



December 6, 2017

**City of Atlanta General
Employees' Pension Fund**

Third Quarter 2017 Executive Summary

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City of Atlanta GEPF Performance Highlights

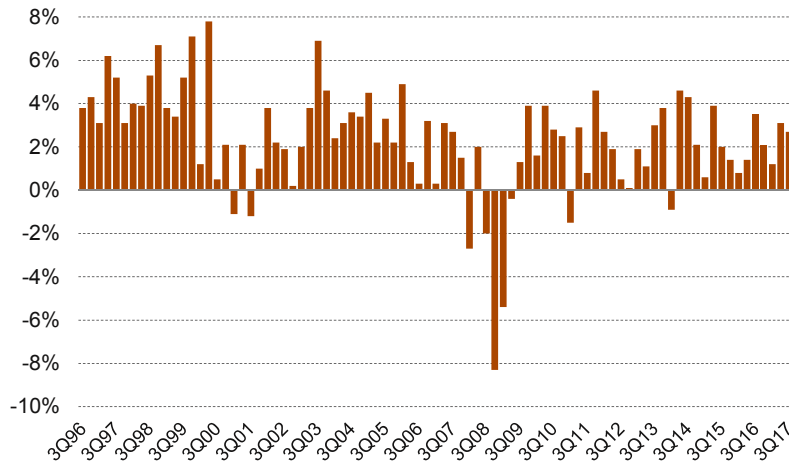
As of September 30, 2017

- Total Fund assets stood at \$1.4 bn, an increase of approximately \$44.3 mm during the quarter.
- The Fund gained 4.29% gross of fees during the quarter, surpassing the Policy Index return of 3.97% and ranking in the top decile of its peers.
- For the last year, the Total Fund was 1.50% ahead of its benchmark, returning 15.14% and outperforming 93% of its peers.
- Over the trailing five years, the Total Fund was 0.98% ahead of its benchmark, returning 11.06% and outperforming 98% of its peers.
- Investments in the underlying asset classes performed as follows during the quarter:
 - The domestic equity composite generated a return of 5.24% versus its benchmark return of 4.57%.
 - The non-US equity composite gained 7.11% and outpaced its benchmark by 1.71%.
 - The emerging markets equity composite's 5.70% return trailed the 8.04% return of the MSCI Emerging Markets Index.
 - The fixed income composite added 0.74% versus its benchmark return of 0.85%.
 - The global fixed income composite grew 2.36% and surpassed the World Government Bond Index by 0.55%
 - The balanced allocation returned 3.63% yet trailed its benchmark by 0.35%.
 - The real estate allocation grew 2.36% and outpaced the 1.70% return of its benchmark.

Economy

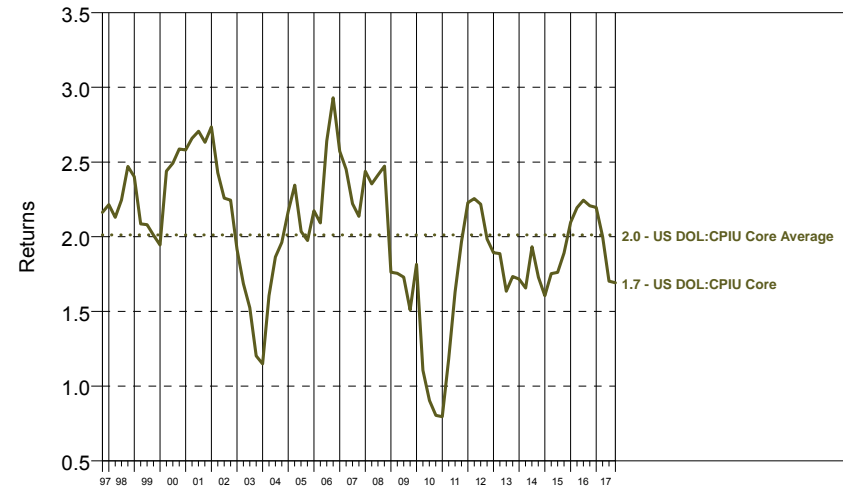
As of September 30, 2017

Quarterly Real GDP Growth (20 Years)



Source: Bureau of Economic Analysis

Rolling 4 Quarter Returns for 20 Years Ended September 30, 2017



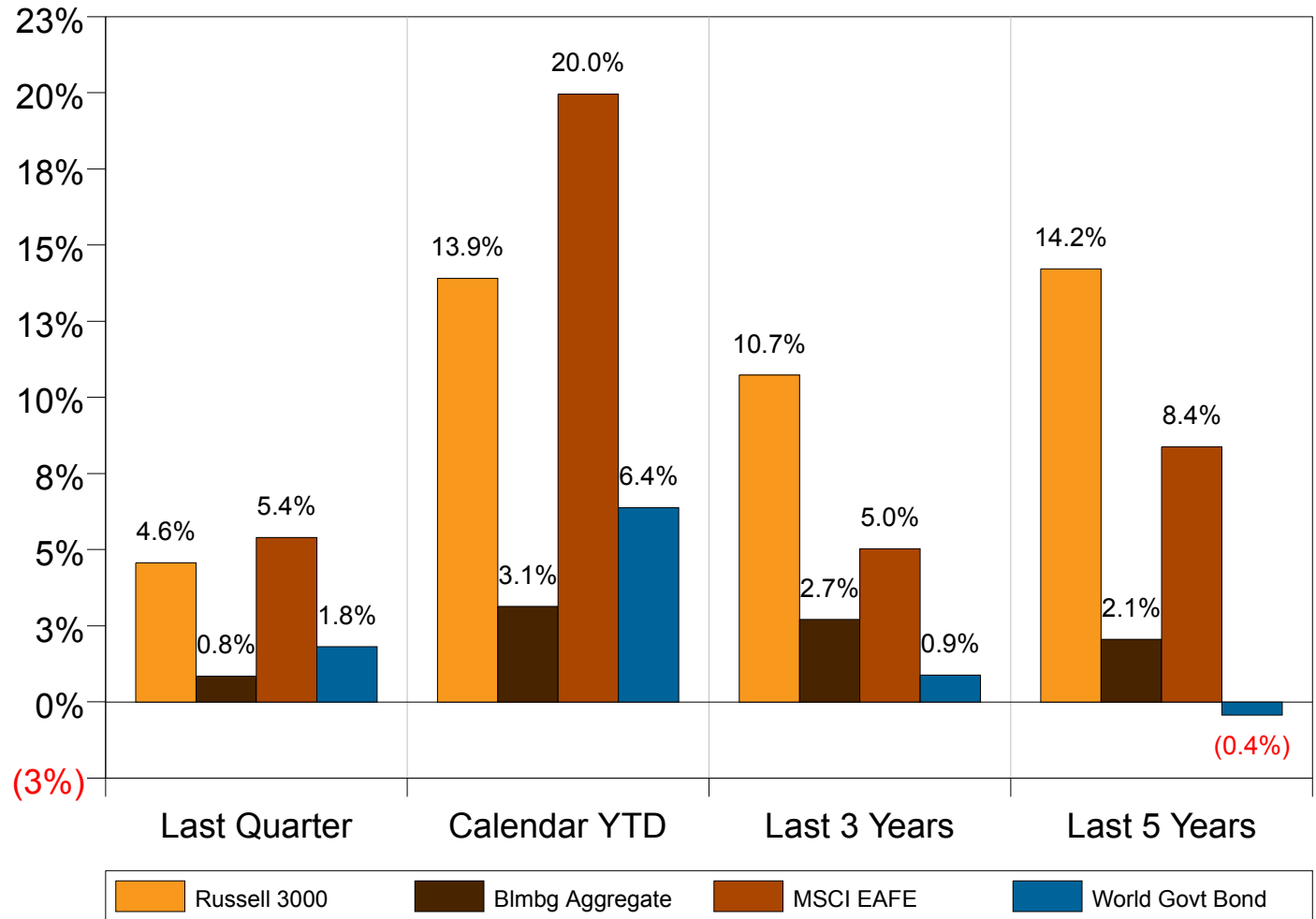
Source: Bureau of Labor Statistics

- Real gross domestic product (GDP) increased at an annual rate of 3.3 percent in the third quarter of 2017. In the second quarter, real GDP increased 3.1 percent.
- Core inflation, which excludes food and energy prices, is at 1.7% year over year.
- The federal funds target rate is 1.00% -1.25% with another increase expected before year end.
- The Fed's previously communicated plan to reduce its balance sheet began in October 2017, reducing reinvestment by \$10 billion per month and increasing gradually.

Asset Class Performance

- U.S. equities forged ahead as several U.S. stock indices hit record highs during the quarter.
- Non-U.S. equity markets continued to outperform their U.S. counterparts assisted by a weakening dollar.
- Interest rates were largely range-bound during the quarter.

% Returns Ending September 30, 2017



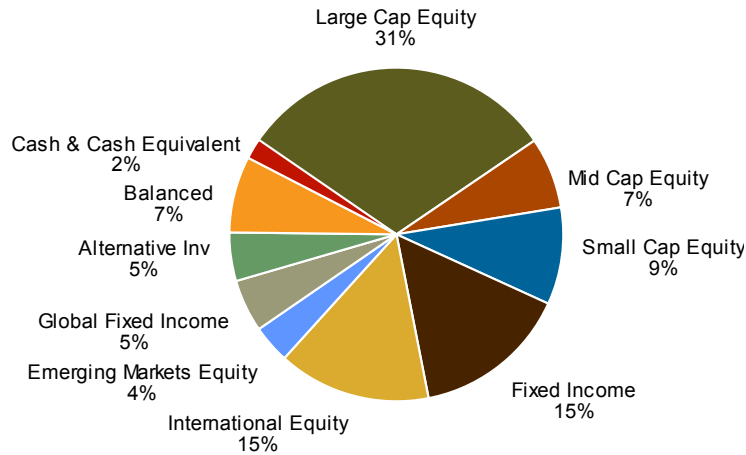
Periodic Table of Investment Returns

	2008	2009	2010	2011	2012	2013	2014	2015	2016	1Q 2017	2Q 2017	3Q 2017
World Govt Bond	MSCI EM	Russell 2000	NCREIF	MSCI EM	Russell 2000	S&P 500	NCREIF	Russell 2000	MSCI EM	MSCI EM	MSCI EM	
10.9%	79.0%	26.9%	14.3%	18.6%	38.8%	13.7%	13.3%	21.3%	11.5%	6.4%	8.0%	
Blmbg Aggregate	Russell MidCap	Russell MidCap	Blmbg Aggregate	MSCI EAFE	Russell MidCap	Russell MidCap	S&P 500	Russell MidCap	MSCI EAFE	MSCI EAFE	Russell 2000	
5.2%	40.5%	25.5%	7.8%	17.3%	34.8%	13.2%	1.4%	13.8%	7.2%	6.1%	5.7%	
NCREIF	MSCI EAFE	MSCI EM	World Govt Bond	Russell MidCap	S&P 500	NCREIF	Blmbg Aggregate	S&P 500	S&P 500	S&P 500	MSCI EAFE	
(6.5%)	31.8%	19.2%	6.4%	17.3%	32.4%	11.8%	0.5%	12.0%	6.1%	3.1%	5.4%	
Russell 2000	Russell 2000	S&P 500	S&P 500	Russell 2000	MSCI EAFE	Blmbg Aggregate	MSCI EAFE	MSCI EM	Russell MidCap	World Govt Bond	S&P 500	
(33.8%)	27.2%	15.1%	2.1%	16.3%	22.8%	6.0%	(0.8%)	11.6%	5.1%	2.9%	4.5%	
S&P 500	S&P 500	NCREIF	Russell MidCap	S&P 500	NCREIF	Russell 2000	Russell MidCap	NCREIF	Russell 2000	Russell MidCap	Russell MidCap	
(37.0%)	26.5%	13.1%	(1.5%)	16.0%	11.0%	4.9%	(2.4%)	8.0%	2.5%	2.7%	3.5%	
Russell MidCap	Blmbg Aggregate	MSCI EAFE	Russell 2000	NCREIF	Blmbg Aggregate	World Govt Bond	World Govt Bond	Blmbg Aggregate	World Govt Bond	Russell 2000	World Govt Bond	
(41.5%)	5.9%	7.7%	(4.2%)	10.5%	(2.0%)	(0.5%)	(3.6%)	2.6%	1.6%	2.5%	1.8%	
MSCI EAFE	World Govt Bond	Blmbg Aggregate	MSCI EAFE	Blmbg Aggregate	MSCI EM	MSCI EM	Russell 2000	World Govt Bond	NCREIF	NCREIF	NCREIF	
(43.4%)	2.6%	6.5%	(12.1%)	4.2%	(2.3%)	(1.8%)	(4.4%)	1.6%	1.5%	1.7%	1.7%	
MSCI EM	NCREIF	World Govt Bond	MSCI EM	World Govt Bond	World Govt Bond	MSCI EAFE	MSCI EM	MSCI EAFE	Blmbg Aggregate	Blmbg Aggregate	Blmbg Aggregate	
(53.2%)	(16.9%)	5.2%	(18.2%)	1.6%	(4.0%)	(4.9%)	(14.6%)	1.0%	0.8%	1.4%	0.8%	

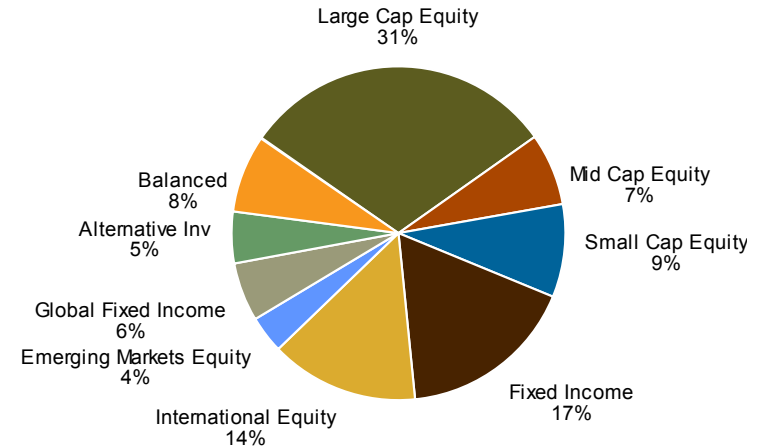
Actual vs. Target Asset Allocation

As of September 30, 2017

Actual Asset Allocation



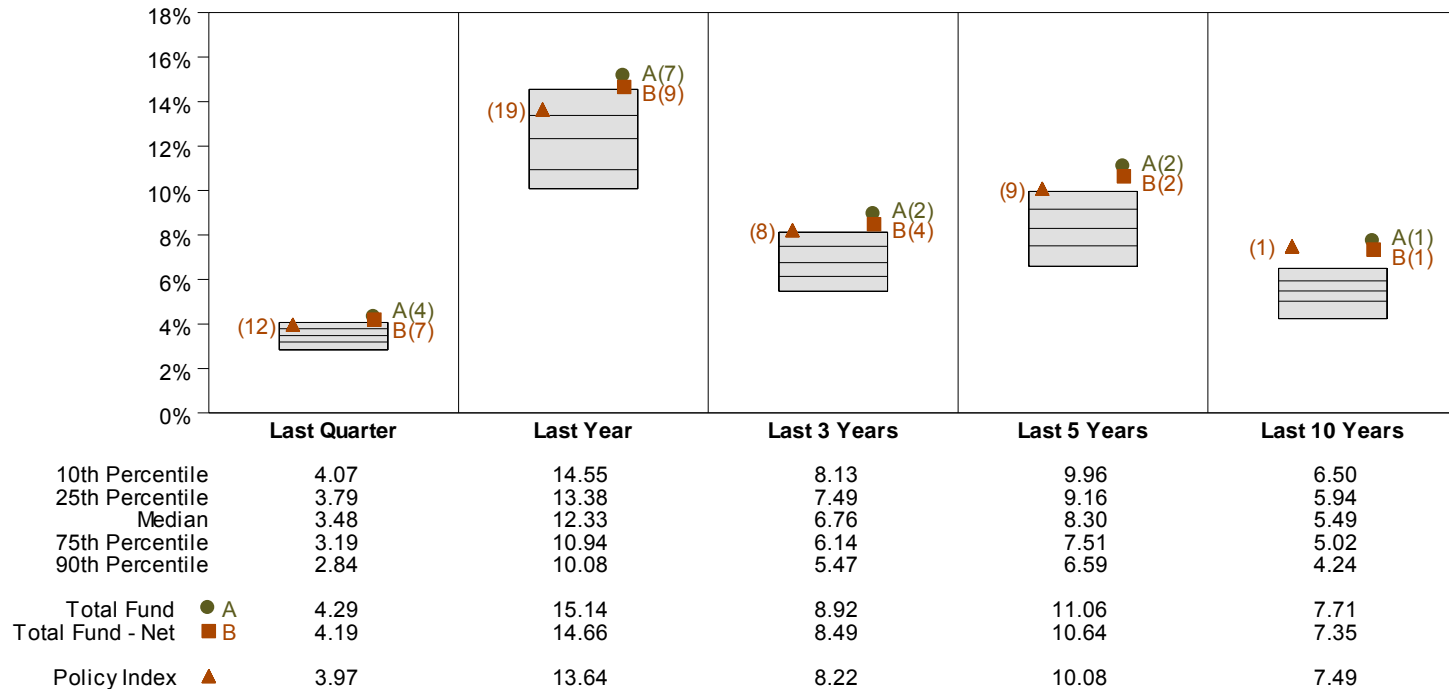
Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Large Cap Equity	435,252	31.1%	30.5%	0.6%	8,548
Mid Cap Equity	96,301	6.9%	7.0%	(0.1%)	(1,631)
Small Cap Equity	131,301	9.4%	9.0%	0.4%	5,389
Fixed Income	210,577	15.1%	17.2%	(2.2%)	(30,756)
International Equity	206,732	14.8%	14.4%	0.4%	5,272
Emerging Markets Equity	51,967	3.7%	3.6%	0.1%	1,602
Global Fixed Income	70,714	5.1%	5.8%	(0.7%)	(9,731)
Alternative Inv	65,238	4.7%	5.0%	(0.3%)	(4,714)
Balanced	103,192	7.4%	7.5%	(0.1%)	(1,736)
Cash & Cash Equivalent	27,758	2.0%	0.0%	2.0%	27,758
Total	1,399,030	100.0%	100.0%		

Total Fund Performance – Annualized Periods Ending 9/30/17

Performance vs Callan Public Fund Sponsor Database (Gross)



- The Fund outperformed the Policy Index by 0.22% net of fees during the quarter and ranks in the top 4% of public funds. The Fund ranks in the top decile of its peers over all of the trailing periods measured.
- For the trailing one-year period, the Fund outperformed the Policy Index by 1.02% net of fees and is top decile relative to peers.

Note: The median is the numerical value separating the higher half of a data sample or distribution, from the lower half. e.g. the mid-point of a distribution.

Total Fund Performance – Attribution

Asset Class	Effective Weight	Last Quarter		Last Year	
		Detractor	Contributor	Detractor	Contributor
Large Cap Equity	31%		0.10		0.39
Small Cap Equity	9%		0.15		0.37
Mid Cap Equity	7%		0.07		0.13
Fixed Income	16%		0.04		0.19
International Equity	15%		0.20		0.51
Emerging Markets	4%	-0.08			0.08
Global Fixed Income	5%		0.04		0.24
Alternative Investments	5%	-0.11		-0.29	
Balanced/GTAA	8%	-0.02			0.08
Cash & Equivalent	2%	-0.07		-0.21	
TOTAL			0.32		1.49

Return vs. Benchmark
4.29% vs. 3.97%

Return vs. Benchmark
15.14% vs. 13.64%

Asset Distribution Across Investment Funds

	September 30, 2017			June 30, 2017		
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Domestic Equity	\$662,854,076	47.38%	\$(3,970,768)	\$33,022,083	\$633,802,761	46.77%
Large Cap Equity	\$435,252,056	31.11%	\$(1,983,151)	\$19,938,339	\$417,296,869	30.79%
Morgan Stanley Large Cap Core	126,430,879	9.04%	(1,983,151)	6,670,849	121,743,182	8.98%
BlackRock Equity S&P 500 Index Fund	308,821,178	22.07%	0	13,267,491	295,553,687	21.81%
Mid Cap Equity	\$96,300,630	6.88%	\$(1,991,985)	\$4,175,537	\$94,117,079	6.95%
Comerstone Capital Management	96,300,630	6.88%	(1,991,985)	4,175,537	94,117,079	6.95%
Small Cap Equity	\$131,301,389	9.39%	\$4,368	\$8,908,208	\$122,388,813	9.03%
Eamest Partners Small Cap Core	75,949,281	5.43%	1,497	5,852,485	70,095,299	5.17%
Channing Capital Management	27,792,719	1.99%	114	1,457,895	26,334,710	1.94%
Legato	\$27,559,390	1.97%	\$2,758	\$1,597,828	\$25,958,804	1.92%
Redwood	7,864,638	0.56%	1,966	412,189	7,450,482	0.55%
ESSEX	8,532,558	0.61%	424	738,537	7,793,596	0.58%
Bridge City	6,303,451	0.45%	0	175,533	6,127,918	0.45%
Lebenthal Lisanti	4,858,744	0.35%	367	271,568	4,586,809	0.34%
International Equity	\$206,731,870	14.78%	\$(7,086,072)	\$13,720,734	\$200,097,208	14.77%
Hardman Johnston Global Advisors (1)	105,591,808	7.55%	0	7,758,883	97,832,925	7.22%
Artisan Partners	101,140,062	7.23%	(7,086,072)	5,961,851	102,264,283	7.55%
Emerging Market Equity	\$51,966,973	3.71%	\$(7,000,000)	\$2,934,976	\$56,031,997	4.13%
Eamest Partners Emerging Markets Fund	51,966,973	3.71%	(7,000,000)	2,934,976	56,031,997	4.13%
Balanced	\$103,191,571	7.38%	\$(3,959,137)	\$3,641,322	\$103,509,387	7.64%
Global Tactical ETF	103,191,571	7.38%	(3,959,137)	3,641,322	103,509,387	7.64%
Fixed Income	\$210,576,937	15.05%	\$(36)	\$1,540,002	\$209,036,971	15.43%
JP Morgan	0	0.00%	(251)	(6)	257	0.00%
Mesirow Financial	69,977,628	5.00%	215	594,264	69,383,149	5.12%
SSgA U.S. Aggregate Bond Index	70,140,890	5.01%	0	591,051	69,549,839	5.13%
Garcia Hamilton	70,458,419	5.04%	0	354,693	70,103,726	5.17%
Global Fixed Income	\$70,713,508	5.05%	\$(87,570)	\$1,631,661	\$69,169,417	5.10%
Colchester	70,713,508	5.05%	(87,570)	1,631,661	69,169,417	5.10%
Real Estate	\$39,066,630	2.79%	\$(306,606)	\$904,343	\$38,468,892	2.84%
Intercontinental	21,534,304	1.54%	(49,113)	533,024	21,050,393	1.55%
JPMUS Real Estate	17,532,326	1.25%	(257,493)	371,319	17,418,499	1.29%
Alternative investment	\$26,171,067	1.87%	\$0	\$0	\$26,171,067	1.93%
GrayCo Alternative Partners II (2)	26,171,067	1.87%	0	0	26,171,067	1.93%
Cash & Cash Equivalent	\$27,757,776	1.98%	\$8,827,387	\$67,043	\$18,863,345	1.39%
Enhanced Cash	11,233,677	0.80%	6,998,080	38,683	4,196,914	0.31%
Security Lending	331	0.00%	0	3	327	0.00%
Cash	16,523,769	1.18%	1,829,307	28,357	14,666,104	1.08%
Total Fund	\$1,399,030,406	100.0%	\$(13,582,803)	\$57,462,163	\$1,355,151,046	100.0%

Asset Class Summary – Net of Fees

Periods Ended September 30, 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Large Cap Equity	4.77%	19.78%	11.65%	14.51%
Mid Cap Equity	4.45%	16.74%	7.68%	13.89%
Small Cap Equity	7.15%	24.45%	13.18%	15.35%
International Equity	6.89%	22.02%	8.53%	11.12%
Emerging Markets Equity	5.44%	23.37%	--	--
Balanced/GTAA	3.51%	13.95%	7.93%	--
Fixed Income	0.70%	0.06%	2.63%	1.97%
Global Fixed Income	2.23%	0.04%	--	--
Real Estate	2.11%	9.01%	--	--
Alternative Investments (lagged)	0.00%	4.51%	0.94%	--
Cash & Equivalents	0.29%	0.95%	0.51%	0.36%
Total Fund	4.19%	14.66%	8.49%	10.64%
Policy Target*	3.97%	13.64%	8.22%	10.08%

*Current Quarter Actual Policy Target (Including Balanced) = 30.5% S&P 500 Index, 7% Russell MidCap Index, 9.0% Russell 2000 Index, 7.4% MSCI EAFE Index, 7% MSCI ACWI ex US, 3.6% MSCI Emerging Markets Index, 7.5% Custom Tactical Overlay Index, 17.2% Bloomberg Barclays U.S. Aggregate Bond Index, 5.8% World Govt Bond Index, and 5% Custom Alternatives Index.

US Equity – Net of Fees

Periods Ended September 30, 2017

	% of Total Assets	Last Quarter	Last Year	Last 3 Years	Last 5 Years
BlackRock Equity S&P 500	22.1%	4.49%	18.63%	--	--
Morgan Stanley LC Core	9.0%	5.44%	22.64%	13.27%	14.98%
S&P 500 Index		4.48%	18.61%	10.81%	14.22%
Cornerstone Cap Mgt.	6.9%	4.45%	16.74%	8.70%	15.21%
Russell Mid Cap Index		3.47%	15.32%	9.54%	14.26%
Earnest Partners SC Core	5.4%	8.27%	27.23%	15.70%	17.64%
Russell 2000 Index		5.67%	20.74%	12.18%	13.79%
Channing Cap Mgt.	2.0%	5.30%	20.00%	10.95%	--
Russell 2000 Value Index		5.11%	20.55%	12.12%	13.27%
Legato	2.0%	6.00%	21.00%	--	--
Russell 2000 Growth Index		6.22%	20.98%	12.17%	14.28%
Domestic Equity	47.4%	5.24%	20.55%	11.62%	--
Russell 3000 Index		4.57%	18.71%	10.74%	14.23%

Non-US Equity – Net of Fees

Periods Ended September 30, 2017

	% of Total Assets	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Artisan Partners	7.2%	6.07%	20.55%	7.92%	11.90%
MSCI EAFE Index		5.40%	19.10%	5.04%	8.38%
Hardman Johnston	7.6%	7.77%	23.57%	9.16%	10.28%
MSCI ACWI ex US Index		6.25%	20.15%	5.19%	7.45%
International Equity	14.8%	6.89%	22.02%	8.53%	11.12%
MSCI EAFE Index		5.40%	19.10%	5.04%	8.38%
Emerging Mkts – Earnest Partners	3.7%	5.44%	23.37%	--	--
MSCI Emerging Mkts Index		8.04%	22.91%	5.28%	4.36%

Fixed Income & Balanced/GTAA – Net of Fees

Periods Ended September 30, 2017

	% of Total Assets	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Mesirow Financial	5.0%	0.79%	0.09%	2.54%	1.97%
SSgA US Aggregate Bond Idx	5.0%	0.84%	0.06%	--	--
Garcia Hamilton	5.0%	0.46%	--	--	--
Blmbg Aggregate Index		0.85%	0.07%	2.71%	2.06%
Fixed Income	15.1%	0.70%	0.06%	2.63%	1.97%
Blmbg Aggregate Index		0.85%	0.07%	2.71%	2.06%
Global Fixed – Colchester	5.1%	2.23%	0.04%	--	--
World Govt Bond Index		1.81%	(2.69%)	0.88%	(0.43%)
Balanced – GLOBALT Tactical	7.4%	3.51%	13.95%	7.93%	--
Globalt Benchmark*		3.98%	13.71%	8.22%	10.08%

*Since 10/1/2015, the Globalt Benchmark is the Strategic Policy Target and consists of 32.5% S&P 500 Index, 7.5% Russell MidCap Index, 10% Russell 2000 Index, 8% MSCI EAFE Index, 8% MSCI ACWI ex US, 4% MSCI Emerging Markets Index, 20% Bloomberg Barclays U.S. Aggregate Bond Index, 5% World Govt Bond Index, and 5% Custom Alternatives Index. The Custom Alternatives Target is 31% HFRI FoF Diversified Index, 64% Russell 3000 Index, and 5% NCREIF ODCE Index.

Real Estate & Alternative Investment – Net of Fees

Periods Ended September 30, 2017

	% of Total Assets	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Intercontinental	1.5%	2.30%	9.87%	--	--
JPM US Real Estate	1.3%	1.88%	8.02%	--	--
NCREIF Total Index		1.70%	6.89%	9.83%	10.35%
Real Estate	2.8%	2.36%	10.61%	--	--
NCREIF Total Index		1.70%	6.89%	9.83%	10.35%
Alternatives – GrayCo*	1.9%	0.00%	4.51%	0.94%	--
Alternative Target*		3.72%	13.99%	7.97%	10.75%

**The current quarter return of the GrayCo Fund is reported using the previous quarter ending market value and current quarter flows, netting to a zero percent return. The Custom Alternatives Target is 31% HFRI FoF Diversified Index, 64% Russell 3000 Index, and 5% NCREIF ODCE Index.*



Manager Watch List

Callan



**City of Atlanta
General Employees Pension Fund**

Watch List Report

October 2017

Brian Smith, CFA
Fund Sponsor Consulting

Bill Emmett
Fund Sponsor Consulting

**City of Atlanta General Employees' Pension Fund
October 2017**

- **Watch Status Report:** Based on GEPF's Watch List Policy, the following managers remain on the Watch List until further notice:
 1. GLOBALT: Added to Watch List during September 2016 due to performance issues.
 2. Mesirow: Added to Watch List during September 2016 due to performance issues.
 3. Cornerstone: Added to Watch List during June 2017 due to performance issues.

**City of Atlanta General Employees' Pension Fund
October 2017**

Manager Watch List

MANAGER	DATE WATCH STARTED, REASON	LAST DUE DILIGENCE MEETING	ACTIONS TAKEN	POLICY/ RECOMMENDED ACTIONS	CoA Acct Size as of 10/31/2017
GLOBALT – Global TAA – 7% of trust	September 2016 Performance	October 2017	Added to Watch List	Monitor	\$104 mil.
Mesirow – Core Fixed Income – 5% of trust	September 2016 Performance	August 2015	Added to Watch List	Monitor	\$70 mil.
Cornerstone – US Mid Cap Equity - 7% of trust	June 2017 Performance	May 2017	Added to Watch List	Monitor	\$98 mil.

Policy/Recommended Actions Legend

Remove = Policy action taken due to IPS guidelines. Remove manager from the watch list as performance improves.

Termination = Recommended action for the Board

Monitor = Recommended action for the Board

Search = Board authorized a manager search



Manager Fees

**City of Atlanta General Employees Pension Fund
Manager Fees
2017**

<u>Equity Large Cap</u>	
<i>Blackrock S&P 500 Index Fund</i>	0.02% flat
<i>Morgan Stanley</i>	50 basis points on the first \$20 million 45 basis points on the next \$15 million 35 basis points above \$35 million
<u>Mid Cap Equity</u>	
<i>Cornerstone</i>	(Revised fee schedule as of January 2017) First \$25,000,000 50 basis points Next \$25,000,000 40 basis points Next \$25,000,000 30 basis points Remainder 20 basis points
<u>Small Cap Equity</u>	
<i>Earnest</i>	0.80% on the first \$10 million 0.65% on the next \$10 million 0.33% on assets over \$20 million
<i>Channing Capital</i>	90 basis points on the first \$25 million 80 basis points for > \$25 million up to \$50 million 70 basis points thereafter
<i>Legato Capital Management</i>	0.60% flat
<u>International Equity</u>	
<i>Johnston Asset Management</i>	0.75% on the first \$25 million 0.60% on the next \$50 million 0.50% on the balance over \$75 million
<i>Artisan Partners</i>	Artisan International Value Fund – expense ratio 0.96%
<i>Earnest Partners Emerging Markets</i>	1.00% Flat
<u>Balanced</u>	
<i>Globalt</i>	0.50% on assets between \$0 & \$50 million 0.40% on assets between \$50 & \$100 million 0.35% on assets over \$100 million

**City of Atlanta General Employees Pension Fund
Manager Fees
2017**

Fixed Income	
<i>JP Morgan Asset Management</i>	28 basis points on first \$75 million 20 basis points on the balance
<i>Garcia Hamilton & Associates</i>	0.18% on all assets
<i>Mesirow Financial</i>	On amounts up to \$10 million 0.35% per year On the next \$50 million 0.25% On the next \$150 million 0.20% per year On the next \$300 million 0.15% per year On the next \$500 million 0.125% per year On all amounts over \$500,000,001 0.100% per year Minimum annual fee shall not be less than \$5,000
<i>State Street Global</i>	<i>US Aggregate bond Index</i> 0.03% flat Minimum Annual Fee \$25,000
<i>Colchester</i>	Colchester Global Bond Fund: First \$25mm 0.60 Next \$25mm 0.50 Next \$100mm 0.35 Thereafter 0.35
<u>Alternative Investments</u>	
<i>GrayCo. Alts</i>	1.00% on all assets
<i>Intercontinental</i>	Management Fee <ul style="list-style-type: none"> • 1.10% on investments up to \$25 million • 1.00% on investments from \$25 million up to \$50 million • 0.85% in investments from \$50 million up to \$100 million • 0.75% on investments of \$100 million and above • Annual management fee is paid on drawn capital Performance Fee <ul style="list-style-type: none"> • Members will receive a preferred return of 8% per annum, thereafter, 80% to the member and 20% to the manager • Performance fee shall be calculated and adjusted on an annual basis, subject to a reserve/clawback • Subject to high-water mark
<i>J.P. Morgan</i>	1.05% on all assets



Glossary

Risk/Reward Statistics

The risk statistics used in this report examine performance characteristics of a manager or a portfolio relative to a benchmark (market indicator) which assumes to represent overall movements in the asset class being considered. The main unit of analysis is the excess return, which is the portfolio return minus the return on a risk free asset (3 month T-Bill).

Alpha measures a portfolio's return in excess of the market return adjusted for risk. It is a measure of the manager's contribution to performance with reference to security selection. A positive alpha indicates that a portfolio was positively rewarded for the residual risk which was taken for that level of market exposure.

Beta measures the sensitivity of rates of portfolio returns to movements in the market index. A portfolio's beta measures the expected change in return per 1% change in the return on the market. If a beta of a portfolio is 1.5, a 1 percent increase in the return on the market will result, on average, in a 1.5 percent increase in the return on the portfolio. The converse would also be true.

Downside Risk stems from the desire to differentiate between "good risk" (upside volatility) and "bad risk" (downside volatility). Whereas standard deviation punishes both upside and downside volatility, downside risk measures only the standard deviation of returns below the target. Returns above the target are assigned a deviation of zero. Both the frequency and magnitude of underperformance affect the amount of downside risk.

Excess Return Ratio is a measure of risk adjusted relative return. This ratio captures the amount of active management performance (value added relative to an index) per unit of active management risk (tracking error against the index.) It is calculated by dividing the manager's annualized cumulative excess return relative to the index by the standard deviation of the individual quarterly excess returns. The Excess Return Ratio can be interpreted as the manager's active risk/reward tradeoff for diverging from the index when the index is mandated to be the "riskless" market position.

Information Ratio measures the manager's market risk-adjusted excess return per unit of residual risk relative to a benchmark. It is computed by dividing alpha by the residual risk over a given time period. Assuming all other factors being equal, managers with lower residual risk achieve higher values in the information ratio. Managers with higher information ratios will add value relative to the benchmark more reliably and consistently.

R-Squared indicates the extent to which the variability of the portfolio returns are explained by market action. It can also be thought of as measuring the diversification relative to the appropriate benchmark. An r-squared value of .75 indicates that 75% of the fluctuation in a portfolio return is explained by market action. An r-squared of 1.0 indicates that a portfolio's returns are entirely related to the market and it is not influenced by other factors. An r-squared of zero indicates that no relationship exists between the portfolio's return and the market.

Relative Standard Deviation is a simple measure of a manager's risk (volatility) relative to a benchmark. It is calculated by dividing the manager's standard deviation of returns by the benchmark's standard deviation of returns. A relative standard deviation of 1.20, for example, means the manager has exhibited 20% more risk than the benchmark over that time period. A ratio of .80 would imply 20% less risk. This ratio is especially useful when analyzing the risk of investment grade fixed-income products where actual historical durations are not available. By using this relative risk measure over rolling time periods one can illustrate the "implied" historical duration patterns of the portfolio versus the benchmark.

Residual Portfolio Risk is the unsystematic risk of a fund, the portion of the total risk unique to the fund (manager) itself and not related to the overall market. This reflects the "bets" which the manager places in that particular asset market. These bets may reflect emphasis in particular sectors, maturities (for bonds), or other issue specific factors which the manager considers a good investment opportunity. Diversification of the portfolio will reduce or eliminate the residual risk of that portfolio.

Risk/Reward Statistics

Sharpe Ratio is a commonly used measure of risk-adjusted return. It is calculated by subtracting the "risk-free" return (usually 3 Month Treasury Bill) from the portfolio return and dividing the resulting "excess return" by the portfolio's risk level (standard deviation). The result is a measure of return gained per unit of risk taken.

Sortino Ratio is a downside risk-adjusted measure of value-added. It measures excess return over a benchmark divided by downside risk. The natural appeal is that it identifies value-added per unit of truly bad risk. The danger of interpretation, however, lies in these two areas: (1) the statistical significance of the denominator, and (2) its reliance on the persistence of skewness in return distributions.

Standard Deviation is a statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measures how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk. If returns are normally distributed (ie. has a bell shaped curve distribution) then approximately 2/3 of the returns would occur within plus or minus one standard deviation from the sample mean.

Total Portfolio Risk is a measure of the volatility of the quarterly excess returns of an asset. Total risk is composed of two measures of risk: market (non-diversifiable or systematic) risk and residual (diversifiable or unsystematic) risk. The purpose of portfolio diversification is to reduce the residual risk of the portfolio.

Tracking Error is a statistical measure of a portfolio's risk relative to an index. It reflects the standard deviation of a portfolio's individual quarterly or monthly returns from the index's returns. Typically, the lower the Tracking Error, the more "index-like" the portfolio.

Treynor Ratio represents the portfolio's average excess return over a specified period divided by the beta relative to its benchmark over that same period. This measure reflects the reward over the risk-free rate relative to the systematic risk assumed.

Note: Alpha, Total Risk, and Residual Risk are annualized.

Fixed Income Portfolio Characteristics

All Portfolio Characteristics are derived by first calculating the characteristics for each security, and then calculating the market value weighted average of these values for the portfolio.

Allocation by Sector - Sector allocation is one of the tools which managers often use to add value without impacting the duration of the portfolio. The sector weights exhibit can be used to contrast a portfolio's weights with those of the index to identify any significant sector bets.

Average Coupon - The average coupon is the market value weighted average coupon of all securities in the portfolio. The total portfolio coupon payments per year are divided by the total portfolio par value.

Average Moody's Rating for Total Portfolio - A measure of the credit quality as determined by the individual security ratings. The ratings for each security, from Moody's Investor Service, are compiled into a composite rating for the whole portfolio. Quality symbols range from Aaa+ (highest investment quality - lowest credit risk) to C (lowest investment quality - highest credit risk).

Average Option Adjusted (Effective) Convexity - Convexity is a measure of the portfolio's exposure to interest rate risk. It is a measure of how much the duration of the portfolio will change given a change in interest rates. Generally, securities with negative convexities are considered to be risky in that changes in interest rates will result in disadvantageous changes in duration. When a security's duration changes it indicates that the stream of expected future cash-flows has changed, generally having a significant impact on the value of the security. The option adjusted convexity for each security in the portfolio is calculated using models developed by Lehman Brothers and Salomon Brothers which determine the expected stream of cash-flows for the security based on various interest rate scenarios. Expected cash-flows take into account any put or call options embedded in the security, any expected sinking-fund paydowns or any expected mortgage principal prepayments.

Average Option Adjusted (Effective) Duration - Duration is one measure of the portfolio's exposure to interest rate risk. Generally, the higher a portfolio's duration, the more that its value will change in response to interest rate changes. The option adjusted duration for each security in the portfolio is calculated using models developed by Lehman Brothers and Salomon Brothers which determine the expected stream of cash-flows for the security based on various interest rate scenarios. Expected cash-flows take into account any put or call options embedded in the security, any expected sinking-fund paydowns or any expected mortgage principal prepayments.

Average Price - The average price is equal to the portfolio market value divided by the number of securities in the portfolio. Portfolios with an average price above par will tend to generate more current income than those with an average price below par.

Average Years to Expected Maturity - This is a measure of the market-value-weighted average of the years to expected maturity across all of the securities in the portfolio. Expected years to maturity takes into account any put or call options embedded in the security, any expected sinking-fund paydowns or any expected mortgage principal prepayments.

Average Years to Stated Maturity - The average years to stated maturity is the market value weighted average time to stated maturity for all securities in the portfolio. This measure does not take into account imbedded options, sinking fund paydowns, or prepayments.

Current Yield - The current yield is the current annual income generated by the total portfolio market value. It is equal to the total portfolio coupon payments per year divided by the current total portfolio market value.

Fixed Income Portfolio Characteristics

Duration Dispersion - Duration dispersion is the market-value weighted standard deviation of the portfolio's individual security durations around the total portfolio duration. The higher the dispersion, the more variable the security durations relative to the total portfolio duration ("barbellness"), and the smaller the dispersion, the more concentrated the holdings' durations around the overall portfolio's ("bulletness"). The purpose of this statistic is to gauge the "bulletness" or "barbellness" of a portfolio relative to its total duration and to that of its benchmark index.

Effective Yield - The effective yield is the actual total annualized return that would be realized if all securities in the portfolio were held to their expected maturities. Effective yield is calculated as the internal rate of return, using the current market value and all expected future interest and principal cash flows. This measure incorporates sinking fund paydowns, expected mortgage principal prepayments, and the exercise of any "in-the-money" imbedded put or call options.

Weighted Average Life - The weighted average life of a security is the weighted average time to payment of all remaining principal. It is calculated by multiplying each expected future principal payment amount by the time left to the payment. This amount is then divided by the total amount of principal remaining. Weighted average life is commonly used as a measure of the investment life for pass-through security types for comparison to non-pass-through securities.



**Historical Active Management
Premiums by Asset Class and
Style**

Third Quarter 2017

A Guide to Our Active versus Passive Data

This publication contains two charts for each category of active managers. The top table shows the percentage of rolling 3-year periods in which managers in various percentiles beat their benchmark by more than a certain fee hurdle.

The bottom chart displays the gross excess return for all the managers in Callan's database for specific asset class categories across the distribution spectrum, from the 10th percentile to the 90th percentile.

Large Cap Core Equity Style versus S&P 500

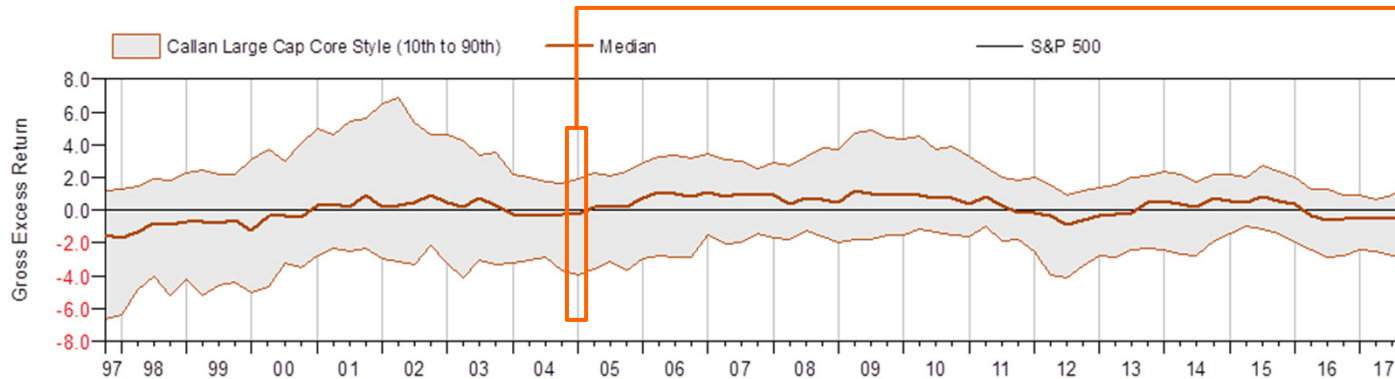
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%
Median	51%	49%	46%	40%	40%	36%	31%	30%	29%	29%
45th Percentile	61%	61%	60%	59%	59%	55%	54%	49%	41%	39%
40th Percentile	66%	65%	65%	65%	64%	64%	64%	61%	60%	59%
35th Percentile	80%	76%	73%	70%	70%	68%	68%	66%	65%	65%
30th Percentile	85%	85%	85%	81%	80%	80%	79%	78%	74%	71%
25th Percentile	94%	94%	93%	89%	86%	85%	84%	84%	83%	80%

Average Annualized 3-Year Excess Return (gross) – Median Manager: 0.16%

This data point indicates that managers in the 40th percentile beat the benchmark by at least 0.35% in 65% of the rolling 3-year periods over the last 20 years.

Rolling 3-Year Gross Excess Return relative to S&P 500 for 20 Years ended September 30, 2017



This data point shows that in the 4th quarter of 2004, the median manager in Callan's database reported gross excess returns over the benchmark of -0.25%, with returns ranging from 1.94% for managers in the 10th percentile to -3.95% for those in the 90th percentile.

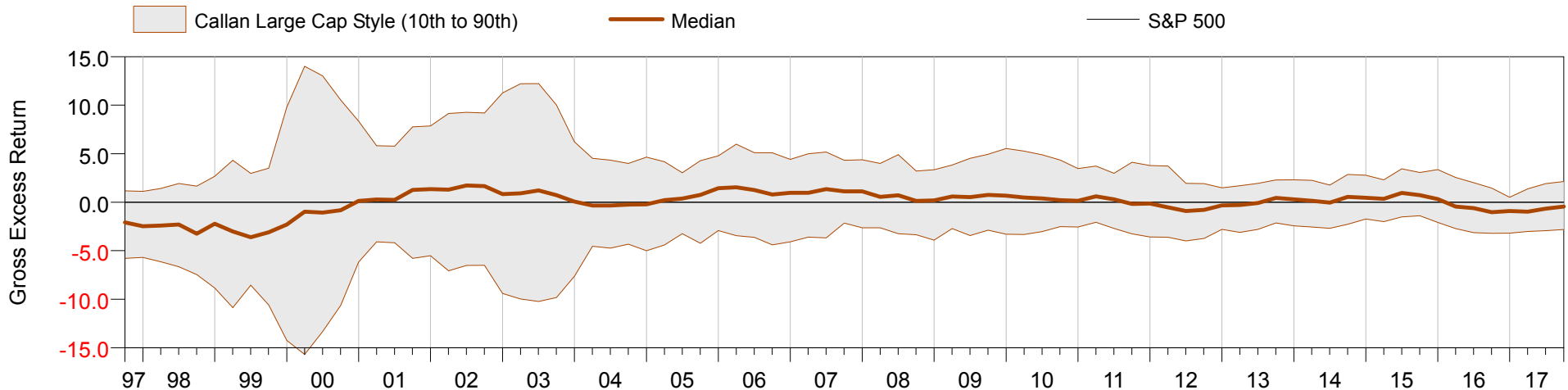
Large Cap Equity Style versus S&P 500

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%
Median	50%	48%	44%	41%	40%	36%	35%	31%	30%	29%
45th Percentile	61%	61%	60%	59%	55%	55%	53%	48%	45%	43%
40th Percentile	74%	74%	71%	71%	70%	70%	69%	66%	63%	60%
35th Percentile	81%	79%	79%	76%	76%	75%	75%	74%	71%	71%
30th Percentile	86%	86%	85%	83%	83%	81%	81%	78%	78%	76%
25th Percentile	90%	90%	90%	90%	90%	90%	90%	88%	88%	86%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.03%**

Rolling 3-Year Gross Excess Return relative to S&P 500 for 20 Years ended September 30, 2017



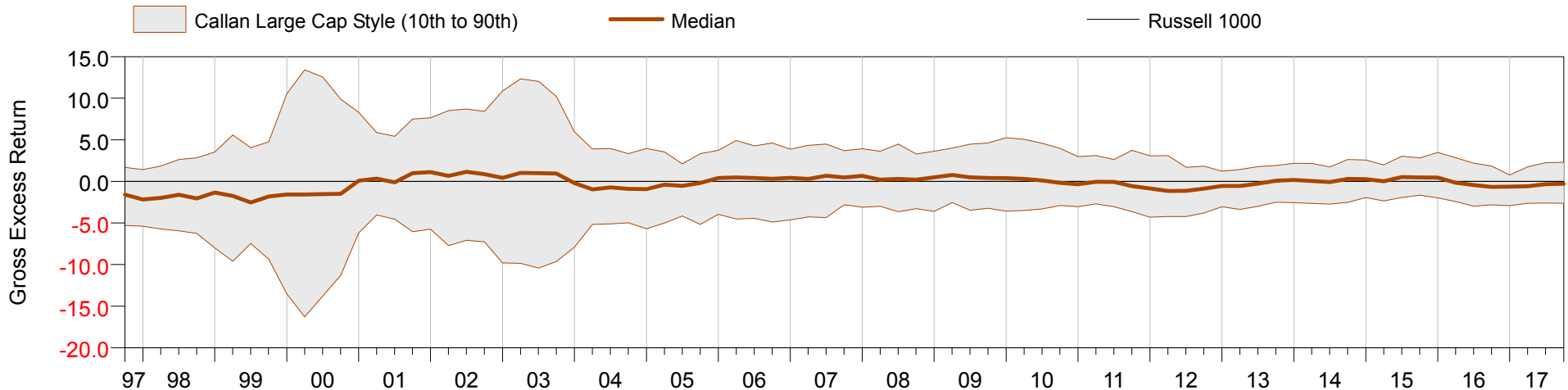
Large Cap Equity Style versus Russell 1000

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%
Median	39%	38%	30%	30%	23%	15%	14%	14%	14%	10%
45th Percentile	51%	48%	48%	48%	46%	43%	40%	39%	38%	34%
40th Percentile	69%	68%	64%	61%	58%	53%	51%	49%	48%	46%
35th Percentile	80%	78%	78%	78%	76%	75%	71%	69%	68%	63%
30th Percentile	91%	90%	88%	85%	85%	85%	84%	83%	80%	79%
25th Percentile	98%	95%	94%	94%	93%	90%	89%	88%	86%	86%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.21%**

Rolling 3-Year Gross Excess Return relative to Russell 1000 for 20 Years ended September 30, 2017



Large Cap Core Equity Style versus S&P 500

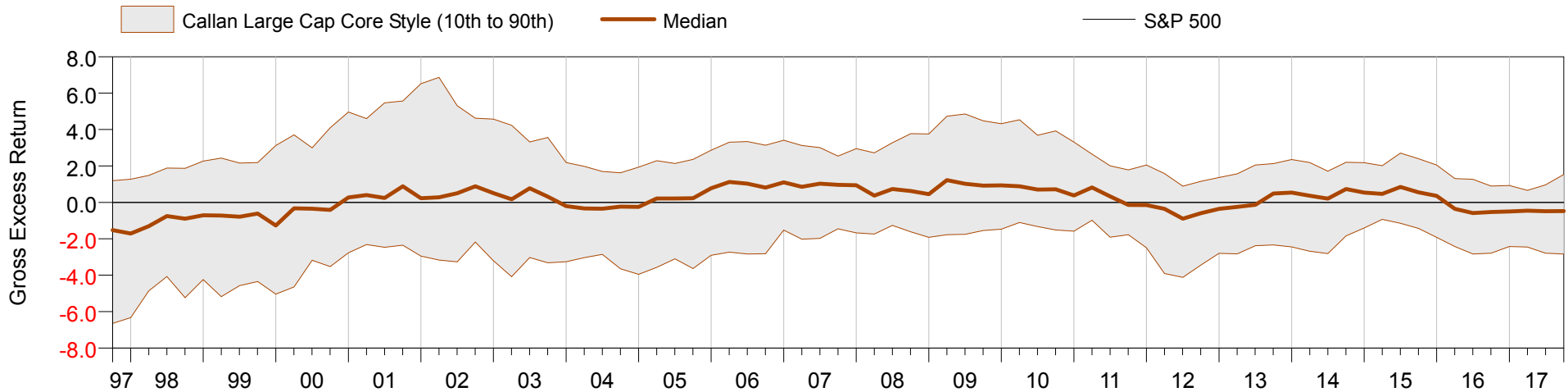
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%
Median	51%	49%	46%	40%	40%	36%	31%	30%	29%	29%
45th Percentile	61%	61%	60%	59%	59%	55%	54%	49%	41%	39%
40th Percentile	66%	65%	65%	65%	64%	64%	64%	61%	60%	59%
35th Percentile	80%	76%	73%	70%	70%	68%	68%	66%	65%	65%
30th Percentile	85%	85%	85%	81%	80%	80%	79%	78%	74%	71%
25th Percentile	94%	94%	93%	89%	86%	85%	84%	84%	83%	80%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.16%

Rolling 3-Year Gross Excess Return relative to S&P 500 for 20 Years ended September 30, 2017



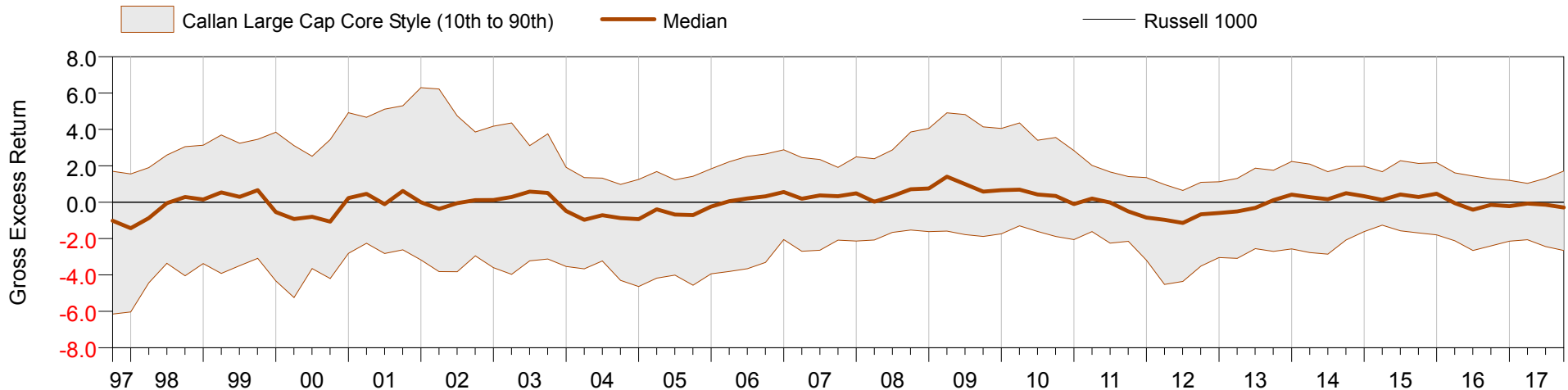
Large Cap Core Equity Style versus Russell 1000

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%
Median	39%	33%	28%	25%	21%	16%	14%	10%	9%	5%
45th Percentile	60%	55%	50%	48%	41%	36%	25%	21%	21%	16%
40th Percentile	70%	66%	65%	63%	60%	58%	51%	48%	46%	41%
35th Percentile	76%	74%	71%	68%	68%	65%	65%	59%	59%	55%
30th Percentile	86%	86%	84%	79%	74%	70%	70%	68%	68%	64%
25th Percentile	91%	90%	89%	88%	84%	83%	80%	76%	74%	74%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.02%**

Rolling 3-Year Gross Excess Return relative to Russell 1000 for 20 Years ended September 30, 2017



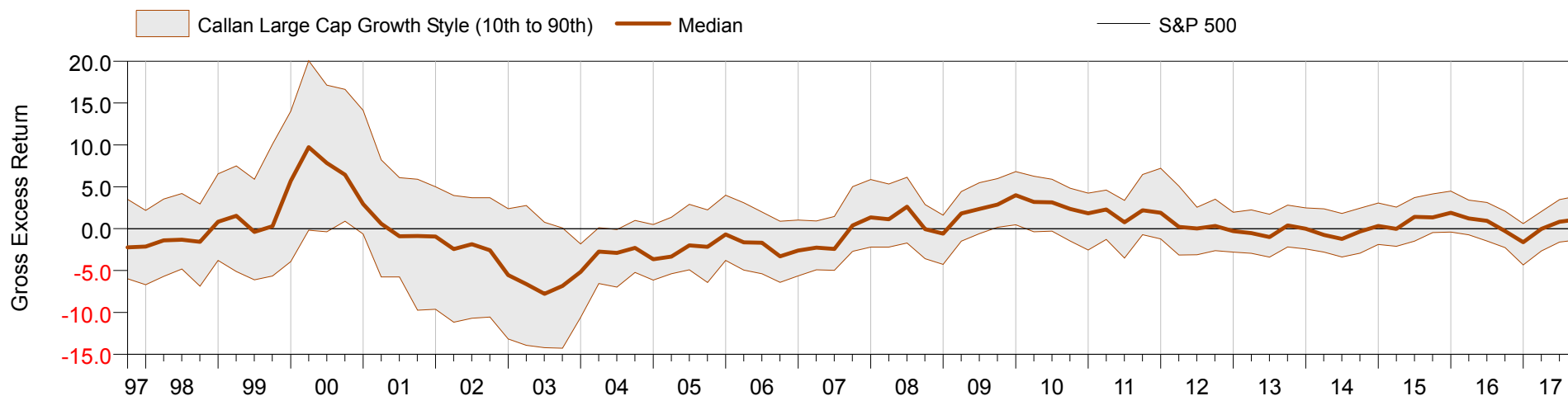
Large Cap Growth Equity Style versus S&P 500

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%
Median	44%	44%	40%	38%	38%	38%	38%	38%	36%	36%
45th Percentile	50%	48%	46%	46%	46%	44%	41%	41%	41%	40%
40th Percentile	58%	58%	55%	54%	51%	51%	50%	49%	49%	46%
35th Percentile	61%	61%	61%	59%	59%	59%	56%	54%	54%	54%
30th Percentile	73%	73%	69%	66%	64%	63%	63%	63%	61%	60%
25th Percentile	79%	79%	78%	78%	75%	75%	74%	74%	71%	70%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.10%**

Rolling 3-Year Gross Excess Return relative to S&P 500 for 20 Years ended September 30, 2017



Large Cap Growth Equity Style versus Russell 1000 Growth

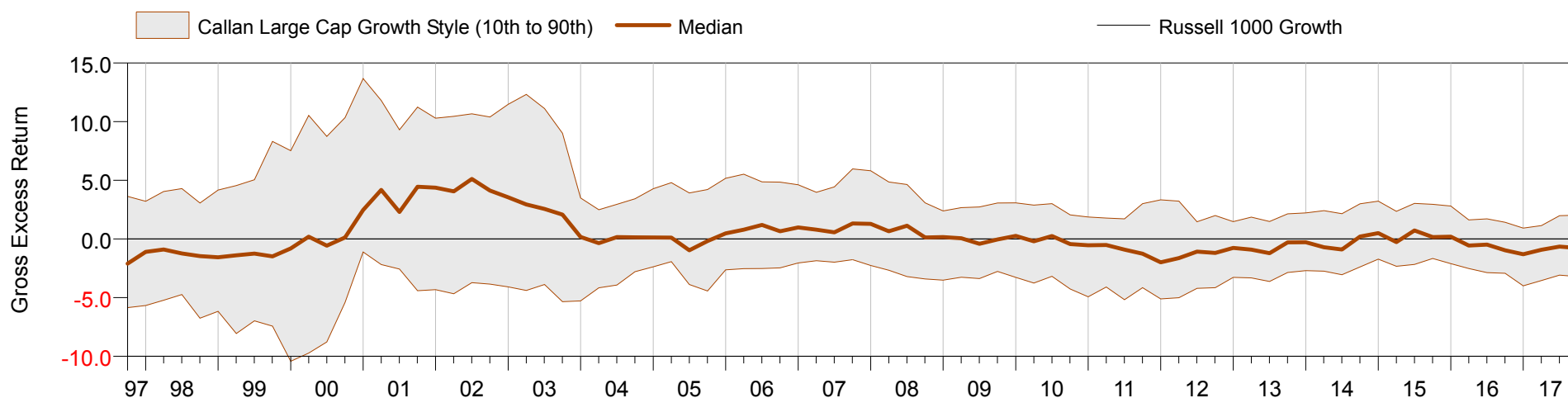
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%
Median	33%	31%	31%	31%	31%	29%	29%	28%	26%	25%
45th Percentile	51%	49%	45%	43%	40%	36%	35%	34%	34%	33%
40th Percentile	61%	60%	60%	59%	59%	55%	53%	50%	48%	44%
35th Percentile	71%	71%	69%	69%	66%	64%	63%	59%	59%	59%
30th Percentile	84%	84%	83%	80%	75%	74%	73%	69%	69%	68%
25th Percentile	94%	93%	93%	86%	86%	85%	84%	83%	81%	81%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.26%

Rolling 3-Year Gross Excess Return relative to Russell 1000 Growth for 20 Years ended September 30, 2017



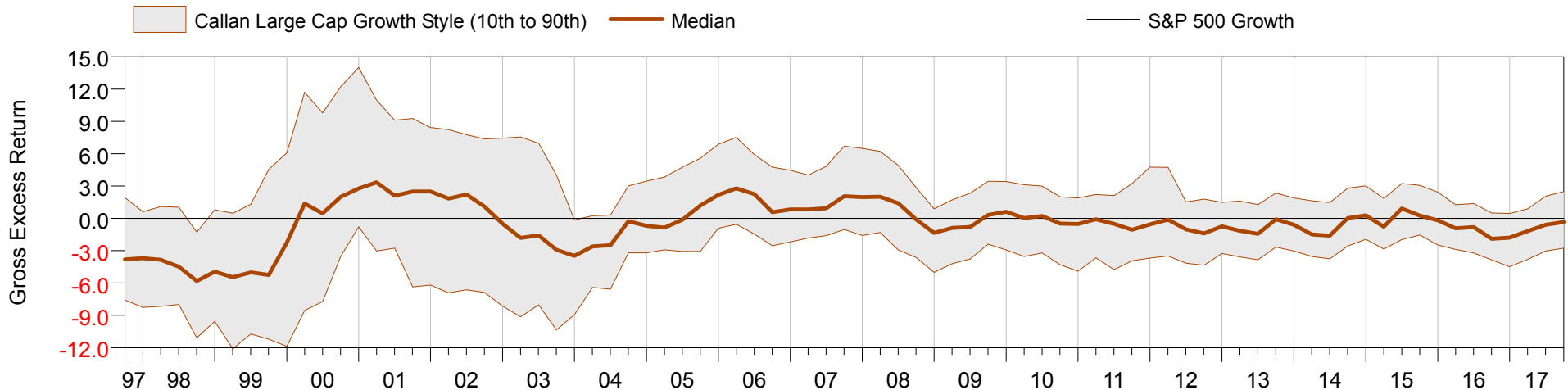
Large Cap Growth Equity Style versus S&P 500 Growth

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%
Median	35%	33%	31%	31%	31%	30%	30%	29%	28%	28%
45th Percentile	41%	41%	40%	40%	38%	36%	36%	35%	35%	35%
40th Percentile	51%	50%	50%	48%	46%	43%	41%	40%	39%	39%
35th Percentile	56%	55%	55%	55%	53%	50%	49%	48%	46%	46%
30th Percentile	65%	64%	64%	64%	63%	60%	60%	59%	59%	59%
25th Percentile	74%	73%	73%	70%	69%	68%	68%	66%	66%	65%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.48%**

Rolling 3-Year Gross Excess Return relative to S&P 500 Growth for 20 Years ended September 30, 2017



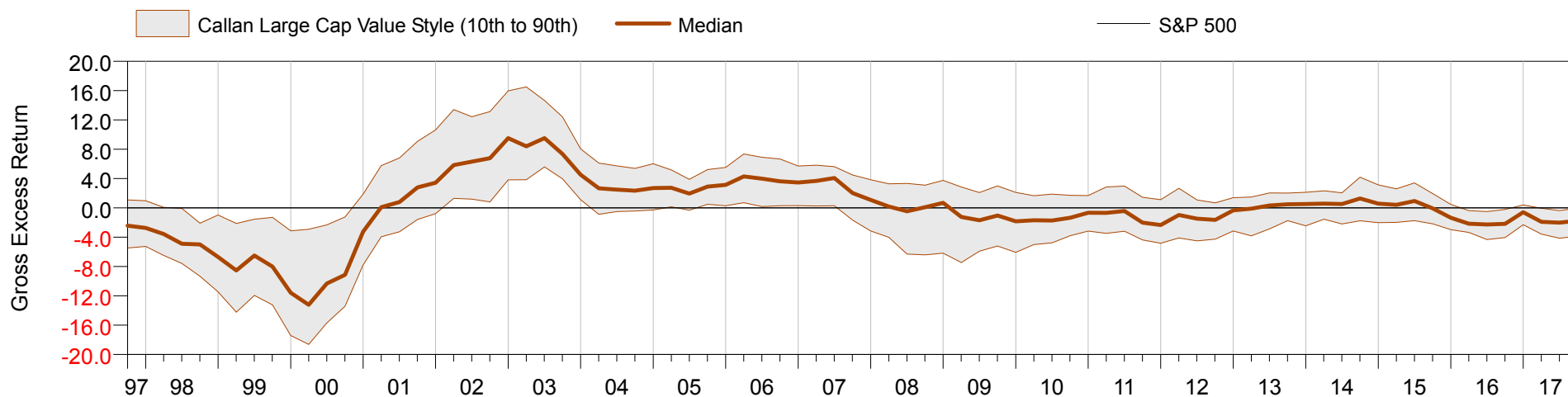
Large Cap Value Equity Style versus S&P 500

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%
Median	46%	46%	45%	45%	44%	43%	40%	38%	38%	36%
45th Percentile	50%	49%	48%	48%	48%	48%	46%	45%	44%	43%
40th Percentile	53%	53%	51%	51%	51%	51%	50%	50%	50%	49%
35th Percentile	55%	55%	55%	55%	55%	53%	53%	53%	53%	53%
30th Percentile	58%	58%	58%	58%	56%	56%	56%	55%	55%	53%
25th Percentile	61%	61%	61%	60%	59%	58%	58%	58%	58%	56%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.13%**

Rolling 3-Year Gross Excess Return relative to S&P 500 for 20 Years ended September 30, 2017



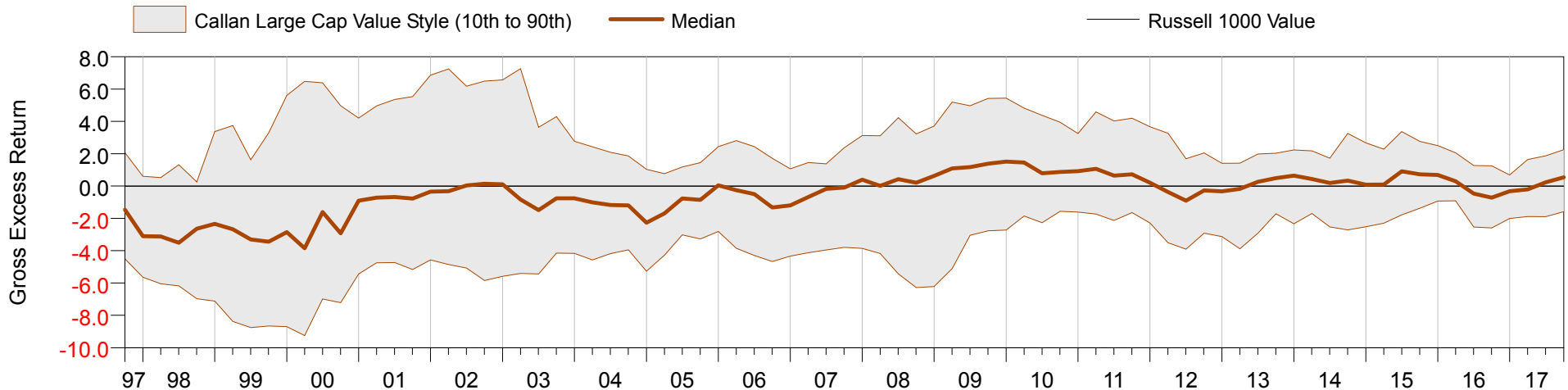
Large Cap Value Equity Style versus Russell 1000 Value

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%
Median	30%	28%	26%	25%	23%	21%	20%	20%	18%	15%
45th Percentile	45%	43%	43%	43%	39%	36%	34%	33%	29%	25%
40th Percentile	55%	53%	51%	48%	46%	46%	44%	44%	43%	40%
35th Percentile	65%	64%	61%	60%	58%	55%	54%	53%	51%	50%
30th Percentile	73%	70%	69%	69%	66%	66%	65%	61%	60%	60%
25th Percentile	79%	78%	76%	74%	74%	73%	70%	70%	70%	68%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.50%**

Rolling 3-Year Gross Excess Return relative to Russell 1000 Value for 20 Years ended September 30, 2017



Large Cap Value Equity Style versus S&P 500 Value

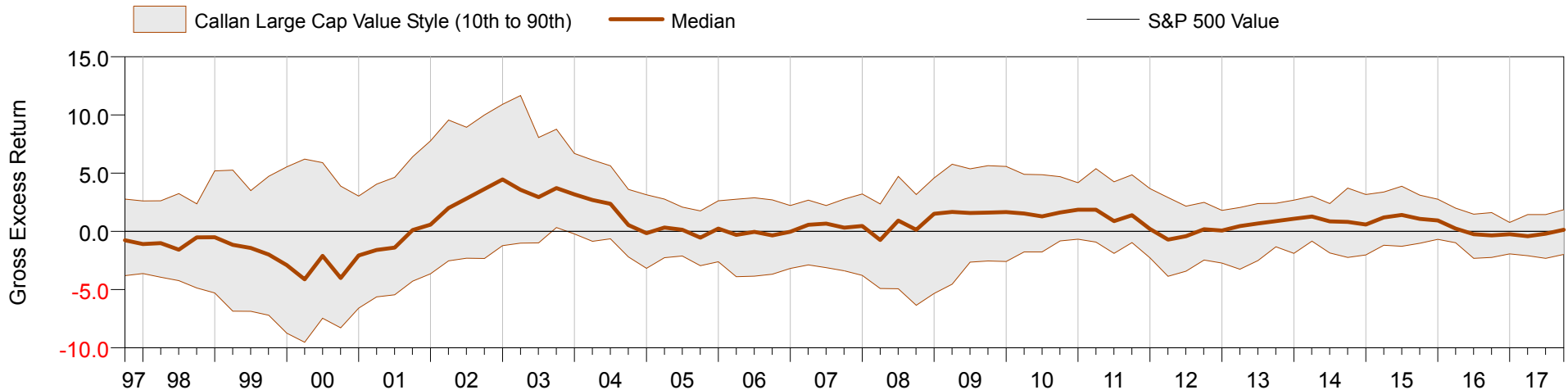
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%
Median	53%	53%	50%	50%	50%	48%	48%	43%	43%	40%
45th Percentile	64%	60%	60%	58%	55%	54%	51%	51%	50%	48%
40th Percentile	68%	68%	64%	63%	63%	61%	59%	58%	58%	56%
35th Percentile	76%	74%	73%	73%	71%	70%	69%	65%	63%	60%
30th Percentile	85%	84%	81%	80%	79%	78%	78%	76%	74%	74%
25th Percentile	94%	93%	93%	90%	90%	88%	88%	84%	84%	84%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.43%

Rolling 3-Year Gross Excess Return relative to S&P 500 Value
for 20 Years ended September 30, 2017



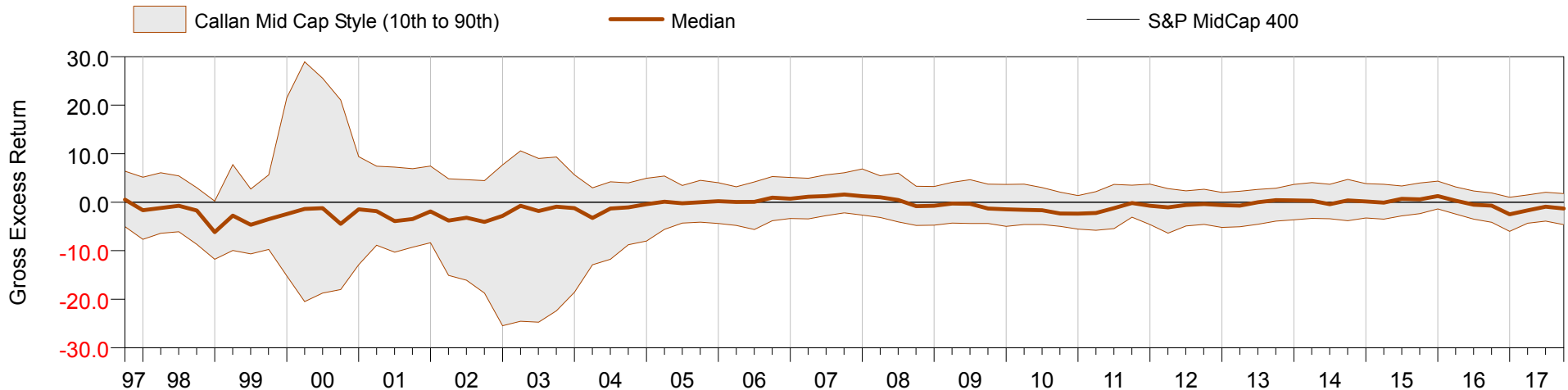
Mid Cap Broad Equity Style versus S&P MidCap 400

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	18%	15%	14%	13%	13%	13%	11%	10%	9%	9%
45th Percentile	30%	30%	28%	26%	25%	24%	23%	21%	18%	15%
40th Percentile	51%	51%	50%	49%	46%	45%	44%	44%	43%	41%
35th Percentile	61%	61%	61%	58%	58%	56%	55%	54%	54%	54%
30th Percentile	75%	74%	71%	69%	68%	68%	65%	61%	60%	59%
25th Percentile	85%	85%	85%	84%	81%	80%	80%	79%	76%	75%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-1.05%**

Rolling 3-Year Gross Excess Return relative to S&P MidCap 400 for 20 Years ended September 30, 2017



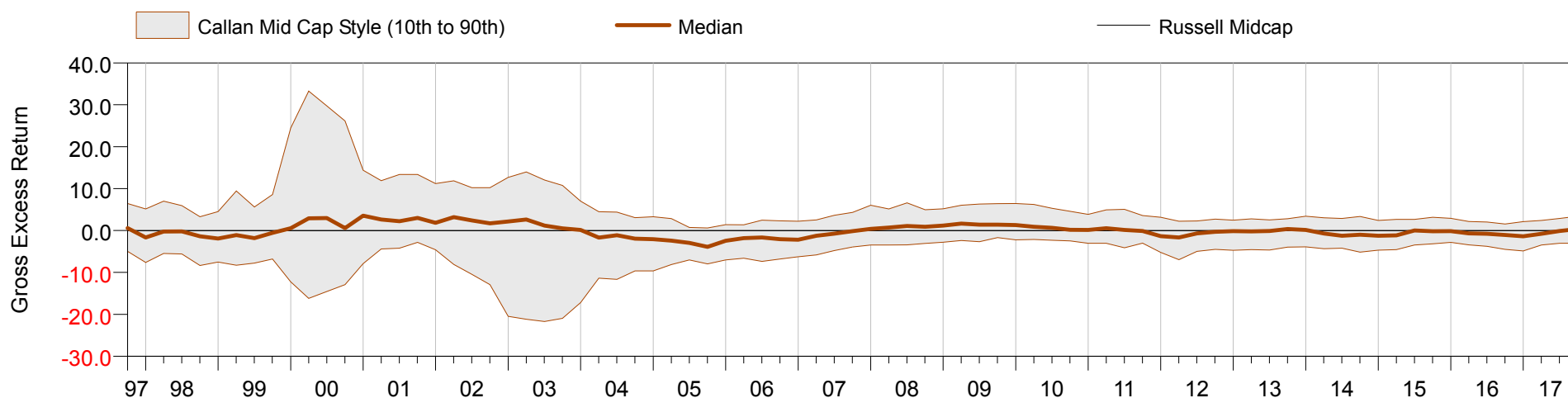
Mid Cap Equity Style versus Russell Midcap

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	38%	35%	34%	34%	30%	29%	29%	28%	26%	26%
45th Percentile	45%	45%	44%	43%	43%	43%	41%	39%	39%	39%
40th Percentile	60%	58%	54%	54%	54%	54%	54%	53%	50%	49%
35th Percentile	69%	69%	65%	65%	64%	61%	59%	56%	56%	56%
30th Percentile	83%	83%	83%	79%	78%	75%	73%	73%	69%	66%
25th Percentile	90%	89%	88%	86%	86%	85%	85%	85%	85%	85%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.05%**

Rolling 3-Year Gross Excess Return relative to Russell Midcap for 20 Years ended September 30, 2017



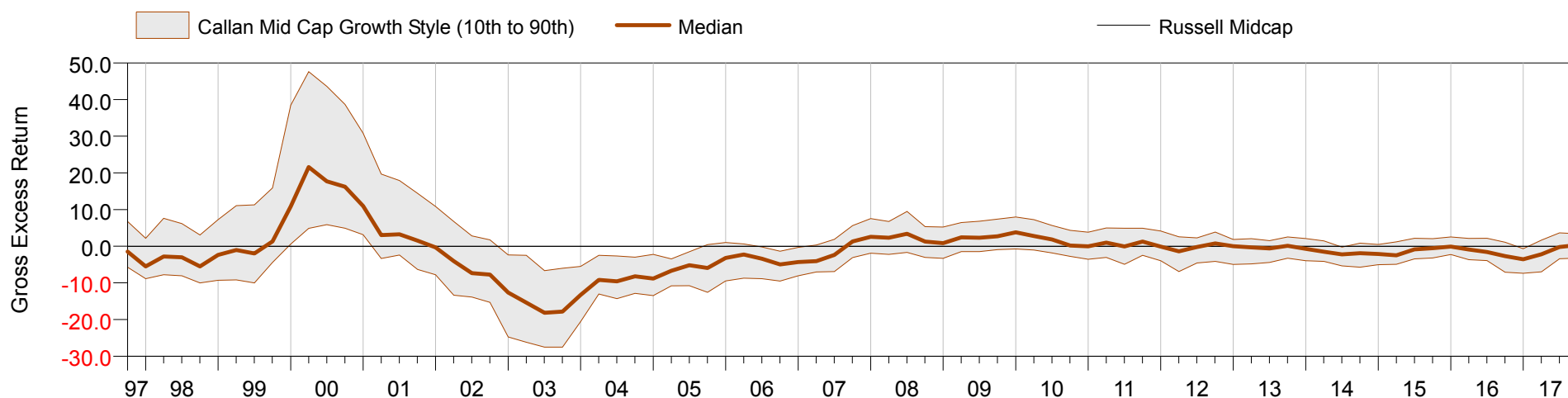
Mid Cap Growth Equity Style versus Russell Midcap

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	30%	30%	30%	30%	30%	30%	30%	30%	30%	29%
45th Percentile	36%	34%	33%	33%	33%	33%	33%	33%	33%	33%
40th Percentile	43%	43%	40%	40%	39%	39%	36%	35%	35%	35%
35th Percentile	45%	44%	44%	44%	43%	41%	41%	41%	41%	40%
30th Percentile	55%	50%	49%	48%	48%	46%	45%	44%	44%	44%
25th Percentile	61%	61%	60%	60%	58%	55%	55%	53%	53%	53%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-1.31%**

Rolling 3-Year Gross Excess Return relative to Russell Midcap for 20 Years ended September 30, 2017



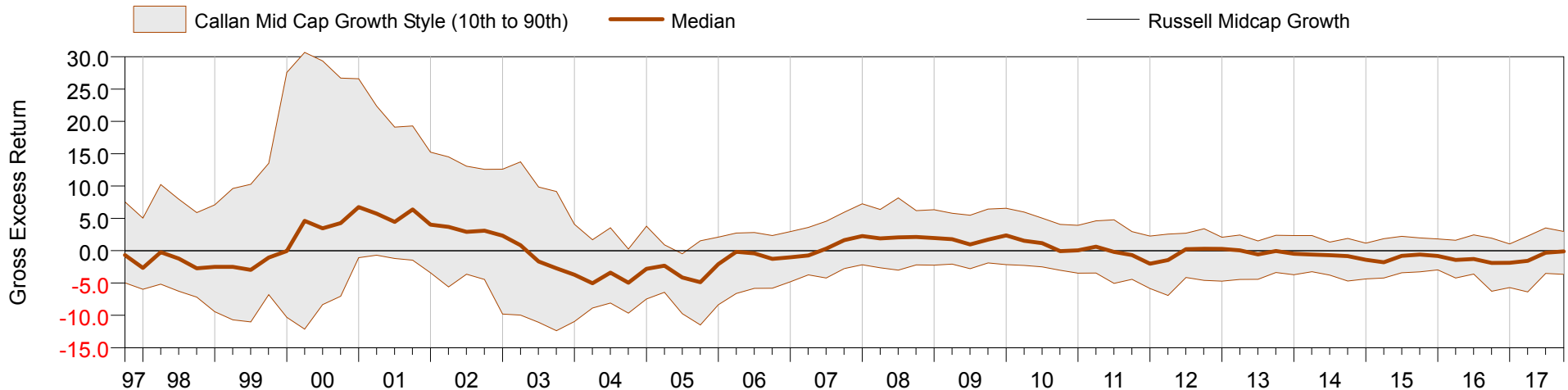
Mid Cap Growth Equity Style versus Russell Midcap Growth

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	33%	33%	33%	33%	33%	33%	31%	31%	31%	31%
45th Percentile	43%	41%	40%	38%	36%	35%	33%	33%	33%	33%
40th Percentile	49%	49%	48%	45%	44%	44%	43%	41%	41%	41%
35th Percentile	55%	55%	54%	54%	53%	51%	50%	50%	48%	45%
30th Percentile	65%	65%	64%	63%	61%	59%	59%	56%	56%	55%
25th Percentile	83%	81%	80%	79%	75%	73%	71%	71%	71%	71%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.02%**

Rolling 3-Year Gross Excess Return relative to Russell Midcap Growth for 20 Years ended September 30, 2017



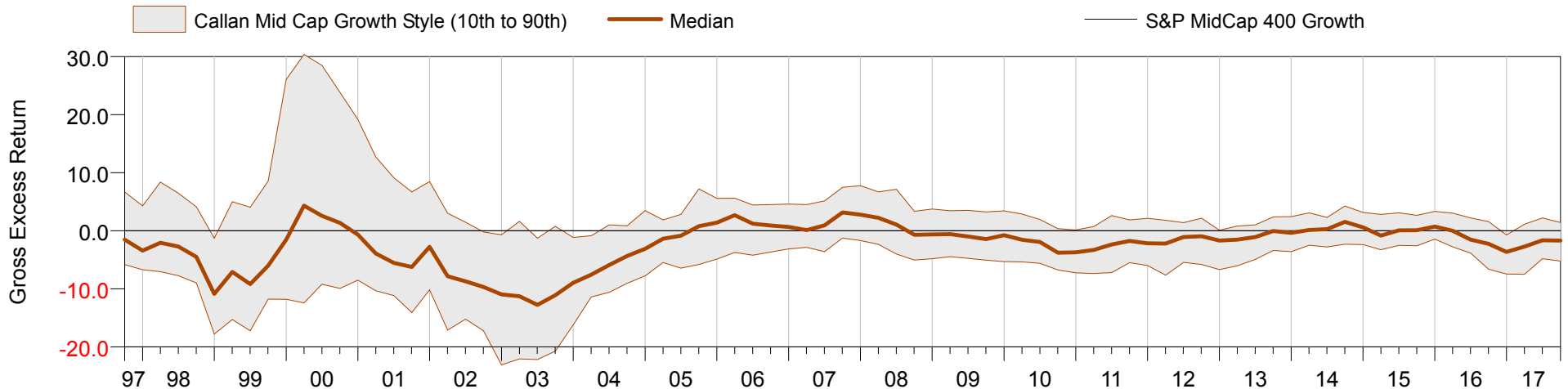
Mid Cap Growth Equity Style versus S&P MidCap 400 Growth

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	21%	21%	21%	21%	21%	20%	19%	19%	18%	16%
45th Percentile	25%	24%	23%	23%	23%	23%	23%	23%	23%	20%
40th Percentile	30%	30%	30%	28%	25%	25%	24%	24%	24%	24%
35th Percentile	38%	38%	36%	36%	36%	35%	34%	34%	33%	31%
30th Percentile	48%	46%	46%	45%	45%	44%	44%	44%	44%	41%
25th Percentile	55%	55%	55%	54%	54%	50%	50%	50%	49%	49%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-2.38%**

Rolling 3-Year Gross Excess Return relative to S&P MidCap 400 Growth for 20 Years ended September 30, 2017



Mid Cap Value Equity Style versus Russell Midcap

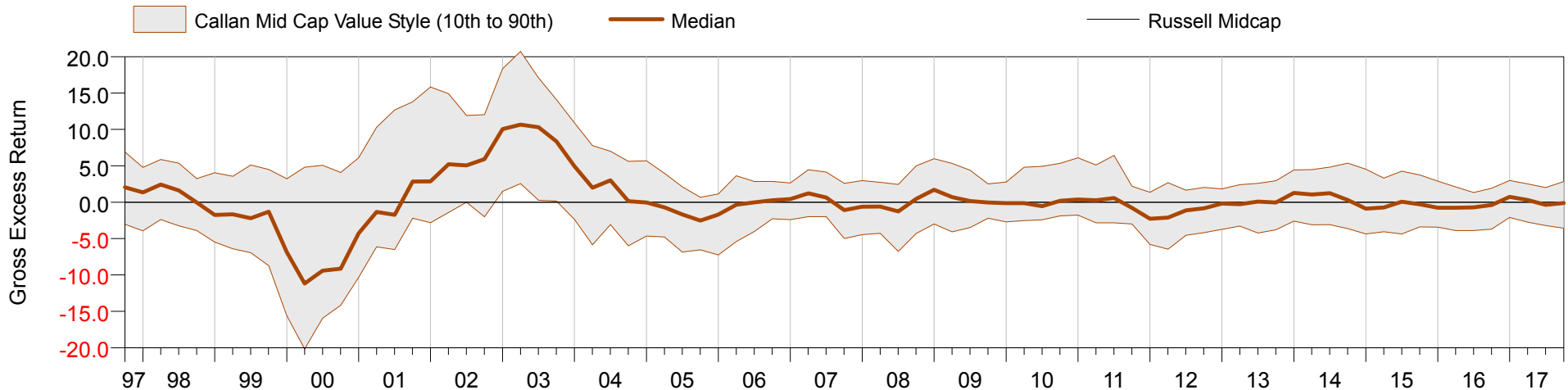
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	34%	33%	31%	30%	30%	29%	29%	28%	25%	25%
45th Percentile	44%	43%	39%	39%	38%	38%	38%	35%	33%	33%
40th Percentile	63%	61%	58%	53%	49%	49%	48%	48%	48%	48%
35th Percentile	68%	68%	66%	66%	63%	63%	59%	59%	55%	53%
30th Percentile	81%	79%	76%	75%	74%	73%	68%	66%	66%	65%
25th Percentile	84%	84%	84%	84%	81%	80%	80%	80%	79%	78%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.18%

Rolling 3-Year Gross Excess Return relative to Russell Midcap for 20 Years ended September 30, 2017



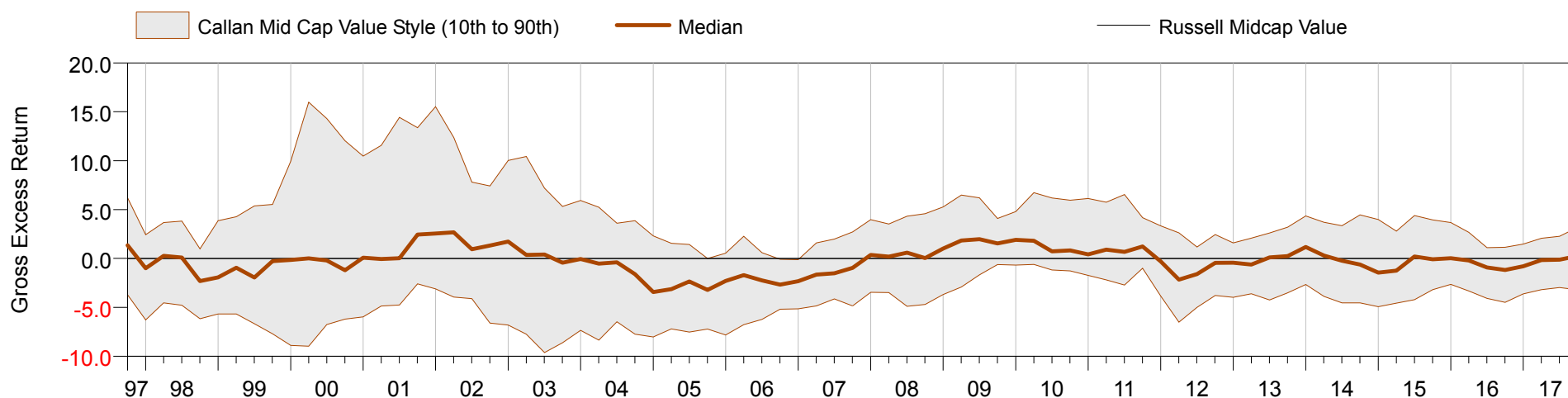
Mid Cap Value Equity Style versus Russell Midcap Value

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	29%	26%	24%	24%	24%	23%	23%	21%	20%	20%
45th Percentile	45%	45%	41%	40%	40%	39%	36%	35%	33%	31%
40th Percentile	56%	55%	55%	54%	53%	50%	49%	45%	44%	44%
35th Percentile	61%	61%	60%	60%	60%	56%	56%	54%	51%	51%
30th Percentile	75%	75%	75%	75%	73%	73%	71%	71%	69%	65%
25th Percentile	80%	80%	80%	80%	78%	76%	76%	76%	75%	75%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.27%**

Rolling 3-Year Gross Excess Return relative to Russell Midcap Value for 20 Years ended September 30, 2017



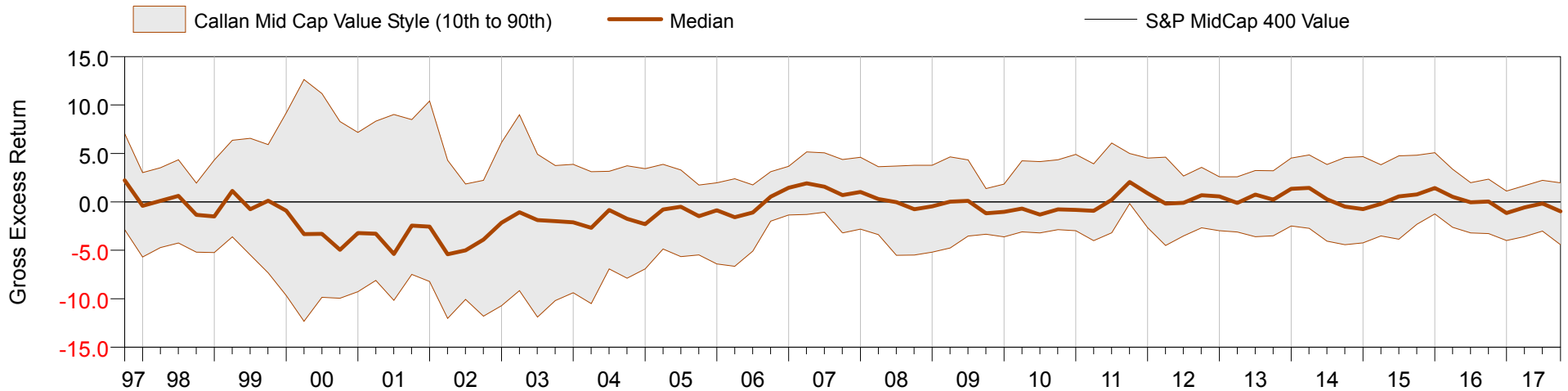
Mid Cap Value Equity Style versus S&P MidCap 400 Value

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	24%	24%	24%	24%	21%	19%	18%	16%	14%	13%
45th Percentile	31%	31%	31%	30%	29%	29%	25%	25%	23%	21%
40th Percentile	51%	51%	46%	44%	40%	38%	38%	34%	31%	31%
35th Percentile	63%	60%	59%	59%	58%	56%	54%	53%	51%	50%
30th Percentile	71%	69%	69%	68%	68%	66%	66%	64%	63%	60%
25th Percentile	86%	84%	81%	81%	81%	78%	78%	76%	75%	74%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.77%**

Rolling 3-Year Gross Excess Return relative to S&P MidCap 400 Value for 20 Years ended September 30, 2017



Smid Cap Equity Style versus Russell 2500

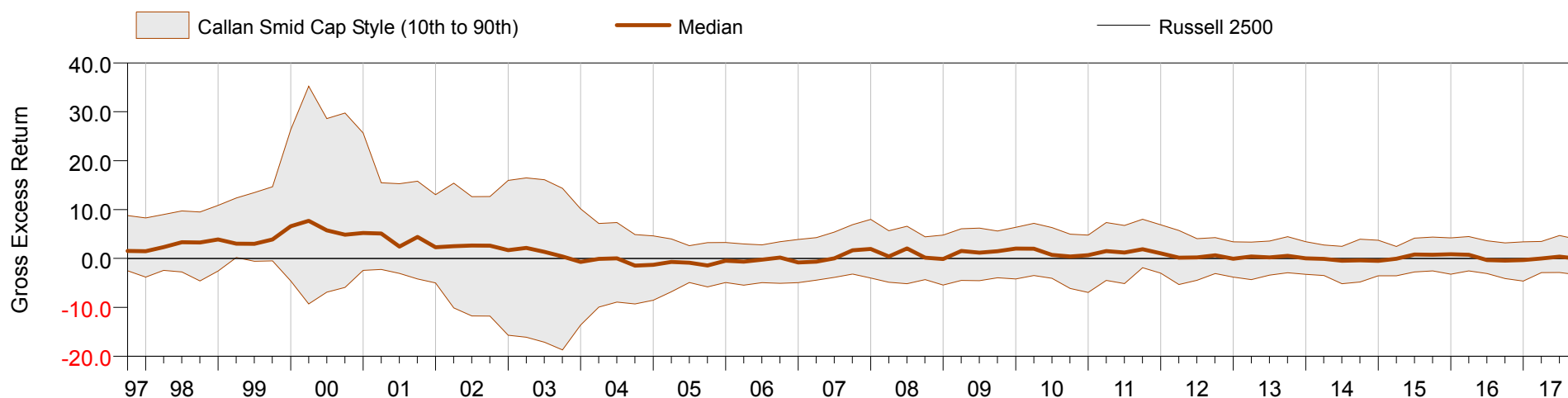
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	60%	59%	54%	54%	53%	53%	51%	50%	50%	46%
45th Percentile	76%	74%	71%	69%	66%	63%	61%	61%	61%	58%
40th Percentile	88%	88%	86%	86%	85%	84%	81%	79%	78%	75%
35th Percentile	93%	93%	93%	93%	91%	89%	88%	88%	88%	86%
30th Percentile	100%	99%	99%	99%	99%	99%	98%	96%	95%	94%
25th Percentile	100%	100%	100%	100%	100%	100%	99%	99%	99%	99%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.23%

Rolling 3-Year Gross Excess Return relative to Russell 2500 for 20 Years ended September 30, 2017



Smid Cap Growth Equity Style versus Russell 2500 Growth

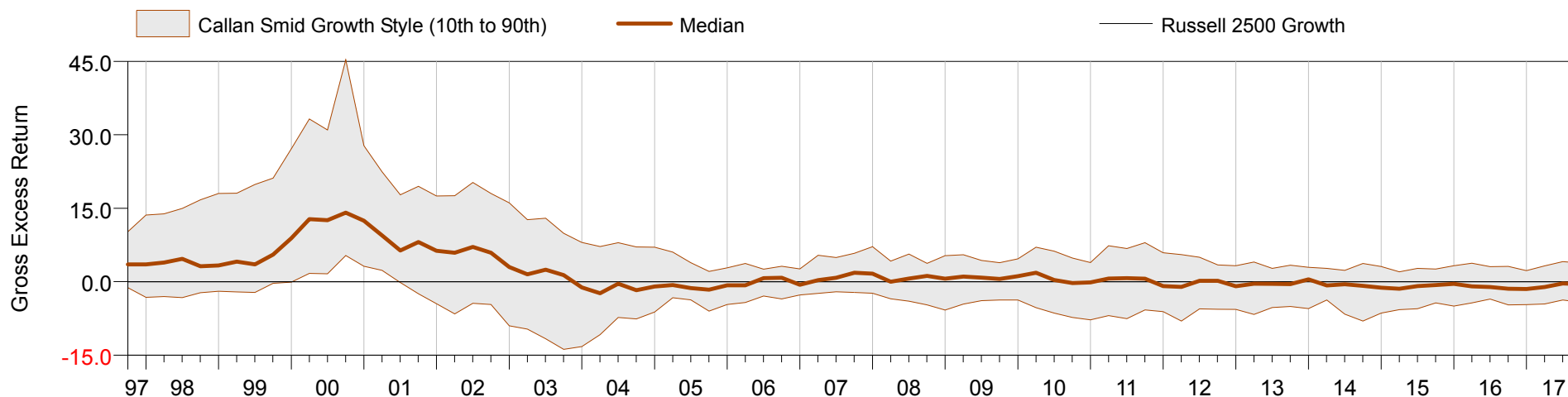
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	53%	51%	51%	50%	50%	49%	45%	44%	43%	41%
45th Percentile	59%	59%	59%	59%	58%	56%	56%	55%	54%	53%
40th Percentile	64%	64%	63%	63%	63%	63%	63%	61%	60%	60%
35th Percentile	78%	78%	78%	76%	75%	70%	70%	69%	69%	69%
30th Percentile	90%	86%	85%	85%	85%	83%	83%	78%	76%	74%
25th Percentile	98%	98%	96%	95%	95%	94%	94%	94%	94%	91%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.72%

Rolling 3-Year Gross Excess Return relative to Russell 2500 Growth for 20 Years ended September 30, 2017



Smid Cap Value Equity Style versus Russell 2500 Value

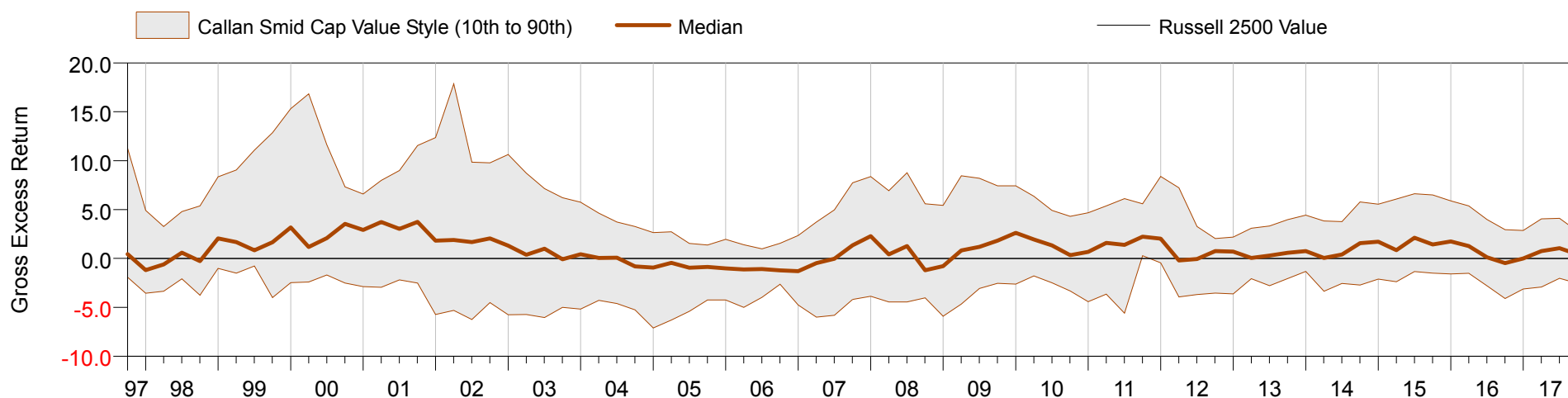
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	64%	63%	58%	58%	58%	55%	55%	54%	53%	49%
45th Percentile	78%	76%	76%	73%	70%	70%	66%	66%	64%	64%
40th Percentile	81%	81%	79%	79%	78%	78%	78%	78%	75%	74%
35th Percentile	85%	85%	85%	81%	81%	80%	80%	80%	80%	79%
30th Percentile	89%	89%	85%	85%	85%	84%	84%	81%	81%	81%
25th Percentile	96%	95%	94%	93%	93%	93%	90%	89%	86%	85%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.83%

Rolling 3-Year Gross Excess Return relative to Russell 2500 Value for 20 Years ended September 30, 2017



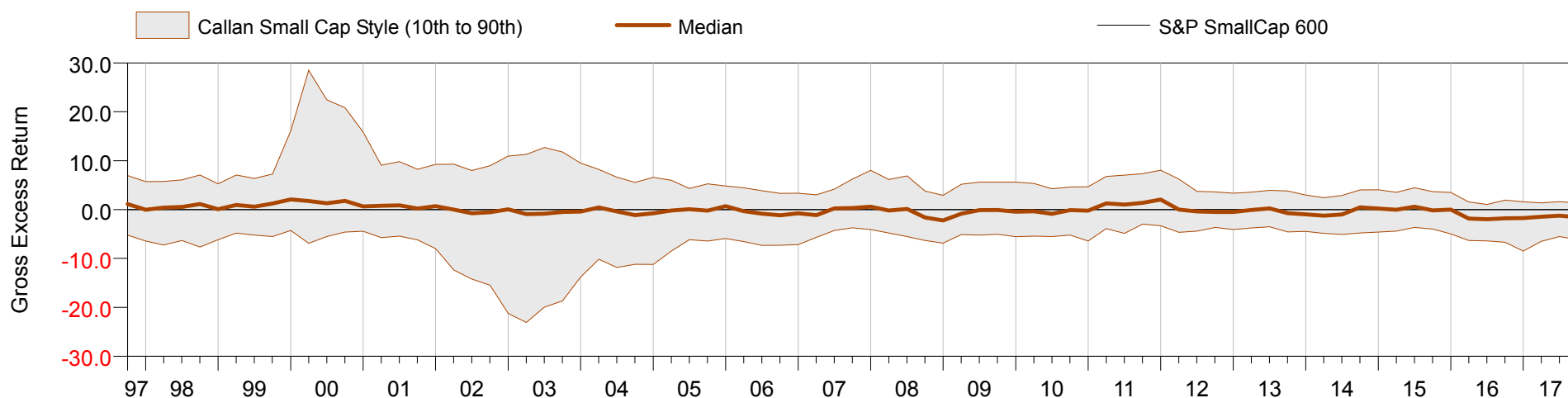
Small Cap Equity Style versus S&P SmallCap 600

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%	0.95%
Median	25%	24%	23%	20%	19%	16%	15%	15%	14%	14%
45th Percentile	49%	45%	44%	41%	41%	39%	38%	34%	33%	31%
40th Percentile	69%	66%	66%	65%	64%	63%	59%	58%	54%	51%
35th Percentile	79%	78%	78%	78%	78%	75%	74%	73%	71%	68%
30th Percentile	88%	86%	86%	86%	86%	85%	85%	85%	85%	83%
25th Percentile	90%	90%	90%	90%	90%	89%	89%	89%	88%	86%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-0.12%**

Rolling 3-Year Gross Excess Return relative to S&P SmallCap 600
for 20 Years ended September 30, 2017



Small Cap Equity Style versus Russell 2000

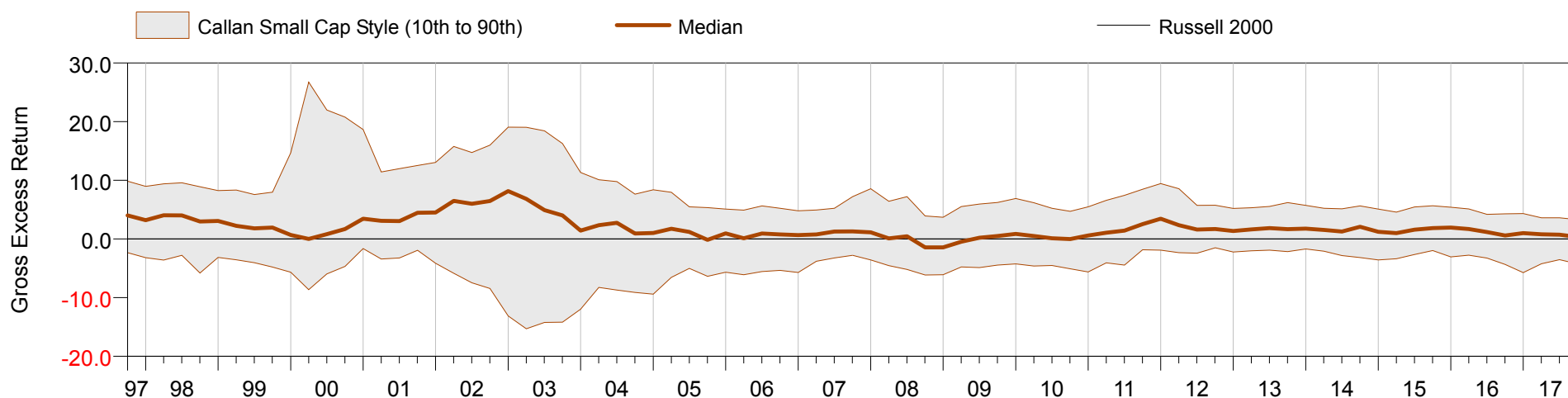
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%	0.95%
Median	84%	83%	80%	80%	78%	76%	73%	70%	70%	68%
45th Percentile	95%	93%	93%	90%	89%	88%	88%	88%	88%	84%
40th Percentile	98%	98%	98%	98%	98%	98%	96%	93%	91%	91%
35th Percentile	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%
30th Percentile	99%	98%	98%	98%	98%	98%	98%	98%	98%	98%
25th Percentile	100%	100%	100%	100%	100%	99%	99%	99%	99%	99%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.85%

Rolling 3-Year Gross Excess Return relative to Russell 2000 for 20 Years ended September 30, 2017



Small Cap Growth Equity Style versus Russell 2000

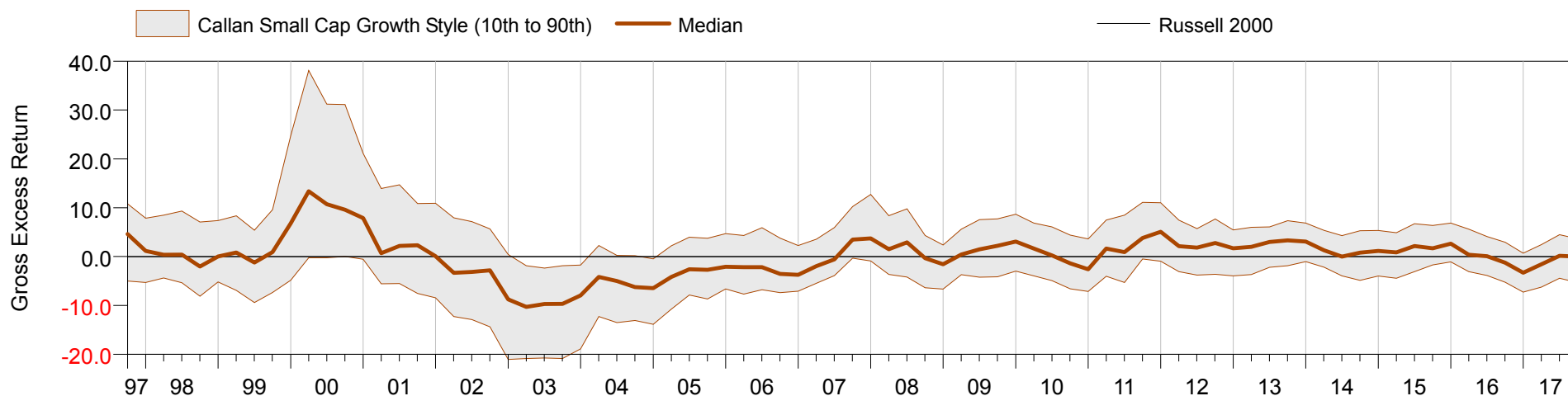
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%	0.95%
Median	48%	48%	48%	48%	46%	46%	46%	44%	43%	40%
45th Percentile	55%	55%	55%	54%	54%	51%	51%	51%	51%	51%
40th Percentile	61%	60%	60%	60%	60%	60%	59%	59%	59%	58%
35th Percentile	68%	68%	66%	66%	66%	65%	65%	63%	63%	60%
30th Percentile	74%	74%	73%	73%	71%	71%	70%	70%	70%	69%
25th Percentile	84%	81%	79%	79%	78%	78%	76%	75%	75%	75%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.03%

Rolling 3-Year Gross Excess Return relative to Russell 2000 for 20 Years ended September 30, 2017



Small Cap Growth Equity Style versus Russell 2000 Growth

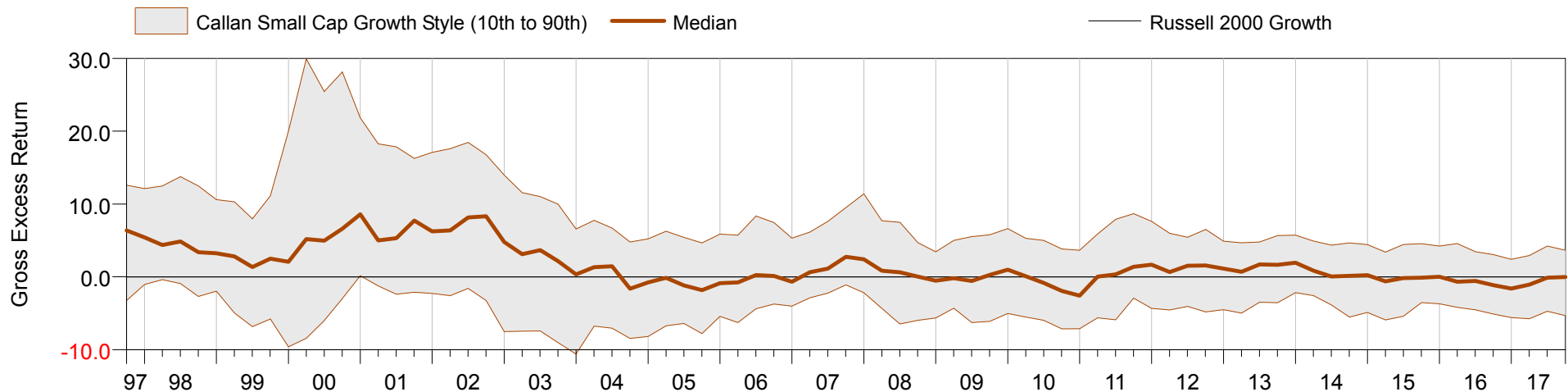
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%	0.95%
Median	55%	55%	55%	53%	51%	50%	50%	49%	48%	48%
45th Percentile	68%	63%	61%	60%	60%	59%	59%	59%	59%	56%
40th Percentile	86%	85%	85%	85%	81%	76%	75%	73%	71%	70%
35th Percentile	89%	88%	88%	88%	88%	88%	88%	88%	86%	86%
30th Percentile	95%	95%	95%	94%	94%	94%	94%	94%	94%	93%
25th Percentile	100%	100%	100%	99%	99%	99%	99%	99%	98%	96%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.57%

Rolling 3-Year Gross Excess Return relative to Russell 2000 Growth for 20 Years ended September 30, 2017



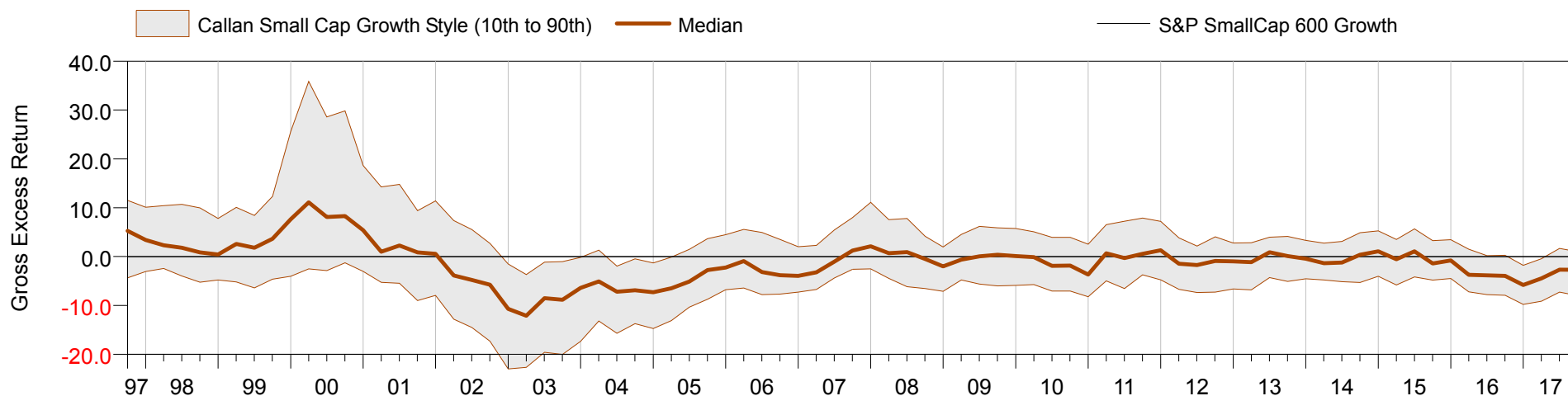
Small Cap Growth Equity Style vs S&P SmallCap 600 Growth

How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%	0.95%
Median	33%	33%	30%	30%	29%	28%	28%	28%	24%	23%
45th Percentile	39%	39%	39%	38%	38%	36%	35%	35%	35%	35%
40th Percentile	48%	48%	48%	48%	48%	48%	46%	41%	40%	40%
35th Percentile	56%	56%	55%	51%	51%	50%	49%	49%	49%	49%
30th Percentile	63%	63%	61%	60%	59%	59%	59%	59%	59%	59%
25th Percentile	69%	69%	69%	69%	69%	68%	68%	66%	66%	64%

Average Annualized 3-Year Excess Return (gross) – Median Manager: **-1.20%**

Rolling 3-Year Gross Excess Return relative to S&P SmallCap 600 Growth for 20 Years ended September 30, 2017



Small Cap Value Equity Style versus Russell 2000

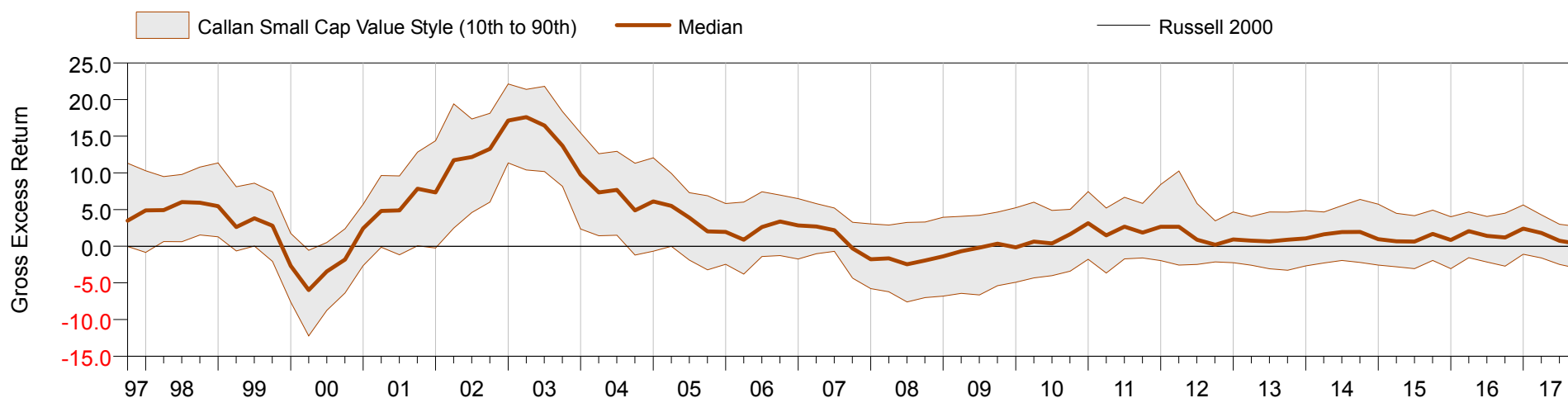
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%	0.95%
Median	79%	79%	79%	76%	74%	73%	71%	70%	69%	65%
45th Percentile	84%	84%	84%	84%	84%	83%	83%	83%	80%	79%
40th Percentile	86%	86%	86%	86%	86%	85%	84%	84%	84%	83%
35th Percentile	89%	89%	89%	89%	89%	89%	89%	88%	88%	88%
30th Percentile	91%	91%	90%	90%	89%	89%	89%	89%	89%	89%
25th Percentile	95%	95%	95%	95%	95%	95%	93%	93%	93%	93%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

3.11%

Rolling 3-Year Gross Excess Return relative to Russell 2000 for 20 Years ended September 30, 2017



Small Cap Value Equity Style versus Russell 2000 Value

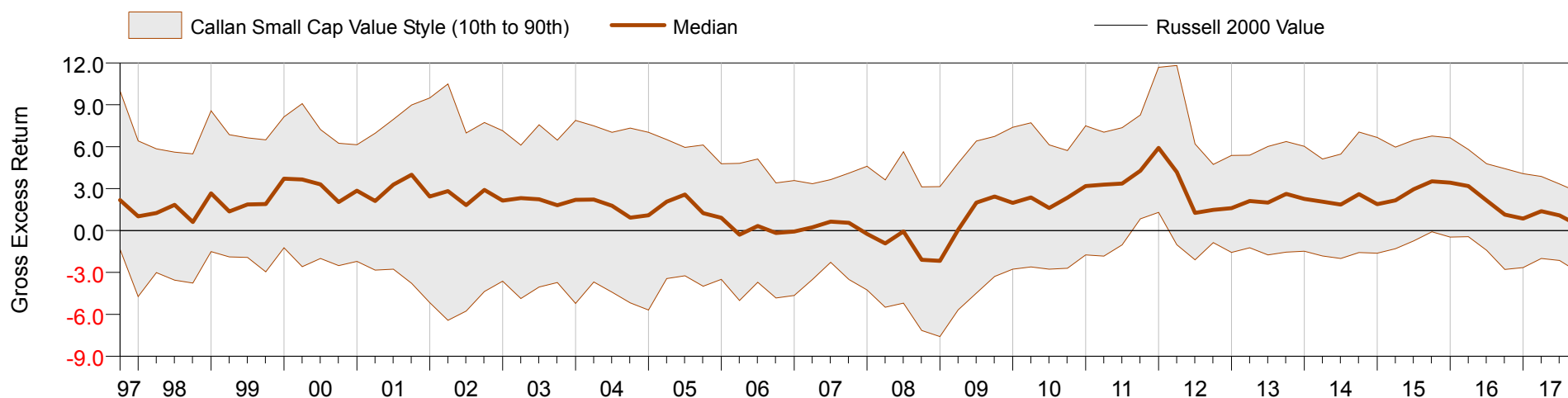
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%	0.95%
Median	85%	85%	84%	81%	81%	81%	81%	81%	80%	78%
45th Percentile	86%	86%	86%	86%	85%	85%	84%	81%	81%	81%
40th Percentile	94%	93%	93%	93%	91%	89%	88%	88%	88%	88%
35th Percentile	96%	96%	95%	95%	95%	95%	94%	94%	94%	94%
30th Percentile	98%	98%	98%	98%	98%	98%	96%	95%	95%	95%
25th Percentile	99%	99%	99%	99%	99%	99%	99%	99%	98%	98%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.85%

Rolling 3-Year Gross Excess Return relative to Russell 2000 Value for 20 Years ended September 30, 2017



Small Cap Value Equity Style versus S&P SmallCap 600 Value

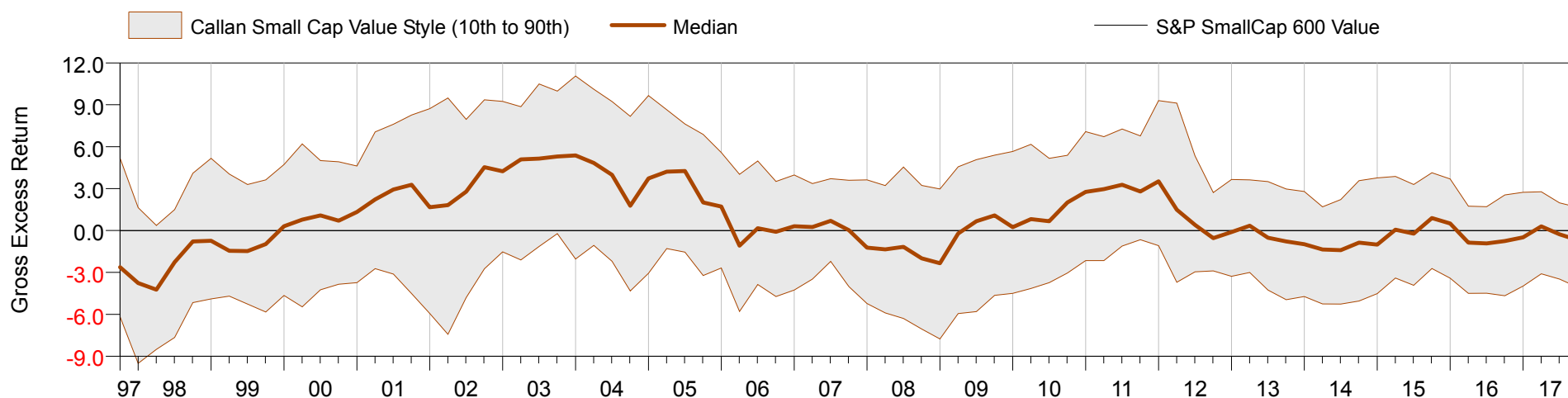
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%	0.95%
Median	48%	46%	46%	46%	44%	41%	40%	39%	38%	38%
45th Percentile	54%	53%	53%	50%	49%	49%	48%	48%	46%	46%
40th Percentile	60%	59%	58%	58%	56%	54%	53%	53%	50%	49%
35th Percentile	74%	69%	68%	66%	65%	64%	63%	61%	61%	61%
30th Percentile	84%	84%	83%	81%	79%	79%	76%	74%	70%	69%
25th Percentile	89%	89%	89%	89%	88%	85%	85%	85%	85%	83%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.81%

Rolling 3-Year Gross Excess Return relative to S&P SmallCap 600 Value for 20 Years ended September 30, 2017



Micro Cap Equity Style versus Russell Microcap

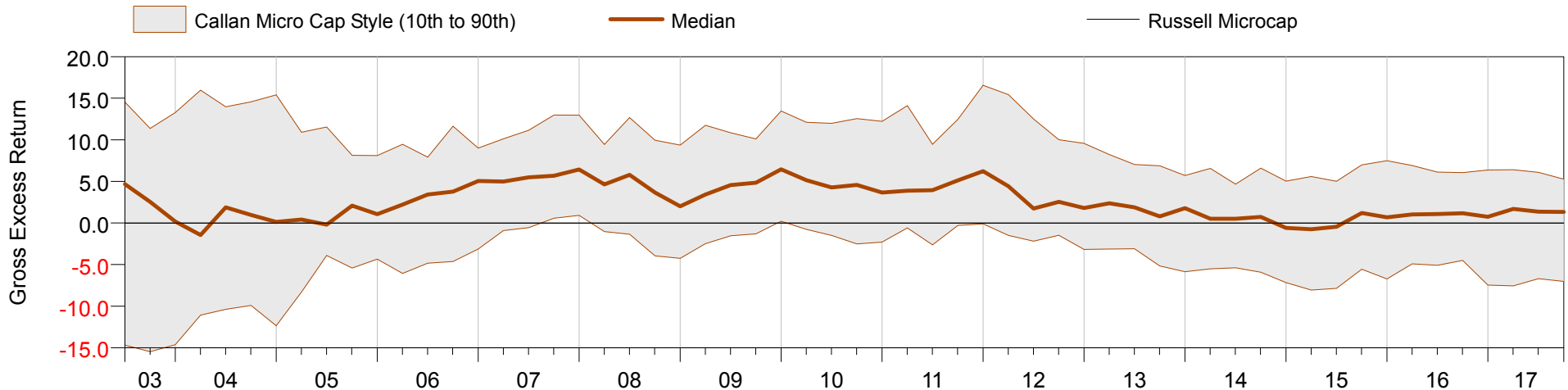
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.80%	0.85%	0.90%	0.95%	1.00%	1.05%	1.10%	1.15%	1.20%	1.25%
Median	75%	75%	75%	75%	74%	72%	68%	68%	67%	65%
45th Percentile	91%	91%	91%	91%	88%	84%	84%	82%	82%	81%
40th Percentile	93%	93%	93%	93%	93%	93%	93%	91%	91%	89%
35th Percentile	98%	96%	96%	96%	96%	96%	96%	96%	96%	96%
30th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
25th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	49%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

2.54%

Rolling 3-Year Gross Excess Return relative to Russell Microcap for 14 1/4 Years ended September 30, 2017



Global Broad Equity Style versus MSCI ACWI

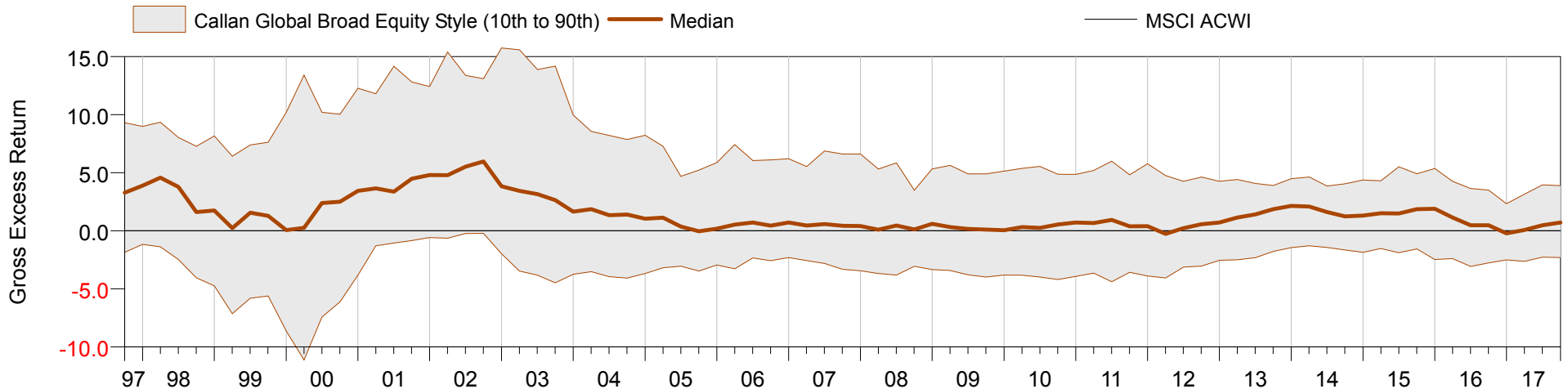
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%
Median	71%	65%	64%	59%	59%	58%	51%	51%	51%	51%
45th Percentile	93%	90%	90%	90%	89%	83%	81%	75%	71%	69%
40th Percentile	99%	99%	96%	96%	96%	95%	95%	94%	94%	93%
35th Percentile	100%	100%	100%	100%	99%	98%	98%	98%	98%	98%
30th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	99%	98%
25th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.45%

Rolling 3-Year Gross Excess Return relative to MSCI ACWI for 20 Years ended September 30, 2017



Global Equity Style versus MSCI World

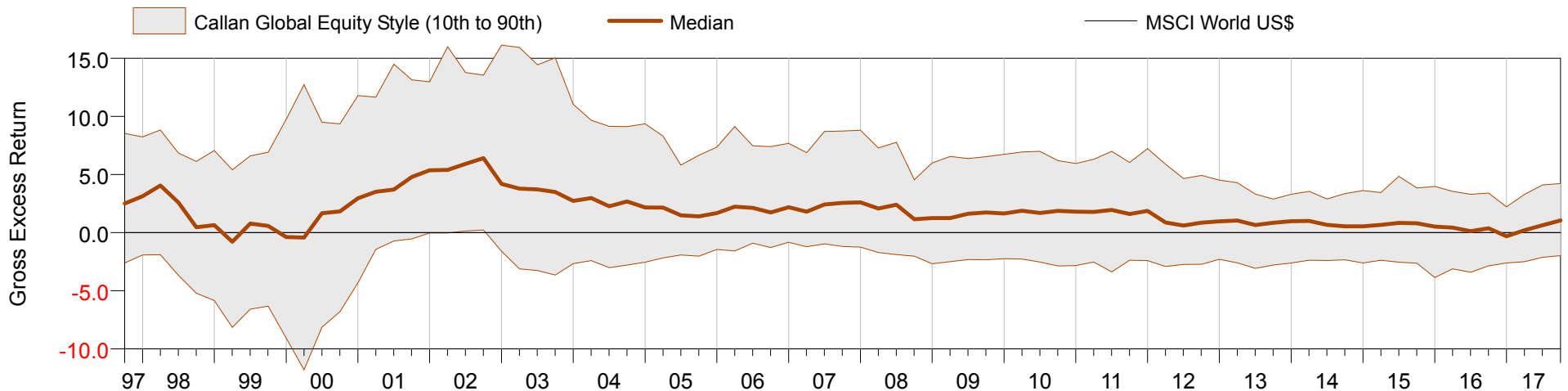
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%
Median	90%	89%	86%	84%	80%	76%	76%	74%	71%	69%
45th Percentile	98%	96%	96%	96%	94%	93%	91%	91%	86%	83%
40th Percentile	99%	99%	99%	98%	96%	96%	96%	96%	95%	94%
35th Percentile	100%	100%	99%	99%	99%	99%	99%	98%	96%	96%
30th Percentile	100%	100%	100%	100%	100%	100%	100%	99%	99%	99%
25th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.84%

Rolling 3-Year Gross Excess Return relative to MSCI World US\$ for 20 Years ended September 30, 2017



Non-U.S. Equity Broad Style vs MSCI ACWI ex USA

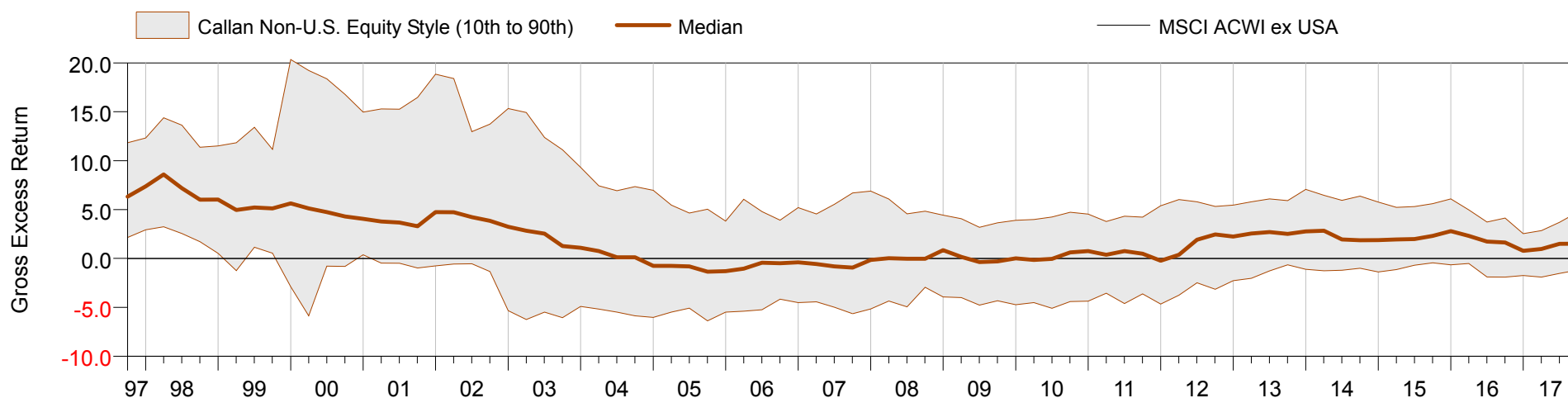
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%
Median	66%	65%	65%	65%	64%	64%	64%	59%	59%	58%
45th Percentile	74%	73%	73%	73%	71%	70%	69%	69%	69%	65%
40th Percentile	85%	85%	84%	84%	80%	79%	79%	79%	79%	78%
35th Percentile	94%	94%	93%	91%	90%	90%	88%	86%	84%	84%
30th Percentile	99%	99%	99%	99%	99%	99%	99%	99%	98%	96%
25th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.92%

Rolling 3-Year Gross Excess Return relative to MSCI ACWI ex USA for 20 Years ended September 30, 2017



Non-U.S. Developed Broad Equity Style versus MSCI EAFE

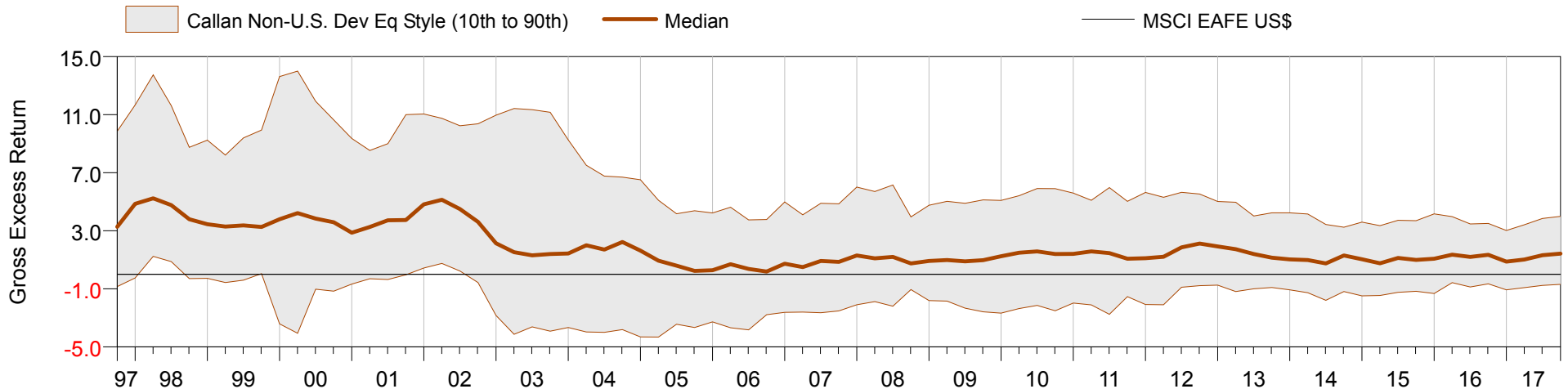
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%
Median	95%	94%	94%	93%	93%	91%	88%	86%	86%	84%
45th Percentile	100%	100%	99%	99%	96%	96%	96%	95%	94%	91%
40th Percentile	100%	100%	100%	100%	100%	100%	100%	99%	99%	98%
35th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
30th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
25th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.88%

Rolling 3-Year Gross Excess Return relative to MSCI EAFE US\$ for 20 Years ended September 30, 2017



Non-U.S. Equity Small Cap Style vs MSCI EAFE Small Cap

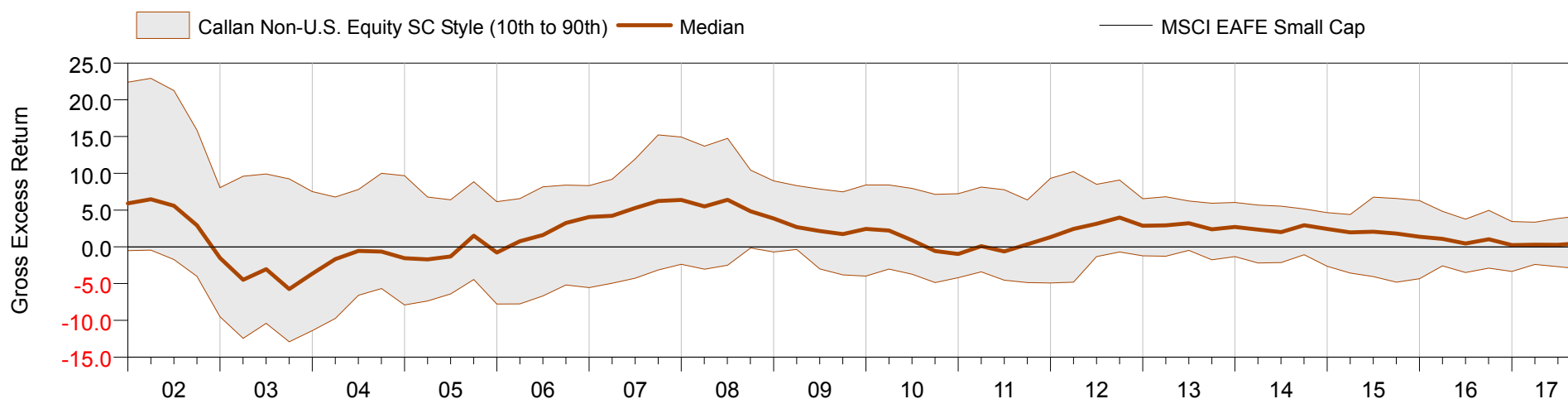
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.75%	0.80%	0.85%	0.90%	0.95%	1.00%	1.05%	1.10%	1.15%	1.20%
Median	65%	63%	63%	63%	62%	62%	60%	59%	59%	59%
45th Percentile	71%	70%	70%	68%	67%	67%	67%	65%	65%	65%
40th Percentile	83%	81%	81%	81%	79%	78%	76%	71%	71%	70%
35th Percentile	94%	90%	90%	90%	90%	90%	89%	89%	89%	87%
30th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	98%	98%
25th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.57%

Rolling 3-Year Gross Excess Return relative to MSCI EAFE Small Cap for 15 3/4 Years ended September 30, 2017



Non-U.S. Small Cap Style vs S&P Developed ex-US Small Cap

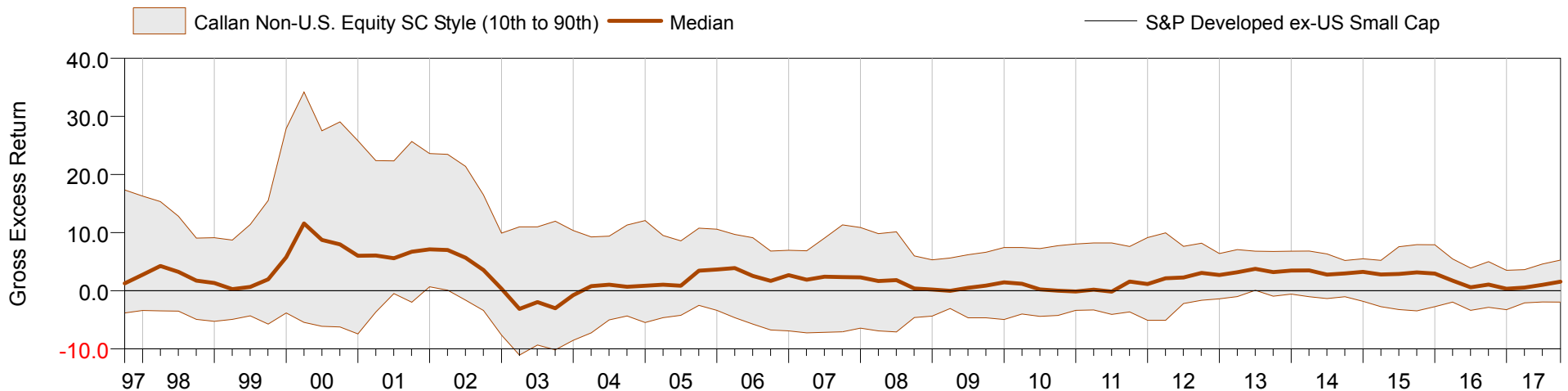
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.75%	0.80%	0.85%	0.90%	0.95%	1.00%	1.05%	1.10%	1.15%	1.20%
Median	75%	75%	74%	70%	70%	70%	66%	65%	65%	64%
45th Percentile	86%	86%	84%	84%	83%	79%	79%	79%	76%	76%
40th Percentile	95%	95%	95%	94%	93%	90%	90%	89%	89%	85%
35th Percentile	99%	99%	98%	98%	98%	98%	98%	98%	98%	96%
30th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
25th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

2.35%

Rolling 3-Year Gross Excess Return relative to S&P Developed ex-US Small Cap for 20 Years ended September 30, 2017



Emerging Mkts Broad Equity Style vs MSCI Emerging Markets

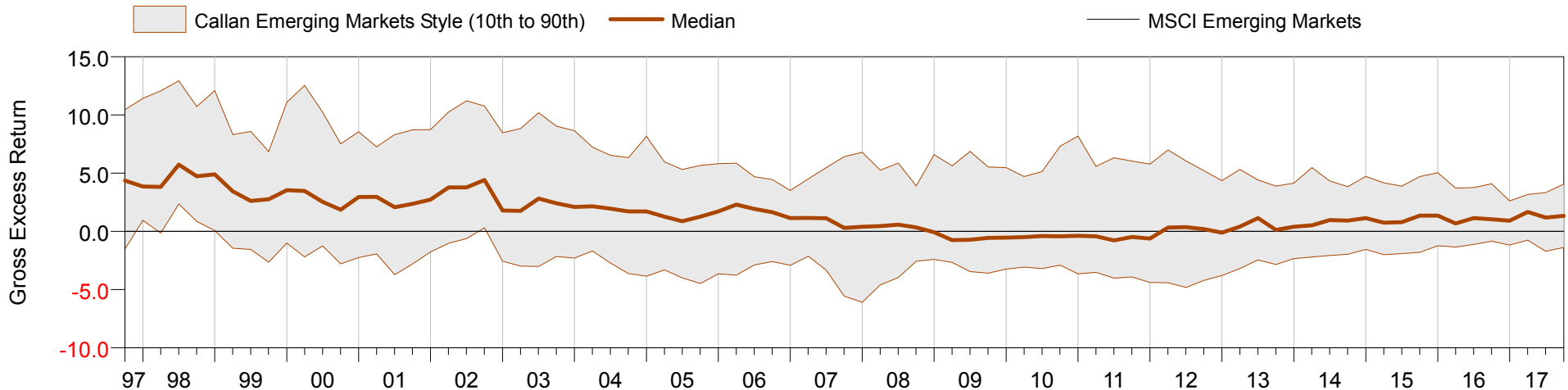
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.70%	0.75%	0.80%	0.85%	0.90%	0.95%	1.00%	1.05%	1.10%	1.15%
Median	66%	66%	64%	64%	63%	60%	59%	58%	58%	51%
45th Percentile	76%	73%	73%	73%	71%	70%	70%	69%	69%	65%
40th Percentile	84%	84%	81%	80%	80%	78%	78%	75%	74%	74%
35th Percentile	93%	93%	91%	91%	89%	88%	86%	86%	86%	86%
30th Percentile	99%	99%	99%	98%	96%	96%	96%	96%	96%	95%
25th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.44%

Rolling 3-Year Gross Excess Return relative to MSCI Emerging Markets for 20 Years ended September 30, 2017



Core Bond Style versus Bloomberg Barclays Aggregate

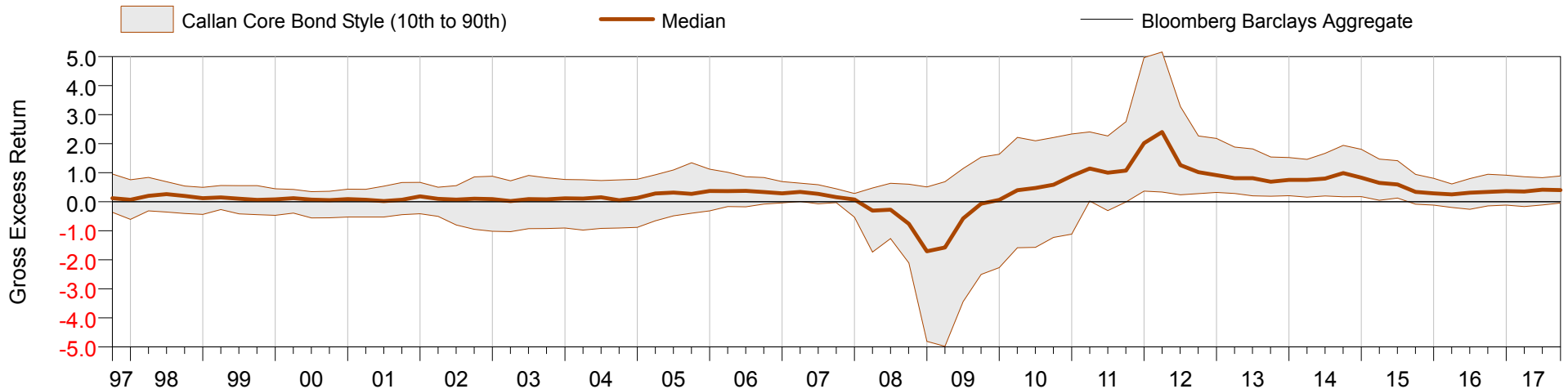
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	54%	53%	44%	36%	29%	26%	25%	25%	23%	23%
45th Percentile	59%	54%	50%	44%	39%	30%	28%	28%	26%	24%
40th Percentile	70%	63%	55%	49%	45%	39%	31%	28%	28%	28%
35th Percentile	83%	69%	64%	53%	51%	44%	40%	33%	31%	28%
30th Percentile	90%	79%	73%	64%	55%	51%	48%	43%	39%	33%
25th Percentile	96%	89%	80%	74%	63%	59%	54%	49%	46%	40%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.32%

Rolling 3-Year Gross Excess Return relative to Bloomberg Barclays Aggregate for 20 Years ended September 30, 2017



Core Plus Bond Style versus Bloomberg Barclays Aggregate

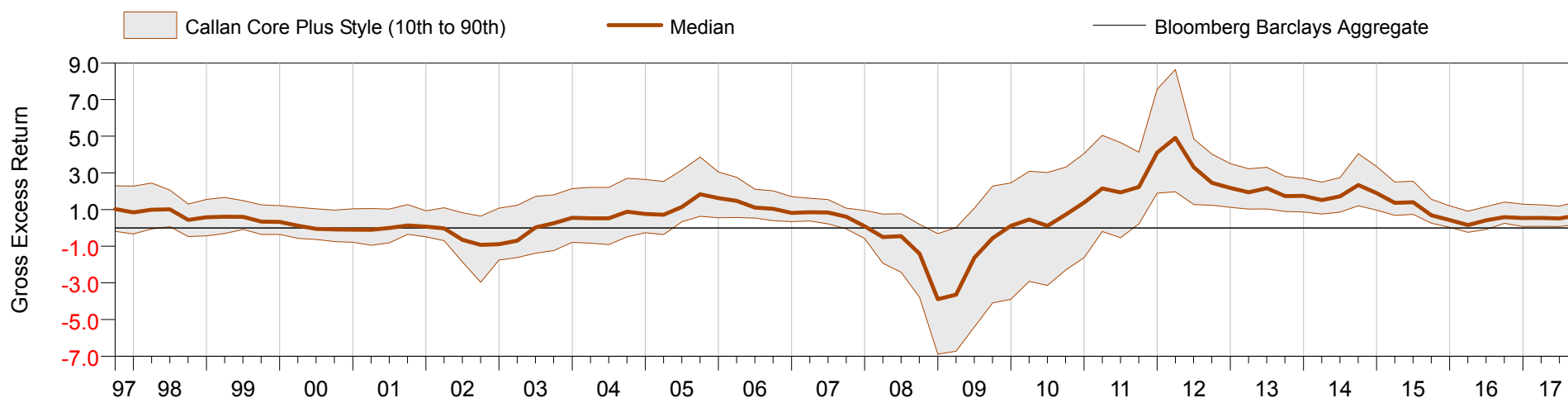
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	69%	69%	68%	65%	65%	61%	60%	54%	50%	46%
45th Percentile	71%	69%	68%	68%	68%	65%	63%	61%	55%	51%
40th Percentile	76%	74%	74%	71%	71%	70%	68%	64%	64%	61%
35th Percentile	80%	79%	76%	74%	73%	73%	73%	69%	69%	64%
30th Percentile	84%	83%	83%	81%	80%	78%	75%	74%	74%	69%
25th Percentile	90%	88%	88%	88%	84%	83%	80%	79%	76%	75%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.69%

Rolling 3-Year Gross Excess Return relative to Bloomberg Barclays Aggregate for 20 Years ended September 30, 2017



High Yield Style vs. Bloomberg Barclays Corporate High Yield

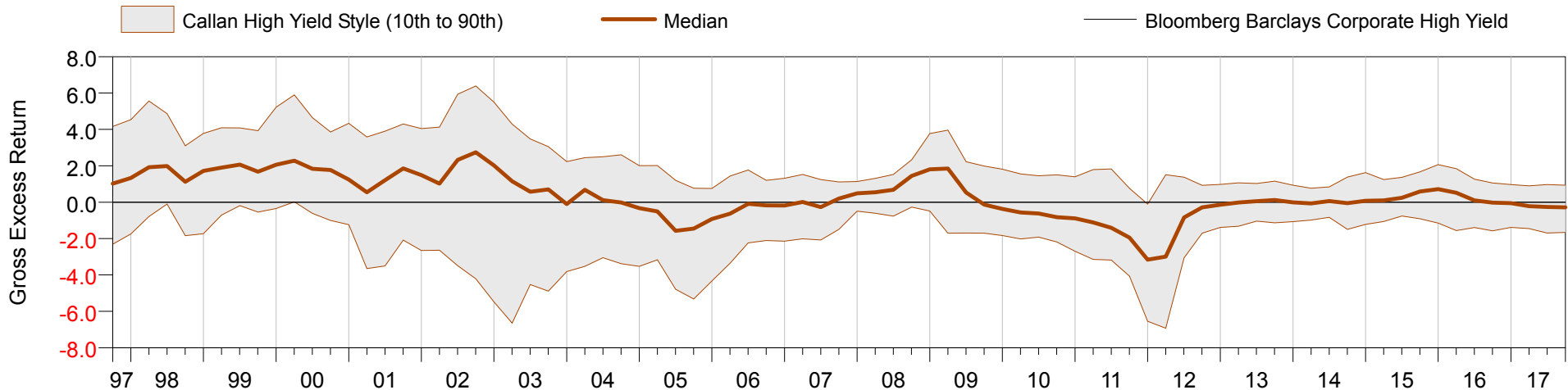
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	46%	44%	44%	44%	44%	44%	43%	39%	35%	35%
45th Percentile	53%	45%	45%	45%	44%	44%	44%	44%	40%	39%
40th Percentile	58%	56%	53%	49%	48%	46%	46%	45%	44%	40%
35th Percentile	70%	66%	63%	60%	58%	51%	49%	46%	46%	45%
30th Percentile	83%	76%	74%	70%	64%	58%	56%	54%	50%	49%
25th Percentile	88%	86%	86%	86%	80%	75%	69%	65%	60%	55%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.34%

Rolling 3-Year Gross Excess Return relative to Bloomberg Barclays Corporate High Yield for 20 Years ended September 30, 2017



Global Fixed Style versus Bloomberg Barclays Global Agg

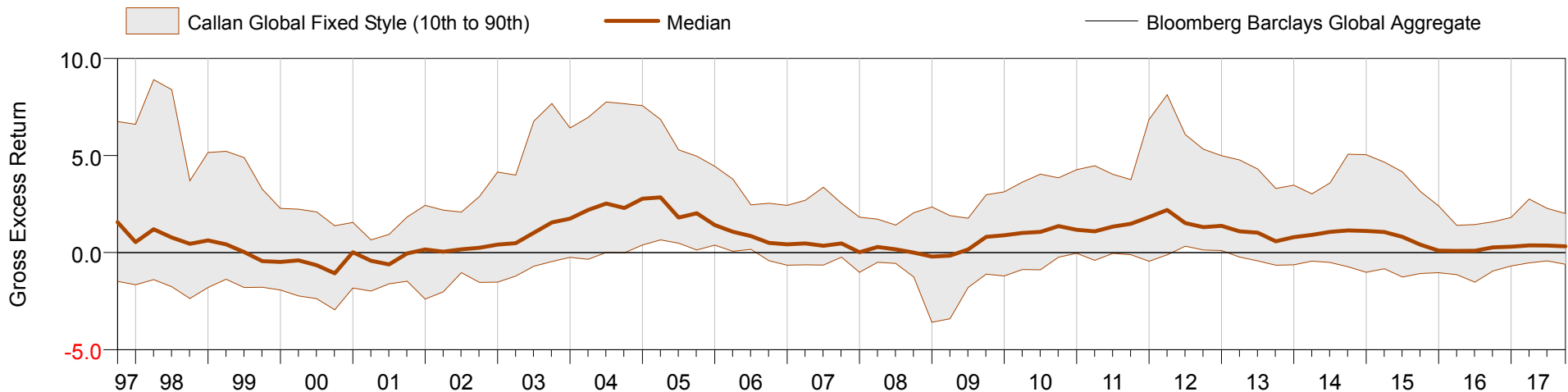
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	73%	71%	69%	66%	63%	56%	53%	50%	49%	48%
45th Percentile	76%	75%	73%	71%	68%	64%	60%	56%	54%	53%
40th Percentile	86%	85%	80%	74%	74%	73%	68%	66%	63%	61%
35th Percentile	93%	91%	91%	89%	83%	83%	81%	78%	71%	70%
30th Percentile	95%	95%	91%	91%	91%	89%	86%	85%	83%	79%
25th Percentile	96%	96%	95%	95%	93%	93%	93%	93%	90%	86%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.73%

Rolling 3-Year Gross Excess Return relative to Bloomberg Barclays Global Aggregate for 20 Years ended September 30, 2017



Non-U.S. Fixed Style versus Citi WGBI Non-US

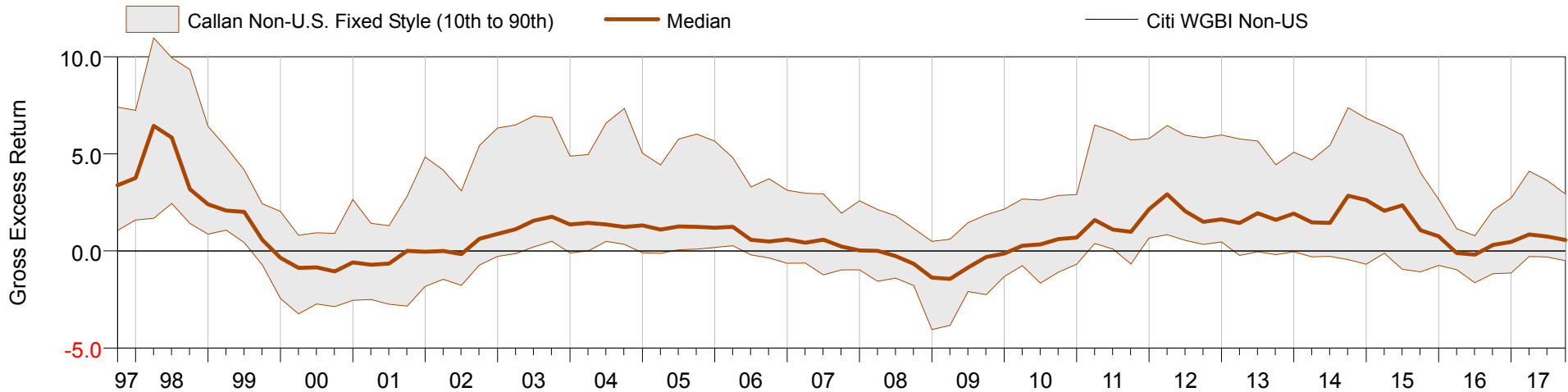
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	73%	71%	70%	68%	68%	66%	64%	64%	59%	55%
45th Percentile	73%	71%	71%	71%	70%	70%	69%	65%	63%	60%
40th Percentile	79%	76%	75%	74%	73%	73%	73%	71%	69%	66%
35th Percentile	84%	80%	80%	78%	76%	75%	75%	74%	74%	70%
30th Percentile	85%	85%	85%	83%	79%	79%	78%	76%	75%	75%
25th Percentile	90%	90%	89%	89%	86%	85%	85%	84%	83%	81%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.97%

Rolling 3-Year Gross Excess Return relative to Citi WGBI Non-US for 20 Years ended September 30, 2017



Non-U.S. Fixed Style versus Bloomberg Barclays GI Agg ex-US

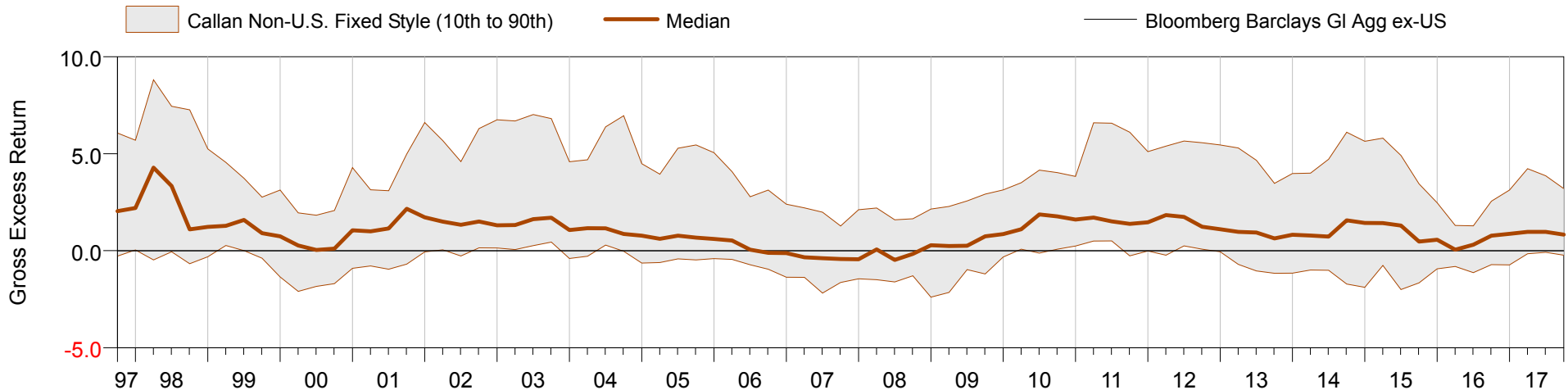
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	84%	83%	79%	78%	78%	78%	76%	75%	74%	70%
45th Percentile	86%	85%	85%	84%	81%	80%	79%	78%	76%	75%
40th Percentile	89%	88%	88%	86%	85%	84%	81%	81%	80%	78%
35th Percentile	89%	89%	88%	88%	86%	86%	84%	84%	84%	84%
30th Percentile	93%	91%	90%	90%	89%	88%	88%	88%	85%	85%
25th Percentile	95%	95%	94%	93%	91%	89%	89%	88%	86%	85%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.97%

Rolling 3-Year Gross Excess Return relative to Bloomberg Barclays GI Agg ex-US for 20 Years ended September 30, 2017



Ext Maturity Gov/Cr Style vs Bloomberg Barclays Long Gov/Cr

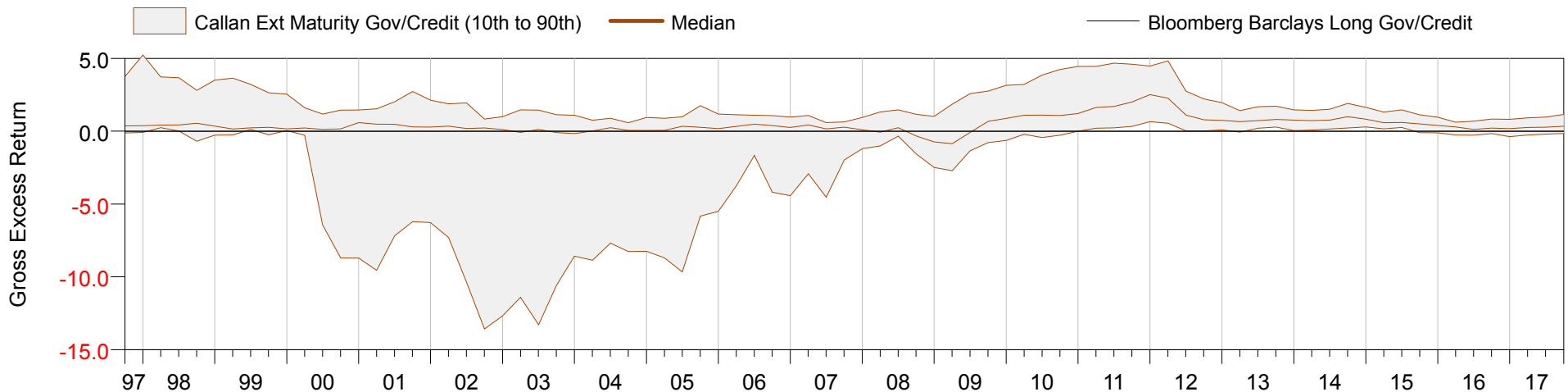
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	70%	64%	53%	49%	41%	38%	34%	33%	29%	28%
45th Percentile	79%	74%	63%	55%	45%	43%	38%	34%	31%	30%
40th Percentile	91%	83%	71%	64%	56%	48%	45%	40%	35%	31%
35th Percentile	95%	93%	86%	84%	78%	68%	60%	51%	50%	46%
30th Percentile	98%	96%	93%	90%	85%	80%	71%	66%	60%	55%
25th Percentile	100%	100%	99%	96%	91%	88%	81%	75%	70%	65%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.47%

Rolling 3-Year Gross Excess Return relative to Bloomberg Barclays Long Gov/Credit for 20 Years ended September 30, 2017



Emerging Debt Database versus JPM EMBI Global Diversified

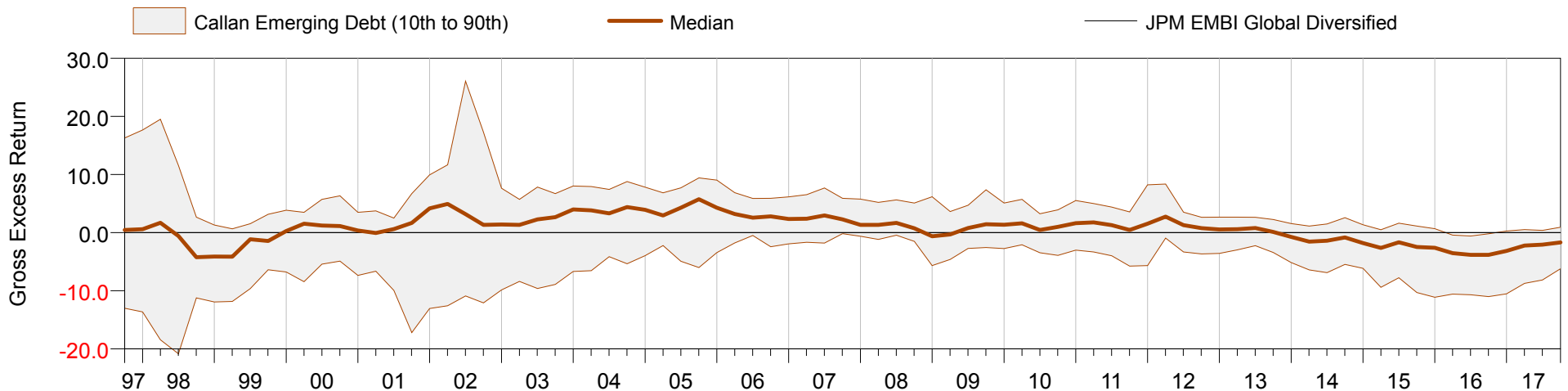
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	68%	68%	66%	66%	65%	64%	63%	63%	59%	58%
45th Percentile	73%	71%	71%	71%	70%	68%	68%	68%	66%	66%
40th Percentile	74%	74%	74%	74%	74%	74%	73%	73%	71%	70%
35th Percentile	75%	75%	75%	75%	75%	75%	74%	74%	74%	74%
30th Percentile	76%	76%	76%	75%	75%	75%	75%	75%	75%	75%
25th Percentile	83%	83%	83%	80%	79%	79%	78%	76%	76%	75%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.73%

Rolling 3-Year Gross Excess Return relative to JP Morgan EMBI Global Diversified for 20 Years ended September 30, 2017



U.S. REIT Style versus NAREIT All Equity

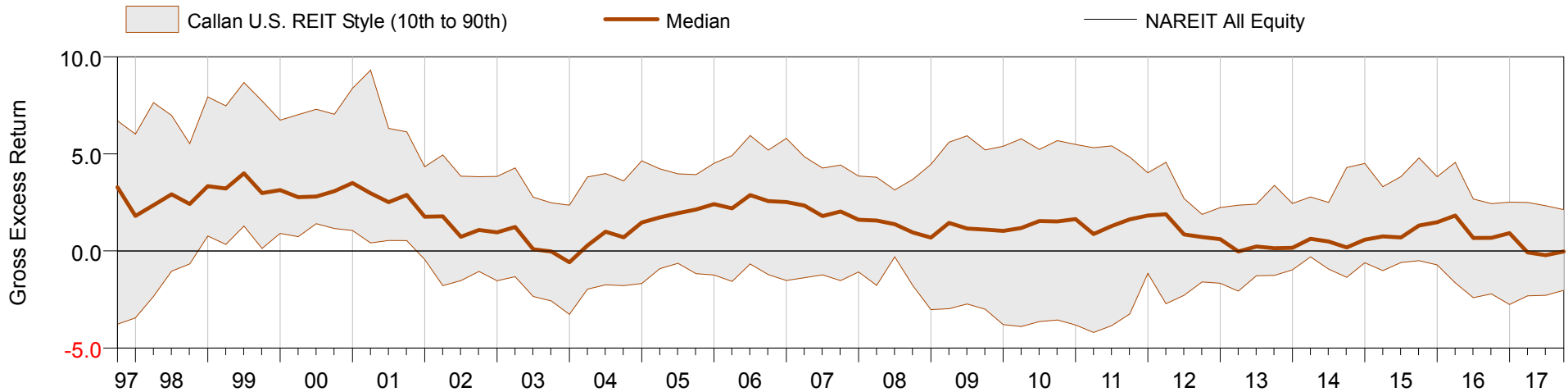
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%	0.95%
Median	84%	84%	83%	80%	75%	71%	70%	70%	68%	66%
45th Percentile	86%	85%	85%	84%	84%	81%	79%	76%	75%	74%
40th Percentile	89%	86%	86%	86%	86%	86%	84%	83%	80%	79%
35th Percentile	91%	89%	88%	88%	88%	88%	88%	88%	86%	85%
30th Percentile	95%	95%	94%	94%	91%	91%	91%	89%	88%	86%
25th Percentile	100%	100%	99%	98%	95%	94%	93%	91%	91%	91%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.48%

Rolling 3-Year Gross Excess Return relative to NAREIT All Equity for 20 Years ended September 30, 2017



Global Real Estate Style vs EPRA/NAREIT Developed

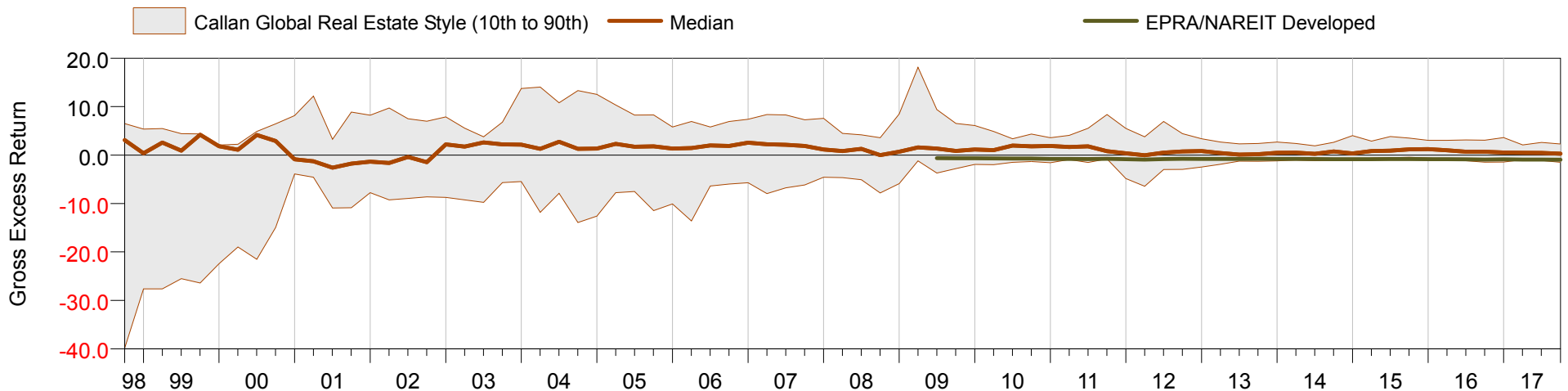
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%	0.85%	0.90%	0.95%
Median	72%	70%	68%	68%	68%	63%	62%	58%	55%	53%
45th Percentile	83%	83%	79%	76%	74%	72%	71%	67%	67%	66%
40th Percentile	92%	92%	89%	88%	84%	83%	82%	80%	76%	76%
35th Percentile	99%	99%	99%	97%	96%	96%	96%	93%	93%	92%
30th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%
25th Percentile	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

1.06%

Rolling 3-Year Gross Excess Return relative to EPRA/NAREIT Developed for 19 Years ended September 30, 2017



Derivative-Based Enhanced Index Style versus S&P 500

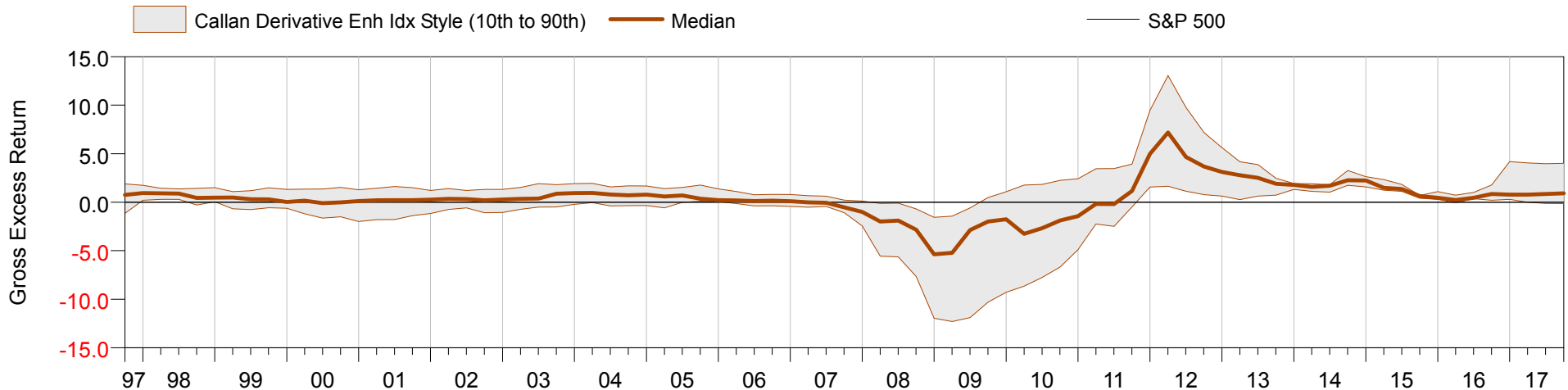
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	65%	59%	50%	48%	46%	41%	41%	40%	39%	
45th Percentile	73%	66%	59%	56%	51%	50%	46%	44%	43%	
40th Percentile	76%	76%	74%	71%	66%	64%	60%	58%	54%	50%
35th Percentile	78%	78%	76%	74%	73%	73%	69%	66%	64%	61%
30th Percentile	83%	83%	83%	80%	74%	74%	74%	73%	71%	69%
25th Percentile	88%	85%	84%	83%	83%	83%	83%	80%	79%	75%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.39%

Rolling 3-Year Gross Excess Return relative to S&P 500 for 20 Years ended September 30, 2017



Stock-Based Enhanced Index Style versus S&P 500

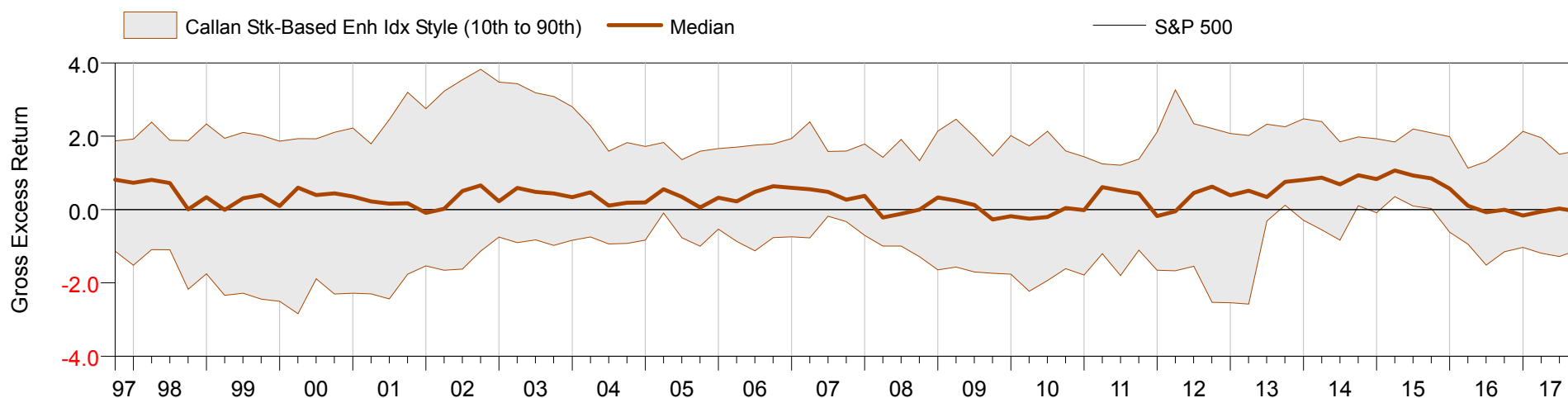
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	63%	58%	56%	48%	41%	38%	31%	28%	20%	16%
45th Percentile	74%	73%	71%	65%	58%	55%	51%	44%	40%	29%
40th Percentile	83%	81%	79%	71%	69%	66%	63%	53%	49%	46%
35th Percentile	91%	91%	88%	85%	83%	81%	75%	68%	65%	64%
30th Percentile	98%	98%	95%	95%	93%	91%	88%	81%	74%	71%
25th Percentile	99%	99%	98%	98%	96%	96%	95%	94%	89%	85%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.33%

Rolling 3-Year Gross Excess Return relative to S&P 500 for 20 Years ended September 30, 2017



Total Enhanced Index Style versus S&P 500

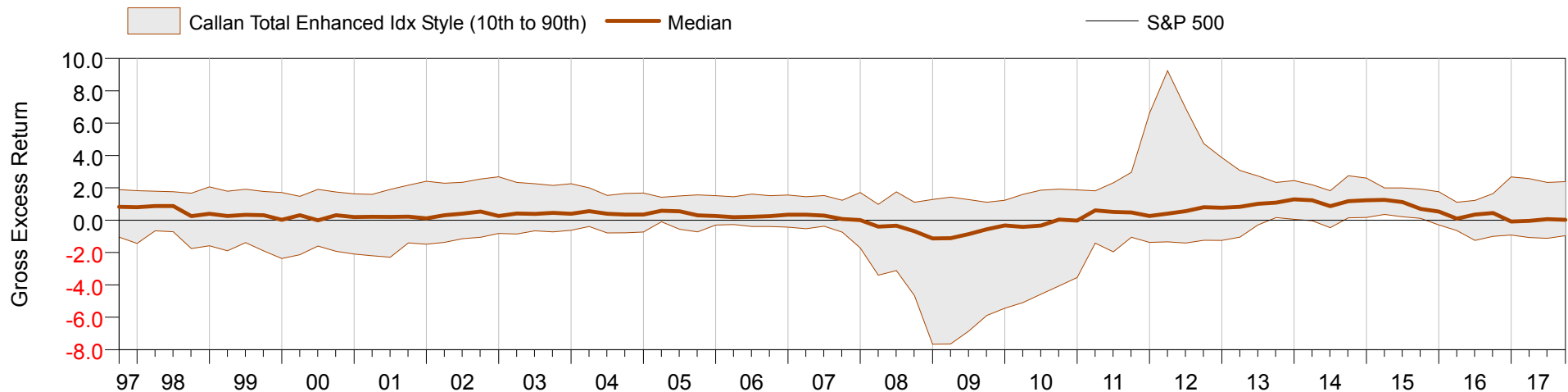
How often Manager Beat Benchmark by more than Fee Hurdle in Rolling 3-Year Periods over last 20 Years

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	70%	65%	56%	46%	40%	33%	30%	26%	21%	20%
45th Percentile	76%	71%	69%	63%	58%	54%	46%	41%	36%	29%
40th Percentile	81%	81%	79%	74%	70%	66%	56%	54%	50%	41%
35th Percentile	89%	85%	85%	83%	81%	80%	74%	71%	66%	60%
30th Percentile	96%	95%	91%	89%	88%	86%	84%	83%	78%	75%
25th Percentile	99%	99%	99%	95%	91%	90%	89%	88%	88%	86%

Average Annualized 3-Year Excess Return (gross) – Median Manager:

0.32%

Rolling 3-Year Gross Excess Return relative to S&P 500 for 20 Years ended September 30, 2017



Mesirow Financial – Executive Summary

● Background

- Mesirow Financial was hired June 30, 2006 to manage a core fixed income mandate.
- As of September 30, 2017 the GEPF portfolio totaled \$69,977,628 and represented 5% of the Total Fund.
- The team is structured by sector specialization and comprised of seven professionals (four portfolio managers, two analysts and one trader).
- Peter Hegel, head of Institutional Fixed Income, manages mortgages, Mark Newlin leads credit as well as treasuries/agencies, Ryan Johnson covers ABS/CMBS/Munis, and Steven Luetger serves as a generalist.
- Two portfolio managers (Newlin & Luetger) are expected to retire in 2018. Mesirow plans to conduct an external search for replacements.

● Observations on Mesirow Financial

- Since inception net-of-fee performance exceeds the Bloomberg Aggregate Index by 0.36% per annum.
- Over the trailing three- and five-year periods, Mesirow ranks bottom quartile relative to peers and has lagged its benchmark by 0.17% and 0.09%, respectively.
- Mesirow’s defensive positioning is reflective in the portfolio’s weighted average quality rating (AA) and lower effective yield relative to the index (2.49% vs. 2.55%).
- Currently, Mesirow does not pass GEPF’s watch list criteria (below peer group and benchmark net of fee performance over a three year period for two consecutive quarters).

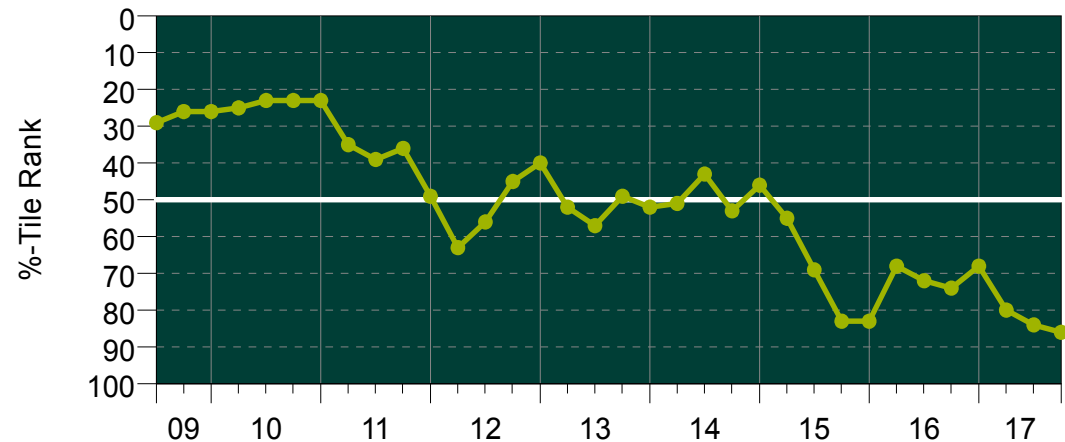
● Recommendations

- While performance has languished due to the portfolio’s defensive positioning, Callan has concerns regarding Mesirow’s succession planning, pending portfolio manager transitions, and sector specialization within the team.
- Callan recommends conducting a fixed income manager search to replace Mesirow.

Mesirow Financial – GEPF Watch List Criteria

- Currently, Mesirow does not pass GEPF’s watch list criteria (below peer group and benchmark net of fee performance over a three year period for two consecutive quarters).
- Mesirow ranks above median in 16 of 34 (47%) rolling three-year periods, but none since mid-2015.
- Mesirow exceeded the Bloomberg Barclays U.S. Aggregate Bond Index in 25 of 34 (74%) rolling three-year periods, but none since mid-2015.

Performance Ranking vs. Callan Core Bond Style Group (Gross of Fee)
Rolling Three-Year Time Periods

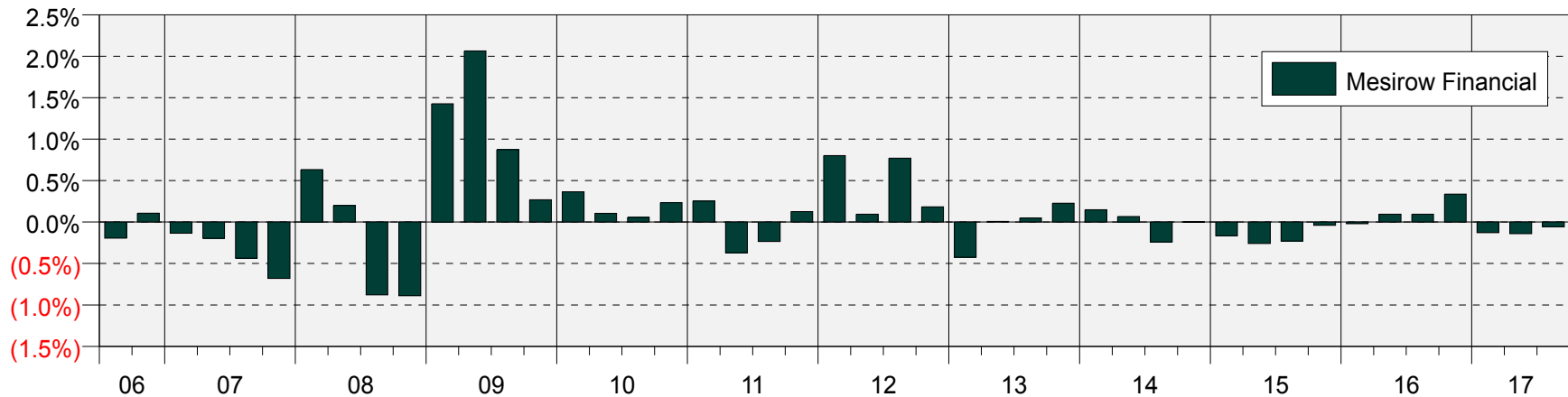


Excess Returns (Net of Fee) vs. Bloomberg Barclays U.S. Aggregate Bond Index
Rolling Three-Year Time Periods



Mesirow Financial – Performance & Portfolio Positioning

Relative Returns vs. Bloomberg Barclays U.S. Aggregate Bond Index



Sector Allocation

As of September 30, 2017

Sectors covered by Mark Newlin

	Mesirow Financial	BImbg Aggregate
Corporate	35.8%	25.6%
US Treasury	23.4%	37.0%
RMBS	15.2%	28.1%
CMBS	10.8%	1.8%
ABS	8.9%	0.5%
Govt Related	0.0%	7.0%
Cash & Other	5.9%	0.1%

Portfolio Characteristics

As of September 30, 2017

	Mesirow Financial	BImbg Aggregate
Volatility* (%)	3.40%	3.34%
Sharpe Ratio*	1.24	1.08
Duration (Yrs.)	5.61	5.96
Average Life (Yrs.)	7.18	8.25
Effective Yield (%)	2.49	2.55
Coupon Rate (%)	3.28	3.06
Wtd. Average Quality	AA	AA+

*Since inception standard deviation and Sharpe ratio (June 30, 2006 – September 30, 2017).