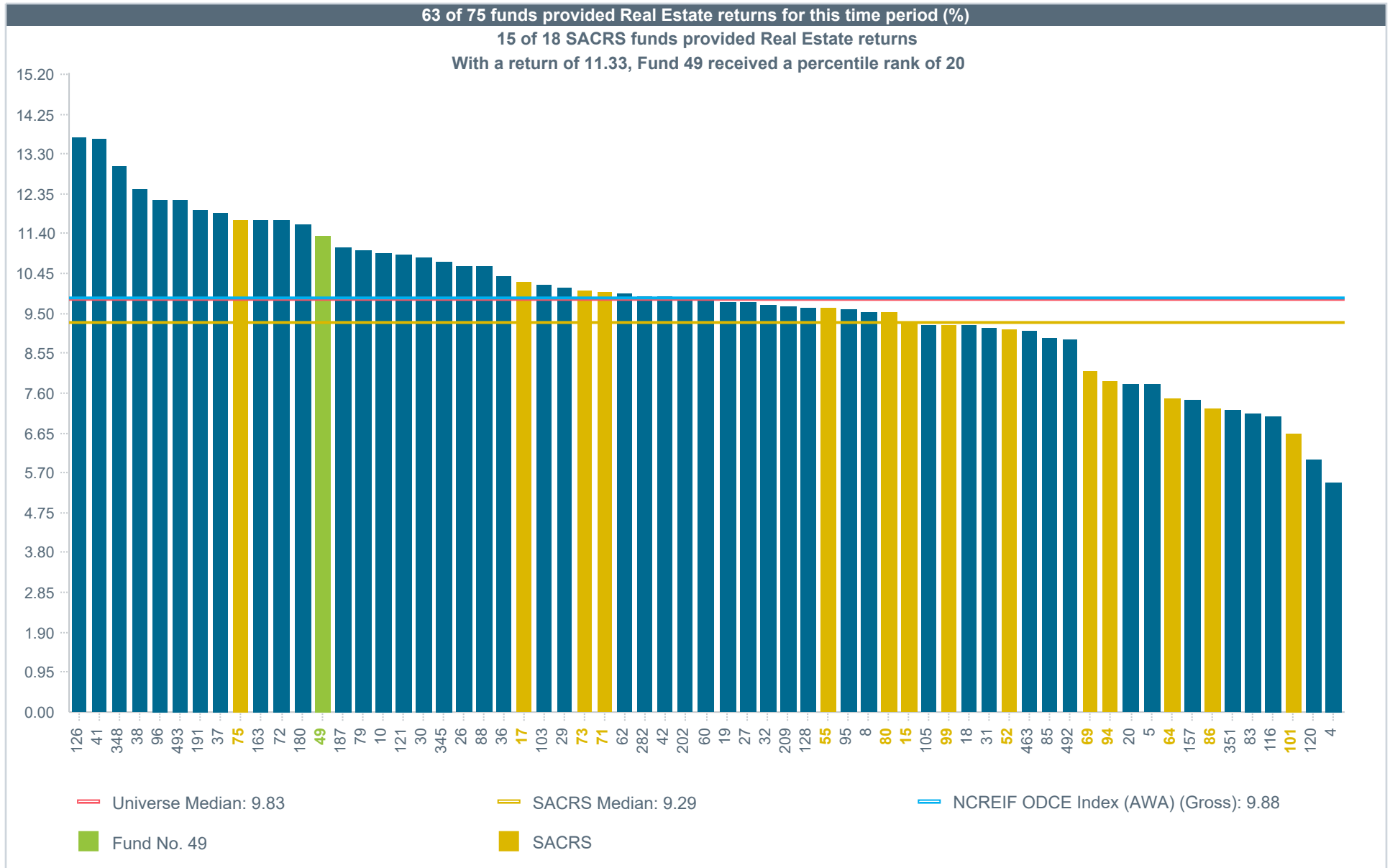
Funds with less history than the specified time period will not appear in the chart.





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





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

5 Year Annualized Total Fund Returns vs. Standard Deviation

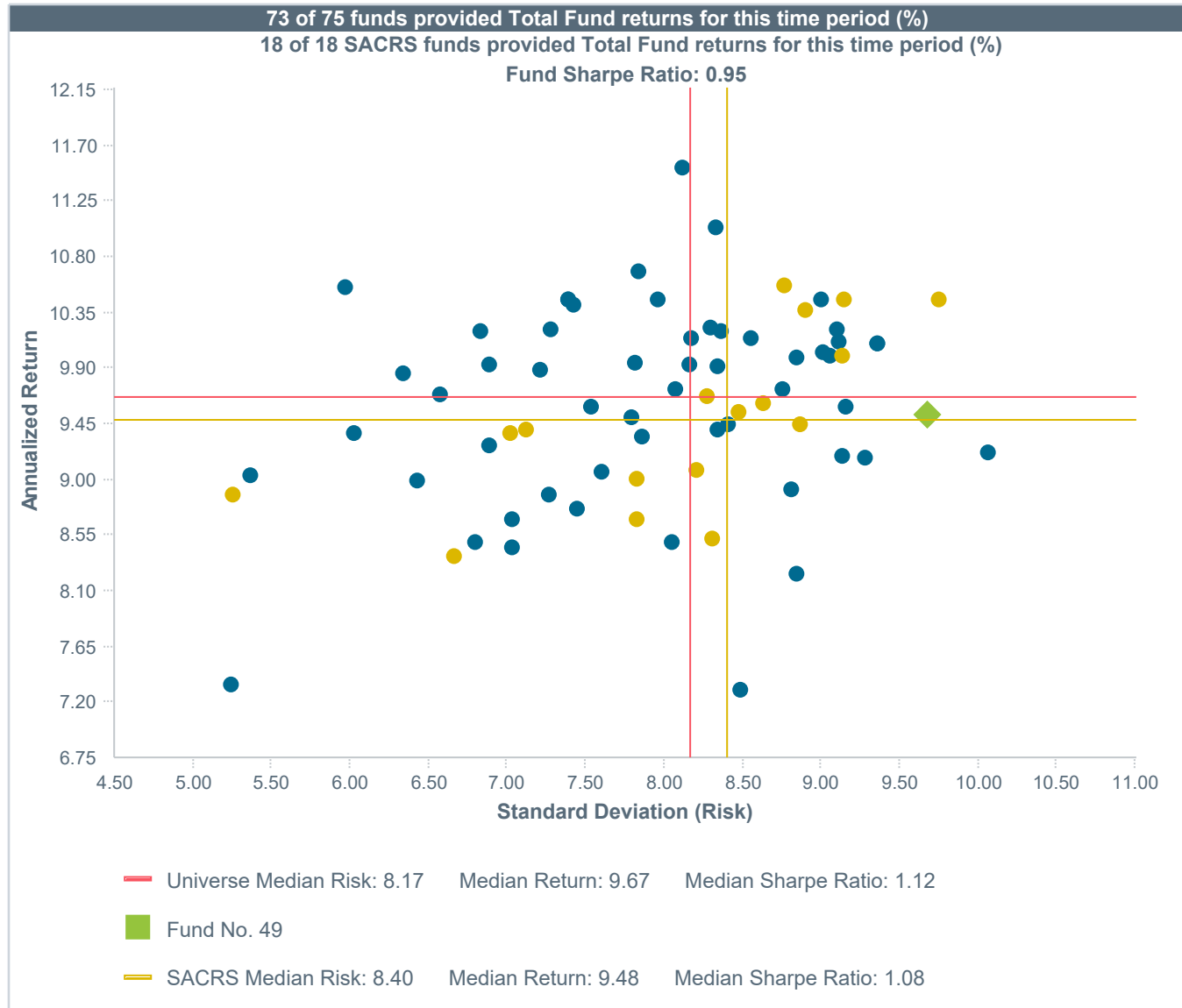


ID	Risk (%)	Return (%)	Sharpe
69	6.30	7.36	1.03
64	6.58	7.01	0.94
86	5.43	6.79	1.09
75	5.81	6.46	0.98
17	7.25	6.42	0.78
52	6.79	6.36	0.83
101	4.35	6.25	1.23
15	6.48	6.20	0.84
129	5.61	6.15	0.95
57	6.59	5.98	0.79
71	5.15	5.97	1.00
73	6.03	5.94	0.85
49	7.99	5.88	0.65
55	6.47	5.86	0.79
99	5.44	5.76	0.92
119	5.90	5.44	0.79
94	5.76	5.14	0.76
80	5.82	4.79	0.70

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 June 30, 2019



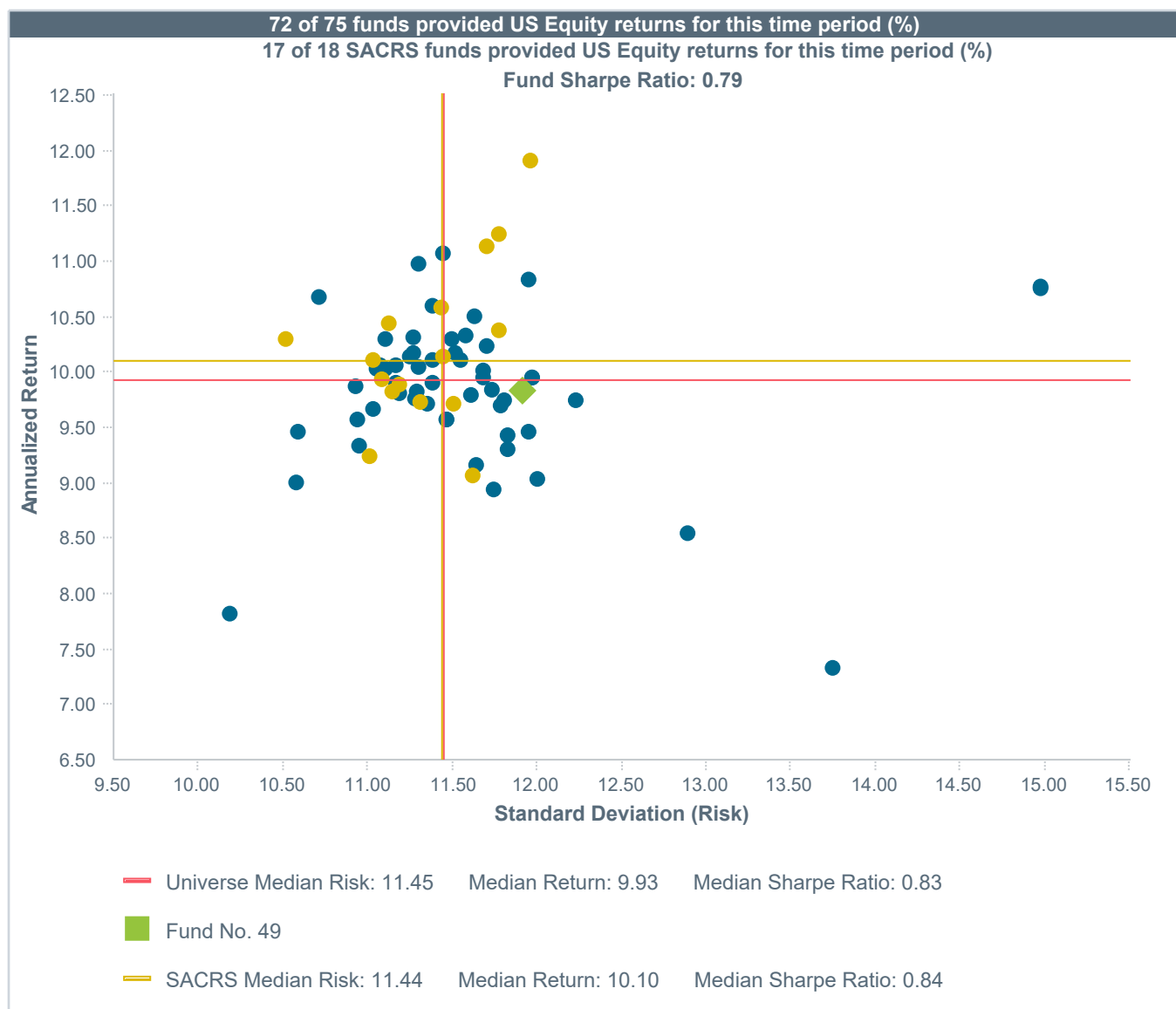
ID	Risk (%)	Return (%)	Sharpe
69	8.77	10.56	1.14
52	9.16	10.44	1.09
17	9.76	10.44	1.03
64	8.91	10.35	1.11
57	9.15	9.99	1.04
75	8.28	9.67	1.11
73	8.63	9.61	1.06
15	8.49	9.53	1.07
49	9.68	9.52	0.95
55	8.87	9.43	1.01
86	7.13	9.39	1.24
129	7.03	9.36	1.25
80	8.21	9.07	1.05
99	7.84	9.00	1.09
101	5.26	8.87	1.56
119	7.84	8.66	1.04
94	8.31	8.51	0.97
71	6.67	8.36	1.17

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 June 30, 2019



ID	Risk (%)	Return (%)	Sharpe
64	11.97	11.90	0.94
15	11.79	11.24	0.90
119	11.71	11.13	0.90
94	11.44	10.57	0.87
52	11.13	10.43	0.88
17	11.78	10.37	0.84
99	10.52	10.30	0.92
75	11.45	10.14	0.84
71	11.04	10.10	0.86
55	11.09	9.92	0.84
57	11.19	9.88	0.83
49	11.91	9.83	0.79
73	11.15	9.82	0.83
86	11.31	9.72	0.81
69	11.51	9.71	0.80
80	11.02	9.23	0.79
129	11.63	9.06	0.74

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 June 30, 2019



ID	Risk (%)	Return (%)	Sharpe
64	14.67	16.25	1.09
119	14.41	15.31	1.04
15	14.76	15.08	1.01
52	13.77	15.06	1.07
94	14.11	15.05	1.05
17	14.47	14.95	1.02
55	13.76	14.76	1.05
57	14.08	14.72	1.03
49	14.37	14.67	1.01
75	14.09	14.65	1.02
80	14.10	14.56	1.02
86	13.88	14.51	1.03
69	14.60	14.43	0.98
73	14.20	14.38	1.00
99	13.50	14.37	1.04
71	13.74	14.28	1.02
129	12.77	13.33	1.02

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



5 Year Annualized International Equity Returns vs. Standard Deviation

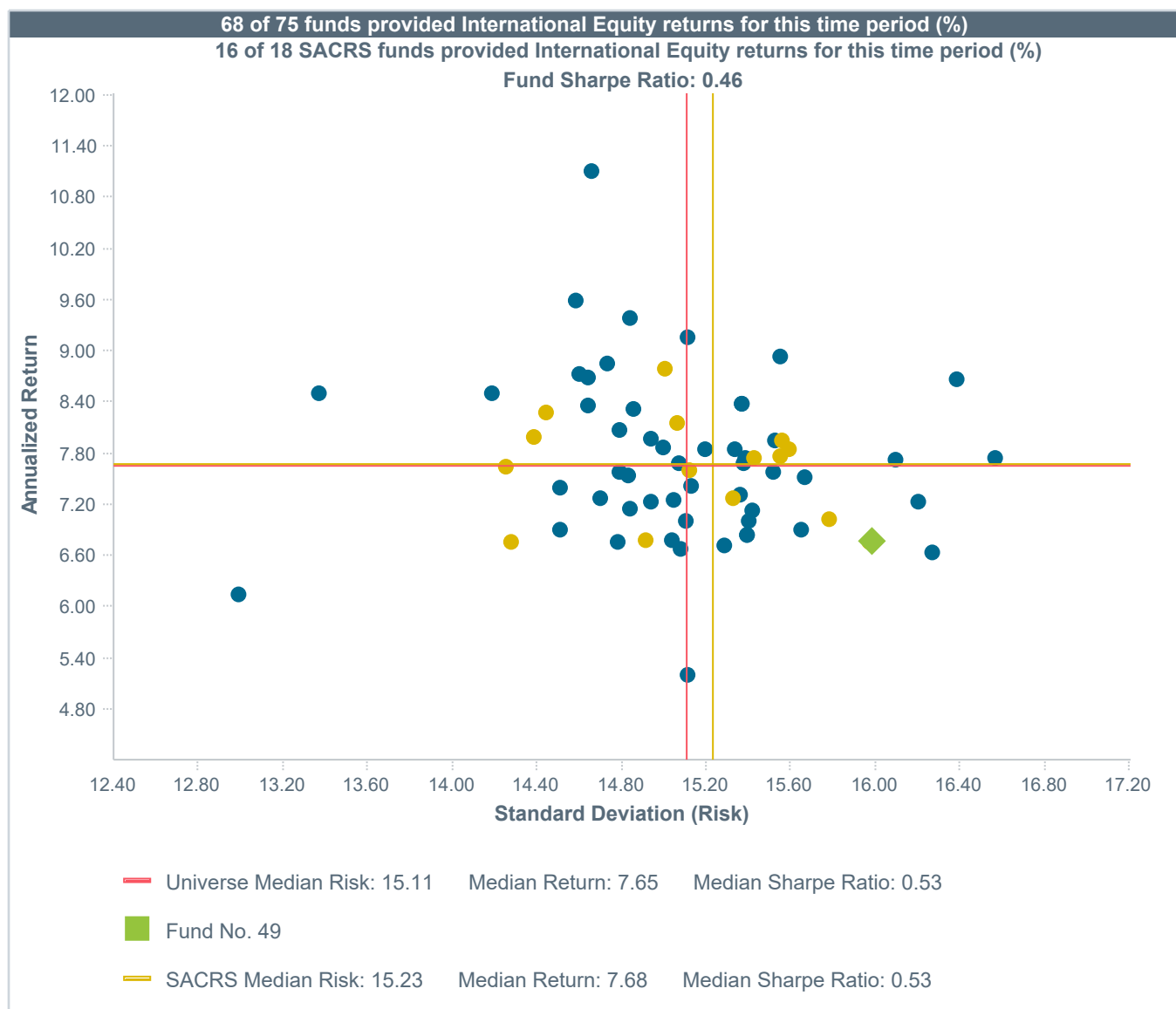


ID	Risk (%)	Return (%)	Sharpe
86	11.03	4.84	0.41
17	12.33	3.97	0.31
71	12.36	3.85	0.30
75	11.90	3.77	0.30
69	11.58	3.75	0.30
52	11.02	3.39	0.28
119	11.72	3.39	0.27
99	11.14	3.26	0.27
73	11.57	3.05	0.24
55	11.59	2.84	0.23
94	11.74	2.76	0.22
80	11.74	2.73	0.22
57	11.73	2.66	0.21
64	11.78	2.65	0.21
15	12.31	2.51	0.19
129	12.45	2.09	0.16
49	12.63	1.11	0.08

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 June 30, 2019



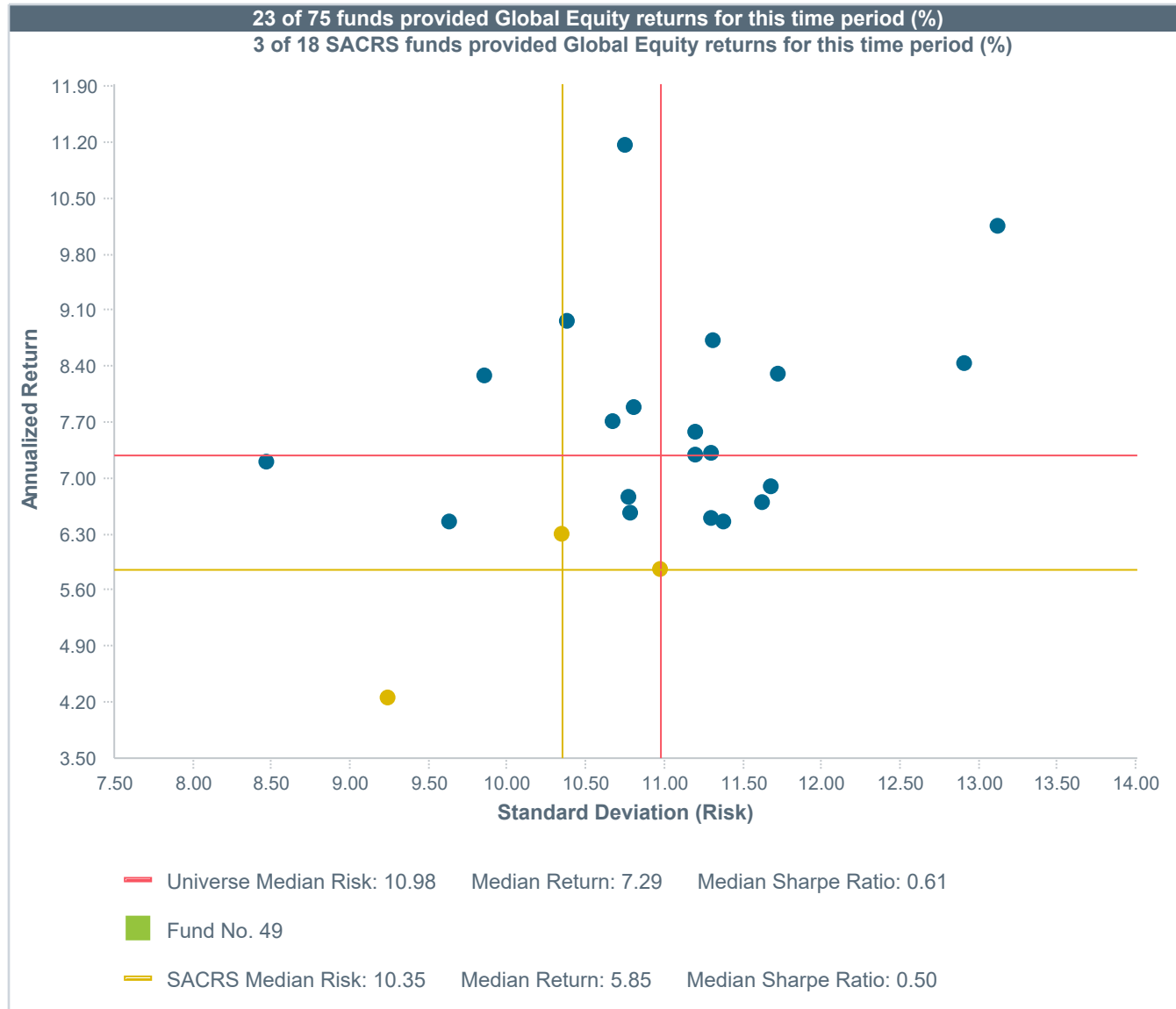
ID	Risk (%)	Return (%)	Sharpe
69	15.01	8.77	0.61
86	14.45	8.26	0.59
17	15.07	8.15	0.57
80	14.39	7.99	0.58
119	15.56	7.94	0.54
71	15.60	7.83	0.54
15	15.56	7.74	0.53
57	15.43	7.73	0.53
52	14.26	7.62	0.56
75	15.13	7.59	0.53
64	15.34	7.26	0.51
55	15.79	7.02	0.48
99	14.92	6.77	0.48
49	15.99	6.77	0.46
73	14.28	6.75	0.50
94	15.98	6.75	0.46

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



Risk/Return Analysis
5 Year Annualized Global Equity Returns vs. Standard Deviation

As of June 30, 2019



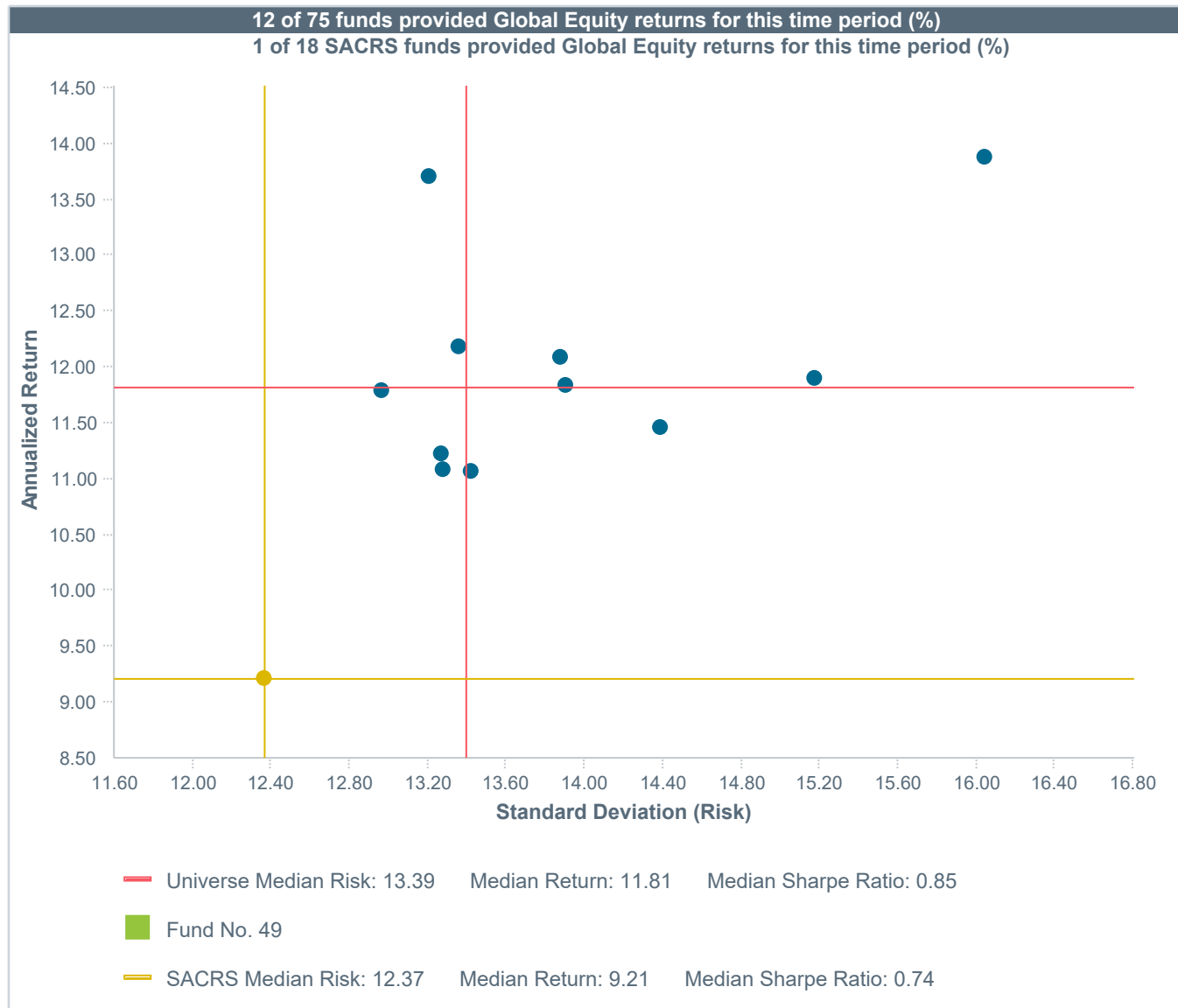
ID	Risk (%)	Return (%)	Sharpe
129	10.35	6.29	0.56
52	10.98	5.85	0.50
64	9.24	4.24	0.41

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



Risk/Return Analysis
10 Year Annualized Global Equity Returns vs. Standard Deviation

As of June 30, 2019



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 June 30, 2019



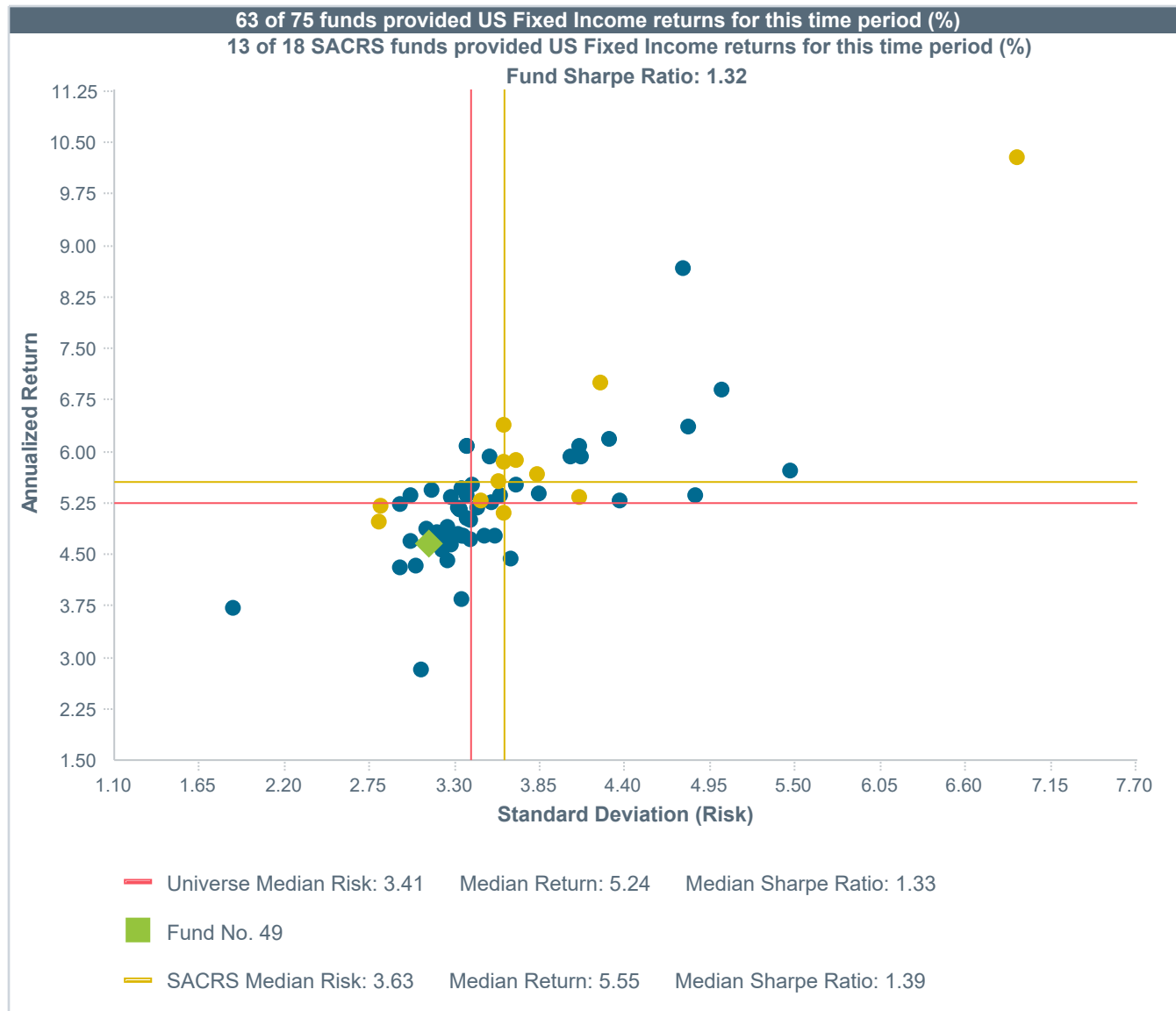
ID	Risk (%)	Return (%)	Sharpe
101	3.92	5.89	1.26
17	3.17	4.06	1.02
73	2.63	3.84	1.15
57	2.40	3.53	1.12
64	1.99	3.48	1.35
75	3.44	3.46	0.77
71	3.22	3.32	0.79
55	3.16	3.31	0.80
94	2.97	3.30	0.85
15	2.56	3.25	0.96
52	2.61	3.24	0.94
49	2.77	3.15	0.85
69	3.55	3.02	0.63
99	3.35	2.77	0.59

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 June 30, 2019

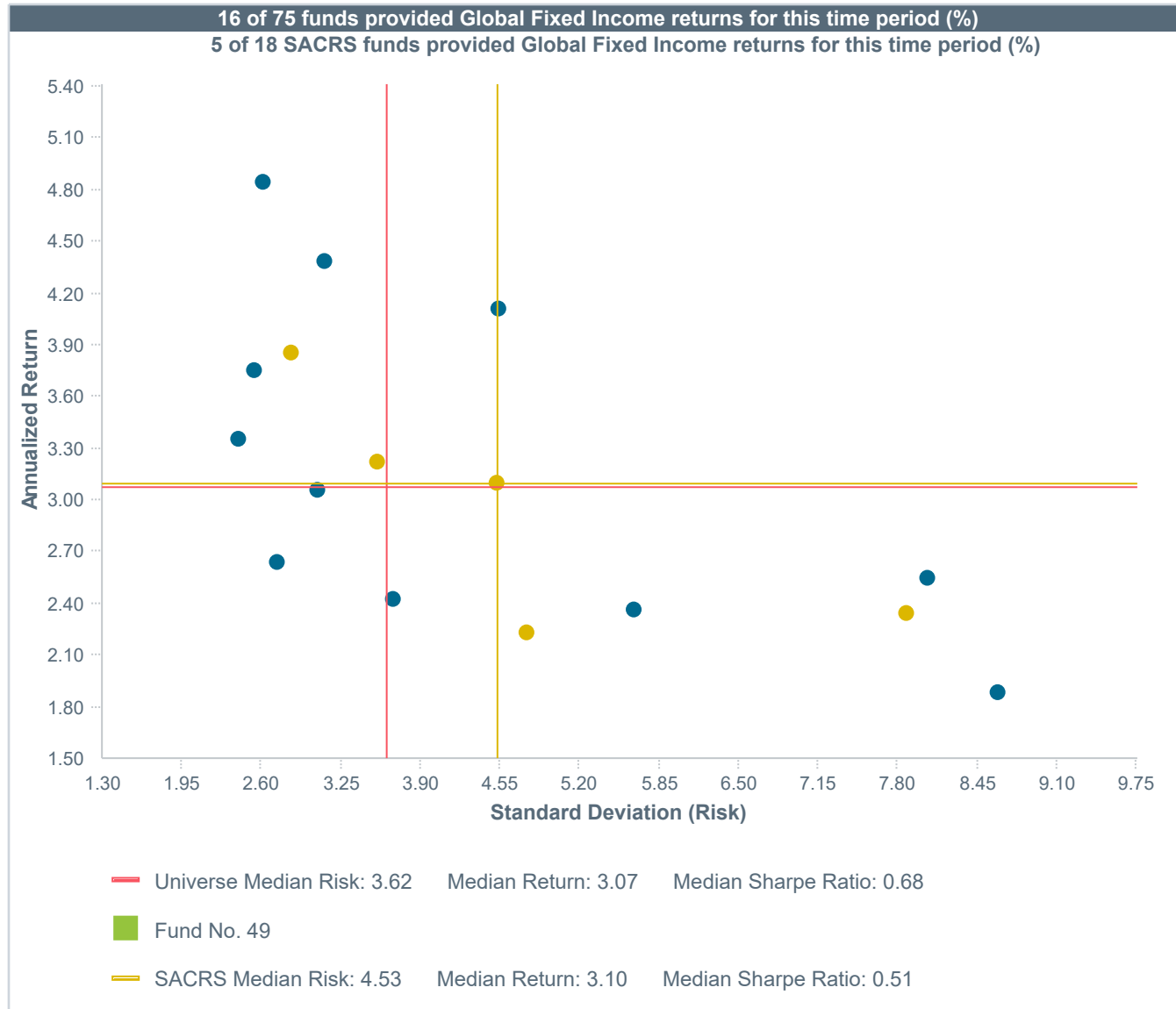


ID	Risk (%)	Return (%)	Sharpe
101	6.94	10.27	1.38
17	4.25	6.99	1.50
73	3.62	6.37	1.58
64	3.70	5.86	1.42
52	3.63	5.83	1.44
75	3.83	5.64	1.33
71	3.59	5.55	1.39
99	4.11	5.32	1.17
55	3.48	5.27	1.36
57	2.83	5.18	1.62
69	3.63	5.09	1.26
15	2.82	4.97	1.56
49	3.13	4.66	1.32

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



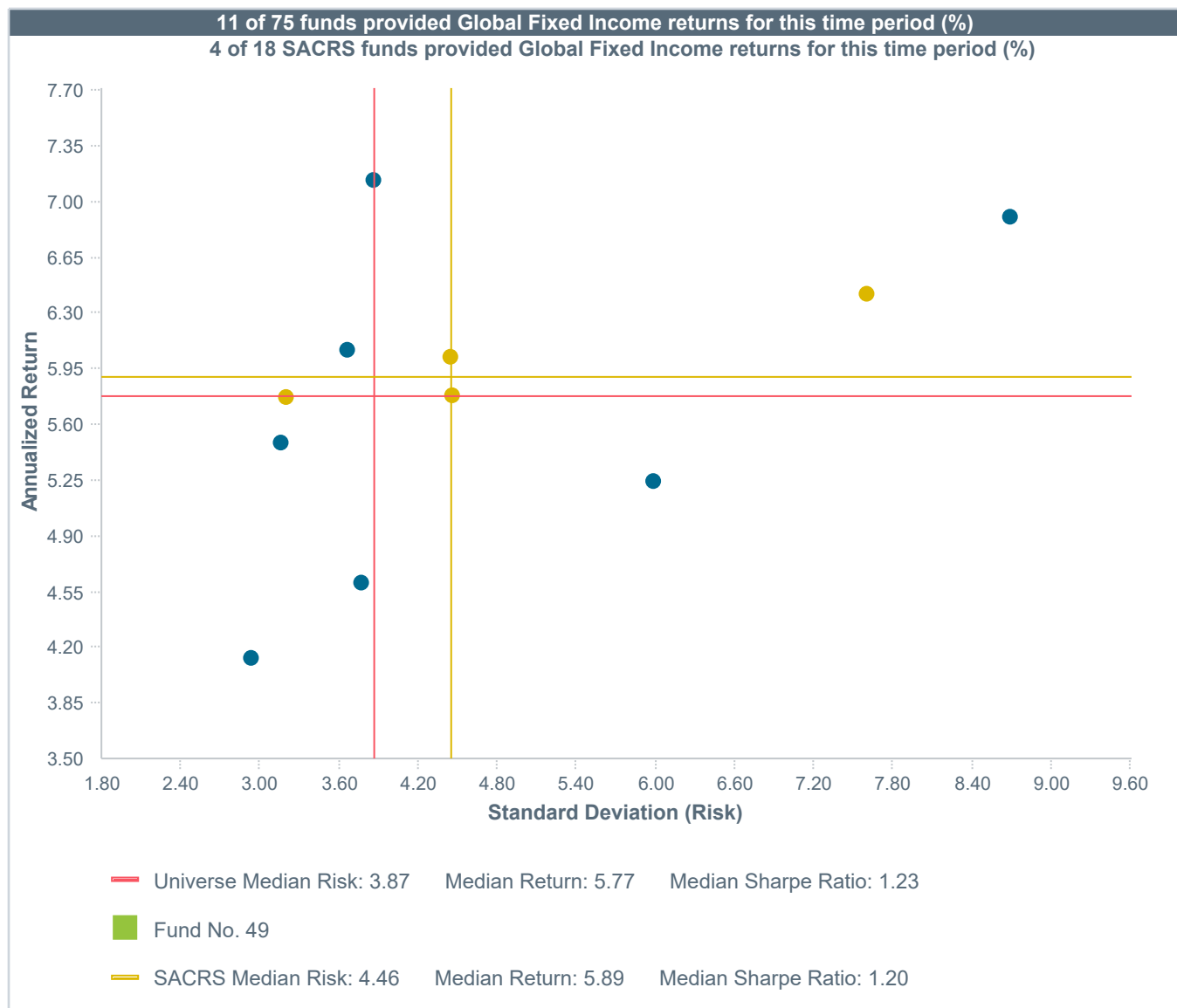
5 Year Annualized Global Fixed Income Returns vs. Standard Deviation



ID	Risk (%)	Return (%)	Sharpe
86	2.85	3.85	1.07
119	3.56	3.22	0.68
80	4.53	3.10	0.51
17	7.87	2.34	0.22
94	4.78	2.22	0.31

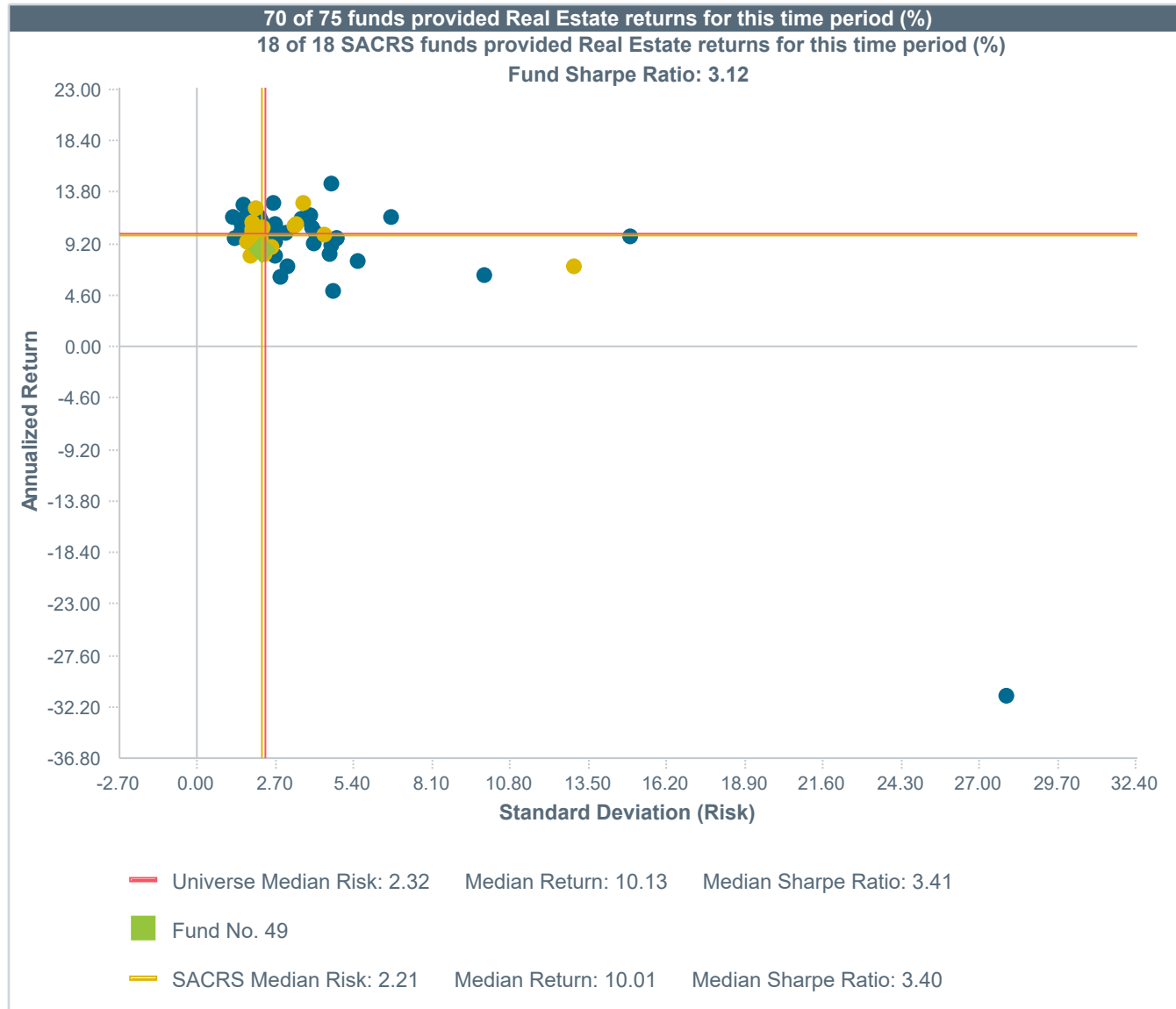
Funds with less history than the specified time period will not appear in the chart.

10 Year Annualized Global Fixed Income Returns vs. Standard Deviation



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

5 Year Annualized Real Estate Returns vs. Standard Deviation

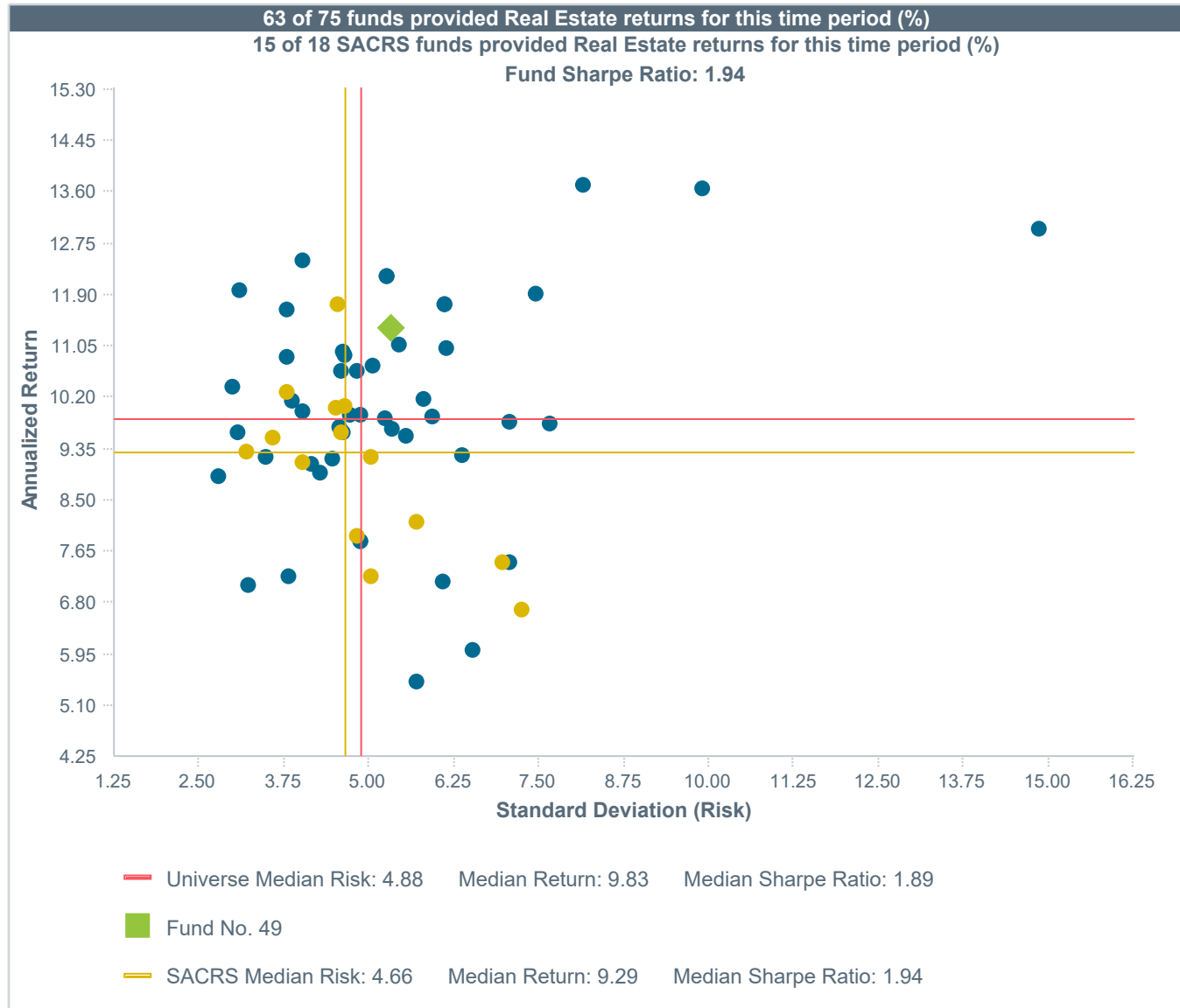


ID	Risk (%)	Return (%)	Sharpe
129	3.69	12.72	2.99
75	2.05	12.30	4.89
99	1.92	11.09	4.82
71	3.41	10.82	2.68
119	3.39	10.68	2.60
17	2.18	10.65	3.82
86	2.27	10.60	3.86
73	1.93	10.39	4.13
80	1.91	10.08	4.05
69	4.41	9.95	1.89
94	2.19	9.53	3.42
55	2.20	9.52	3.37
64	1.73	9.23	3.94
101	2.57	8.80	2.82
49	2.23	8.68	3.12
52	2.32	8.27	2.72
15	1.84	8.02	3.45
57	13.02	7.07	0.53

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 June 30, 2019



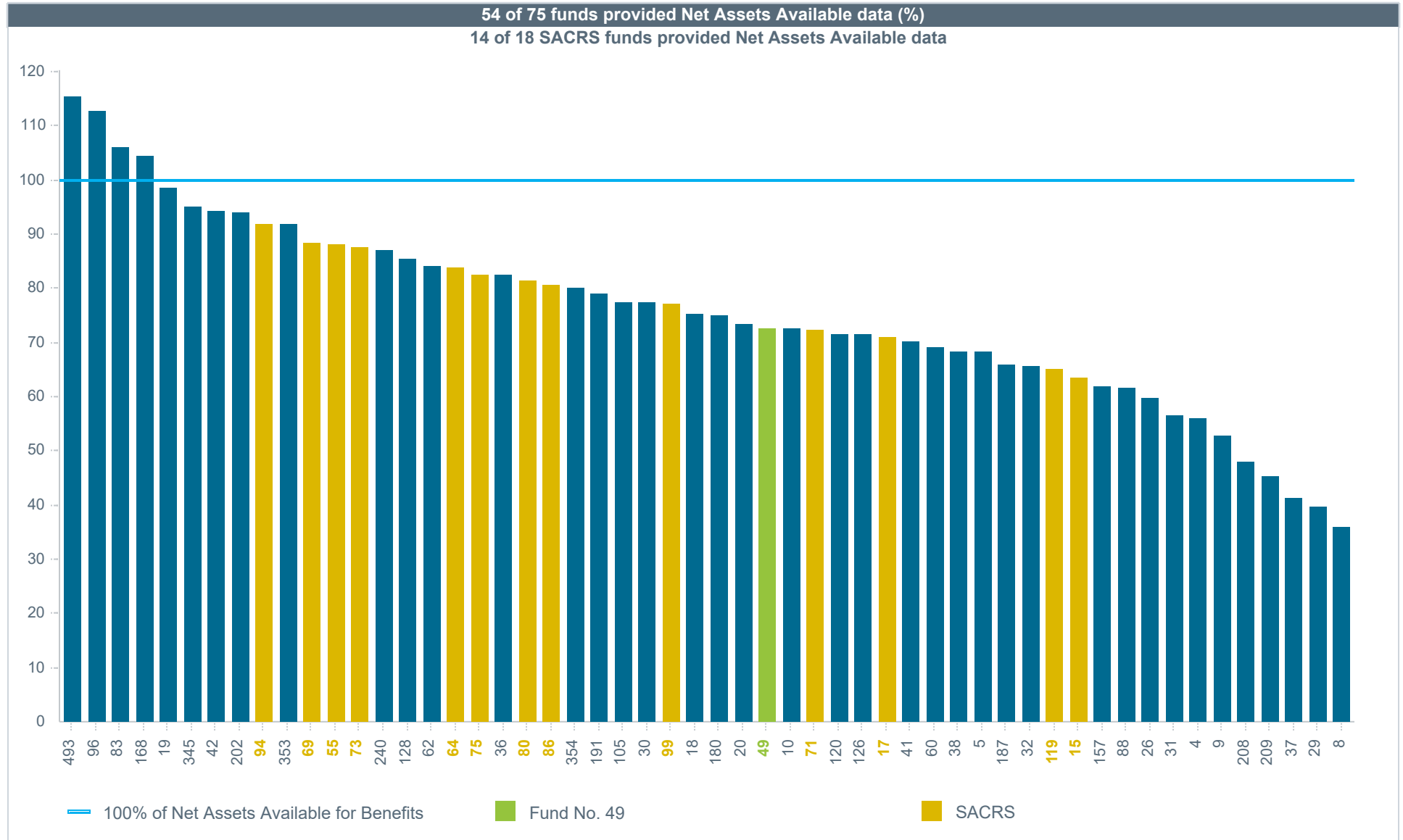
ID	Risk (%)	Return (%)	Sharpe
75	4.56	11.73	2.36
49	5.33	11.33	1.94
17	3.80	10.26	2.43
73	4.66	10.04	1.97
71	4.54	10.00	2.01
55	4.62	9.61	1.89
80	3.60	9.52	2.38
15	3.22	9.29	2.58
99	5.04	9.20	1.69
52	4.03	9.10	2.02
69	5.71	8.11	1.30
94	4.83	7.89	1.50
64	6.98	7.46	1.00
86	5.04	7.21	1.32
101	7.26	6.65	0.86

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

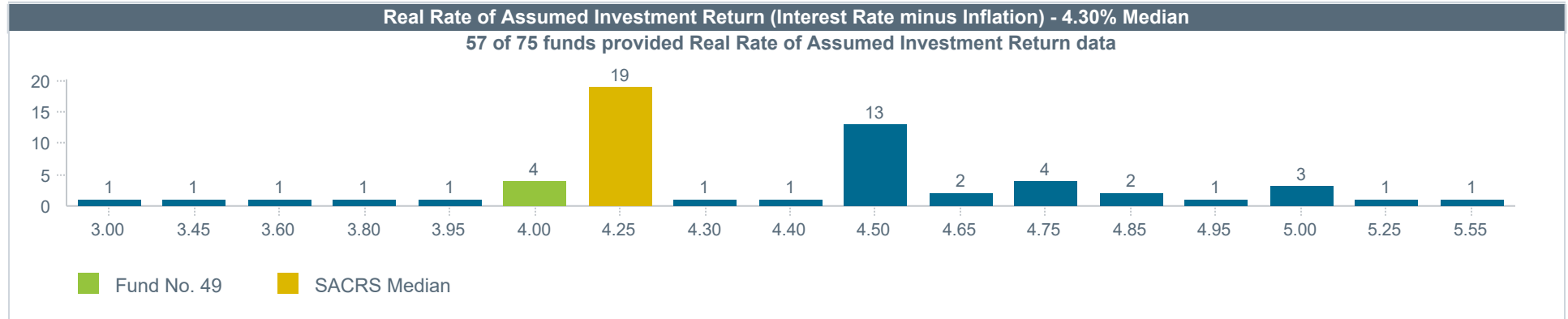
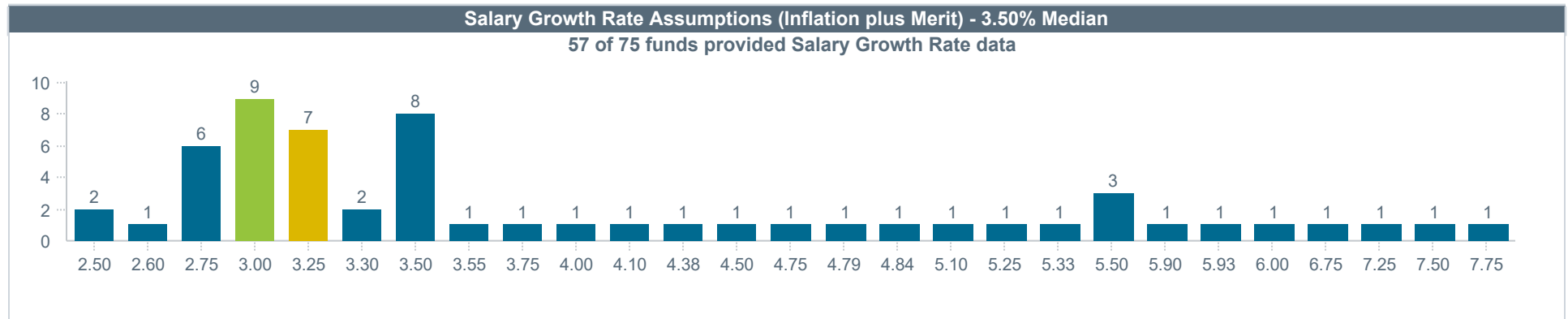
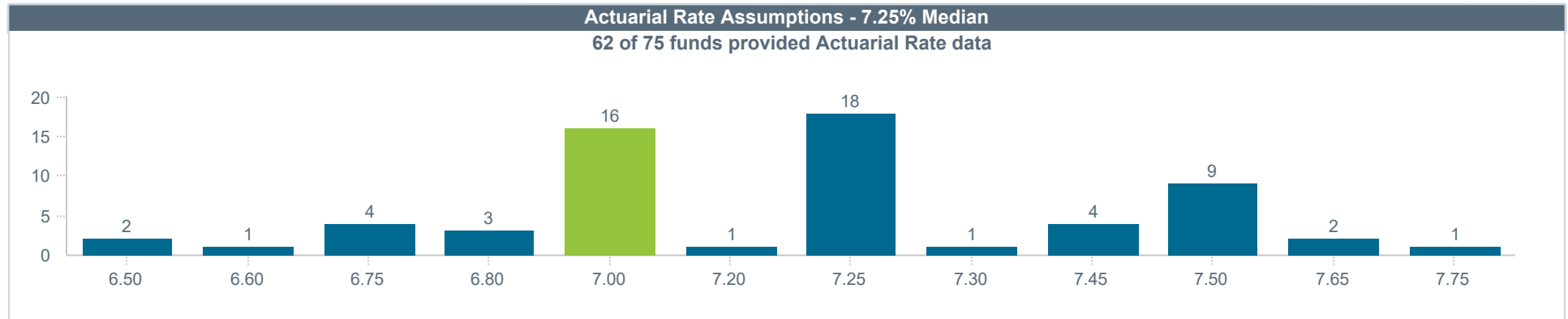


Net Assets Available For Benefits
Expressed as a Percentage of the Pension Benefit Obligation

As of June 30, 2019



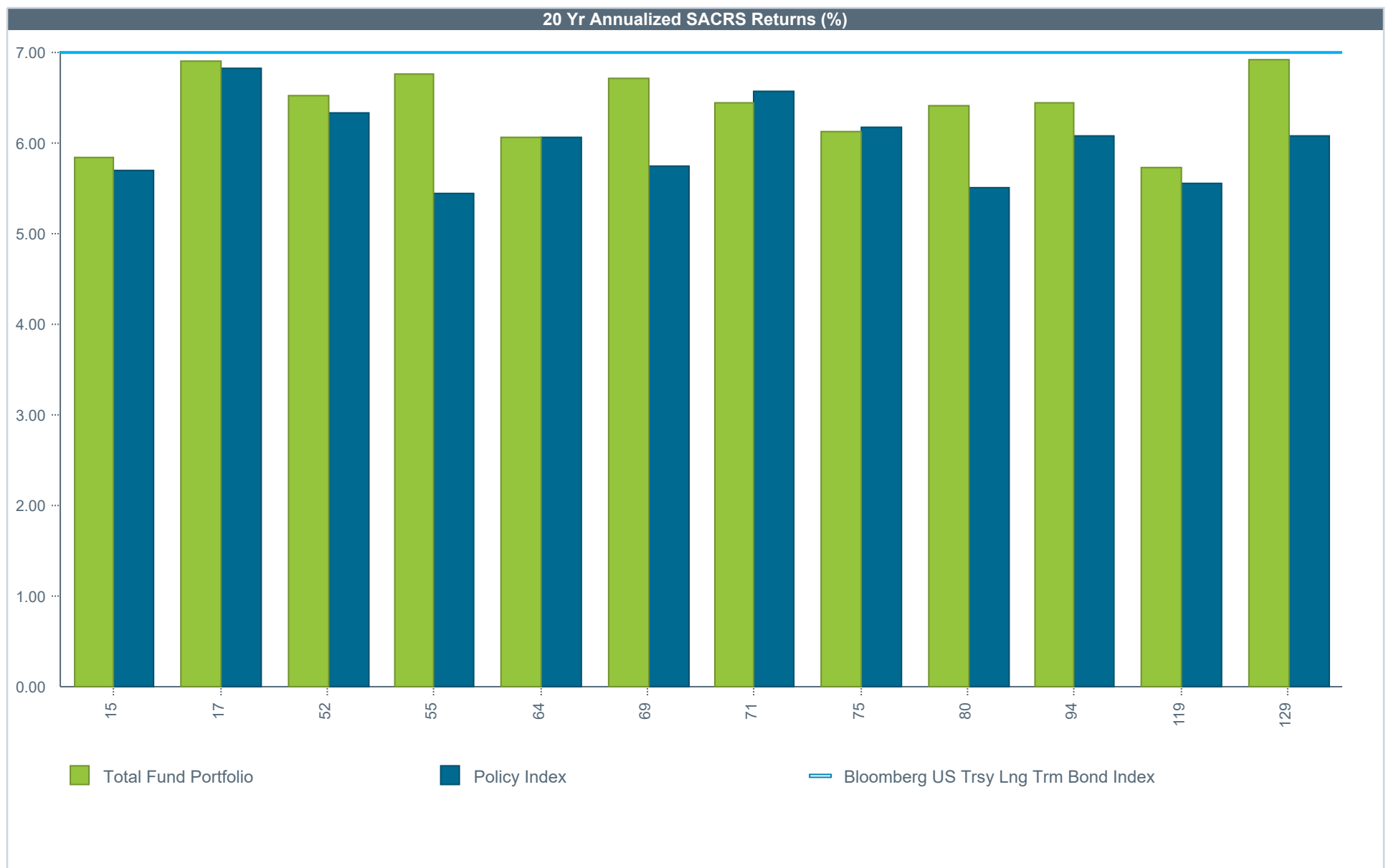
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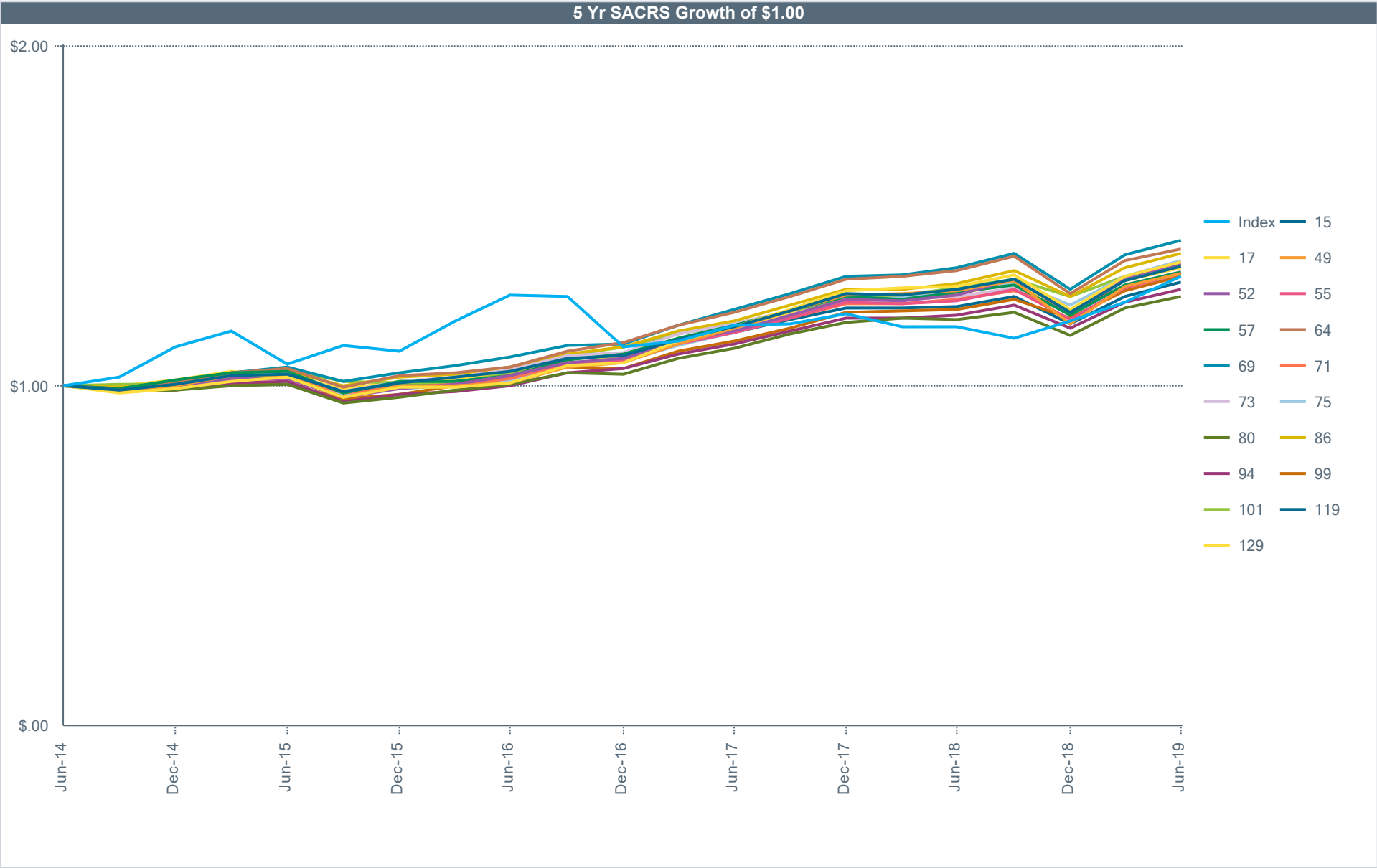


Funds that did not provide data will not appear in the chart.



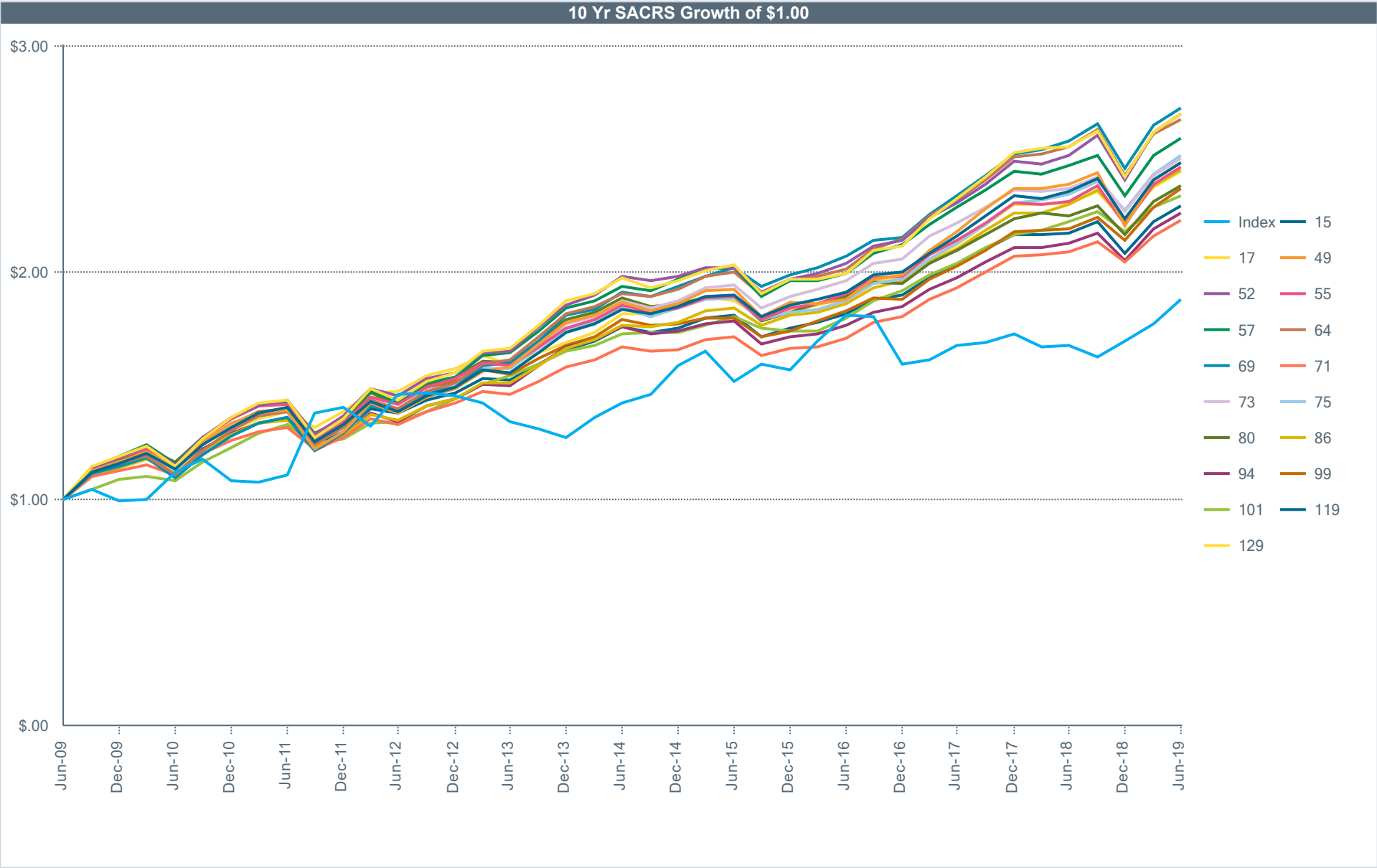






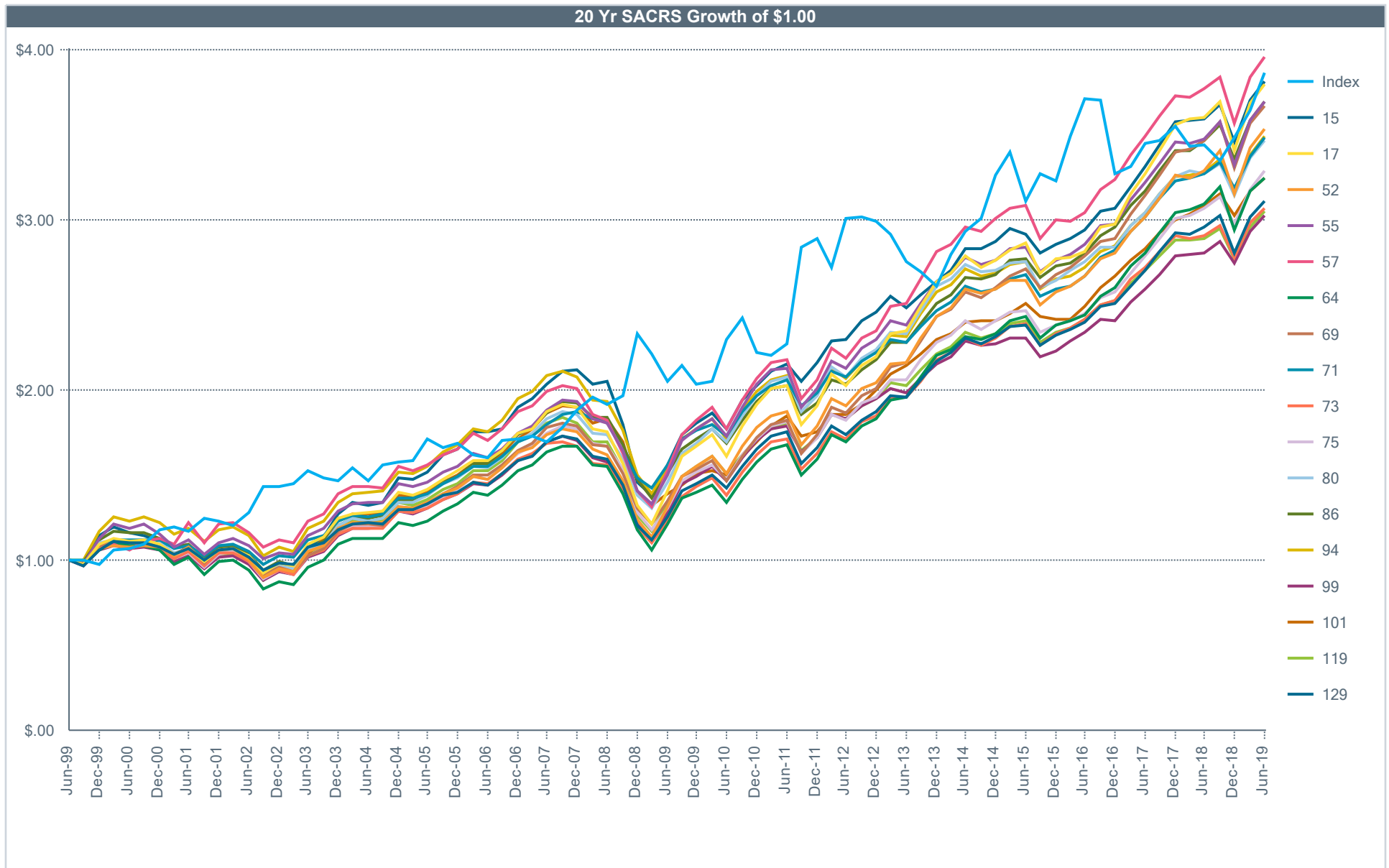
Index - Bloomberg US Trsy Lng Trm Bond Index





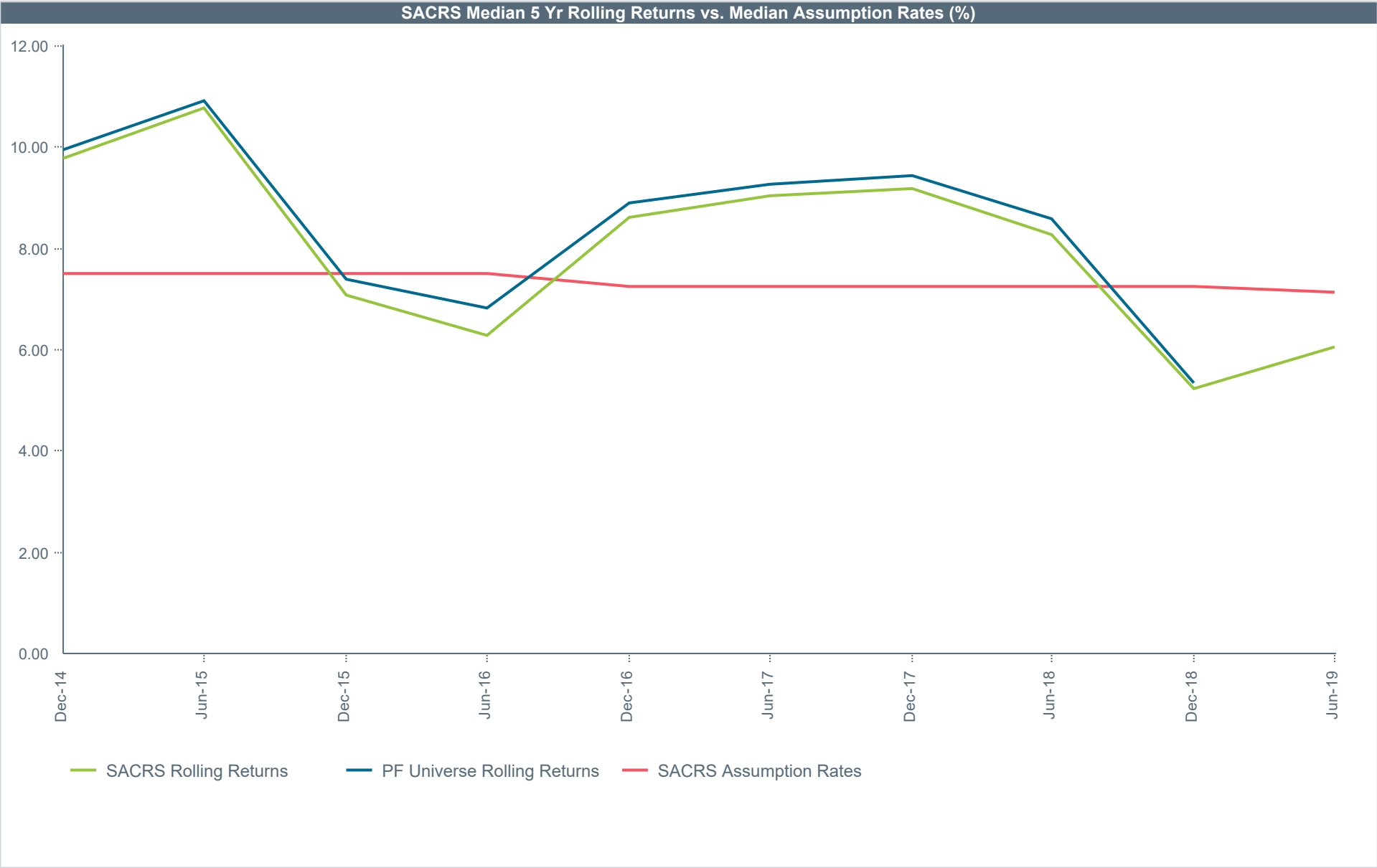
Index - Bloomberg US Trsy Lng Trm Bond Index

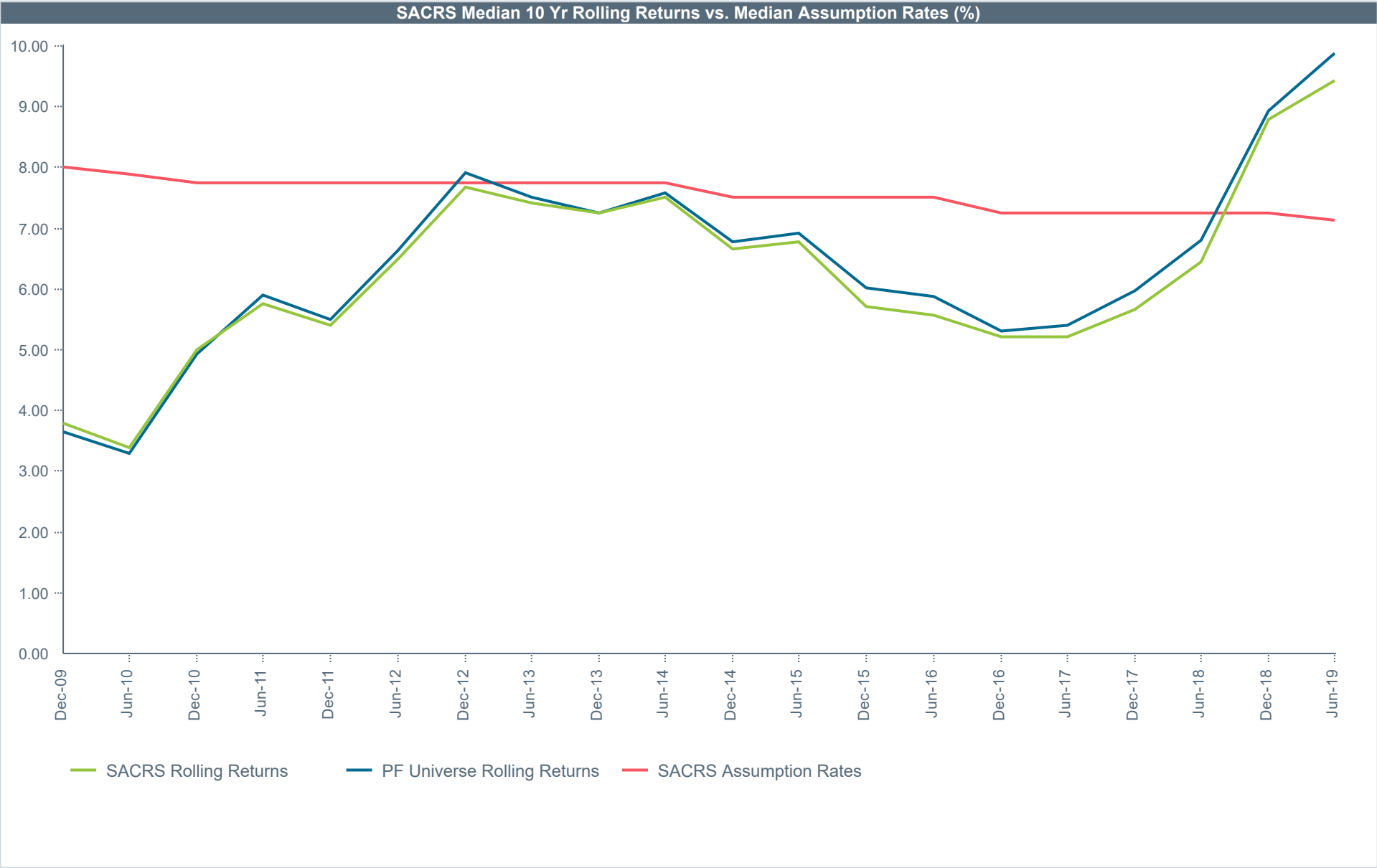


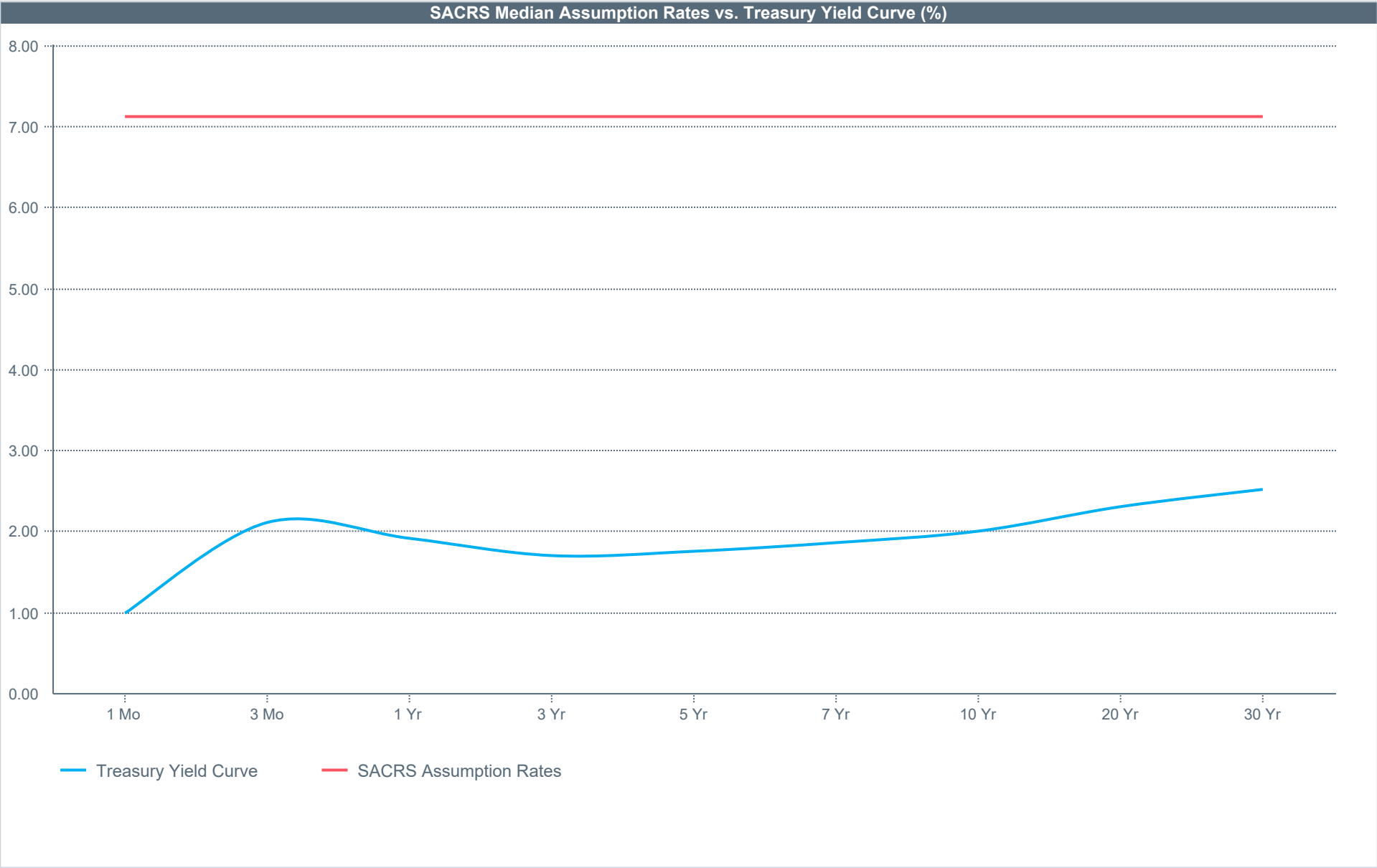


Index - Bloomberg US Trsy Lng Trm Bond Index









Miscellaneous Comments

- Performance shown is gross of fees, with the exception of the following:
 - Funds 8, 31, 49, 350, and 351: Performance shown is net of fees.
 - Funds 5 and 20: Performance shown is net of fees, except for Total Fund performance.
 - Funds 4, 55, 75, and 85: Performance shown for Real Estate is net of fees.
- 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 Benefits includes funding percentage valuation as of dates between June 2018 and June 2019.
- Allocations shown reflect dedicated managers/mandates rather than actual exposure, with the exception of the following:
 - Funds 29, 86, and 119: Performance shown for Global Fixed Income includes US and Non-US Fixed Income funds.
 - Fund 121: Performance shown for Global Fixed Income includes Non-US Fixed Income funds.
 - Funds 4, 42, 64, 99, 202, and 240: Performance shown for US Fixed Income includes US and Non-US Fixed Income funds.

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 given period.

Sharpe Ratio - Represents the excess rate of return over the risk-free return (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise), divided by the standard deviation of the excess return to the risk free asset. 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.

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