



# QUALITY GROWTH INVESTING

*A Series of Reports From Jensen Investment Management*

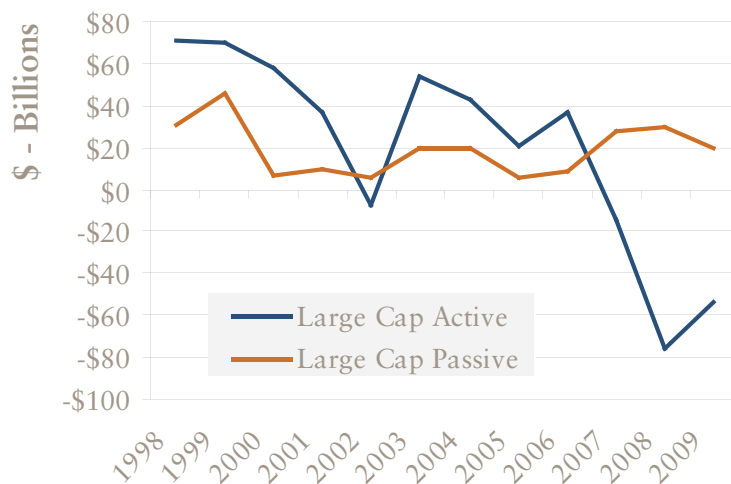
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By Dave Mertens and Adam Calamar

## Mutual Funds through the Lens of “Active Share”

John Bogle, founder of The Vanguard Group, is famous for his opinion that “index funds are unequivocally the best way to invest.” Indeed, over the last decade, the popularity of passively managed strategies has steadily increased. Positive flows to passive large cap U.S. funds that are in sharp contrast to the outflows experienced by active large cap U.S. funds document this trend.

Figure 1: Annual Large Cap Active Flows vs. Large Cap Passive Flows



Source: Morningstar, Inc.. Large Cap Active group includes actively managed Large Cap Growth, Large Cap Blend, and Large Cap Value funds. Large Cap Passive group includes passively managed Large Cap Growth, Large Cap Blend, and Large Cap Value funds.

While the idea of buying and holding inexpensive index funds has been an important development in investing theory, we argue that this strategy does not make sense for all investors, and that careful selection of superior active managers may be a more compelling policy than resigning oneself to passive index funds.

In spite of recent trends, assets held within actively managed strategies today are significantly greater than those in passive products. As of year end 2009 active strategies, including both open-end mutual funds and exchange traded funds, held more than \$6 trillion, more than three and a half times the nearly \$1.7 trillion held within passive strategies, according to Morningstar. It can be assumed that an investor who decides to pay

a premium for active management in an effort to reap higher returns or reduce risk expects to receive active management. But another trend that has occurred over time is the shift by many active products to a closer alignment of their holdings with their benchmarks or so-called “closet indexing.”

Whether this happened for reasons of managing the business risk of the mutual fund company (believing there is less chance of losing shareholders with performance that closely mimics the benchmark index), job risk of the individual portfolio managers or a lack of talented managers relative to an expanded universe of funds, shareholders may not be getting what they are paying for.

As a result, there is as Wall Street Journal writer Sam Mamudi notes a “double whammy for investors.” He adds that, “It lowers their odds of getting results that are far better than the benchmark, which is a key reason to opt for an active stock picker (although to be fair, their chances of falling far behind are lower, too). And they may be paying substantial annual fees, and sometimes sales commissions, for fairly average returns.”

This trend toward closet indexing was observed by two Yale School of Management professors who developed a measure termed “Active Share.” This metric quantifies the “bet” that active managers are taking relative to their respective benchmarks. We believe that measuring the Active Share of funds, along with additional quantitative and qualitative analysis, may help investors confirm that they are getting the active management they desire, determine appropriate benchmark indexes for funds selected, and, ultimately, select skilled managers with potential for future outperformance.

## What is Active Share?

The concept of Active Share was introduced by Finance professors Dr. K.J. Martijn Cremers and Dr. Antti Petajisto in 2006 within their study, “How Active is Your Fund Manager? A New Measure That Predicts Performance.” Active Share quantifies the portion of a portfolio that differs from its benchmark, summing the absolute differences between portfolio weights in the fund and the benchmark index.<sup>1</sup> The Active Share of a fund may vary from zero percent for an index fund that exactly mirrors the benchmark, to 100% for a portfolio with no overlap. In short, Active Share focuses on stock selection – the conviction of a manager to veer away from the weightings of the index.

Stock selection is one way for a manager to potentially beat the benchmark over time. A fund that adds value over time by owning stocks that outperform the benchmark – while not increasing market risk – adds value through stock selection.

The other way for an active manager to potentially beat the benchmark index is through factor-timing. Factor-timing includes employing shifts in market capitalization, price-to-book ratios, industry weights and other exposures.

Drs. Cremers and Petajisto believe that Active Share can measure the dimension of stock selection. They believe that Tracking Error, which measures the volatility of excess returns, reflects differences in factor bets. Looking at both measures in tandem creates a grid for sorting how active a fund is based on holdings and returns data and offers another tool for comparing funds, as shown in Figure 2 on the following page.

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<sup>1</sup> Beginning with the position weights in both the fund and the index, Active Share is calculated by determining the difference in weights for all securities in either the fund or the index, summing the absolute differences and dividing by two. Dividing by two ensures that Active Share results in a value between 0% and 100%. If a fund holds none of the index stocks, the Active Share will equal 100%; an index fund with holdings identical to the benchmark will have an Active Share of 0%.

Figure 2: Active Management in Two Dimensions<sup>2</sup>



### The Researchers' Observations

In their study Drs. Cremers and Petajisto included a universe of 2,647 mutual funds and analyzed holdings over the period 1980-2003. During this time, they noted a clear shift toward lower Active Share – a move toward funds more closely aligning with their benchmarks. They found that the percentage of assets under management with Active Share less than 60% increased from 1.5% in 1980 to 44.8% in 2003. Assets under management with Active Share greater than 80% decreased over this time span from 42.8% to 23.3%. Index funds account for some of this shift, but less than one might think. The fraction of index funds and their assets before 1990 was less than 1%. That figure had grown to 15.3% by 2003.

While the shift has been toward lower Active Share, Drs. Cremers and Petajisto found that funds with higher Active Share – those whose holdings diverged more from the index – are more likely to beat their benchmarks. Funds in the study were segmented into Active Share quintiles and then into Tracking Error quintiles. Noting that the majority of funds were very active in the 1980s, the professors used 1990-2003 as the sample period for studying fund performance and excluded index funds to consider only the actively managed group.

Study results showed that higher Active Share improved performance; higher Tracking Error on its own did not. Pairing the two measures, high Active Share and high Tracking Error managers (concentrated stock funds) earned the highest positive excess returns. Low Active Share and low Tracking Error funds, by contrast, generally lagged their benchmarks after fees and trading costs.

<sup>2</sup> Figure adapted from: Cremers, Martijn and Petajisto, Antti. (2009, March 31). How Active is Your Fund Manager? A New Measure That Predicts Performance. Yale ICF Working Paper No. 06-14, Yale School of Management. Retrieved from <http://ssrn.com/abstract=891719>

## How Can Investors Utilize Active Share?

How is Active Share useful to investors as they consider actively managed mutual funds? First, it is important to get what you pay for. If an investor is willing to pay active management fees, they should receive a product that is truly actively managed.

With myriad fund choices, it is not as simple as “active versus passive.” There are significant differences in the degrees of active management between managers. Active Share allows investors another metric to compare and choose the funds that best suit their needs.

Another use suggested by Drs. Cremers and Petajisto is to verify the “best fit” benchmark index for measuring the results of a fund. They suggest that the index against which the fund has the lowest Active Share will be most appropriate.

Determining the most suitable benchmark for an actively managed investment product helps ensure that the proper allocations are maintained in a particular product and asset class. Using that benchmark as the measuring stick against product performance also helps set investor expectations and gauge ongoing results.

Consideration should also be given in this exercise to the Tracking Error, which should be lower against the appropriate index, and R-Squared which should be higher.<sup>3</sup> Comparing The Jensen Portfolio mutual fund (“The Jensen Portfolio”) to two common indexes provides an example.

Figure 3: Active Share and Tracking Error of *The Jensen Portfolio*

	12/31/07		12/31/08		12/31/09	
	S&P 500 Index	Russell 1000 Growth Index	S&P 500 Index	Russell 1000 Growth Index	S&P 500 Index	Russell 1000 Growth Index
Active Share	85%	85%	82%	85%	85%	77%
1-Year Tracking Error	4.1%	3.8%	8.5%	11.7%	6.6%	5.5%
R-Squared	80%	83%	82%	74%	91%	91%

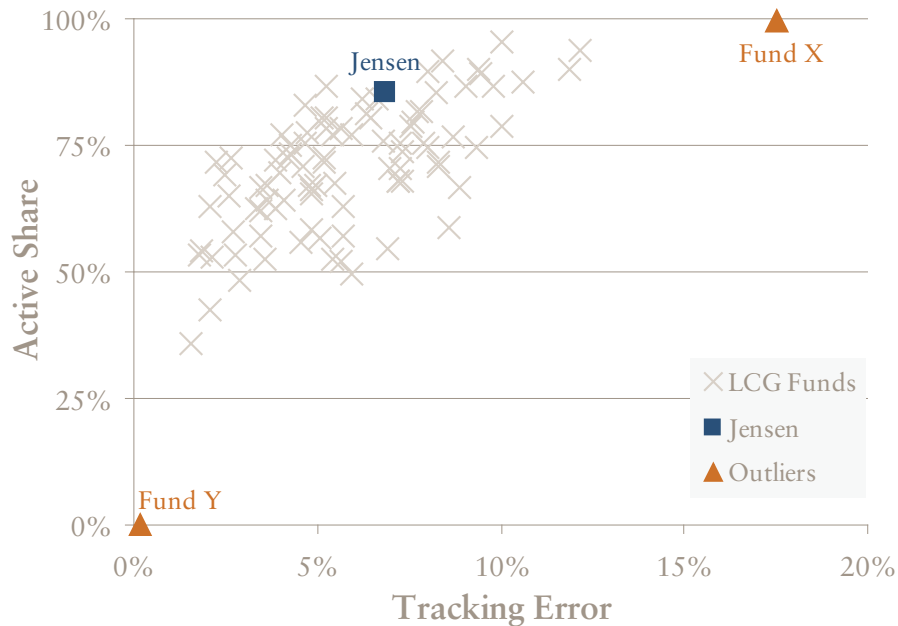
Sources: Thomson-Reuters, Russell.

Viewing Figure 3 brings up additional uses for Active Share. If these calculations over time were to reveal a marked change in results, it could be reflective of a shift in style or strategy by the fund manager. Further investigation may help uncover whether the fund is truly the solution desired by the investor.

<sup>3</sup> R-Squared is a measure of the percentage of a fund’s performance movements that are explained by performance movements of a benchmark index.

As an example, the graph below charts the position of The Jensen Portfolio compared with a peer group of mutual funds classified by Morningstar as Large Cap Growth funds with assets greater than \$1 billion. Ninety-four funds met these criteria.<sup>4</sup> Each fund's Active Share and Tracking Error were calculated against their primary prospectus benchmark.<sup>5</sup>

Figure 4: Active Share and Tracking Error of Large Cap Growth Mutual Funds



The pattern of distribution of funds along these two axes is generally consistent with that found by Drs. Cremers and Petajisto. As the chart shows, there are two outliers (as indicated by orange triangles) that deserve further attention. At the extreme lower left of the graph is an index fund (Fund Y) that nearly duplicates the holdings of a particular index. Therefore, this fund is where we would expect it to be, with a low Active Share and a low Tracking Error. This was the only fund in the peer group that Morningstar identified as an Index Fund.

In the extreme upper right of Figure 4, there is a fund with a high degree of Tracking Error and a high Active Share (Fund X). Normally, one would assume that this must be a fund with extremely concentrated positions. However, with over 80 holdings, Fund X would not appear to be particularly concentrated. Interestingly, this fund lists its benchmark as the Russell 2000 Index, which is typically used to measure the performance of small-cap companies, not large-cap growth companies. When we compare this fund against some common large-cap and large-cap growth indexes, however, the Tracking Error and Active Share numbers are much lower.

<sup>4</sup> The Peer Group includes those funds that Morningstar classifies as United States Large Cap Growth which are: eligible to investors in the United States, are the oldest share class if the fund has multiple share classes, are not closed to new investors, and have assets greater than \$1 billion USD. In addition, three funds whose only holdings were other mutual funds were excluded.

<sup>5</sup> Active Share was calculated as of 12/31/09 or using the most recent holdings data available, with no holdings older than 9/30/09. The holdings date for each fund was matched to the holdings date of its index. Tracking Error was calculated for the trailing one year ended 12/31/09. Both Tracking Error and Active Share were calculated using the Primary Prospectus Benchmark as identified by Morningstar.

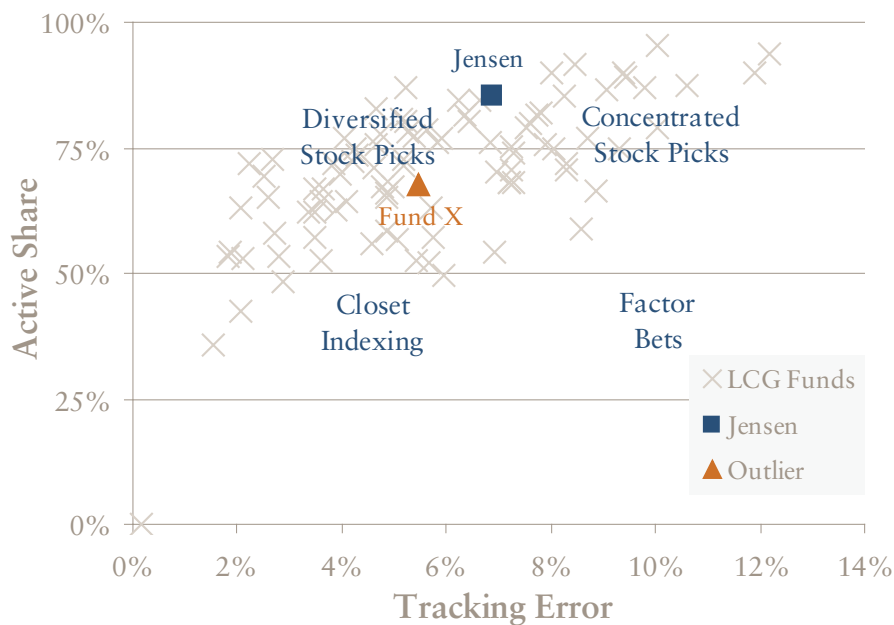
Figure 5: Active Share and Tracking Error of *Fund X* vs. Selected Indexes

	Russell 2000 Index	Russell 3000 Index	Russell 1000 Index	S&P 500 Index	Russell 3000 Growth Index	Russell 1000 Growth Index
Active Share	99%	84%	83%	82%	77%	76%
1-Year Tracking Error	17.5%	10.2%	9.8%	10.0%	6.3%	5.8%

Based upon Figure 5, we could reject *Fund X*'s primary benchmark as the Russell 2000 Index and use the Russell 1000 Growth Index instead, as it has the lowest Tracking Error and the lowest Active Share of those indexes we examined.<sup>6</sup>

Taking this into consideration, here is the same chart as above, but with the outlier benchmarked against the Russell 1000 Growth Index instead of the Russell 2000 Index.

Figure 6: Active Share and Tracking Error of Large Cap Growth Mutual Funds



Looking at the chart above, we can see that there are a handful of funds that have exceptionally high Active Share measures (above 90%, for example). What we don't know, however, is if this Active Share is due to the wrong index, as shown in the previous example, or if it is due to the fund manager's selection of particular securities and concentration in those securities. To answer this question, we can look at the components of Active Share in order to drill down into the differences between a portfolio and an index.

<sup>6</sup> In a real-life investment scenario, a more thorough analysis of the fund's Active Share and Tracking Error over several time periods may be necessary to determine the best index for the fund.

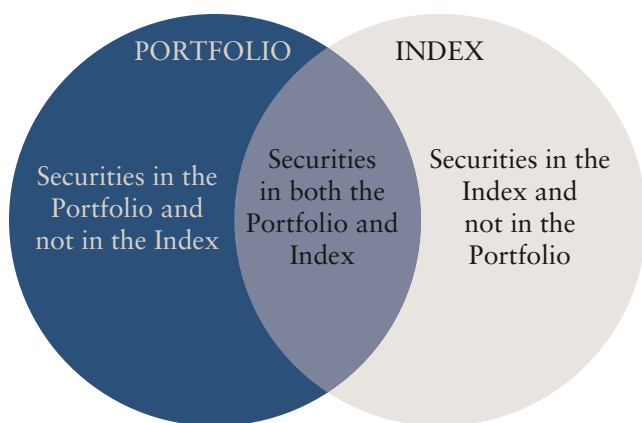
## Dissecting the Components of Active Share

Active Share can be divided into three components:

1. The effect of securities that are in the portfolio and not in the benchmark index;
2. The effect of securities that are in the benchmark index and not in the portfolio;
3. The effect of securities that are in both the benchmark index and the portfolio.

The relationship between these three components is shown in the diagram below:

Figure 7: Components of Active Share



Each of these components contributes to the total Active Share measurement.

In the first case, the portion of Active Share attributable to securities in the portfolio and not in the index is simply the sum of the weights of these securities divided by two.

The calculation for the second component is the same, except it sums the weights of the securities present in the index and not the portfolio.

The third segment of Active Share is the sum of the absolute values of the differences in weights for all of the securities that are in both the portfolio and the index. This sum is also divided by two.

## How *The Jensen Portfolio's* Active Share Scores Break Down

As an example of how to use the components of Active Share, these components are shown below for *The Jensen Portfolio* versus the peer group averages as of December 31, 2009.

Figure 8: Active Share Components for *The Jensen Portfolio*

	Total Active Share*	Active Share Generated by Securities only in the Portfolio	Active Share Generated by Securities in both the Portfolio and the Index	Active Share Generated by Securities only in the Index
<b>The Jensen Portfolio</b>	85%	2%	40%	43%
Peer Group Average	71%	12%	27%	32%

\*For each mutual fund, Active Share was calculated against the Primary Prospectus Benchmark, as identified by Morningstar. The Primary Prospectus Benchmark for *The Jensen Portfolio* is the S&P 500 Index.

By examining the breakdown of Active Share in The Jensen Portfolio, we can see that:

- Very little (2%) of The Jensen Portfolio's Active Share score is generated from owning securities that are not in the benchmark index (the S&P 500 Index). This is a good initial indication that the Fund is being compared against an appropriate benchmark. If this number was very high, or had changed significantly over time, it could indicate an inappropriate benchmark or a strategy shift by the manager, respectively.
- Approximately 40% of The Jensen Portfolio's Active Share score is generated by differences in weightings for securities that are in both the portfolio and the index. Out of this peer group of 94 funds, The Jensen Portfolio is the second highest in this measure, and is where we would expect a high-conviction manager like Jensen to score.
- The remaining 43% of The Jensen Portfolio's Active Share score is generated by securities that are included in the index but not in the portfolio. This segment of the Active Share score can be used as a proxy to determine concentration.<sup>7</sup> Given the relatively concentrated nature of The Jensen Portfolio, this is also what we would expect to find. If this number was very high, but the portfolio was not particularly concentrated, it could indicate that the benchmark index was incorrect. Additionally, significant changes in this number over time could also indicate a shift in strategy by the manager.

Overall, the number of securities in the portfolio tends to be related to Active Share and Tracking Error, in that as the number of securities increases, Active Share and Tracking Error generally decrease.<sup>8</sup> A regression of the sample data suggests that for each additional 10 securities in the portfolio, Active Share decreases 69 basis points, and Tracking Error decreases 6 basis points.<sup>9</sup>

Likewise, if the manager changes the overlap between the portfolio and the index, the Active Share and Tracking Error will tend to change as well, such that as the percentage of the portfolio comprising securities included only in the portfolio (and not in the index) increases, Active Share and Tracking Error generally increase.<sup>10</sup> A regression of the sample data suggests that for each additional 1% of a portfolio's assets that are not included in the index, Active Share increases 48 basis points, and Tracking Error increases 11 basis points.<sup>11</sup>

These relationships are shown graphically in the Figure 9 on the following page, which combines themes from Figure 2 and Figure 7 above, where the blue circle refers to the portfolio, and the gray circle refers to the index.

<sup>7</sup> The correlation coefficient between the *Number of portfolio holdings* and the *Percent of the portfolio in the index* was -75%. A negative correlation coefficient indicates that as one variable increases, the other generally decreases.

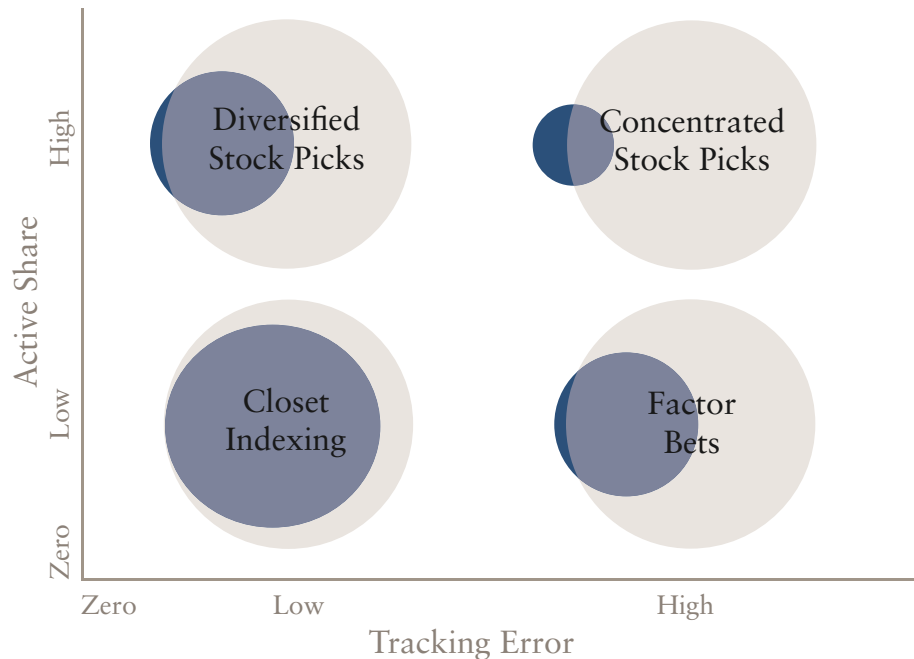
<sup>8</sup> The correlation coefficient between the *Number of portfolio holdings* and the *Active Share* was -58%. The correlation coefficient between the *Number of portfolio holdings* and the *Tracking Error* was -24%. A negative correlation coefficient indicates that as one variable increases, the other generally decreases.

<sup>9</sup> The linear regression between the *Number of portfolio holdings* and the *Active Share* resulted in: intercept = 0.7954 (t-stat 43.6603, p-value 0.0000) and x-variable = -0.0007 (t-stat -6.7610, p-value 0.0000). The linear regression between the *Number of portfolio holdings* and the *Tracking Error* resulted in: intercept = 0.0661 (t-stat 16.0641, p-value 0.0000) and x-variable = -0.0001 (t-stat -2.4174, p-value 0.0176).

<sup>10</sup> The correlation coefficient between the *Percent of portfolio not in the index* and the *Active Share* was 49%. The correlation coefficient between the *Percent of portfolio not in the index* and the *Tracking Error* was 57%. A positive correlation coefficient indicates that as one variable increases, the other generally increases.

<sup>11</sup> The linear regression between the *Percent of the portfolio not in the index* and the *Active Share* resulted in: intercept = 0.5921 (t-stat 24.0306, p-value 0.0000) and x-variable = 0.4846 (t-stat 5.3742, p-value 0.0000). The linear regression between the *Percent of the portfolio not in the index* and the *Tracking Error* resulted in: intercept = 0.0340 (t-stat 7.6756, p-value 0.0000) and x-variable = 0.1066 (t-stat 6.5691, p-value 0.0000).

Figure 9: General Pattern of Portfolio Changes with Changes in Active Share and Tracking Error



Overall, Active Share is an interesting measurement that can be used to examine the characteristics of a mutual fund's portfolio, benchmark, and how they change over time in order to determine how "active" a manager truly is. It can also be used to determine whether one is using an appropriate benchmark for a fund. The basic analysis presented here serves as an example for evaluating funds in this manner, and we believe that the results of our analysis of The Jensen Portfolio are consistent with our values and our investment discipline.

### Jensen Investment Management's Beliefs

As portfolio managers, we believe that active management can add value over time. Supported by the work of Drs. Cremers and Petajisto, we believe that concentrated, high conviction fund managers are best situated to beat the market. These convictions, and not the holdings of an index, should dictate successful investment discipline. We believe markets are not always rational and valuation opportunities have and will continue to present themselves in the stocks of quality companies.

Jensen Investment Management began in 1988 as an advisor to private clients who did not focus on benchmark indexes, but instead viewed outcomes as important: funding the educational needs of their children, building assets for comfortable retirements and meeting their commitments to charities among them. Today, our clientele also includes institutions and shareholders of The Jensen Portfolio, many of whom are keenly observant of our performance relative to benchmarks. We understand the measuring sticks against which we are compared and take comfort that, as high-conviction managers, we have a framework for constructing portfolios with the goal of outperformance over the long term.

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All factual information contained in this paper is derived from sources which Jensen believes are reliable, but Jensen cannot guarantee complete accuracy. Any charts, graphics, or formulas contained in this piece are only for the purpose of illustration. The views of Jensen Investment Management expressed herein are not intended to be a forecast of future events, a guarantee of future results, nor investment advice. Fund holdings and sector weightings are subject to change without notice and should not be considered recommendations to buy or sell any security. *Past performance does not guarantee future results.*

*The Jensen Portfolio is nondiversified, meaning that it may concentrate its assets in fewer individual holdings than a diversified fund, and therefore is more exposed to individual stock volatility than a diversified fund. Investing involves risks, and loss of principal value is possible.*

The S&P 500 Index is a market value weighted index consisting of 500 stocks chosen for market size, liquidity and industry group representation. The Russell 1000 Growth Index measures the performance of those Russell 1000 Index companies with higher price-to-book ratios and higher forecasted growth values. The Russell 3000 Index measures the performance of the largest 3000 U.S. companies representing approximately 98% of the investable U.S. equity market. The Russell 3000 Growth Index measures the performance of the broad growth segment of the U.S. equity universe. It includes those Russell 3000 companies with higher price-to-book ratios and higher forecasted growth values. The Russell 2000 Index measures the performance of the small-cap segment of the U.S. equity universe and includes approximately 2,000 of the smallest companies. The Russell 1000 Index measures the performance of the large-cap segment of the U.S. equity universe and includes approximately 1,000 of the largest companies. These indexes are unmanaged, and you cannot invest directly in an index.

Price/Book Ratio is calculated by dividing the current price of the stock by the company's book value per share.

A Basis Point is a unit of measurement that is equal to 1/100th of 1%.

*The Fund's investment objectives, risks, charges and expenses must be considered carefully before investing. The prospectus contains this and other important information about the investment company, and it may be obtained by calling 1-800-992-4144, or by visiting [www.jenseninvestment.com](http://www.jenseninvestment.com). Read it carefully before investing.*

Index performance is not indicative of fund performance. For current standardized performance of the Jensen Portfolio, please call 1-800-992-4144 or visit [www.jenseninvestment.com](http://www.jenseninvestment.com).

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