Oberweis Asset Management

MICRO-CAP GROWTH STRATEGY

4Q 2018

The Quarter & Year in Review

The Oberweis Micro-Cap Composite returned -10.74% (-11.74% net of fees) versus -9.31% for the Russell 2000 Growth Index in 2018. The Composite lagged the Russell 2000 Growth Index by 143 basis points (243 basis points net of fees) but outperformed the Russell Microcap Growth Index, which returned -14.18%, by 344 basis points (244 basis points net of fees). During the fourth quarter, the Composite returned -24.39% (-24.76 net of fees) versus -21.65% for the Russell 2000 Growth Index, a shortfall of 274 basis points (311 basis points net of fees). Compared to the Russell Microcap Growth Index's return of -24.93%, however, the Composite outperformed by 54 basis points (17 basis points net of fees).

Clearly 2018 was a challenging year for equity managers globally, and the environment for U.S. micro-cap stocks was one of the more difficult sub-markets. Although growth stocks outperformed value stocks during the year, they lagged during the fourth quarter[1]. Eclipsing any benefit from our growth bias was a negative capitalization impact. During 2018, small-cap growth stocks underperformed large-cap growth stocks by 780 basis points[2], and micro-caps lagged even more. In fact, the smallest two quintiles of companies within the Russell 2000 Growth Index performed the worst during both the year and the quarter, and stocks with market capitalizations under $500 million similarly generated the lowest performance during both time frames. This market capitalization headwind was also evidenced by our Composite outperformance for both the quarter and full year relative to the Russell Microcap Growth Index, which has a significantly lower median market capitalization, and more comparable to the Composite, than that of the Russell 2000 Growth Index.

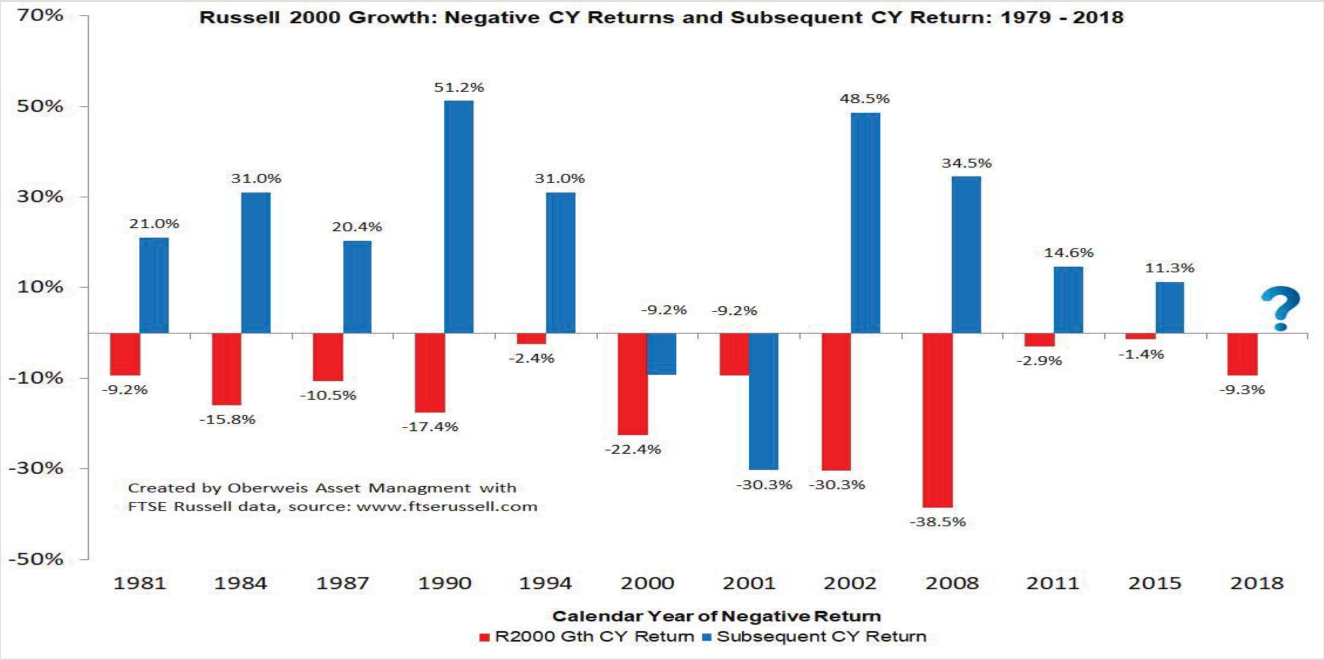
More challenging for our portfolio was the underperformance of stocks exhibiting upward estimate revisions. Philosophically, we seek to identify companies that have experienced a significant positive earnings surprise and which we expect will generate above-consensus results going forward due to a material fundamental misunderstanding. Over time, these companies usually experience upward estimate revisions as a result, and such companies can generate outsized price appreciation as other investors begin to understand the true earnings power of the company. During 2018, however, investors shunned these companies, as shown below by the graph of MSCI Barra's "Sentiment" factor performance. Barra's Sentiment factor measures analyst revision ratios and changes in analyst-predicted P/E ratios and is a good proxy for companies reporting earnings surprises; our portfolio has historically had a large positive exposure to this factor. Exposure to this factor in 2018 represented a major drag on our performance, but we remain confident that positive estimate revisions remain a solidly positive factor over the intermediate- to long-term.

[1] For 2018, the Russell 2000 Growth Index and the Russell 2000 Value Index returned –9.31% and –12.86%, respectively. For the fourth quarter, the Russell 2000 Growth Index and the Russell 2000 Value Index returned –21.65% and –18.67%, respectively.
[2] For 2018, the Russell 1000 Growth Index returned -1.51%.

A year ago we noted the complacency in the market and surmised that a more tumultuous environment "could be in the offing" in 2018. Volatility, as measured by the CBOE's VIX Index, exploded in 2018, eclipsing 50 in early February and spiking again at year-end as the market collapsed in December. There was really nowhere to hide as the U.S. market, non-U.S. developed markets, and emerging markets posted negative returns around the world. Additionally, asset classes outside of equities generated negative returns, leaving cash as the only positive asset class and safe haven.

Returns were decidedly negative against a backdrop of reasonable economic data and company-specific fundamentals in the U.S. S&P 500 operating earnings hit a record high in 2018 on record profit margins, and we expect earnings growth (albeit at a slower rate) to continue in 2019. Inflation, long in the Fed's cross-hairs, remains essentially in line with the target rate of 2%. The manufacturing Purchasing Managers' Index still registered an expansionary reading of 53.8 in December despite market skittishness and more sluggish manufacturing activity in China, Taiwan, Korea, Mexico, and parts of Europe (France and Italy).

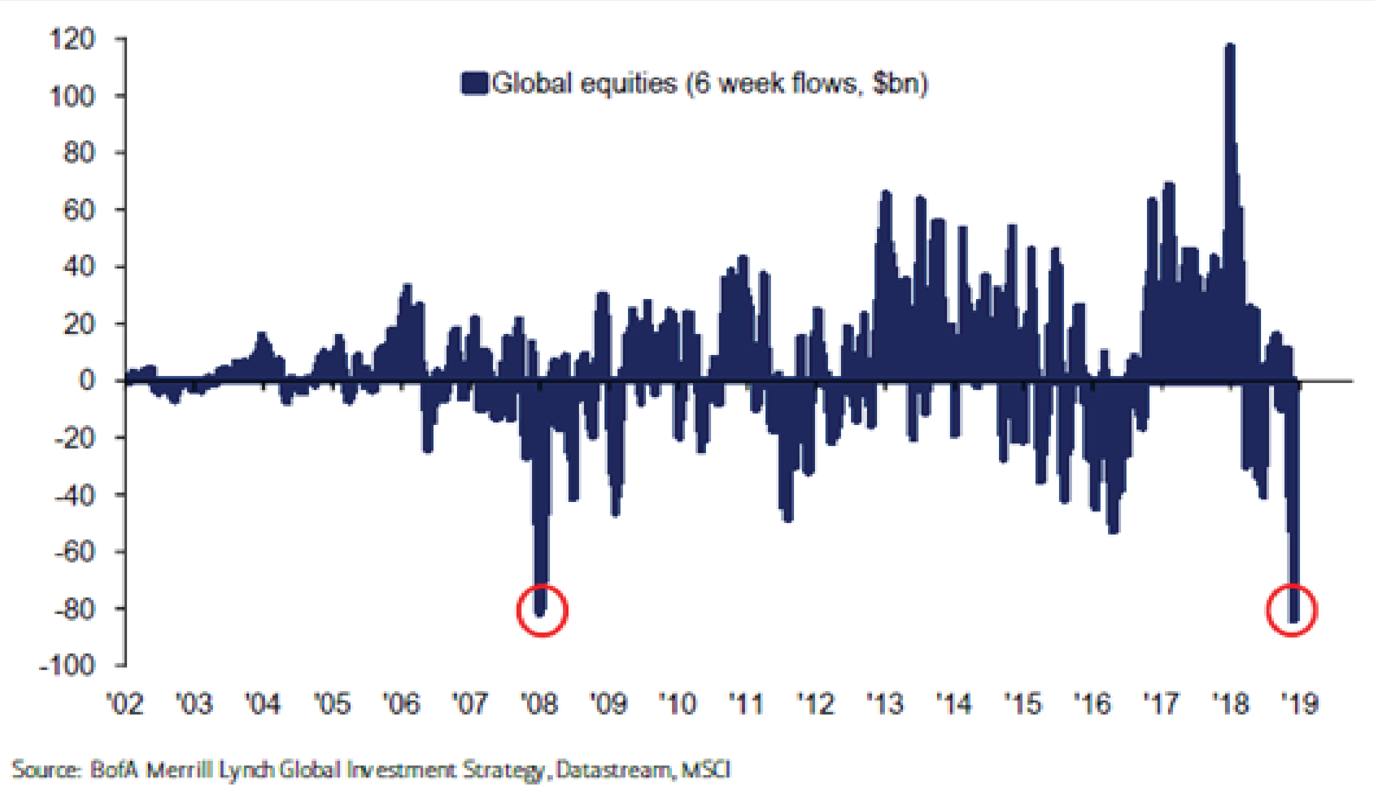
Investors became increasingly fearful as the year wore on, as concerns over rising interest rates, tighter monetary policy, slowing economic growth in international markets and U.S. trade policy were compounded. By year-end, investors were particularly concerned that the resulting "bear market" (if we define a bear market as a decline of over 20%) could portend a recession. Although U.S. equities by this definition did enter a bear market late in 2018, not all "bear markets" are associated with a recession. In fact, small-cap bear market declines in excess of 20% in 1998, 2010, 2011, and 2015-2016 all occurred during non-recessionary economic environments. Furthermore, while no one can predict the future, negative calendar year returns for the Russell 2000 Growth have often resulted in positive returns in the subsequent calendar year (except for the bear market period following the Internet bubble).



There was also much discussion of an "inverted yield curve" predicting an imminent recession. While it's true that parts of the yield curve are currently inverted (such as the 5-year and 2-year), we consider the 10-year and 2-year yield spread to be the more meaningful indicator, and it has yet to turn negative. Importantly, inversion of the 10/2 spread does not portend an immediate recession; the last time the 10/2 spread inverted was in December 2005, and the Great Recession officially started in December 2007 – some two years later. The Russell 2000 Growth Index returned in excess of 20% over that time period[3], so the inversion obsession may not predict much of anything.

In our view, what we're left with as we enter 2019 is an above-average investment opportunity for long-term investors and likely the most compelling opportunity we've seen since late 2011. Fear at the end of 2018 was palpable; a number of sentiment measures we track were at extreme fear levels last seen in early 2016 or late 2011. Some measures, such as the substantial global equity outflows witnessed at the end of the year, were at the highest levels witnessed since the global financial crisis in 2008.

[3] The Russell 2000 Growth Index returned 20.4% from 11/30/2005 through 11/30/2007.



Our contrarian view based on sentiment is supported by valuations. The P/E of our investable universe[4] is now 26% below what we observed entering 2018, and the S&P 500 P/E finished the year at its lowest level since 2013, which we believe more than adequately discounts the risks discussed above. Some of those risks appear to already be abating. Interest rates have declined, with the 10-year U.S. Treasury yield closing under 2.7% at year-end compared to a peak in early October of more than 3.2%. Recent Federal Reserve comments have been less hawkish and Fed Funds futures currently project no additional rate hikes in 2019 versus expectations of four 2019 hikes just weeks ago, a significant move that exemplifies the major shifts in sentiment that occurred late last year. The trade dispute between the U.S. and China has possibly peaked and is entering a critical negotiation phase with heightened levels of motivation as President Trump hopes to stem a declining stock market and Chinese President Xi reacts to a weakening Chinese economy. Although it's dangerous to predict the potential timing of a resolution, we do believe equity markets would react favorably to any agreement that provides more certainty on trade.

That said, we still believe the biggest risk to equity markets – as we noted last quarter – lies with debt and interest rates. The unwind of quantitative easing represents uncharted territory, and it's not entirely clear how the Fed's balance sheet reduction strategy will impact the economy, the equity market, and the bond market. Fed Chairman Powell will need to walk a fine line as he attempts to normalize monetary policy without disproportionately disrupting capital markets in the process. We expect markets will continue to be hyper-sensitive to his comments for the foreseeable future, although given the broadly negative stock market performance during the fourth quarter, some of this is likely already priced in.

While headlines and investor risk appetites can change on a whim in the short-term, our bottom-up strategy has always been focused on investing in businesses with idiosyncratic attributes that afford the potential for earnings growth to surprise to the upside. These companies are often undergoing a transformational change or event that we believe is potentially misunderstood or underestimated by the consensus. While the earnings multiples afforded such companies can oscillate from quarter to quarter, we believe that prudent stock selection of a diversified portfolio of companies with prospects for better-than-expected earnings growth is likely to outperform the broader market over the long-term.

[4]Our micro-cap and small-cap combined investable universe consists of all U.S. companies with market capitalizations less than $5 billion that reported an earnings surprise of 10% or more in the latest reported quarter. The median forward 12-month P/E ratio for our universe stood at 19.9x on 12/28/2017 and at 14.6x on 1/3/2019.

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Portfolio Highlights

As of December 31, 2018, the portfolio was 100% invested in 68 different positions. The portfolio had its largest weightings in consumer discretionary (21.4% average weighting during the quarter versus 18.2% for the Russell 2000 Growth Index), technology (21.2% versus 16.0%), and producer durables (20.3% versus 15.6%). The portfolio was most underweight health care (18.7% versus 25.8%), financial services (5.0% versus 10.6%) and utilities (0.0% versus 1.8%).

In the fourth quarter the portfolio benefited from favorable stock selection in health care (where our holdings generated a return of -13.41% versus a -25.56% return for the benchmark's health care holdings) and energy (-19.08% versus -40.58%) . Performance was negatively impacted by stock selection in consumer discretionary (-30.76% versus -19.77%), producer durables (-29.45% versus -21.04%), and financial services (-40.11% versus -16.45%).

PORTFOLIO CHARACTERISTICS
(AS OF DECEMBER 31, 2018)

Number of Stocks	68
Weighted Market Capitalization (in millions)	$885
Median Market Capitalization (in millions)	$600
P/E Forward 4 Quarters (estimated)	10.6x
Long-Term Debt to Total Equity	10.9%
Return on Equity	5.9%
Cash Position	1.9%
Portfolio Turnover (2018)	116.0%

Source: Thomson Reuters Eikon

Key Benefits

The Micro-Cap Growth strategy seeks to capitalize on the exceptional growth potential of companies in the early stages of their life cycle. The strategy invests in very small companies which, at the time of purchase, have a market capitalization

less than $600 million or are within the range of companies represented in the Russell Micro-Cap Growth Index, whichever is greater. These companies often boast exciting products and/or services driving organic revenue and earnings growth. Our fundamental research process is specifically designed to uncover such opportunities.

The key benefits of the Micro-Cap Growth strategy are:

- Access to one of the least efficient segments of the equity market
- Potential for significant alpha over a full market cycle
- Combines empirically-proven Behavioral Finance principles with the very best of fundamental bottom-up research
- Disciplined and repeatable investment process managed by a passionate and experienced investment team
- Fundamental research process specifically designed to efficiently discover micro-cap companies that are misunderstood by traditional Wall Street research analysts
- Exposure to micro-cap companies offering the potential for earnings growth that differs from consensus expectations
- Diversified portfolio with a focus on risk management

Minimum Account Size: $5 million for Institutional Account Management

For more information please contact:
Brian K. Lee
Oberweis Asset Management, Inc.
3333 Warrenville Rd., Suite 500, Lisle, IL 60532
(800) 323-6166 | (630) 577-2321 | brian.lee@oberweis.net

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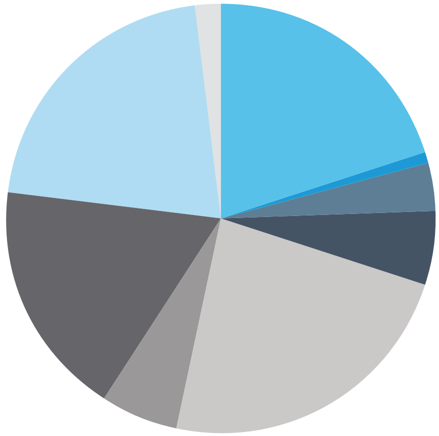
TOP TEN HOLDINGS ***(as of December 31, 2018)***

	Company		Line of Business
1	Vericel Corp.	3.7%	Develops cell therapy products for the treatment of patients in the sports medicine and burn care markets
2	Vicor Corp.	3.2%	Designs modular power components and complete power systems
3	LHC Group, Inc.	2.8%	Provides home health care services
4	Atricure, Inc.	2.6%	Develops treatments for atrial fibrillation
5	Tandem Diabetes Care, Inc.	2.4%	Develops pump systems for diabetes patients
6	K12, Inc.	2.3%	Provides online educational services for high school students
7	Career Education Corp.	2.3%	Provides for-profit secondary education in the U.S.
8	DMC Global, Inc.	2.2%	Global technology company that offers collaboration, research, development, and other services
9	Quantenna Communications, Inc.	2.2%	Develops wireless communication solutions
10	Veracyte, Inc.	2.2%	Develops molecular oncoloty tests

Top 10 holdings as a percentage of Total Net Assets. Portfolio Holdings are subject to change at any time. References to specific securities should not be construed as a recommendation to buy or sell and should not be assumed profitable. Source: Thomson Reuters Eikon

SECTOR WEIGHTINGS ***(as of December 31, 2018)***

Consumer Discretionary	20.1%
Consumer Staples	0.8%
Energy	3.6%
Financial Services	5.5%
Health Care	23.4%
Materials & Processing	5.9%
Producer Durables	17.8%
Technology	21.0%
Utilities	0.0%
Cash	1.9%
Total	100.0%



Sector weightings as a percentage of Total Net Assets. Source: Thomson Reuters Eikon

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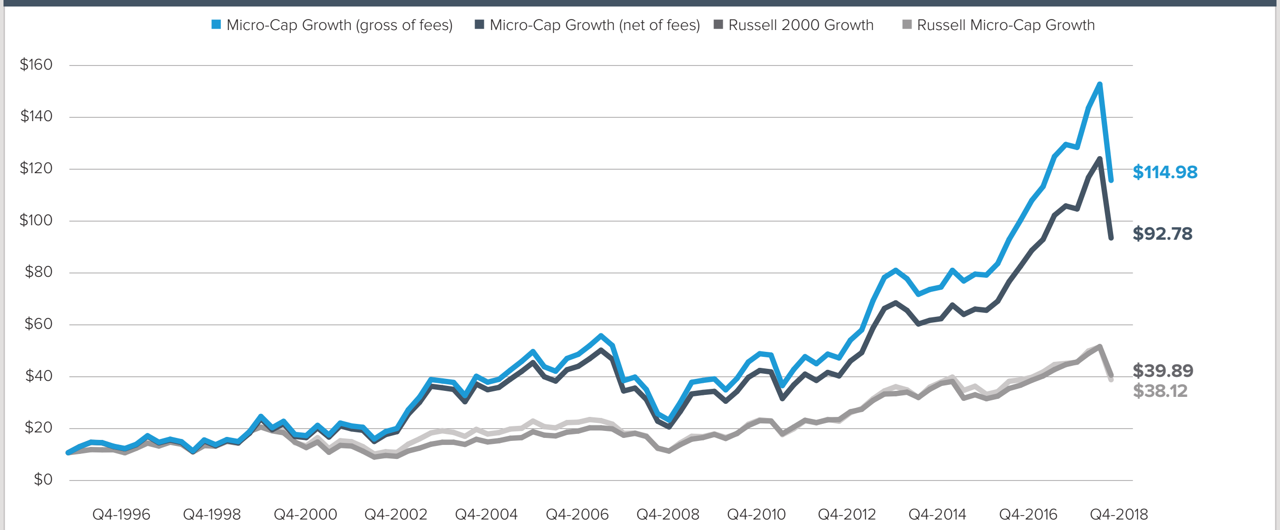
AVERAGE ANNUAL TOTAL RETURNS *(as of December 31, 2018)*	QTD	1 Yr	3 Yr	5 Yr	10 Yr	Since Inception 1/1/1996
Micro-Cap Growth (gross of fees)	**-24.39%**	**-10.74%**	**13.41%**	**8.19%**	**16.48%**	**11.23%**
Micro-Cap Growth (net of fees)	**-24.76%**	**-11.74%**	**12.39%**	**7.18%**	**15.41%**	**10.19%**
Russell Microcap Growth Index	-24.93%	-14.18%	2.27%	1.41%	12.04%	N/A
Russell 2000 Growth Index	-21.65%	-9.31%	7.24%	5.13%	13.52%	6.43%

Oberweis Asset Management, Inc. ("OAM") is an independent investment management firm that is not affiliated with any parent organization. The composite returns are comprised of all fully discretionary accounts with a minimum value of $5 million. Performance results, from 1-1-96 until 12-31-03 and 9-1-11 to present were derived solely from the performance of the Oberweis Micro-Cap Fund, a registered, open-end mutual fund, for which OAM serves as investment adviser. Prior to November 4, 2001, James D. Oberweis was the sole portfolio manager for the Micro-Cap Fund during the period of the performance results noted. Accounts are dollar-weighted within the composite and reported in U.S. dollars.

The Russell 2000 Index measures the performance of approximately 2,000 companies with small-market capitalizations. The Russell 2000 Growth Index measures the performance of those Russell 2000 companies with higher price-to-book ratios and higher forecasted earnings growth rates. The Russell Microcap Growth Index measures the performance of those Russell Micro Cap companies with higher price-to-book ratios and higher forecasted growth values. The performance data includes reinvested dividends. The Russell Microcap Index is represented by the smallest 1,000 securities in the small cap Russell 2000 Index plus the next 1,000 securities. Each index is an unmanaged group of stocks, whose performance does not reflect the deduction of fees, expenses or taxes.

Advisory fees are disclosed in Part II of Form ADV. Performance is historical and includes the reinvestment of dividends and other income. Past performance is not necessarily indicative of future results.

GROWTH OF $10 MILLION — WITH INCOME INVESTED *(January 1, 1996 – December 31, 2018)*



The Russell Microcap Growth Index began on 7/3/00, and the line graph for the Index begins at the same value as the Fund on that date.

Oberweis Asset Management, Inc.

Recognized as a leading small-cap stock specialist, Oberweis has been helping institutional investors manage their assets prudently and effectively for many years.

MEET THE TEAM