



Public Fund Universe Analysis

City of Milwaukee Employees' Retirement System

Period Ending June 30, 2019

Fund Number: 105



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.

OVERVIEW

RVK, Inc. (RVK) was founded in 1985 and is one of the largest independent and employee-owned investment consulting firms in the US, providing world-class investment advice to institutional investors. We serve over 400 plans, including pension plans, defined contribution plans, endowments & foundations, insurance pools, and special purpose funds. Notably, in April 2019, RVK received a Greenwich *Quality Leader Award* for a second consecutive year.

MISSION STATEMENT

To provide best-in-class investment consulting services to a wide array of sophisticated investors.

STRATEGIC INVESTMENT ADVICE AND AN EXPLICIT NO CONFLICTS OF INTEREST POLICY

RVK built its investment consulting practice on the principles of integrity, investment knowledge, client service, and our no conflicts of interest policy. We are exclusively focused on strategic investment consulting services and solely owned by active employees, enabling us to offer advice that is not influenced by other business activities. As a privately-held firm with no affiliates or parent company, we are in control of our business policy, providing firm stability for clients. We offer an extensive slate of consulting services and produce deliverables fully customized to meet each client's needs.

KEY TENETS OF OUR CULTURE



RVK BY THE NUMBERS

- **30+** Years of Business
- **4** offices - Portland, Boise Chicago, New York
- **\$1+** trillion Full-Retainer AUA
- **80+** Investment Professionals
- **50+** Advanced Degrees and Certifications
- **100%** Employee Ownership
- **100%** Revenue Derived from Client Fees
- **100%** Non-Discretionary Services

GENERAL CONSULTING SERVICES

- Plan Evaluation
- Strategic Asset Allocation
- Investment Policy Development & Review
- Investment Manager Search & Selection
- Performance Analysis & Reporting
- Manager Structure Analysis
- Risk Monitoring and Management
- Client Education
- Special Projects

SPECIALTY CONSULTING SERVICES

- Custody, Record keeper, Third-Party Administrator Searches
- Asset/Liability Studies
- Endowment Spending Policy Studies
- Securities Lending Reviews
- Pacing Studies
- Strategic Planning Reviews
- Outsourced CIO (OCIO) Searches, Evaluation, and Ongoing Monitoring
- Directed Consulting Services
- Fee Reviews
- Defined Contribution Solutions Services
- Investment Operations Solutions
- Board and Investment Program Operational Reviews

FOR MORE INFORMATION ABOUT OUR SERVICES, PLEASE CONTACT:

Business.Development@RVKInc.com
503-221-4200

Alameda County Employees' Retirement Association

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 (Fund No. 105)

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

Kansas City, Missouri Employees' Retirement System

Kern County Employees' Retirement Association

Los Angeles County Employees Retirement Association

Los Angeles Water & Power Employees Retirement Plan

Maryland State Retirement and Pension System

Merced County Employees' Retirement Association

Montana Teachers' Retirement System

Nevada Public Employees' Retirement System

North Carolina Retirement System

Orange County Employees' Retirement System

Pennsylvania State Employees' Retirement System

Public Employees Retirement Association of New Mexico

Sacramento County Employees' Retirement System

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

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

Mendocino County Employees' Retirement Association

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

San Diego County Employees Retirement Association

Santa Barbara County Employees' Retirement System
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
Virginia Retirement System
Wyoming Retirement System

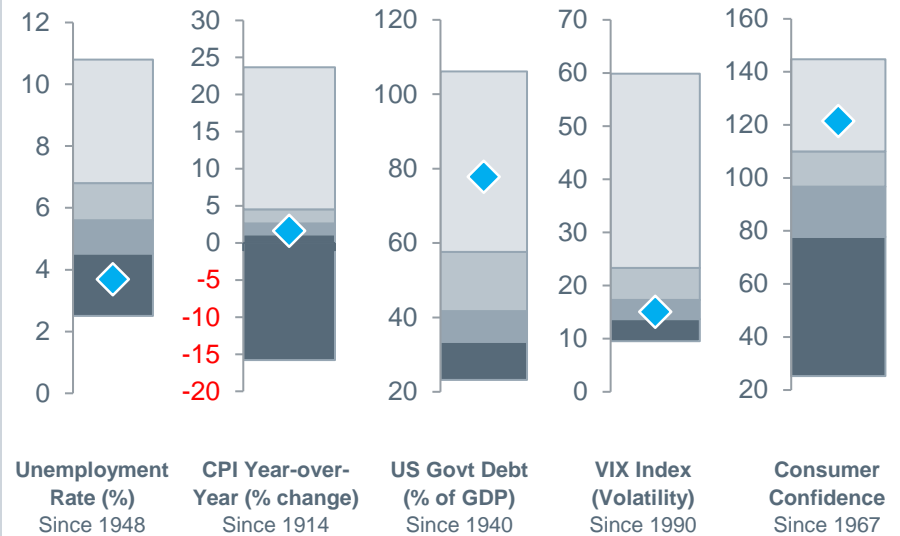
San Mateo County Employees' Retirement Association
Sonoma County Employees' Retirement Association
Stanislaus County Employees' Retirement Association
State of New Jersey Pension Fund
State Universities Retirement System of Illinois
Teachers' Retirement System of the State of Illinois
The Navajo Nation Retirement Plan
Ventura County Employees' Retirement Association
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.

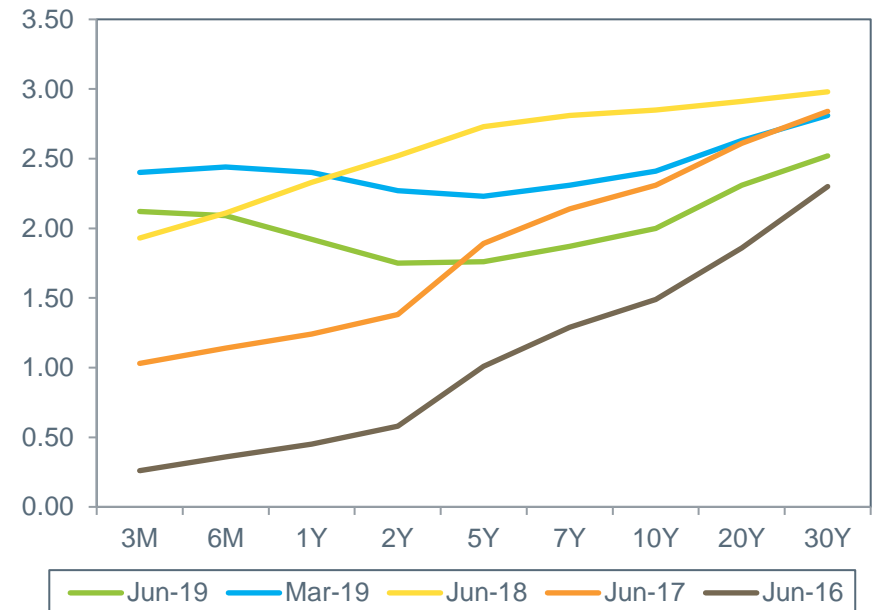
Key Economic Indicators



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.

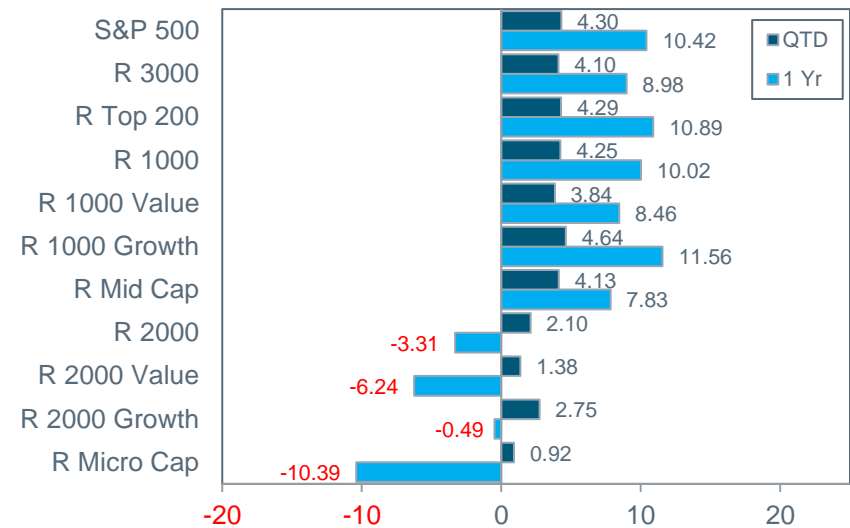
Market Cap

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

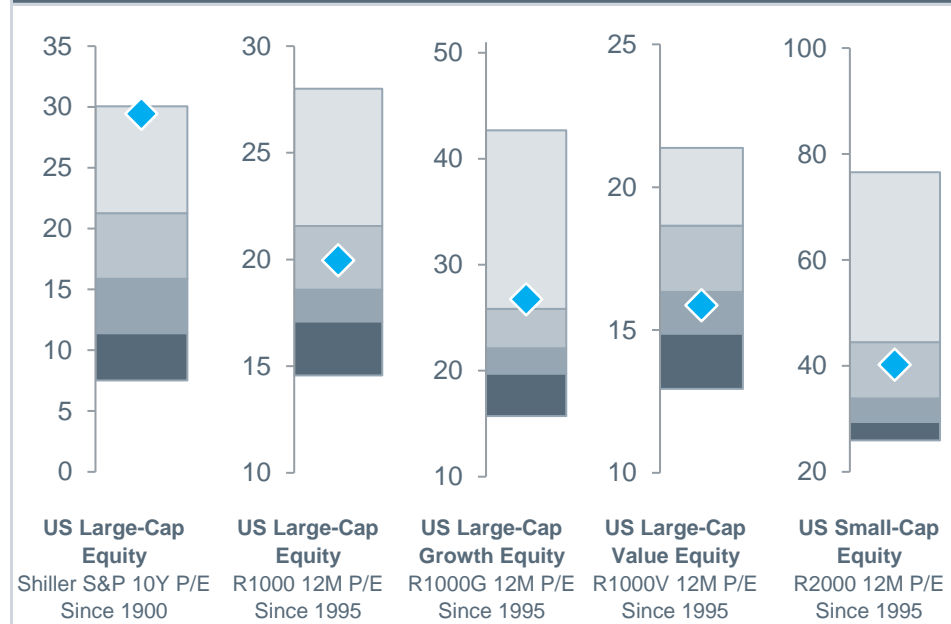
Style and Sector

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.

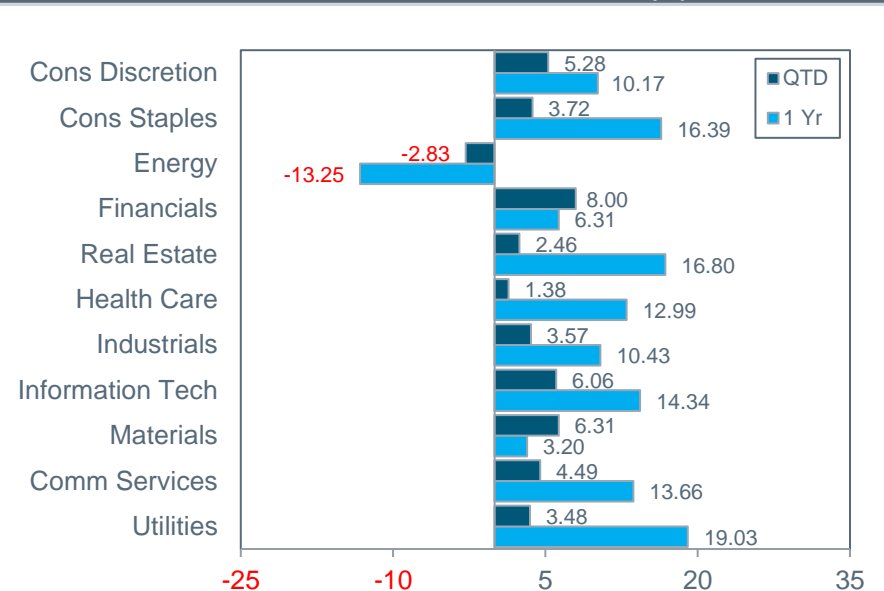
Style and Capitalization Market Performance (%)



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.

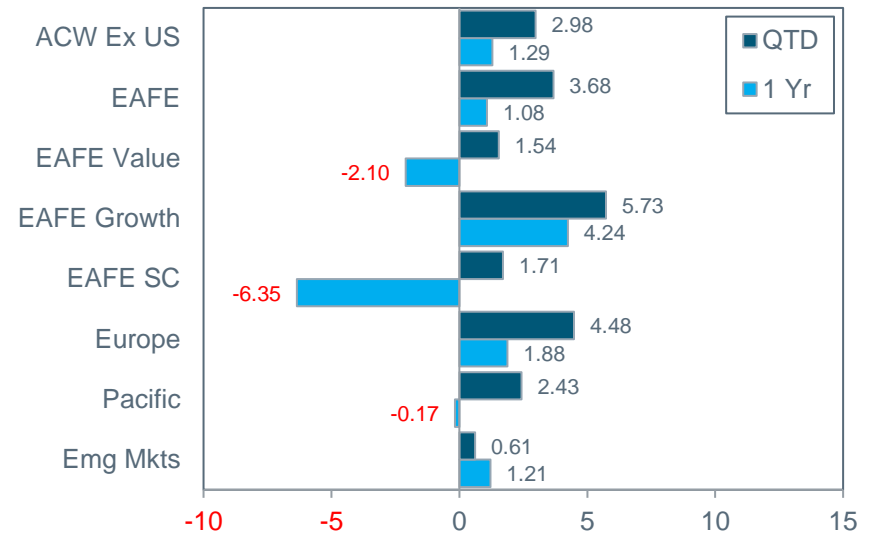
Emerging Markets

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.

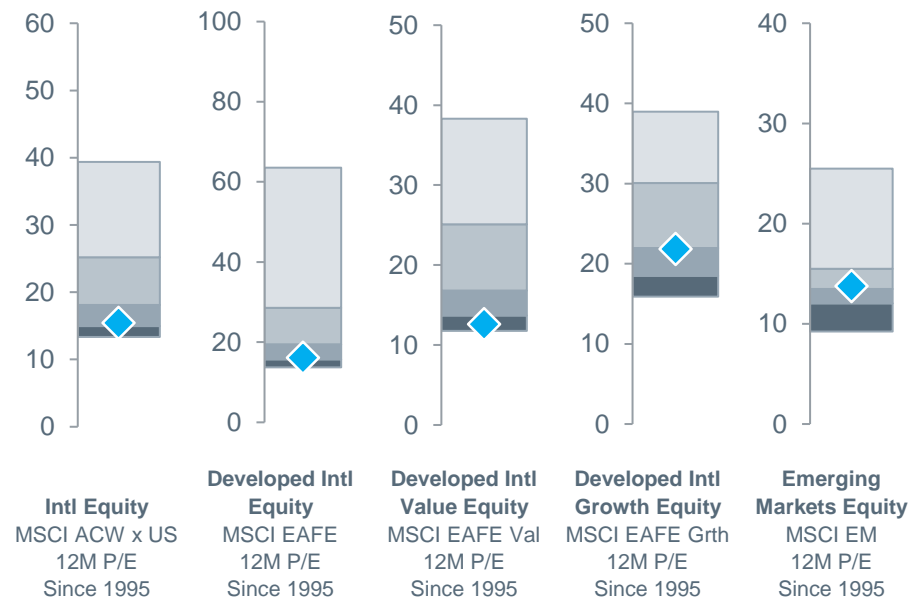
Market Cap & Style

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.

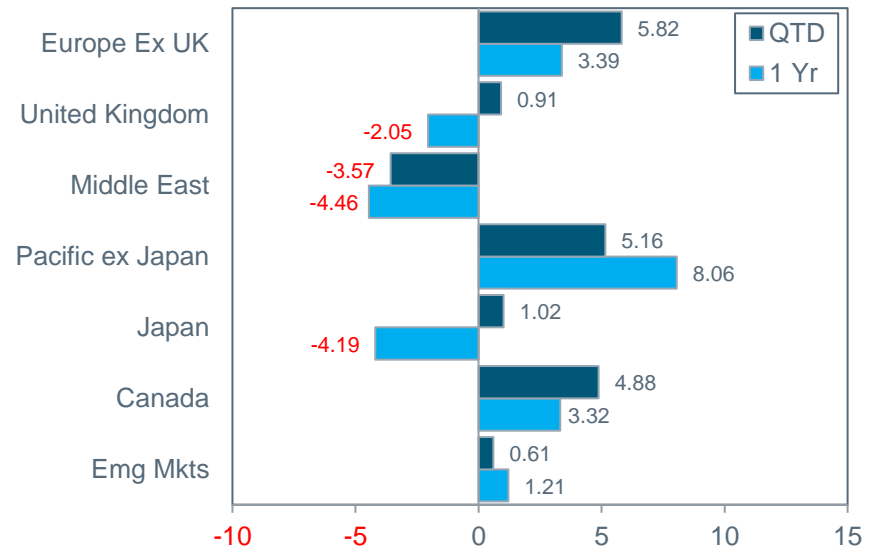
MSCI Style and Capitalization Market Performance (%)



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%.

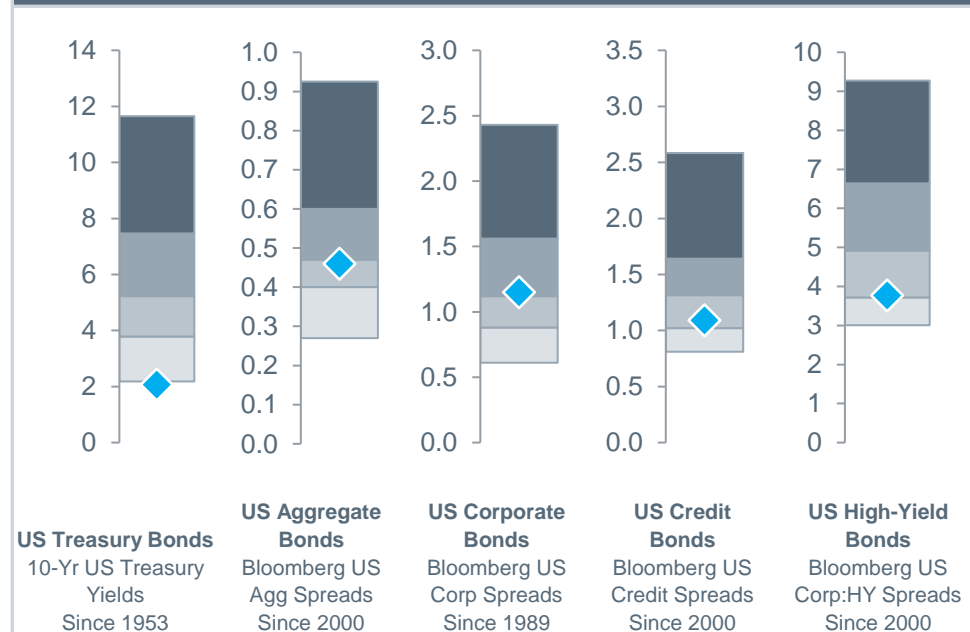
Credit Market

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.

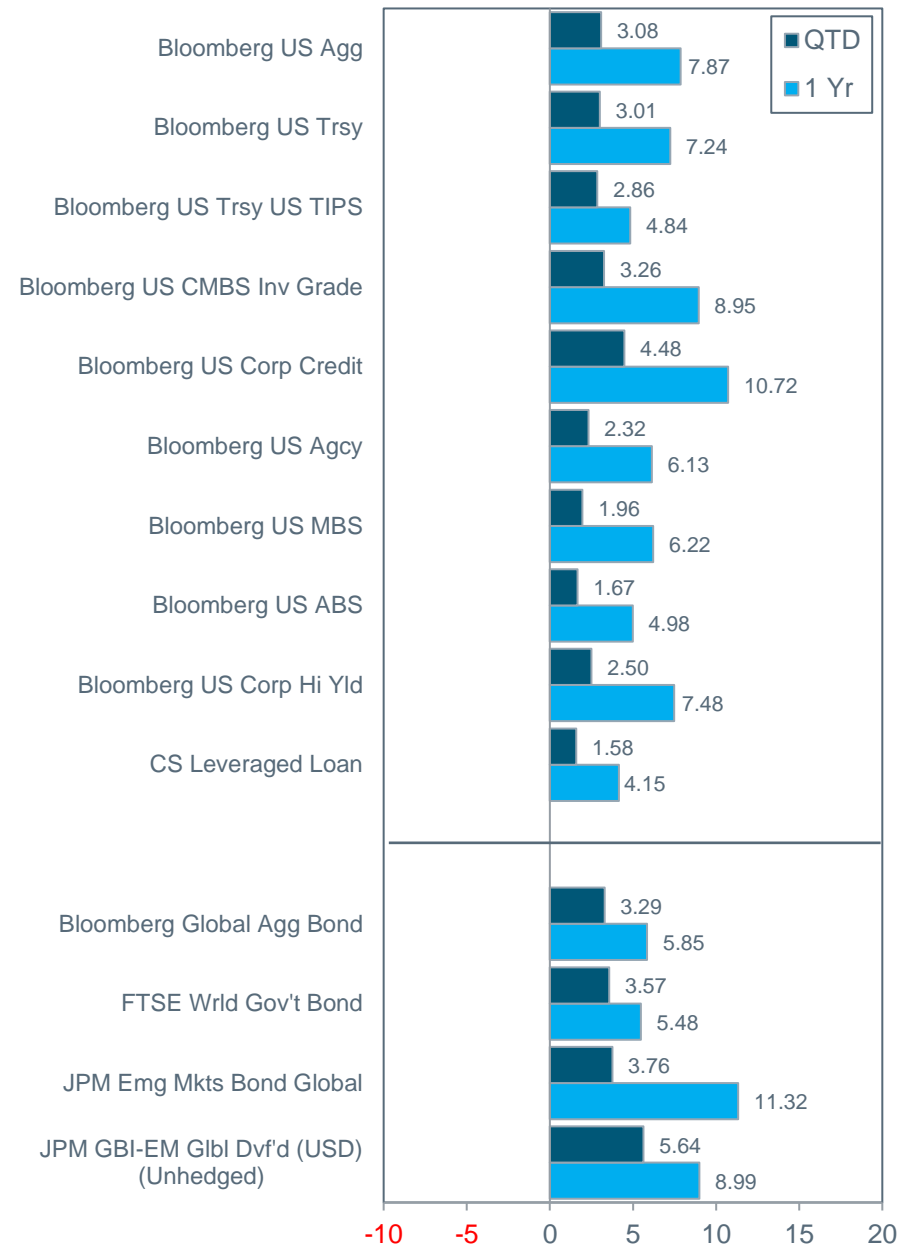
Emerging Market Debt

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

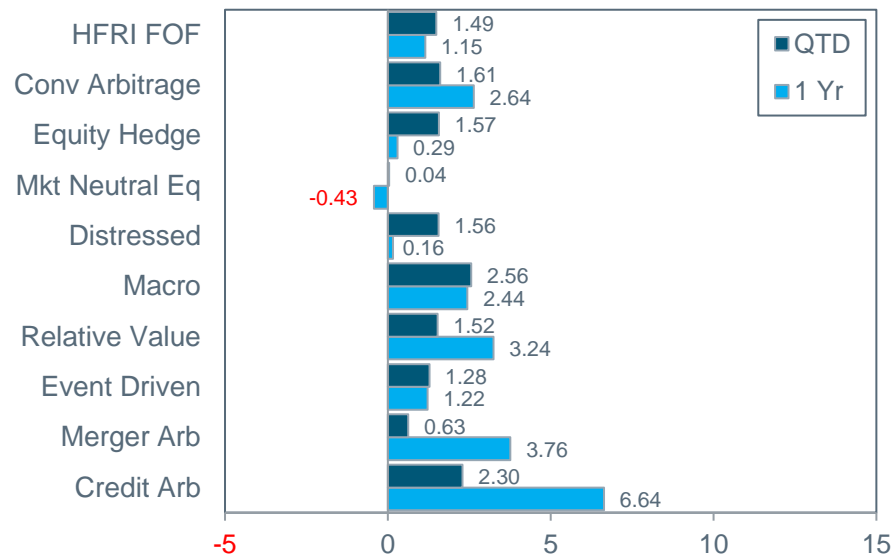
General Market - Diversified Inflation Strategies (DIS)

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.

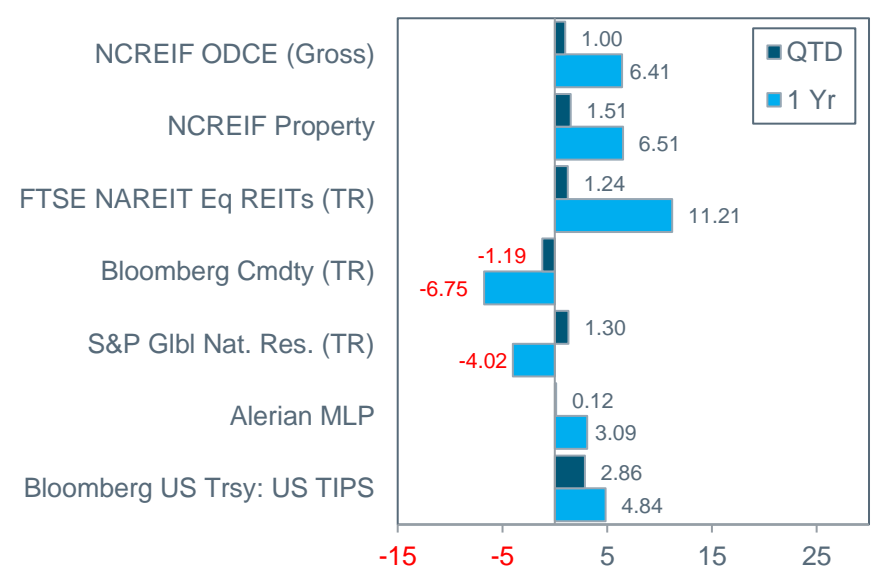
General Market - Real Estate

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 (%)

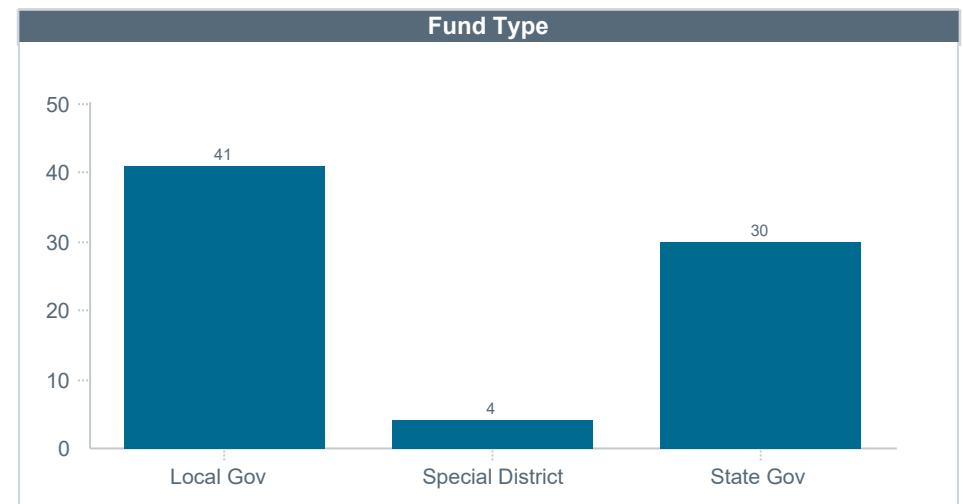
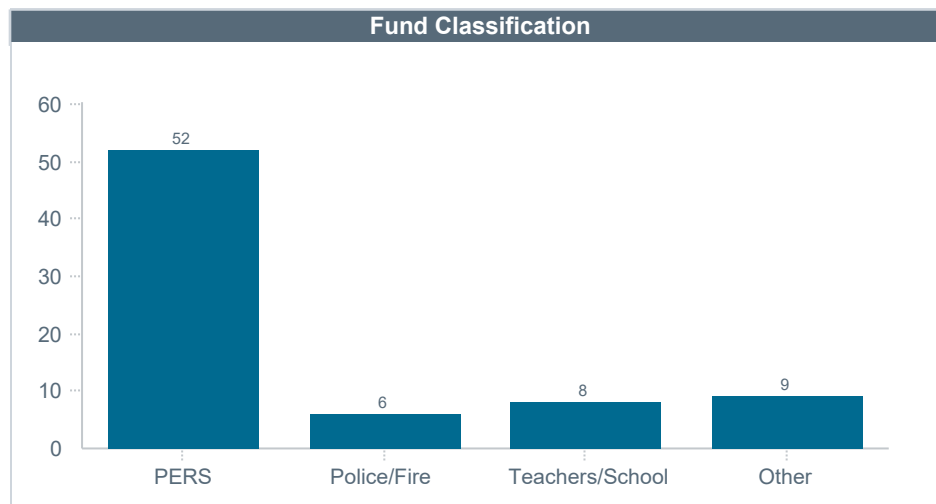
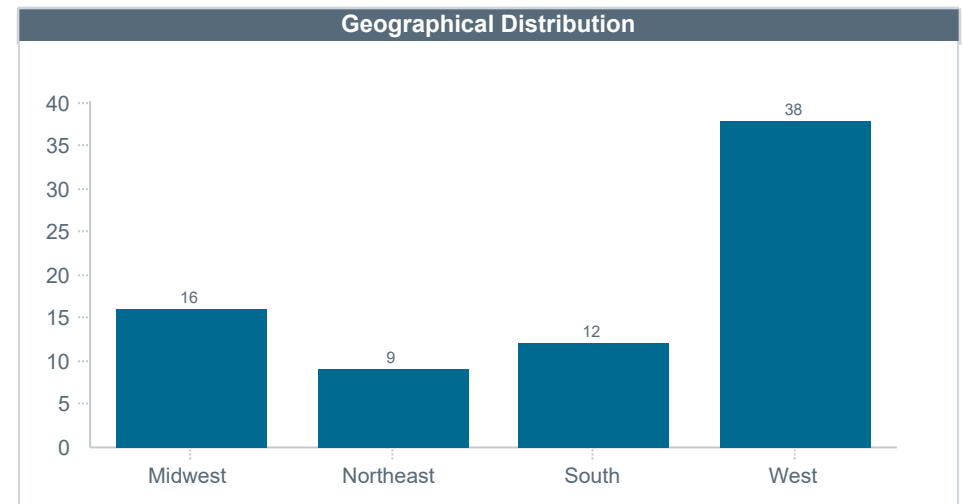
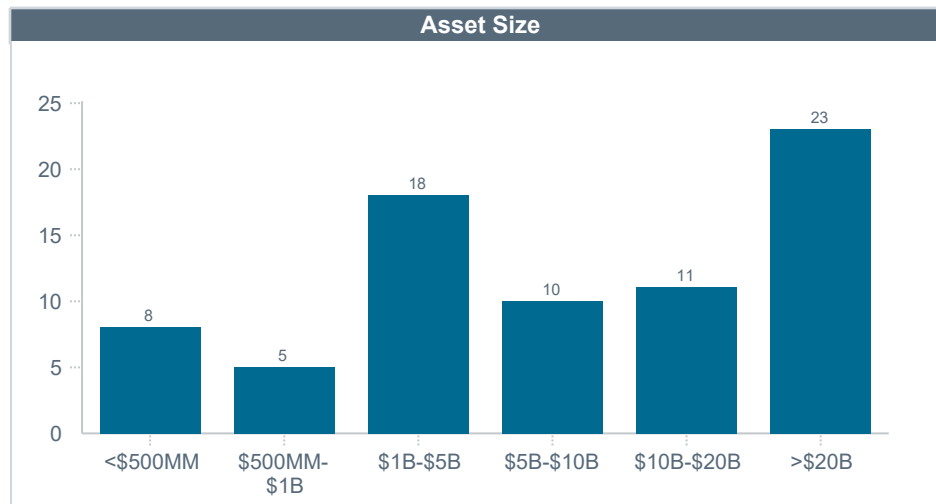


Annual Asset Class Performance

As of June 30, 2019

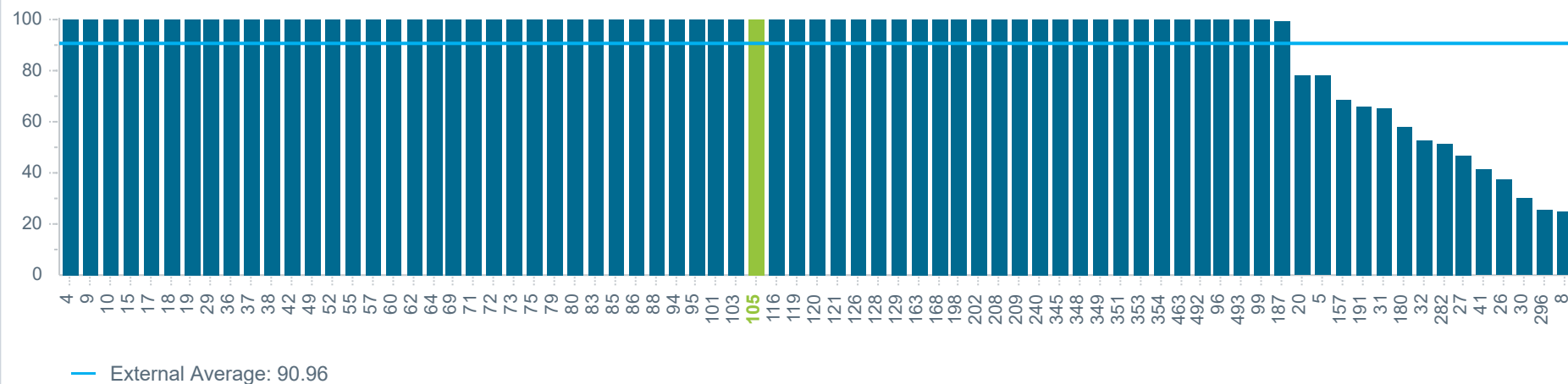
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD
Best ↑ 															

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

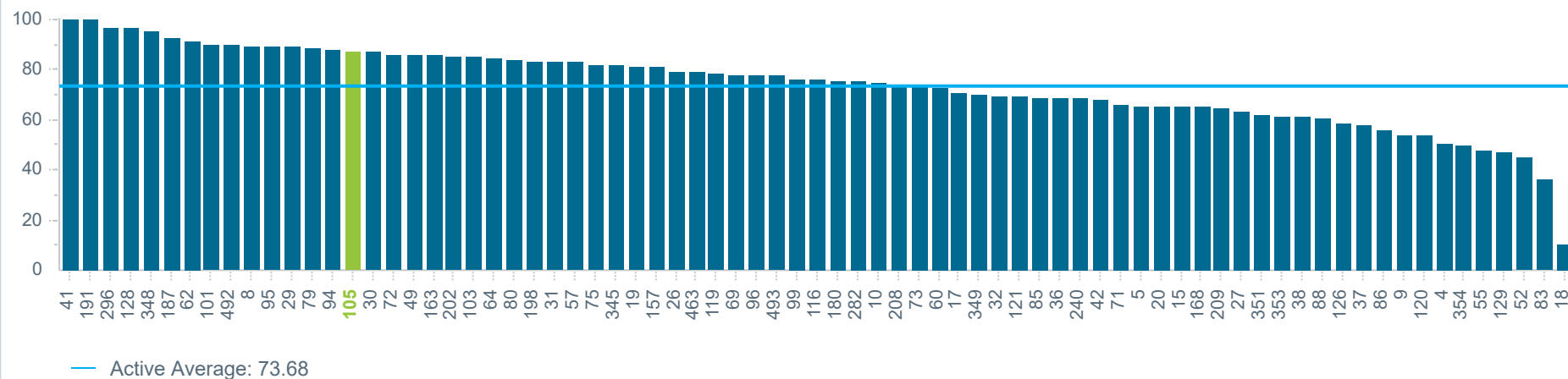


■ Universe: 75 funds

External Management (%)



Active Management (%)

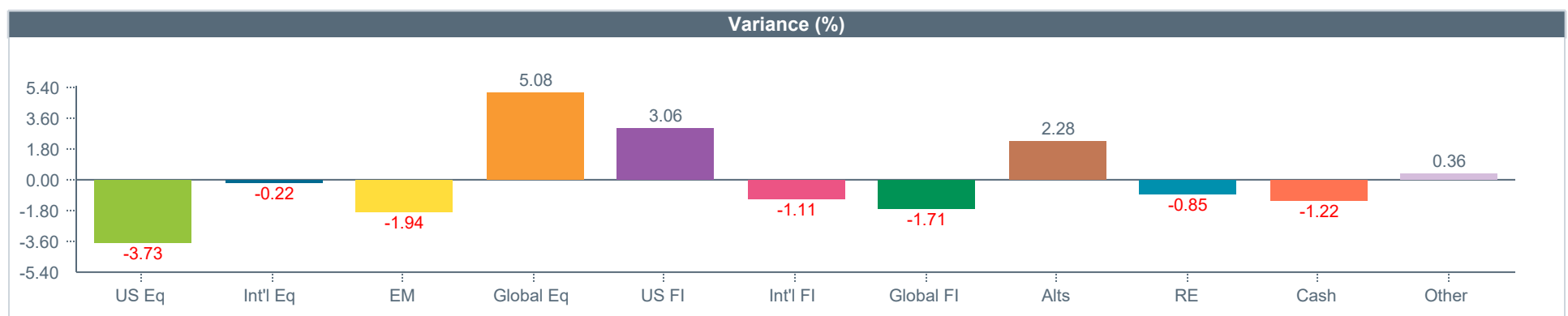
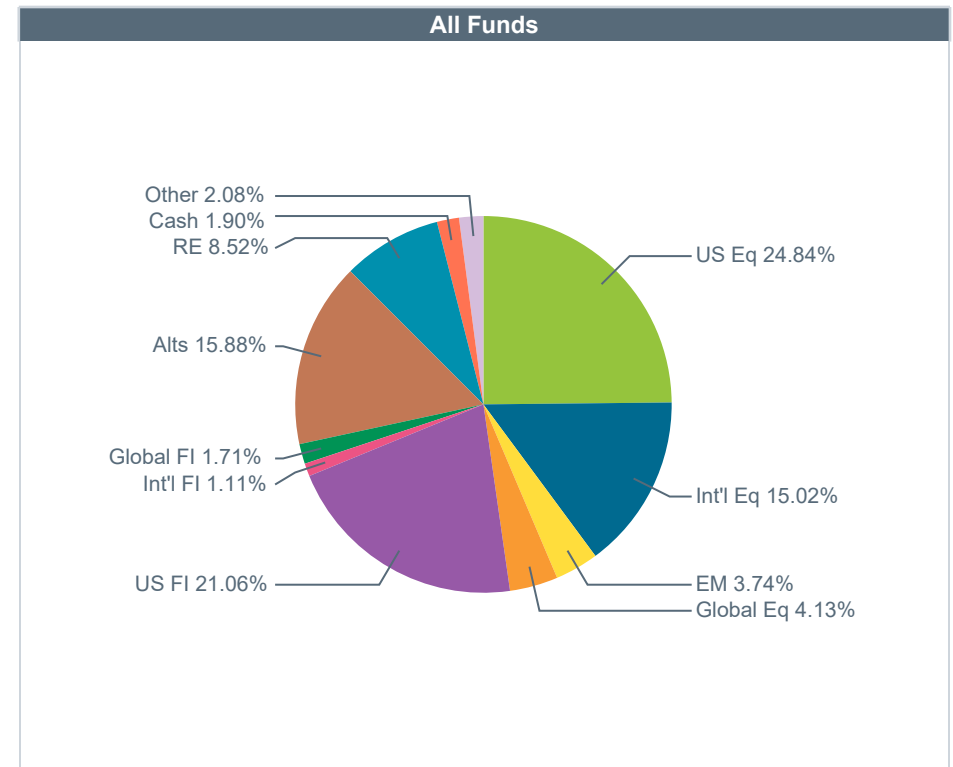
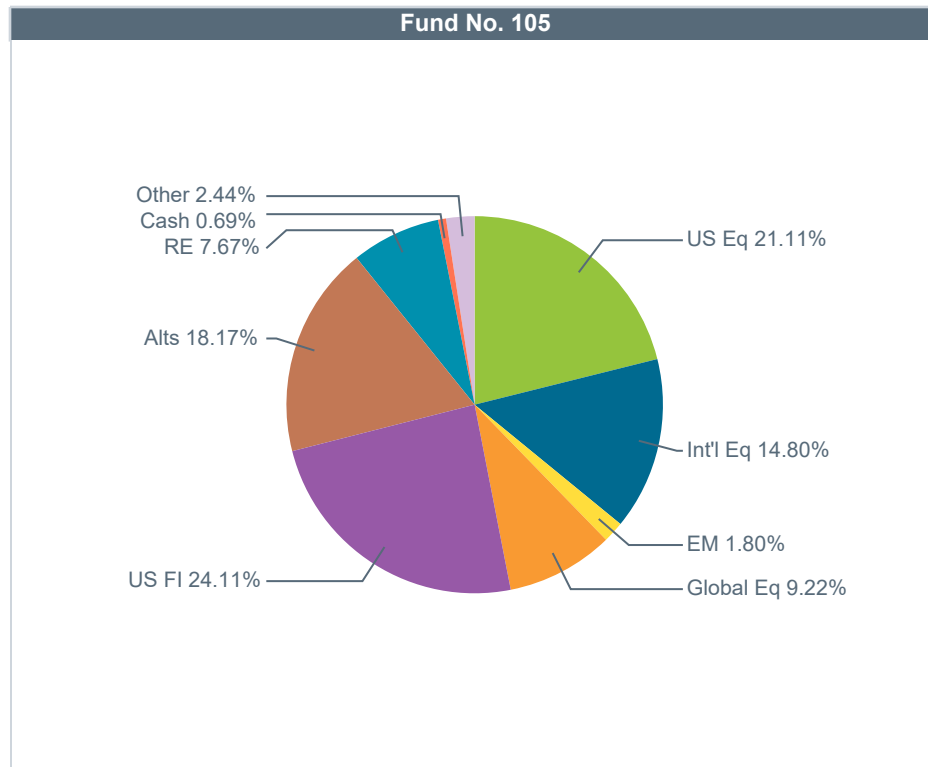


Fund No. 105

Asset Range	Actively Managed (%)	Passively Managed (%)	Externally Managed (%)	Internally Managed (%)
Over \$20B	73.97	26.03	75.69	24.31
\$10B-\$20B	71.12	28.88	93.21	6.79
\$5B-\$10B	66.30	33.70	97.79	2.21
\$1B-\$5B	78.95	21.05	98.75	1.25
\$500MM-\$1B	73.86	26.14	100.00	0.00
Under \$500MM	73.60	26.40	100.00	0.00
Fund No. 105	86.89	13.11	100.00	0.00

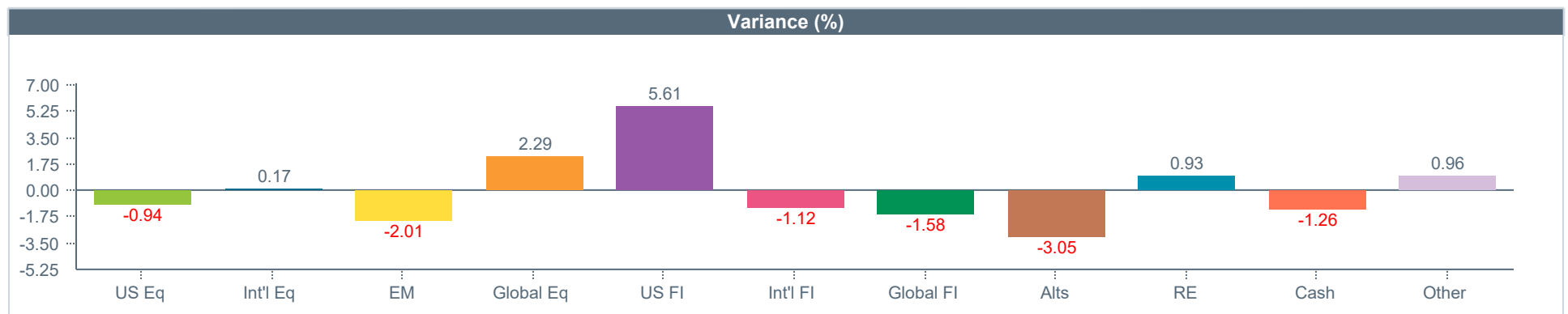
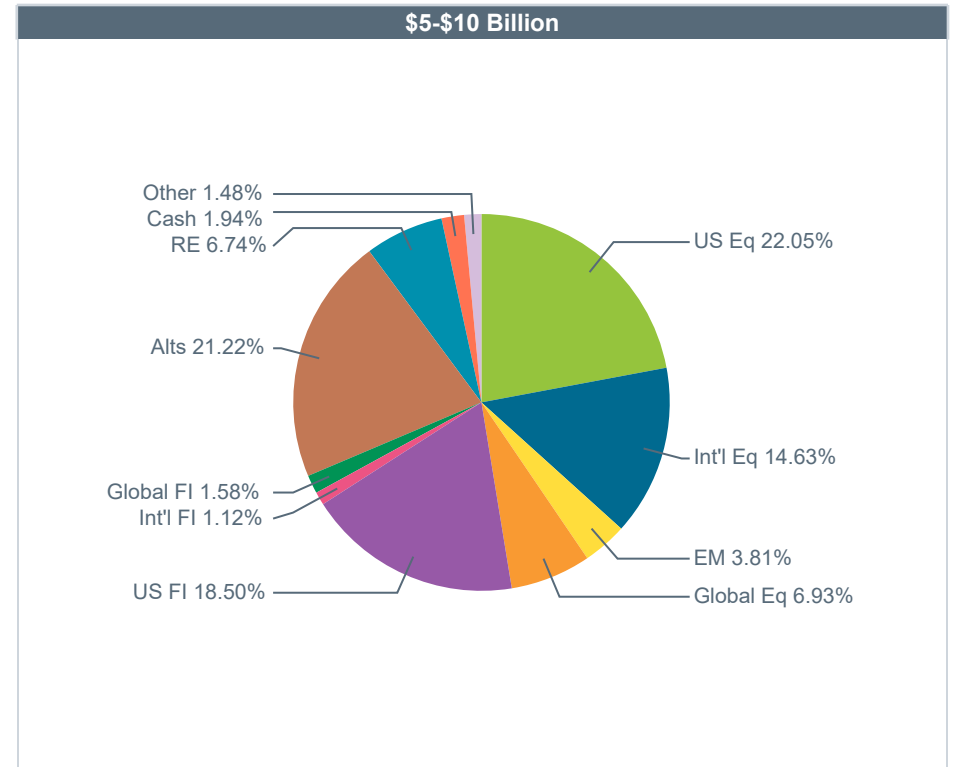
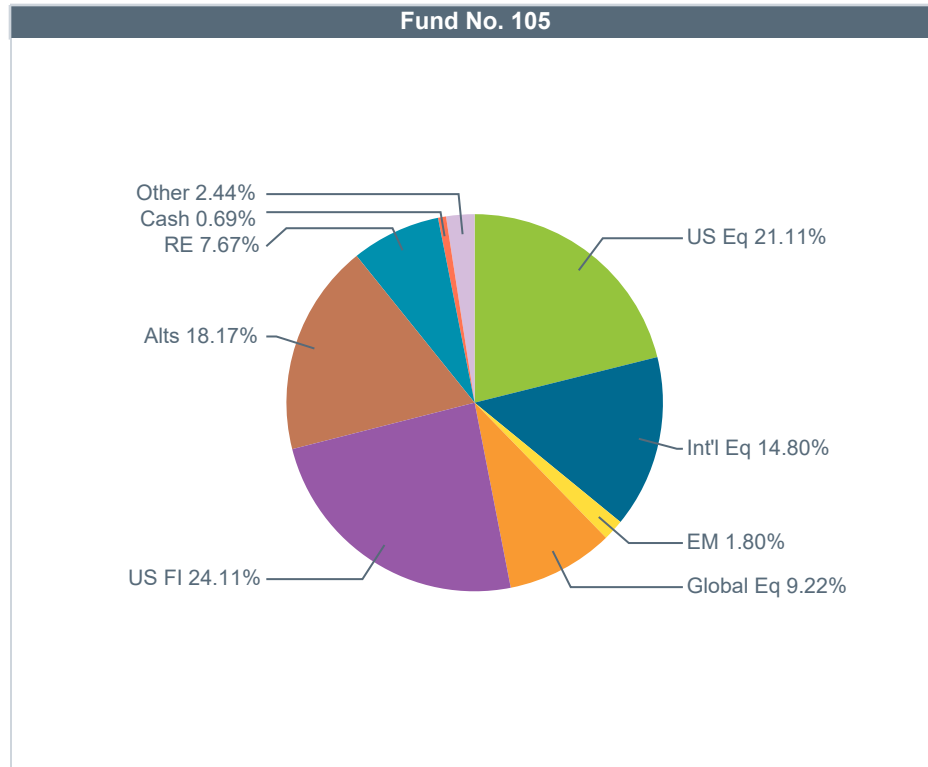
Percentages shown for asset ranges are representative of the average allocation.

Portfolio (%)	Active Management		External Management	
	Public Fund Universe	Fund No. 105	Public Fund Universe	Fund No. 105
90 to 100	8	0	61	1
50 to 89	61	1	8	0
10 to 49	6	0	6	0
Less than 10	0	0	0	0
Total Funds Reporting	75	1	75	1



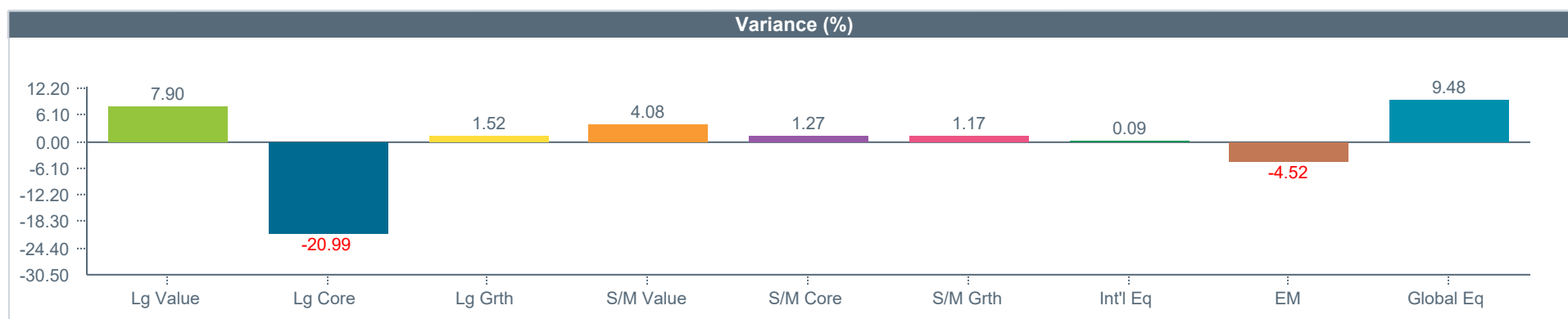
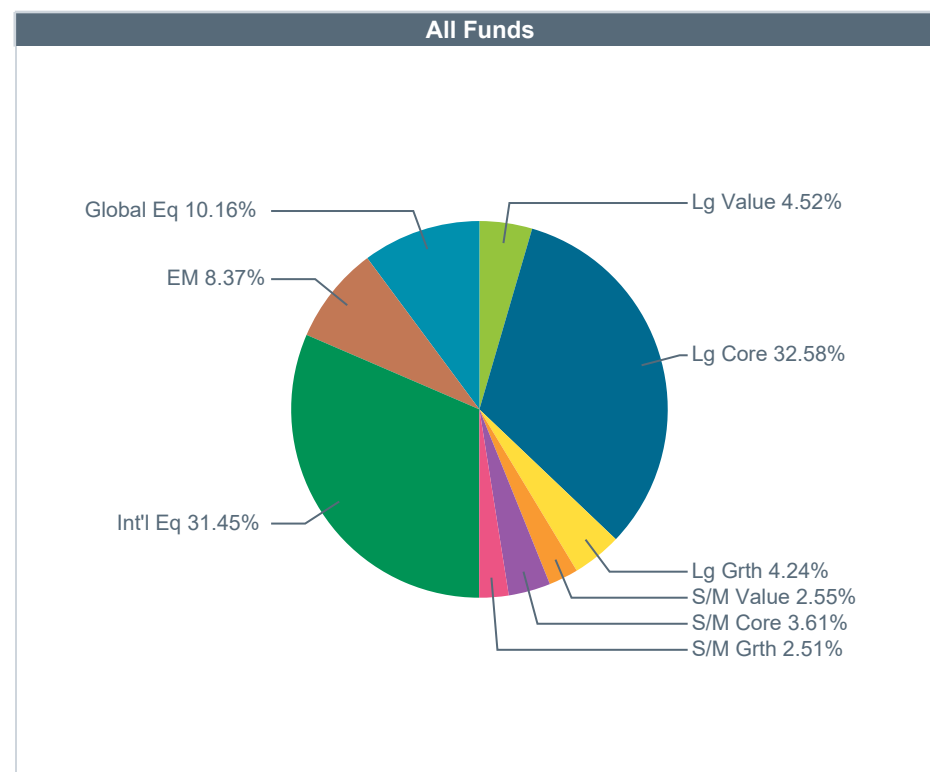
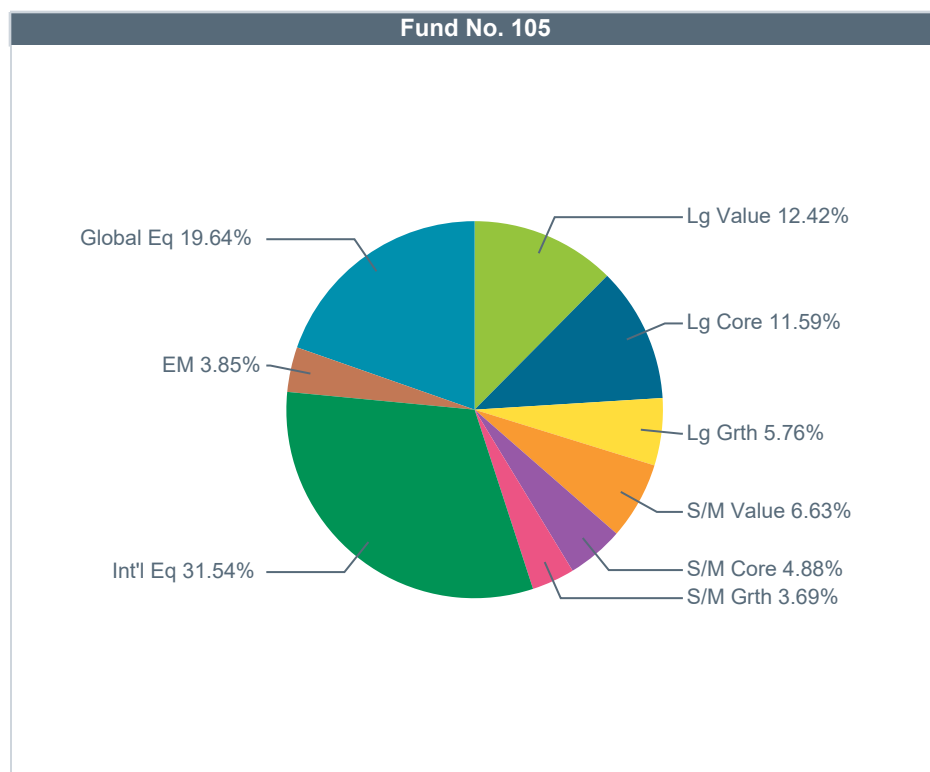
Allocations shown may not sum up to 100% exactly due to rounding.





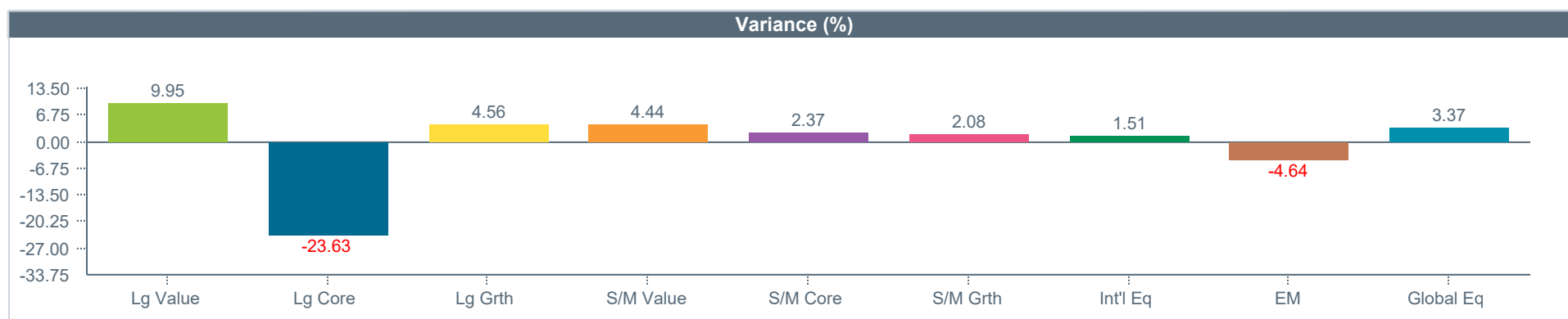
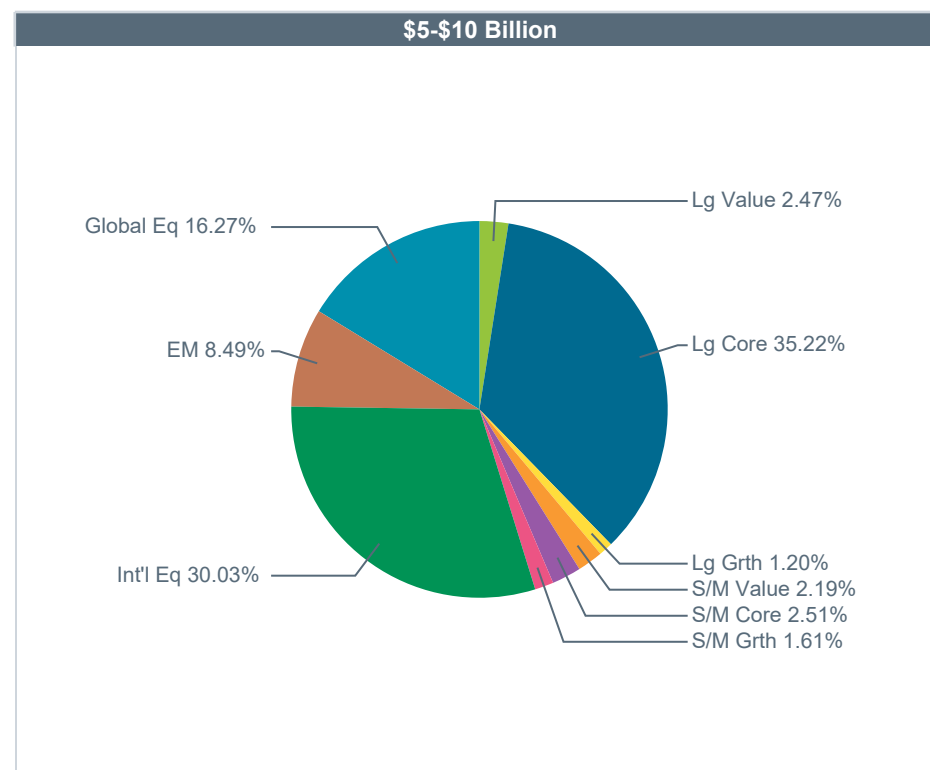
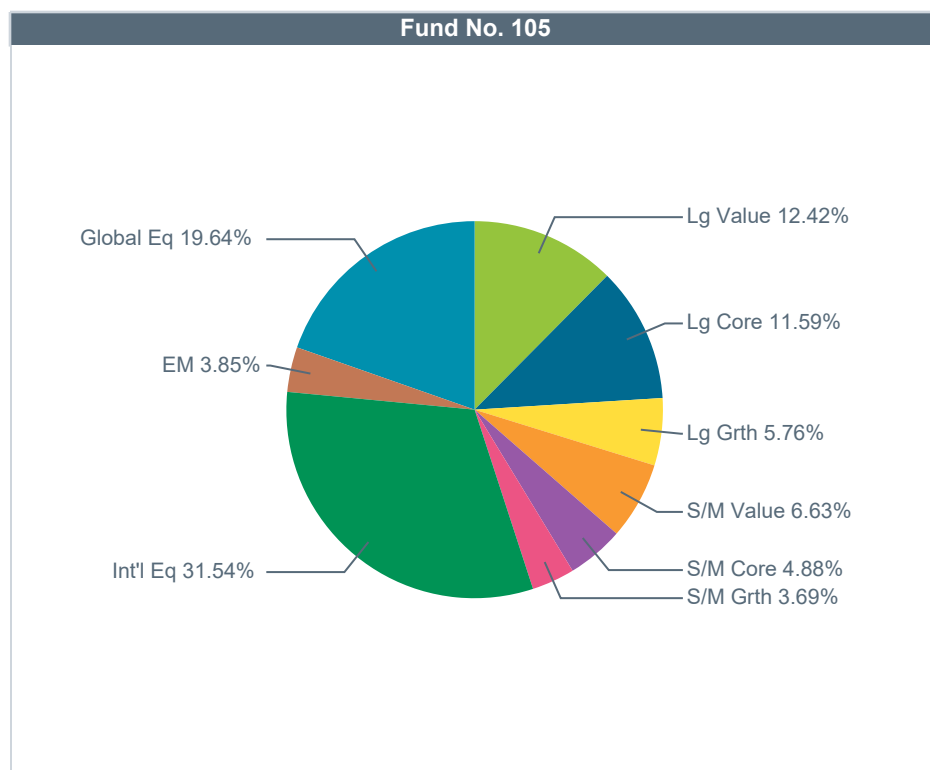
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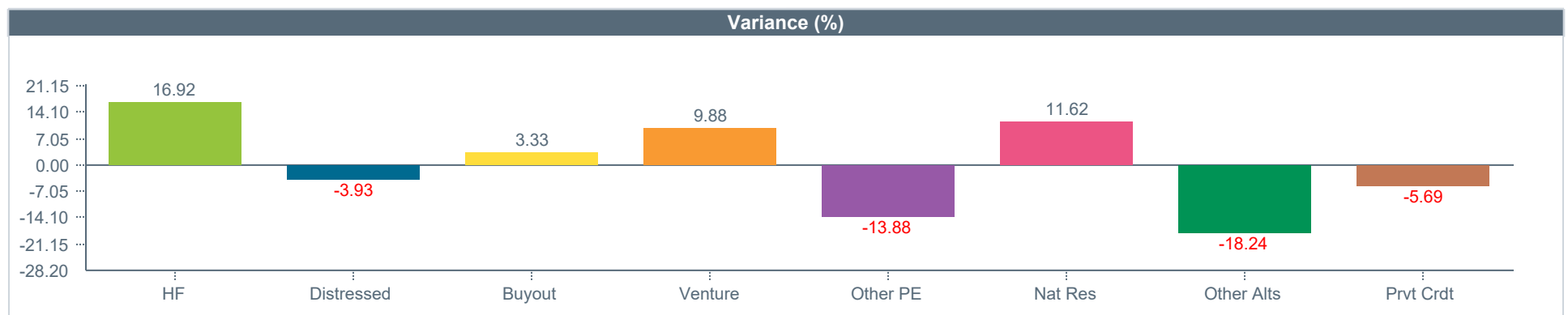
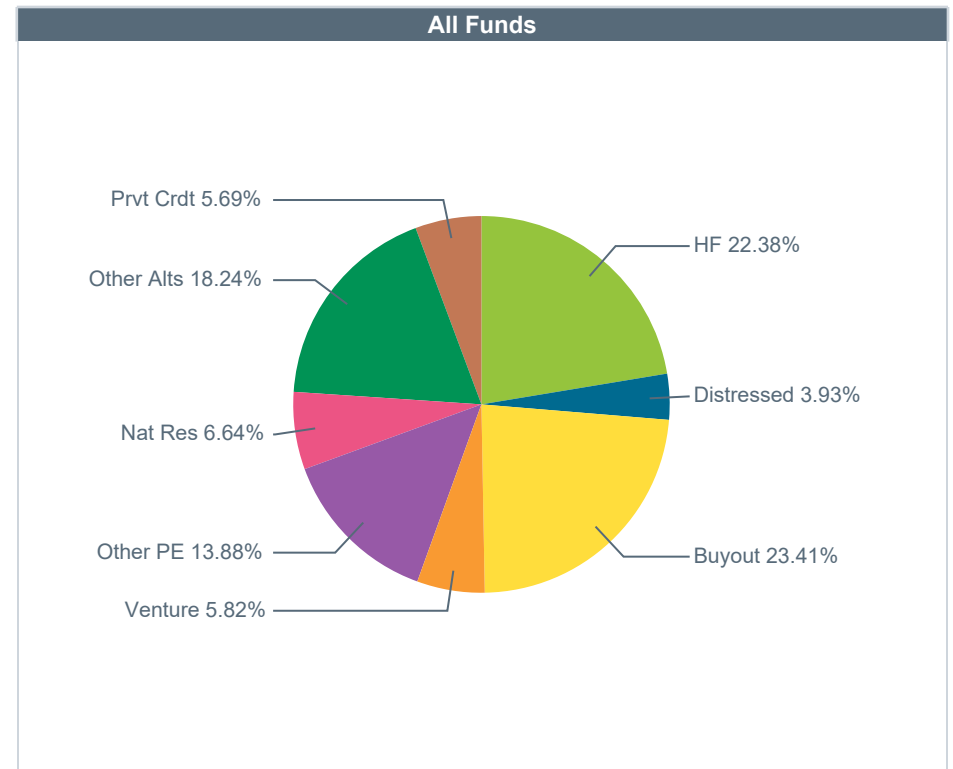
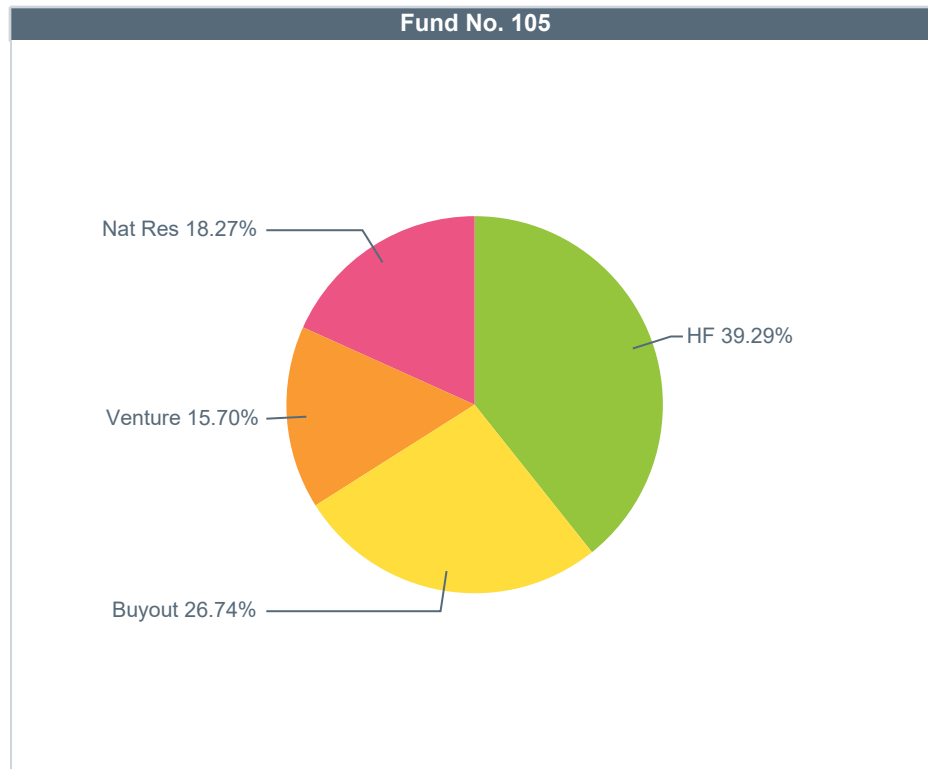
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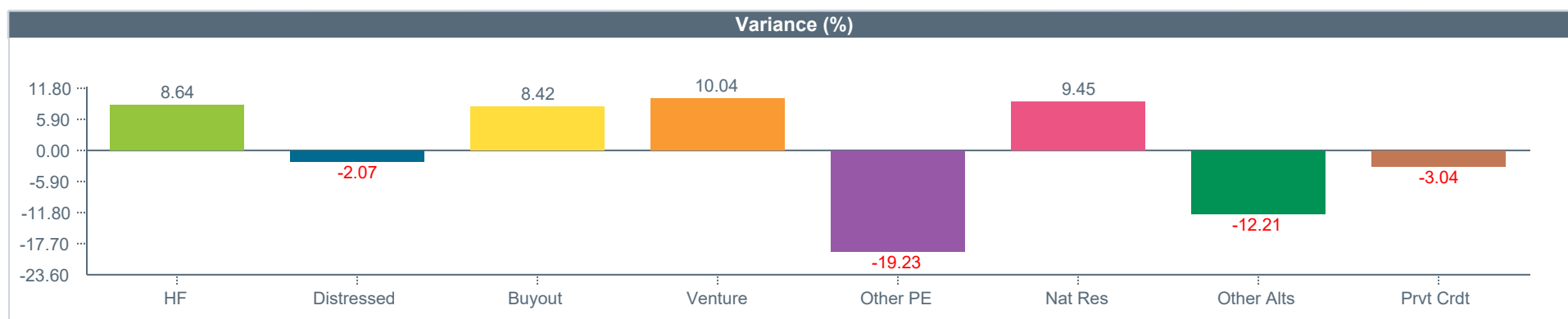
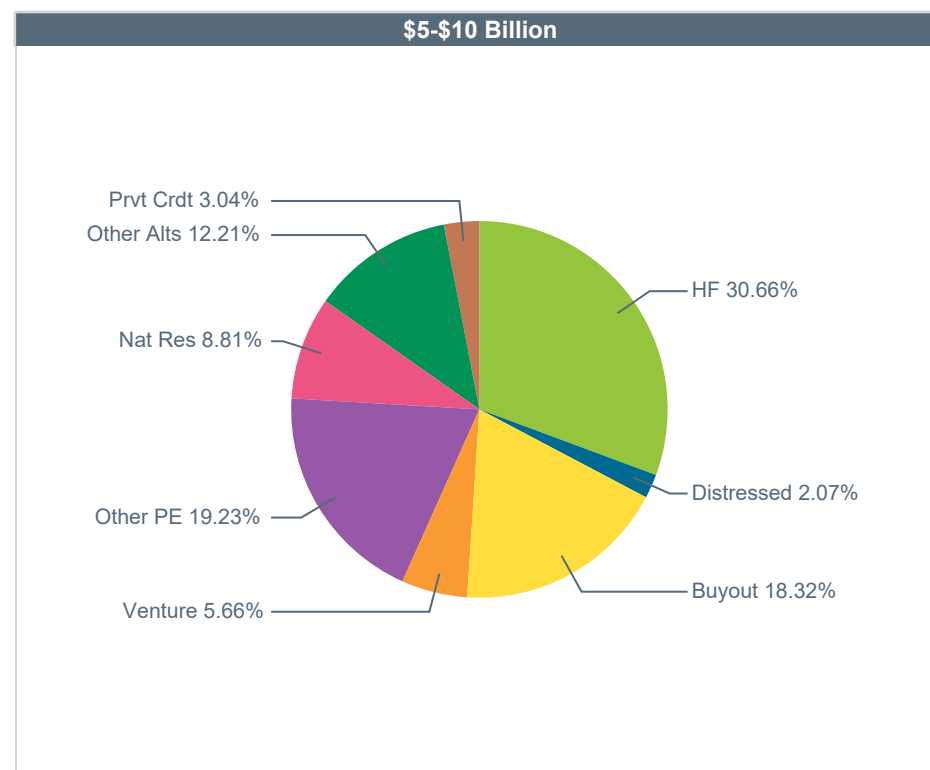
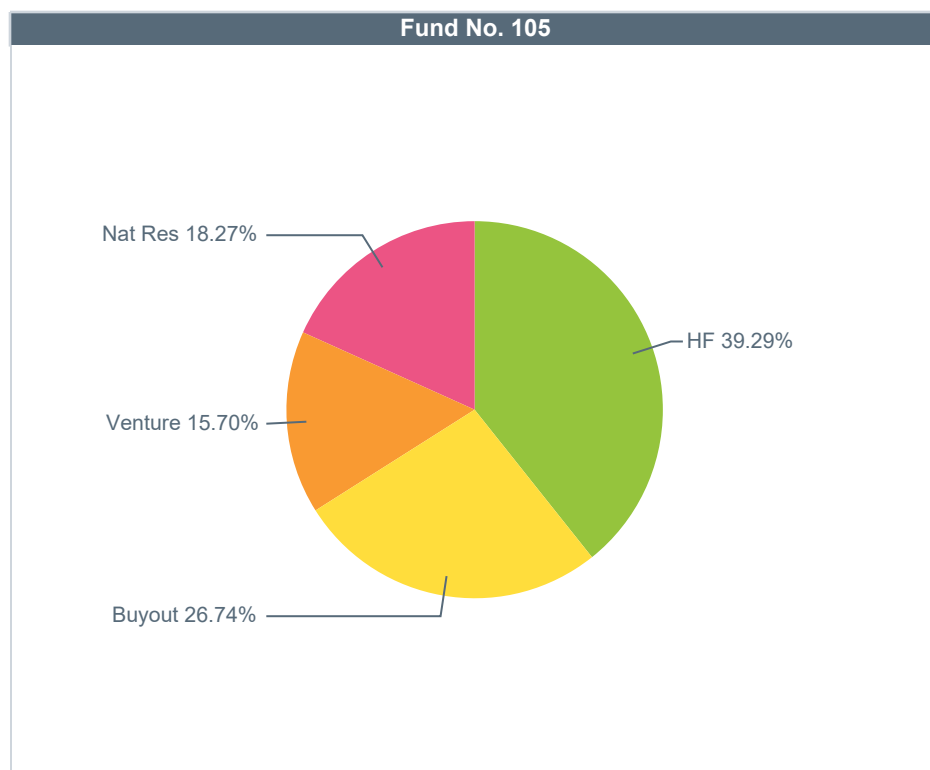


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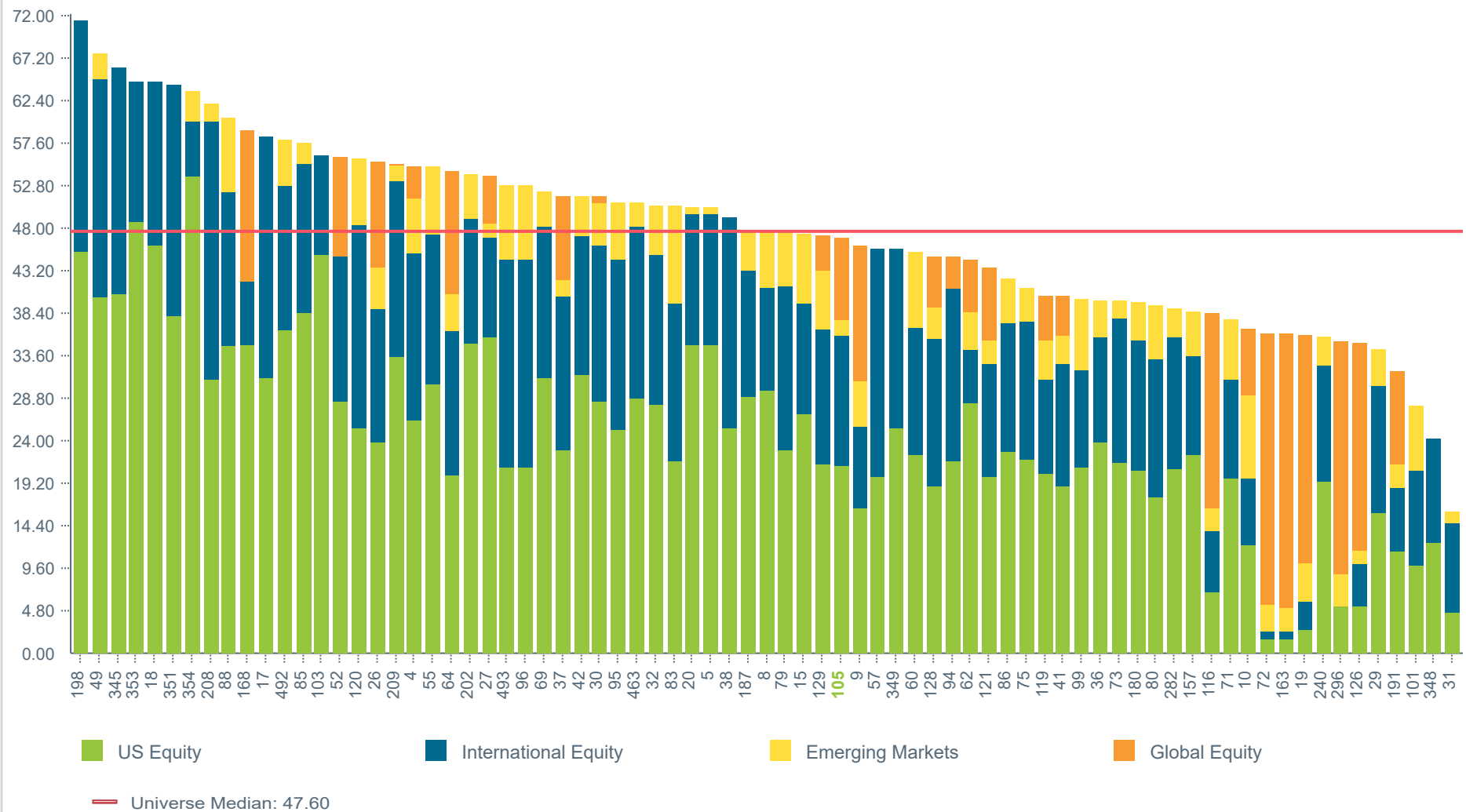
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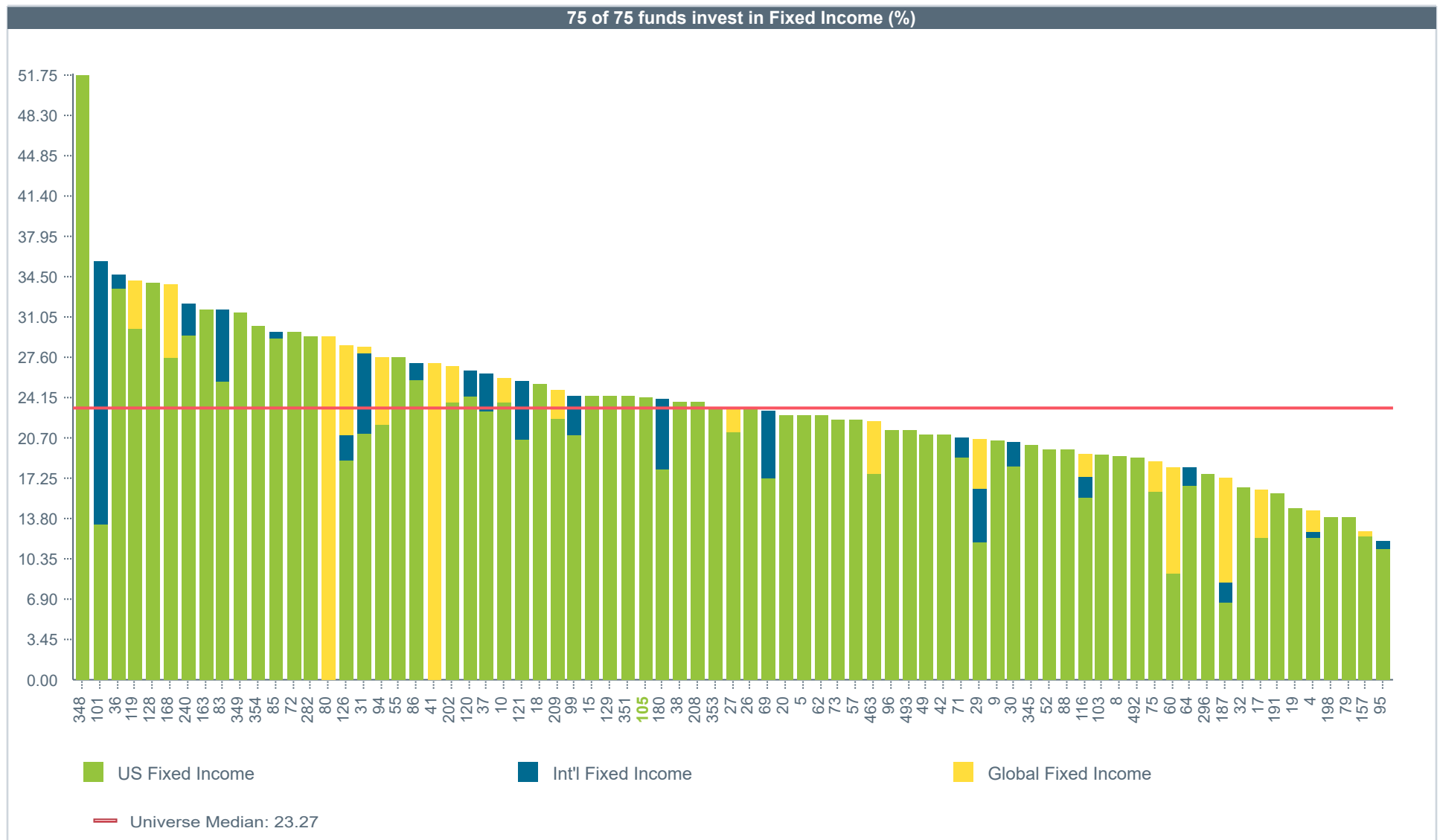


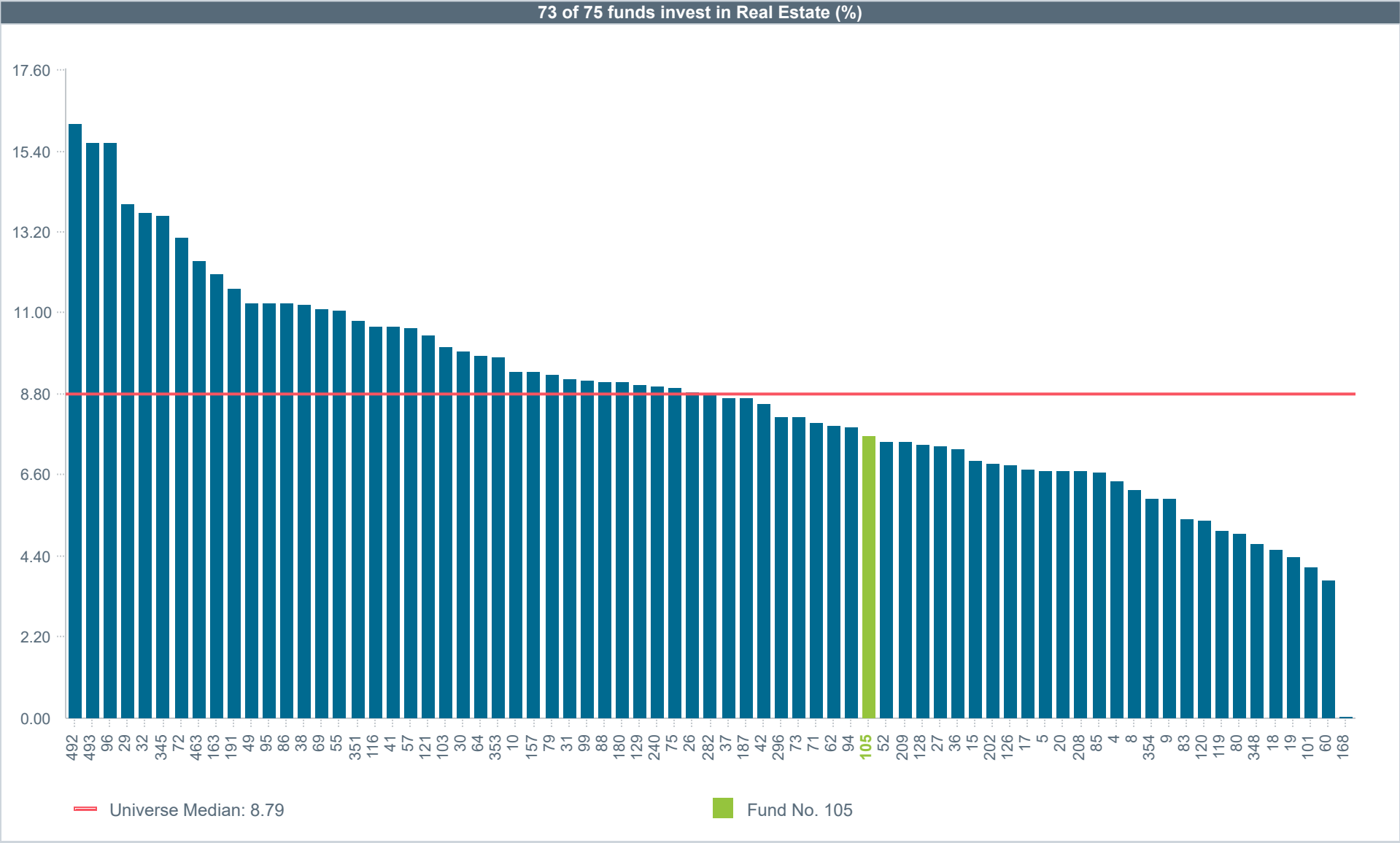
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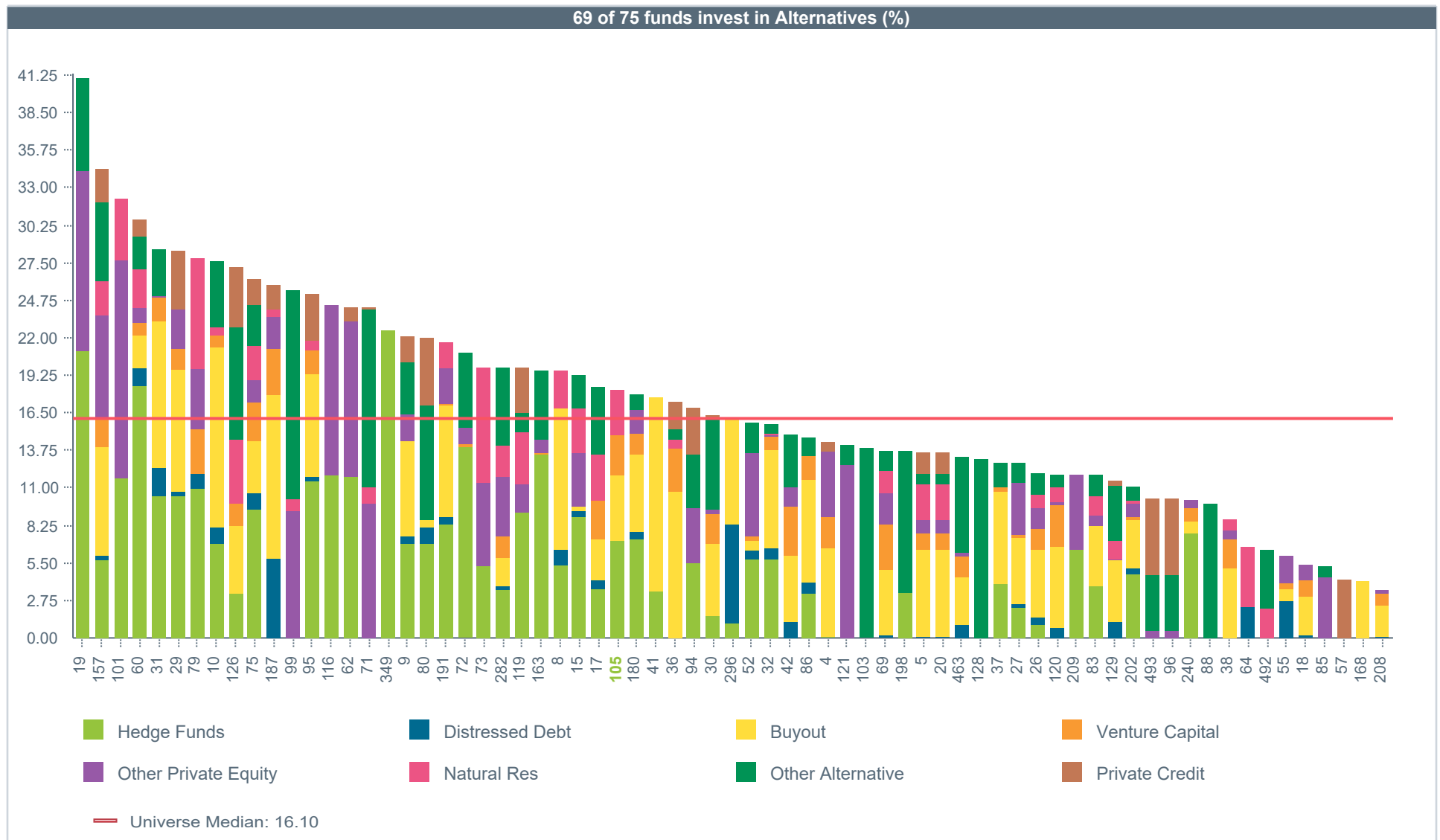


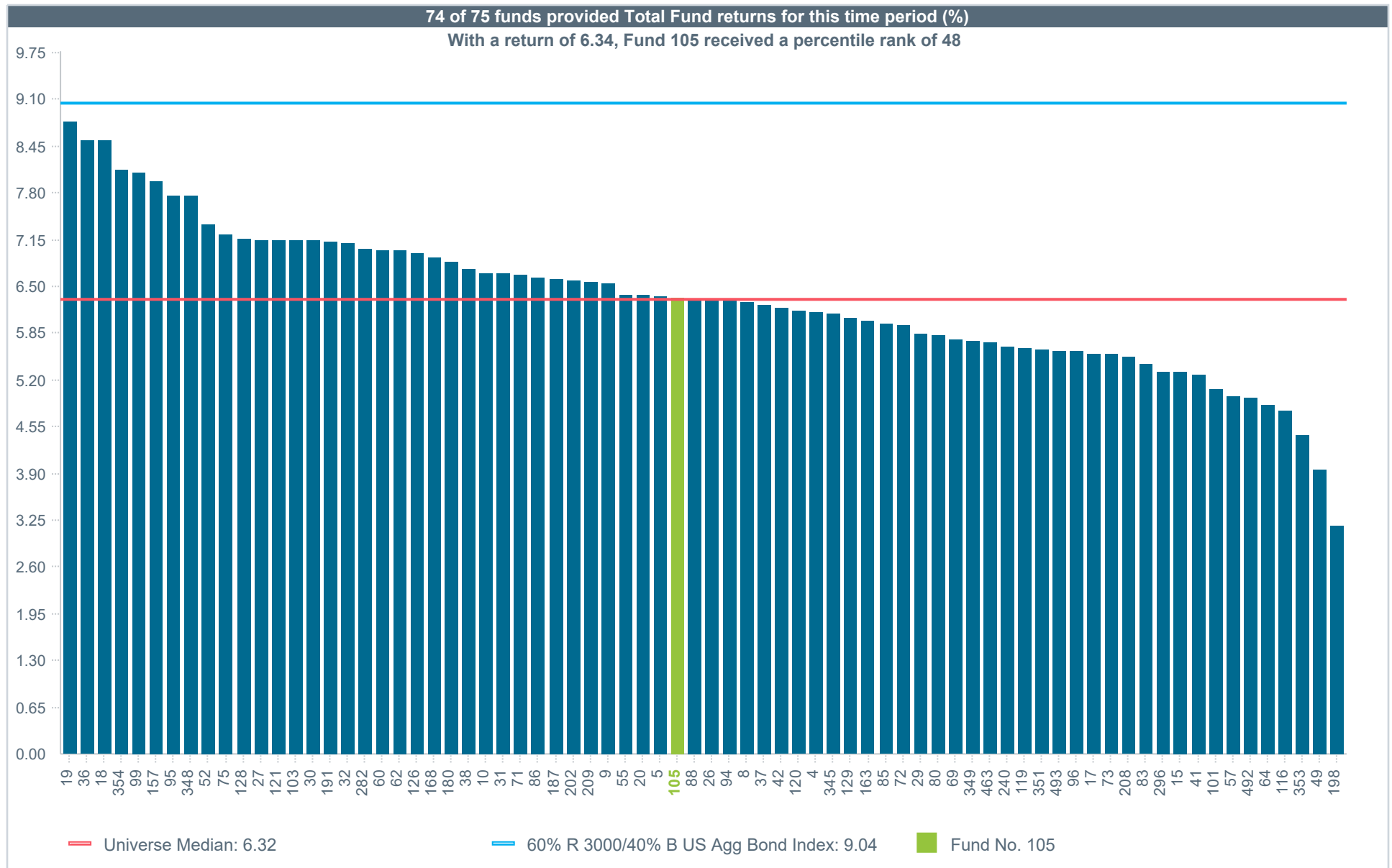
75 of 75 funds invest in Equity (%)





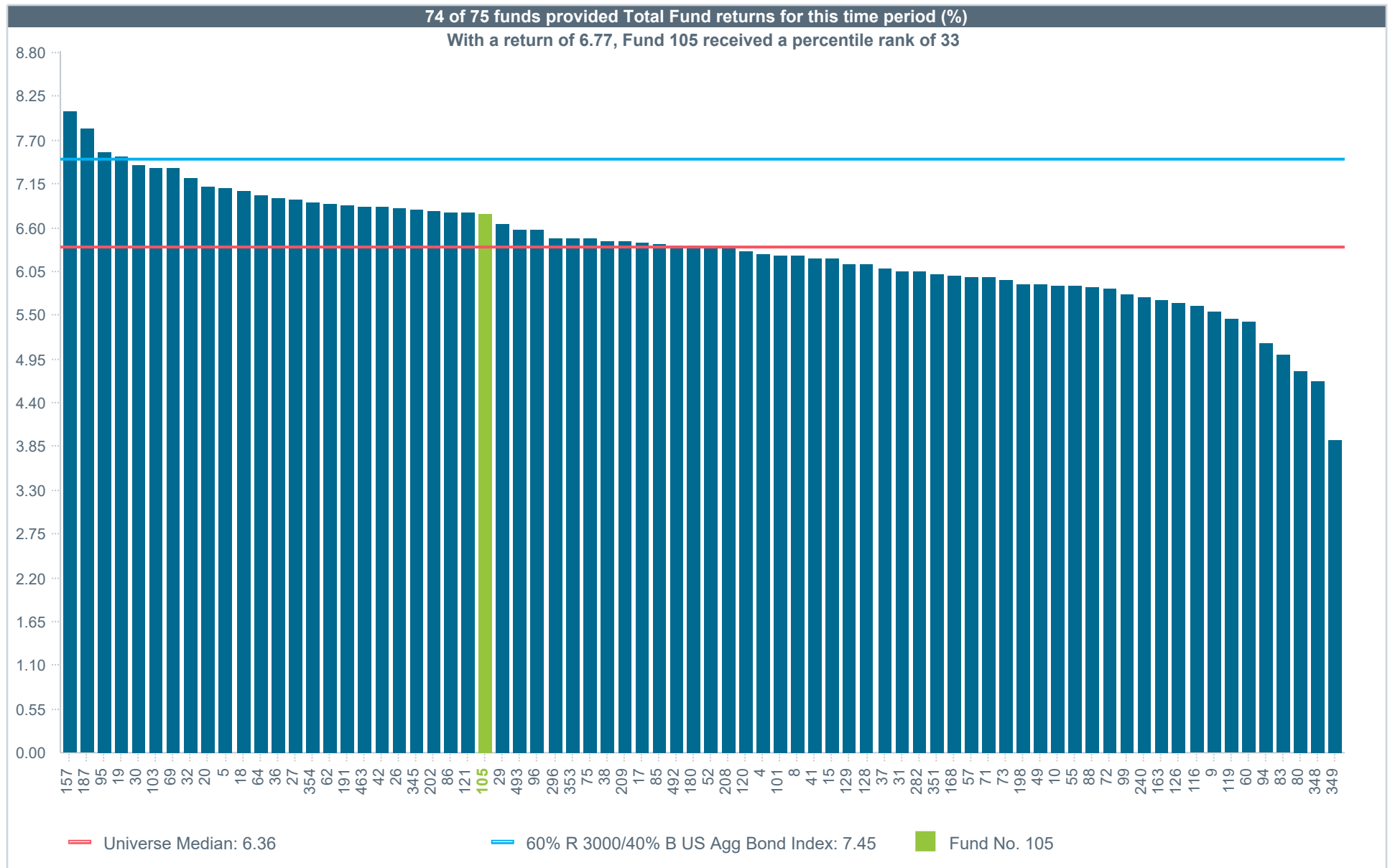






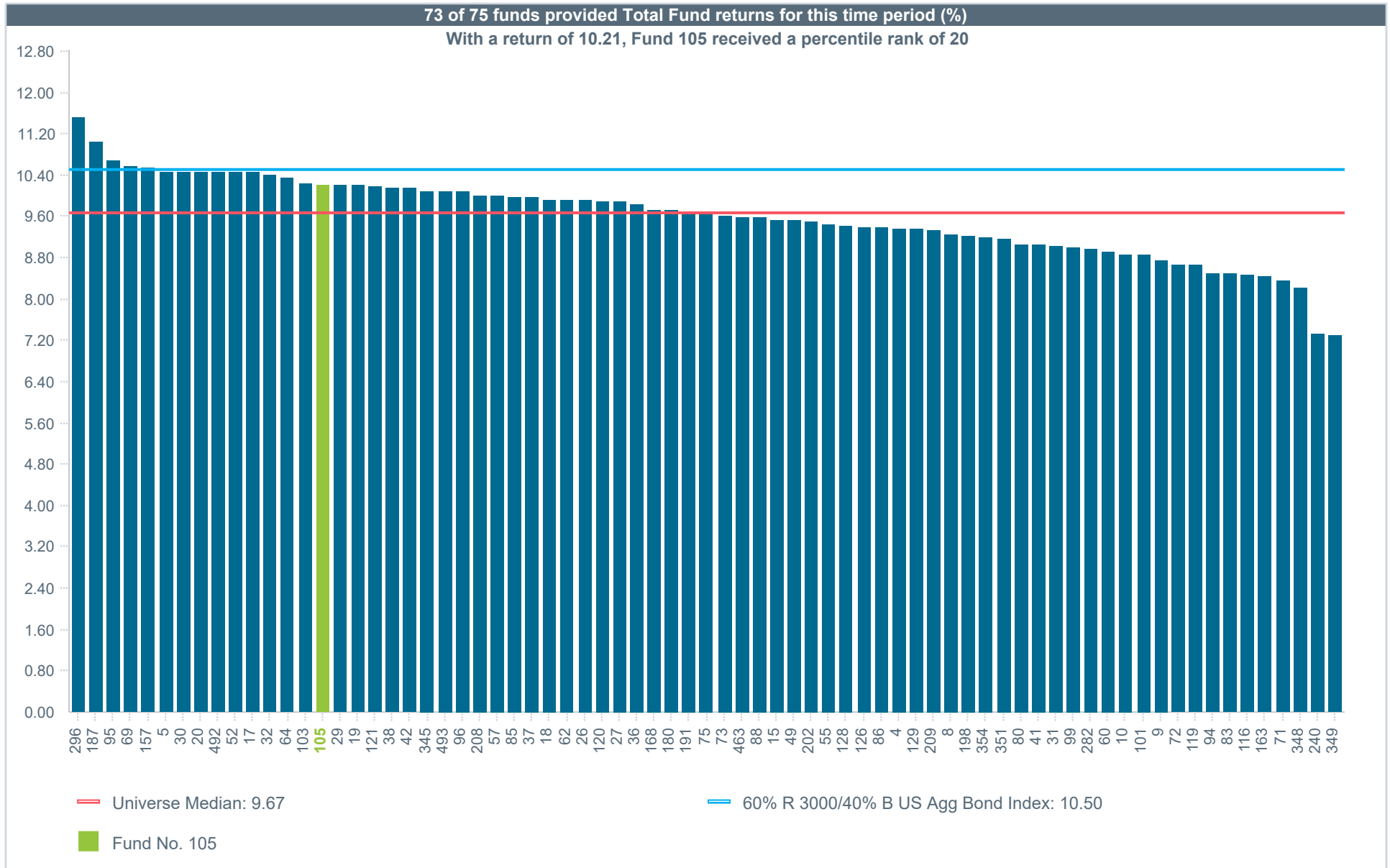
Funds with less history than the specified time period will not appear in the chart.





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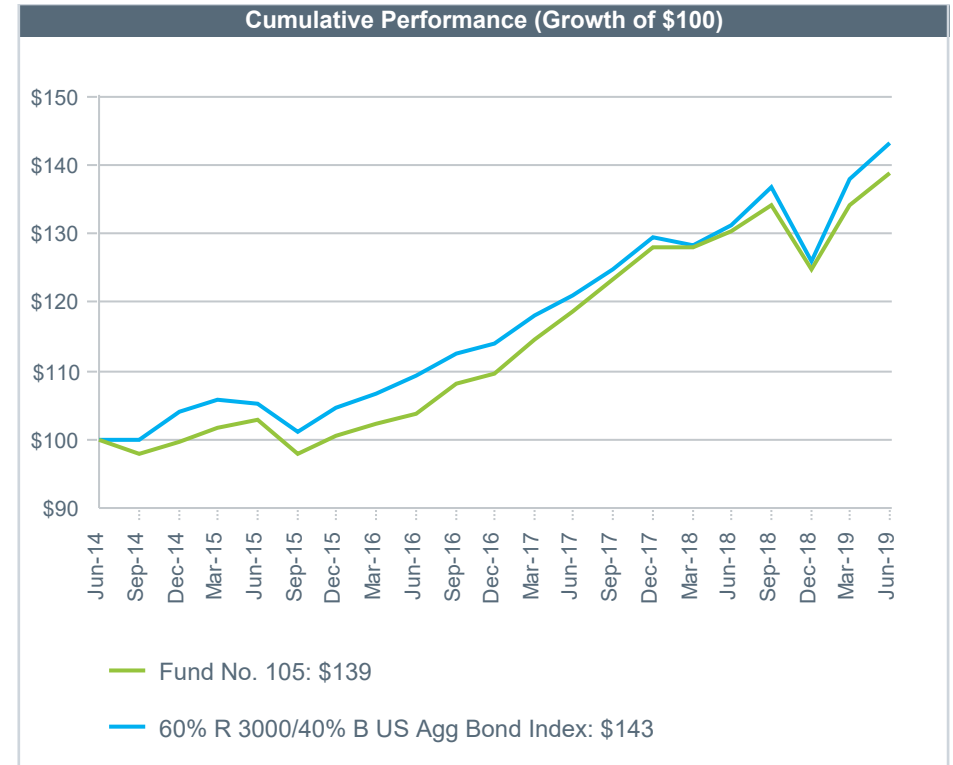
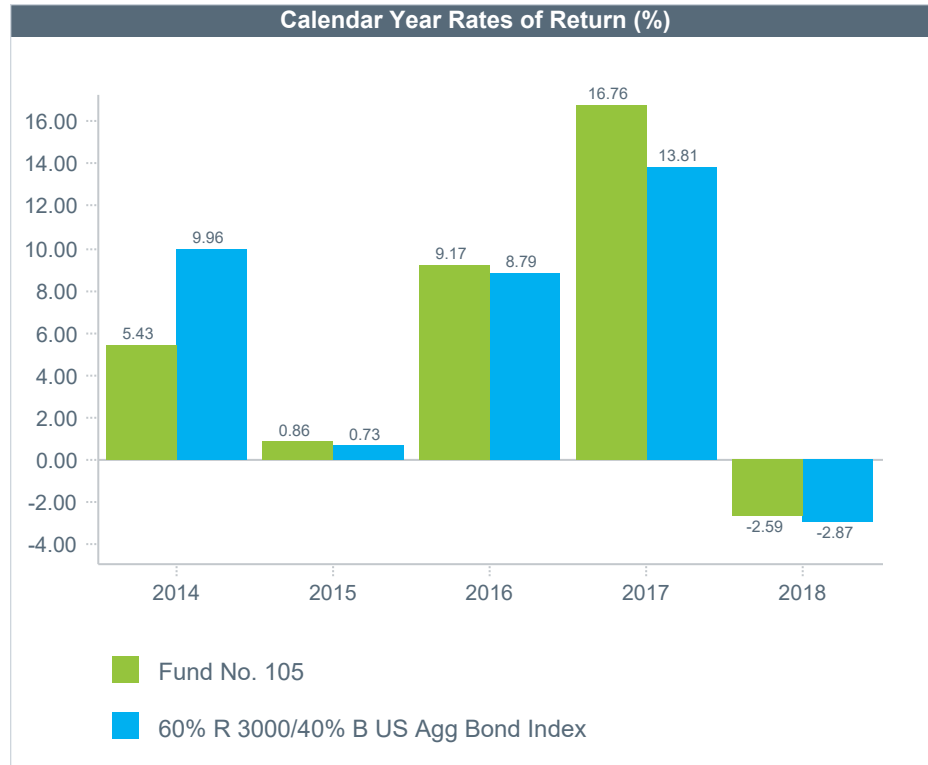


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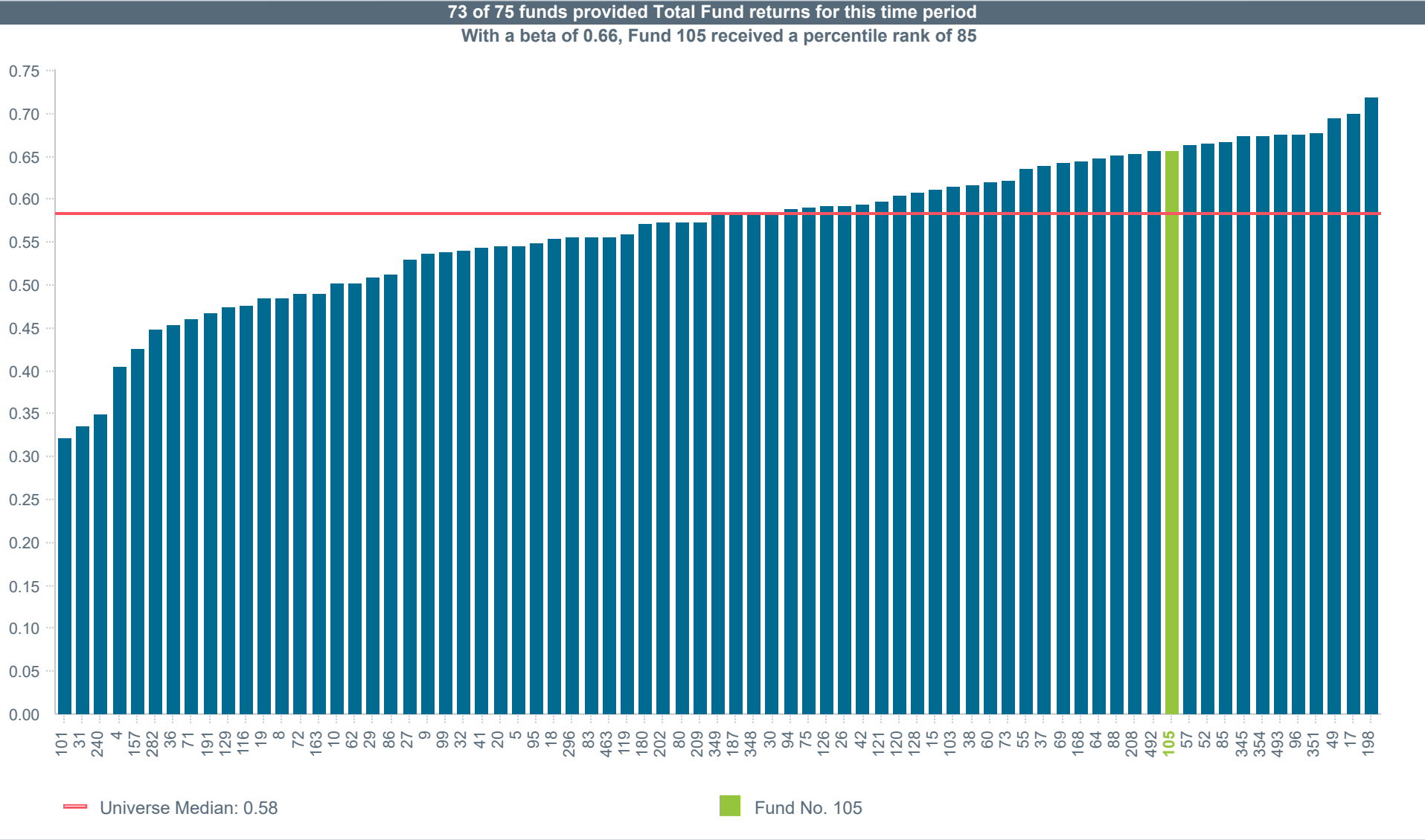
Total Return - Total Fund
Fund No. 105 vs. 60% R 3000/40% B US Agg Bond Index

As of June 30, 2019



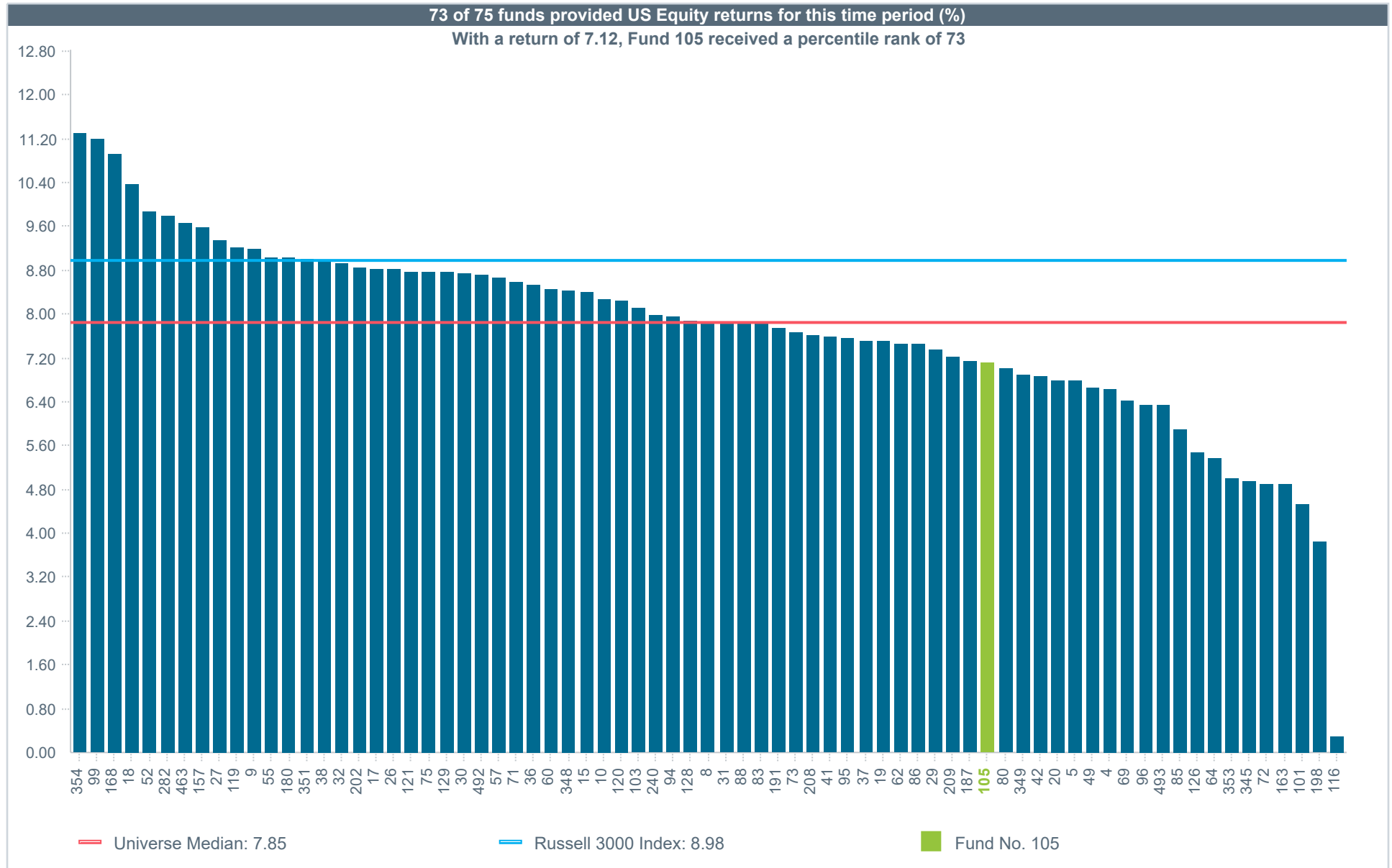
Annualized Returns (%)			
	1 Year	3 Years	5 Years
Fund No. 105	6.34	10.18	6.77
60% R 3000/40% B US Agg Bond Index	9.04	9.42	7.45
Variance	-2.70	0.76	-0.68





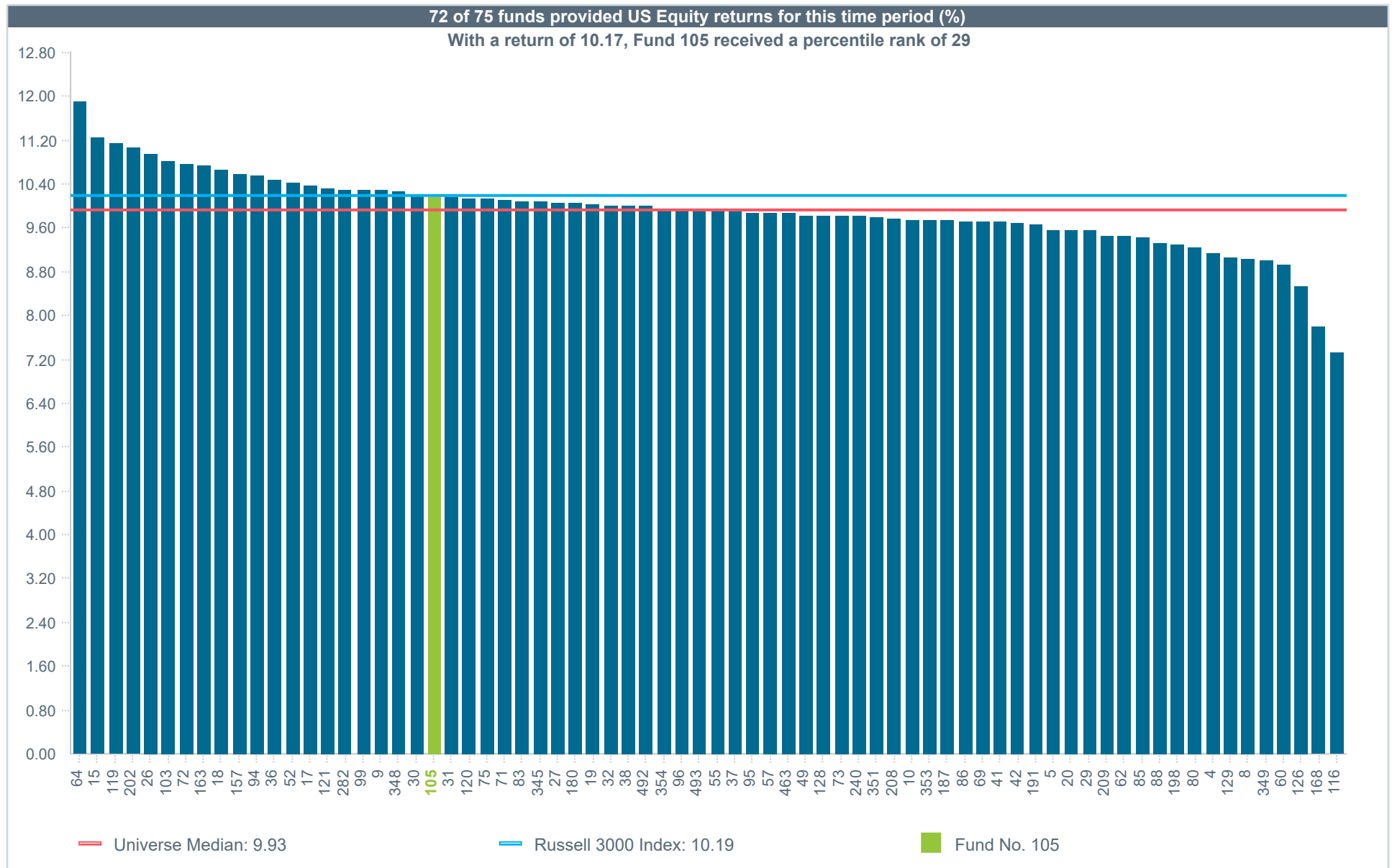
Funds with less history than the specified time period will not appear in the chart. Benchmark used is the S&P 500 Index (Cap Wtd).





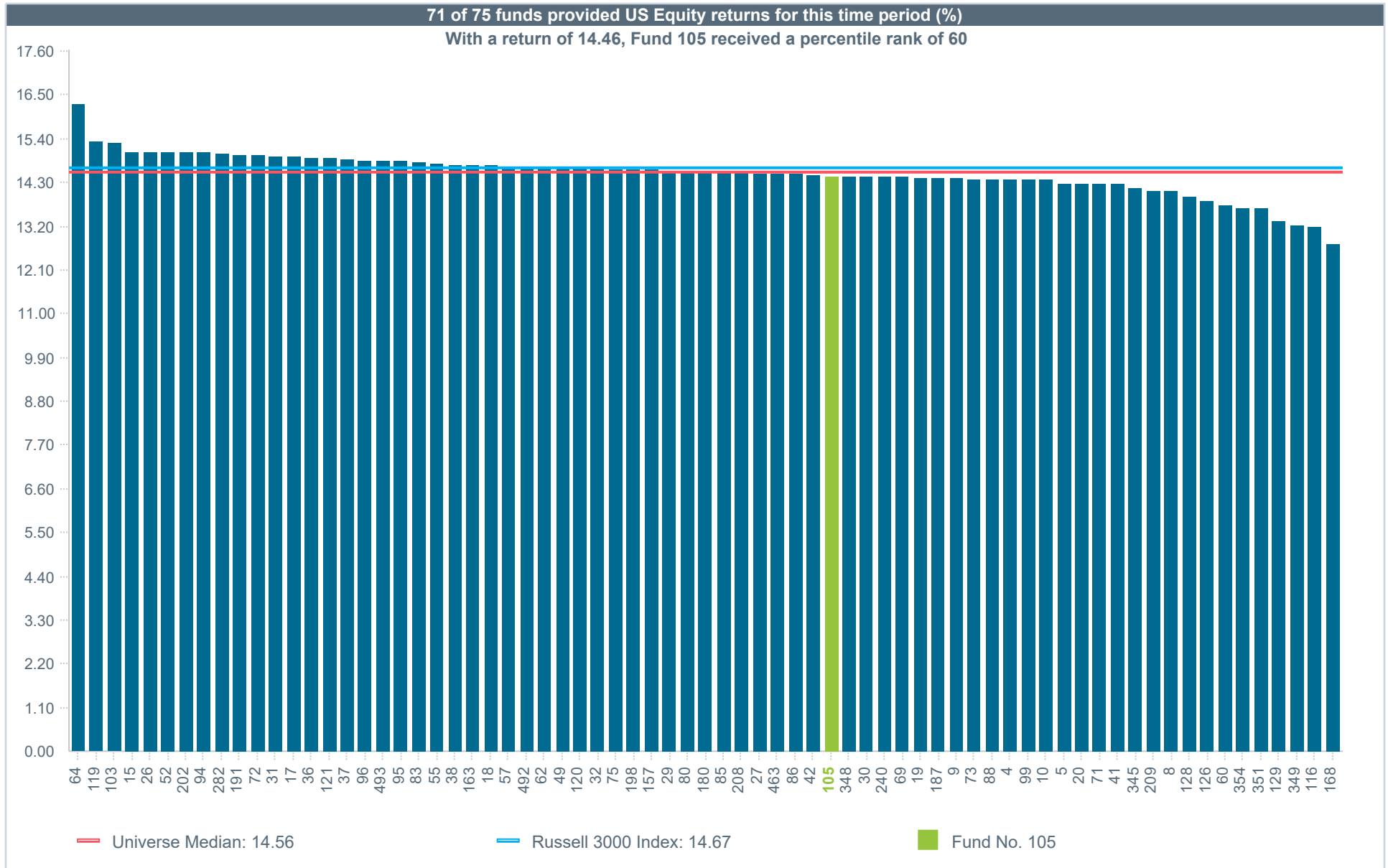
Funds with less history than the specified time period will not appear in the chart.





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



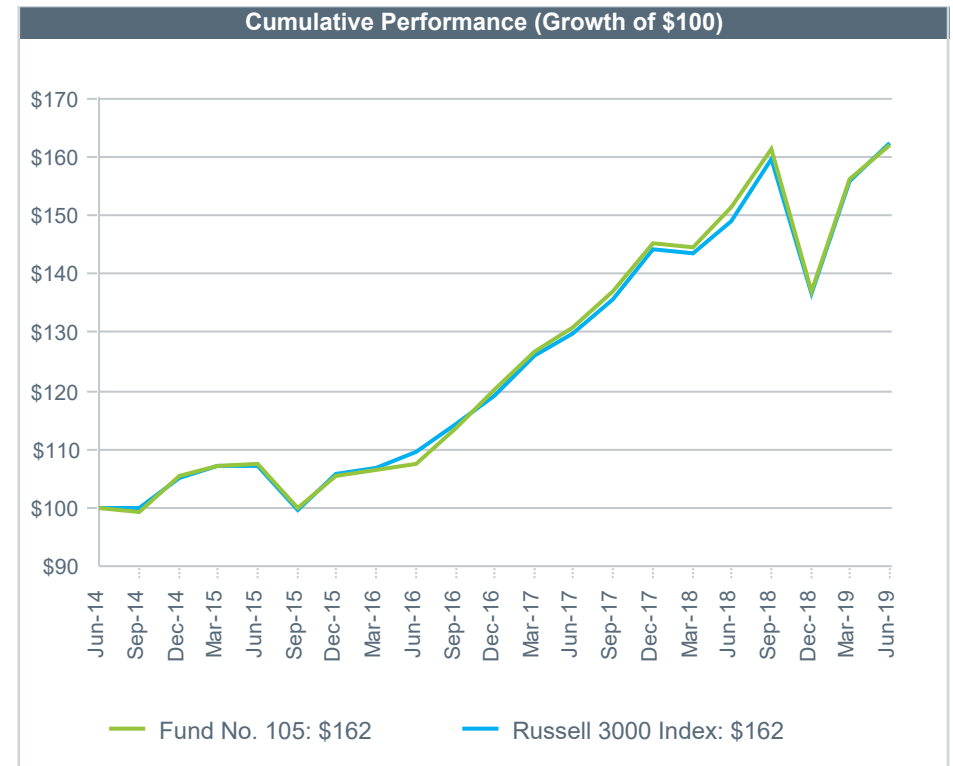
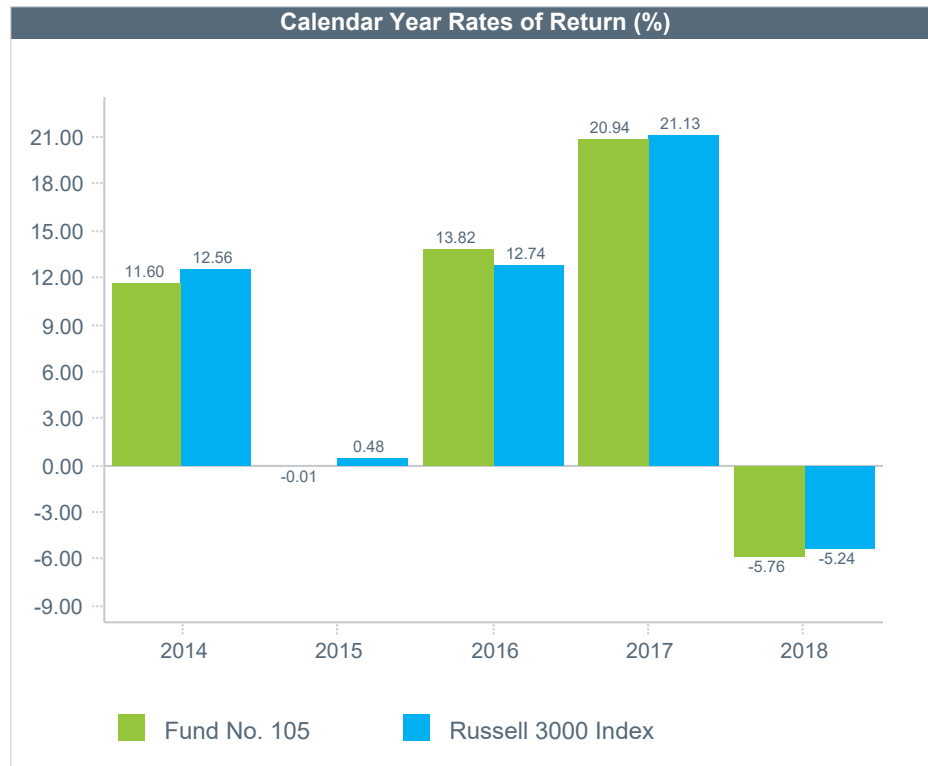


Funds with less history than the specified time period will not appear in the chart.



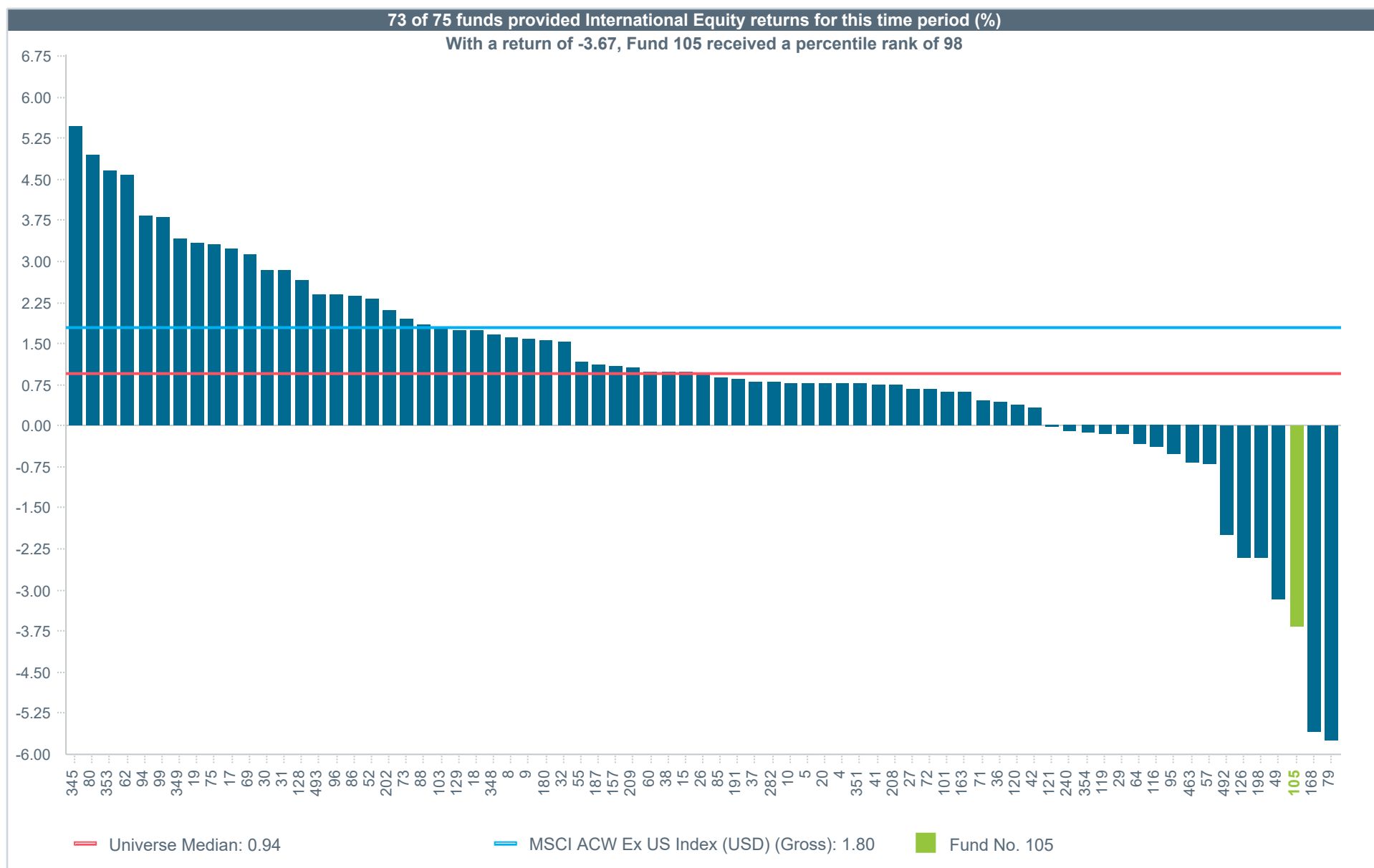
Total Return - US Equity
Fund No. 105 vs. Russell 3000 Index

As of June 30, 2019



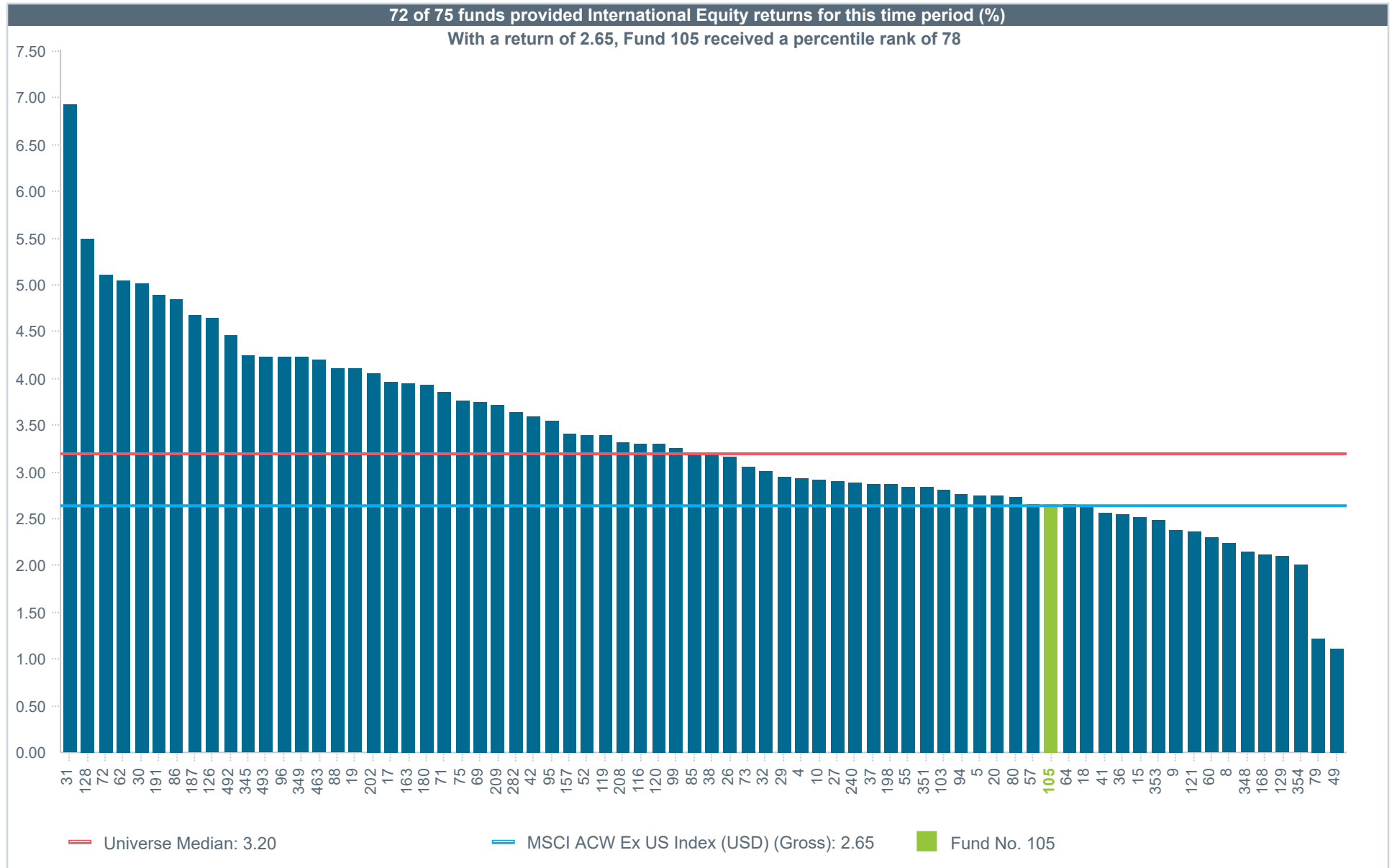
Annualized Returns (%)			
	1 Year	3 Years	5 Years
Fund No. 105	7.12	14.68	10.17
Russell 3000 Index	8.98	14.02	10.19
Variance	-1.86	0.66	-0.02



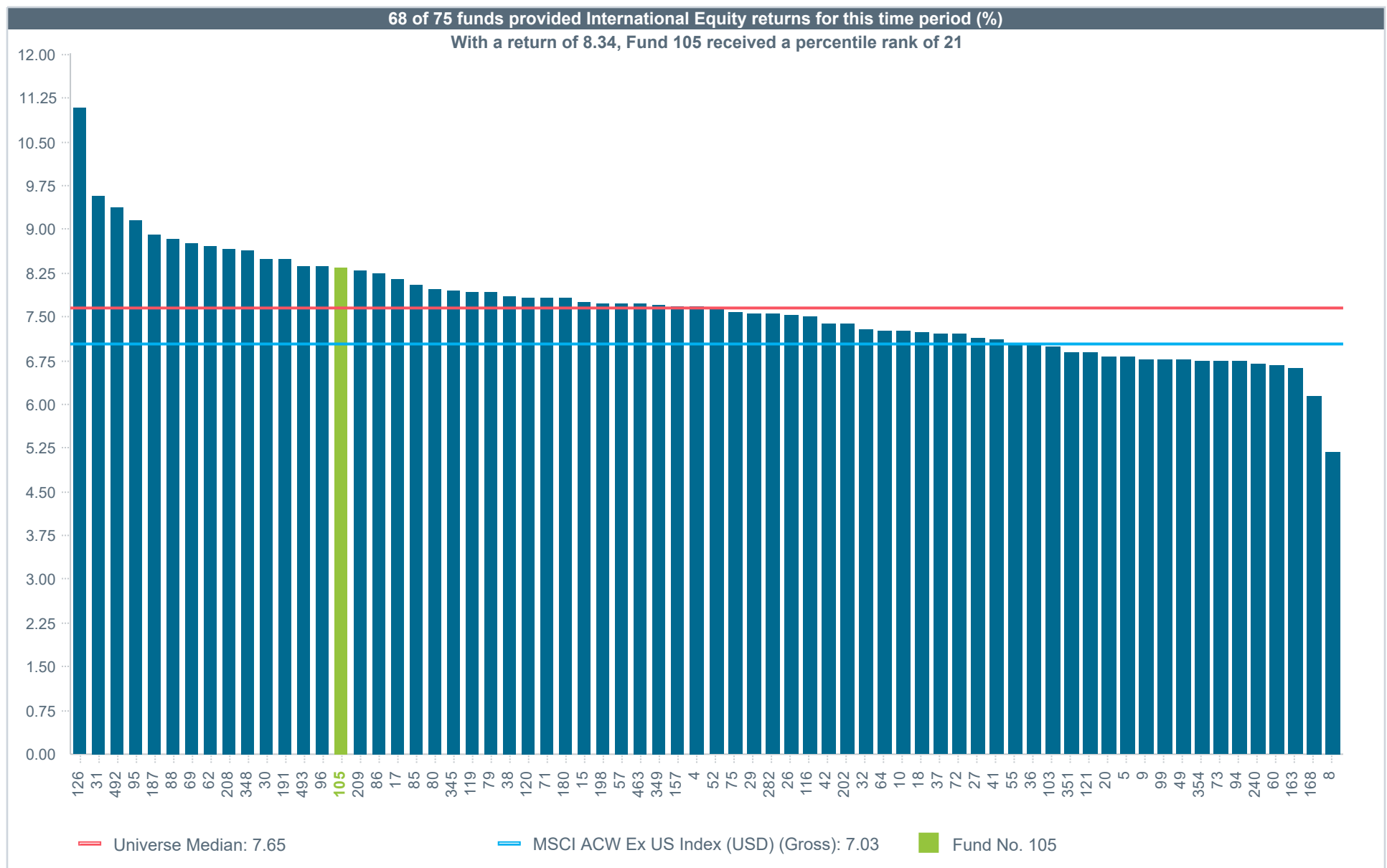


Funds with less history than the specified time period will not appear in the chart.





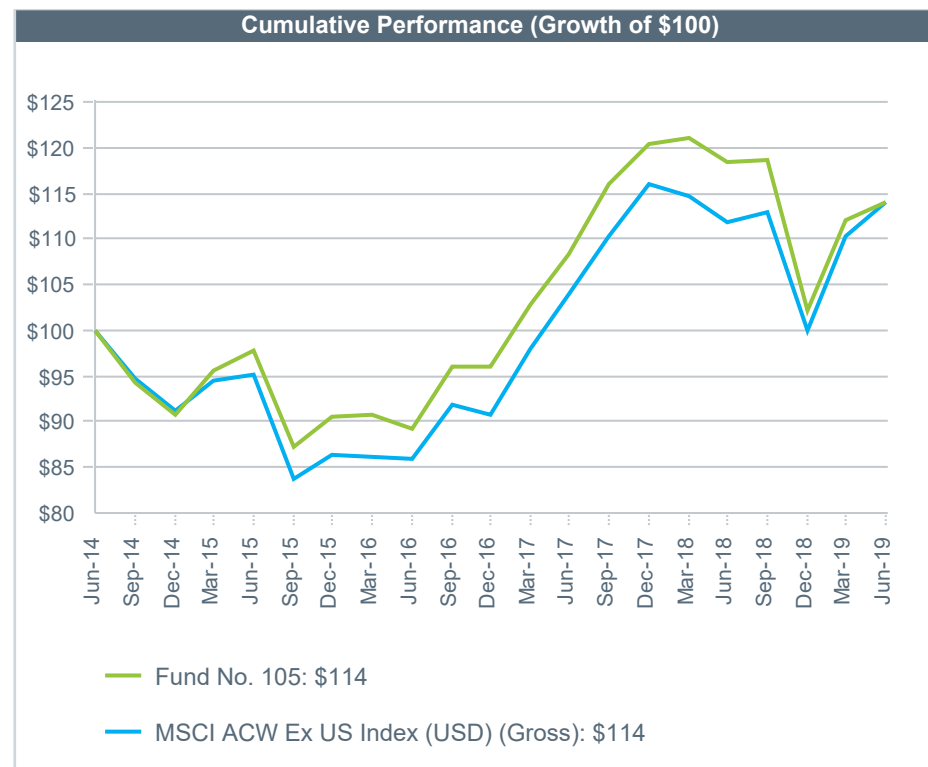
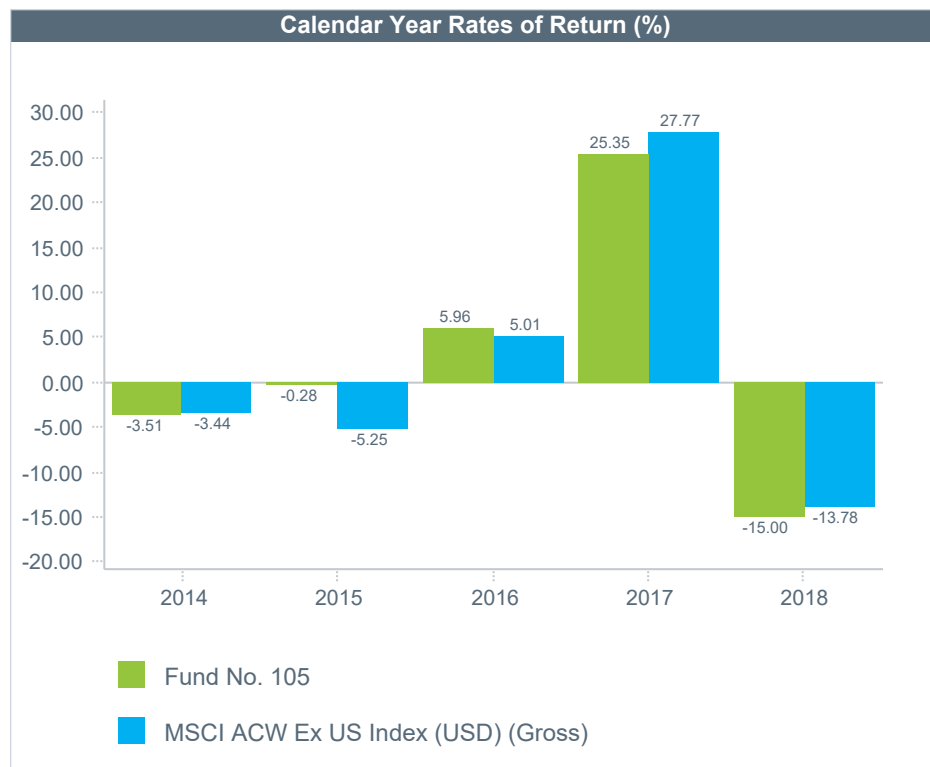
Funds with less history than the specified time period will not appear in the chart.



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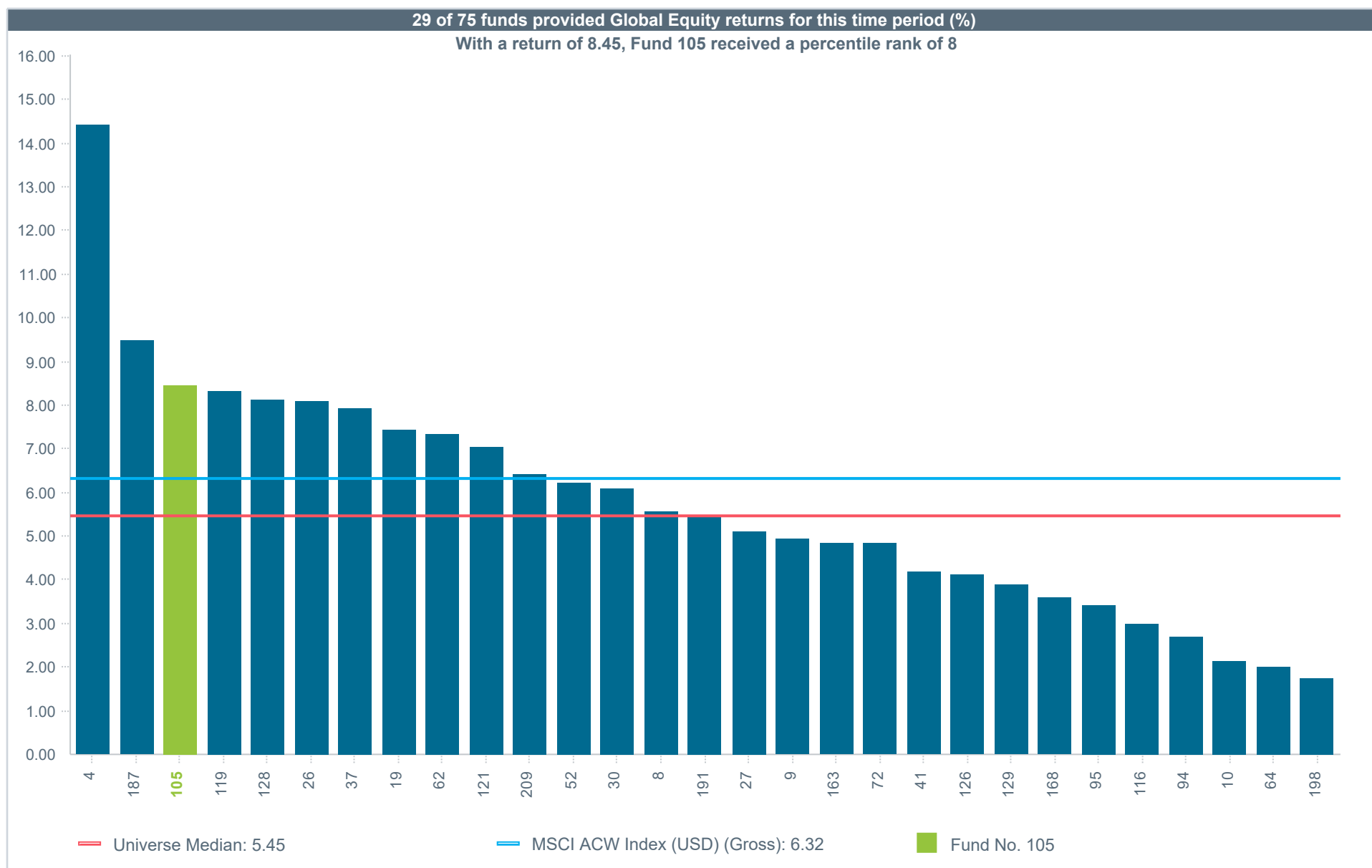
Total Return - International Equity
Fund No. 105 vs. MSCI ACW Ex US Index (USD) (Gross)

As of June 30, 2019

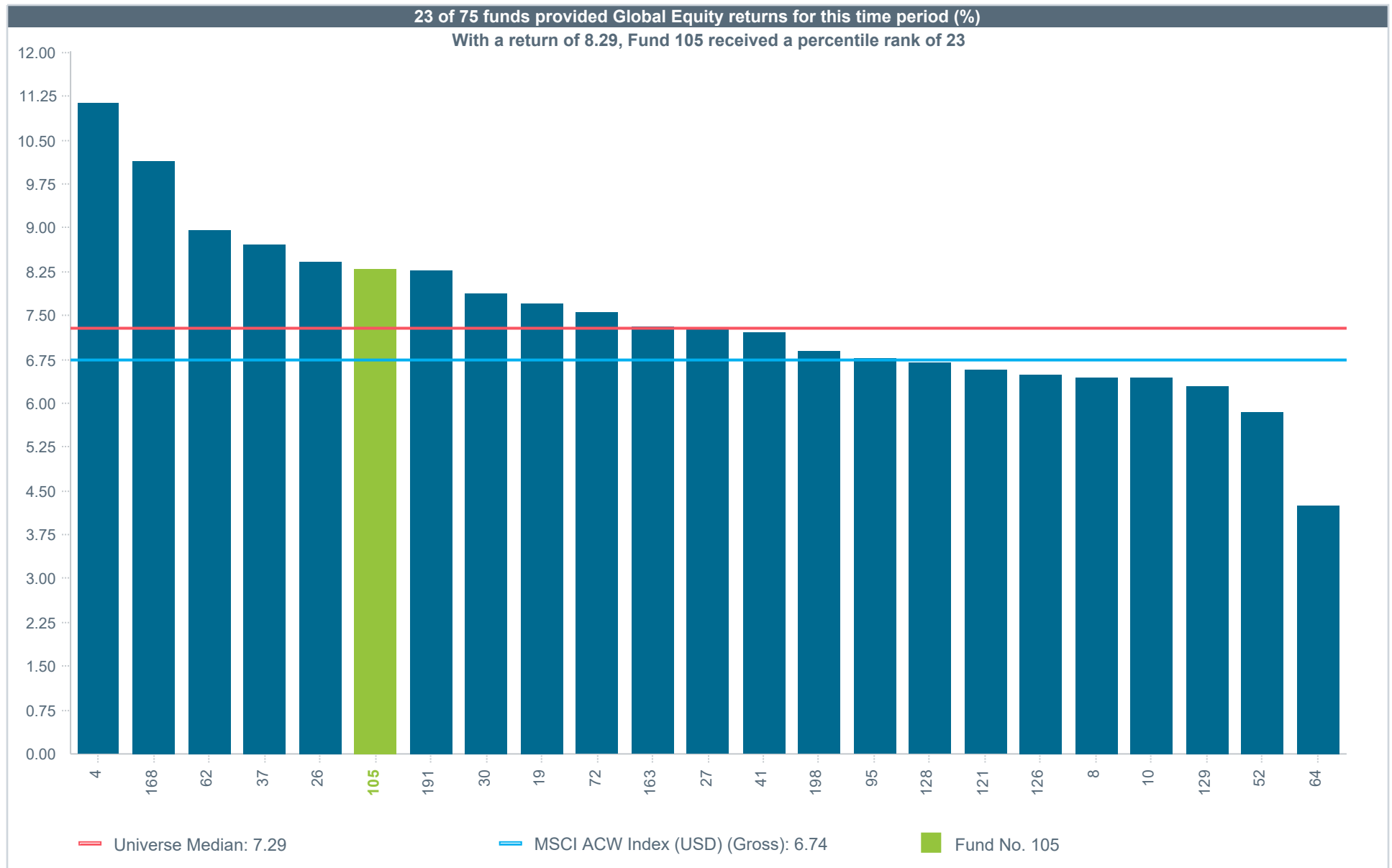


Annualized Returns (%)			
	1 Year	3 Years	5 Years
Fund No. 105	-3.67	8.51	2.65
MSCI ACW Ex US Index (USD) (Gross)	1.80	9.91	2.65
Variance	-5.47	-1.40	0.00



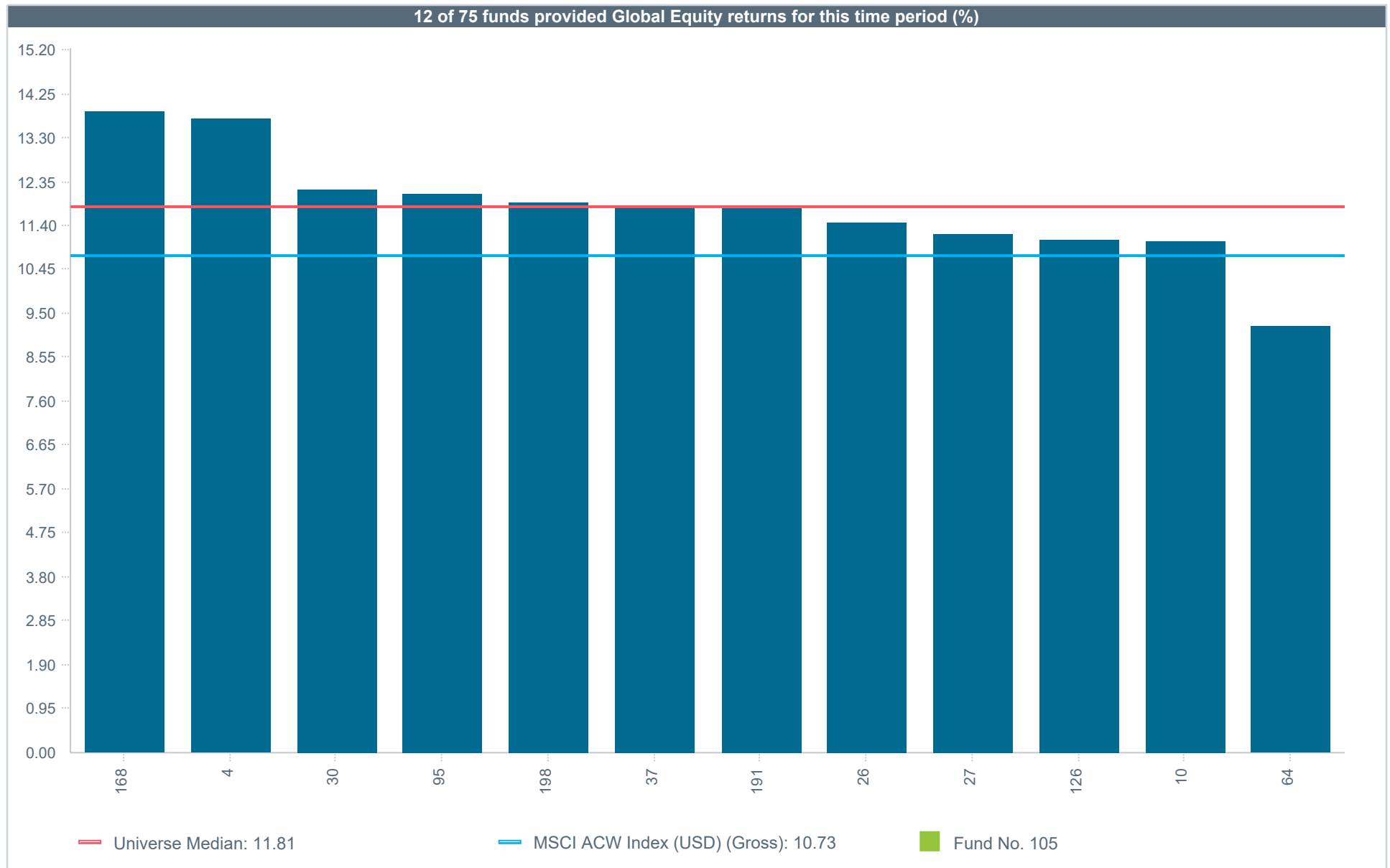


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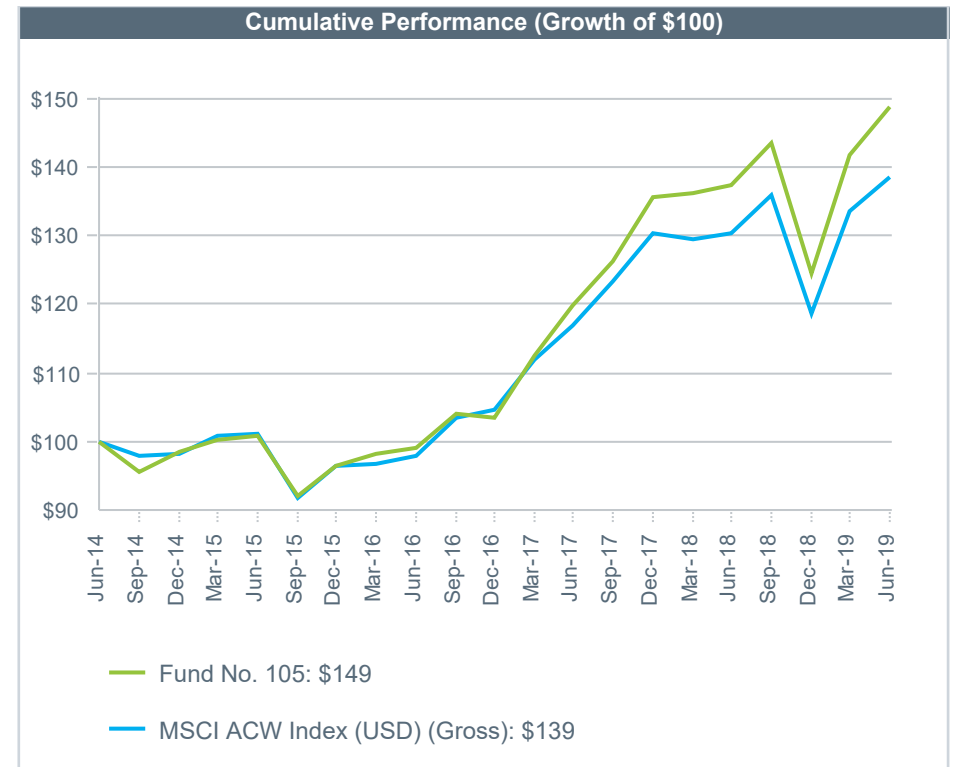
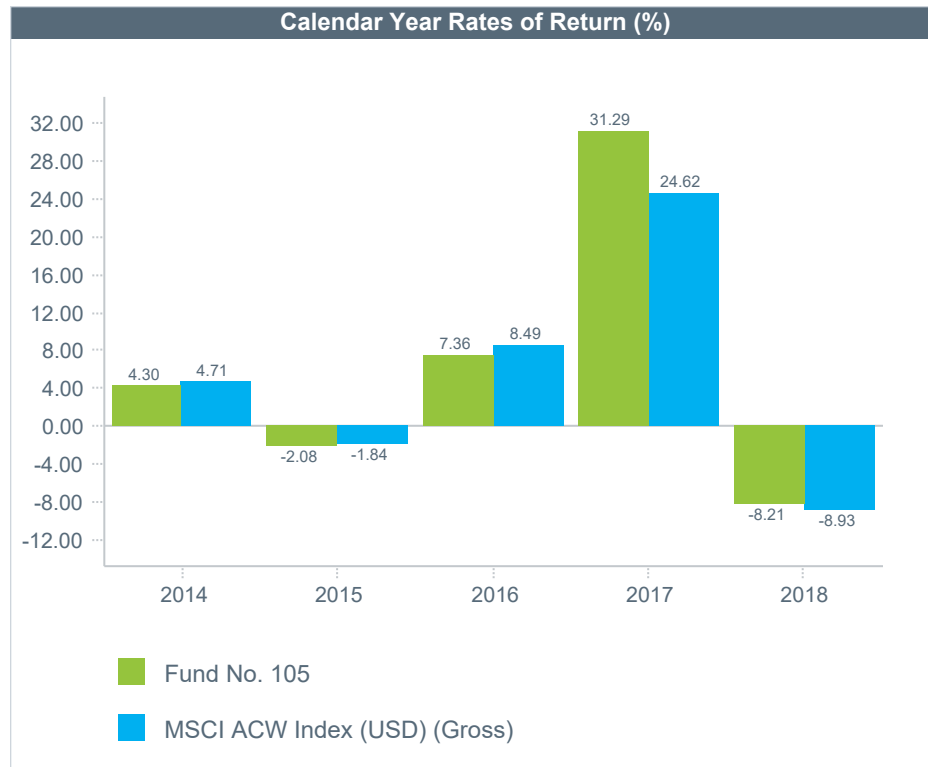


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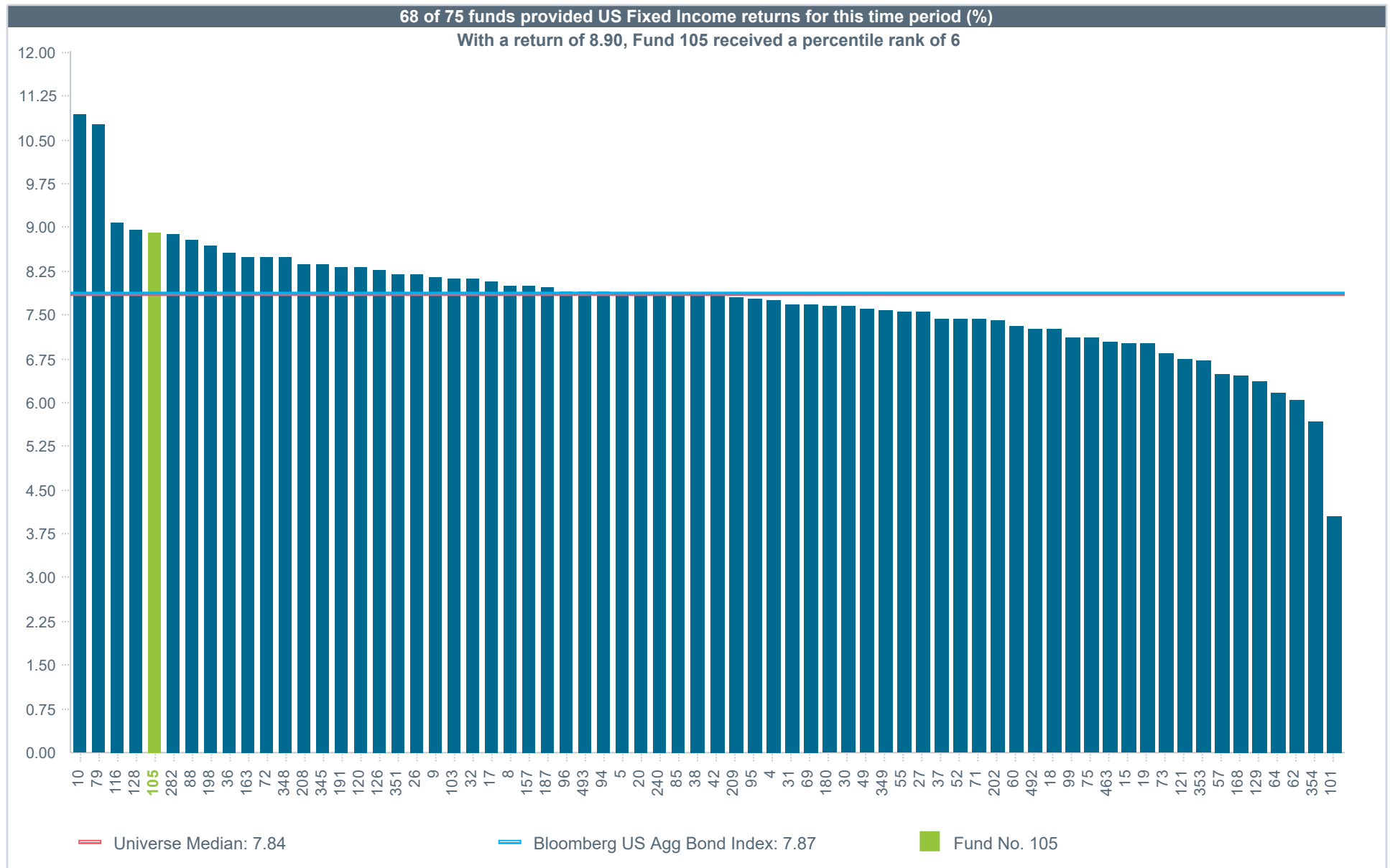
Total Return - Global Equity
Fund No. 105 vs. MSCI ACW Index (USD) (Gross)

As of June 30, 2019



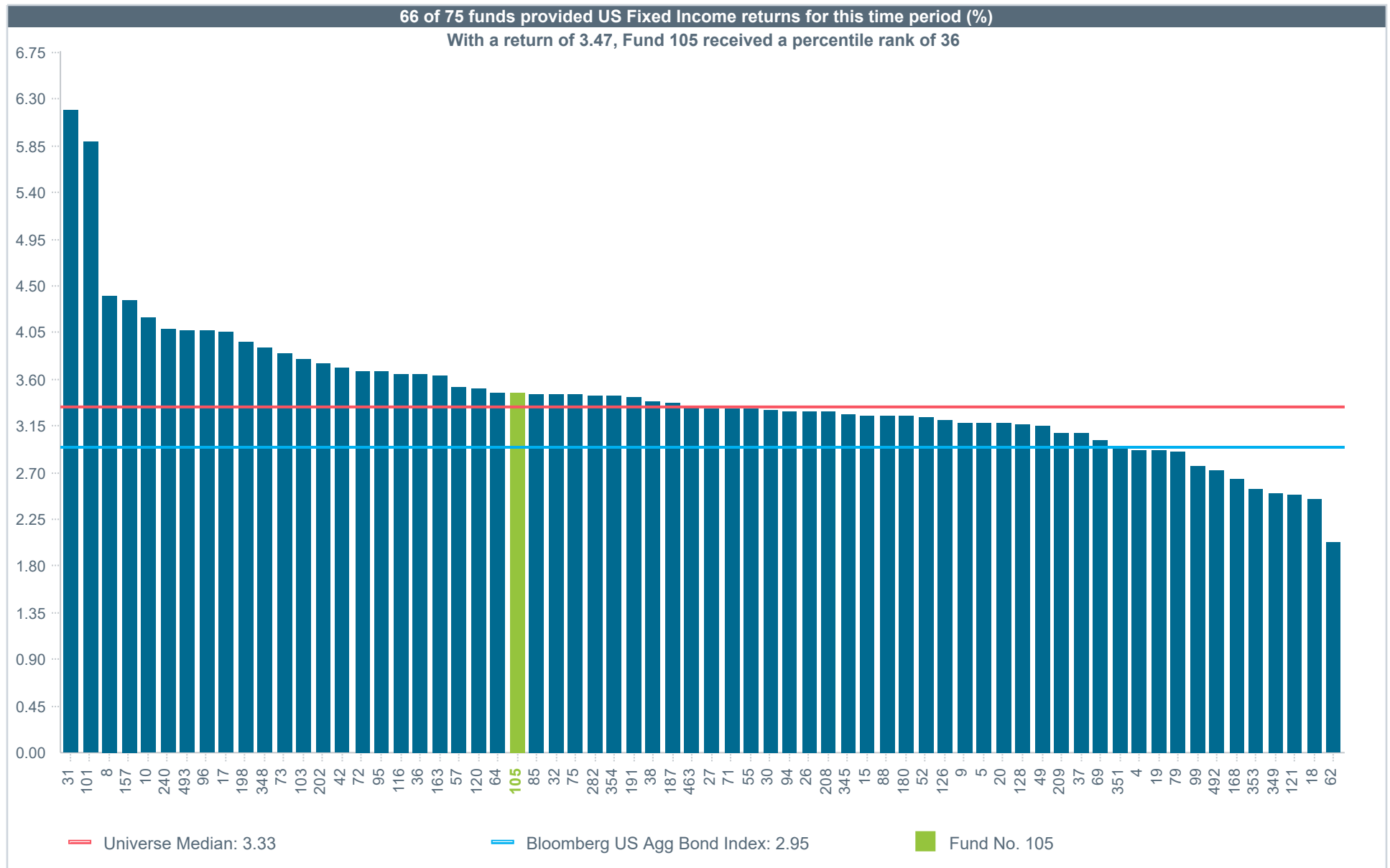
Annualized Returns (%)			
	1 Year	3 Years	5 Years
Fund No. 105	8.45	14.58	8.29
MSCI ACW Index (USD) (Gross)	6.32	12.22	6.74
Variance	2.13	2.36	1.55





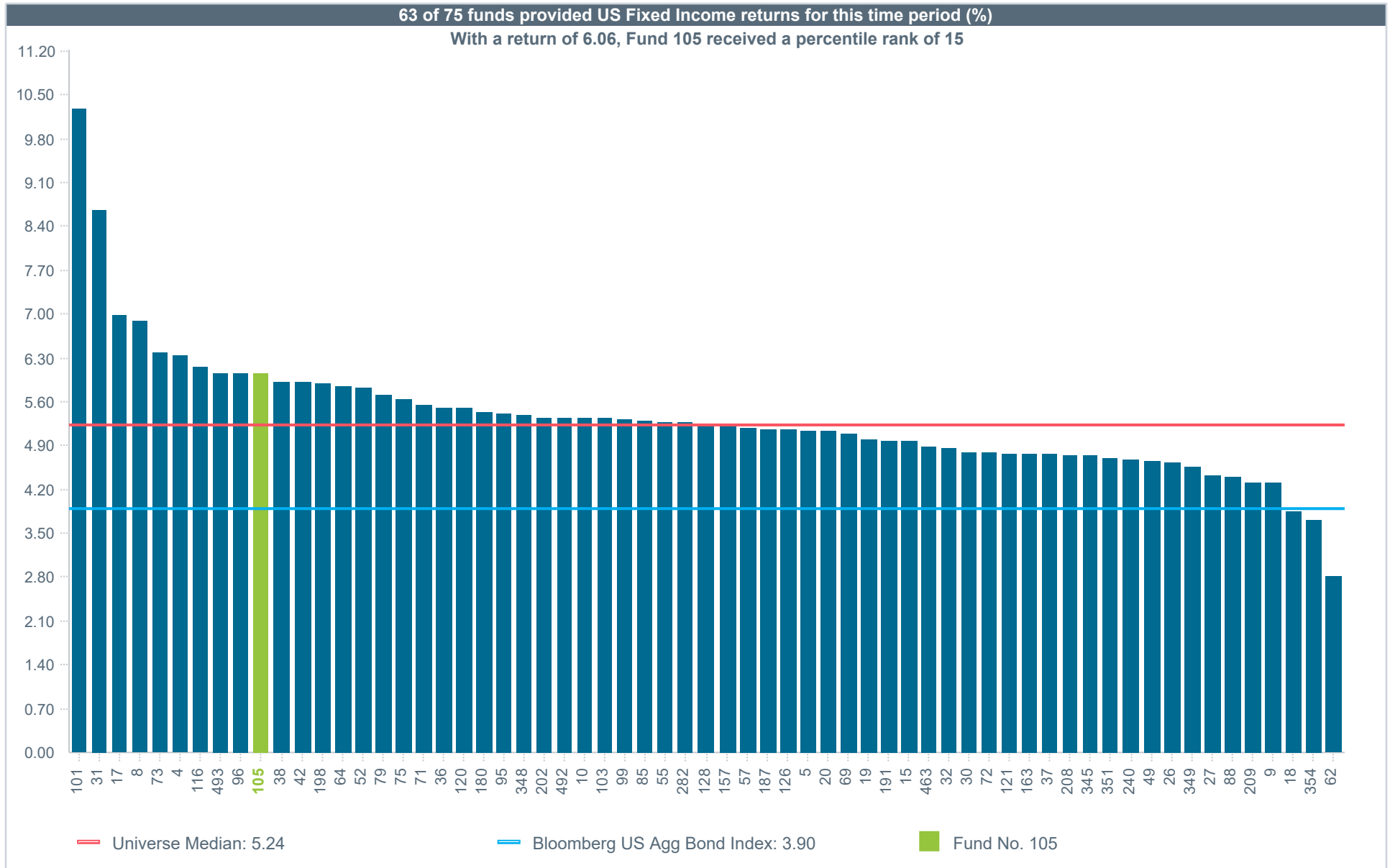
Funds with less history than the specified time period will not appear in the chart.





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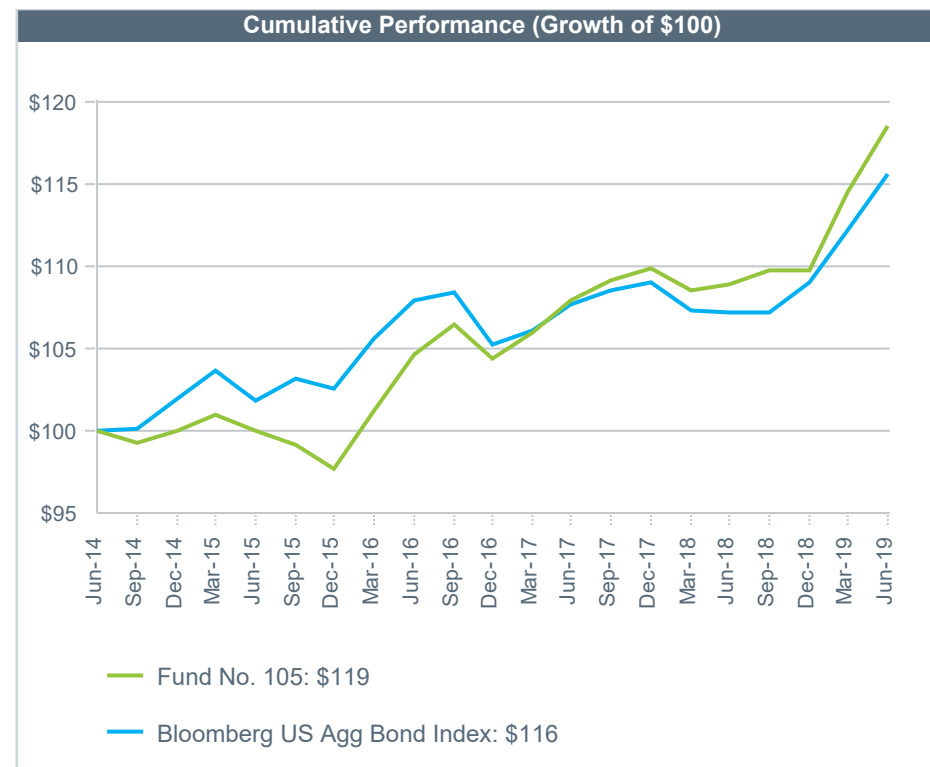
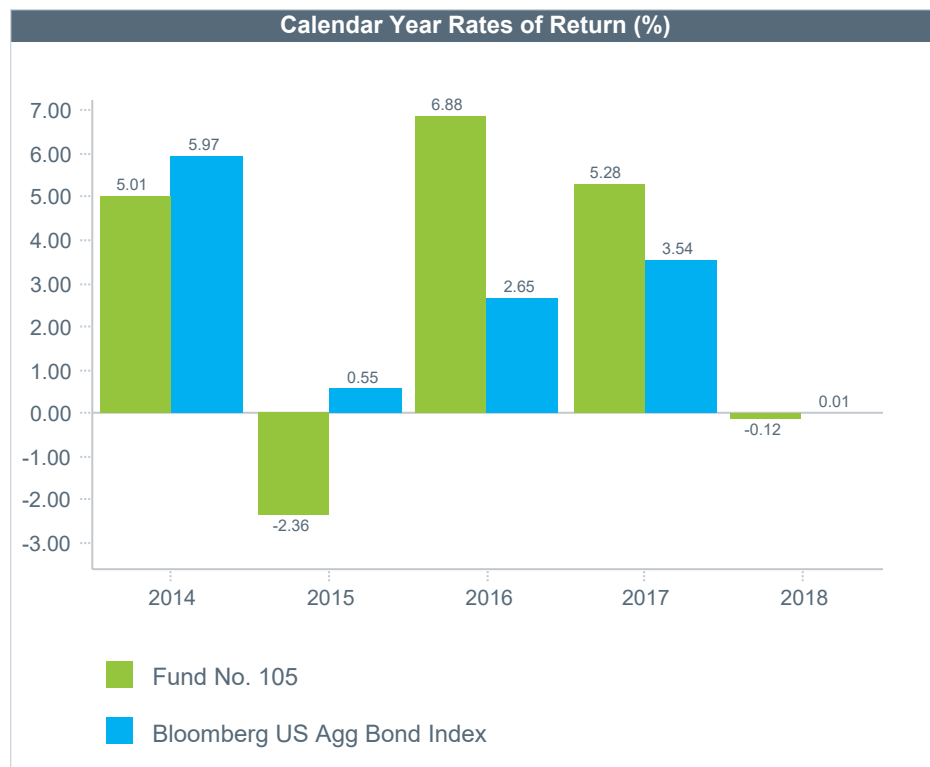


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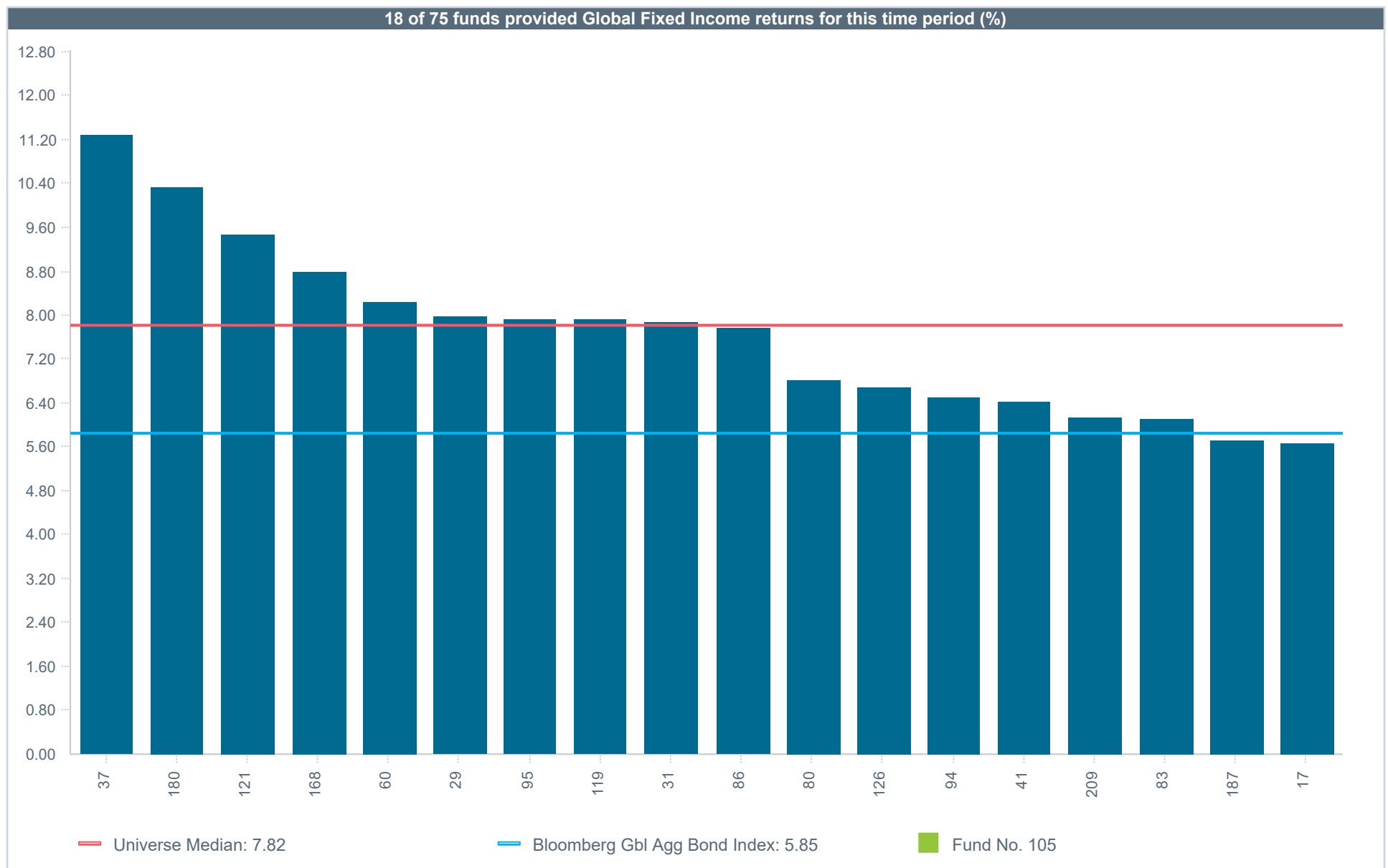
Total Return - US Fixed Income
Fund No. 105 vs. Bloomberg US Agg Bond Index

As of June 30, 2019



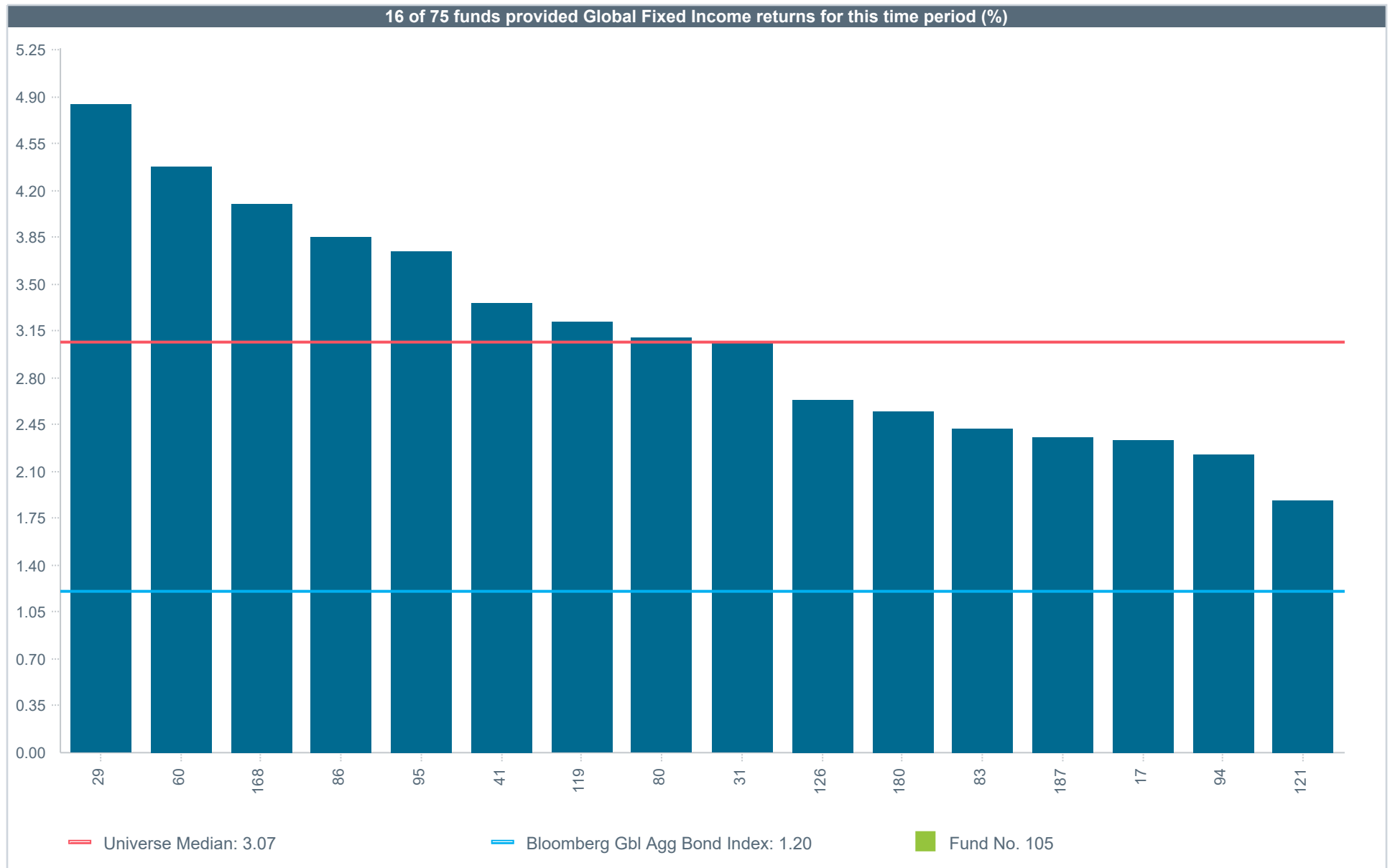
Annualized Returns (%)			
	1 Year	3 Years	5 Years
Fund No. 105	8.90	4.27	3.47
Bloomberg US Agg Bond Index	7.87	2.31	2.95
Variance	1.03	1.96	0.52





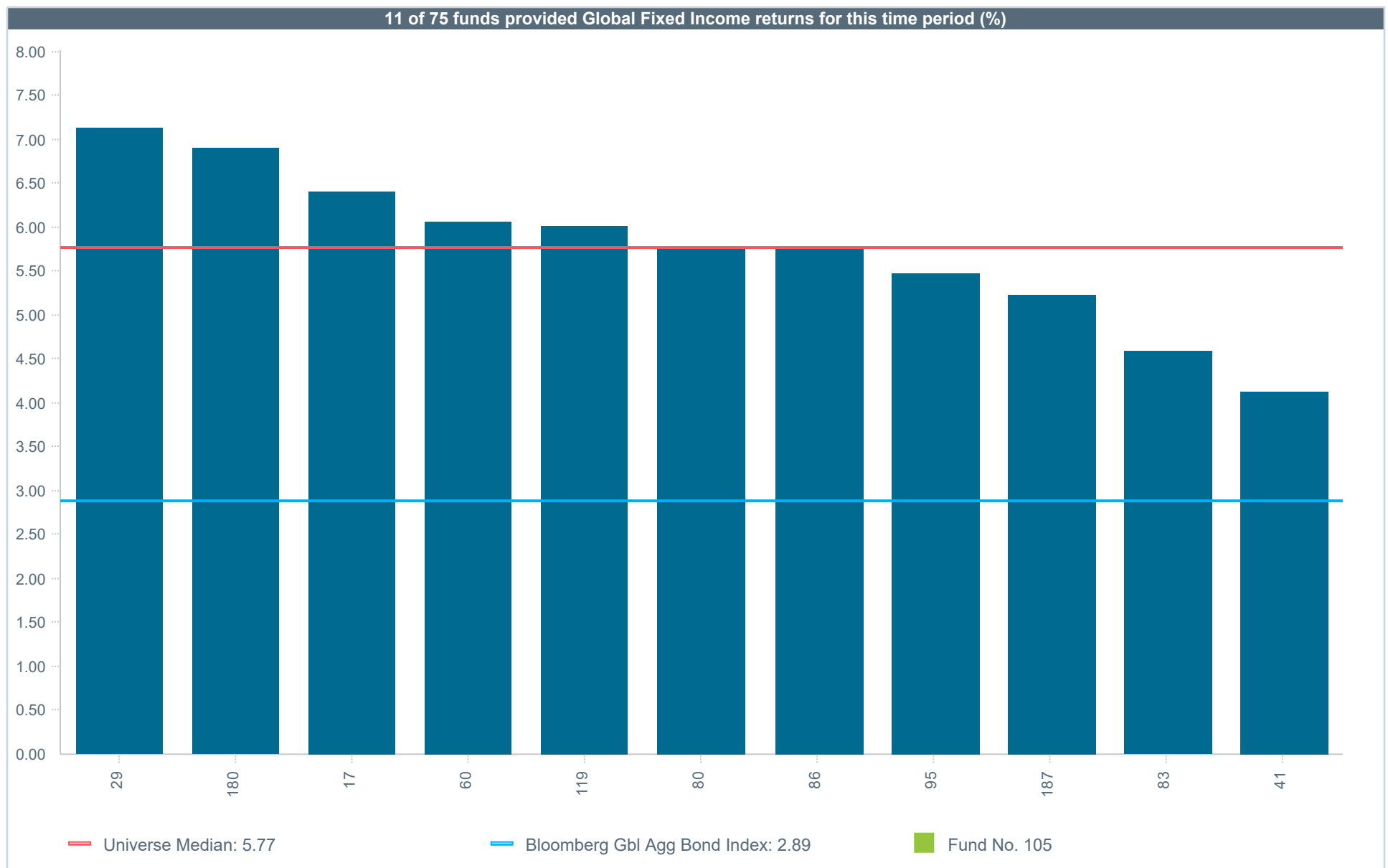
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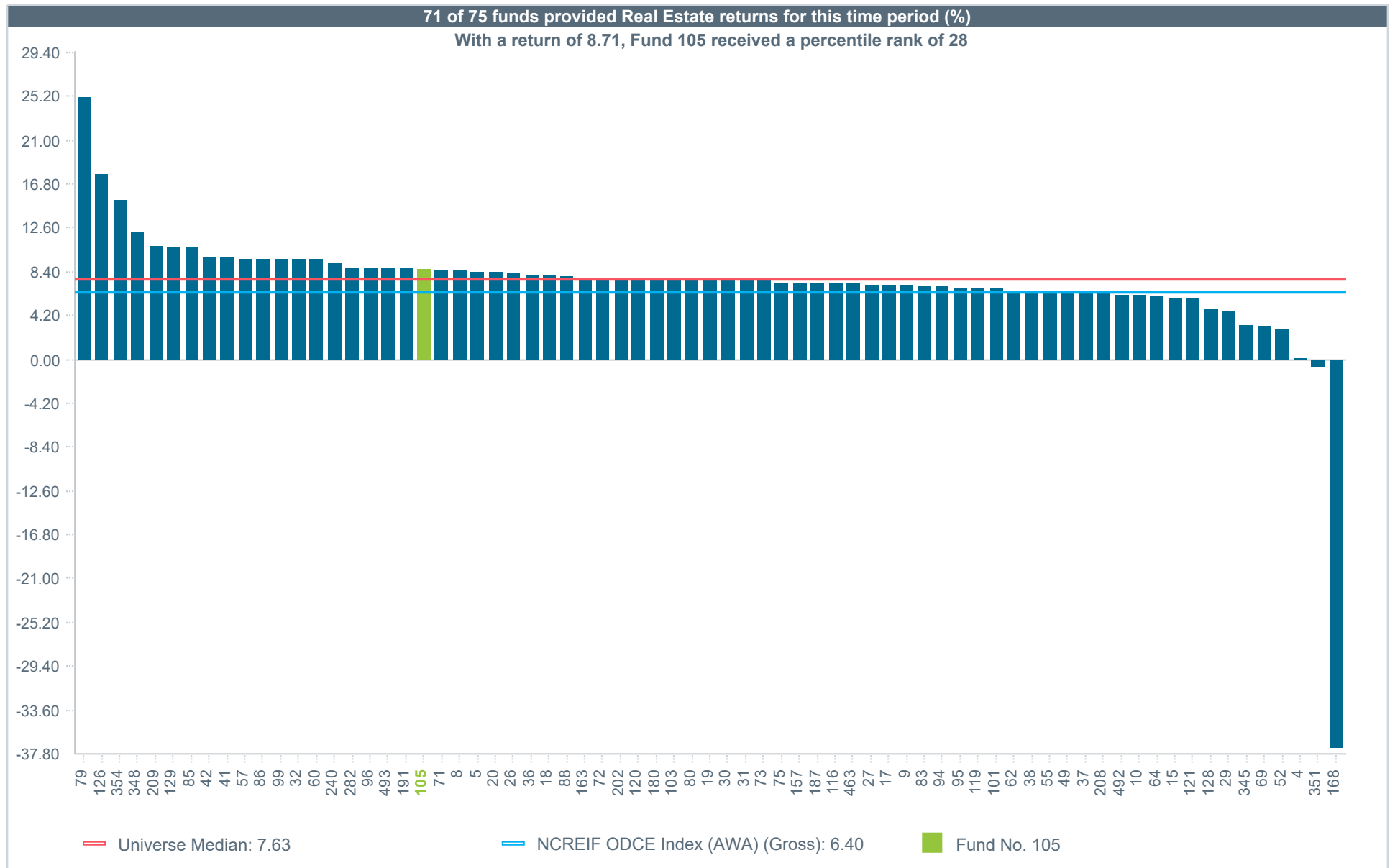


Funds with less history than the specified time period will not appear in the chart.



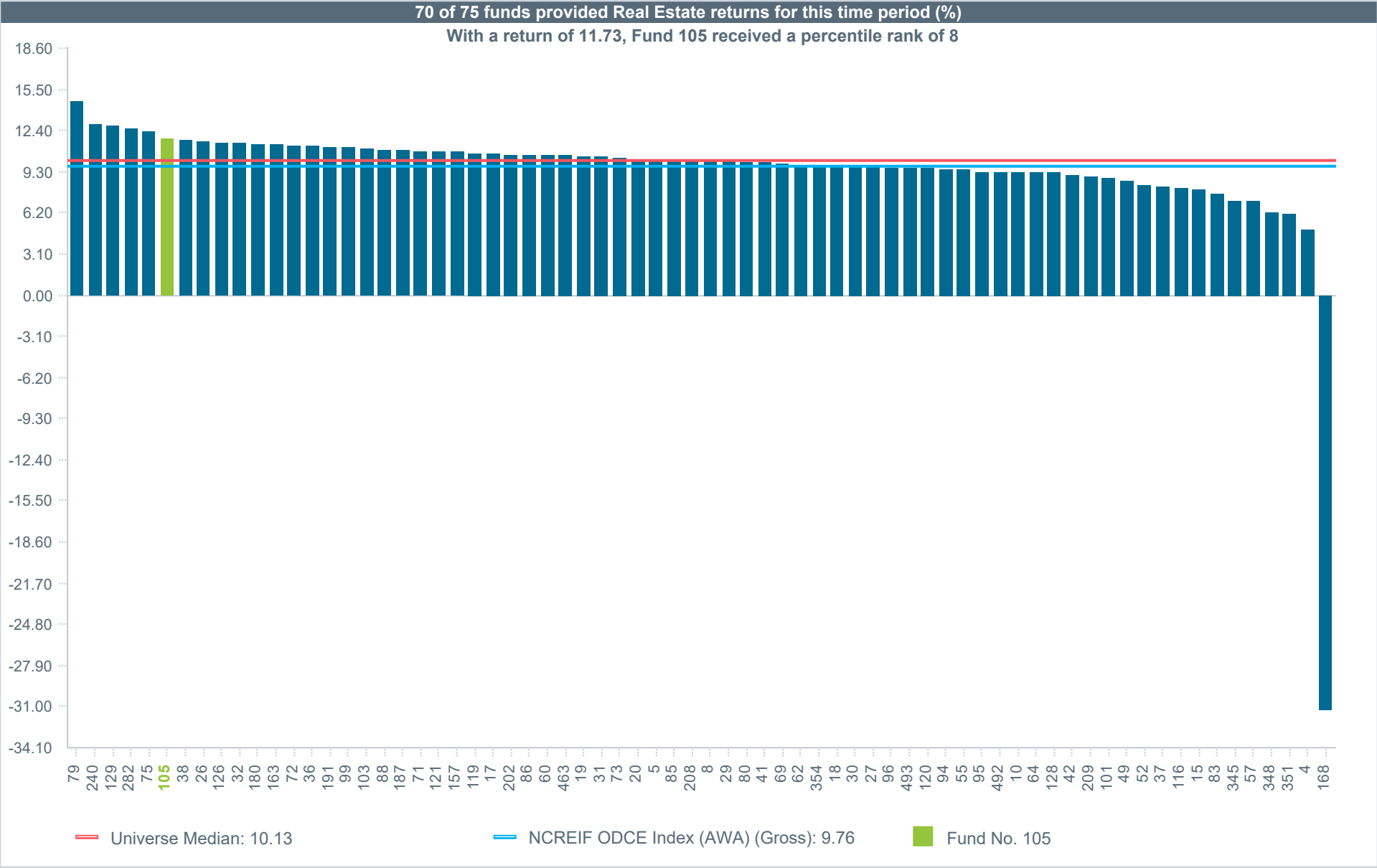
Calendar Year Rates of Return (%)	Cumulative Performance (Growth of \$100)
Fund No. 105 does not have return data for Global Fixed Income	

Annualized Returns (%)			
	1 Year	3 Years	5 Years
Fund No. 105	N/A	N/A	N/A
Bloomberg Gbl Agg Bond Index	N/A	N/A	N/A
Variance	N/A	N/A	N/A



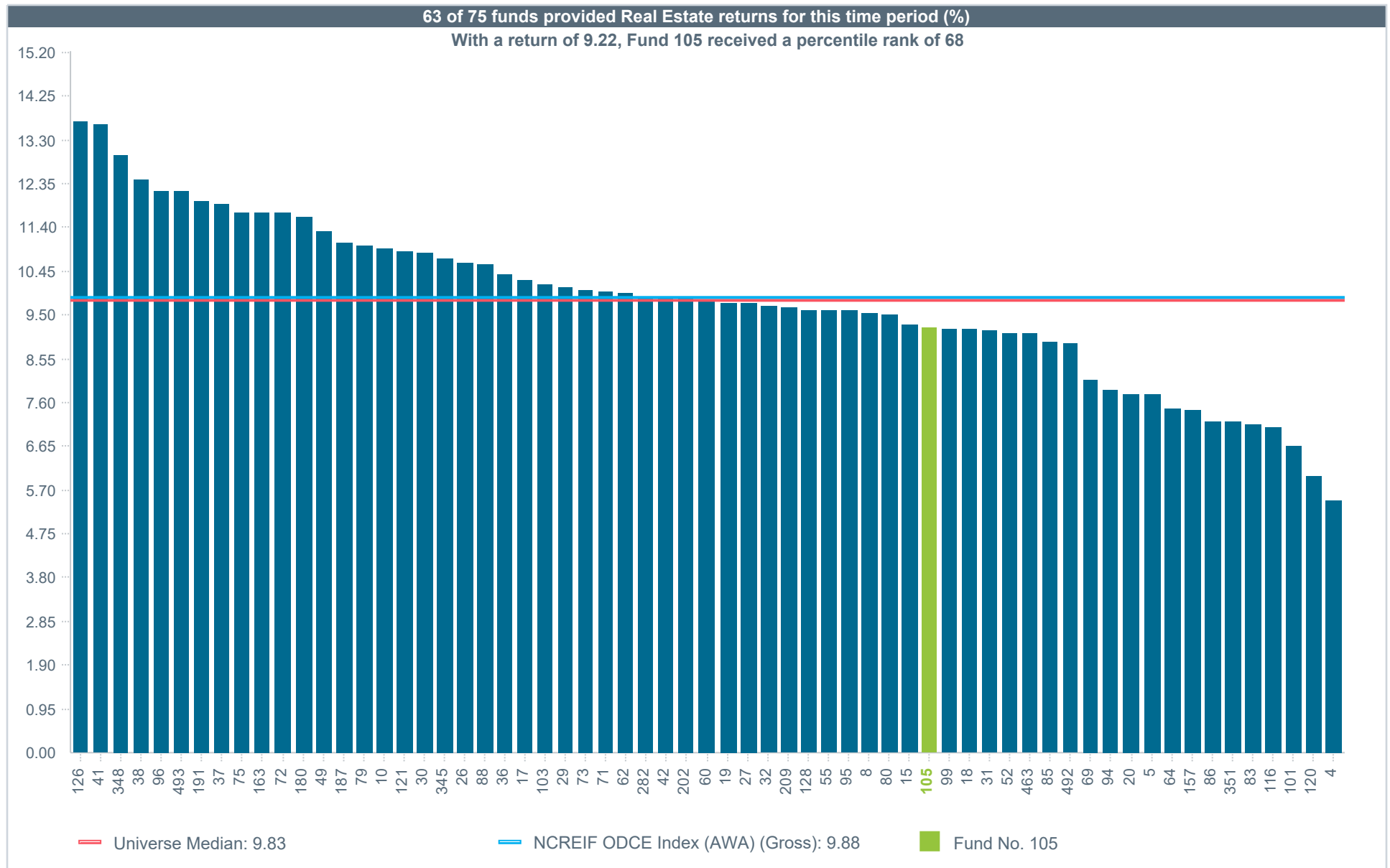
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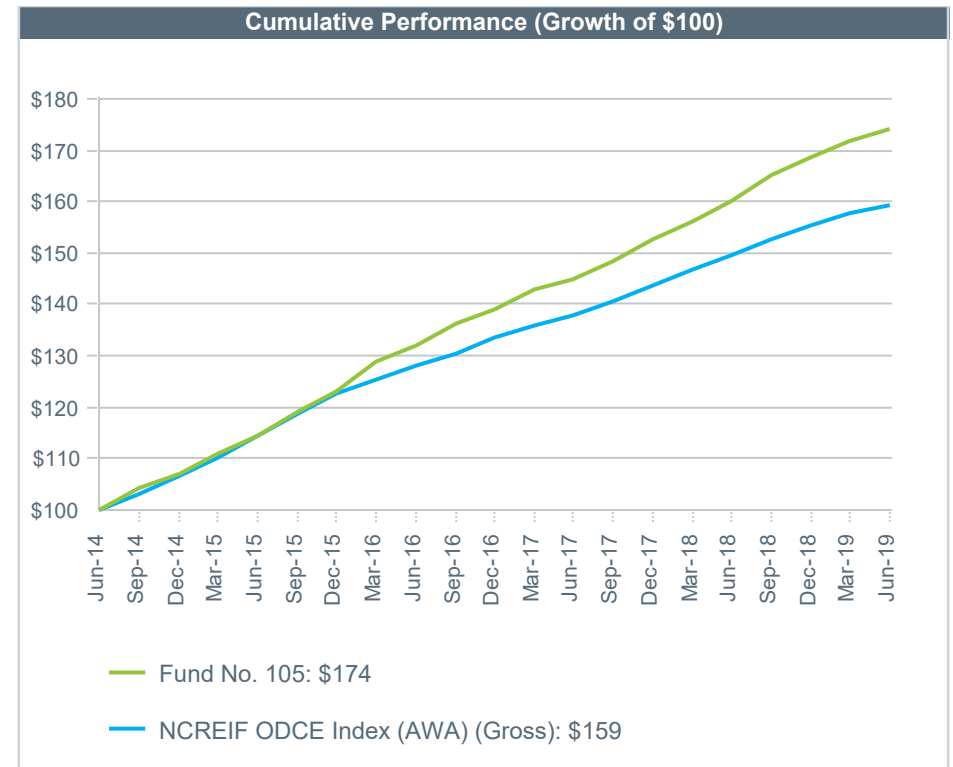
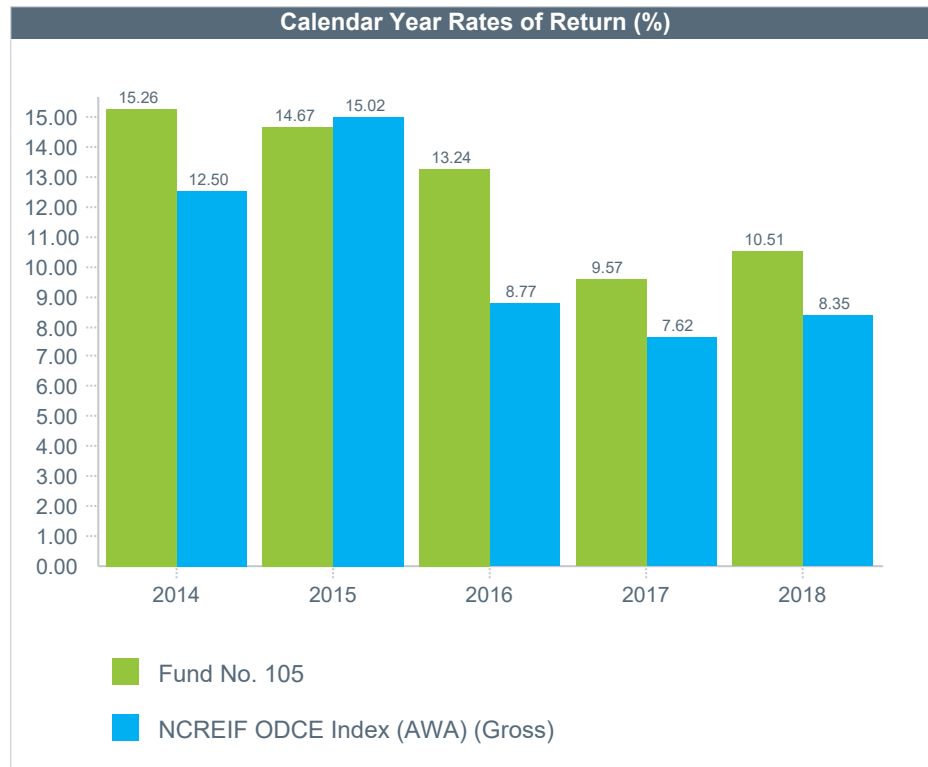


Funds with less history than the specified time period will not appear in the chart.



Total Return - Real Estate
Fund No. 105 vs. NCREIF ODCE Index (AWA) (Gross)

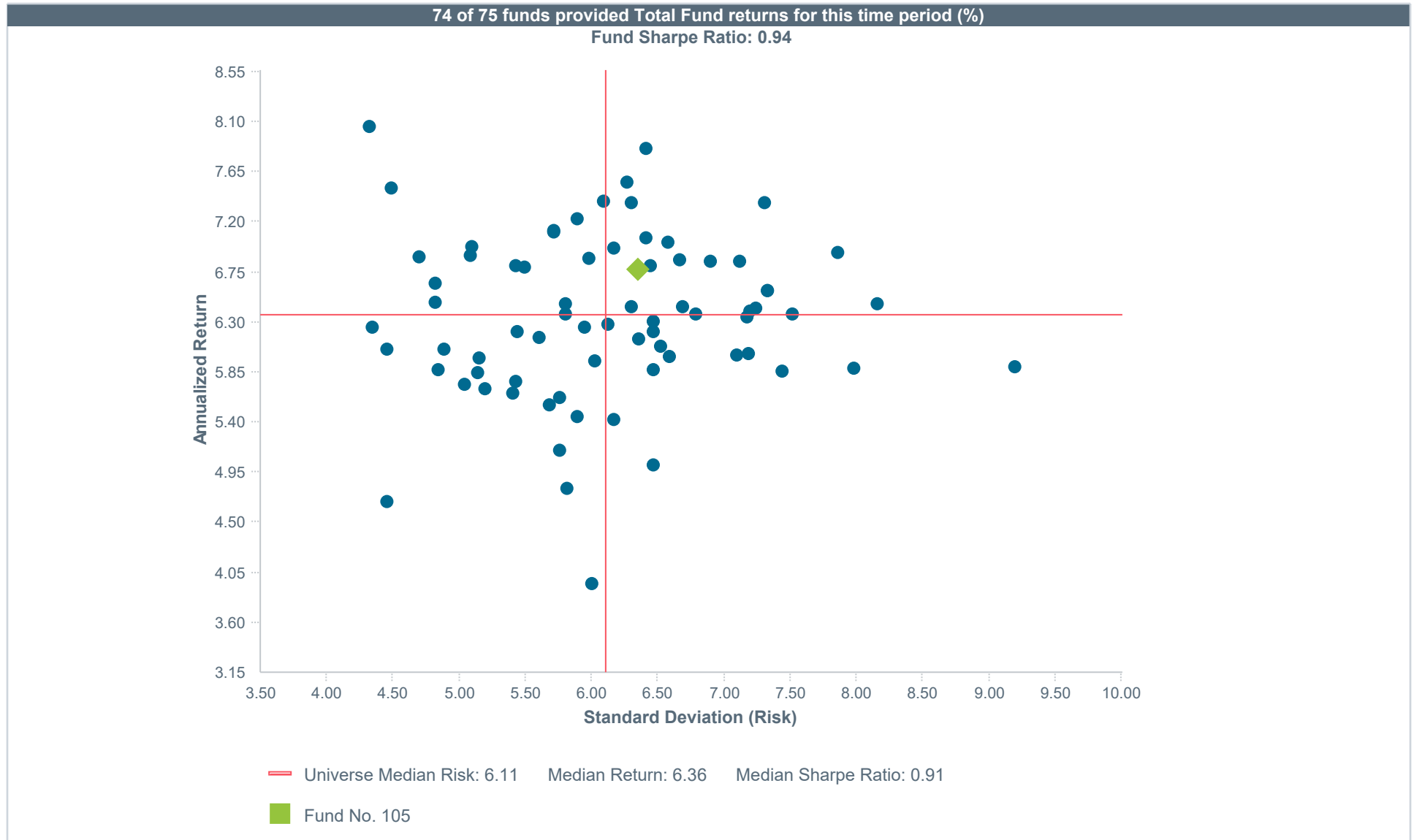
As of June 30, 2019



Annualized Returns (%)			
	1 Year	3 Years	5 Years
Fund No. 105	8.71	9.65	11.73
NCREIF ODCE Index (AWA) (Gross)	6.40	7.57	9.76
Variance	2.31	2.08	1.97



5 Year Annualized Total Fund Returns vs. Standard Deviation



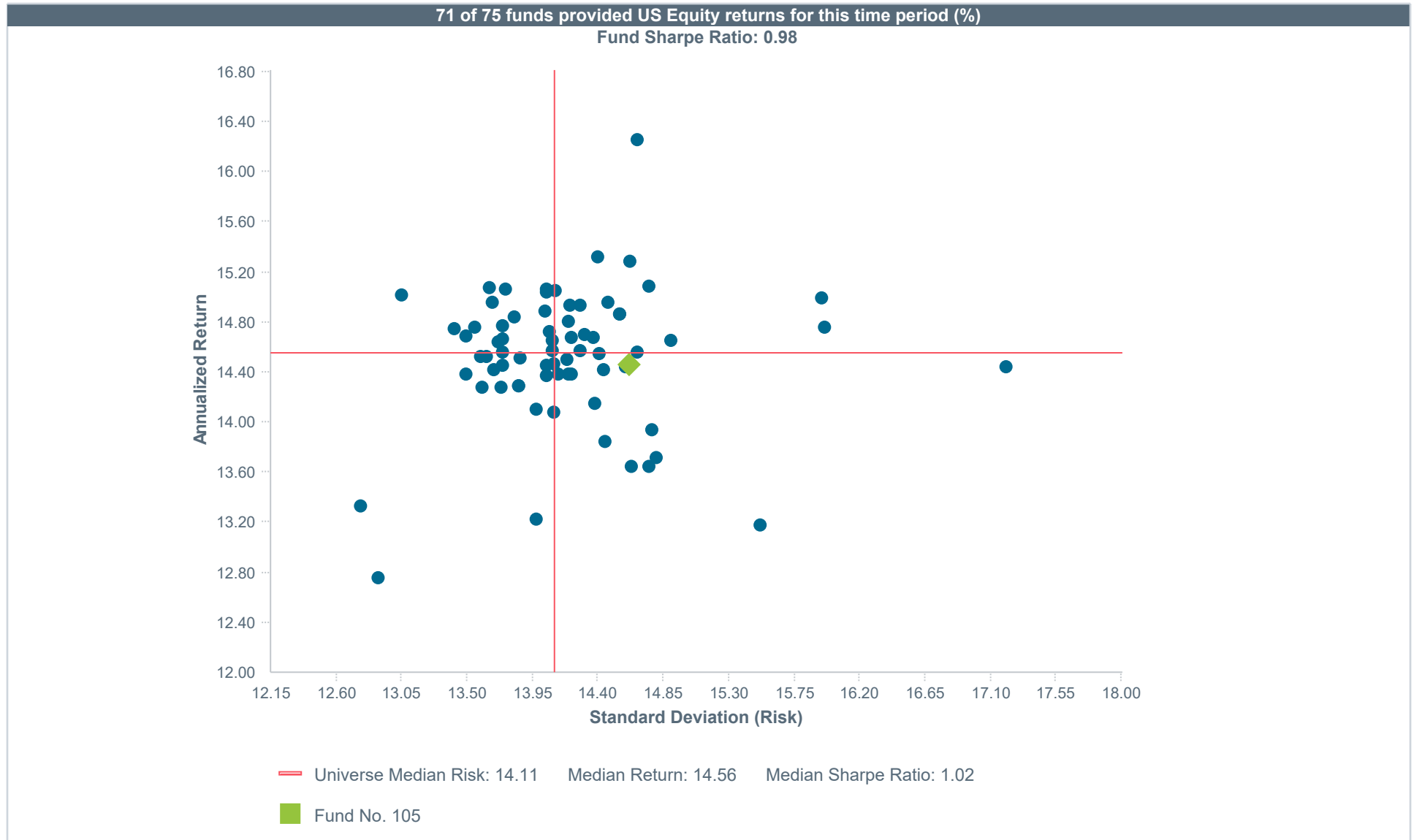
Funds with less history than the specified time period will not appear in the chart.



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



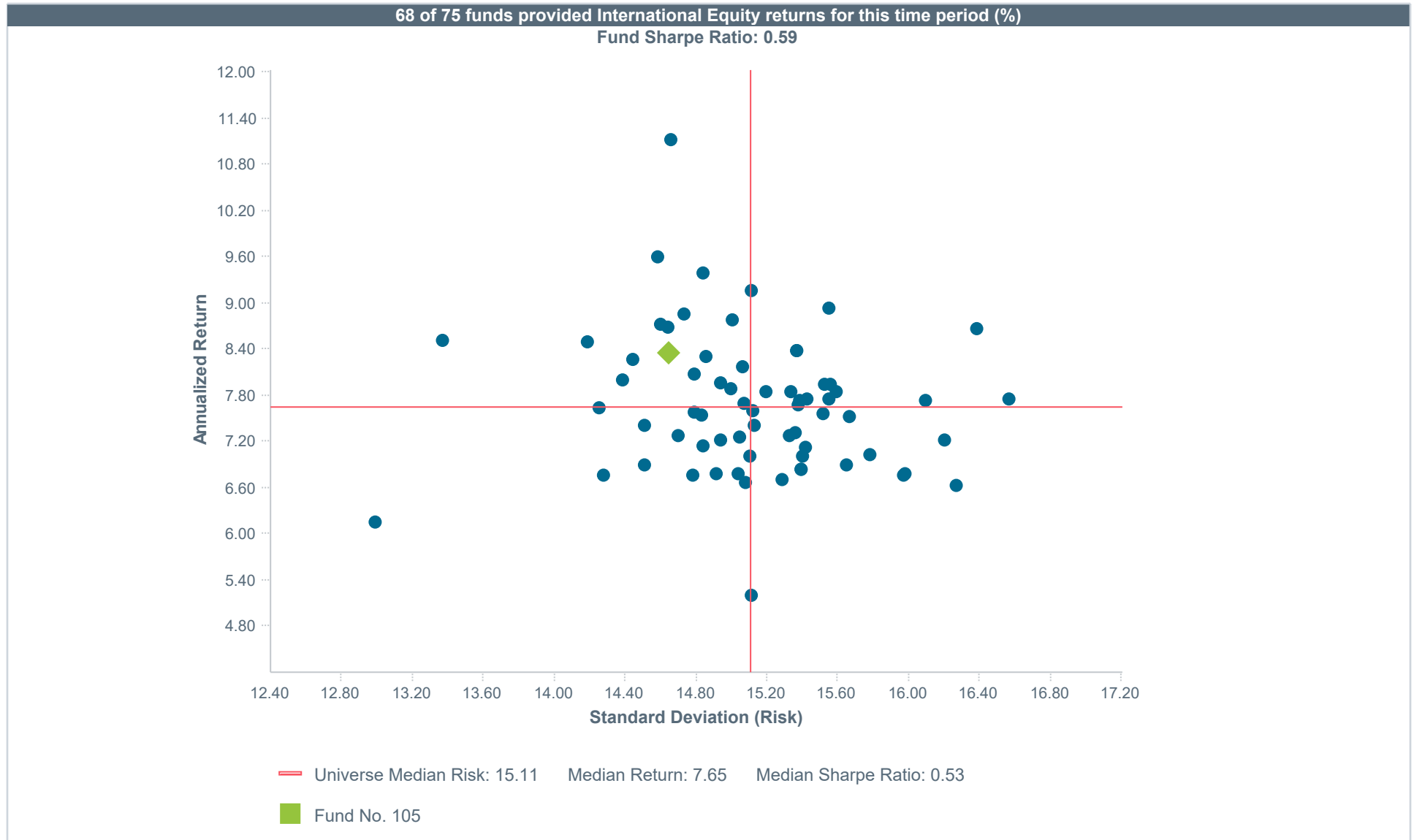
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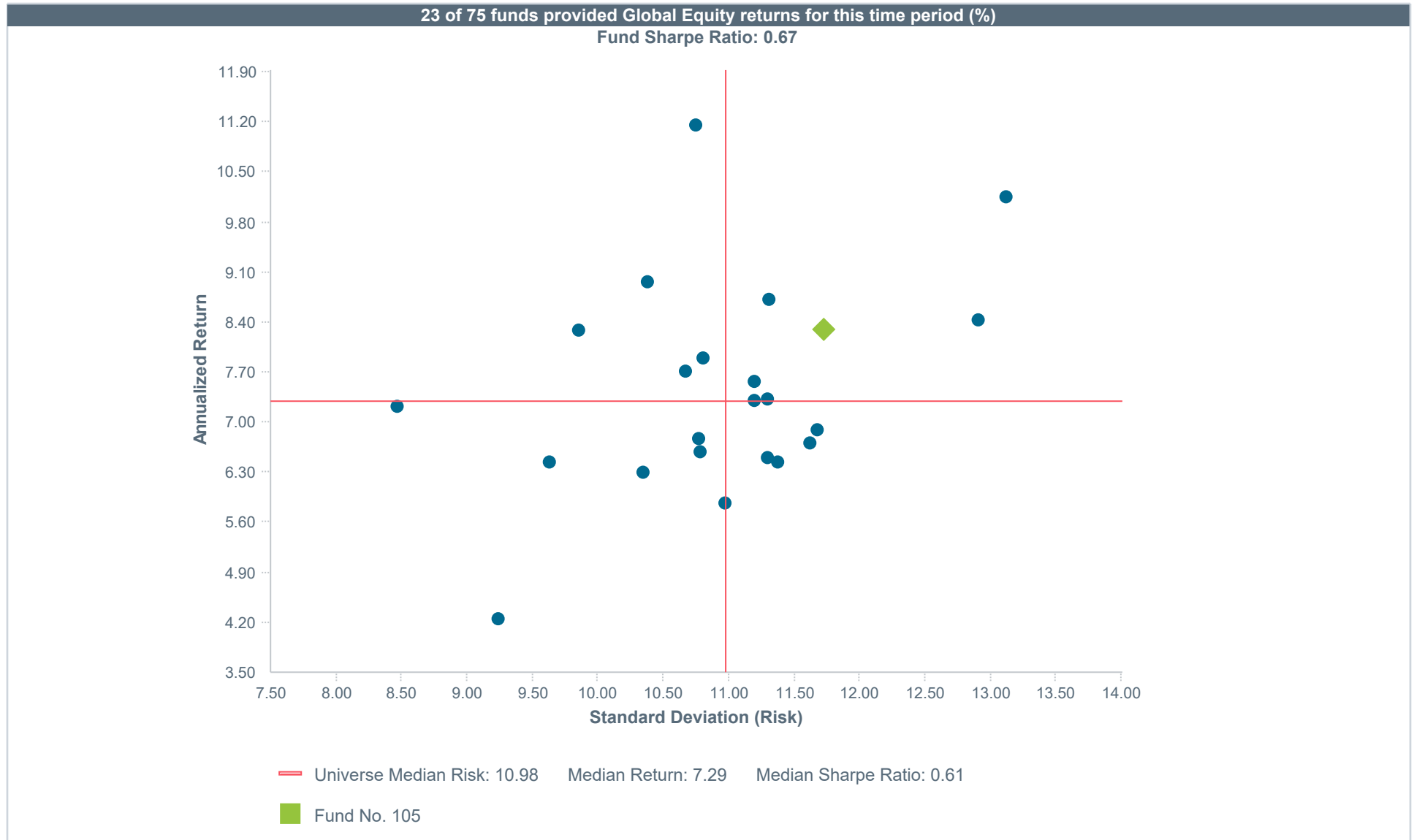
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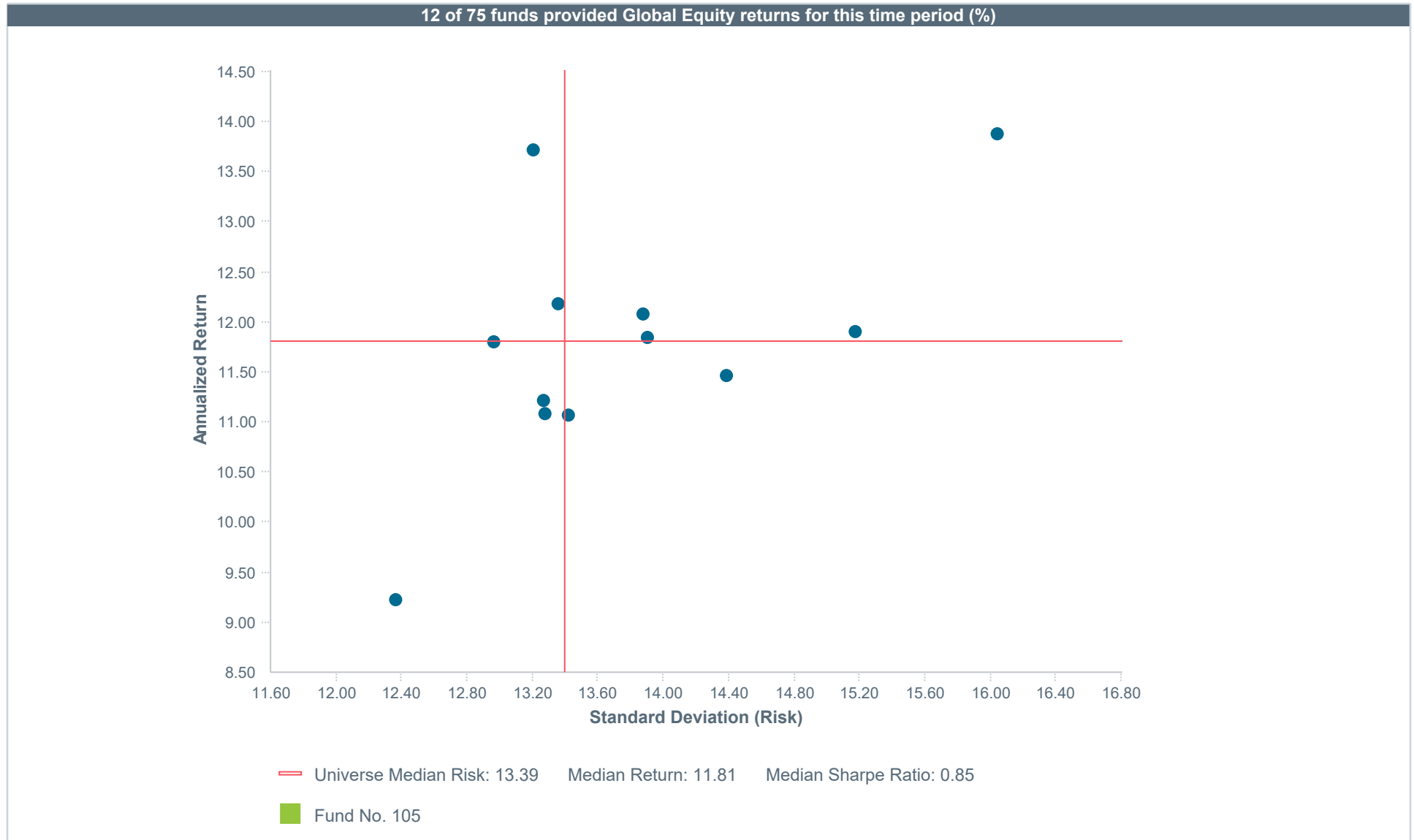
Funds with less history than the specified time period will not appear in the chart.



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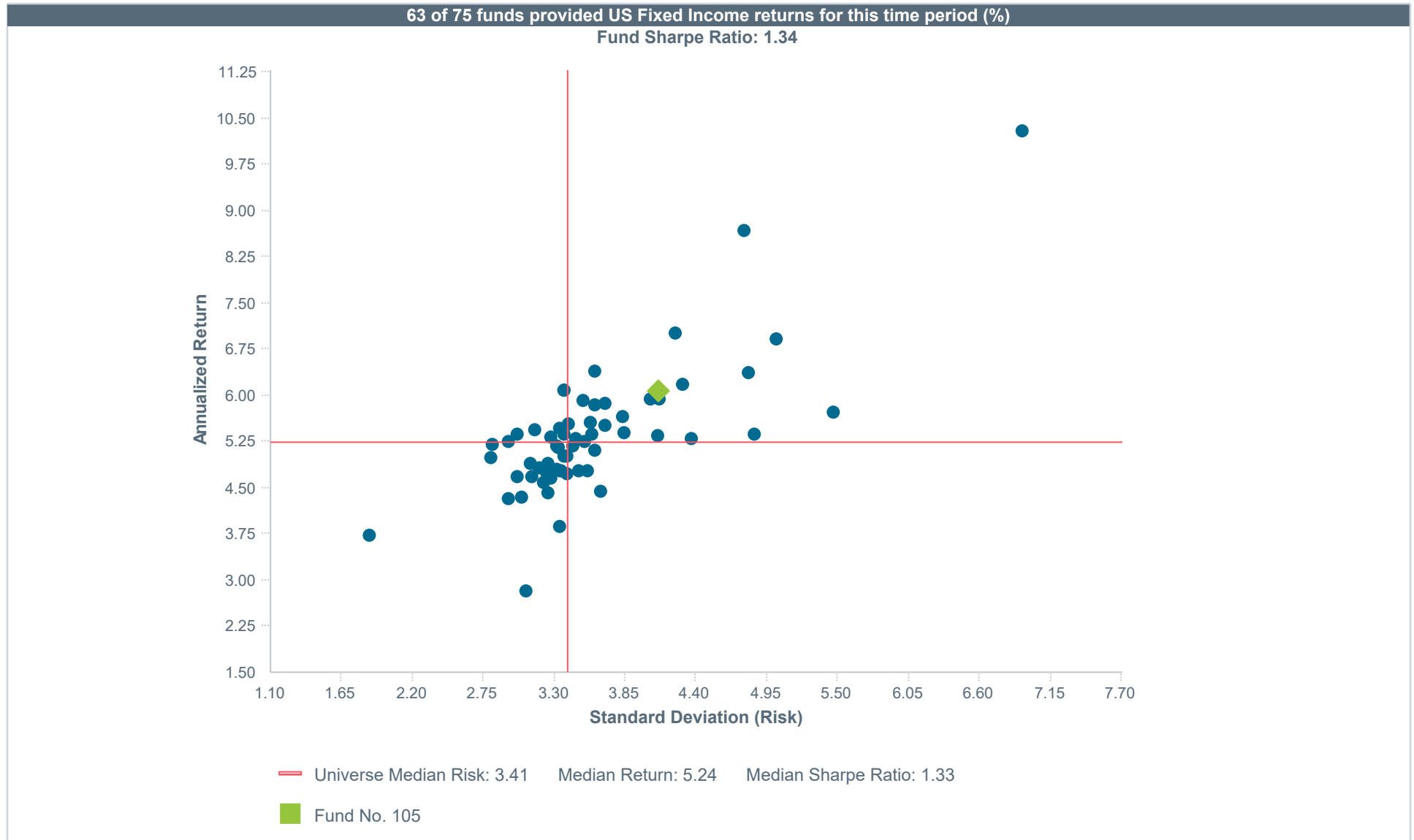
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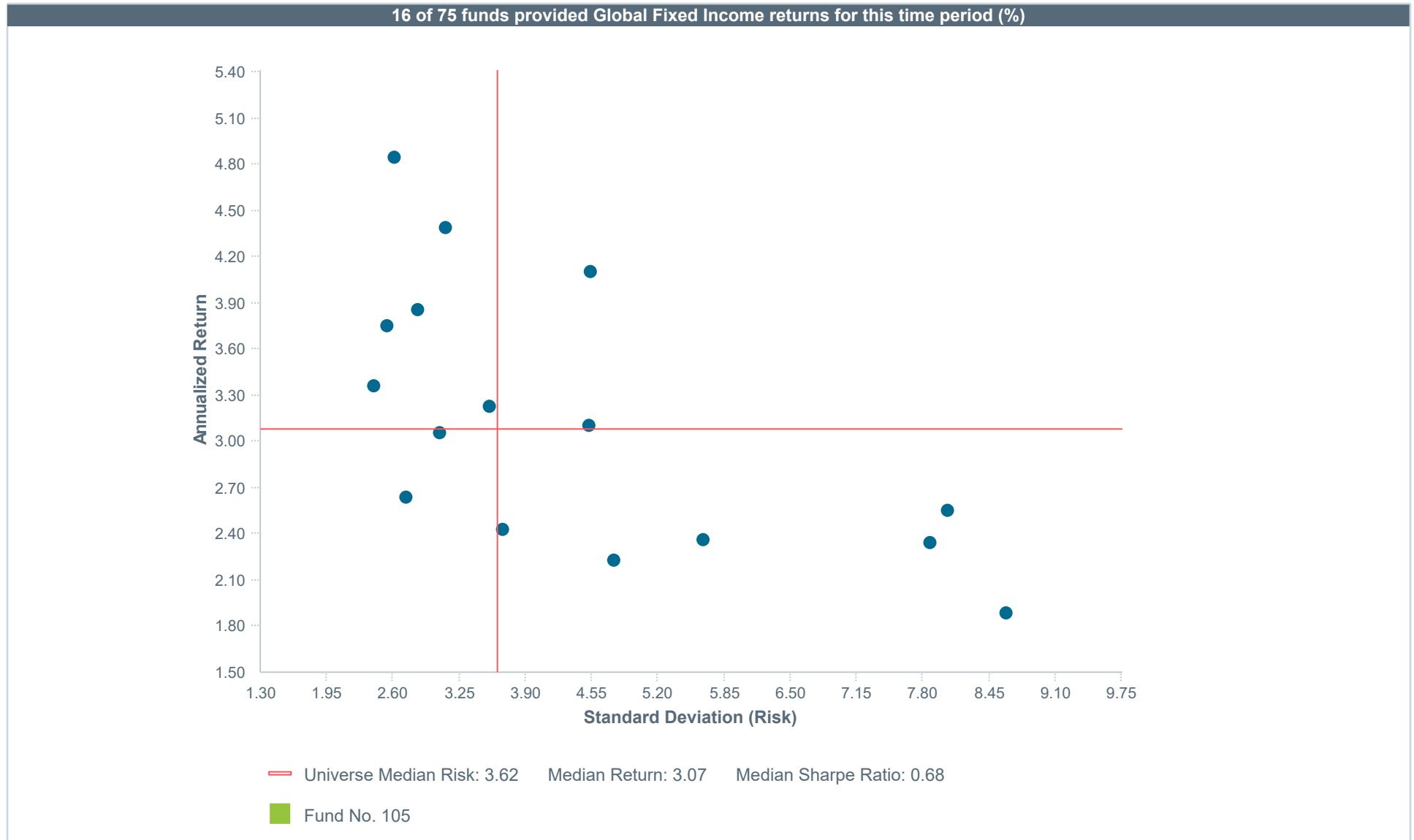
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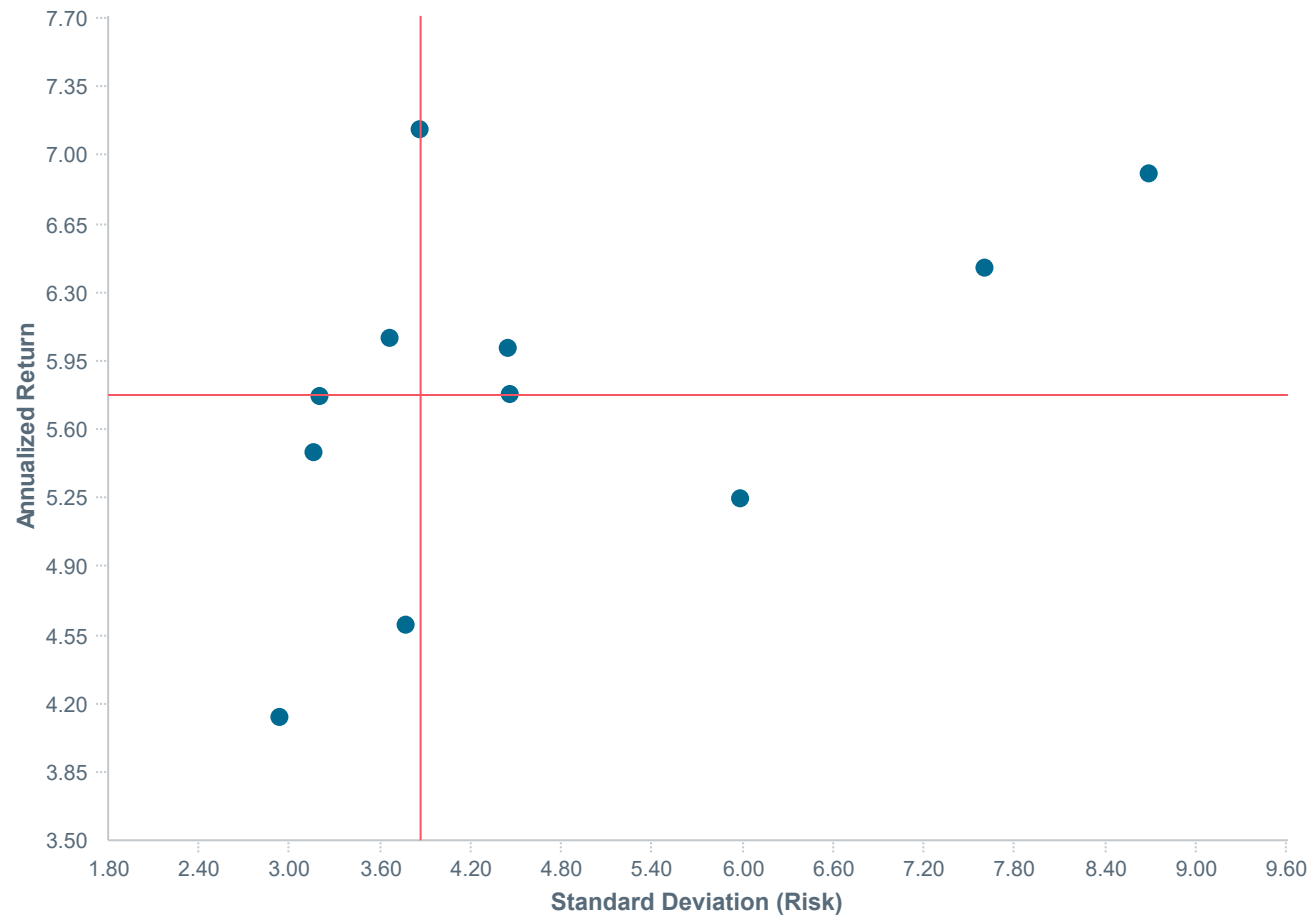
Funds with less history than the specified time period will not appear in the chart.



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

10 Year Annualized Global Fixed Income Returns vs. Standard Deviation

11 of 75 funds provided Global Fixed Income returns for this time period (%)

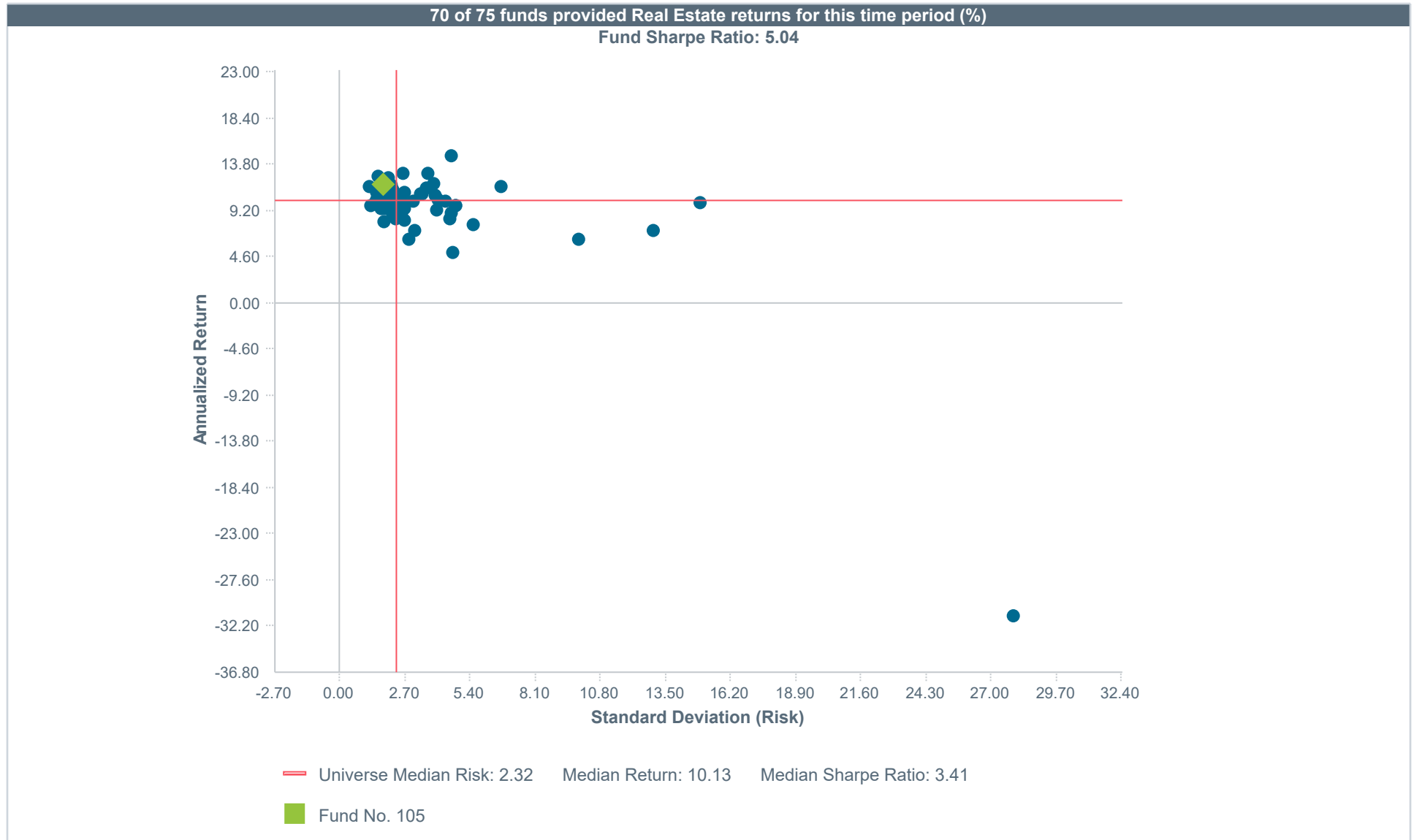


— Universe Median Risk: 3.87 Median Return: 5.77 Median Sharpe Ratio: 1.23

■ Fund No. 105

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





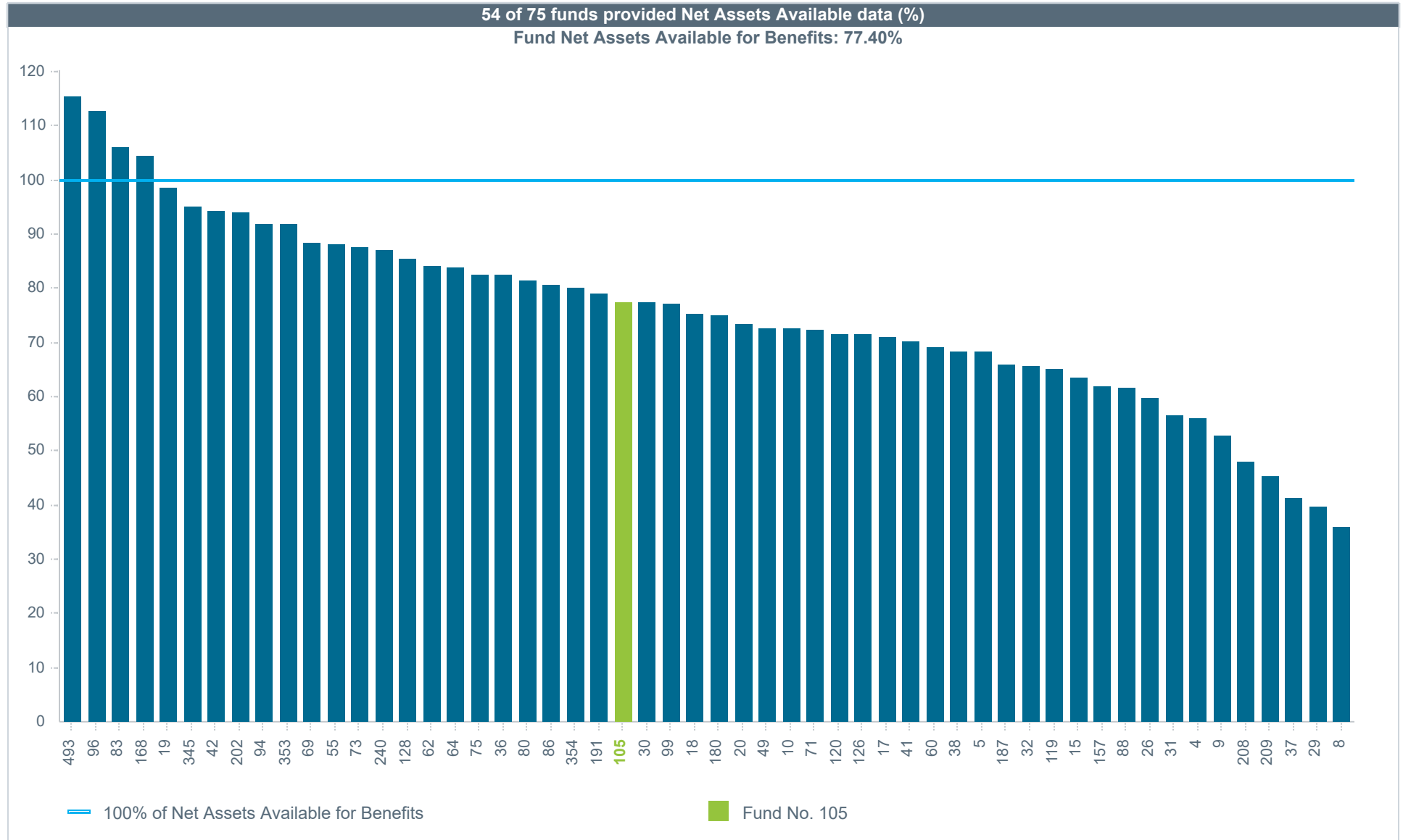
Funds with less history than the specified time period will not appear in the chart.



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

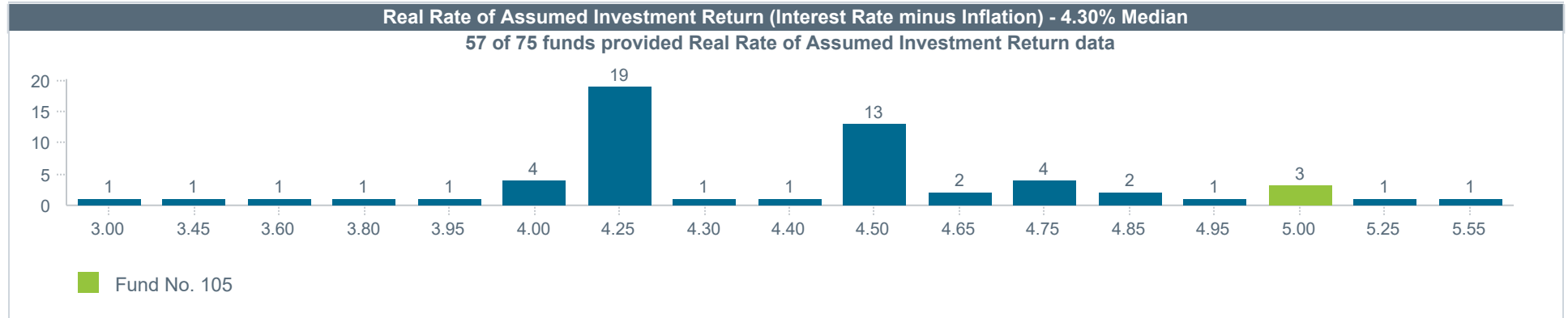
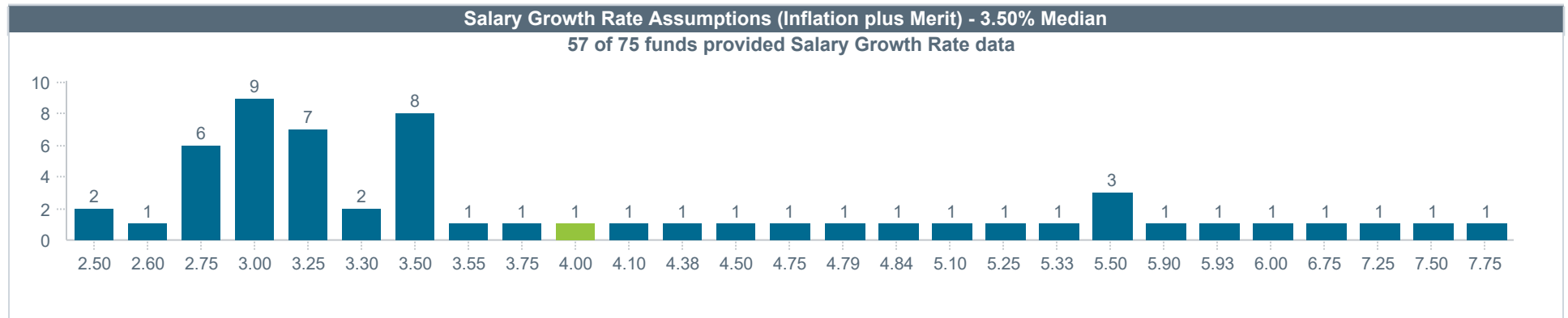
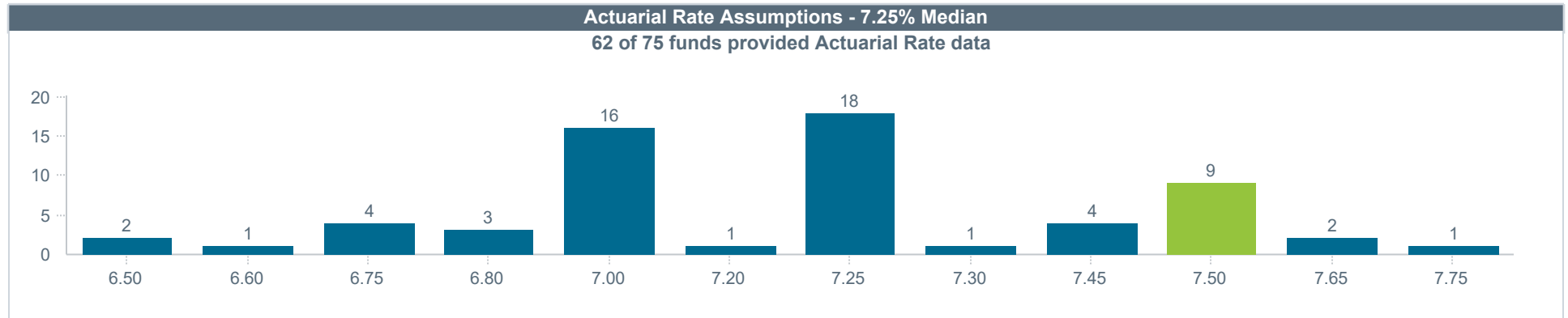
Net Assets Available For Benefits
Expressed as a Percentage of the Pension Benefit Obligation

As of June 30, 2019



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





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

Overlay Survey Summary

Q1. Of the 75 participants in the 2019 Q2 Public Fund Report, 50 participants provided a response to the Overlay Survey. Of those participants, 26 are currently using a form of overlay, 2 are considering evaluating a form of overlay, and 22 are not currently using or considering evaluating any form of overlay.

Q2. Of the 26 participants that provided a response to the Overlay Survey and have exposure to an overlay manager or managers, the purposes of the overlay programs are distributed as follows:

- 42 % Manage foreign currency risk
- 23 % Generate alpha
- 0 % Match Plan liabilities more closely (either as part of an explicit or conceptual framework)
- 4 % Express a view on US Dollar
- 0 % Manage market risk within an LDI construct
- 19 % Tactical asset allocation
- 54 % Cash equitization
- 62 % Rebalancing management
- 31 % Transition management
- 8 % Other

Q3. Of the 11 participants that provided a response to the Overlay Survey and have exposure to a currency manager or managers, the program structures are distributed as follows:

- 45 % Static hedge ratio
- 45 % Dynamic hedging program where manager varies the hedge ratio
- 27 % Alpha generating currency manager focused on absolute return

Q4. Of the 6 participants that provided a response to the Overlay Survey and indicated use of a hedge ratio on a currency program, the responses are distributed as follows:

- 1 response indicated 25 % hedge on All Equities
- 5 responses indicated 50 % hedge on Developed Equity exposure
- 1 response indicated 75 % hedge on Developed Equity exposure

Supplemental Questions

Q1. Of the 54 respondents, the methods of Private Equity reporting are distributed as follows:

- 35 % Valuations and cash flows are updated and reflected as received by custodian
- 6 % Reported on a 1 month lag to account for additional valuations and cash flow activity
- 59 % Reported on a 1 quarter lag to account for most all valuations and cash flow activity

Q2. Of the 58 respondents, the methods of Private Real Estate reporting are distributed as follows:

- 47 % Valuations and cash flows are updated and reflected as received by custodian
- 5 % Reported on a 1 month lag to account for additional valuations and cash flow activity
- 48 % Reported on a 1 quarter lag to account for most all valuations and cash flow activity

Q3. Of the 58 respondents, the responses to whether or not Private Equity and/or Private Real Estate valuations are restated once final valuations are received from the managers are distributed as follows:

- 17 % Answered 'Yes' - valuations are restated
- 83 % Answered 'No' - valuations are not restated

Q4. Of the 57 respondents, the responses to whether or not a third party risk software provider is used are distributed as follows:

- 28 % Answered 'Yes'
- 72 % Answered 'No'

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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