



Public Fund Universe Analysis

City of Milwaukee Employees' Retirement System

Period Ending June 30, 2022

Fund Number: 105



OVERVIEW

RVK, Inc. (RVK) was founded in 1985 and is one of the largest independent and employee-owned investment consulting firms in the world, as reported by *Pensions & Investments Special Report – Consultants*. We provide strategic investment advice to institutional investors with pension plans, defined contribution plans, endowments & foundations, insurance pools, and special purpose funds. In April 2022, RVK was the *only* firm to receive a Greenwich *Quality Leader Award*¹ for a fifth consecutive year.

MISSION STATEMENT

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

STRATEGIC INVESTMENT ADVICE AND EXPLICIT NO CONFLICTS OF INTEREST POLICY

RVK has built its investment consulting practice on the principles of integrity, investment expertise, 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

- **36** Years of Business
- **4** offices - Portland, Boise, Chicago, New York
- **\$1** trillion Full-Retainer AUA
- **100+** 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
- ESG / Impact Investing Advice
- 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**

¹Between July and October 2020, Coalition Greenwich conducted interviews with 856 senior professionals at 704 of the largest tax-exempt funds in the US—including corporate and union funds, public funds, endowments and foundations, insurance general accounts, and healthcare organizations—with either pension or investment pool assets greater than \$150 million. Study participants were asked to provide quantitative and qualitative evaluations of their asset managers and investment consultants, including qualitative assessments of those firms soliciting their business and detailed information on important market trends. RVK is one of three firms recognized in the large investment consultant category. The ratings may not be representative of any one client's experience with RVK; rather, they are representative of those clients that chose to participate in the survey. The results are not indicative of RVK's future performance.

Alameda County Employees' Retirement Association	Anchorage Police & Fire Retirement System
Arlington County Employees' Retirement System	California State Teachers' Retirement System
Chicago Teachers' Pension Fund	City of Austin Employees' Retirement System
City of Fresno Employees Retirement Systems	City of Fresno Fire & Police Retirement System
City of Jacksonville Police and Fire Retirement Fund	City of Jacksonville Retirement System
City of Milwaukee Employees' Retirement System (Fund No. 105)	City of Plano Other Post-Employment Benefits Trust
City of Plano Retirement Security Plan	Civilian Employees' Retirement System of the Police Department of Kansas City, Missouri
Confederated Tribes of the Warm Springs Tribal Council Pension Fund	Employees Retirement System of Texas
Fire and Police Pension Association of Colorado	Fresno County Employees' Retirement Association
Gila River Indian Community Retirement Plan	Imperial County Employees' Retirement System
Iowa Public Employees' Retirement System	Kansas City, Missouri Employees' Retirement System
Kansas Public Employees' Retirement System	Los Angeles Fire and Police Pension System
Los Angeles Water & Power Employees Retirement Plan	Marin County Employees' Retirement Association
Maryland State Retirement and Pension System	Mendocino County Employees' Retirement Association
Merced County Employees' Retirement Association	Montana Public Employees' Retirement System
Montana Teachers' Retirement System	Municipality of Anchorage Pre-Funding Program
Nevada Public Employees' Retirement System	New York State Common Retirement Fund
North Carolina Retirement System	Ohio Public Employees' Retirement System
Oklahoma Firefighters Pension and Retirement System	Oklahoma Law Enforcement Retirement System
Oklahoma Police Pension and Retirement System	Oklahoma Public Employees Retirement System
Oklahoma Teachers' Retirement System	Oklahoma Uniform Retirement System for Justices and Judges
Oklahoma Wildlife Conservation Retirement System	Orange County Employees' Retirement System
Pennsylvania State Employees' Retirement System	Police Retirement System of Kansas City, Missouri
Public School and Education ERS of Missouri	Sacramento County Employees' Retirement System
San Diego City Employees' Retirement System	San Diego County Employees Retirement Association
San Diego Transit Corporation Employees Retirement	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	

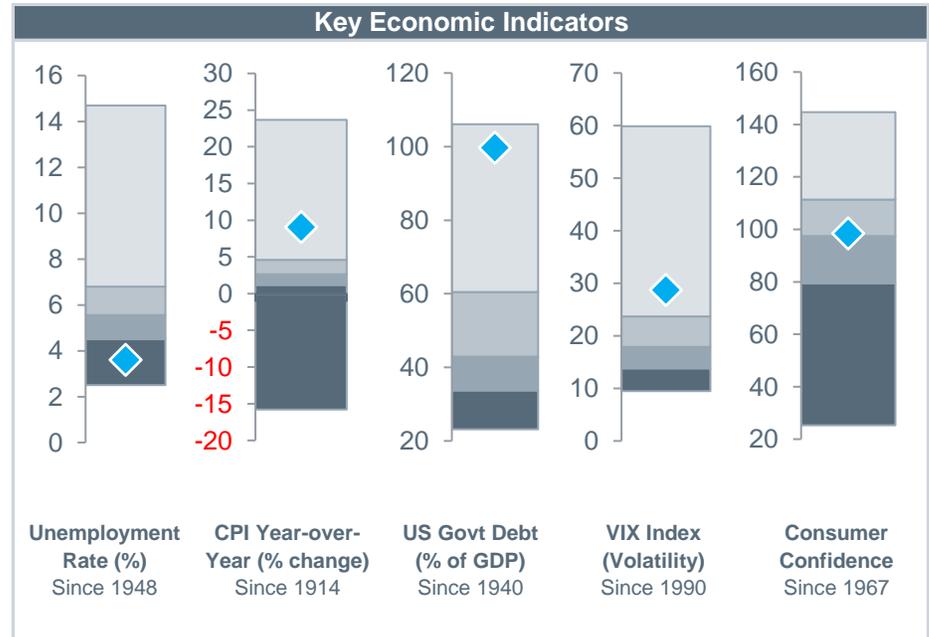


State Teachers Retirement System of Ohio
Teachers' Retirement System of the State of Illinois
Texas Municipal Retirement System
Ventura County Employees' Retirement Association
Virginia Retirement System
Wyoming Retirement System

State of New Jersey Pension Fund
Teachers' Retirement System of Louisiana
Teachers' Retirement System of Kentucky
The Navajo Nation Retirement Plan
Vermont Pension Investment Committee
West Virginia Investment Management Board

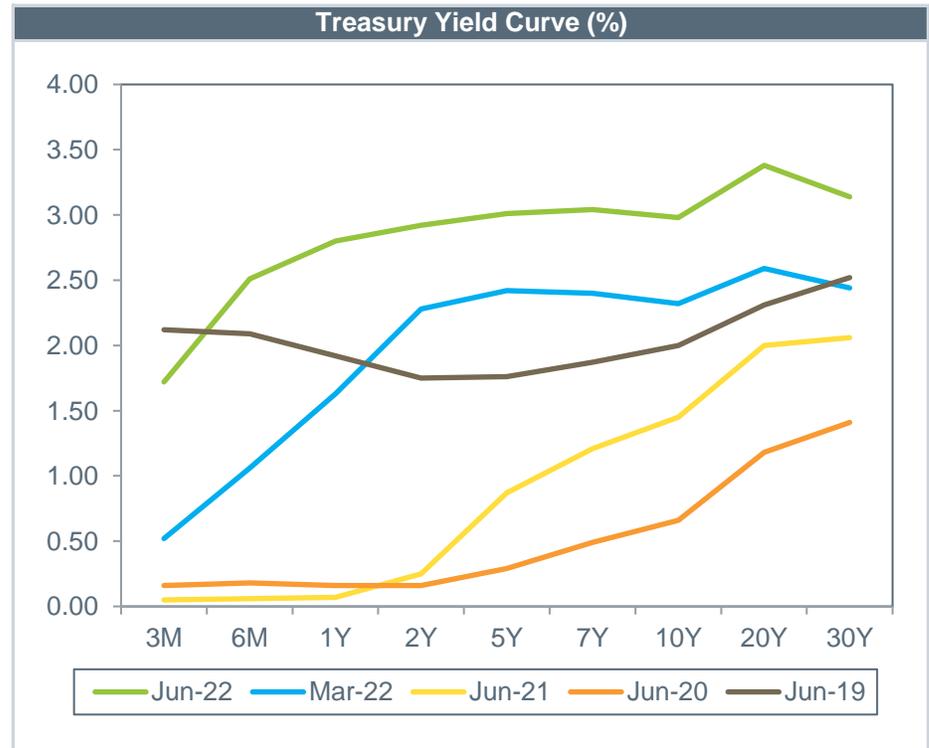
Second Quarter Economic Environment

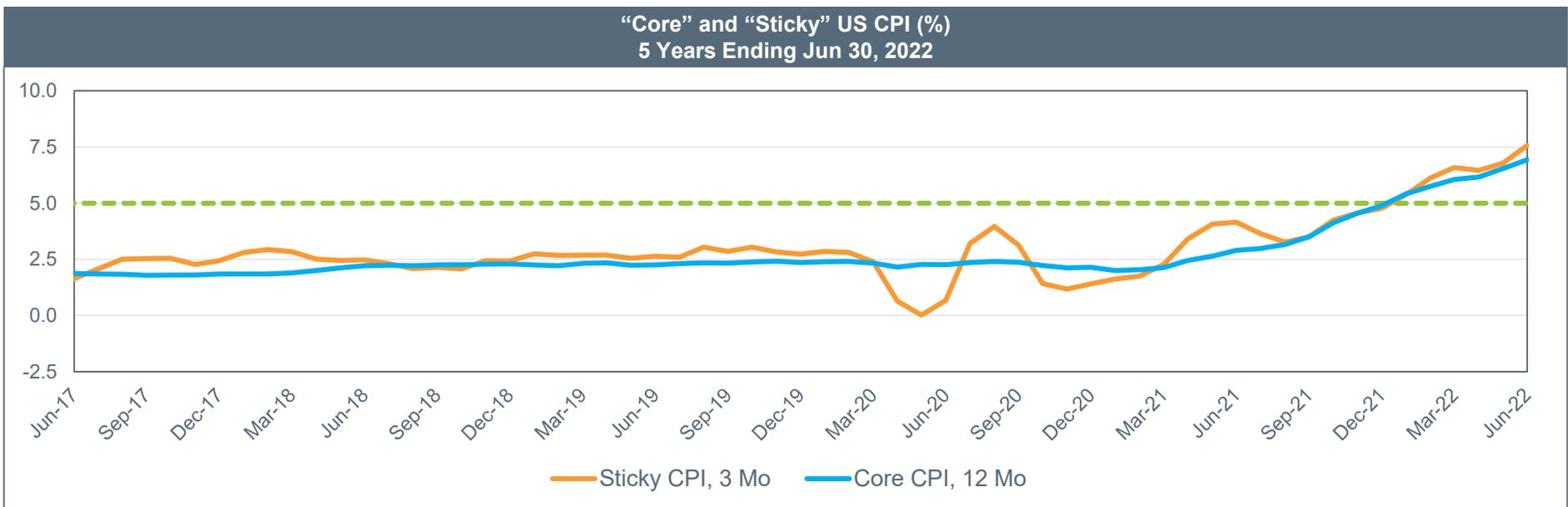
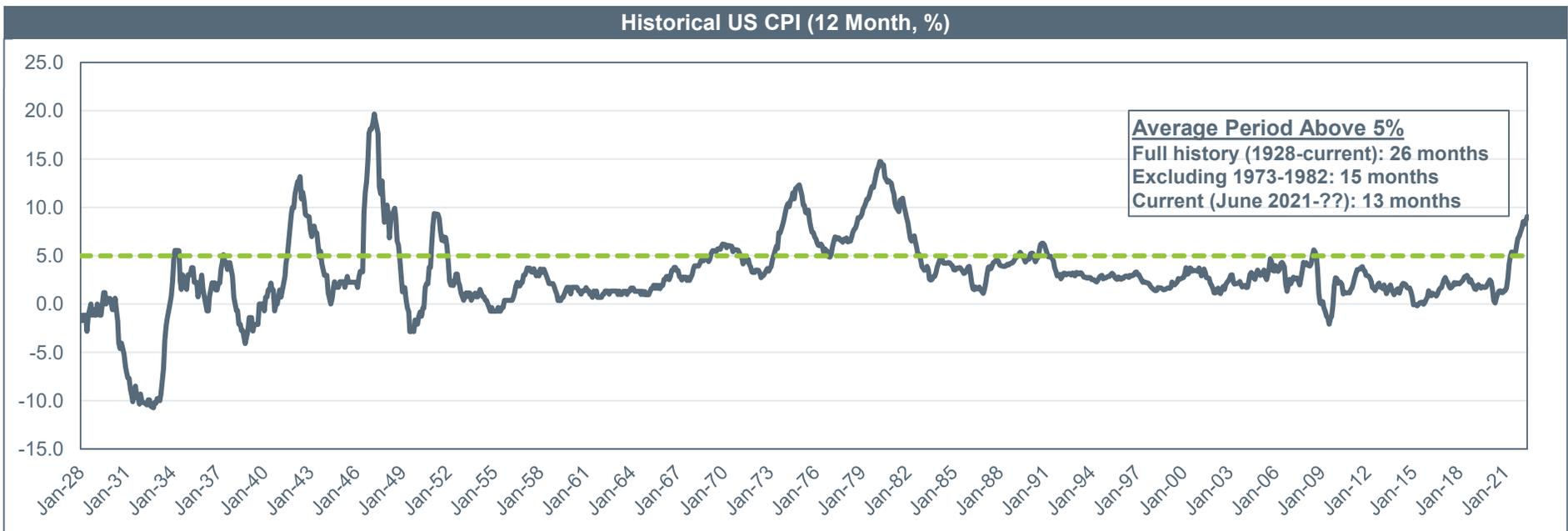
Continued rising inflation, accelerated tightening of global monetary policy and falling economic growth estimates led to most major indices ending negative in Q2. Inflation continued to rise in the US as the Consumer Price Index (CPI) rose to 9.1% at the end of June, spurred on by supply chain disruptions tied with the war in Ukraine and China's zero-COVID policy. The OECD's June Economic Outlook report now forecasts global inflation to end the year near 9%. Central banks continued to tighten monetary policy with the Federal Open Market Committee raising the federal funds rate by 0.75% in June which followed a 0.50% increase in May. Following the June CPI release, a 1.0% increase at the FOMC meeting in July is now the most likely scenario based on probabilities implied by traders. Forecasters are increasingly citing a rising risk of a recession in the US however the data is less clear. The Atlanta Fed's GDP Nowcast indicates a modest contraction of growth in Q2, with declining residential investment and private inventory overhang as key negative effects. However, manufacturing and services Purchasing Managers' indexes (PMIs) indicate expansion. The unemployment rate ended June at 3.6% as non-farm payroll growth averaged just under 375k per month. According to the latest JOLTS survey, the US currently has roughly two job openings for every unemployed individual. The Atlanta Fed's wage tracker also lists average annual wage growth at 6.7% based on a 3-month moving average.



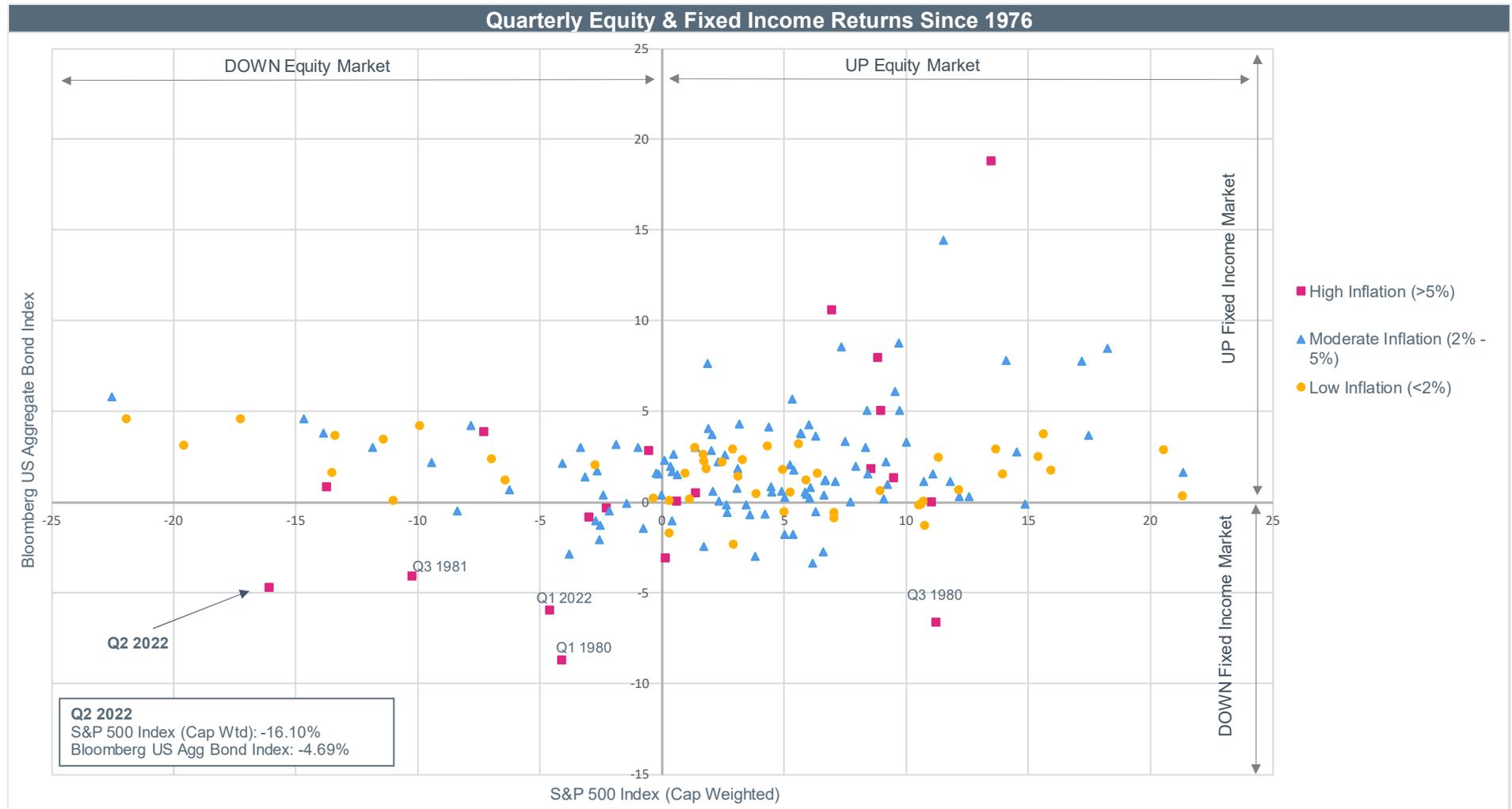
Economic Indicators	Jun-22	Mar-22	Jun-21	Jun-19	20 Yr
Federal Funds Rate (%)	1.58 ▲	0.33	0.08	2.40	1.30
Breakeven Infl. - 5 Yr (%)	2.62 ▼	3.43	2.50	1.54	1.86
Breakeven Infl. - 10 Yr (%)	2.34 ▼	2.83	2.34	1.70	2.04
CPI YoY (Headline) (%)	9.1 ▲	8.5	5.4	1.6	2.2
Unemployment Rate (%)	3.6 —	3.6	5.9	3.6	6.1
Real GDP YoY (%)	1.8 ▼	3.7	12.5	2.1	2.0
PMI - Manufacturing	53.0 ▼	57.1	60.9	51.5	53.5
USD Total Wtd Idx	121.05 ▲	115.22	112.61	114.58	103.10
WTI Crude Oil per Barrel (\$)	105.8 ▲	100.3	73.5	58.5	64.4
Gold Spot per Oz (\$)	1,807 ▼	1,937	1,770	1,410	1,086

Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	-16.10	-19.96	-10.62	11.31	12.96
Russell 2000	-17.20	-23.43	-25.20	5.17	9.35
MSCI EAFE (Net)	-14.51	-19.57	-17.77	2.20	5.40
MSCI EAFE SC (Net)	-17.69	-24.71	-23.98	1.72	7.18
MSCI Emg Mkts (Net)	-11.45	-17.63	-25.28	2.18	3.06
Bloomberg US Agg Bond	-4.69	-10.35	-10.29	0.88	1.54
ICE BofAML 3 Mo US T-Bill	0.11	0.15	0.17	1.11	0.64
NCREIF ODCE (Gross)	4.77	12.49	29.51	10.54	11.16
FTSE NAREIT Eq REIT (TR)	-16.97	-20.20	-6.27	5.30	7.39
HFRI FOF Comp	-3.94	-6.59	-5.50	3.62	3.75
Bloomberg Cmdbty (TR)	-5.66	18.44	24.27	8.39	-0.82





As of June 30, 2022. Sources: US Bureau of Labor Statistics, Federal Reserve Bank of Cleveland, and Federal Reserve Bank of Atlanta. Core CPI is represented by the Revised FRB Cleveland Trimmed Mean, 12-month. Sticky CPI is represented by the FRB Atlanta Sticky-Price Index, 3-month.



Bloomberg US Aggregate Bond Index: Worst Quarters and Subsequent Performance

Quarter Ended	Quarter Return	YTW at Quarter End	Subsequent Quarter Return	Subsequent Year Return	Subsequent 3 Year Return Annualized
Mar-1980	-8.71%	14.10	18.79%	13.05%	17.88%
Sep-1980	-6.60%	12.43	1.36%	-2.58%	15.05%
Mar-2022	-5.93%	2.92	-4.69%	?	?
Jun-2022	-4.69%	3.72	?	?	?
Sep-1981	-4.07%	16.50	10.58%	35.22%	19.35%
Mar-2021	-3.38%	1.61	1.83%	-4.15%	?
Dec-1979	-3.08%	11.19	-8.71%	2.67%	13.12%

Inflation data provided by the Federal Reserve Economic Database.
 Yield to Worst data provided by Barclays Live.



Second Quarter Review

Broad Market

US equity markets were down sharply in Q2 in the midst of increasing concerns of a looming recession as the Fed acted to respond to sustained, elevated levels of inflation. With declines affecting all sectors, investors fled to defensive stocks as these were comparatively resilient. Likewise, investors in energy stocks benefited as the sector was buoyed by commodity prices.

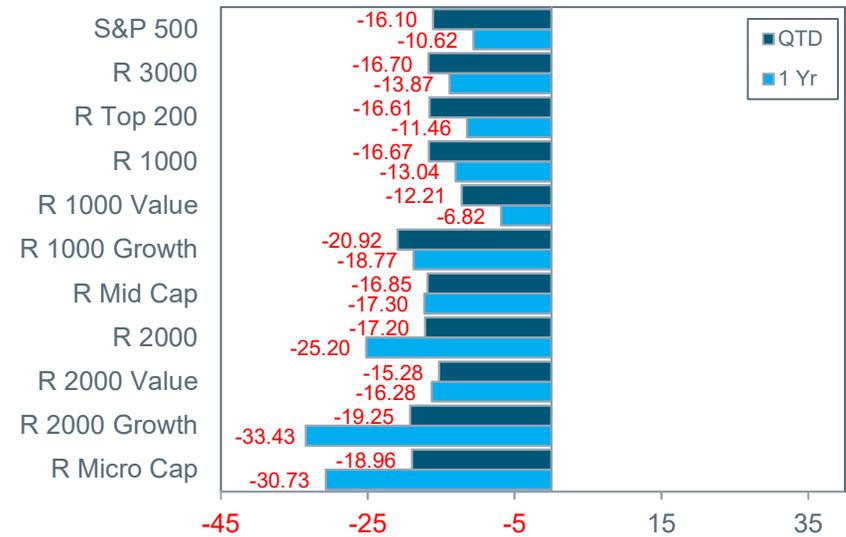
Market Cap

There was significant outperformance of value stocks over growth stocks, with the Russell 1000 Value and Russell 2000 Value indexes outperforming their growth counterparts by 8.7% and 4.0%, respectively.

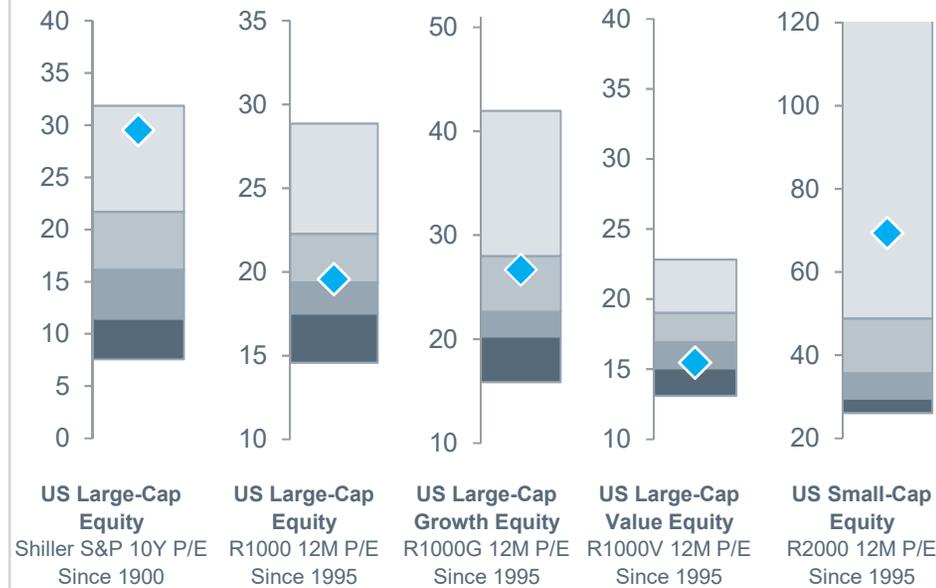
Style and Sector

Active management performed well in Q2, with the exception of large-cap growth managers. Small- and mid-cap core and value managers had an exceptionally strong Q2 with a majority outpacing their respective benchmarks by significant margins.

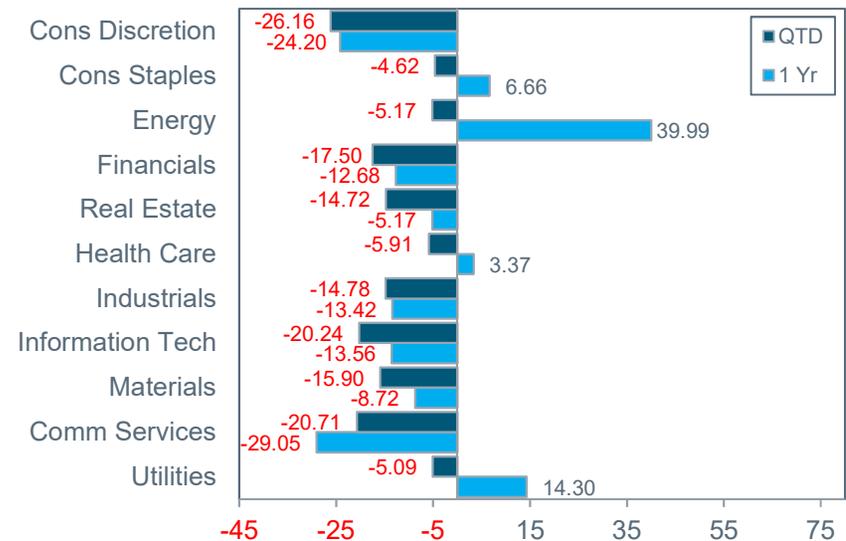
Style and Capitalization Market Performance (%)



Valuations



S&P 500 Index Sector Performance (%)



Valuation data courtesy of Bloomberg Professional Service and Robert J. Shiller, *Irrational Exuberance*, Second Edition. P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.



Second Quarter Review

Developed Markets

Developed International markets fared better than the domestic market, albeit still finishing Q2 in negative territory with the MSCI EAFE Index notching a -14.5% return for the period. Value stocks remained in favor with continued outperformance over growth stocks, while large-cap stocks outperformed small-cap stocks. All developed market countries and sectors were negative for the quarter, with the Asia-Pacific region and information technology sector leading markets lower.

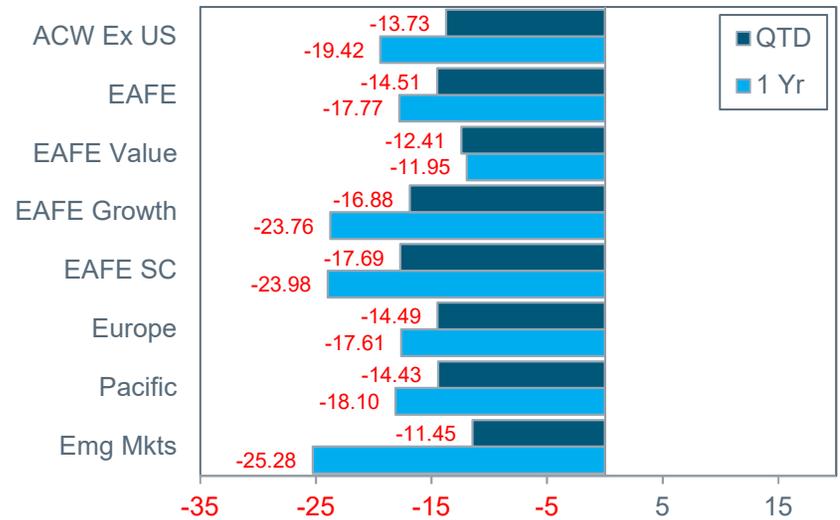
Emerging Markets

Emerging markets outperformed developed in Q2 with the MSCI EM Index returning -11.4%. Nearly all emerging market countries experienced negative returns.

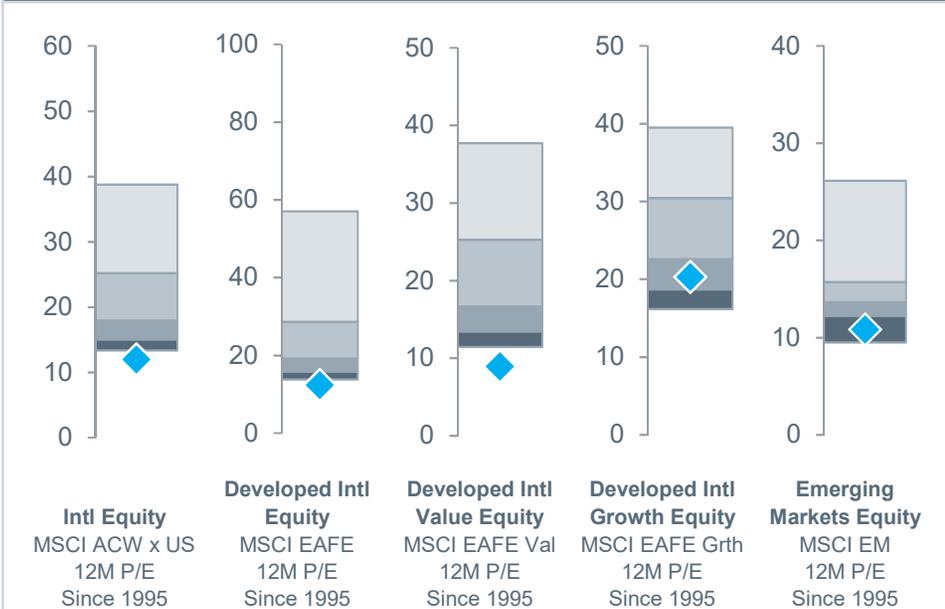
Market Cap & Style

In international markets, value stocks outperformed growth, while large-cap stocks outperformed small-cap. In emerging markets, value stocks outperformed growth, and large-cap stocks outperformed small-cap.

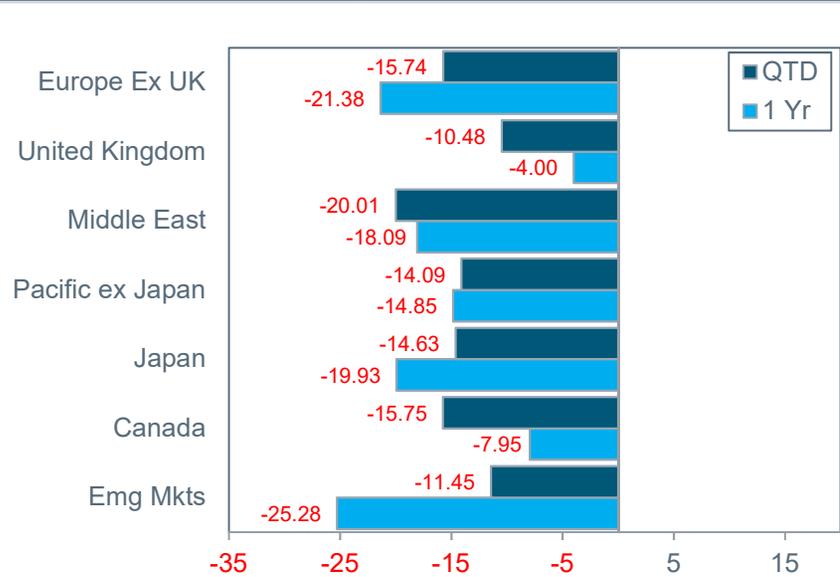
MSCI Style and Capitalization Market Performance (%)



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

In Q2, Treasury yields rose 66 basis points from 2.32% to 2.98% with an intra-quarter high of 3.49%, as measured by the 10-year US Treasury yield. The Federal Reserve hiked the Federal Funds rate by 75 basis points over the quarter, the largest single increase since 1994. The Bloomberg US Aggregate ended the quarter down with an overall return of -4.7%.

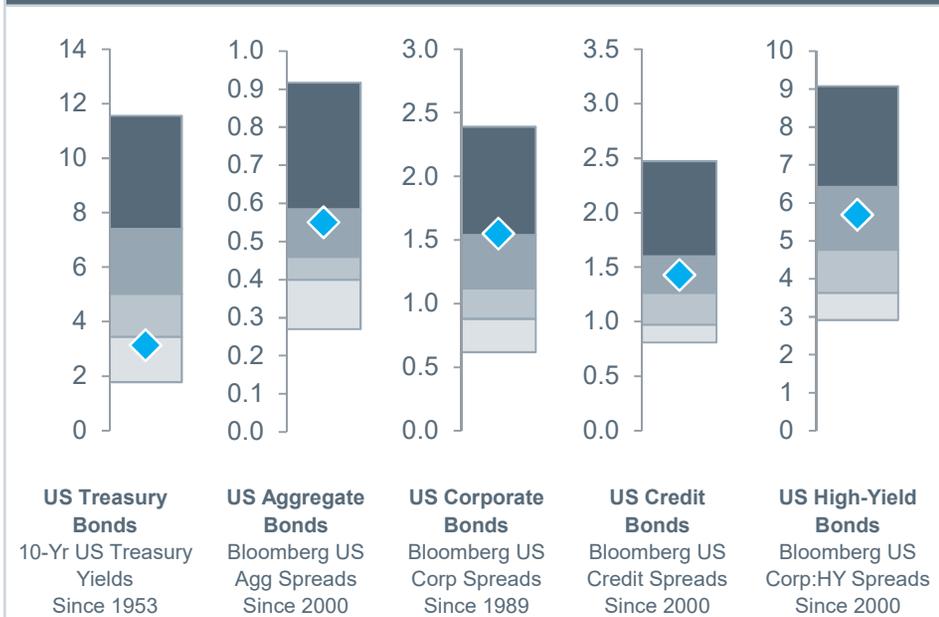
Credit Market

While fixed income broadly experienced negative absolute performance over the quarter, widening credit spreads presented additional headwinds to corporate credit. US Investment Grade credit detracted -6.9%, while US High Yield returned -9.8%, as measured by the Bloomberg US Credit Index and Bloomberg US High Yield index, respectively.

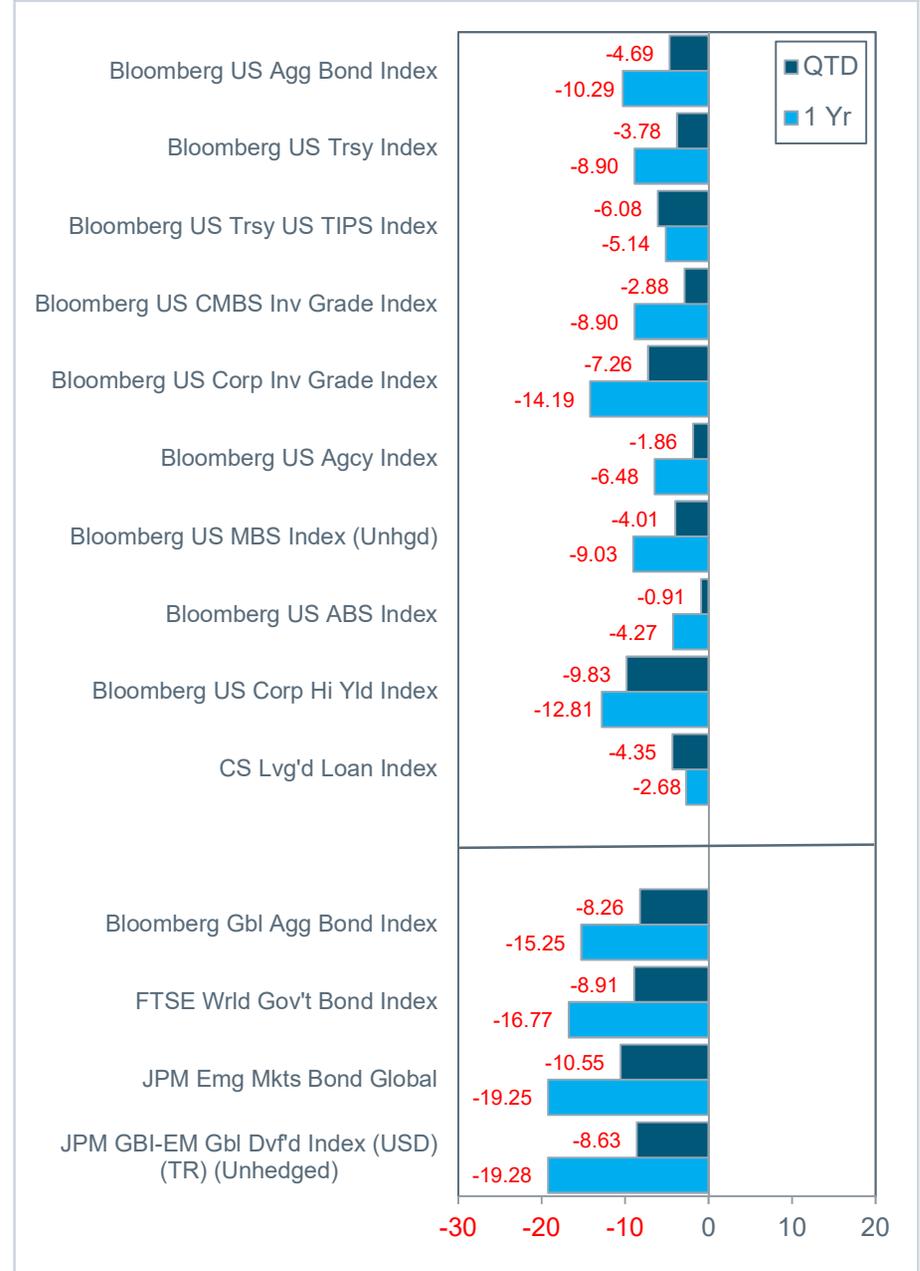
Emerging Market Debt

Foreign fixed income experienced headwinds from the Russia-Ukraine war, inflationary concerns, and mixed central bank policy. These factors led to a -11.4% return in Q2 for the JPM EMBI Global Diversified Index.

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

Dispersion continues to be the theme across the hedge fund landscape. Although the HFRI Asset Weighted Composite returned 0.3% during the quarter, its year-to-date return remained positive at 2.1%. By contrast, the Equal Weighted Index, which is dominated by long/short equity strategies (“ELS”), returned -4.9% in Q2, led lower by ELS managers returning -8.3%. Prime brokerage data indicates that the 1st half of 2022 was one of the strongest on record for short alpha, as higher interest rates tend to structurally benefit short sellers.

General Market - Global Tactical Asset Allocation (GTAA)

Global Tactical Asset Allocation (GTAA) strategies that RVK follows closely generated disparate performance in Q2. Although overall performance was negative, nearly all managers outperformed a US centric blend of 60% equity and 40% fixed income. The top performing long-biased GTAA strategies tended to emphasize relative undervaluation in their asset allocation processes, while underperformers tended to hold larger allocations to US equity and non-USD fixed income.

Second Quarter Review - Real Assets

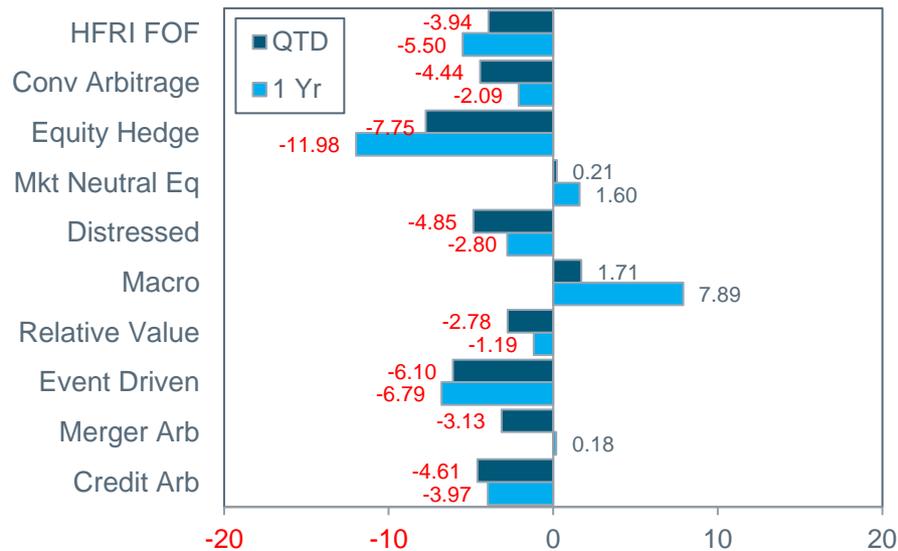
General Market - Diversified Inflation Strategies (DIS)

After responding positively to record inflationary pressures in Q1, DIS posted losses ranging from negative mid-single digit to negative low double-digit. Manager allocations to inflation sensitive assets were affected by cross currents of Fed rate hikes combined with changing market estimates of future economic growth. During the quarter, nearly all inflation sensitive asset classes were negative except for energy commodities. Managers with larger TIPS allocations tended to outperform peers, especially in cases where shorter duration TIPS were targeted.

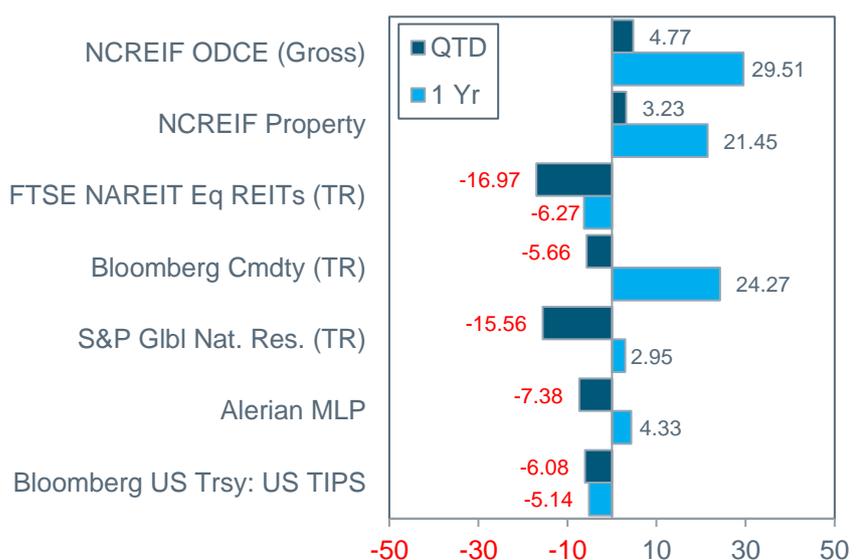
General Market - Real Estate

Core private real estate generated a positive 4.8% return in Q2, as reported by the NFI-ODCE Index, with the total return comprising of 0.9% income and 3.9% price appreciation. While the income return is trending at the lower end of historical levels, the price appreciation return remains elevated. Investors in publicly traded real estate significantly underperformed their private market counterparts by a meaningful margin.

HFRI Hedge Fund Performance (%)



Real Asset Performance (%)



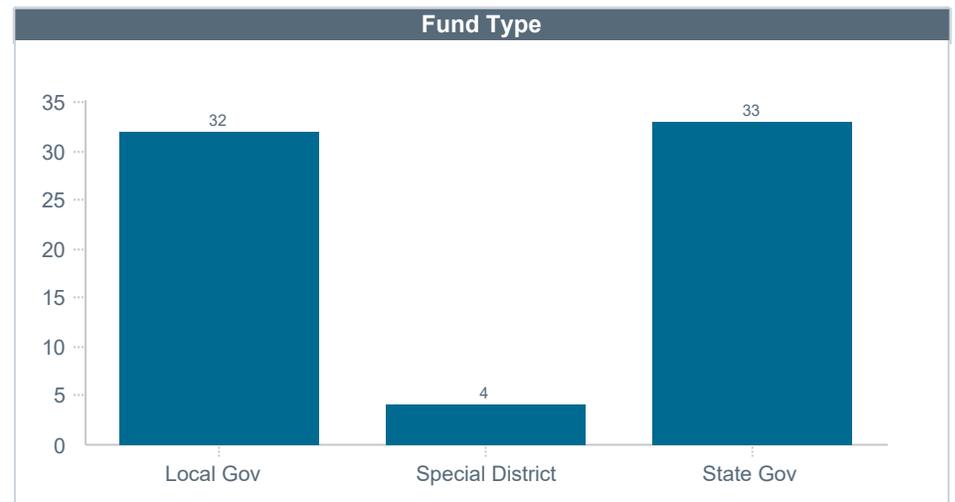
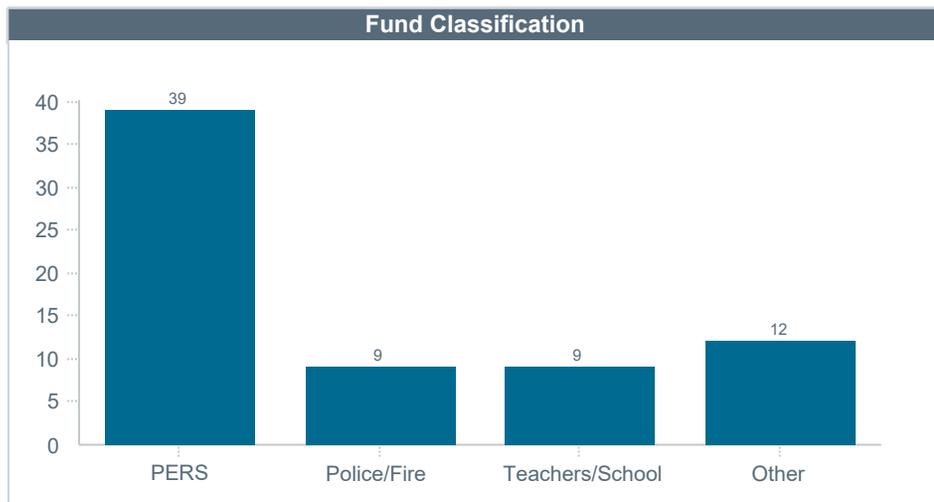
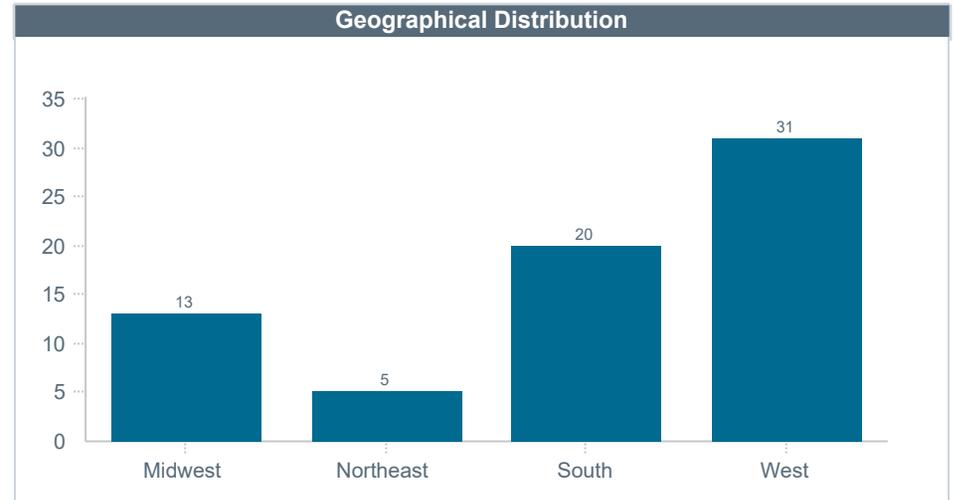
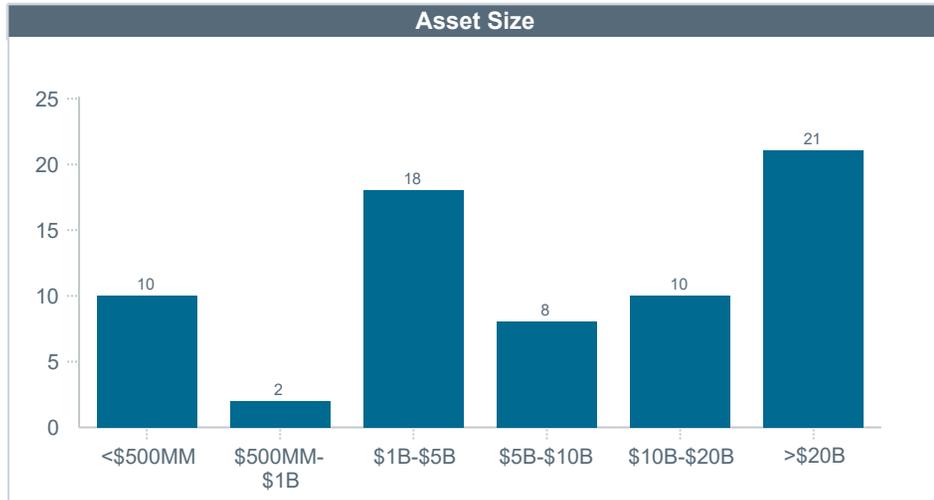
Annual Asset Class Performance

As of June 30, 2022

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	YTD
Best	8.44	78.51	27.94	22.49	20.00	38.82	30.14	15.02	21.31	37.28	8.35	31.49	19.96	43.24	18.44
	5.24	58.21	26.85	15.99	18.23	32.39	19.31	9.59	17.13	33.01	1.87	26.00	18.40	28.71	12.49
	2.06	46.78	22.04	13.56	18.06	29.30	13.69	3.20	11.96	25.03	0.01	25.53	18.31	27.11	0.15
	-2.35	31.78	18.88	8.29	17.32	22.78	12.50	1.38	11.77	21.83	-1.26	24.96	16.12	22.17	-6.59
	-10.01	28.01	16.83	7.84	16.35	13.94	5.97	0.55	11.19	14.65	-2.08	22.01	12.34	14.82	-8.92
	-21.37	27.17	16.36	4.98	16.00	8.96	4.89	0.05	8.77	10.71	-4.02	19.59	10.99	11.26	-10.35
	-26.16	26.46	15.12	2.11	15.81	7.44	3.64	-0.27	8.52	7.77	-4.38	18.42	10.88	10.10	-14.19
	-33.79	18.91	15.06	0.10	10.94	2.47	3.37	-0.81	6.67	7.62	-4.62	14.32	7.82	6.17	-17.63
	-35.65	11.47	10.16	-4.18	8.78	0.07	2.45	-1.44	4.68	7.50	-4.68	8.72	7.51	5.96	-19.57
	-37.00	11.41	7.75	-5.72	6.98	-2.02	0.04	-3.30	2.65	5.23	-11.01	8.43	7.11	5.28	-19.96
	-37.74	5.93	6.54	-12.14	4.79	-2.60	-2.19	-4.41	2.18	3.54	-11.25	8.39	1.19	0.05	-20.20
	-43.33	1.92	6.31	-13.32	4.21	-8.61	-4.90	-4.47	1.00	3.01	-13.73	7.69	0.67	-1.55	-21.88
	-47.01	0.21	5.70	-15.94	0.11	-8.83	-4.95	-14.92	0.51	1.70	-14.57	5.34	-3.12	-2.52	-23.43
Worst	-53.33	-29.76	0.13	-18.42	-1.06	-9.52	-17.01	-24.66	0.33	0.86	-17.89	2.28	-8.00	-2.54	-24.71
	S&P 500 - US Large Cap	R 2000 - US Small Cap	MSCI EAFE (Net) - Int'l Dev.	MSCI EAFE SC (Net) - Int'l SC	MSCI EM (Net) - Int'l Emg Mkts	Bloombrg US Agg Bond - FI	Bloombrg US Corp Hi Yield - FI	Bloombrg US Trsy US TIPS - FI	Bloombrg US Gov Credit Lng - FI	NCREIF ODCE (Gross) - Real Estate	FTSE NAREIT Eq REITs Index (TR)	HFRI FOF Comp Index - ARS	Bloombrg Cmdty (TR) - Commod.	ICE BofAML 3 Mo T-Bill - Cash Equiv	

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

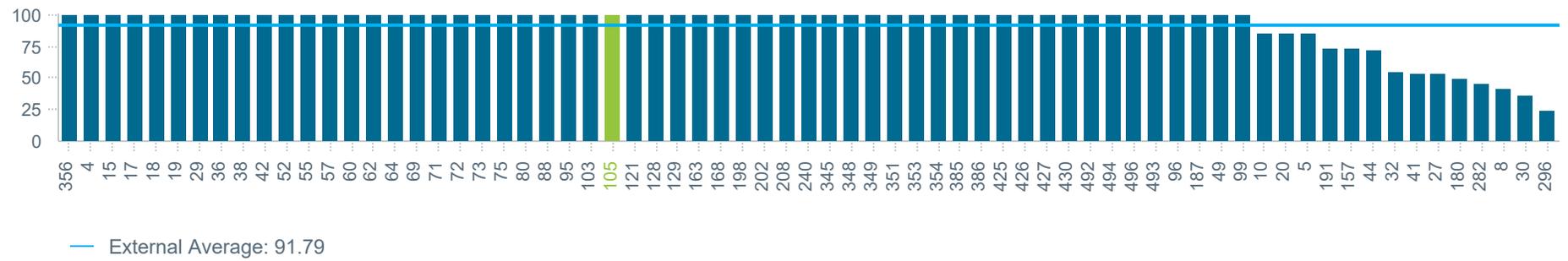




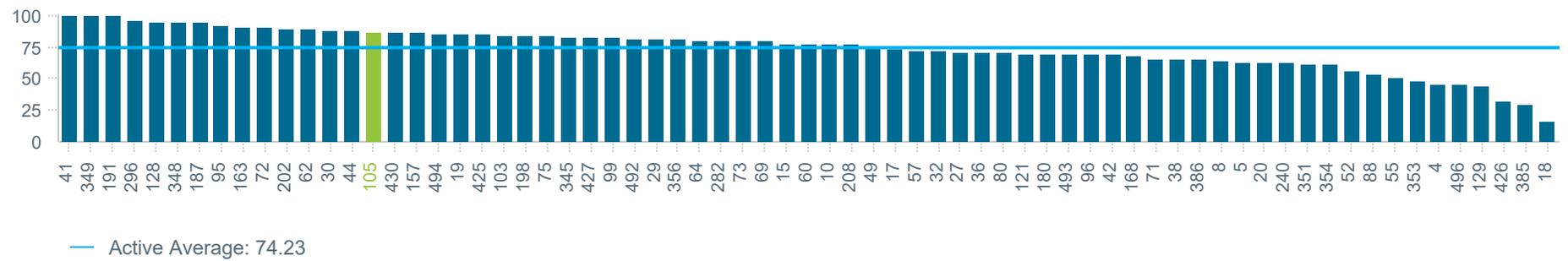
■ Universe: 69 funds



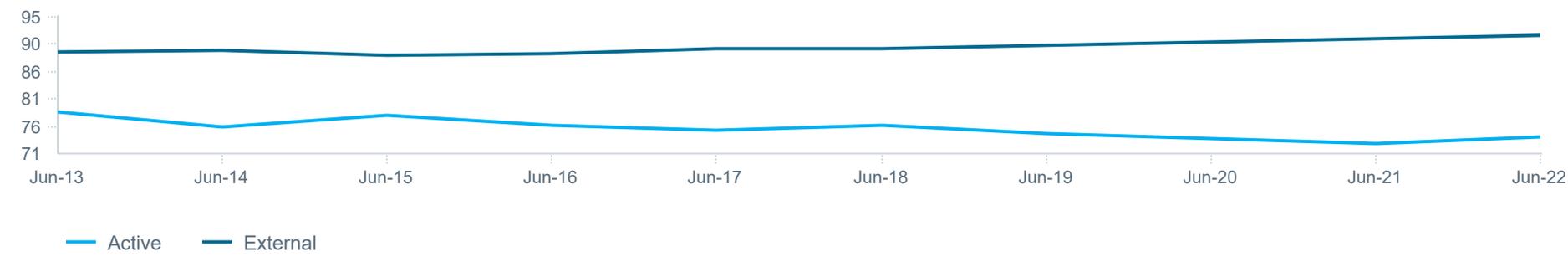
External Management (%)



Active Management (%)



Public Fund Universe Historical Average (%)



■ Fund No. 105

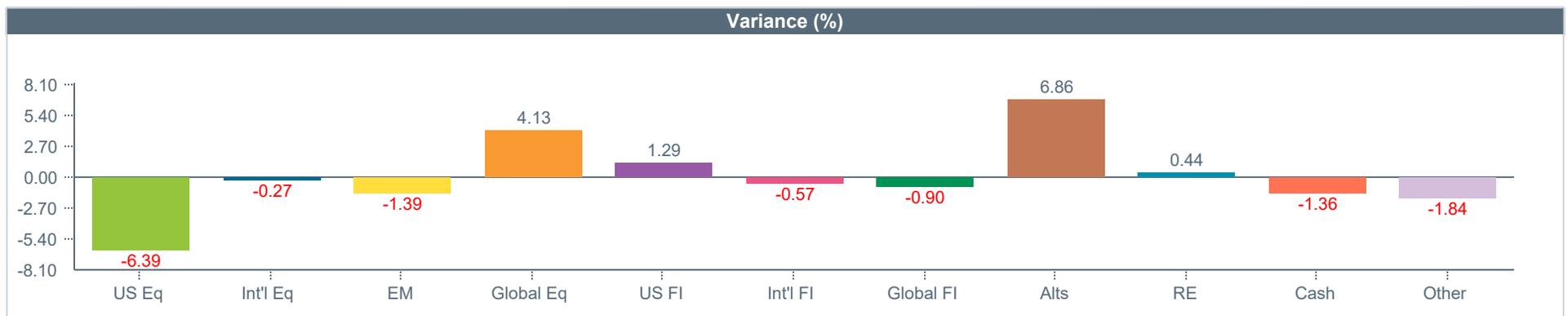
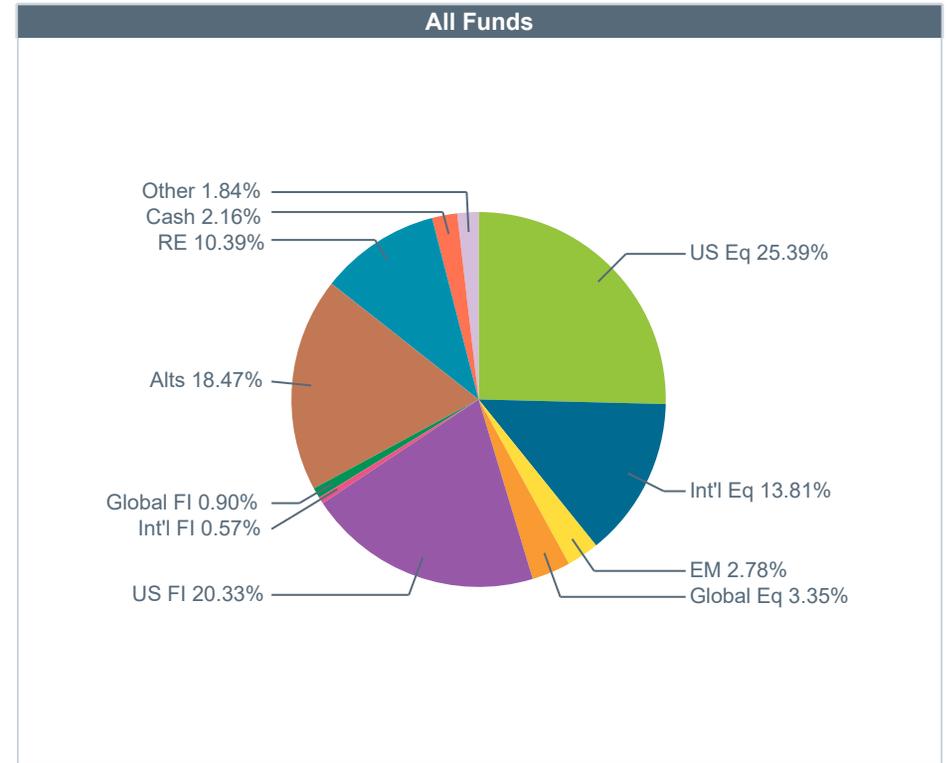
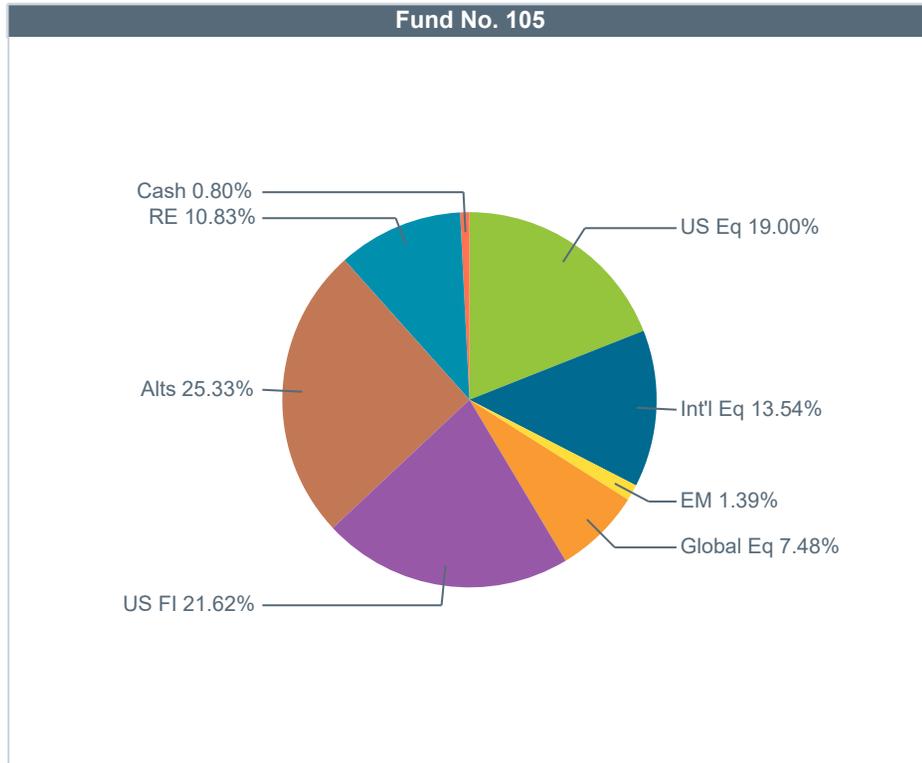


Asset Range	Actively Managed (%)	Passively Managed (%)	Externally Managed (%)	Internally Managed (%)
Over \$20B	74.22	25.78	78.07	21.93
\$10B-\$20B	72.14	27.86	92.44	7.56
\$5B-\$10B	70.73	29.27	98.13	1.87
\$1B-\$5B	75.85	24.15	99.15	0.85
\$500MM-\$1B	82.90	17.10	99.87	0.13
Under \$500MM	74.47	25.53	100.00	0.00
Fund No. 105	86.95	13.05	100.00	0.00

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

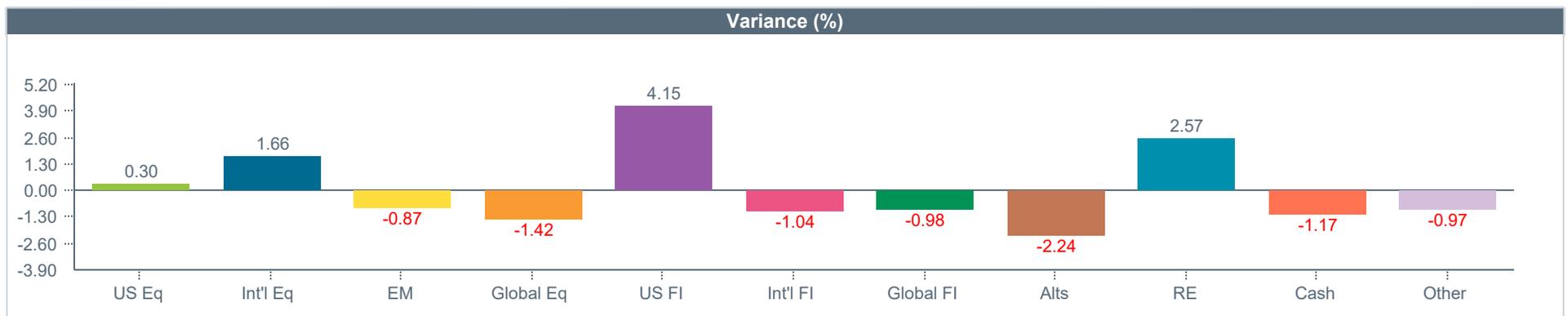
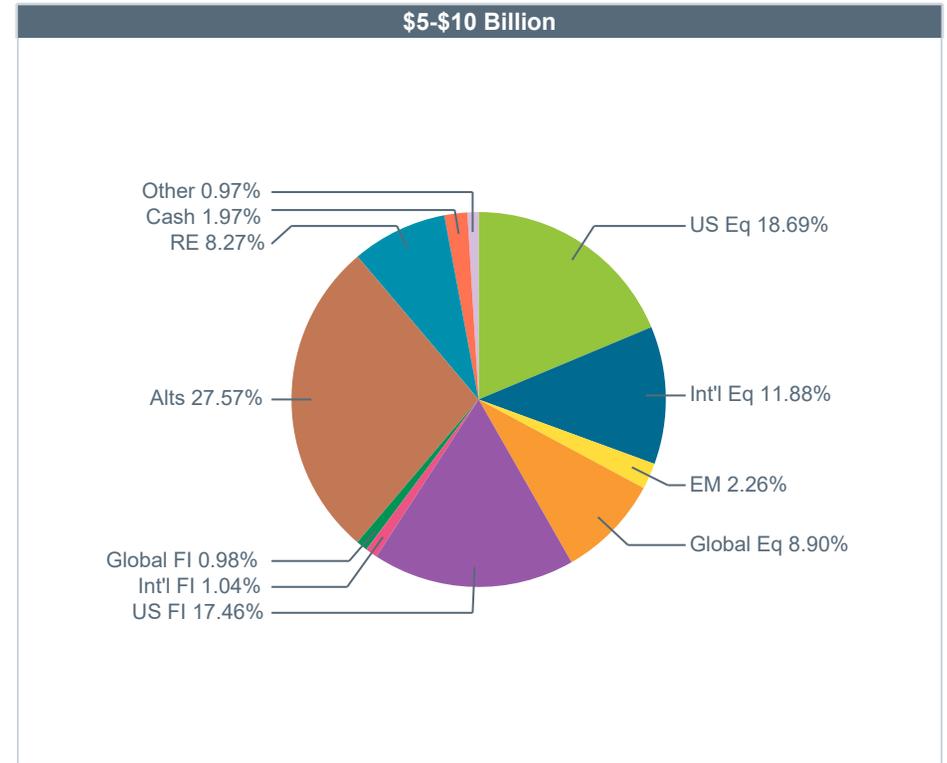
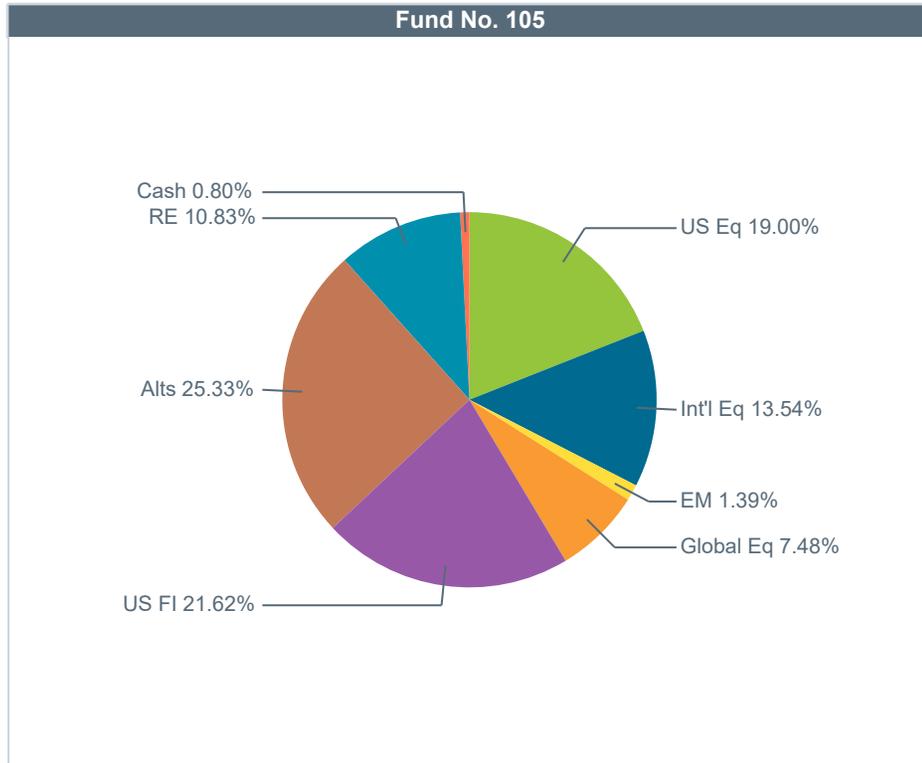
Portfolio (%)	Active Management		External Management	
	Public Fund Universe	Fund No. 105	Public Fund Universe	Fund No. 105
90 to 100	10	0	55	1
50 to 89	51	1	9	0
10 to 49	7	0	5	0
Less than 10	0	0	0	0
Total Funds Reporting	68	1	69	1





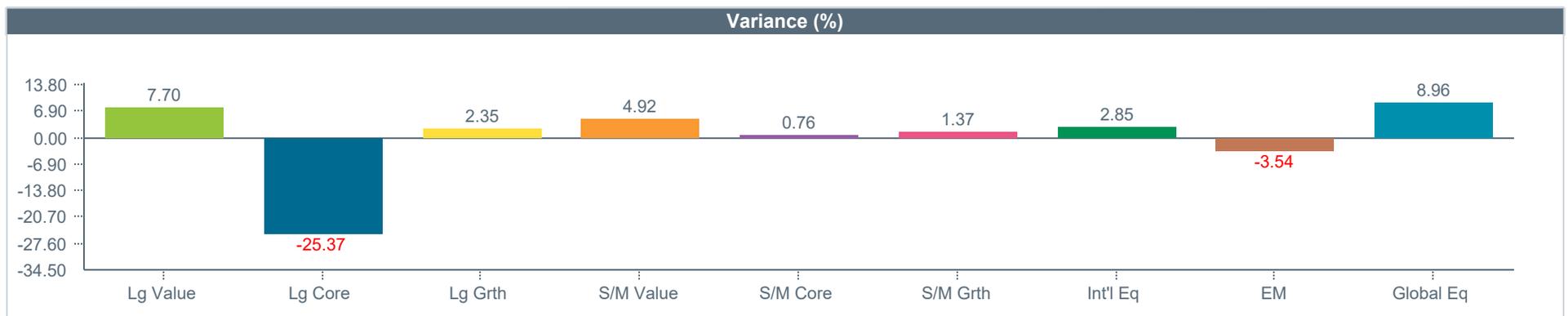
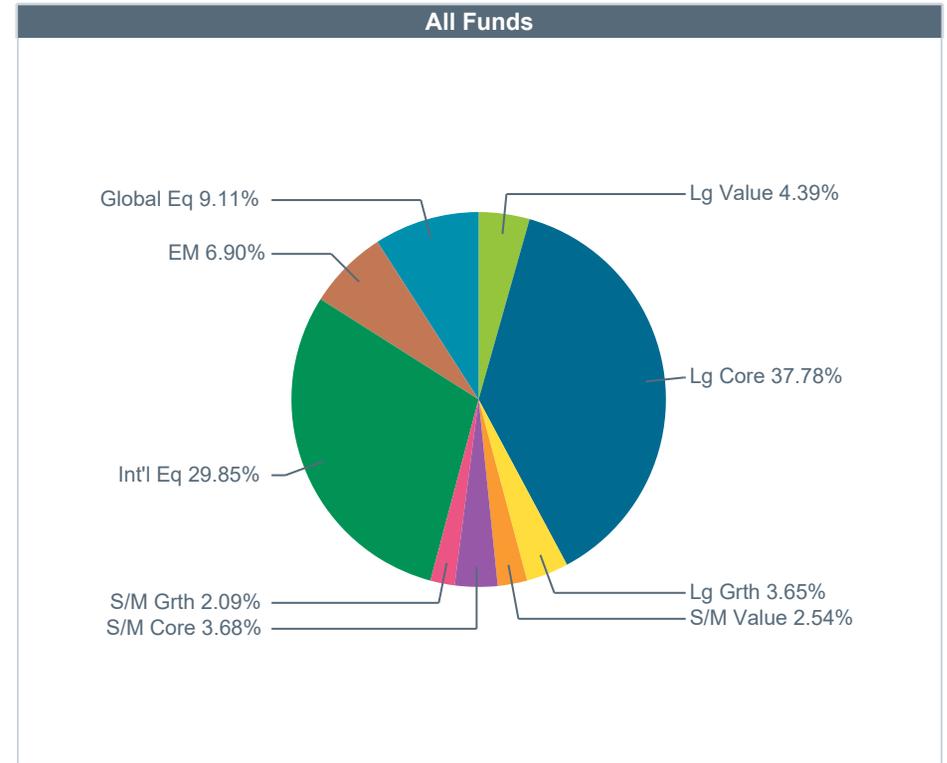
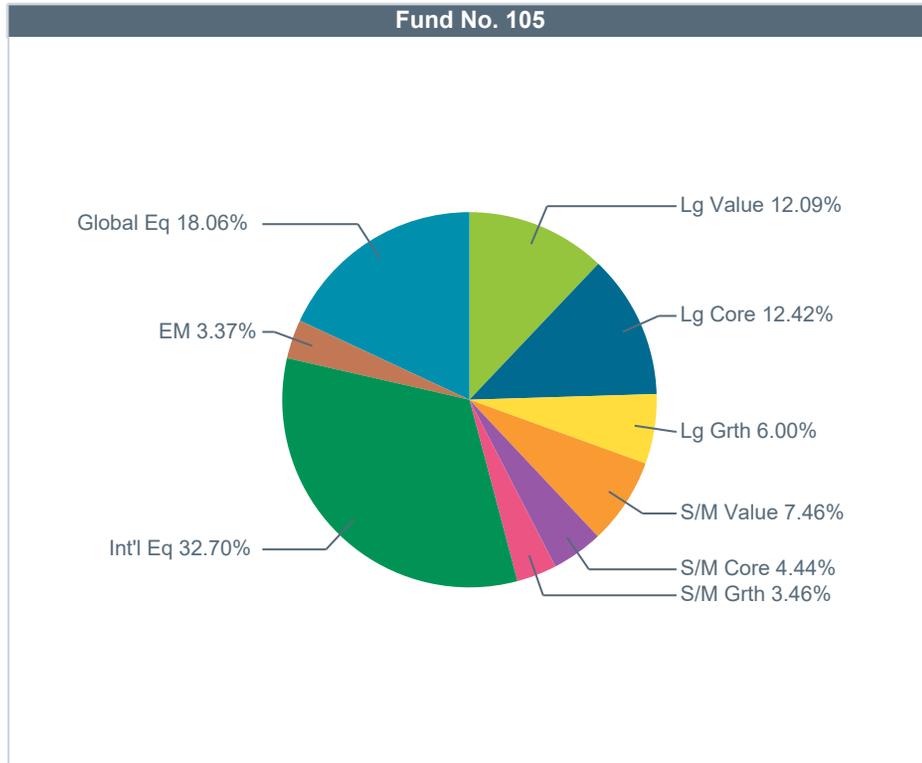
Allocations shown may not sum up to 100% exactly due to rounding.





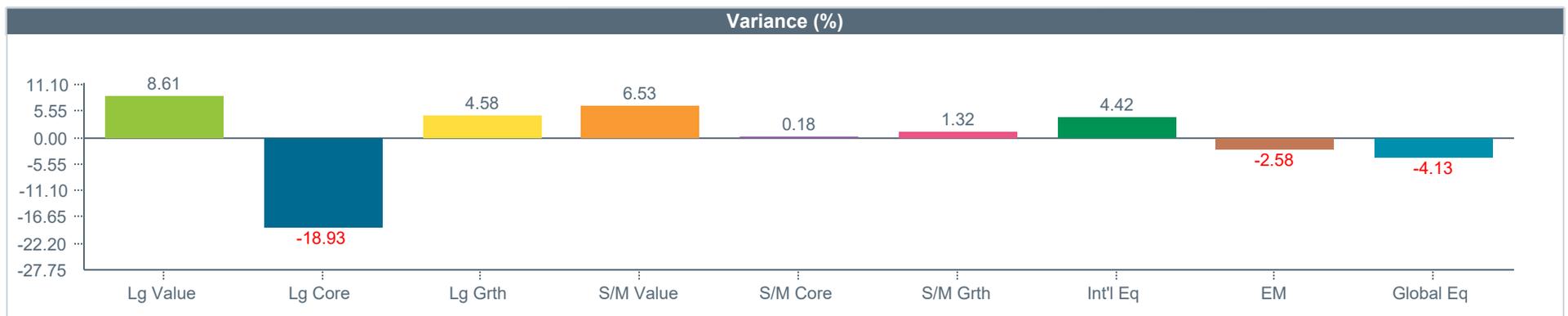
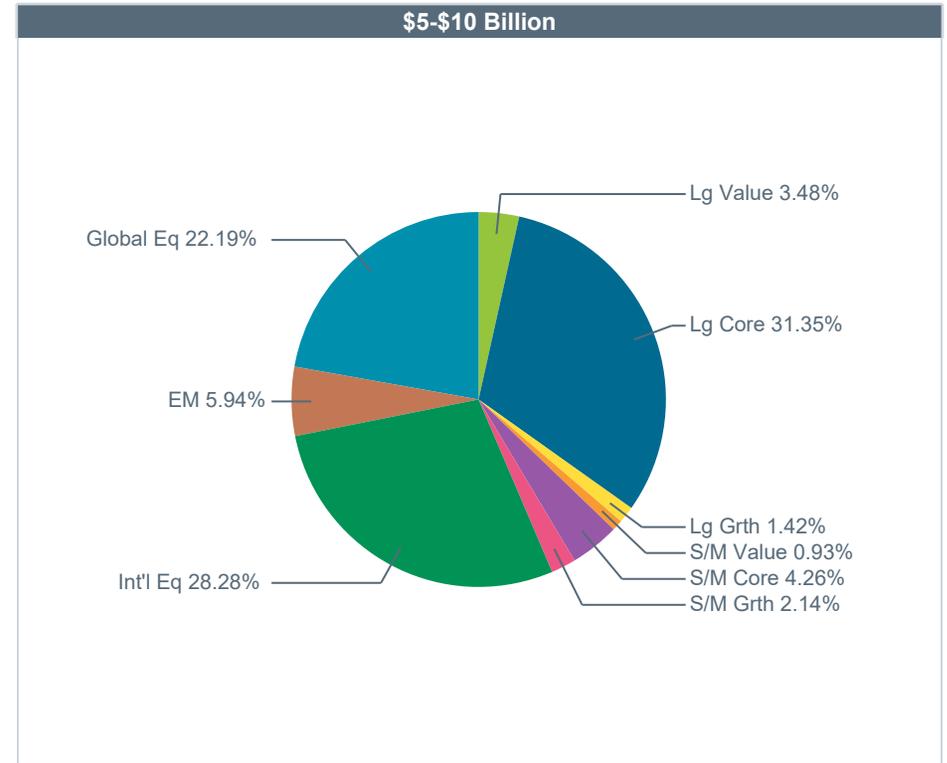
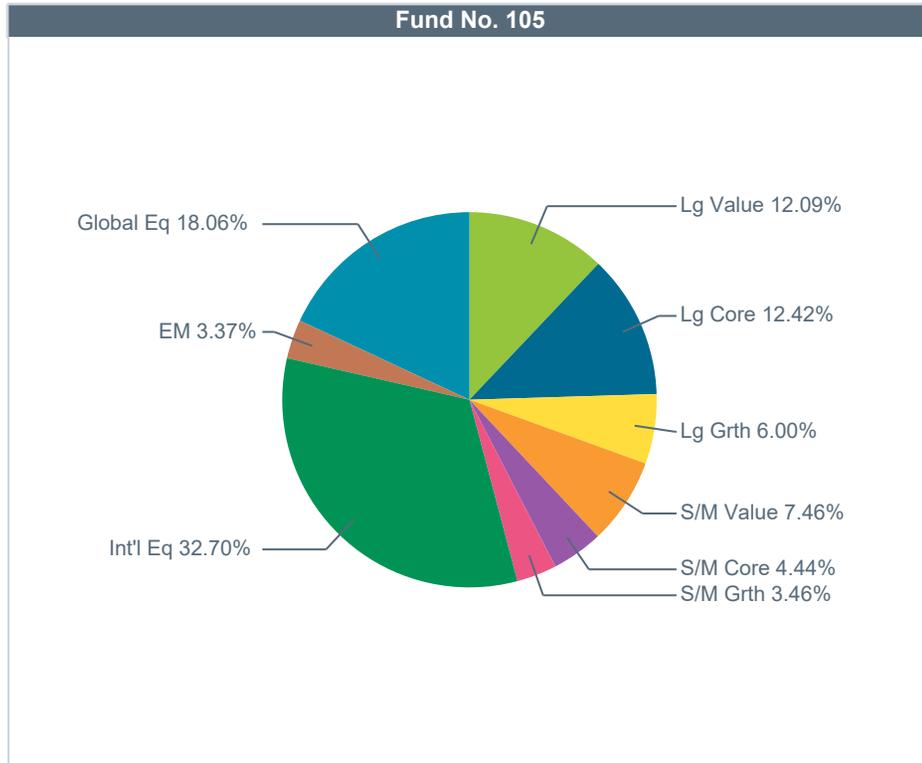
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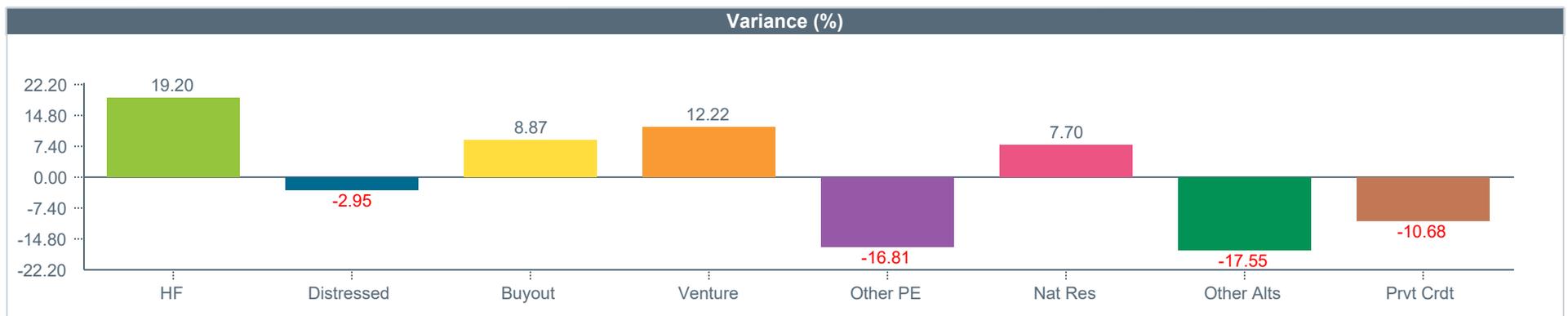
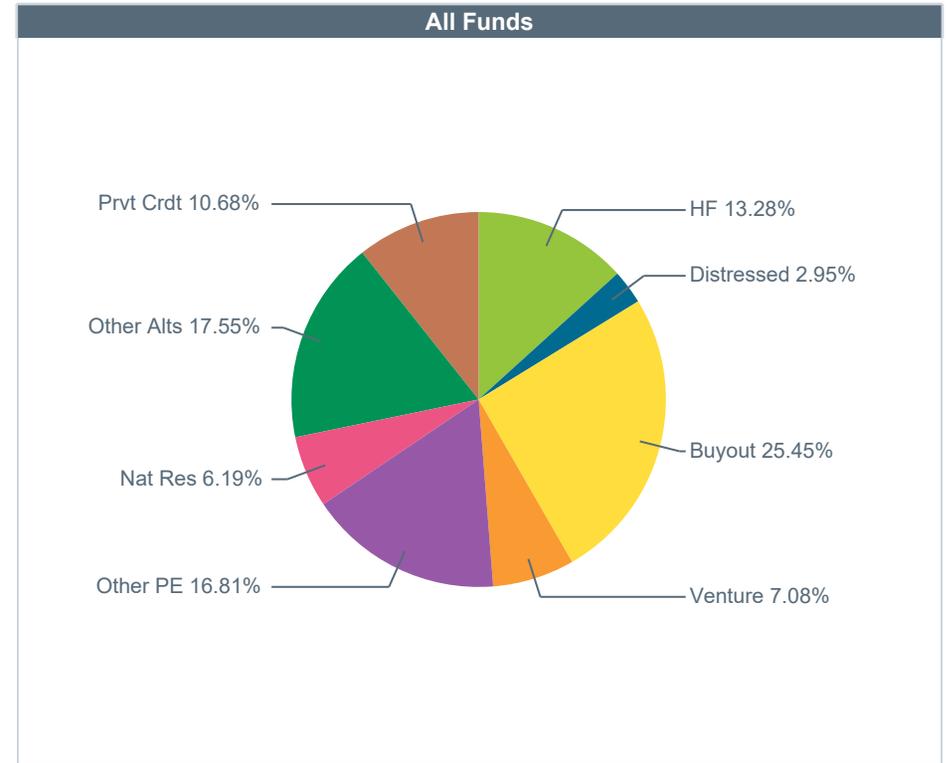
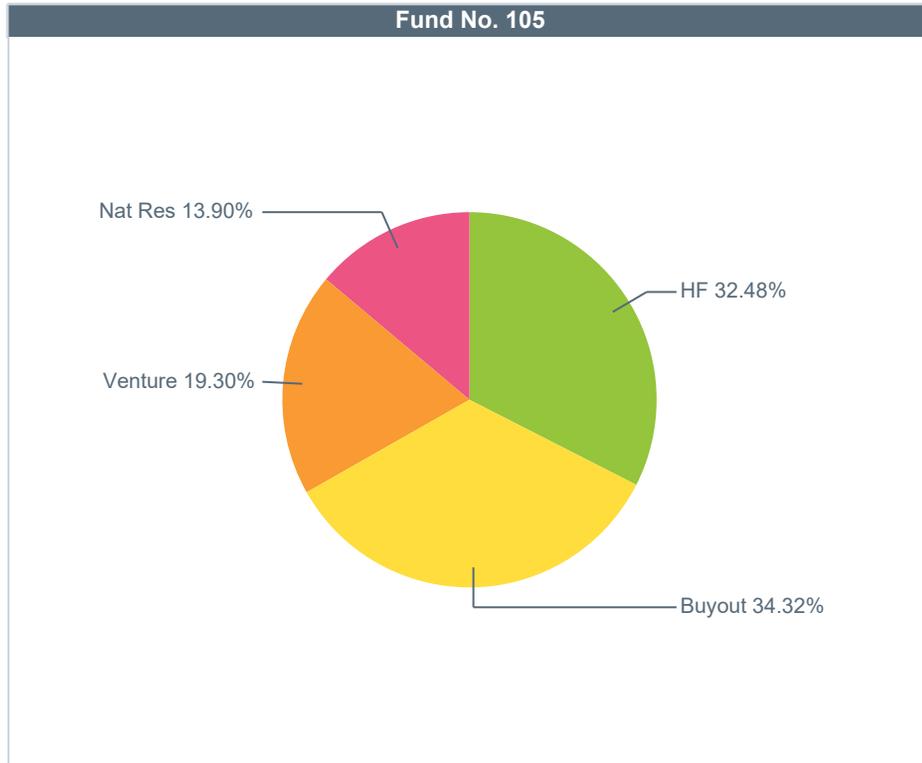
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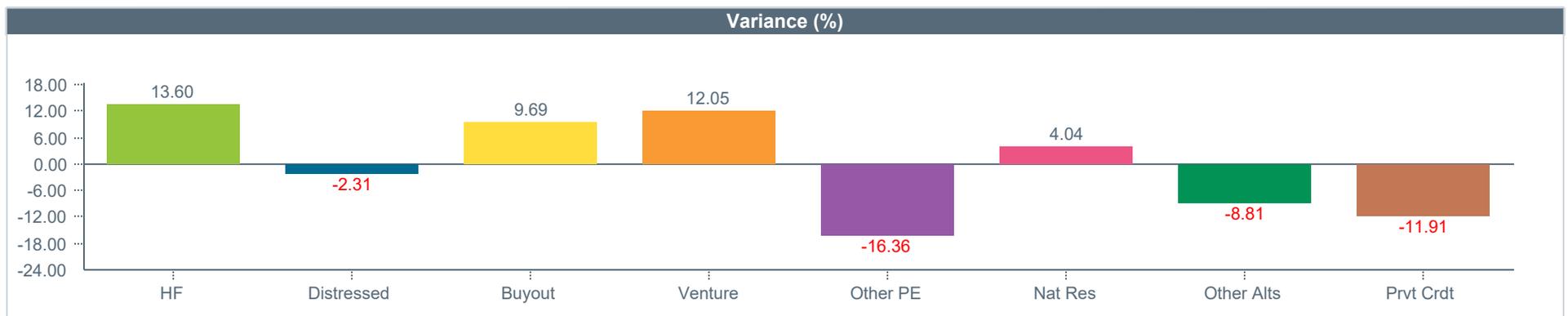
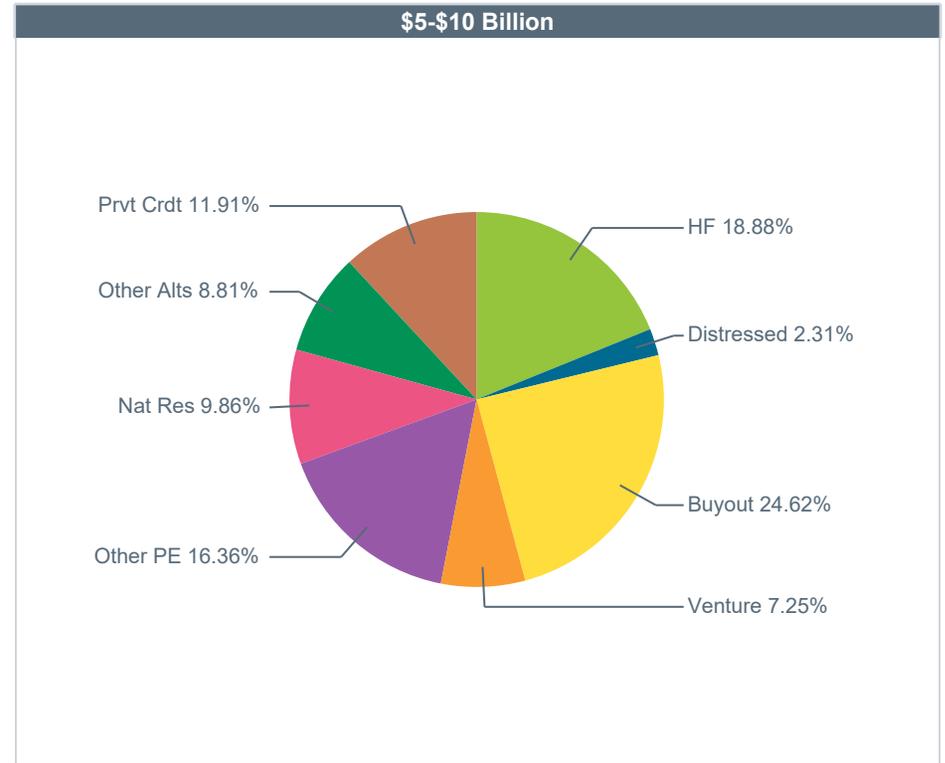
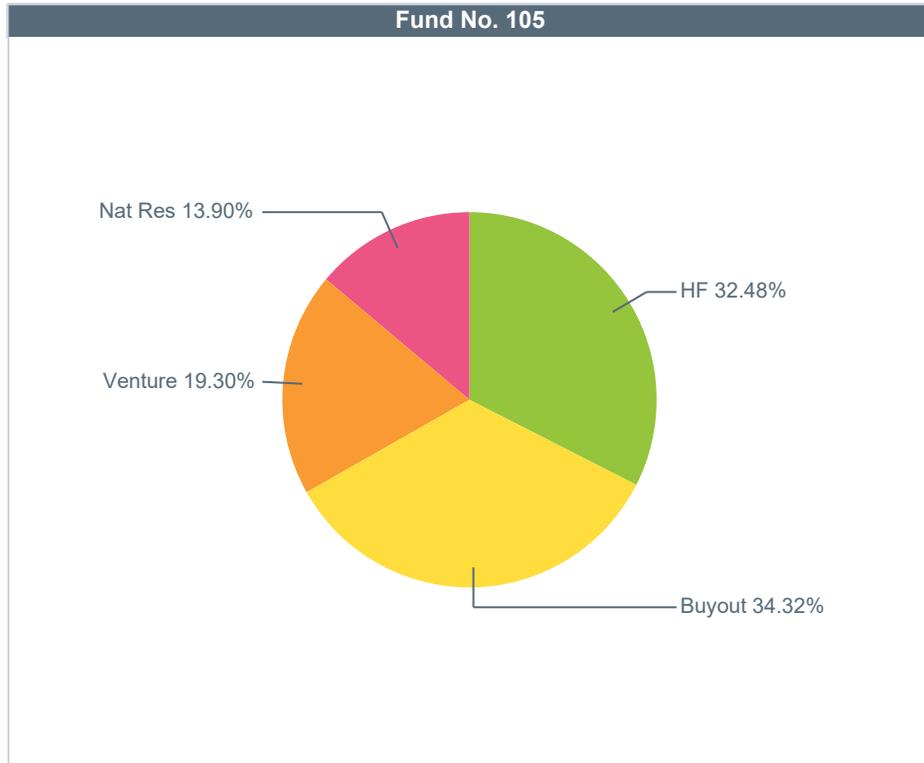
Allocations shown may not sum up to 100% exactly due to rounding.





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

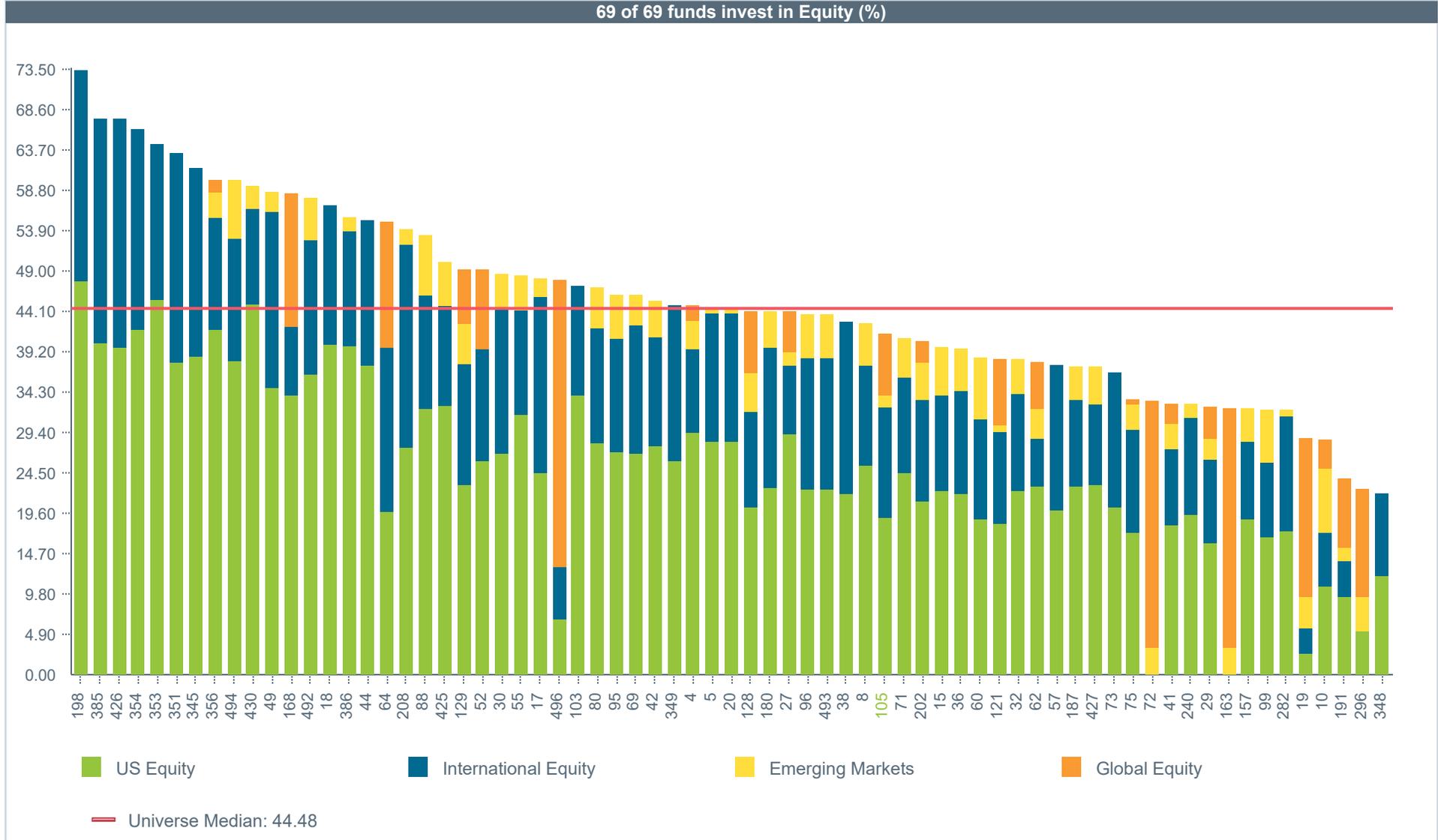


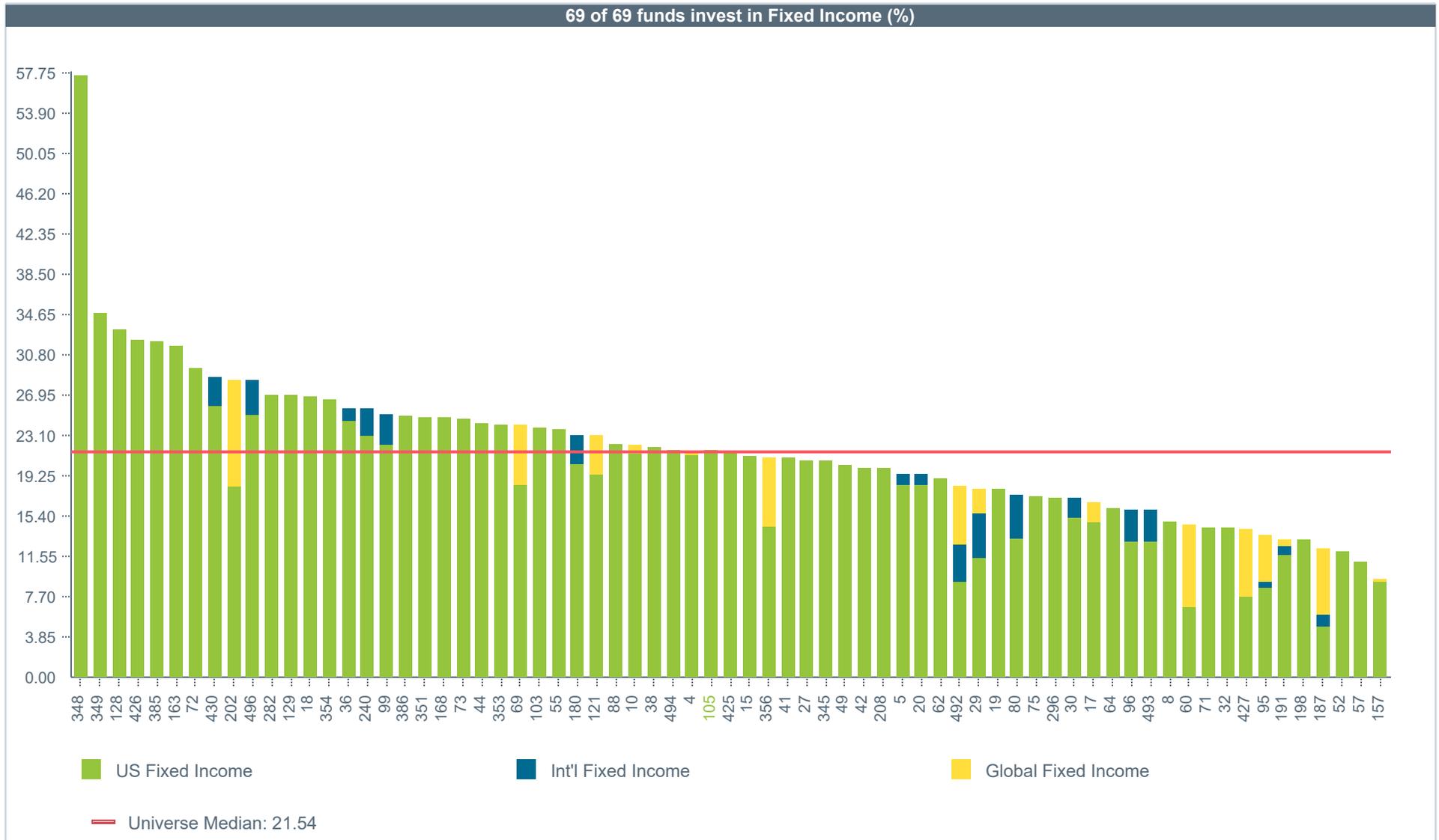


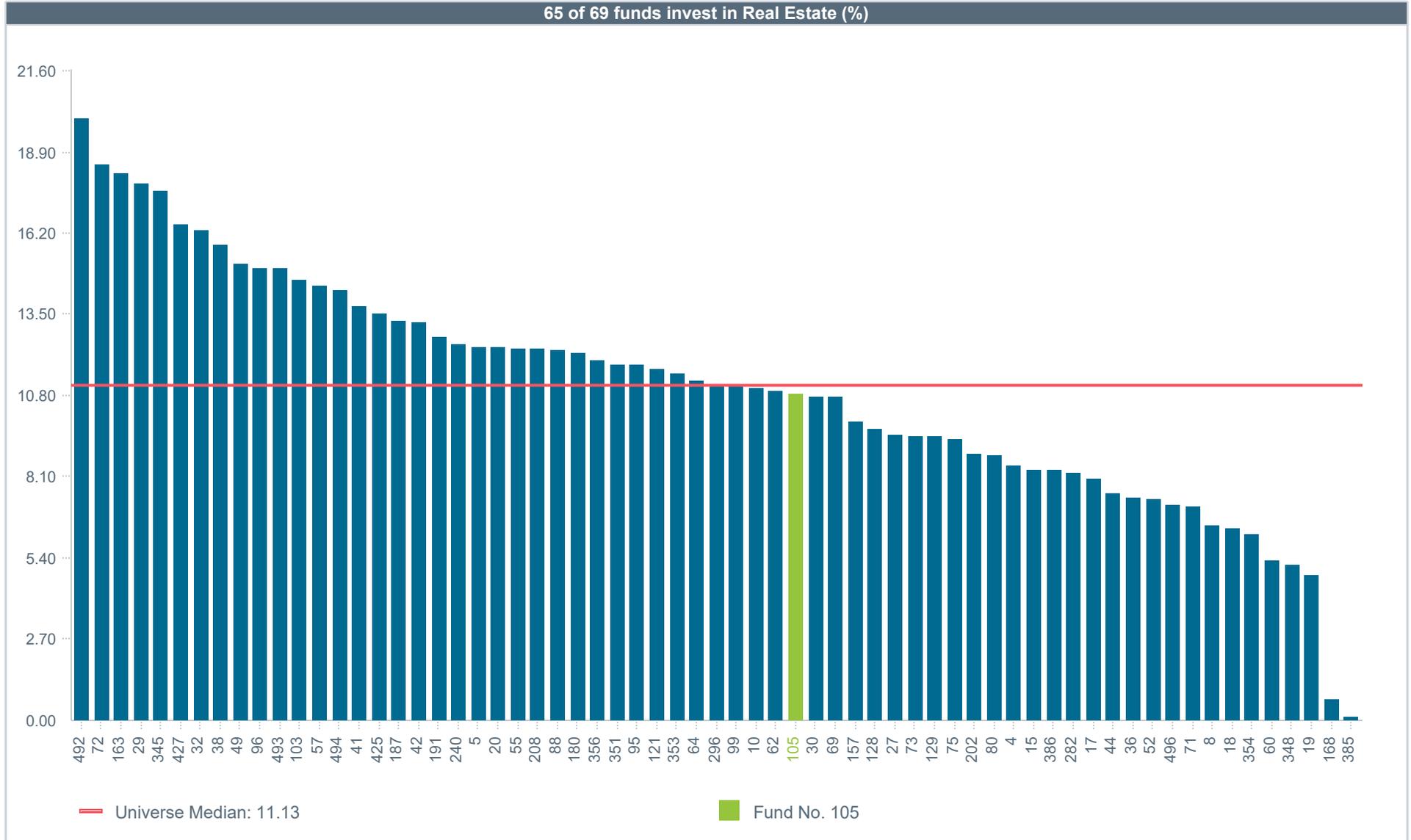
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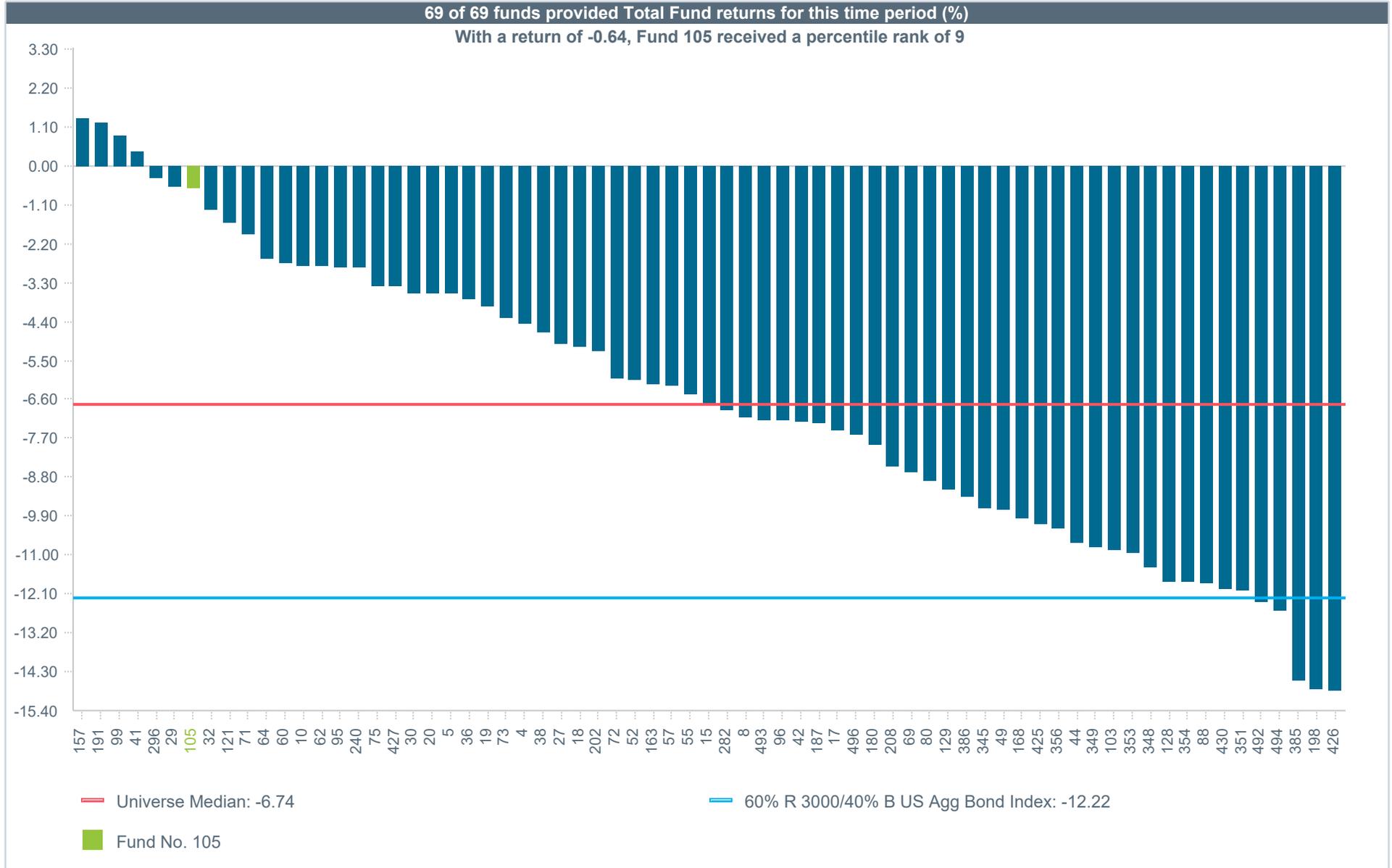
69 of 69 funds invest in Equity (%)





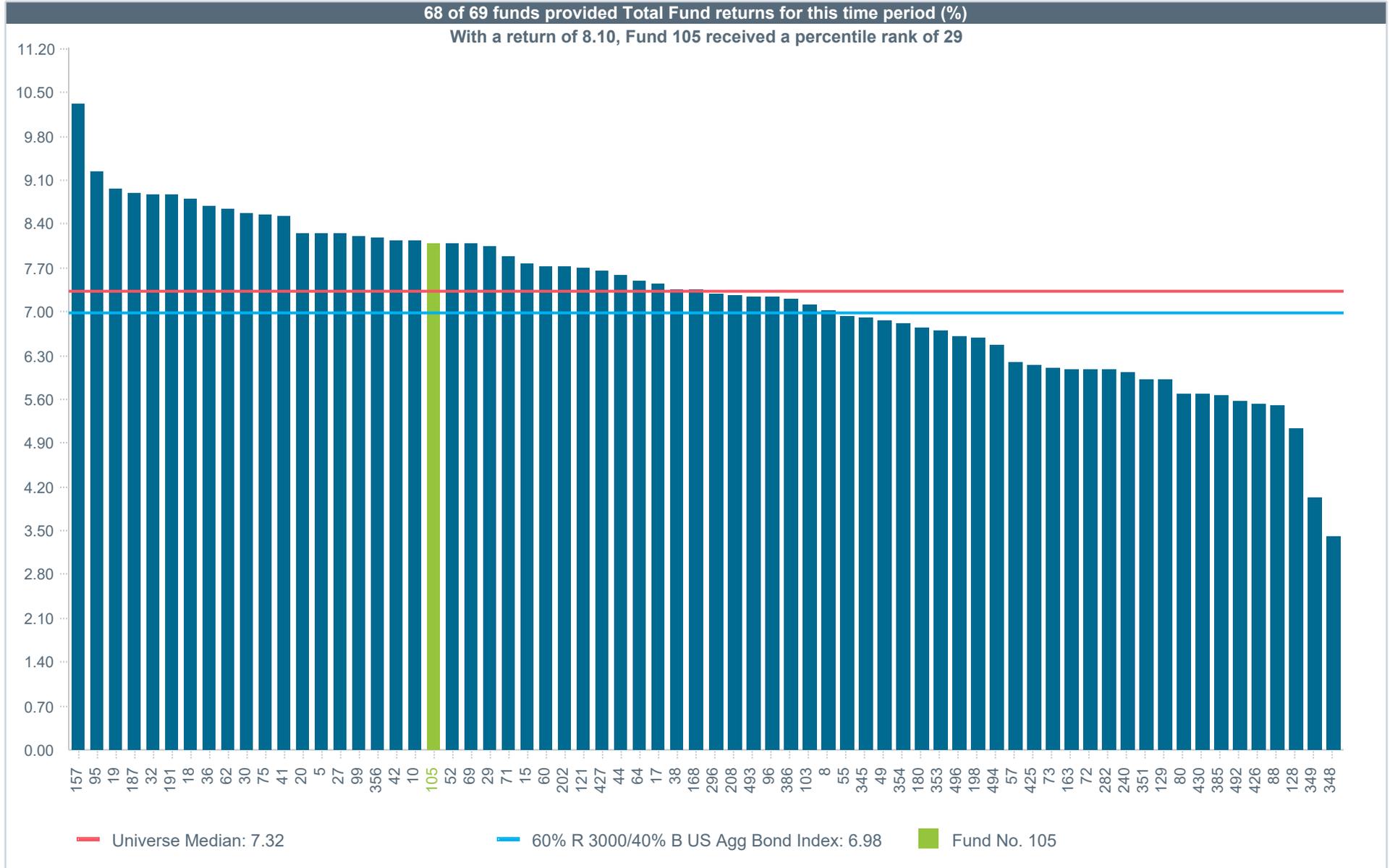






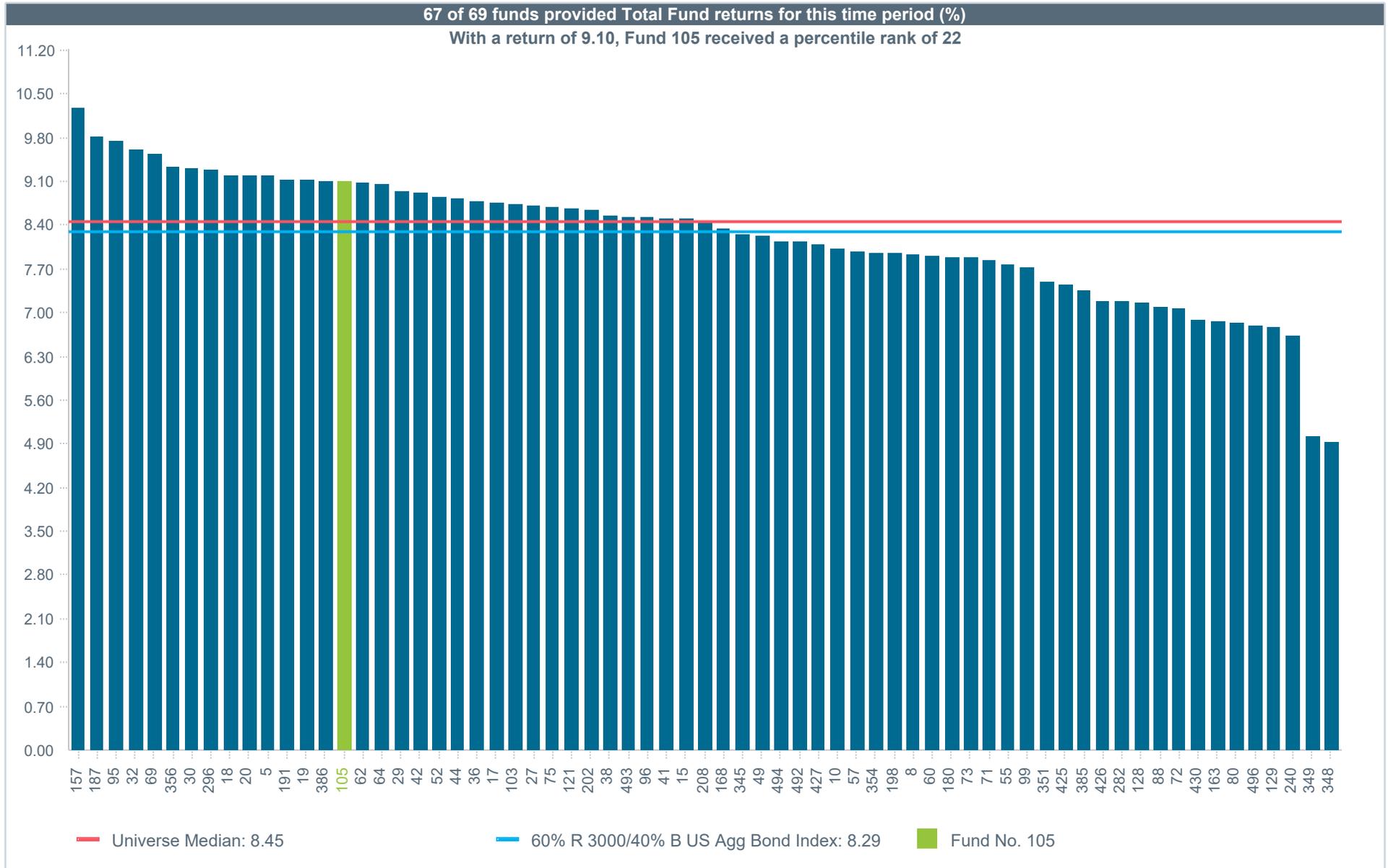
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Funds with less history than the specified time period will not appear in the chart.



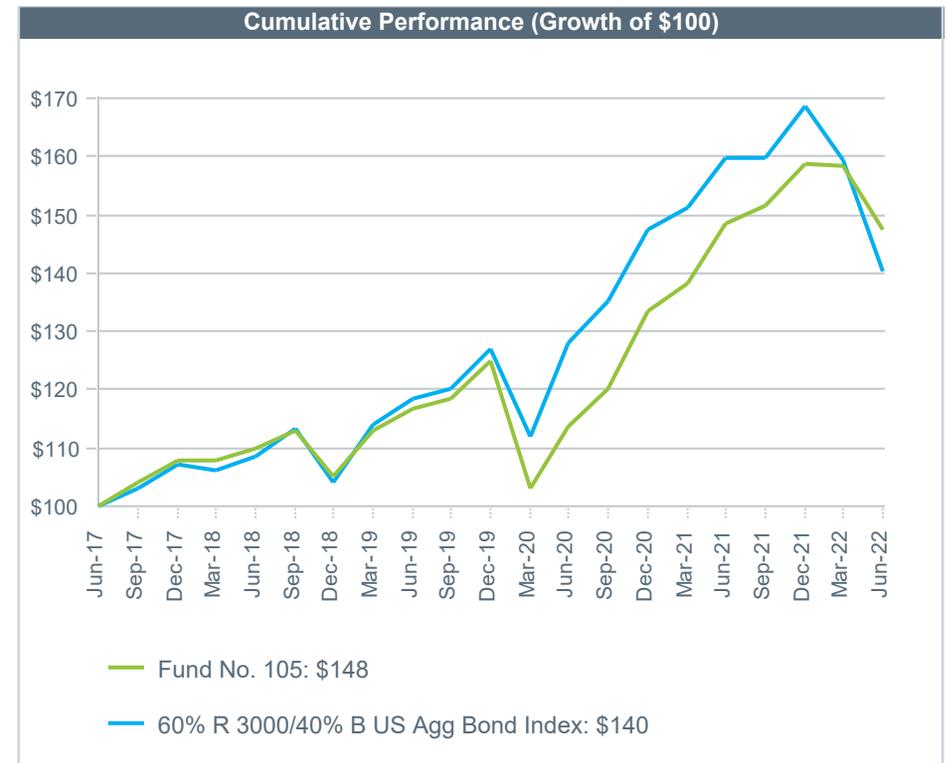
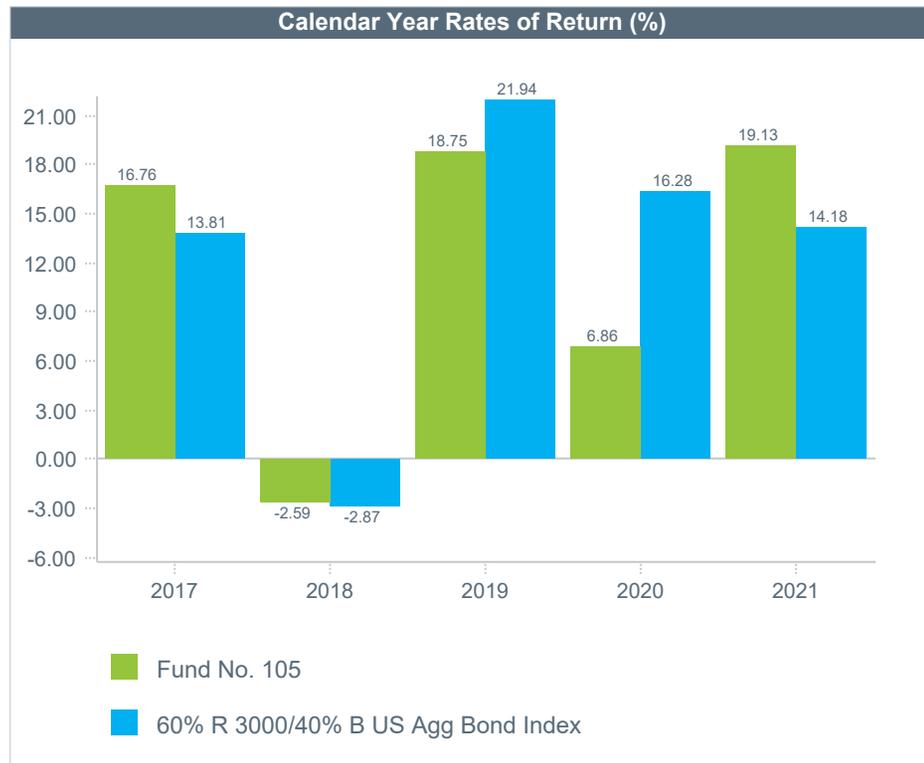


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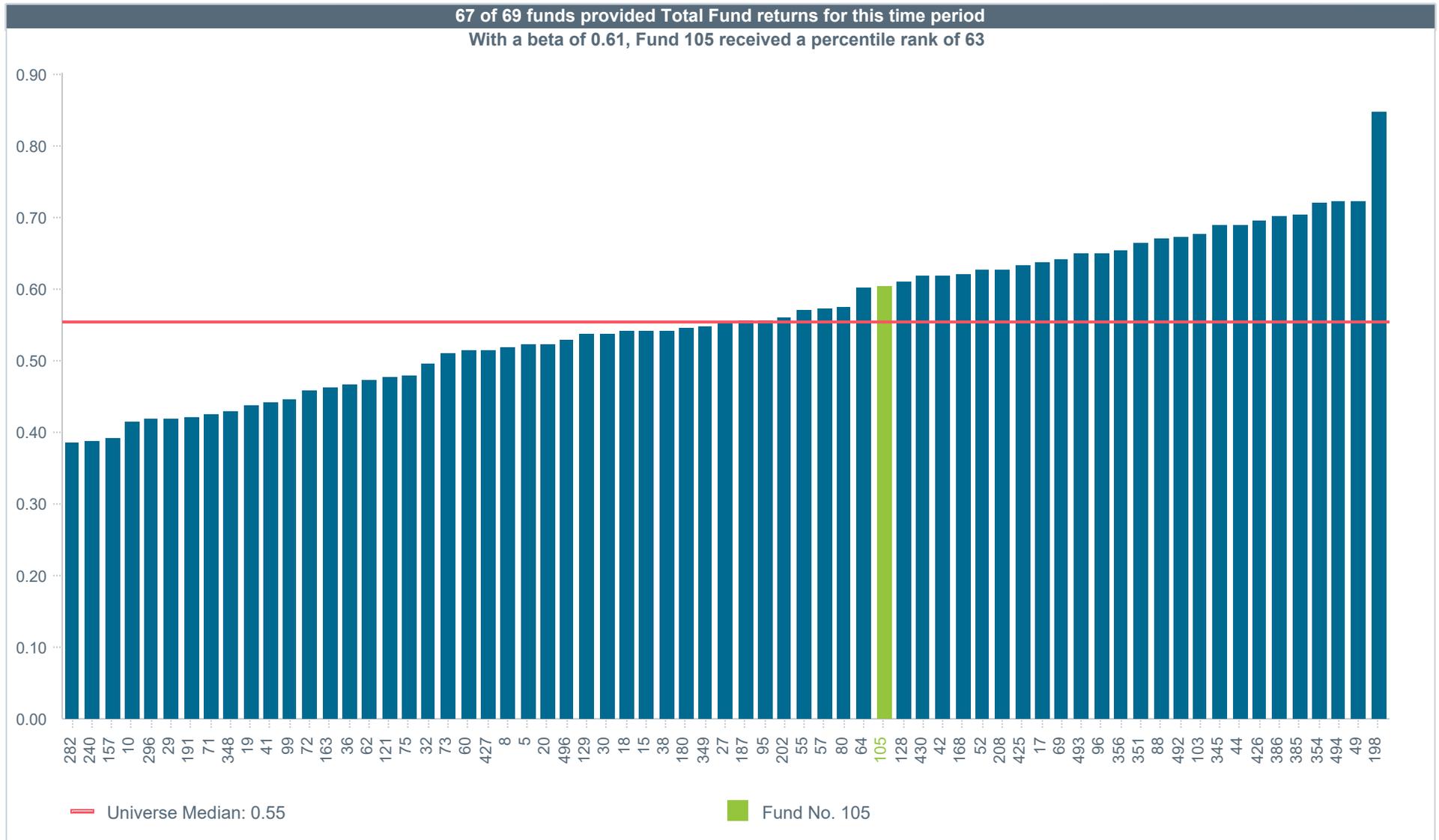
Total Return - Total Fund
Fund No. 105 vs. 60% R 3000/40% B US Agg Bond Index

As of June 30, 2022



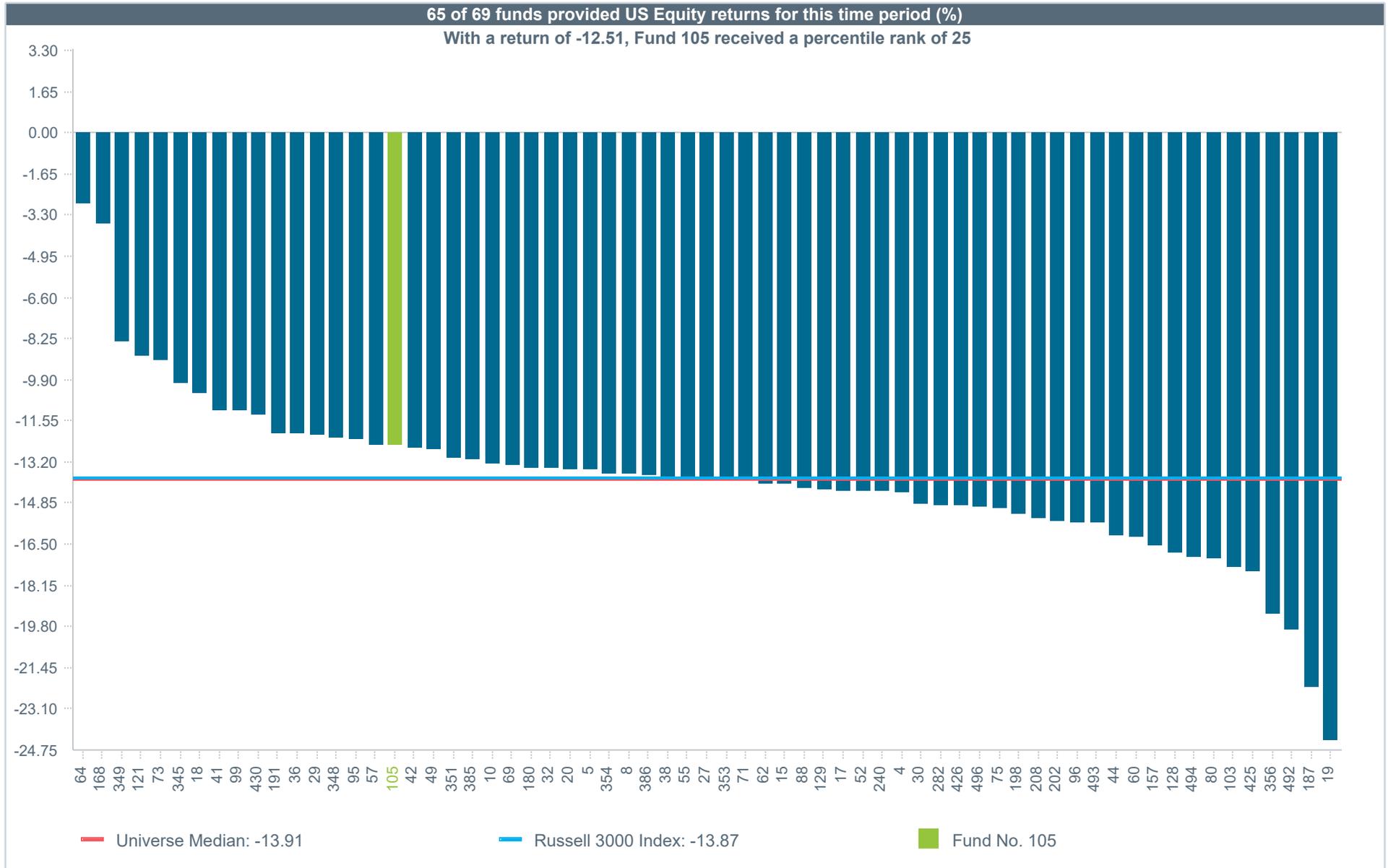
Annualized Returns (%)			
	1 Year	3 Years	5 Years
Fund No. 105	-0.64	8.08	8.10
60% R 3000/40% B US Agg Bond Index	-12.22	5.79	6.98
Variance	11.58	2.29	1.12





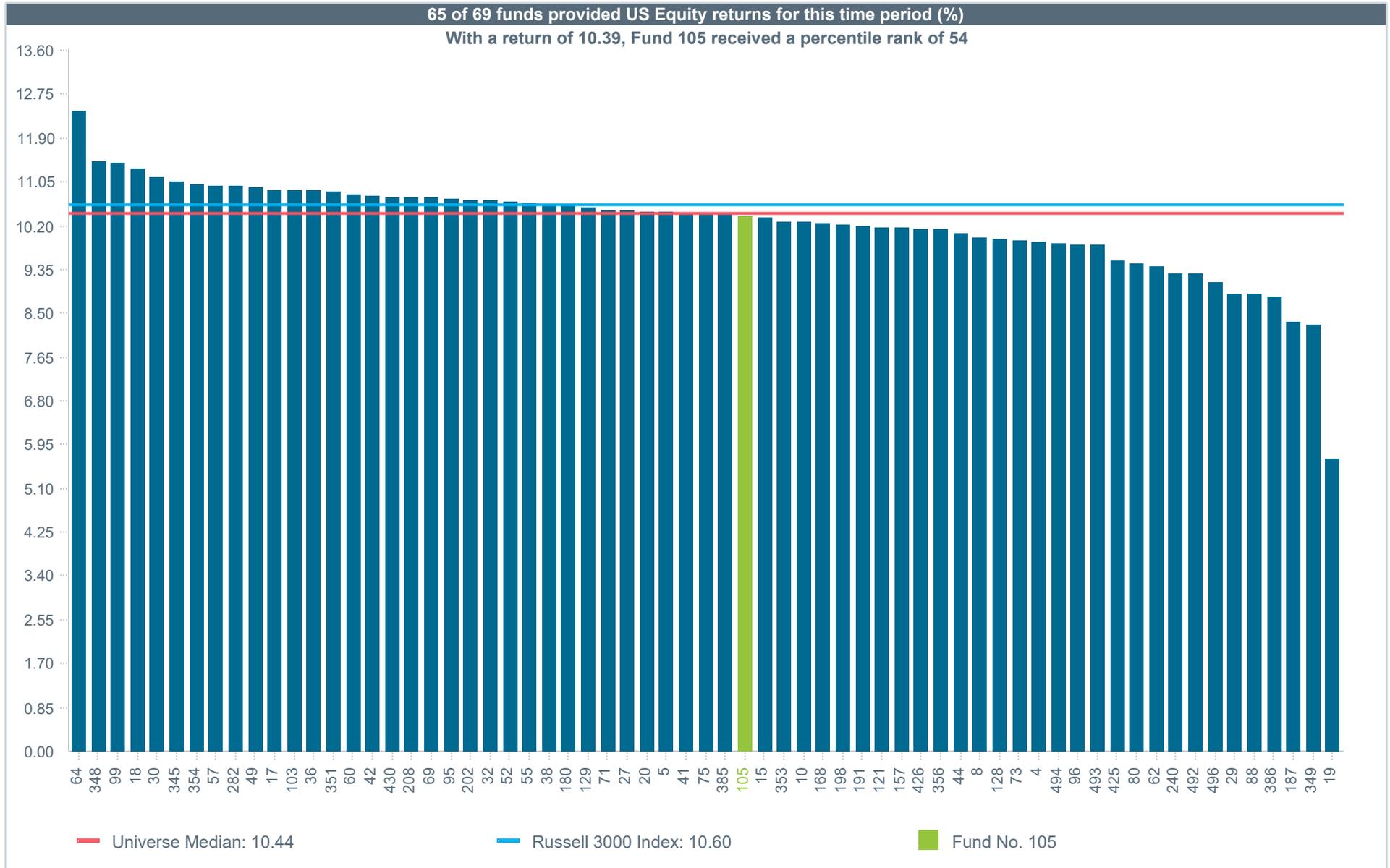
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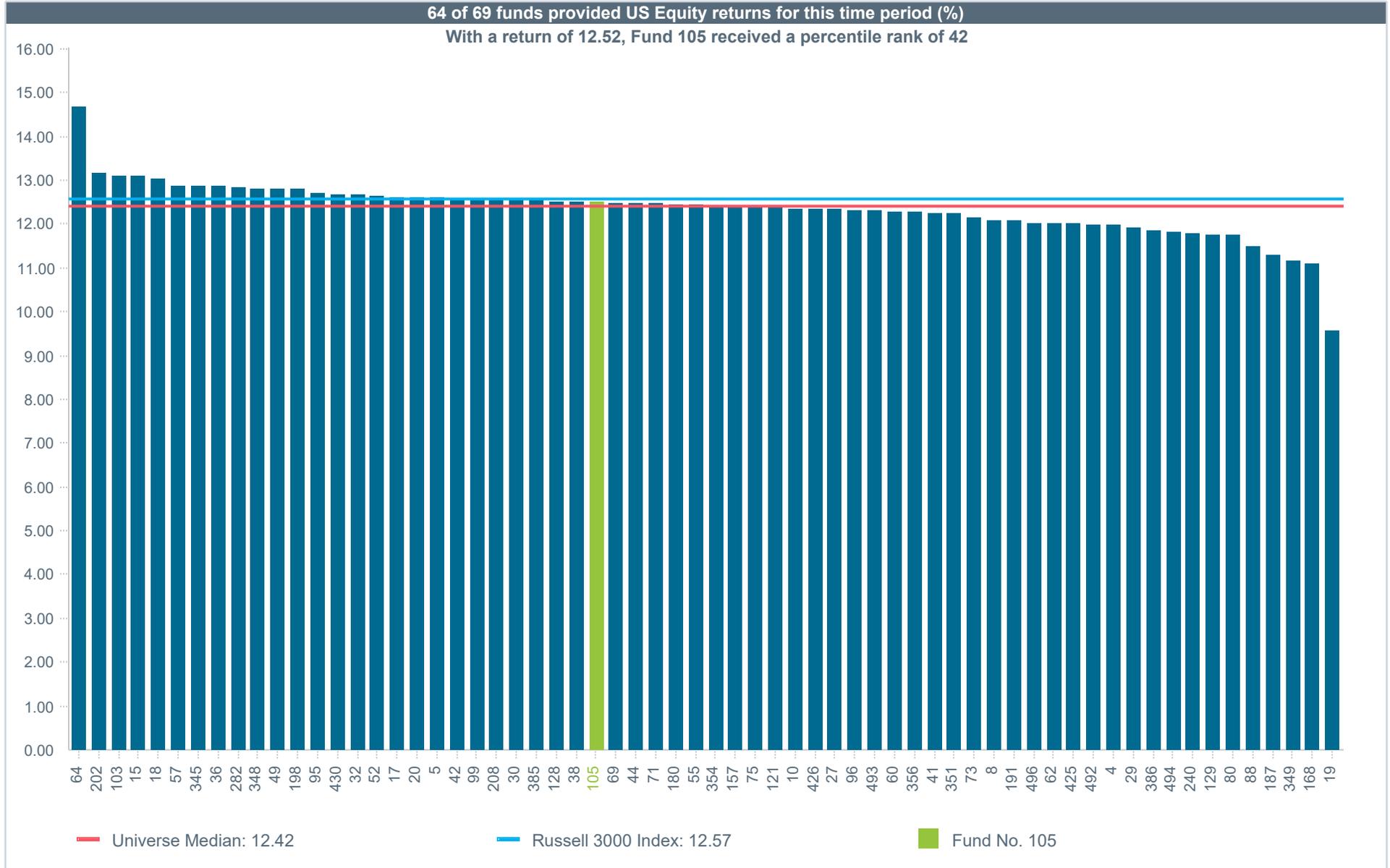
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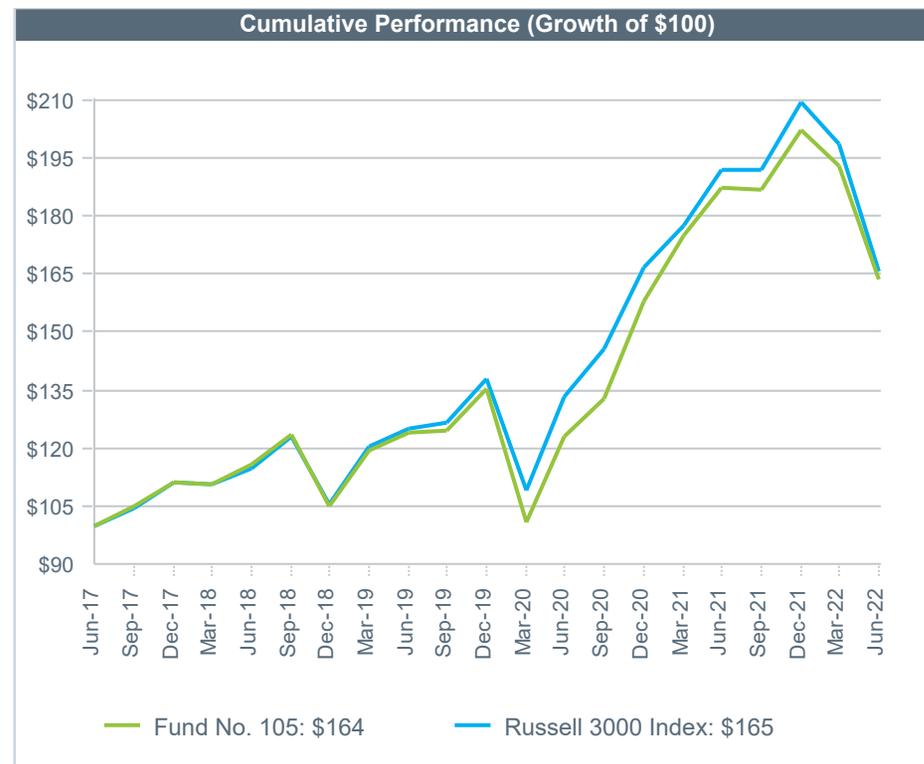
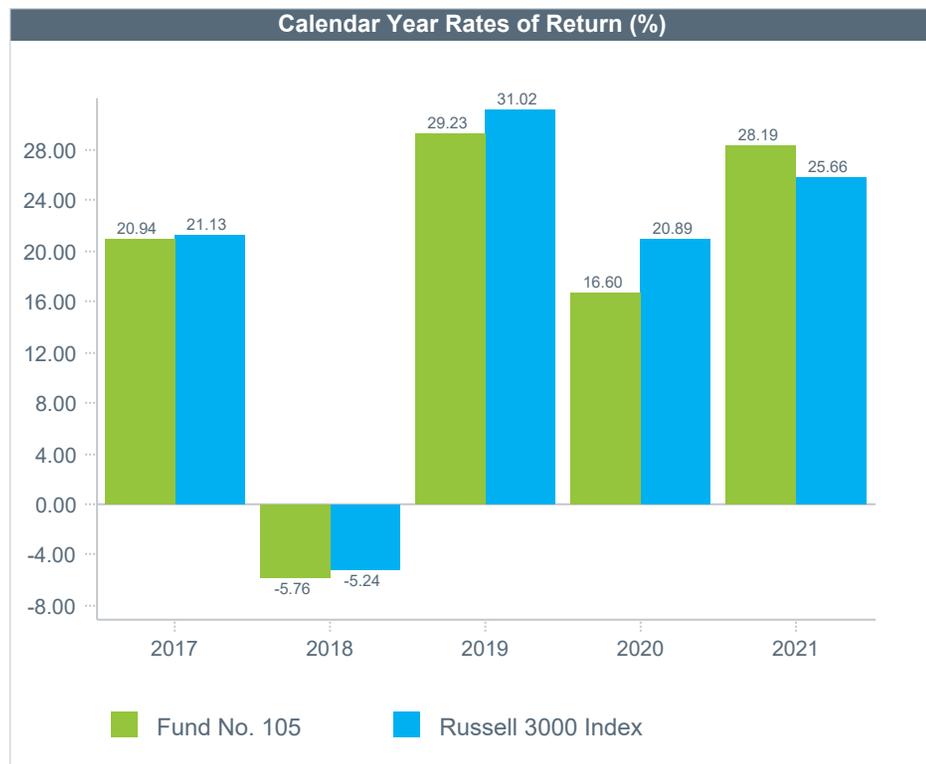
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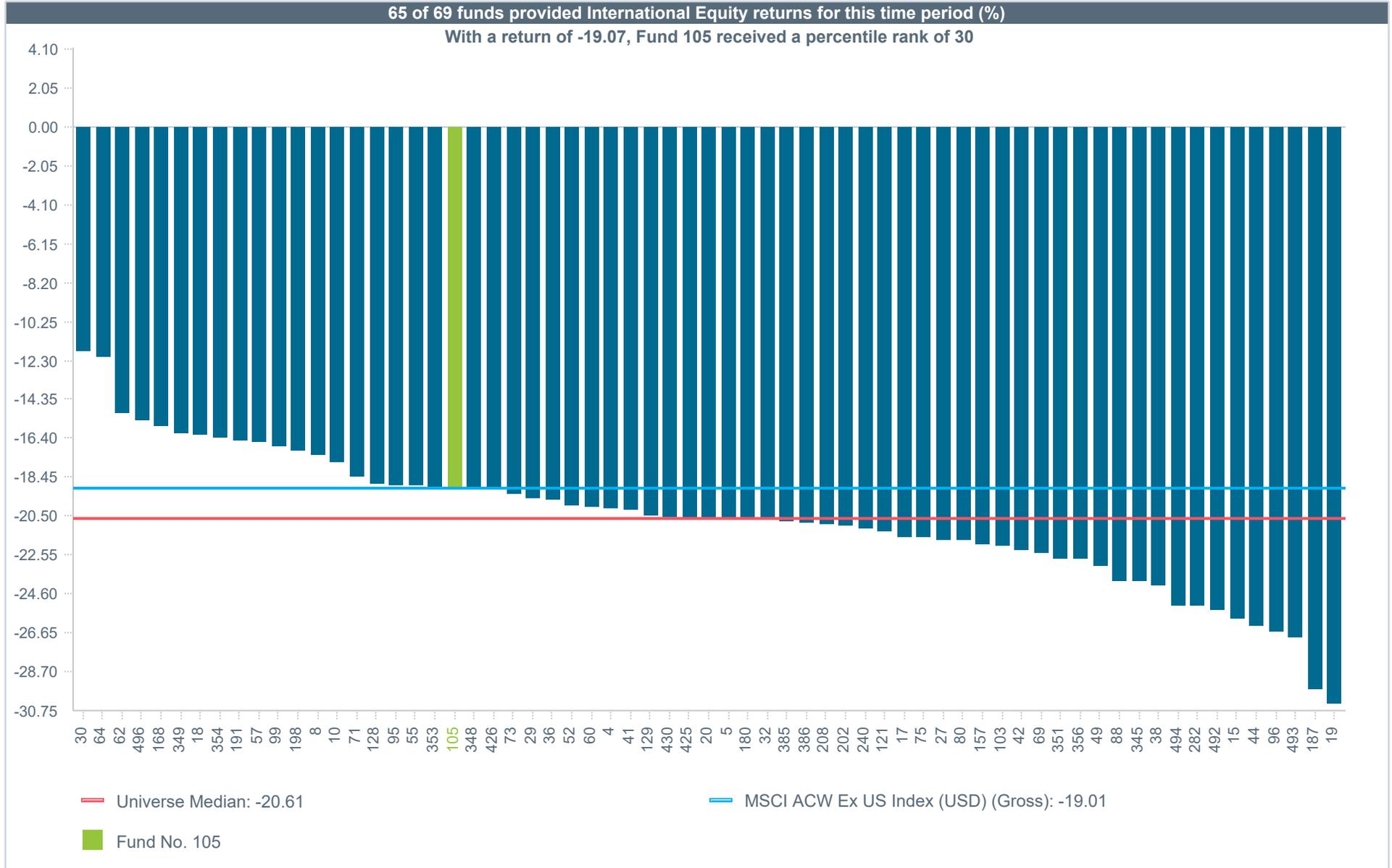




Annualized Returns (%)

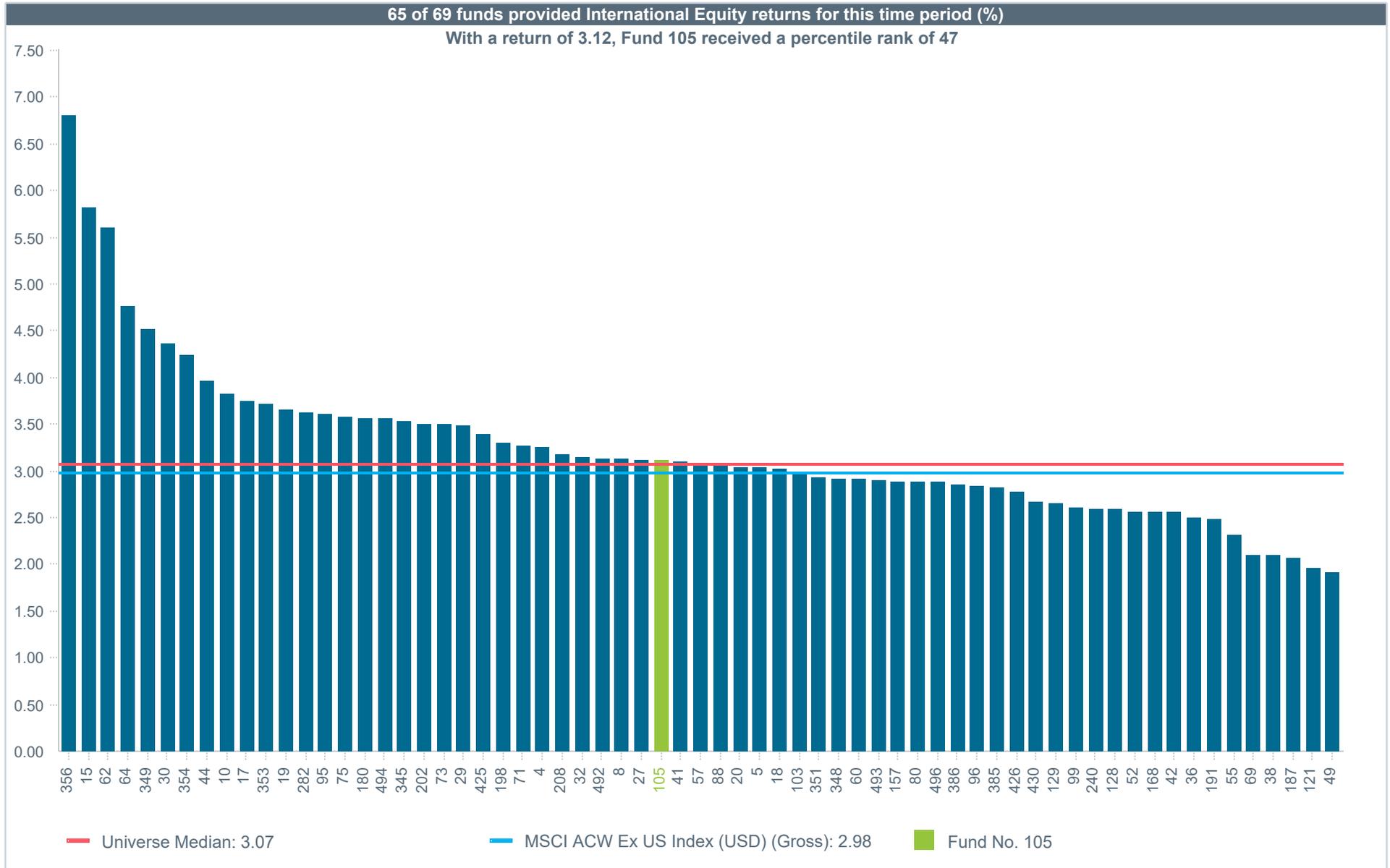
	1 Year	3 Years	5 Years
Fund No. 105	-12.51	9.74	10.39
Russell 3000 Index	-13.87	9.77	10.60
Variance	1.36	-0.03	-0.21





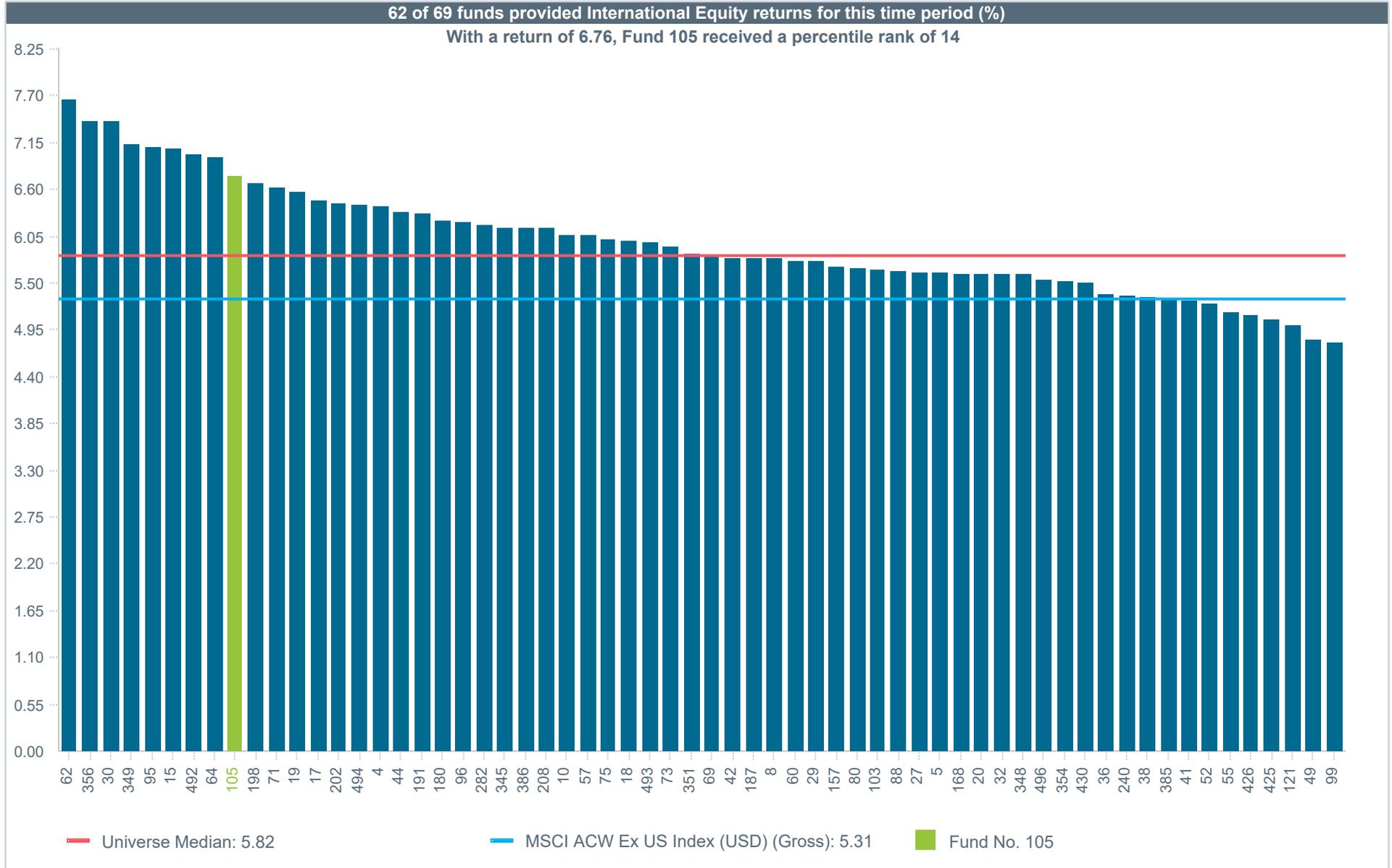
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Funds with less history than the specified time period will not appear in the chart.



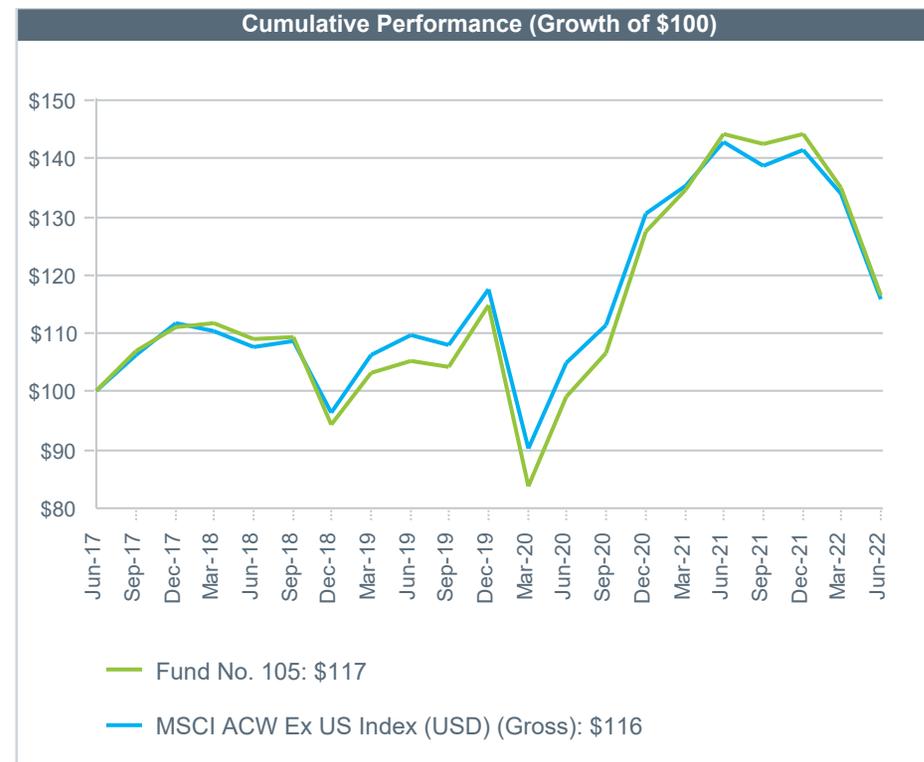
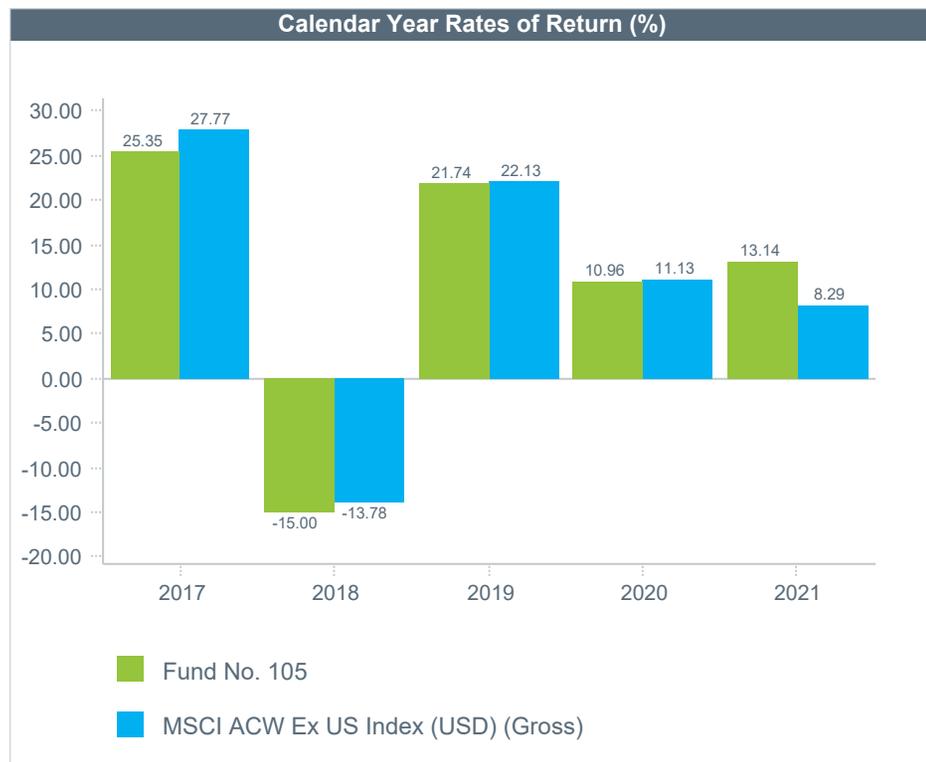


Funds with less history than the specified time period will not appear in the chart.



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

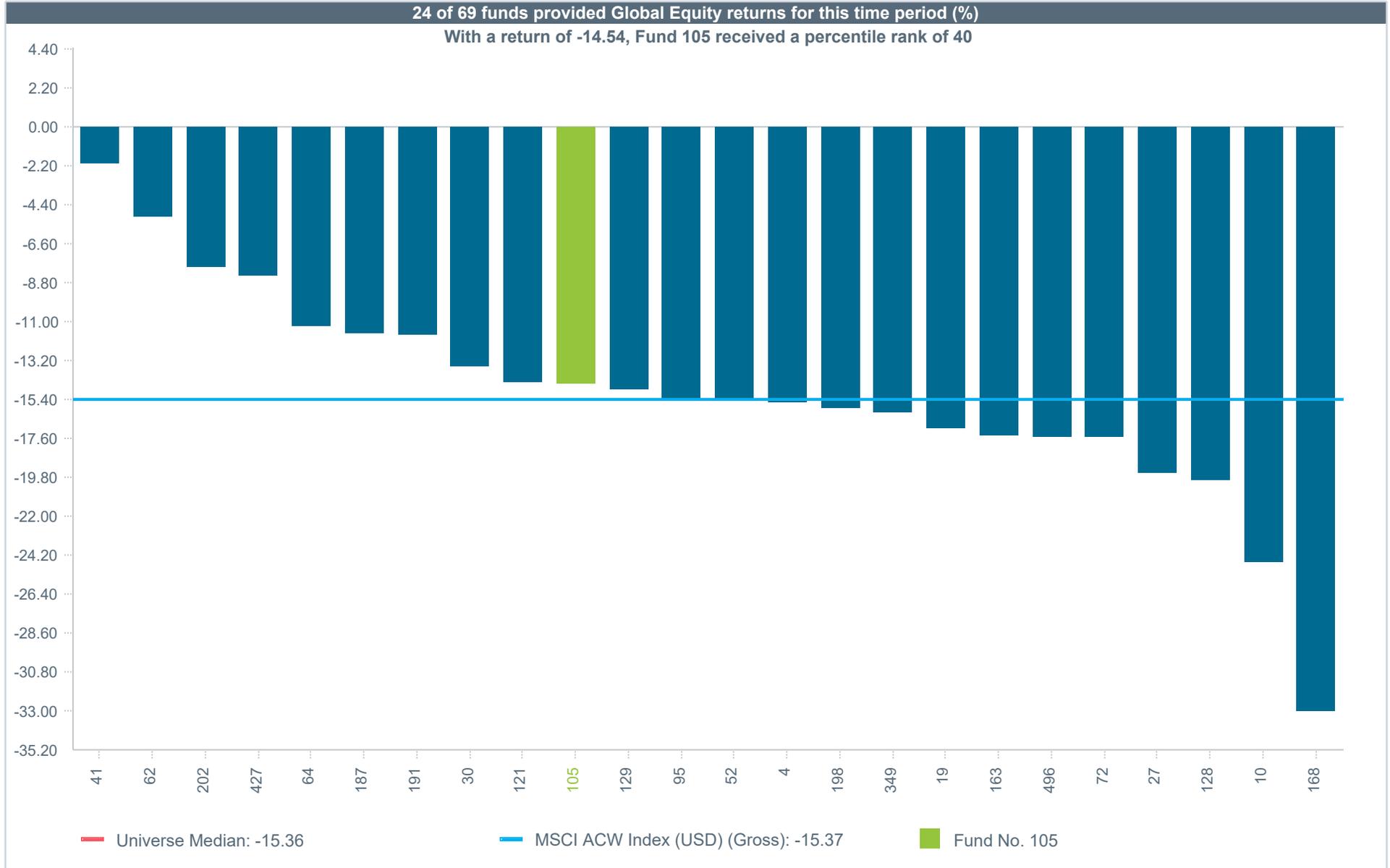
As of June 30, 2022



Annualized Returns (%)

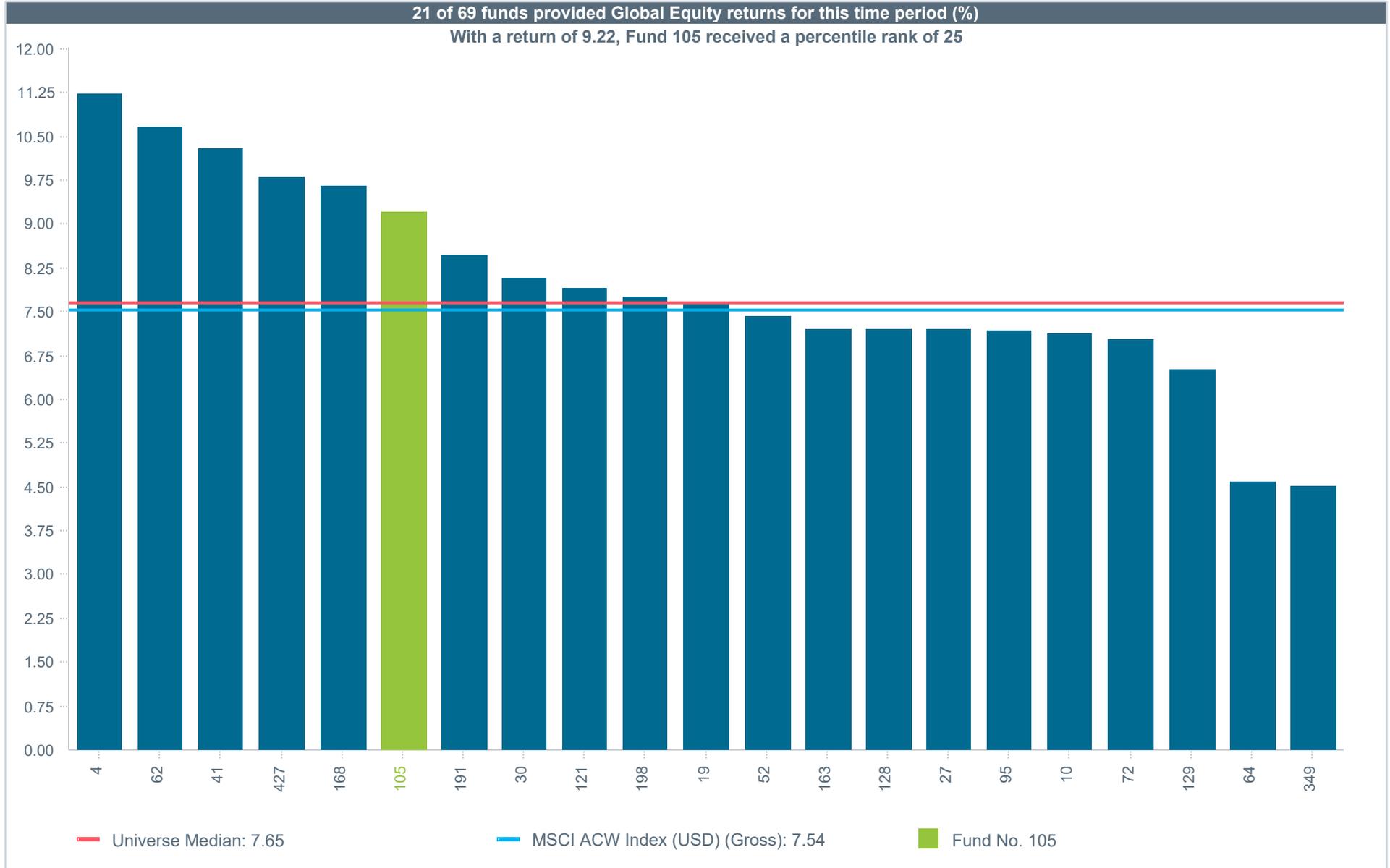
	1 Year	3 Years	5 Years
Fund No. 105	-19.07	3.51	3.12
MSCI ACW Ex US Index (USD) (Gross)	-19.01	1.81	2.98
Variance	-0.06	1.70	0.14





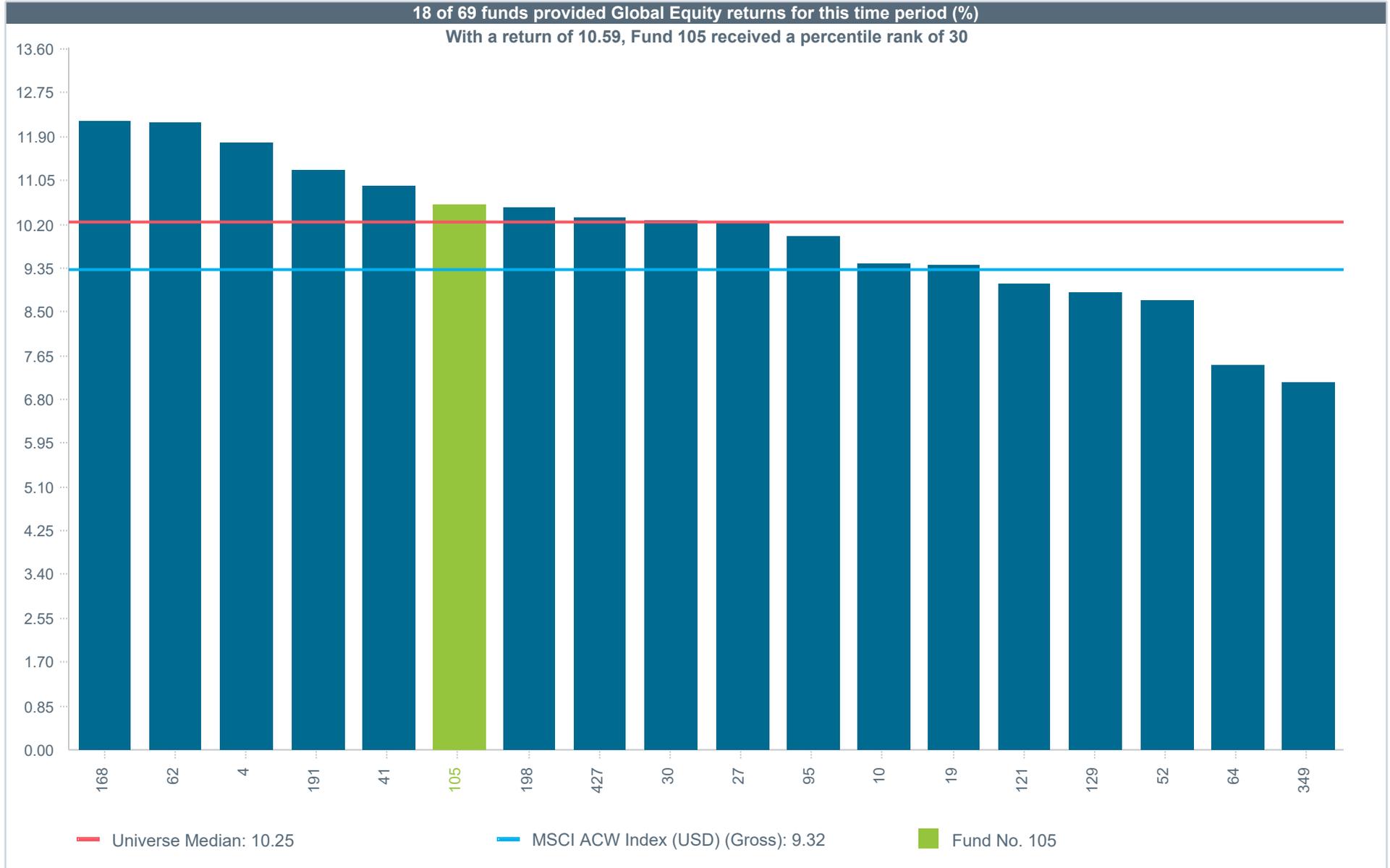
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Funds with less history than the specified time period will not appear in the chart.



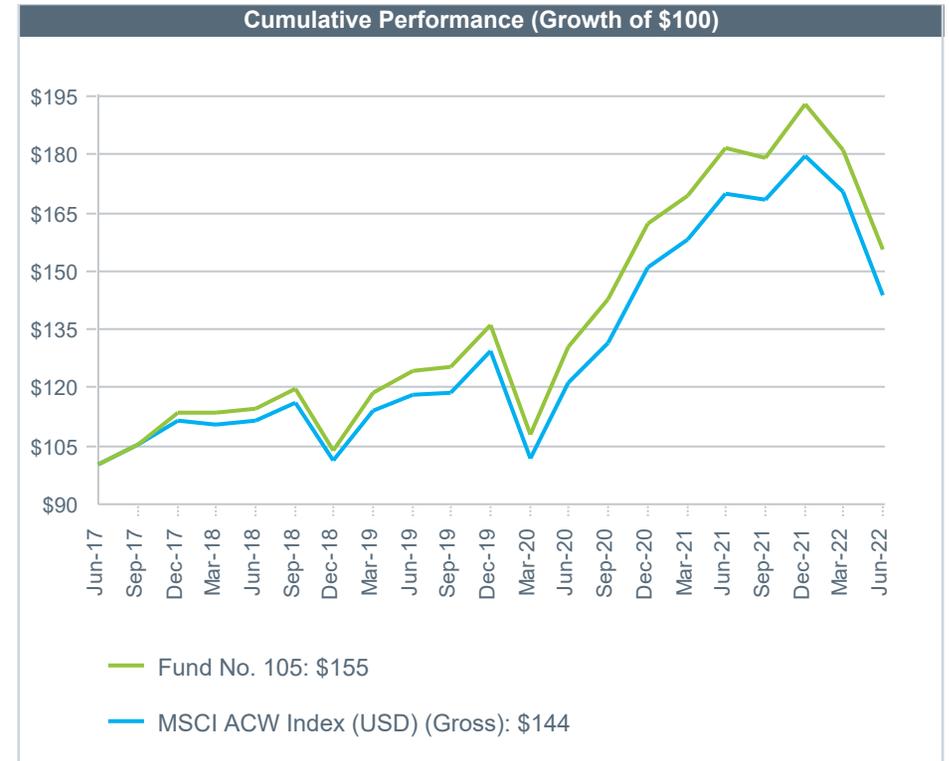
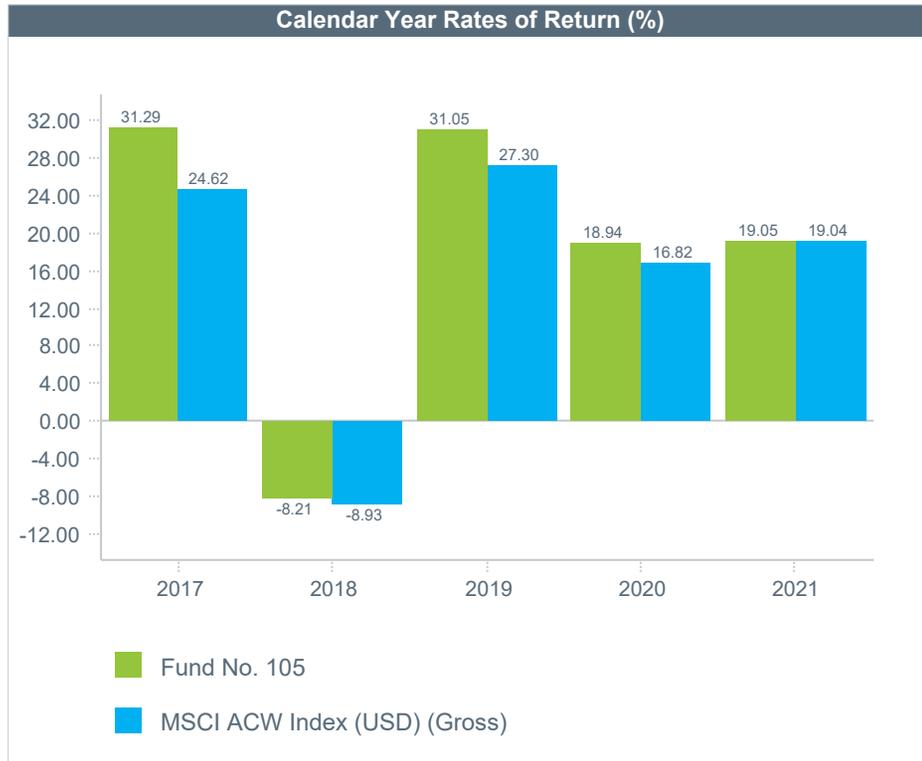


Funds with less history than the specified time period will not appear in the chart.



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

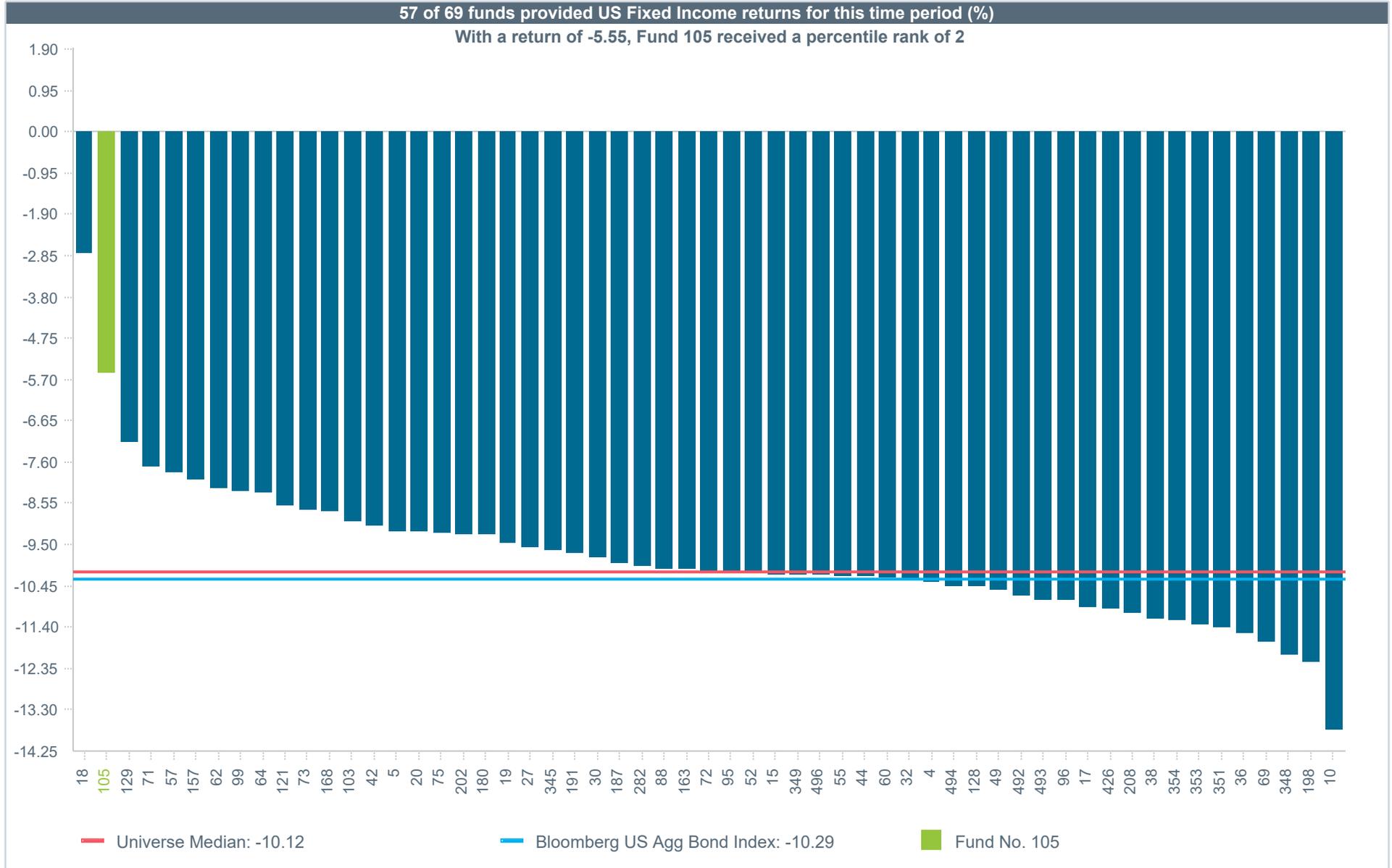
As of June 30, 2022



Annualized Returns (%)

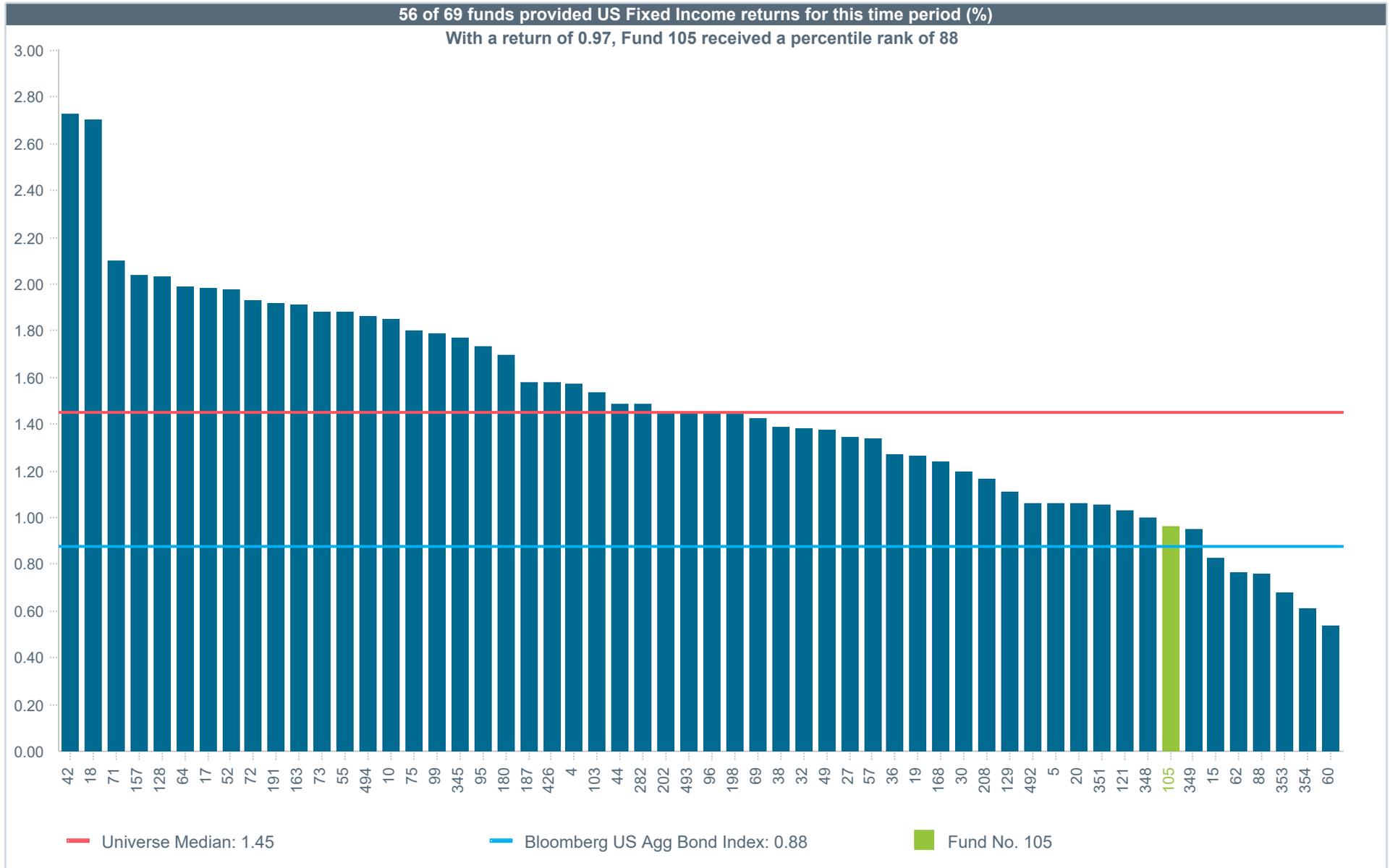
	1 Year	3 Years	5 Years
Fund No. 105	-14.54	7.73	9.22
MSCI ACW Index (USD) (Gross)	-15.37	6.71	7.54
Variance	0.83	1.02	1.68





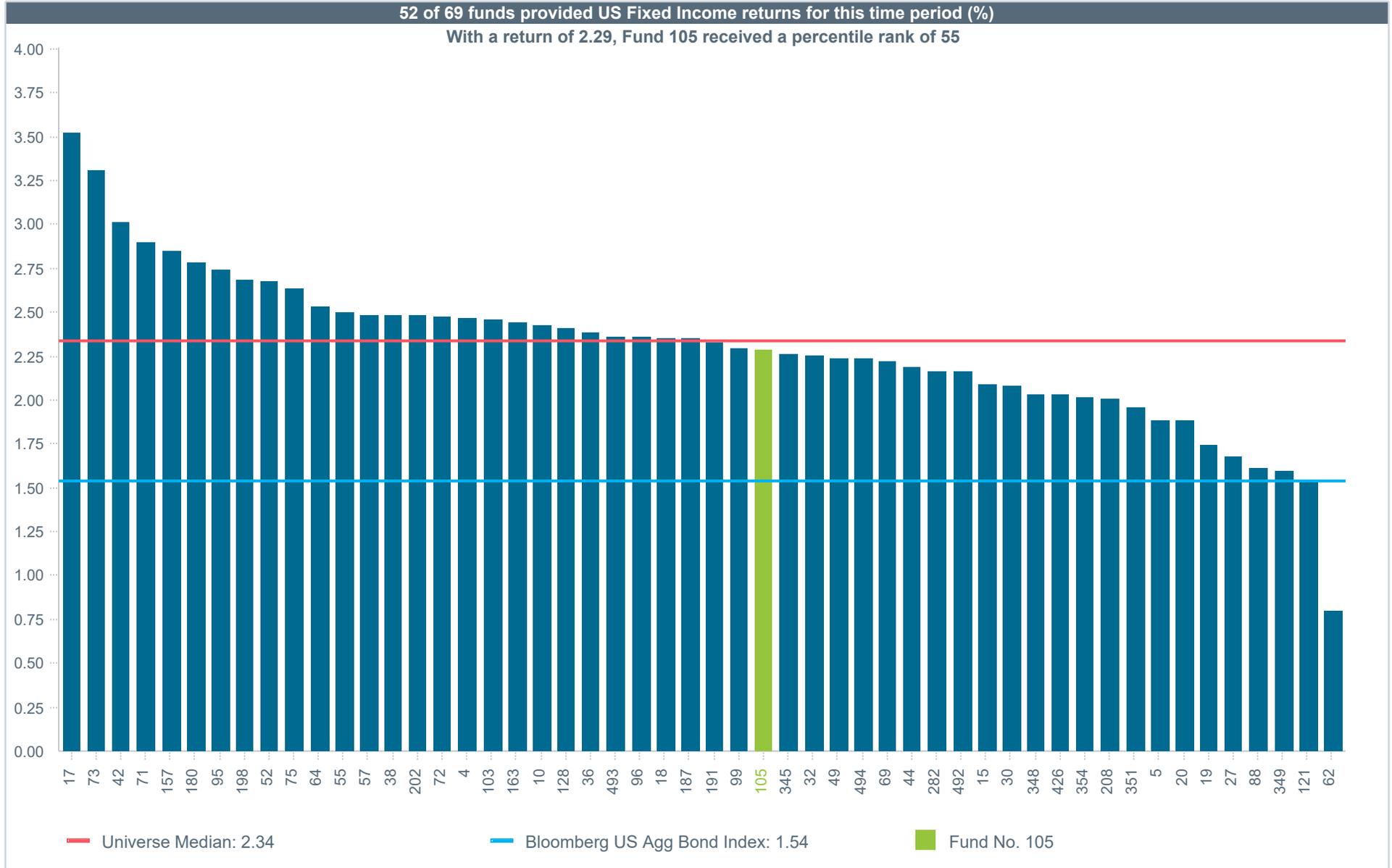
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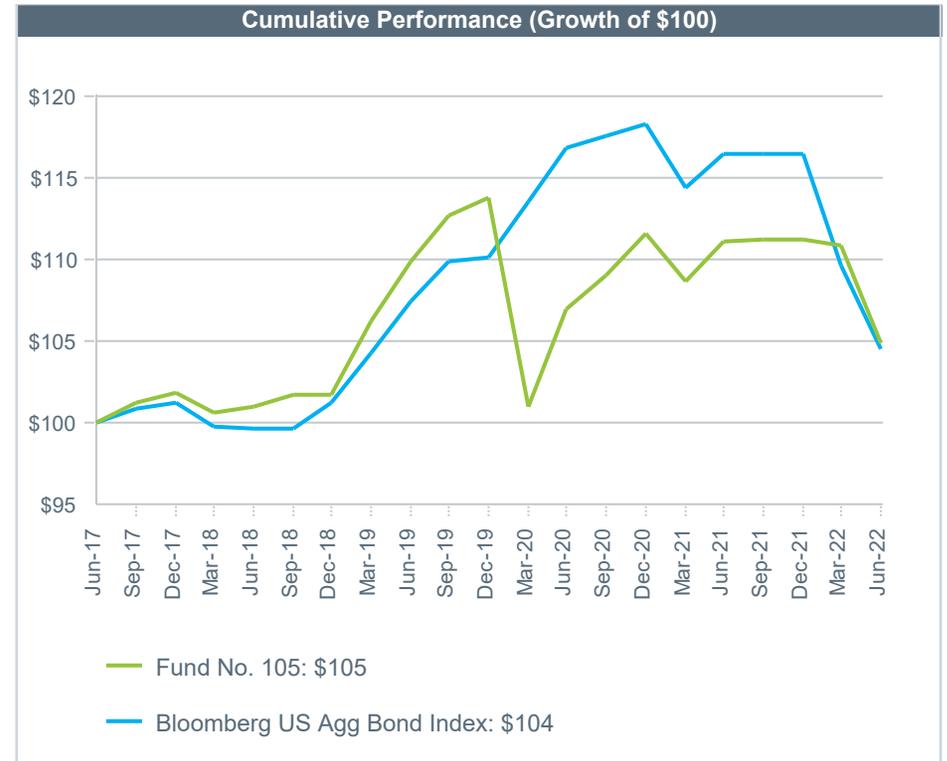
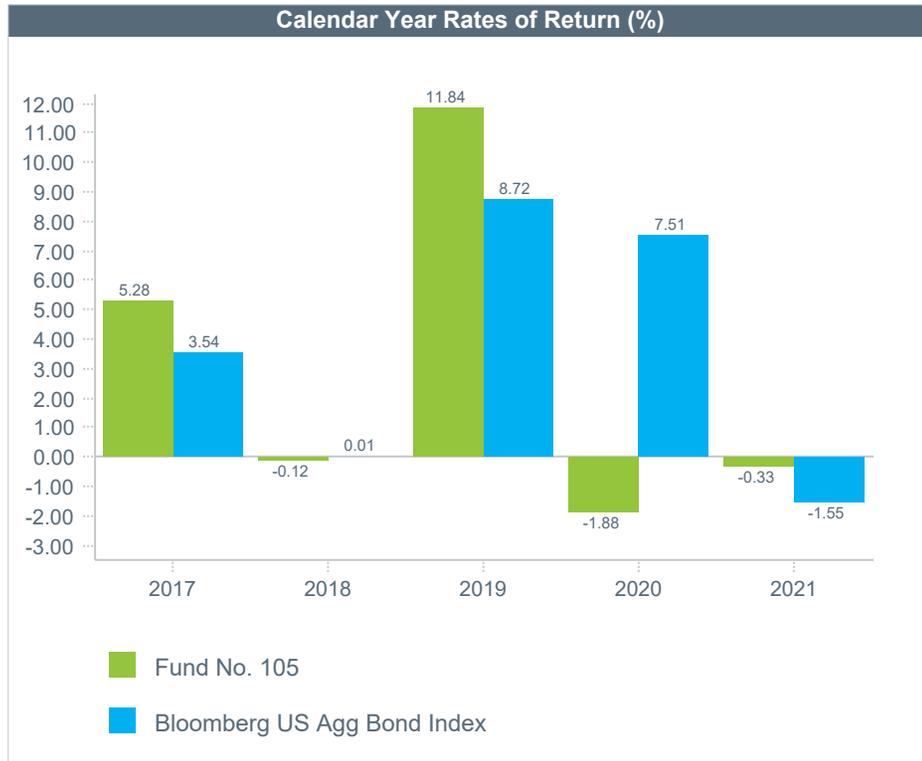


Funds with less history than the specified time period will not appear in the chart.



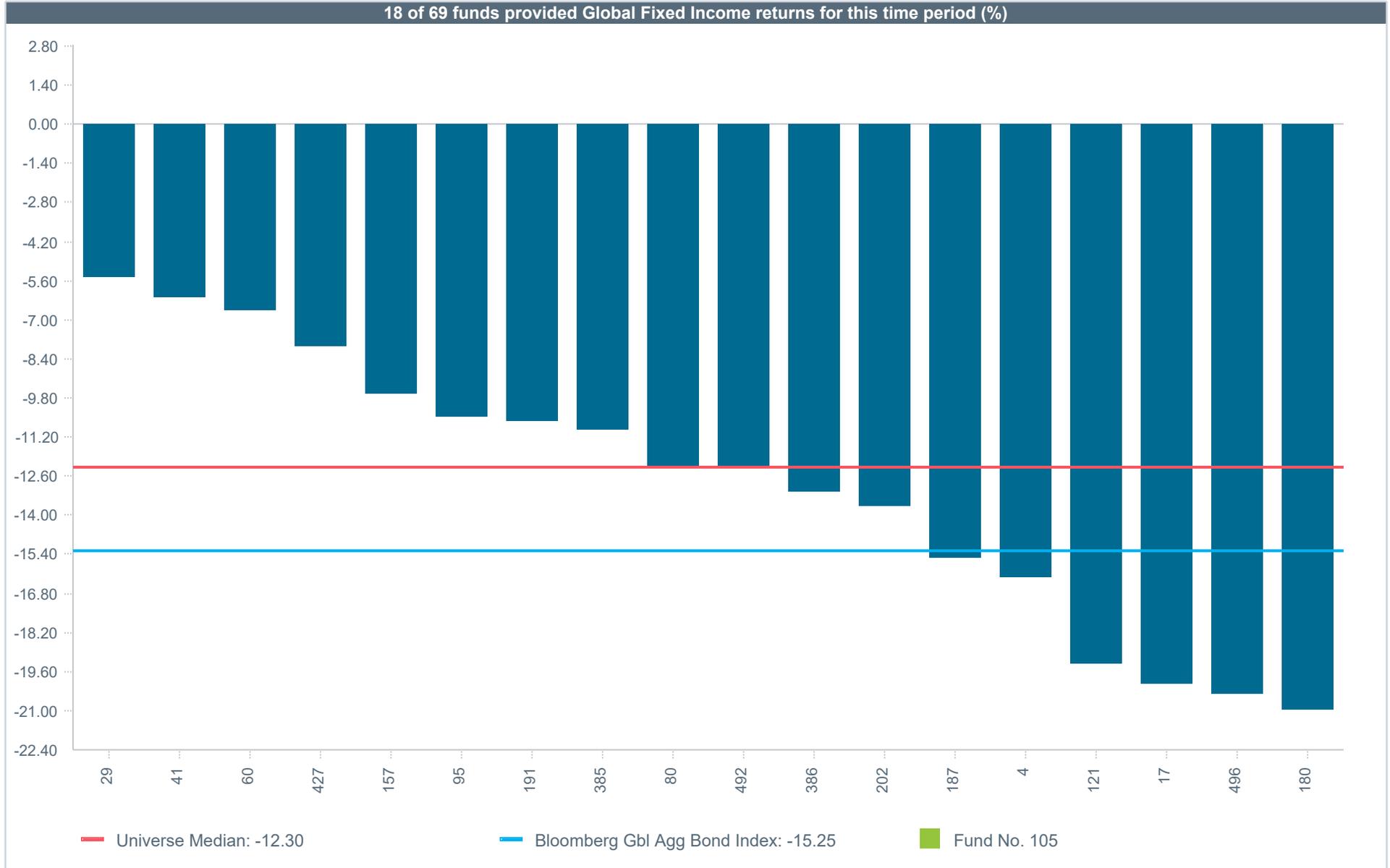
Total Return - US Fixed Income
Fund No. 105 vs. Bloomberg US Agg Bond Index

As of June 30, 2022



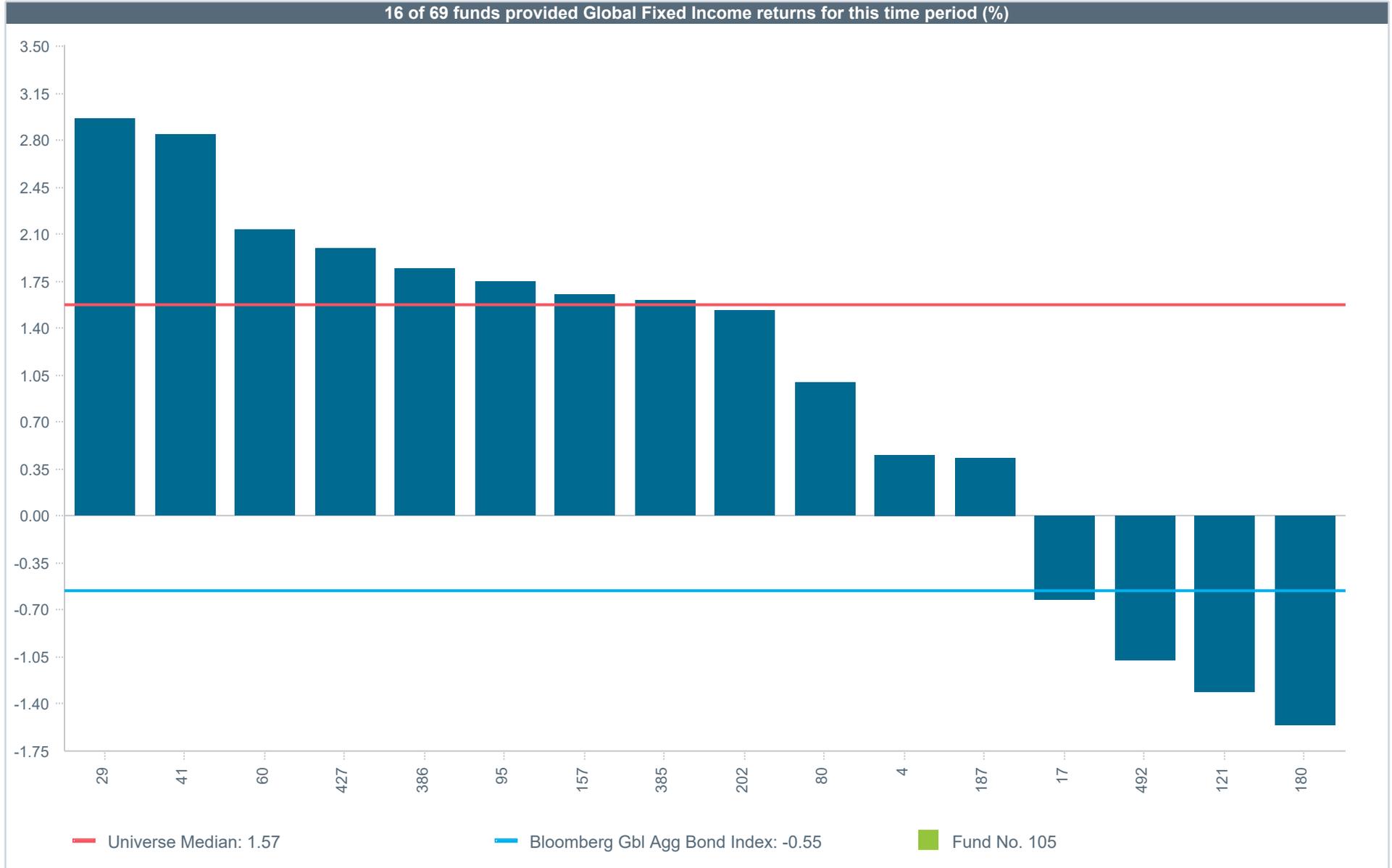
Annualized Returns (%)			
	1 Year	3 Years	5 Years
Fund No. 105	-5.55	-1.54	0.97
Bloomberg US Agg Bond Index	-10.29	-0.94	0.88
Variance	4.74	-0.60	0.09





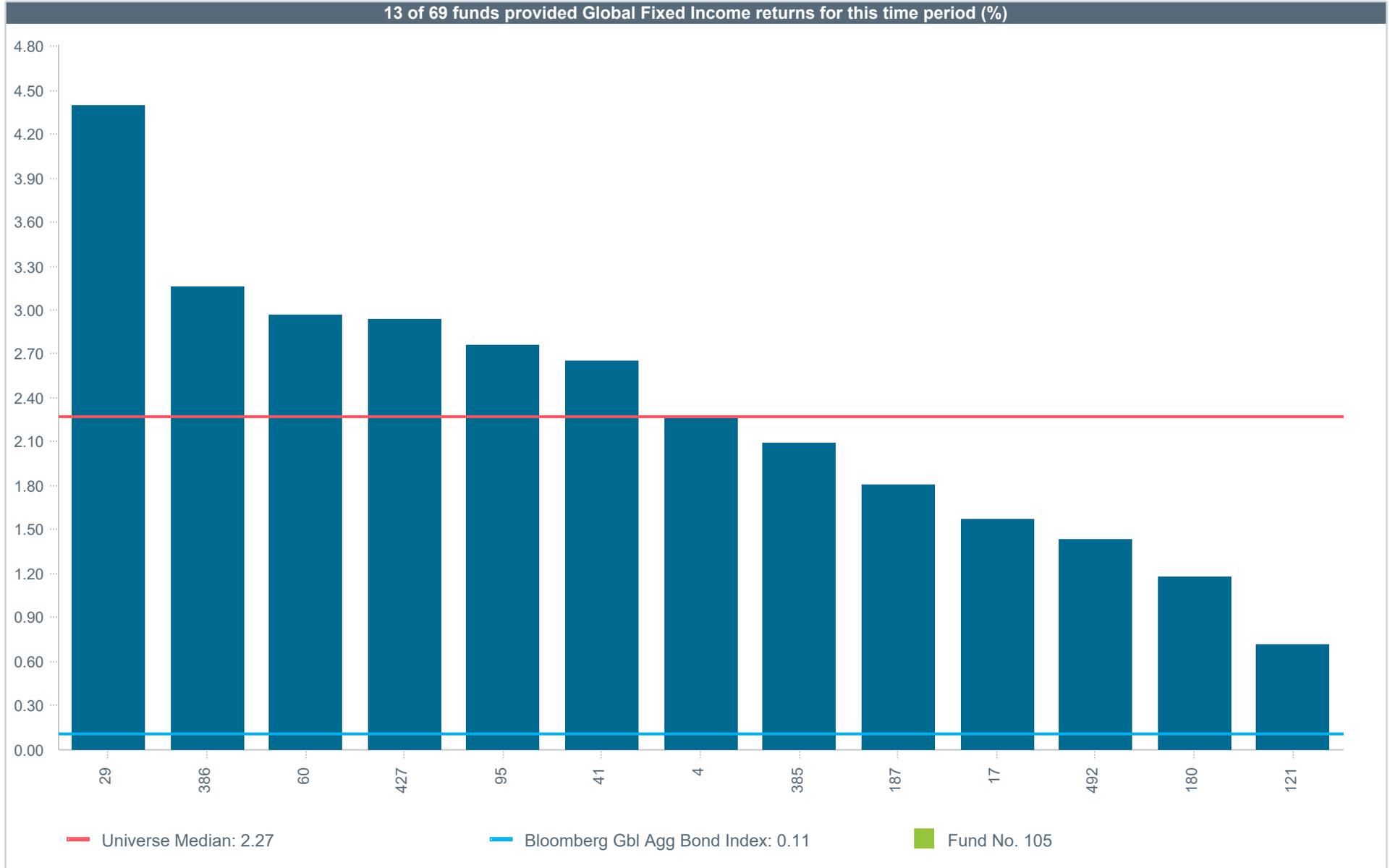
Funds with less history than the specified time period will not appear in the chart.





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





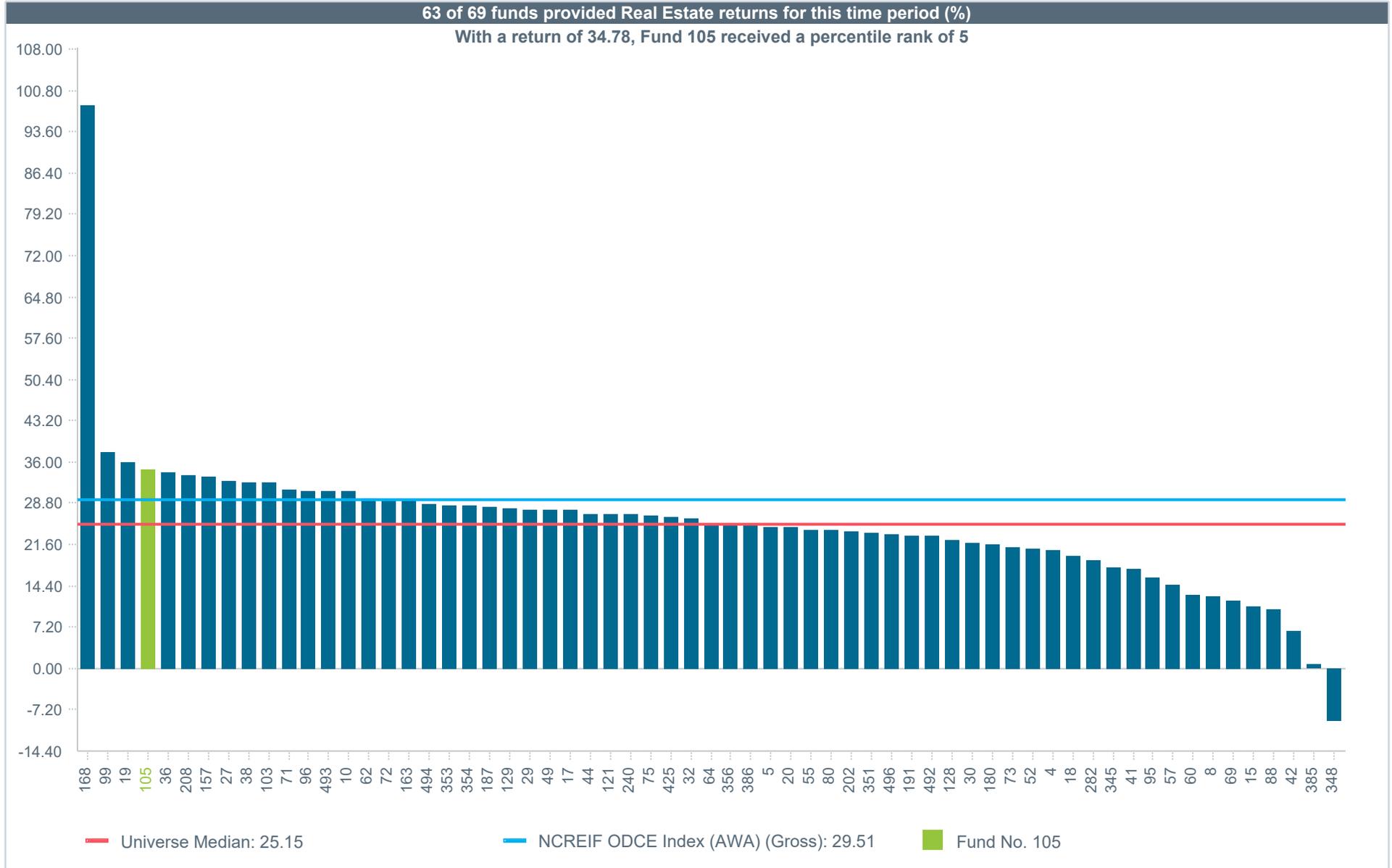
Funds with less history than the specified time period will not appear in the chart.



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

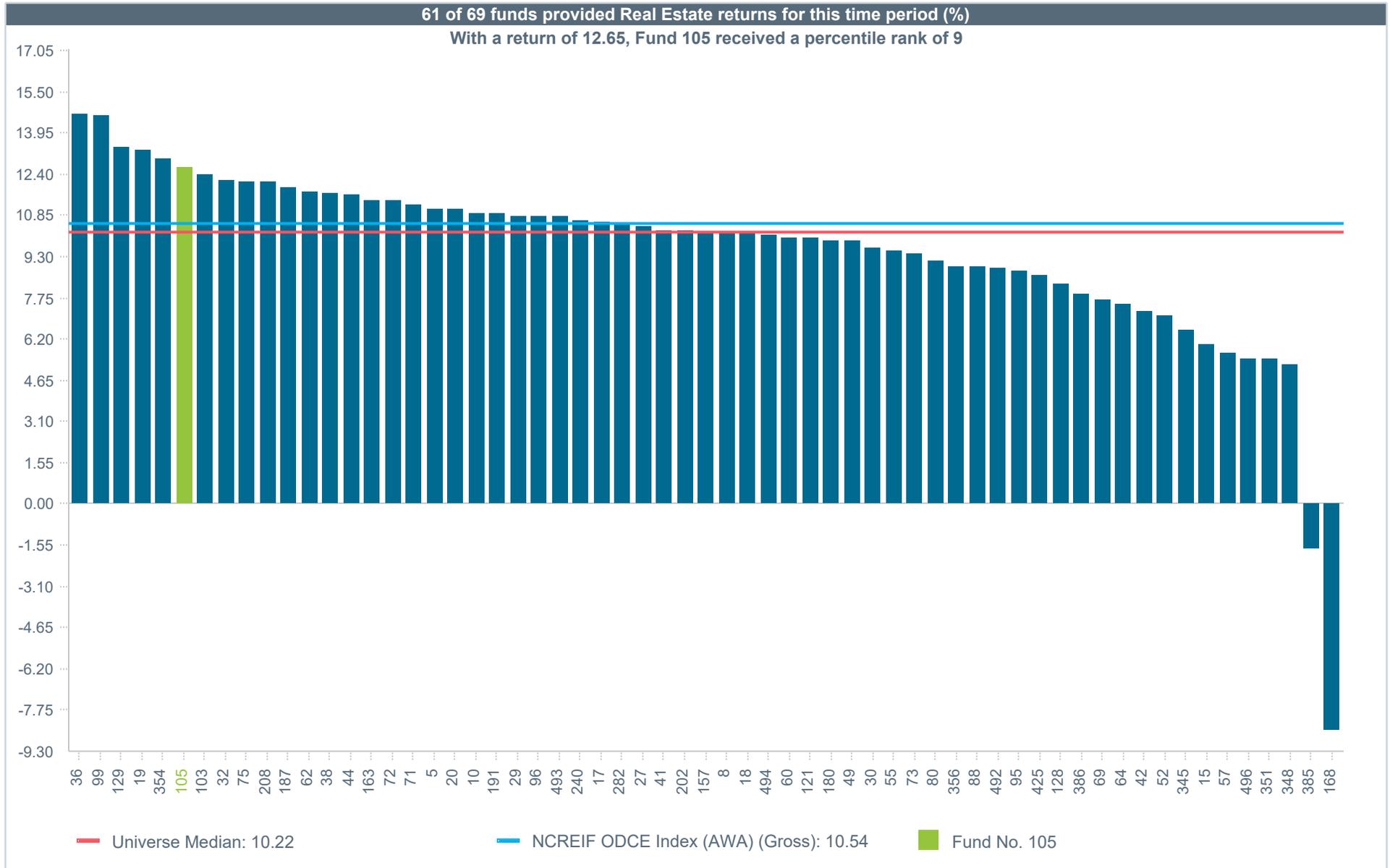
Annualized Returns (%)			
	1 Year	3 Years	5 Years
Fund No. 105	N/A	N/A	N/A
Bloomberg Gbl Agg Bond Index	N/A	N/A	N/A
Variance	N/A	N/A	N/A





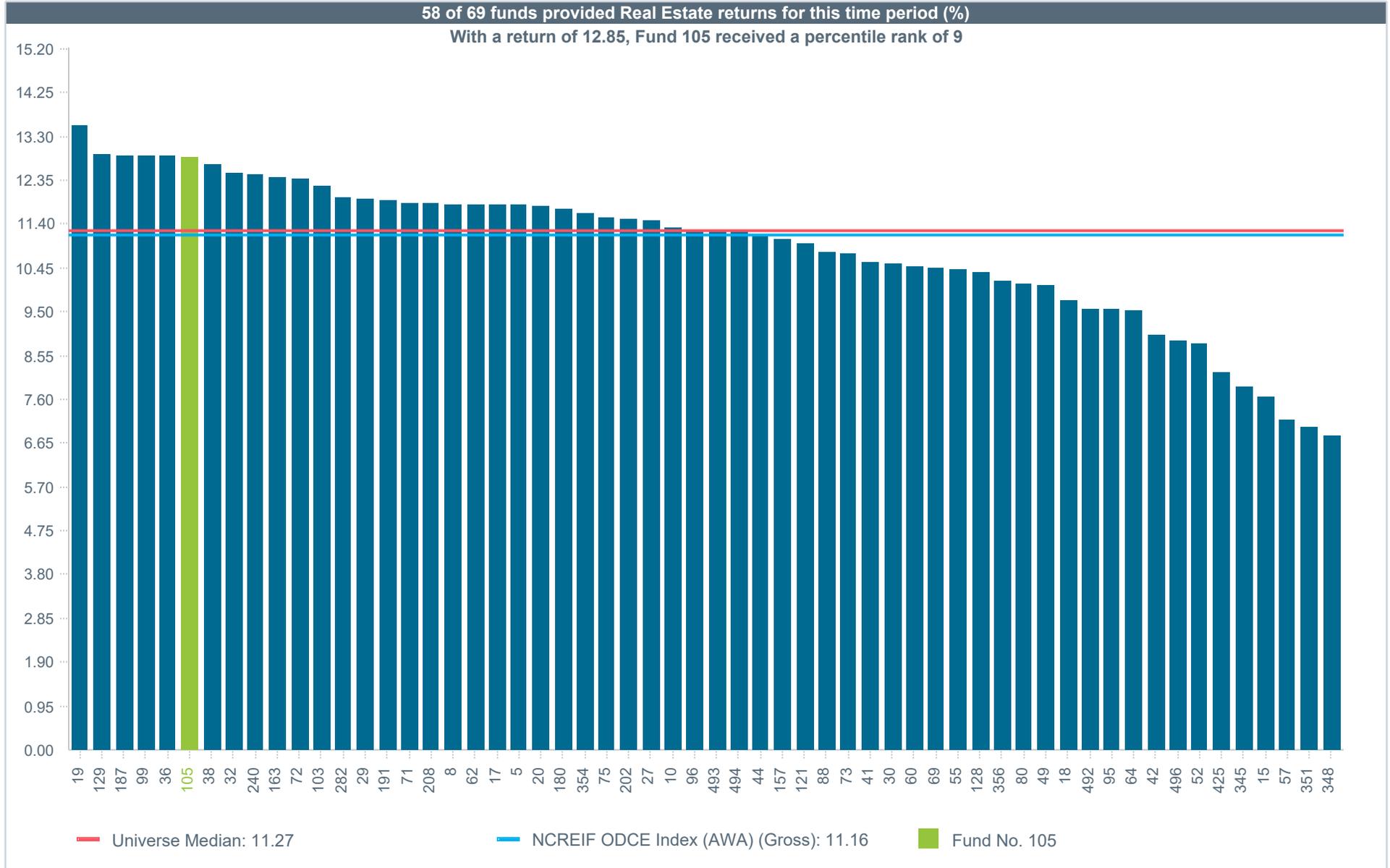
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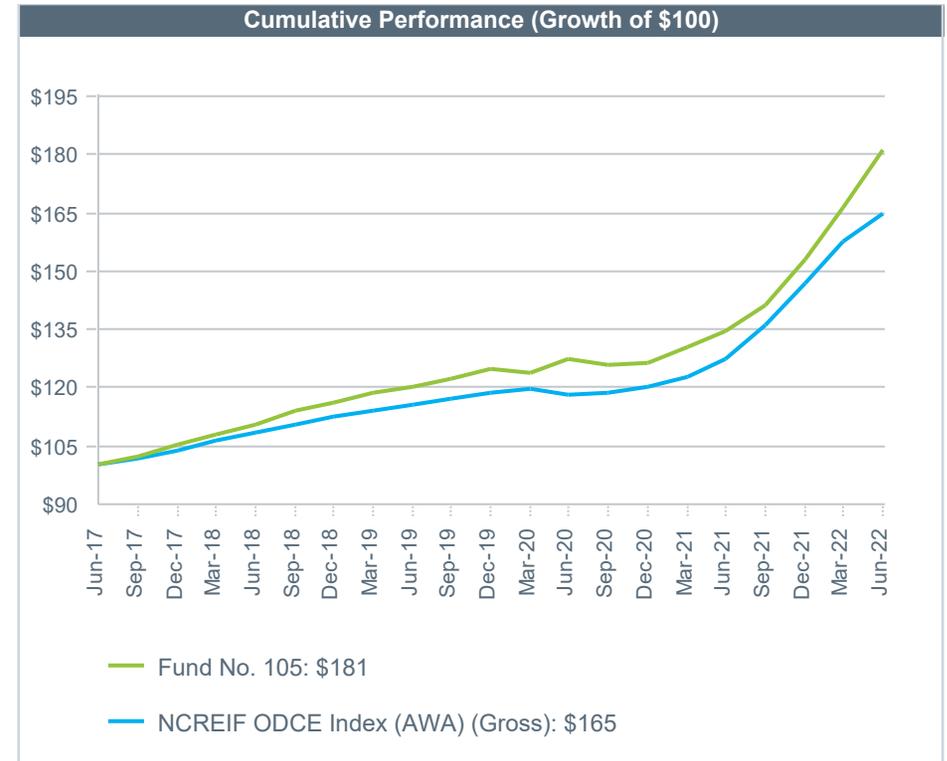
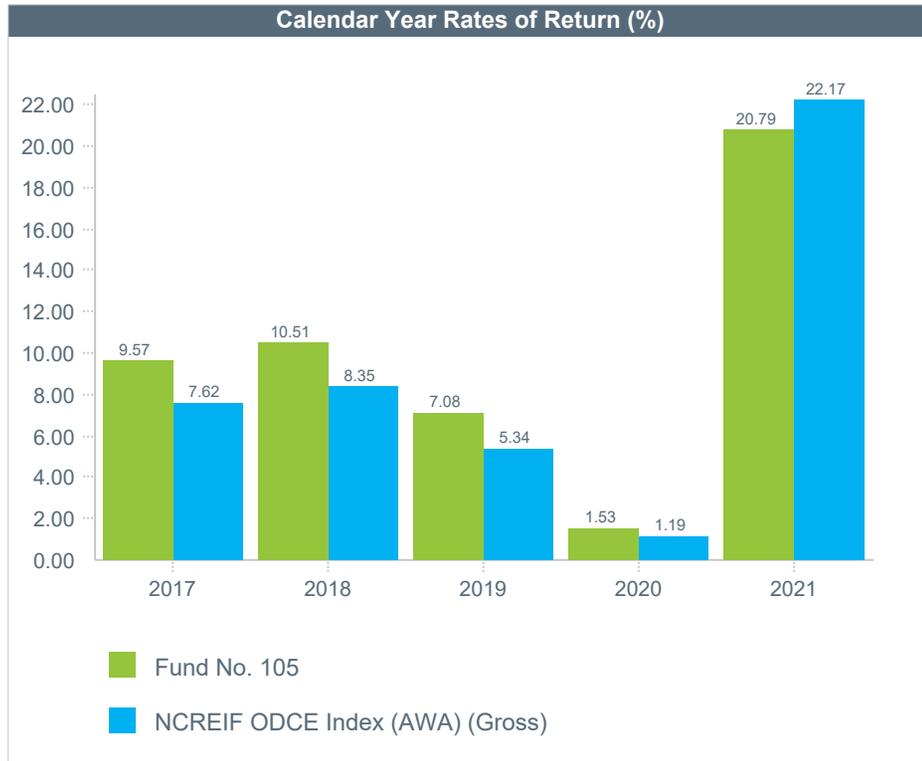
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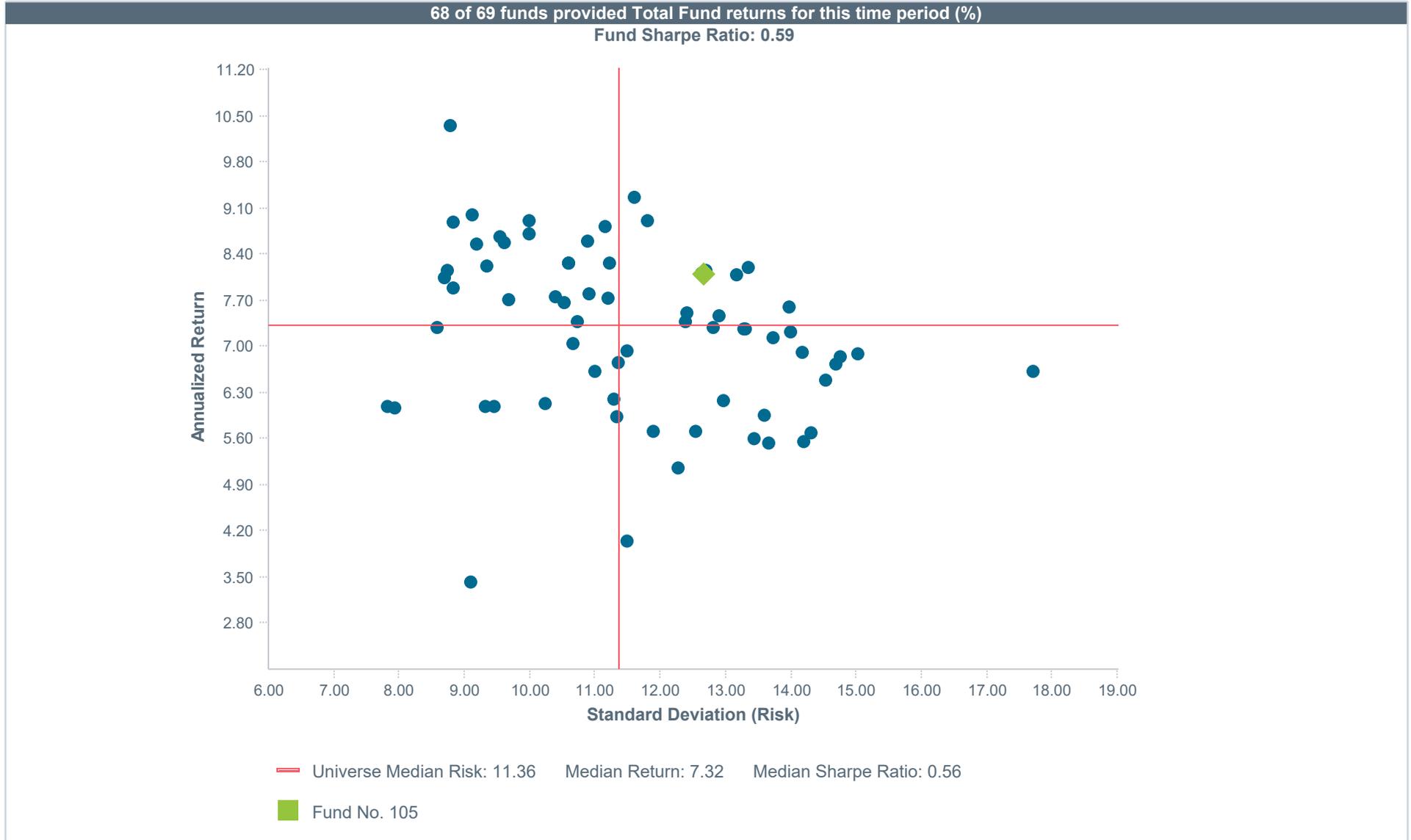




Annualized Returns (%)			
	1 Year	3 Years	5 Years
Fund No. 105	34.78	14.69	12.65
NCREIF ODCE Index (AWA) (Gross)	29.51	12.66	10.54
Variance	5.27	2.03	2.11

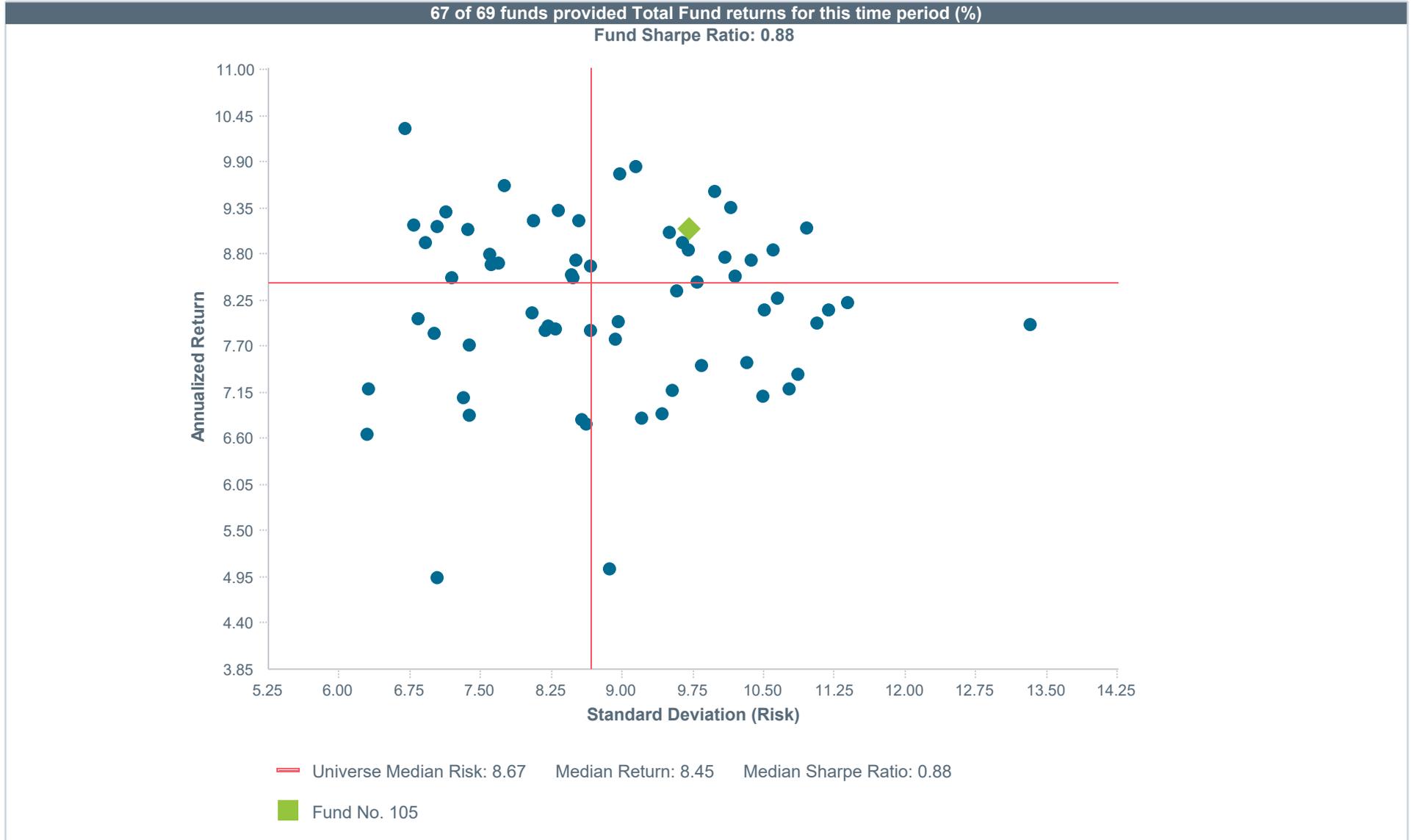


5 Year Annualized Total Fund Returns vs. Standard Deviation



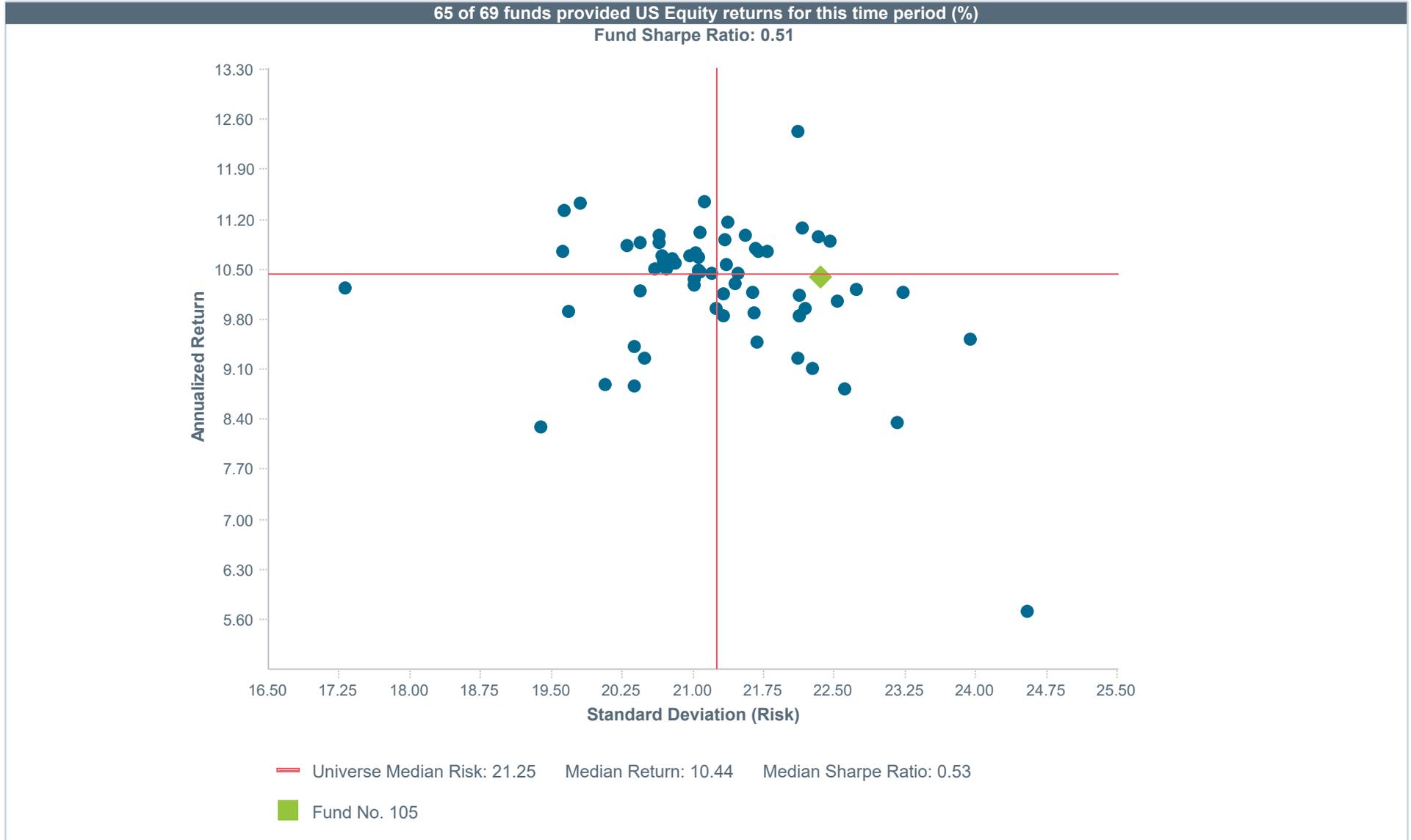
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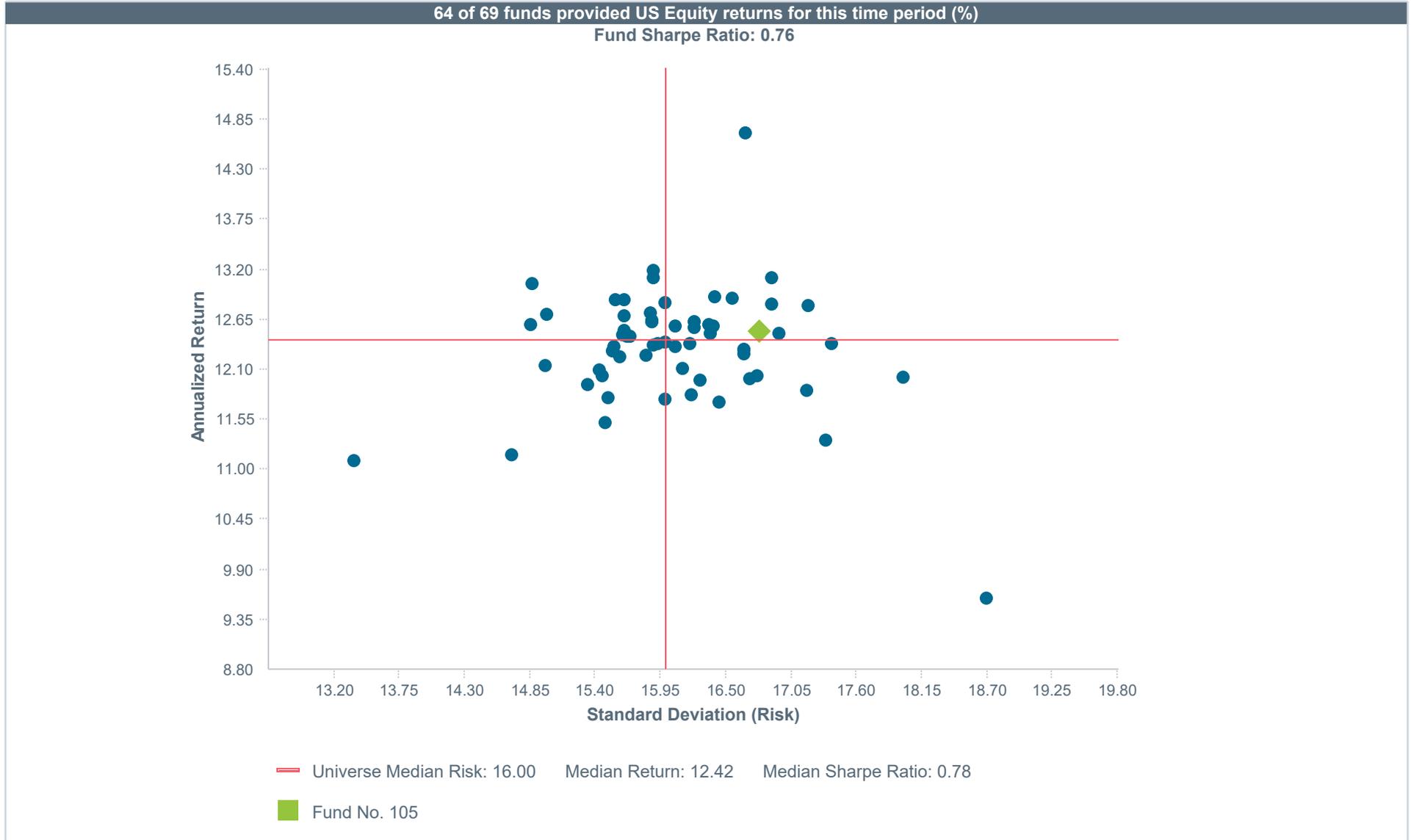
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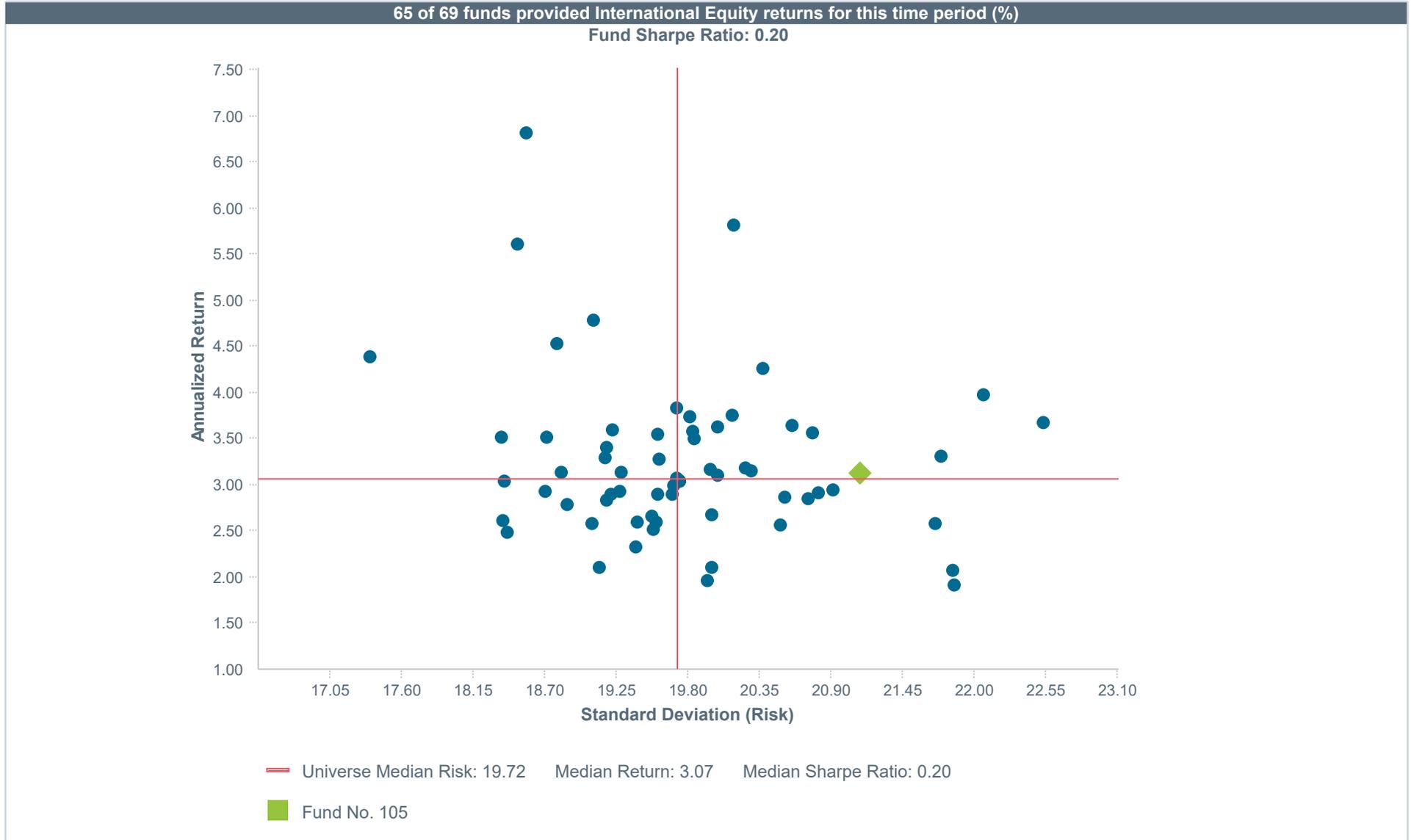
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Funds with less history than the specified time period will not appear in the chart.





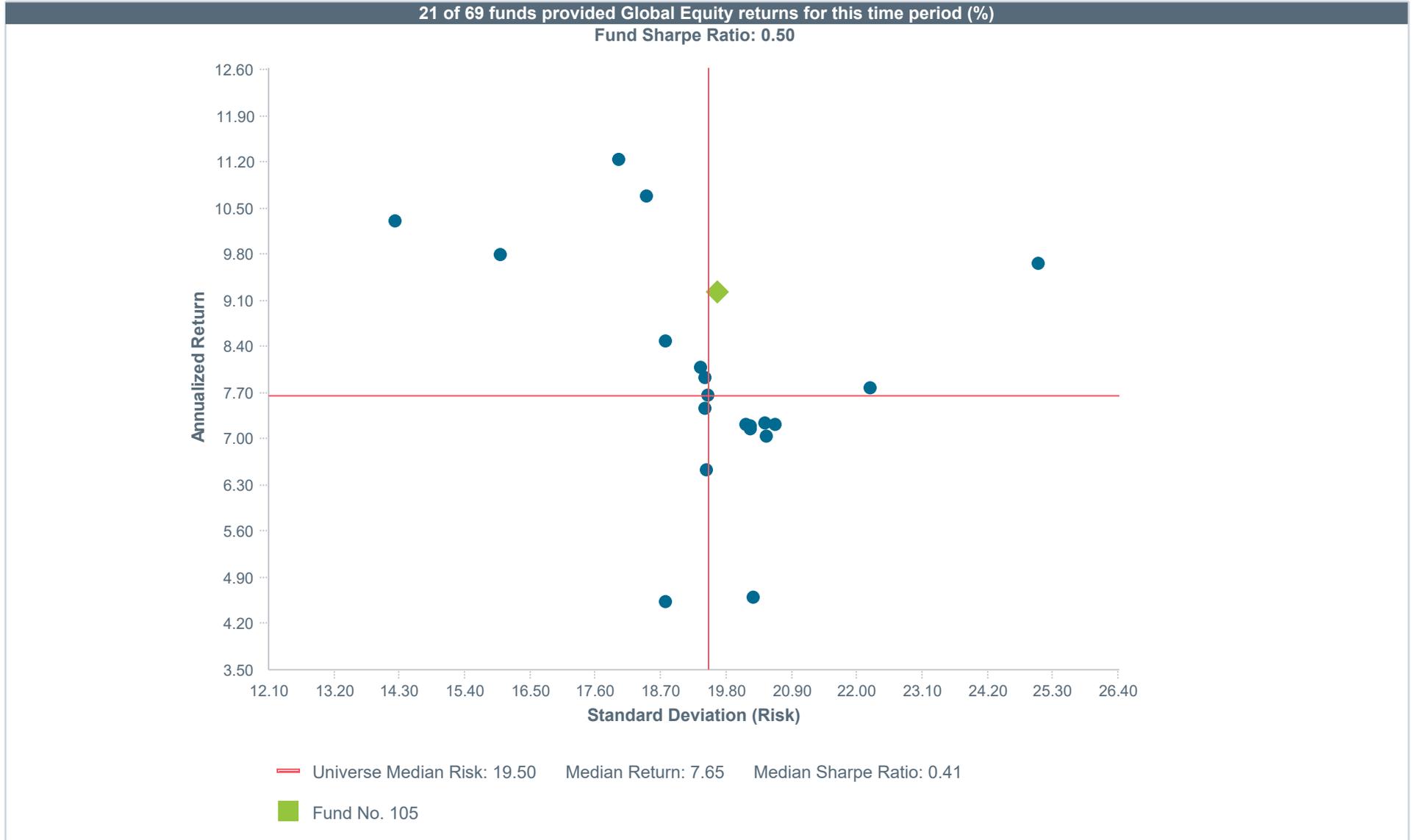
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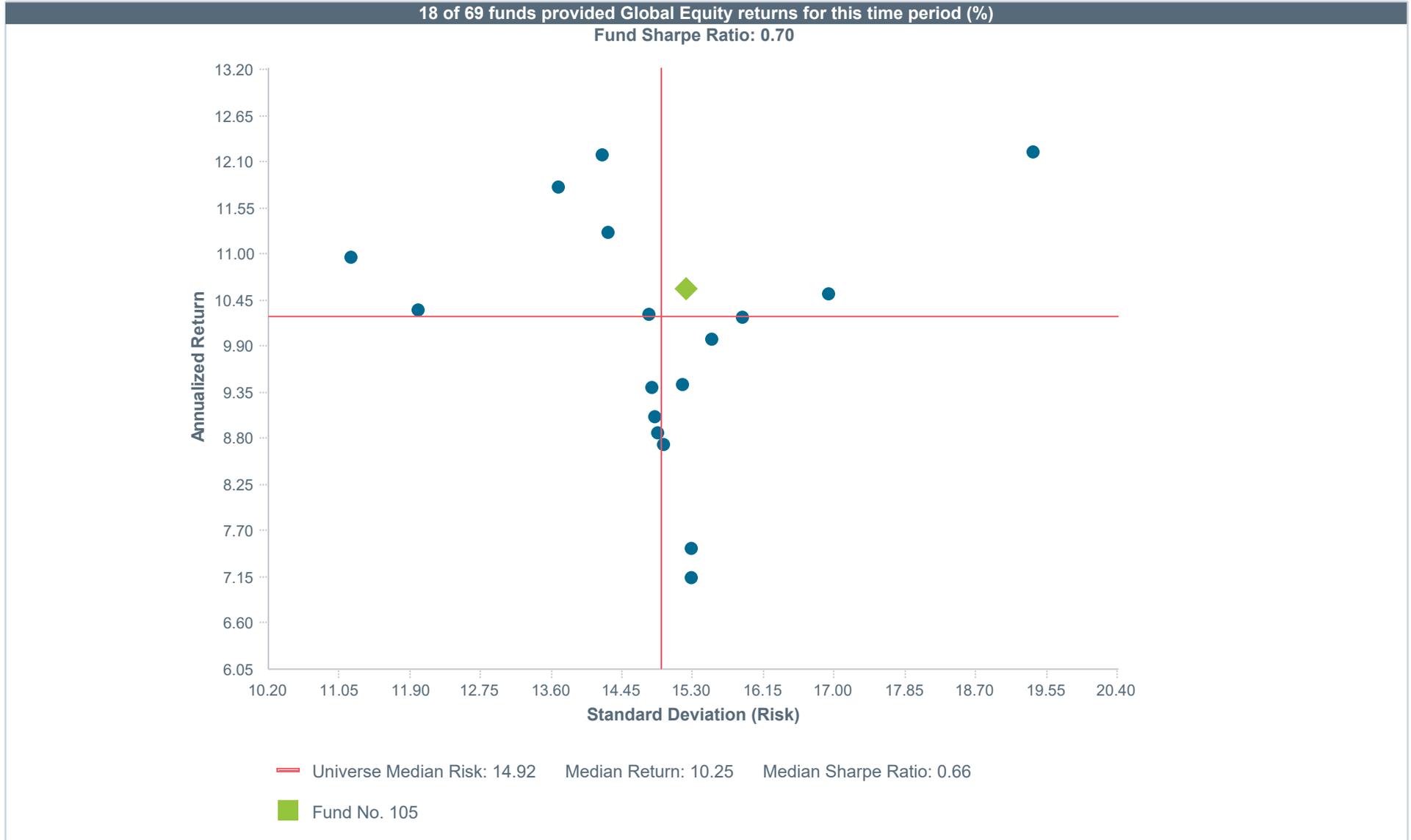
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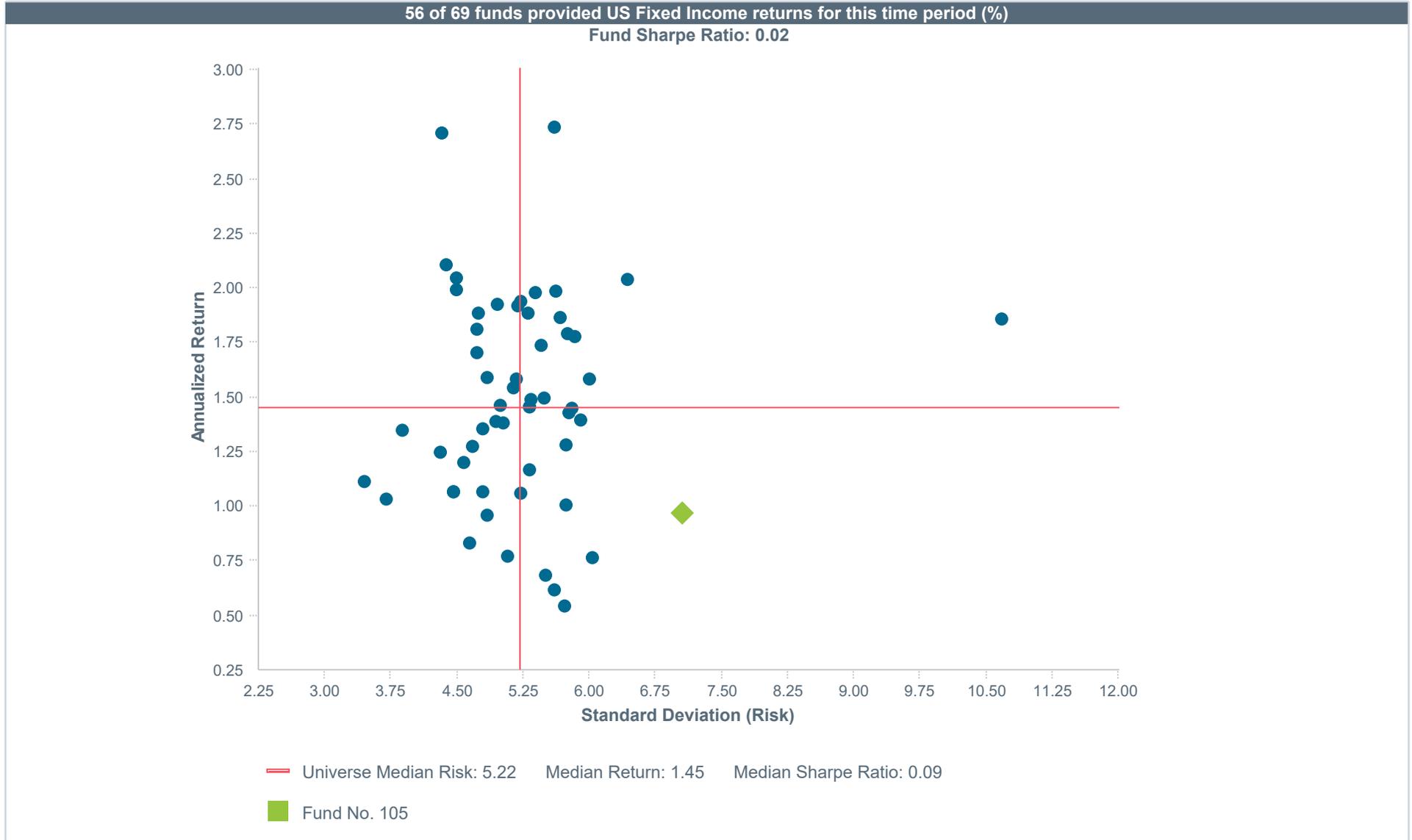
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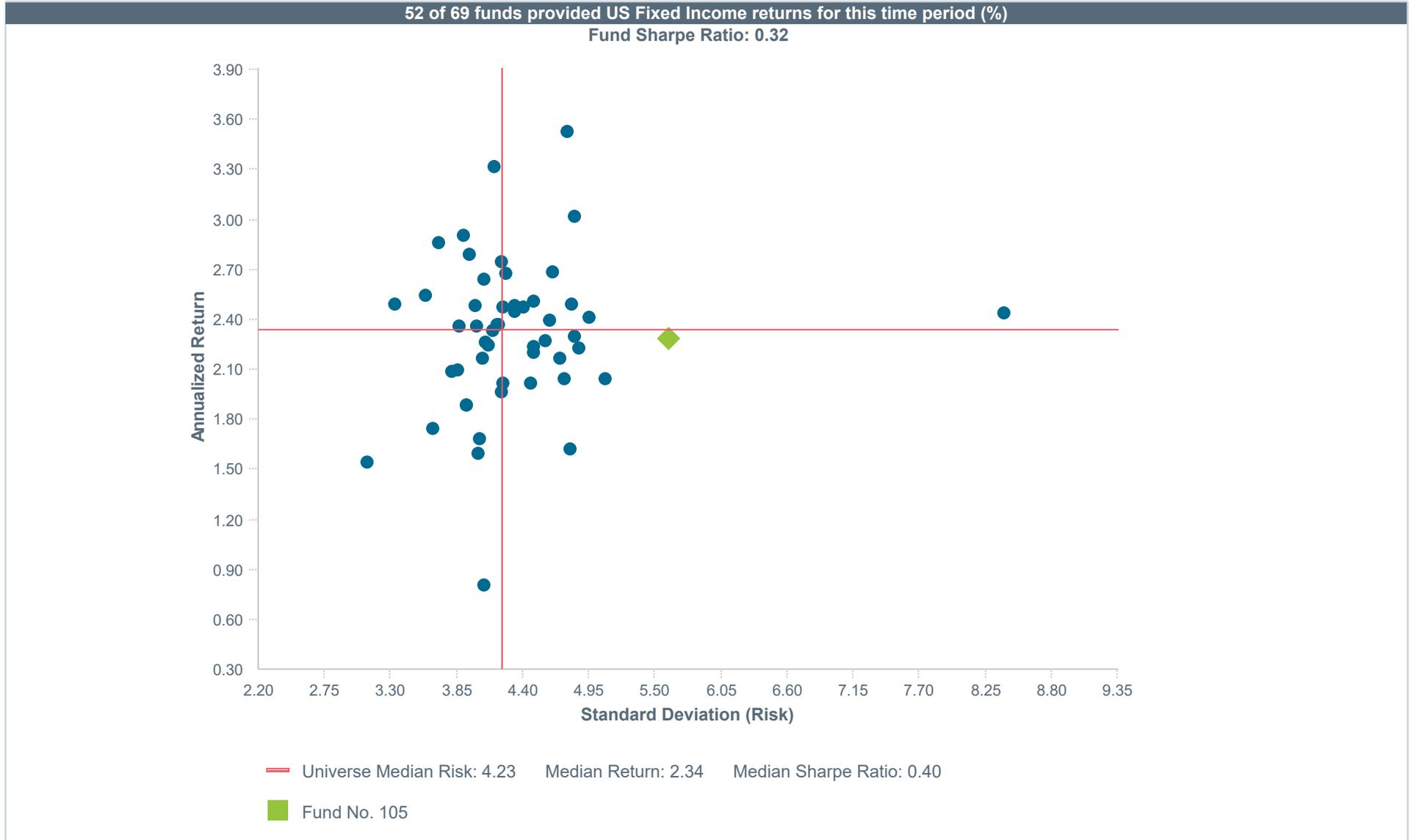
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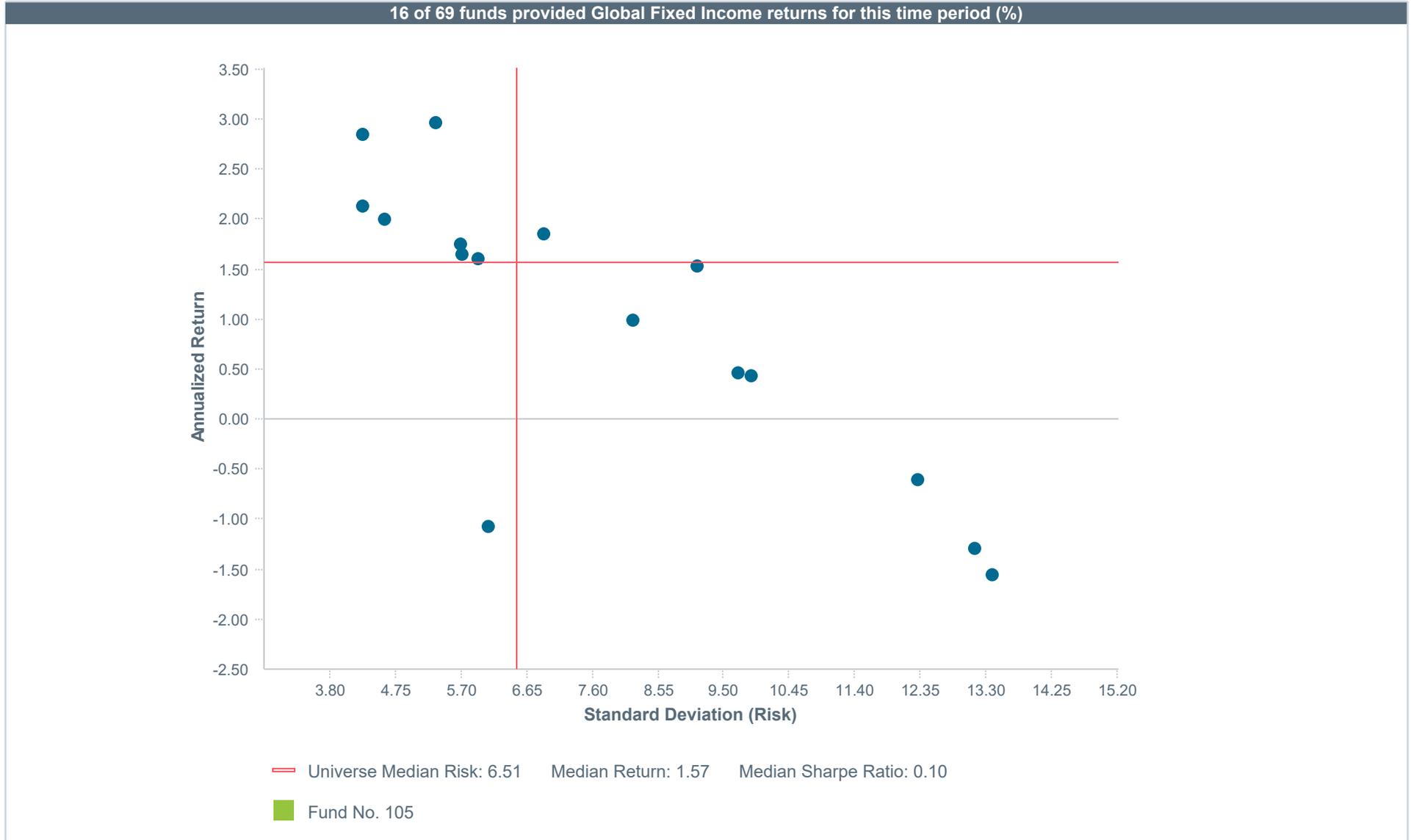
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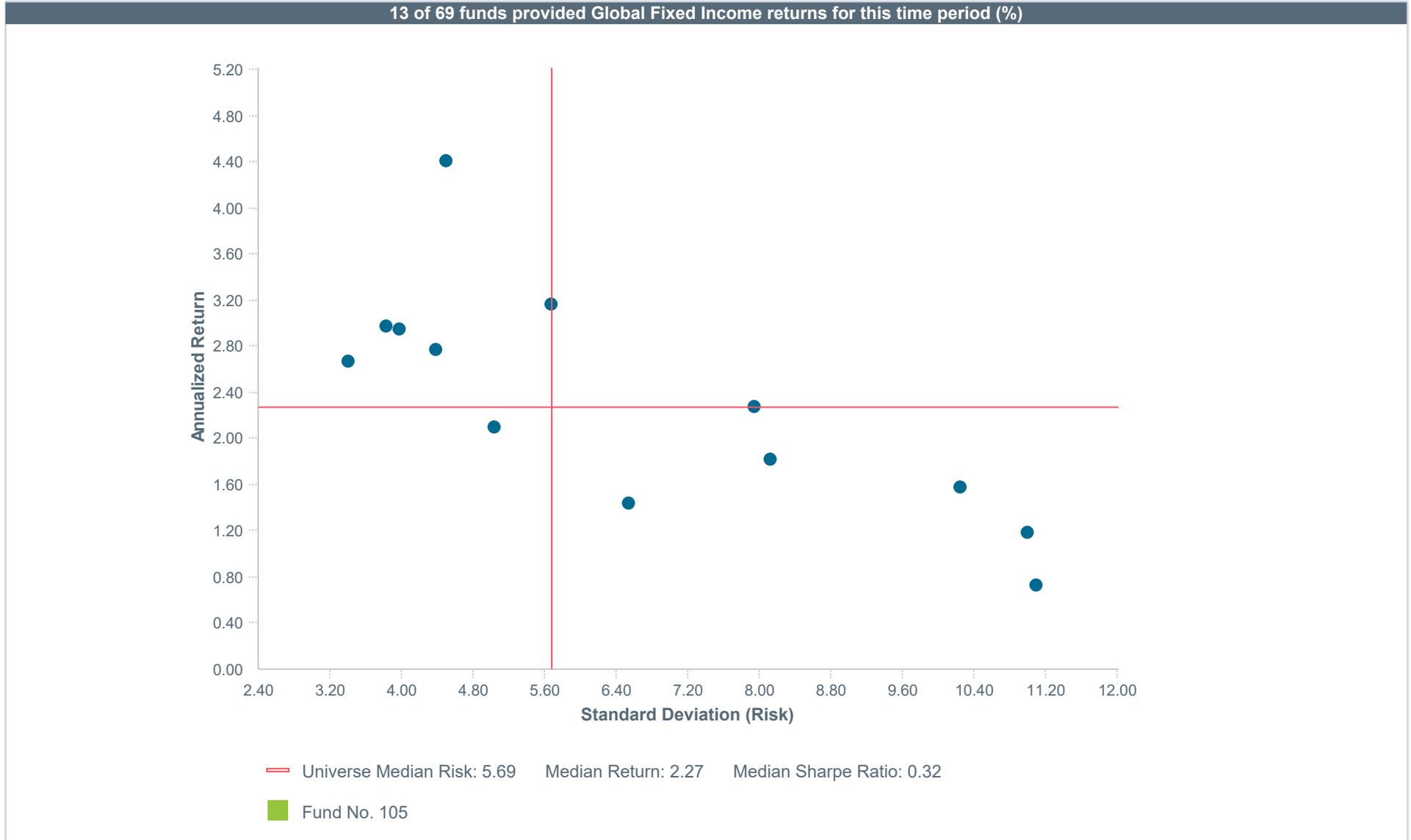
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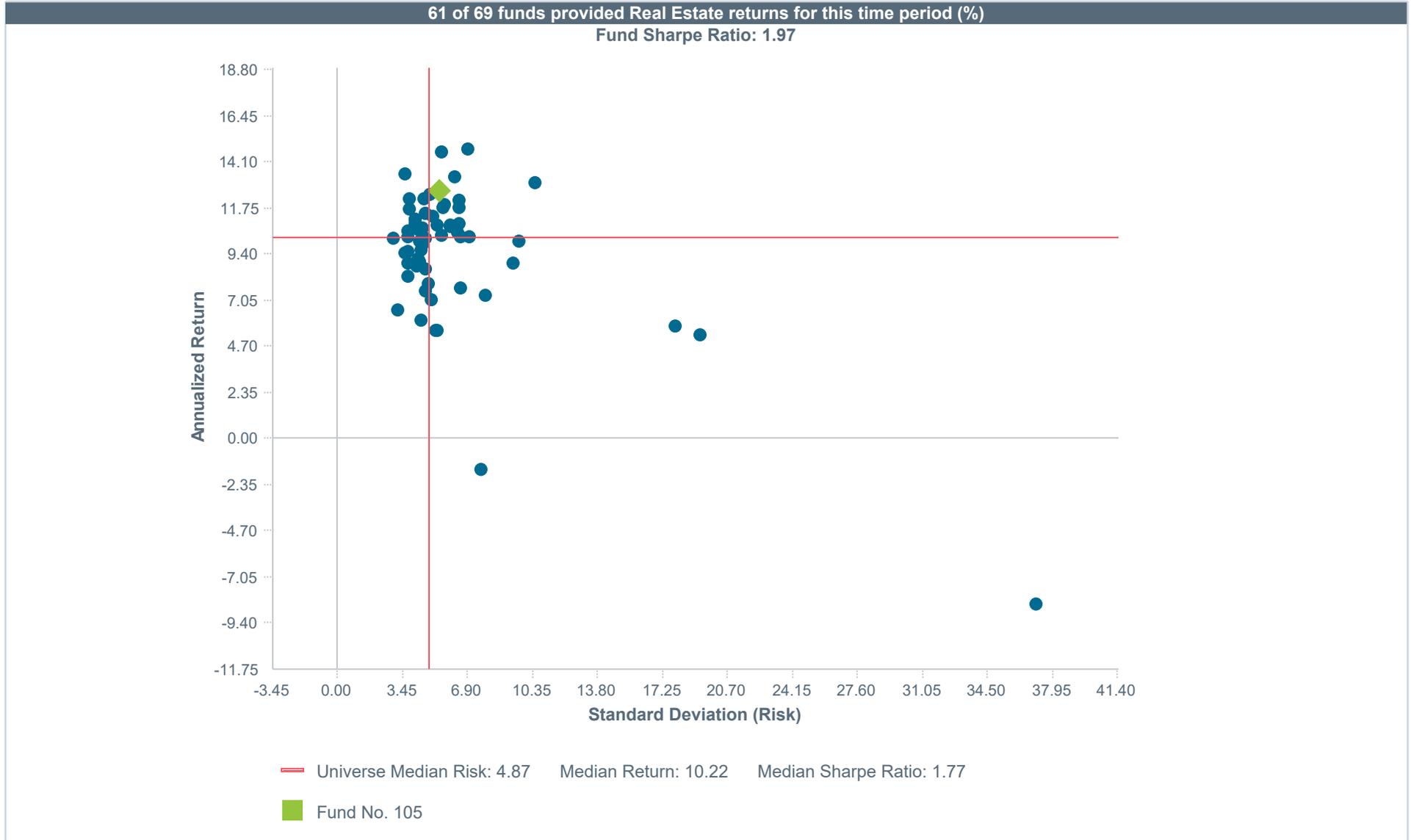
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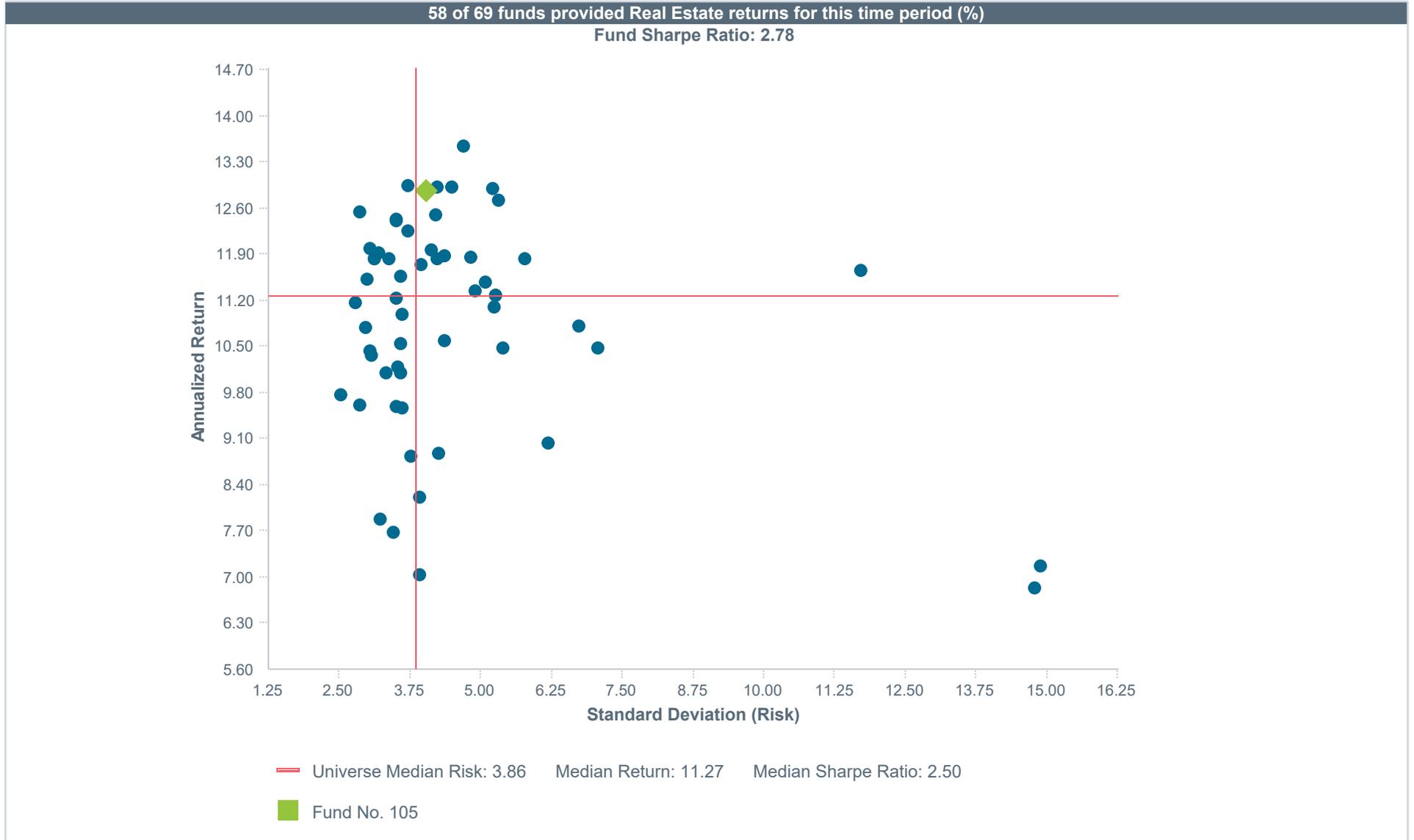
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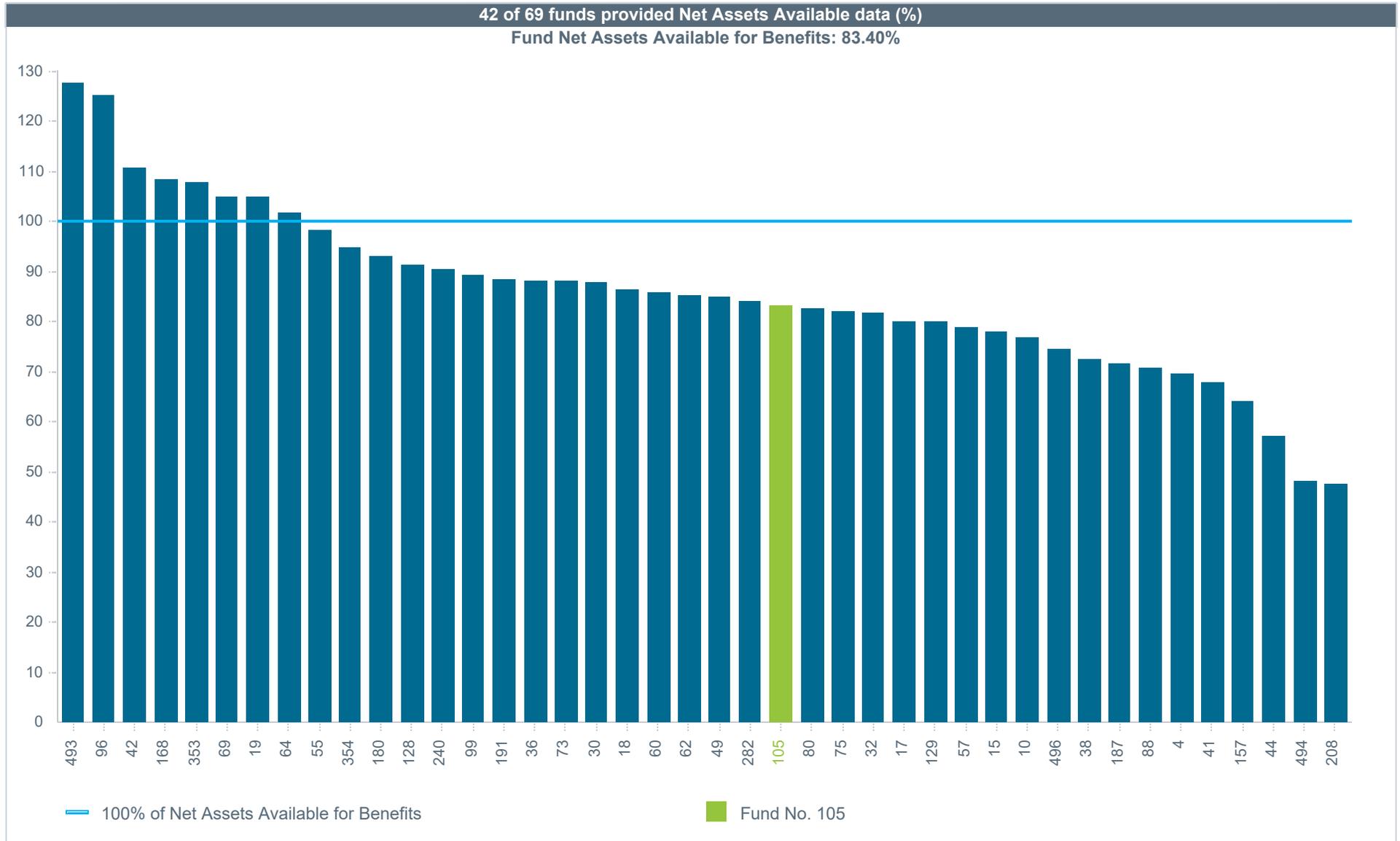


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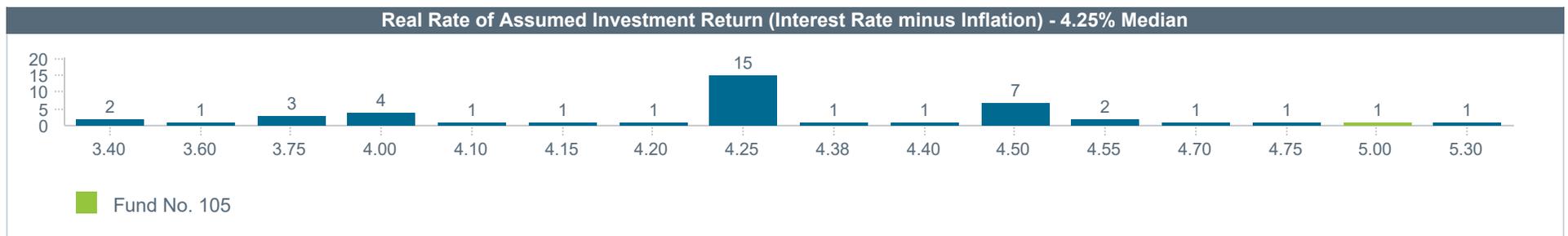
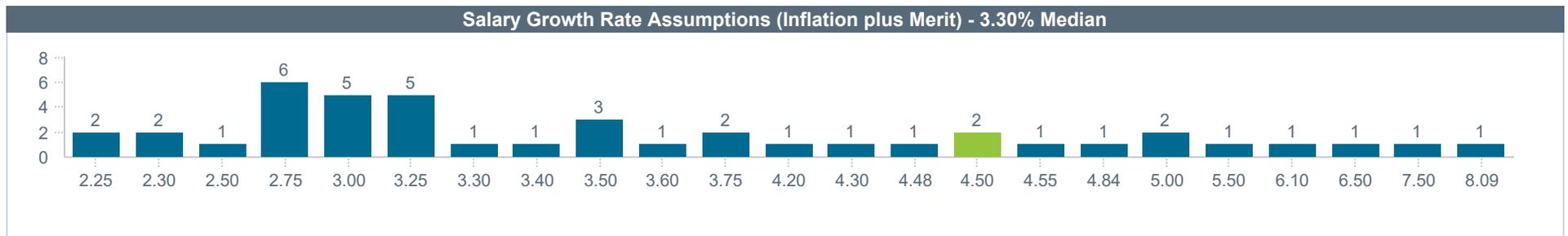
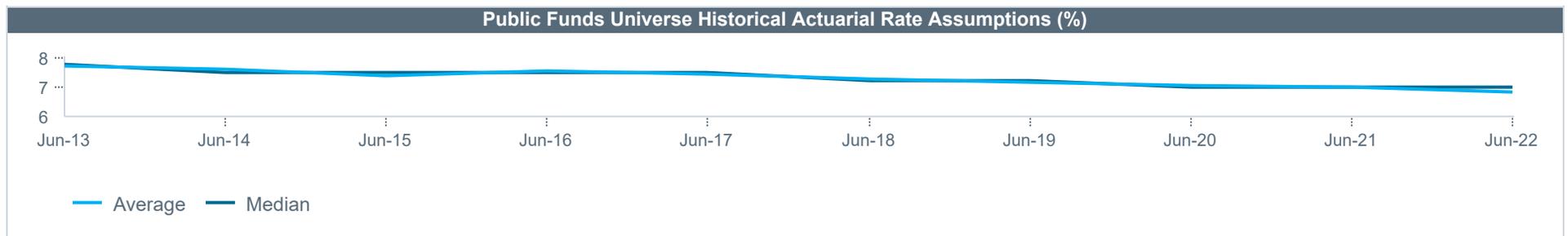
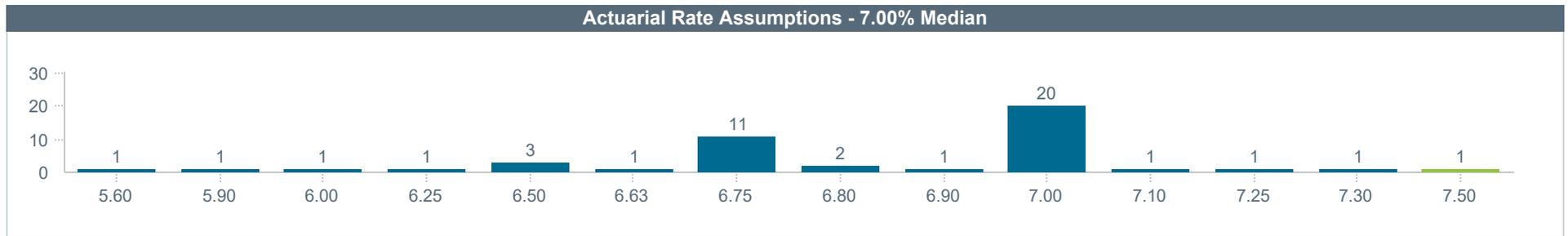
Net Assets Available For Benefits
Expressed as a Percentage of the Pension Benefit Obligation

As of June 30, 2022



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 69 participants in the 2022 Q2 Public Fund Report, 43 participants provided a response to the Overlay Survey. Of those participants, 19 are currently using a form of overlay, 1 is considering evaluating a form of overlay, and 23 are not currently using or considering evaluating any form of overlay.

Q2. Of the 19 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:

- 26 % Manage foreign currency risk
- 26 % Generate alpha
- 0 % Match Plan liabilities more closely (either as part of an explicit or conceptual framework)
- 0 % Express a view on US Dollar
- 0 % Manage market risk within an LDI construct
- 37 % Tactical asset allocation
- 63 % Cash equitization
- 63 % Rebalancing management
- 32 % Transition management
- 5 % Other

Q3. Of the 8 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:

- 50 % Static hedge ratio
- 38 % Dynamic hedging program where manager varies the hedge ratio
- 25 % Alpha generating currency manager focused on absolute return

Q4. Of the 5 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 50 % hedge on All foreign currency exposure in the Fund
- 4 responses indicated 50 % hedge on Developed Equity exposure
- 1 response indicated 65 % hedge on Developed Equity exposure
- 1 response indicated 50 % hedge on International Equity exposure
- 1 response indicated 65 % hedge on International Equity exposure
- 1 response indicated 50 % hedge on Other



Supplemental Questions

Q1. Of the 37 respondents, the methods of Private Equity reporting are distributed as follows:

- 35 % Valuations and cash flows are updated and reflected as received by custodian
- 3 % Reported on a 1 month lag to account for additional valuations and cash flow activity
- 62 % Reported on a 1 quarter lag to account for most all valuations and cash flow activity

Q2. Of the 42 respondents, the methods of Private Real Estate reporting are distributed as follows:

- 48 % 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 44 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:

- 16 % Answered 'Yes' - valuations are restated
- 84 % Answered 'No' - valuations are not restated

Q4. Of the 43 respondents, the responses to whether or not a third party risk software provider is used are distributed as follows:

- 30 % Answered 'Yes'
- 70 % 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 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 December 2020 and December 2021.
 - Fund 96: Net Assets Available for Benefits shown is the higher funded ratio for one of two commingled systems reported by the fund.
- 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. Calculation is based on quarterly periodicity.

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. Calculation is based on quarterly periodicity.

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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