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**Investment Style:**

Mid-Cap Growth

**NEEDHAM GROWTH FUND****3Q19 Quarterly Commentary****Needham Growth Fund (NEEGX/NEEIX): Review of the 3rd Quarter**

The Needham Growth Fund's mission is to create wealth for long-term investors—and the third quarter was another step forward. The Fund's Institutional and Retail classes returned 2.19% and 2.05%, respectively, in the quarter ended September 30, 2019. The Russell 2000 Index returned -2.40% and the S&P 500 Index returned 1.70% in the quarter. Year-to-date through September 30, 2019, the Fund's Institutional and Retail classes returned 28.58% and 28.02%, respectively. The Russell 2000 Index returned 14.18% and the S&P 500 Index returned 20.55%.

**Creating Wealth for Long-Term Investors**

To create wealth for long-term investors, we look to invest in companies that have the potential to compound returns at above-market rates. U.S. equity markets make it easy to become a financial partner of great entrepreneurs and corporate managers. Investors and stock traders can easily and inexpensively execute trades and become partial owners of any of over 4,000 companies in the U.S.

On October 2, Charles Schwab announced commission-free equity trades and was soon followed by many other brokers. The danger of our markets is that they make it so easy to trade that the concept of being a business owner is abstract and lost in the thrill or pain of short-term results and the 24-hour news cycle.

As long-term investors, we look for three investment criteria for potential compounders:

- 1) Can the company grow to be 5-10x larger?
- 2) Is the company managed by founders, family or long-tenured CEOs? These managers tend to think longer-term. Some of the great wealth creation has come from public and private family-run businesses.
- 3) Does the company have the potential for high-return on capital? Has the company been investing in new products, services or distribution that have yet to show results and that the stock market has yet to value appropriately?

Let's look at the investment process of an ETF or quantitative fund. An ETF buys or sells all of the stocks in an index at the market price based on flows into or out of the ETF. An index-based ETF makes no assessment of the value of the stock it is buying. Quant funds use math to discern which factors will lead to outperformance. Most of these factors are based on past financial and stock performance. Some quantitative investors may take into account analysts' estimates and data about CEOs, if it can be quantified. Our three criteria, particularly the first and third, are impossible for a quant fund to quantify.

Considering the Fund's four largest positions, we view the Needham Growth Fund as a financial partner of Mark Casper, CEO of Thermo Fisher Scientific (TMO), Bill Nash of CarMax (KMX), John Kibarian of PDF Solutions (PDFS), and Bertrand Loy of Entegris (ENTG). In contrast to the manager of a quant fund or ETF, we know these companies, their management teams and their operations well. We invested in these companies when they had been in investment cycles that obscured the companies' underlying progress.

On average, the Fund has owned shares of these four companies for nearly 13 years. Thermo Fisher, CarMax and Entegris have contributed returns at above the market's average performance. In 2019, Entegris has been the top contributor for the Fund and all have outperformed the S&P 500. PDF has contributed positively, but has been below the market. We are optimistic about PDF Solutions' potential to be a positive contributor over the long term.

Beyond these top four holdings are 61 other investments. The top 10 investments represented 55.76% of net assets. The smaller investments are newer, and we look for these companies to prove themselves as compounders over time.

Morningstar categorizes the Fund as Mid Cap Growth, while Lipper categorizes it as Mid Cap Core. The trailing 12-month turnover in the Needham Growth Fund was 8.7%, implying an 11-year holding period. When you hold companies for 10-15 years, and they succeed, they grow to larger market cap categories. We are not concerned about where the Fund falls in the style boxes. Our mission is to find companies that match the three criteria and may compound over many years, independent of their industry or market cap.

### **Third Quarter Performance: Needham Growth Fund (NEEIX/NEEGX)**

In the third quarter, three of the top performers in the Needham Growth Fund supply technology and capital equipment for semiconductor manufacturing. While the semiconductor memory market has too much manufacturing capacity, the logic market is strong. Taiwan Semiconductor Manufacturing ADR (TSM.NA) is spending aggressively on the leading-edge 7 nanometer production process, which is used to manufacture the processors for Apple's fall 2019 iPhones, as well as other high-end semiconductors.

Entegris, Inc. (ENTG) was the Fund's top contributor in the third quarter. Entegris supplies filters and chemicals used in semiconductor advanced manufacturing processes. Based on confidence in its business, Entegris said the second quarter represented a bottom in revenue, and it expects revenue growth in the third quarter and beyond. Technology transitions by customers could drive the adoption of new Entegris products. The company also announced \$20 million in annual cost savings, which is expected to be in place by the end of 2019.

In April, Entegris announced a merger with Versum Materials, which was bested by a competing offer from Merck AG (MKGAF). Entegris continued with its acquisition strategy by acquiring Digital Specialty Chemicals (DSC) in March, and then MPD Chemicals for \$165 million cash in July. MPD makes advanced materials for the specialty chemical, technology and life sciences industries. In September, Entegris acquired Hangzhou Anow Microfiltration for \$73 million. With the expense reduction and the acquisitions, Entegris is doing a mini-version of what might have been with Versum.

FormFactor, Inc. (FORM) was the second-leading contributor. The company reported results at the high end of revenue, gross margin and earnings expectations. FormFactor makes probe cards that are used to test wafers for new semiconductor designs. At the start of the year, the company suffered from a delay in Intel Corporation's (INTC) latest generation 14/10 nanometer manufacturing processes. Demand at Intel recovered in the second quarter. Over the last seven years, FormFactor has diversified its business by acquiring leading probe card companies for RF (radio frequency) design, and logic/system-on chip design.

Photronics Inc. (PLAB) was the third-leading contributor. Photronics makes photomasks, which are used in the manufacturing of semiconductors and AMOLED and LED panels in flat panel television screens and displays. Photronics has become the leading independent maker of photomasks. The company has been in an investment mode; it built out new facilities in China, which are expected to be profitable by year-end 2019.

Akamai Technologies Inc. (AKAM) was the Fund's fourth-leading contributor. Akamai is the largest Cloud-based security company, with a Cloud of over 240,000 servers located in networks around the world. These servers are used to store content, such as a Disney movie, and to speed delivery to viewers. Akamai uses the same Cloud to provide cyber-security to enterprises. If an attacker goes after a company's website protected by Akamai, one of Akamai's servers will absorb the bad Internet traffic and Akamai will shift the website to a different, safe server. Akamai's security results were above the high-end of guidance in the second quarter of 2019, and the stock outperformed.

The leading detractor was Aspen Aerogels, Inc. (ASPN). While Aspen is one of the top performers year-to-date in 2019, the stock's ascension paused in the third quarter. Aspen manufactures aerogel insulation with special heat and cryogenic characteristics, and is used as a substitute for old-fashioned pink insulation. Aspen's products are used for energy infrastructure and commercial construction projects.

In the third quarter, the Needham Growth Fund added to its position in Vicor Corporation (VICR) and Wabtec (Westinghouse Air Brake Technologies Corp.) (WAB), a leading locomotive manufacturer. In February 2019, Wabtec closed its transformational acquisition of General Electric Company's (GE) locomotive business. We believe there could be a strong market for new and retrofit locomotives over the next few years, as technology is more widely adopted and the cost of trucking and shortage of drivers makes rail an even more attractive shipping option. The Fund added a new position in Brookfield Asset Management (BAM), upon its acquisition of our holding in Oaktree Capital Group, LLC. The Fund also exited its position in Electronics for Imaging, Inc. (EFII), as the company was acquired. The Fund did not reduce significant amounts of any of its holdings.

At September 30, 2019, Needham Growth Fund's top 10 positions were 55.76% of net assets. The Fund had an Active Share of 98.0% versus the S&P 500. The Fund was short 1.3% of total investments. Once again, the Fund looks nothing like the S&P 500 and its performance was not correlated.

We believe the U.S. remains the best place in the world to be investing, and we continue to see an opportunity to invest in small and mid cap stocks. Most importantly, we see a revolution happening in technology that has created and continues to create investment opportunities. We see opportunity in our strategy of investing in companies that we know well and that we believe are positioned with secular growth drivers.

We welcome our new investors and thank all of our investors for their continued support. If you have any questions, thoughts or concerns, please contact us at (800) 625-7071 or [jbarr@needhamco.com](mailto:jbarr@needhamco.com) and [cretzler@needhamco.com](mailto:cretzler@needhamco.com). For information about the Needham Growth Fund, please visit our website at [www.needhamfunds.com](http://www.needhamfunds.com).

Sincerely,



John Barr, Portfolio Manager



Chris Retzler, Portfolio Manager

## AVERAGE ANNUAL RETURNS AS OF 9/30/19

	3 MO	YTD	1YR	3YR	5YR	10YR	SINCE INCEPT.
Needham Growth Fund Inst Class**	2.19%	28.58%	10.44%	9.34%	7.72%	10.89%	12.79%
After Taxes on Distributions	2.19%	28.58%	6.75%	7.00%	5.69%	9.58%	11.45%
After Taxes on Distributions & Redemptions	1.29%	16.92%	8.03%	6.94%	5.77%	8.80%	10.91%
Needham Growth Fund Retail Class	2.05%	28.02%	9.81%	8.78%	7.21%	10.39%	12.31%
After Taxes on Distributions	2.05%	28.02%	6.11%	6.43%	5.18%	9.08%	10.97%
After Taxes on Distributions and Redemptions	1.21%	16.59%	7.69%	6.53%	5.37%	8.38%	10.47%
S&P 500 Index	1.70%	20.55%	4.25%	13.39%	10.84%	13.24%	8.91%
S&P 400 Index	(0.09)%	17.87%	(2.49)%	9.38%	8.88%	12.56%	11.16%
Russell 2000 Index	(2.40)%	14.18%	(8.89)%	8.23%	8.19%	11.19%	8.28%

The Needham Growth Fund inception date is 1/1/96.

\*\*Performance for any periods prior to the inception date of Institutional Class Shares are based on the historical performance of the Retail Class Shares adjusted to assume the expenses associated with Institutional Class Shares.

The Needham Growth Fund's Gross Expense Ratio is 2.76% for the Retail Class and 2.48% for the Institutional Class. The Needham Growth Fund's Net Expense Ratio is 2.76% for the Retail Class and 2.21% for the Institutional Class. The Net Expense Ratio reflects a contractual agreement by the Fund's investment adviser to waive its fee and/or reimburse the Fund through May 1, 2020 to the extent the Gross Expense Ratio exceeds 1.95% and 1.40% of the average daily net assets of Retail Class Shares and Institutional Class Shares (Expense Cap). The Expense Cap excludes taxes, interest, brokerage, dividends on short positions, fees and expenses of "acquired funds," extraordinary items and shareholder redemption fees but includes the management fee.

Fact Sheet Link: [Needham Growth Fund](#)

*The information presented in this commentary is not intended as personalized investment advice and does not constitute a recommendation to buy or sell a particular security or other investments.*

This message is not an offer of the Needham Growth Fund, the Needham Aggressive Growth Fund or the Needham Small Cap Growth Fund. Shares are sold only through the currently effective prospectus. Please read the prospectus or summary prospectus and consider the investment objectives, risks and charges and expenses of the Funds carefully before you invest. The prospectus and summary prospectus contain this and other information about the Funds and can be obtained on our website, [www.needhamfunds.com](http://www.needhamfunds.com).

Investment returns and principal value will fluctuate, and when redeemed, shares may be worth more or less than their original cost. Performance data quoted represents past performance, and does not guarantee future results. Current performance may be higher or lower than these results. Performance current to the most recent month-end may be obtained by calling our transfer agent at 1-800-625-7071. Total return figures include reinvestment of all dividends and capital gains.

*All three of the Needham Funds have substantial exposure to small and micro capitalized companies. Funds holding smaller capitalized companies are subject to greater price fluctuation than those of larger companies.*

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Portfolio holdings are subject to change. The Needham Growth Fund's ownership as a percentage of net assets in the stated securities as of 9/30/19: TMO: 8.75%; KMX: 7.27%; PDFS: 6.44%; ENTG: 6.12%; TSM: 0.40%; FORM: 3.03%; PLAB: 1.55%; AKAM: 3.11%; ASPN: 2.18%; VICR: 2.14%; WAB: 1.44%; BAM: 0.33%; EFII: 0.00%.

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